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Paulum sepultae distat inertiae
Celata virtus.—HORACE.

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NEW ORLEANS
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ORIGINAL COMMUNICATIONS.

Professor Julius Sommerbrodt's Important Discoveries Concerning the Reflex Relations betweeen Lungs, Heart and Vessels.*

By PAUL VON SEYDEWITZ, M D.,

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Professor Julius Sommerbrodt, of the University of Breslau, has recently published under the above heading a pamphlet which discloses some most interesting points of this obscure field of physiology, and furnishes the key to several disputed pathological questions.

We know that *Hering* was the first to demonstrate by experiments upon dogs the reflex relations between heart and lungs, showing that a moderate inflation of the lungs increases the frequency of the heart's action.

Sommerbrodt, who like *Marey*, *Wolf*, *Landois* and *Riegel*, had made numerous experiments with the sphygmograph,

*Die reflectorischen Beziehungen zwischen Lunge, Herz und Gefässen, von Dr. Julius Sommerbrodt, A. O. Professor an der Universität Breslau. Berlin, gr. 8vo., 1881, im. Verlag von August Hirschwald. N. W. Unter den Linden, No. 68.

concedes that he arrived only through the labors of Klemensiewicz to a correct interpretation of the curves. He now publishes, following up Hering's labors and utilizing Valsalva's experiment, a large series of observations, illustrated by fifty-eight sphygmographic curves, remarkable for their delicacy and precision, and arrives at the following conclusions:

1st. Increase of intra-bronchial pressure in man, such as caused by loud speaking, frequent and deep respiration—as in running and climbing—straining, coughing, inhaling compressed air, or during Valsalva's experiment, irritates the sensory nerves of the lungs; hence:

2d. (a.) Reflex depression of the vaso-motor nerves. The arterial *tonus* is lowered, the capacity of the vessels increased and the blood-pressure reduced.

(b.) Reflex depression of the inhibitory nerves of the heart; thence increased frequency of its action. At a low increase of pressure this latter reflex effect begins later than the former, and always vanishes earlier.

(a.) and (b.) together promote the circulation of the blood in a remarkable manner, and also the secretion of the kidneys, by accelerating the blood-current.

3d. The lowering of the blood-pressure, caused by a high intra-bronchial pressure by the process mentioned *sub* 2d (a) as well as by the regurgitation of the venous blood, is followed by a short interval of increased blood-pressure above the norm, after the cessation of the intra-bronchial pressure which is brought about by the previously regurgitated blood flooding the heart. This confirms in man the results obtained by Knoll in his experiments upon animals. After this stage the effects mentioned *sub* 2d, *a.* and *b.*, reappear.

4th. High intra-bronchial pressure is certainly at first an impediment to the circulation through the regurgitation of the venous blood; but, as this impediment is soon and lastingly over-compensated by the effects mentioned, *sub* 2d *a.* and *b.*, these higher degrees of intra-bronchial pressure chiefly and finally promote circulation.

5th. A moderate intrabronchial pressure (frequent and deep respiration, singing, loud speaking, etc.), since it suffices to bring about the effects described under 2d, *a.* and *b.*, and this without an appreciable regurgitation of the venous blood, essentially promotes circulation.

6th. Aside from the over-compensation mentioned, *sub* 4th, we find the teleological significance of the combined reflex-effect, detailed *sub* 2d, *a.* and *b.* chiefly in this, that through it a greater supply of oxygen and of tissue-material is guaranteed, principally to the muscles, but probably also to the central organs, during and after their more energetic activity (lifting, climbing, loud speaking, etc.).

7th. We must regard the degree of the intra-bronchial pressure as the regulator of the blood-current, since the combined reflex effect becomes the more pronounced, the stronger and more lasting the irritation of the sensory nerves of the lungs proves to be, and *vice versa.*

8th. That irritation of the sensory nerves of the lungs, besides causing all the effects spoken of, *sub* 2d, *a.* and *b.* is likewise competent to alter the rhythm of the heart, as well in healthy as in sick persons. (*Allorhythmia.*) An increased irritability of the heart seems, however, to be a pre-requsite to it.

9th. This hitherto unknown experimental *allorhythmia*, produced during diminished arterial pressure, differs herein materially from that discovered by Knoll, which, as it is well known, depends altogether upon *increased* pressure of the blood. This *allorhythmia* is the first proof of the hitherto merely supposed possibility that the rhythm of the human heart might be changed by reflex action.

These are the conclusions of Professor Sommerbrodt. Besides them we find in his pamphlet very important remarks interspersed and afterwards sustained by forcible arguments.

Thus, for instance, page 38:

"The theory of the effect of compressed air stands as follows:

"The effect is a mechanical one, but in its more important part due to reflex action. Whilst, therefore, the inhalation of compressed air is in itself an obstacle to circulation, it exercises, in its more distant consequences, a decidedly favorable influence upon the circulation of the blood. This explains, what Rosenstein, Kelemen and others confirm, why inhalations of compressed air exercise a pronounced influence upon the diuresis of patients suffering from heart diseases, and even in one instance of purulent pleurisy."

Page 16, whilst speaking of Knoll, who quite recently has submitted anew the Valsalva experiment to a very close study, Sommerbrodt corroborates the results of this investigator: "Knoll saw the frequency of the pulse, during the experiment, increased from 12 to 60 beats per minute, but, as he writes, the conditions for the change in the 'mean frequency of the pulse,' during and after the variation of the breathing, remain obscure."

He (Knoll) found in dogs, to be sure, the beat of the heart irregular, but not accelerated, when he produced a very high pressure within the thorax by inflating one of the pleural sacs * * * * and closes by saying that, for the present, he (Knoll), is unable to furnish any experimental expedient for the explanation of these phenomena in man.

Sommerbrodt, after quoting Knoll textually, claims the latter's admission as a most valuable support for his own views; "for," says he, "it is quite immaterial for the frequency of the pulse, how high the intra-thoracic pressure proves to be, so long as there does not exist at the same time an intra-bronchial pressure occasioned by the inflation of the lung itself"; in other words, so long as intra-thoracic pressure does not combine with intra-bronchial pressure, which, as we have seen above, is alone sufficient to produce increased frequency of the pulse, and furthermore must be considered as the chief regulator of the circulation. No wonder, then, that Sommerbrodt concludes by contending that just the negative result of Knoll's experiment confirms his own discoveries.

We have thought it proper to dwell on this point longer than the cursory character of our sketch would seem to war-

rant, but Sommerbrodt himself lays great stress upon the fact, that the correctness of Knoll's experiments and observations upon animals has never been questioned; and this is of particular value to him, as he is now the first one who has conclusively proven their correctness upon human subjects.

On the contrary, occupied for years with the study of the rhythm and allorhythm of the heart, he had been obliged again and again to point out that large series of observations upon man could not have been explained in the sense of Knoll. Hence, chronic allorhythmy of years' duration, when an increase of arterial pressure was the initial condition of its origin, should undisputably have produced hypertrophy of the left ventricle; and now he knows already quite a number of patients where this is not at all the case.

As an example, he refers to a case he published in 1879, in the 23d Vol. of the German *Archives for Clinical Medicine;* that of Madetzki, which case, at the date of the pamphlet, had been under his observation for three years and nine months. In this woman, who suffers for the last seven years of a palsy of the right side, due to apoplexy, there exist, thus, for at least three years and nine months, a constant *allorhythmy* and chiefly a *pulsus bigeminus* and *trigeminus*, and not unfrequently even *sexgeminus;* and yet, during all this time, has the heart of this patient never undergone the slightest demonstrable change in its volume.

Professor Sommerbrodt gives some very interesting observations chosen from his patients, having a bearing on the question at issue, and we ask the reader's indulgence for offering two of them without reproducing the explanatory curves. They are selected, because they corroborate each other in a very important point.

I. "Mr. S., a gentleman farmer, from G., 56 years old, consulted me July 30, 1880. He is a stately, robust man, riding daily on horseback. Two years ago he had a first attack of asthma; since then four more; once immediately after drinking cold beer. He is a confirmed *emphysematicus*, and in addition suffers now from a slight catarrh of the larger bronchi. Dyspnœa very moderate, appetite good, stools regular.

The heart is nearly covered by the emphysematic lung; nevertheless its sounds are loud and quite pure.

"All the curves, taken on that day (July 30), ten in number, exhibited the character of curve 53, *i. e.*, of exquisite *pulsus alternans*, with rare interspersions of *p. bigeminus* and *p. trigeminus*.

"Patient was sent to Salzbrunn,* where he improved wonderfully, lost his cough and had no more asthmatic attacks.

"August 23rd of last year, I saw him again. All the pulse-curves taken then, showed pure *pulsus alternans*. Whilst one of the curves was being taken, the respiration experiment (Valsalva's) was made, after the plate had been arrested. This experiment did not alone wipe out the *pulsus alternans*, but rendered the pulse perfectly normal and rhythmic, as I never had seen it before in this patient; and furthermore it did not return, for the subsequent half-hour, to the previous state of pure *pulsus alternans*.

"During another experiment, made on the same afternoon, was found exclusively *pulsus alternans*. The respiration-experiment being made again, the type of the pulse was obliterated there and then, though not quite as completely as had been the case at the first experiment in the morning. But already on the very next plate, the pulse returned abruptly to its habitual type.

"On the 10th of last November I repeated these experiments on Mr. S..., with exactly similar results. This sudden obliteration of the otherwise constant type of *allorhythmy* by my experiment I saw also in another patient. In that patient the normal pulse made its appearance only then, when by the experiment the transitory stage of *p. bigeminus* had been reached. On a certain day, when already repeated experiments had been made, the normal rhythm of the pulse made its appearance, instead of *pulsus trigeminus*, immediately after the ex-

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Salzbrunn is situated in the district of Breslau, in Prussian Silesia, in the foot-hills of the Sudetic mountains, 1210 feet above the level of the sea. It contains eight mineral springs, of which two are drunk: "Oberbrunnen and Mühlbrunnen," the first of which belongs to the muriate-alkaline-acidulous class, whilst the rest serve for bathing. "These baths," says Julius Althaus, in his book, *The Spas of Europe*, London, 1862, page 324, "accelerate the metamorphosis of matter, promote the absorption of exudations in the skin and cellular tissue, and reduce congestion of internal organs."

As a watering-place, Salzbrunn stands in high favor all over Germany. v. S.

periment. But never have I seen in him, from the 16th day of August to the 6th of October, spontaneously normal rhythm of the pulse, although I drew each time a great many curves before I commenced experimenting."

II. "Mr. Z...., from Gl...., 53 years old, was suffering in 1870, for the third time, from acute rheumatism. Two years ago he had a severe bronchial catarrh of long standing. A sojourn at Ems, in 1879, improved this catarrh considerably. Since last June there has been occasional albuminuria. After a sojourn in Tegernsee* during the summer, dyspnœa occurred; the cough since August was constant, and the general state of health reduced.

"November 6, 1880: Patient emaciated. Cough generally dry and frequent. Lungs somewhat emphysematous. Cardiac dullness increased in length and breadth. Epigastric pulsation. Apex-beat outside of the mammillary line. Sounds perfectly pure. R. diastolic auricular sound accentuated. Catarrh of the larger bronchi. Piles.

"After six curves had been drawn, which exhibited, without exception, *pulsus alternans*, I ordered deep and frequent breathing, and saw exactly, as in the previous observation, the type of *p. alternans* effaced, to return until two more curves were made, but then in its purest expression."

We have frequently mentioned "Valsalva's experiment," without deeming it necessary to describe it, as we suppose all our readers familiar with it; but we may say a few words concerning its effects, and relate in this connection what Sommerbrodt, in offering his first two curves, states.

He enumerates (page 9): "1st. So soon as expiration with closed glottis begins, the curve rises above the level of the base; but soon afterwards falls somewhat, to ascend again towards the end of the experiment.

"2d. During the experiment, the individual pulse beats be-

*Tegernsee, a village and lake of Upper Bavaria, situated upon the northern slope of the Tyrolese Alps.

come dicrotic, resp. hyperdicrotic, and remain so for several heart beats beyond it.

3d. "The heart's action is accelerated during the experiment, and continues some moments after the respiration has been released."

"Here must be added that, during the experiment, the height of the primary elevation is diminished, not unfrequently even to being effaced altogther." With regard to the effects mentioned *sub* 2d, the Breslau professor says: "The second phenomenon, at the same time a striking and most important point of the experiment, makes its appearance after 2 to 4 pulsations. This is the dicrotism resp. hyper-dicrotism of the pulse-undulations, which takes place during the whole experiment, and even beyond it, *i. e.*, the abnormally increased elevations of reaction. This dicrotism is always present, and varies only in degree. It is the pregnant sign of an abnormally diminished tension of the wall of the vessel and a sign of the lowered blood-pressure."

Now, what Sommerbrodt here says is very important, for, if correct, (and we have no reason to doubt) we must indeed consider the abnormally low recoil-elevations as the expression of the lowered blood-pressure, a conclusion at which Sommerbrodt arrives himself, whether the dicrotic pulse be the effect of Valsalva's, or any other experiment, or of a morbid affection; and he quotes Zuntz and Lichtheim, who have experimently proved that the compression of the *vena cava* markedly lowers the blood-pressure.

Sommerbrodt warns us to be careful how we use the sphygmograph, in order to obtain reliable curves. He says: "Waldenburg, when he contends that, during the period of the ascension of the curve, very distinct anacrotism is apparent, appeals to his own curves for proving that assertion. Now, though it be difficult, even in these curves, to recognize any traces of anacrotism, I am of opinion that they merely arose by too great a tension of the spring in Marey's sphygmograph, which Waldenburg made use of when he drew those curves. Although this sphygmograph produces very fine diagrams, if

cleverly handled, so long as we wish to draw only simple curves, it ceases to be advantageous, so soon as we experimentally change the conditions under which it has to be applied. The tension of the spring, which is requisite for examination of the radial pulse, in order to primarily determine the foundation curve, must necessarily become too strong; hence faulty, from the moment that the filling in the tube of the vessel begins to increase sensibly. This depresses the pulse-elevations, as we can see in Waldenburg's curves; and is even apt to show a pseudo-anacrotism, which is nothing but an artificial product.

"Those who experiment with the sphygmograph after the principle of Vierordt, adopted by Landois and myself, and adapt a weight to the artery, instead of the spring, will never commit this fault. The weighting remains under all circumstances the same, whether the vessel is full or empty; so that the pad follows, or rather clings to, its wall with more accuracy."

It may be mentioned, that Sommerbrodt uses an instrument improved by himself and remarkable for its sensitiveness.

It would be premature here to utilize Sommerbrodt's important discoveries, in order to explain certain obscure pathological problems, but the connection between intra-bronchial pressure, frequently and lastingly increased, and cardiac diseases, is well illustrated by the frequency of the latter in soldiers, porters, singers, athletes and others, who habitually undergo exertions as enumerated by Sommerbrodt, *sub* No. 1 of his conclusions we have given above.

Finally, we may add that a translation of Sommerbrodt's *brochure* is in course of preparation; but, since the faithful reproduction of the numerous and delicate curves will require considerable time, we have thought it advisable to anticipate its publication by this preliminary notice.

Some Points Concerning Cerebral Phenomena.

By Stanford E. Chaille, M. D.,

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From the Proceedings of the Orleans Parish Medical Society, May 30th, 1881.

In the Oct. No., 1868, of the New Orleans Medical and Surgical Journal, I published an article in reference to the cerebral circulation; contending therein that the ventricles discharged an important function in adjusting the cerebral circulation, so that whenever the brain becomes gorged with blood the ventricles are thereby compressed and thus emptied of their cerebro spinal fluid, and, contrariwise, whenever cerebral anæmia occurs, then the ventricles become distended with this fluid, by the suction-force of the closed cranial cavity. It was contended that this flux and reflux of the cerebro-spinal fluid occurs to some extent, however slight, with every heart's beat, and to greater extent with every expiration, inasmuch as this obstructor of the venous circulation increases the blood in the brain. This view, in connection with other facts, rendered me, long ago, utterly skeptical as to the so-called serous apoplexy; since I regard an excess, under ordinary circumstances, of serous fluid in the brain as really due to cerebral anæmia, and the attending symptoms as dependent on the anæmia and not on the serous accumulation. Further, I have been long accustomed, as a teacher, to deride the abuse by physicians of the term "congestion of the brain," not only because of the vagueness of its symptoms, but also and chiefly because of my observations that *post-mortem* examinations not only often show great fullness of the cerebral vessels in cases no one has thought of diagnosing congestion of the brain, but also often fail to show any such fullness in cases which have been thus diagnosed.

It has been gratifying to find my own heterodox views on these subjects supported by one of England's most distin-

guished pathological anatomists, Dr. Walter Moxon. In his Croonian Lectures on the "Influence of the Circulation on the Nervous System," published in the April No. of the British Medical Journal, he contributes so much novel and valuable instruction, that a summary of the main points will, it is believed, prove of interest. However, no summary can do justice to these admirably terse lectures, which teach important lessons concerning three important topics, namely, some anatomical peculiarities of the cerebral circulation, congestion of the brain, and epilepsy.

ANATOMICAL PECULIARITIES.

Although the closed cranial cavity exercises a suction force which tends to keep it filled with an invariable sum total of contents, yet the flux and reflux of two of these contents, the blood and the cerebro-spinal fluid, permit a variation in the quantity of each supplied to the brain, so that the greater the one the less the other. However, in exceptional cases of atrophy or of enlargement of the brain, there would be, if the size of the cranial cavity remains unaltered, an excess of both fluids in the former, and a scanty supply of both in the latter. Under ordinary circumstances, the variation in the blood supplied to the brain amounts to about three ounces, that is, to the capacity of the ventricles for containing cerebro-spinal fluid. Even in apoplexy, clots never exceed three-and-a-half ounces; this amount, if introduced suddenly, is fatal, and may be regarded as the maximum variation in the cranial blood supply. Man's ability to stand erect is attributed, in part, to the large supply of cranial blood required when upright, and to the furtherance of this supply by the subsidence of cerebro-spinal fluid from gravitation. The giddiness of debility, old age, etc., is believed to be often due to so feeble an action of the heart, that the suction force of the cranial cavity distends the brain with cerebro-spinal fluid more rapidly than with the blood propelled by the enfeebled heart.

In further illustration of the function of the ventricles of the brain, attention is next called to the important service performed by the canal from the third to the fourth ventricles, or

the valve of Vieussens. Without this canal, there could not be any flux and reflux of cerebro-spinal fluid from the cerebral ventricles to the spinal cord, hence no variation of the quantity of blood in the brain, and no adjustment of blood pressure on the brain. Its function is illustrated by the congestion and discomfort which result from standing on the head; at which time gravity causes an unusual pressure on the brain, both of blood and of cerebro-spinal fluid. One case is reported of closure of the valve of Vieussens by a warty growth in the fourth ventricle. The patient was slow, dull, fretful and hesitative, without being idiotic.

Physiologists have long conceded that automatic mechanisms existed for regulating the cranial blood supply, but have neglected to explain the mechanisms by which both the entry and the outflow of the blood was so controlled as to favor the maintenance of a constantly sufficient supply, while obviating an undue accumulation of blood in the brain.

An automatic mechanism exists, special to the human brain, for checking excessive flow of blood thereto. This mechanism acts by pressure on the pneumogastrics, whereby the action of the heart is diminished; for, Czermak proved that pressure on, as well as stimulation of, the pneumogastrics lessens the heart's action. How is this pressure exercised? The cornu, a finger-like process of the fourth ventricle, overlaps the roots of the pneumogastric, and in advanced life even adheres thereto; within this cornu lies the choroid plexus, which, when filled with blood, distends the cornu, thus making pressure on the pneumogastrics, whereby the entry of the blood to the gorged brain is checked. Whenever there is too great flow of blood to the brain, it is observable that the pulse slows. This is illustrated by the well-known fact that the erect posture quickens, while the supine posture, which favors the flow of blood to the brain, retards the pulse, and this result ensues even though the individual be strapped on a revolving board, so as obviate all muscular effort. Compressed air, digitalis, the onset of meningitis, all increase the flow of blood to the brain and all slow the pulse. These facts prove the existence of a regulating contrivance to prevent an excessive flow of blood to the brain,

and it is not doubted that this contrivance is by pressure on the pneumogastrics, as above stated. Long continued pressure would paralyze these nerves, and this result would serve to explain why the pulse quickens with the progress of meningitis, and why digitalis sometimes fails to slow the pulse.

Attention is also specially called to the exceptionally straight and tense course of the pneumogastrics from their orifice to their foramen of exit, and to the consequent readiness with which they can be lacerated. It is believed that fatal concussion is often due to laceration of these nerves, and of the cornu of the fourth ventricle to which they so often adhere. This lesion has been found in several instances, and should be sought for in every obscure case.

Three contrivances for impeding the exit of blood from the cranium deserve notice. In the first place, the cerebral veins do not accompany the arteries, as is usual, in their descending course, but ascend against gravitation towards the summit of the brain, so that when the circulation is most feeble, then the venous current is most retarded. In the second place, the irregular calibre and the projecting internal partitions of the sinuses increase friction and retard the venous current. In the third place, and most important, the great veins at the back of the brain pass to the longitudinal sinus at such an angle, that the current in the former encounters an opposing current in the latter, for the veins run forwards, while the longitudinal sinus runs backwards. This peculiarity characterizes only man, the upright animal, and is due to the greater development of his cerebrum posteriorly over the cerebellum: the greater this development, the larger and more numerous the veins which empty an opposing current into the longitudinal sinus, and thereby ensue greater impediment to the exit of venous blood, better supply of blood to the brain, and better adaptation to the erect posture.

It is taught, that proof is given, that this third and last mechanism does serve to impede the exit of venous blood, by the fact that the Pacchionian corpuscles always appear about the endings of the great cerebral veins in the longitudinal sinus, chiefly around the posterior cerebral veins, and never

on the veins at the base of the brain, where the circulation is free. For these corpuscles are really only fibroid excrescences, such as are frequent on the capsules of the spleen and liver in heart disease and cirrhosis, and it is known that "a chronic delay in venous blood tends to cause increase and thickening of the lower forms of texture, such as fibroid tissue." That age should always cause these corpuscles to grow becomes readily comprehensible, since age prolongs the venous congestion.

An additional observation of interest is made about this same peculiarity in the cerebral venous circulation. It is pointed out in detail, that it is limited to the intellectual parts of the brain, and that the lower vital parts have no such check to venous outflow. Since there results, then, a greater tension on the blood vessels of the intellectual parts, it is not singular that, when a blood vessel in the brain is ruptured, this should be, nine times out of ten, a vessel of the higher intellectual, and not of the lower vital parts. And, since the vascular supply of these intellectual parts is less well organized, it is not strange, when a general strain is imposed on the brain, that these parts should be the more apt to give way, and to become diseased.

An additional peculiarity of the blood supply to the cerebro-spinal system, and an important consequence thereof is noticed. Satisfactory evidence is given that to no part of the cerebro-spinal system is the blood-supply so scanty, so difficult, so likely to be deficient when the general circulation is feeble, as the supply to the tip of the spinal cord, *i. e.*, to the cauda equina, which supplies the lower extremities and the sphincters, the parts specially involved in paraplegia. In illustration of this subject, and also of the results of active congestion of the brain, attention is called to the influence of atmospheric pressure on the cerebro-spinal circulation.

On this topic, all other observations confirm those of Captain Eads, who, when constructing the bridge at St. Louis, across the Mississippi river, worked from 60 to 90 feet under water. Experiments are cited in proof that the atmospheric pressure, under these circumstances, forced the blood from the surface

to the centres, and among these to the brain, with a pressure ten times greater than the normal pressure, and three times greater than the pressure from any pathological causes; hence the atmospheric pressure was at least three times greater than any pressure from disease ever causes. Now, this excessive pressure causes an active cerebral hyperæmia far greater than disease can produce, and since it is uncomplicated with strangulation, with arrest of venous circulation, with adulteration of blood by carbonic acid or other poisons, and with altered texture of the brain, this excessive cerebral hyperæmia teaches the results simply of greatly increased flow of blood to the brain. What results have been observed? Uniformly there has been noticed retardation of pulse, with soothing, exhilarating and other sensations entirely favorable as to nerve-function; with exception of the function of hearing, which is unfavorably affected, solely by unbalanced aërial pressure on the tympanum, as is well known and understood.

No ill effects, due to excessive cerebral hyperæmia, have ever been observed, as long as the pressure causing it persisted. The few who do suffer, suffer solely on sudden reduction of the pressure, that is, on return to the ordinary and comparatively rarefied atmosphere. At St. Louis, thousands worked and visited, for a brief period, at a depth from 60 to 90 feet, without experiencing any unpleasant symptoms on returning to the surface. But, of 352 workmen, 30 were seriously affected on returning to the surface and 12 died. All who suffered were exposed more than an hour to the excessive atmospheric pressure, and there were only two prominent symptoms, pains in the limbs and paraplegia, with a total absence in every case of any of the symptoms assigned to congestion of the brain, and of any derangement of the cerebral functions. This evidence is conclusive that cerebral hyperæmia, however active, does not produce, when uncomplicated with other causes, the symptoms assigned to cerebral congestion. But what causes the paraplegia on removal from excessive atmospheric pressure? The blood driven violently to the centres returns as violently to the surface, leaving the brain and cord anæmic; and, this anæmia being greatest in the tip of the

cord, where the circulation is feeblest, the lower extremities and sphincters are necessarily most affected. It is further suggested, that the feeble supply of blood to the tip of the spinal cord explains why some debilitating causes, and such poisons as prussic acid, aconitia and conia, which are depressants of the circulation, are often followed by paraplegia.

It may objected to the foregoing explanation of the occurrence of paraplegia on removal from excessive atmospheric pressure, after an exposure thereto of one hour or more, that, if true, all, and not simply a fraction, of those exposed should suffer. It is urged, however, that not only the supply of vessels, but also the tolerance with which alterations of blood pressure is borne, varies much in different individuals; hence only those, the worst organized in these particulars, are prone to suffer.

CONGESTION OF THE BRAIN.

It has been shown that, when pure arterial blood is, by aerial pressure, forced into the brain with a force far greater than disease ever exercises, no symptoms at all resembling those assigned to congestion of the brain ever ensue. In fact, arterial congestion, however great, gives evidence of a favorable, instead of a deadly, influence on brain-functions. What results follow venous congestion?

It is well known that violent paroxysms of coughing, that tumors pressing on the jugular veins, that cyanosis and other morbid conditions often cause swollen veins on the forehead, and a dusky hue of the face, without giving rise to any noticeable discomfort to the brain. Now, since these obvious conditions of venous congestion fail to cause the alleged symptoms of congestion of the brain, there is no reason to believe that these symptoms can be caused by a congestion which is *not obvious*, and we have no right to summon an unproven congestion to explain such symptoms.

Inasmuch as neither arterial nor venous congestion, when simple and uncomplicated, justify the belief that the symptoms assigned to congestion of the brain are really due thereto, it is the more important to determine what evidence of this

disease is presented by post-mortem examination. Every pathological anatomist knows that over-fulness of the cerebral and spinal veins is very common after death. In fact, this is generally present, provided that the cervical veins have not been cut, prior to the opening of the cerebro-spinal cavities. Further, the mode of death and the position of the head, for even a short time after death, notably affect the condition in which the cerebral vessels are found. Death by asphyxia greatly swells the veins, and the shrunken brain of old age necessitates increased fluids within the cranium, usually both cerebro-spinal fluid and blood. For such reasons, the *post-mortem* condition of the cerebro-spinal blood vessels seldom, if ever, permits one to tell with certainty what was their condition before the commencement of the act of dying. Kussmaul and Tenner were unable to determine this, though they experimented on animals for this purpose, ligating their cervical veins and subjecting them to conditions accurately known both before and after death. Failure under such circumstances shows conclusively how little certainty there can ordinarily be in deciding that *post-mortem* overfulness of the cerebro-spinal blood vessels proves that this existed before death, and was the cause of the death. Not one of the *post-mortem* evidences, that congestion of the brain existed during life, can be relied on—neither the overfull and tortuous vessels, nor the swollen appearance of the brain, nor the redness and bloody points on section of it, nor the stains of blood-pigment. In fine, there are "no anatomical grounds for believing that there is any malady whose cause is overfilling of the vessels of the brain with blood."

Inasmuch as visibly forcible arterial congestion does not produce the alleged symptoms of cerebral congestion—and visibly great venous congestion fails to produce them—and *post-mortem* evidence is incapable of proving that the cerebral hyperæmia was present before the act of dying, it becomes imperative that evidence from other sources should be all the more conclusive in proof of the existence of any such disease as congestion of the brain. Which, by-the-bye, even if it could be proved, would leave us ignorant still of two most

essential points, namely, the causes of such congestion and a reasonable explanation of the dependence of the symptoms on the alleged lesion.

What evidence of the existence of congestion of the brain is furnished by clinical medicine? The best authorities describe four distinct and very widely diverse manifestations of this obscure and often rapidly fatal disease. The *convulsive*, *apoplectic*, *febrile* and *delirious* forms of congestion of the brain are all portrayed by our standard authorities. So far as the first two forms are concerned, satisfactory evidence is given, at length, in proof that these forms are in truth epileptic attacks, and that they yield far better to bromide of potash than to those measures of depletion which ought to control congestion of the brain. The flushing of the face in the convulsive form of congestion of the brain has been urged as a symptom, which distinguishes this disease from an epileptic convulsion, this being characterized by pallor of the face. However, it must not be forgotten that flushing of the face does not necessarily indicate cerebral congestion, for sleep is unquestionably attended with anæmia of the brain, and yet with congestion of the face and eyes. The febrile form is marked by fever, dull headache, drowsiness, stupor, and at times by convulsions or delirium. It is not infrequent at the outset of eruptive fevers, it may destroy life before a diagnosis is practicable, and it is really due to blood-poisoning. Evidence in favor of this view is presented by the facts that in 1867 and 1878, when severe epidemics of yellow fever occurred in New Orleans, the reported deaths by congestion of the brain very much exceeded these deaths in non epidemic years; for instance, they numbered only 58 in 1866, but 160 in 1867, and 155 in 1878 but only 95 in 1879. The febrile form not infrequently occurs in what is known as "cerebral rheumatism," which is most successfully treated, not by abstracting blood, but by cold baths and other measures which drive blood to the brain. The delirious form occurs most frequently in the debilitated and aged; the symptoms are indicative of "exhaustion in an anæmic brain," and the disease is really mania.

How inconsistently absurd the clinical evidence is, appears

from the facts, that "if the alienist needs something to stand for a cause of violent mania, it is congestion of the brain; if the practitioner in charge, when head-disorders do not include madness, wants an explanation of seizures that are the exact reverse of mania—for instance, of fits, in which, instead of violence, you have oppression and stupor—he has it, it is congestion of the brain; if the question is of some 'very old person'—the expression is not mine—whose circulation is, one would think, too poor to congest anything, and if this person shows negation of brain activity, still it is congestion of the brain; if a person has drunk enormous quantities of alcohol and is comatose this also is congestion of the brain, and if he has been out in the sun, and has a cerebral seizure, this too is congestion of the brain."

The phenomena, neither in strangulation nor apoplexy, give any explanation of the symptoms alleged to be due to congestion of the brain. In strangulation there is arrest of circulation, and of the vital changes dependent thereon. In apoplexy, the bursting of a blood vessel is due to tension in the smaller arteries, a tension which causes resistance to the flow of blood into the capillaries and veins, and thereby underfilling of the vascular system as a whole. Ordinary apoplexy in elderly subjects gives evidence of chronic anæmia, of atrophy from deficient supply; and the giddiness and transitory numbness, which often forwarn the attack, are due to capillary and nervous anæmia, not to an over-supply of blood. Neither the insensibility of sleep, nor of syncope, nor of asphyxia, nor of apoplexy, nor of epilepsy, is due to congestion of the brain; and not only unconsciousness, but the other symptoms assigned to congestion of brain, are known to be caused by cerebral anæmia. When this is wanting, we have much more cause to suspect arrest of circulation, poisoned blood, or textural disease, than to suspect congestion of the brain.

Practically, some convenient expression is needed for obscure cerebral symptoms, just as neuralgia is needed to conceal our ignorance. But neuralgia, though it teaches little, does not at least mislead us, whereas congestion of the brain does imply a condition of fulness of the blood vessels and con-

sequent pressure on the brain, which probably do not exist, and certainly do not cause the symptoms; for "the forcing of blood into the brain, while the blood is good, properly aerated, and within its vessels, affects only favorably the functions of the brain, as far as our evidence goes."

If the views now presented respecting congestion of the brain be correct, it is to be hoped the time is not distant when the physicians of New Orleans will cease to report, that from one to two per cent. of all our annual deaths are due to a disease which has no existence.

Dr. Mushet, in the *Br. Medical Journal*, of May 14th, 1881, (received this day), calls attention to the fact that he anticipated Dr. Moxon in his views of congestion of the brain as early as 1866, in the *Br. and Foreign Med. Chir. Review*, and in his book on Apoplexy.

EPILEPSY.

Recognition of the facts, that insensibility is caused by cerebral anæmia, and that if this be excessive, convulsions may ensue, prepared the medical mind to believe that an epileptic fit was attended with cerebral anæmia, and to accept the theory that this anæmia was brought about by spasm of the cerebral arteries. Kussmaul's experiments on animals strengthened this theory. However, it deserves special attention, that his experiments proved that convulsions did not follow ligation of three out of four cervical arteries which supply the brain, and that while ligation of all four vessels did not always, yet that it did generally, cause convulsions, and that there ensued an interval of from eight to eighteen seconds between the complete ligation of all the vessels and the resulting convulsions. Does physiology justify the belief that the vaso-motor nerves can act on the muscular coat of arteries with an occluding force at all comparable to ligation of all the arteries which supply the brain, and with a rapidity at all comparable to the lightning-like suddenness of an epileptic fit, a suddenness so instantaneous as to preclude the sufferer from taking a chair, or even from protecting himself from a fatal fall into water or fire?

All experiments prove, that even the most violent stimulation of the vaso-motor nerves fails to produce on the calibre of the arteries more than a moderate diminution, which falls far short of the total arrest to the flow of blood caused by ligation of all four of the cerebral arteries. Farther, no one has ever observed the total and sudden closure of arteries by vaso-motor action in parts exposed to view, and nothing justifies the belief that any such excessive action ever occurs in the brain or other parts not exposed to view. Experiments further prove that the action of the vaso-motors on the muscular coat of arteries is slow, just as is the action of nerves on all involuntary muscles, so that artificial stimulation is not followed by contractions until after the lapse of from five to thirteen seconds. Another fact of importance is, that all attempts to cause convulsions by stimulating the cervical sympathetics, however violently, have failed. All these facts discredit the accepted theory that epileptic fits are due to arterial spasm.

However, there is little cause to doubt that there is cerebral anaemia in epilepsy, and we know that the face does become very pale, and that insensibility and convulsions are prominent symptoms. What are these phenomena due to, if not due to arterial spasm? All the observations which could be collected by Dr. Moxon, unite to prove that, at the moment of seizure with an epileptic fit, there is sudden arrest of the pulse, therefore of the heart's action, and to this it is believed are due the palid face, the frequent giddiness, the sudden unconciousness, and probably the convulsions. It is farther taught that this sudden arrest of the heart is probably brought about through the pneumogastrics, and that their abnormal action is due to the nervous impulse which causes epilepsy; in other words to an *unknown* source, inexplicable by the theory of arterial spasm or by any other theory thus far propounded.

It is suggested that the convulsions may be regarded as conservative in regard to the unconsciousness for convulsions, by their muscular compression, drive the blood from the veins back to the heart, and thus to the bloodless, insensible brain. That these conservative convulsions should at times overstep the limits necessary for preserving life is no more singular

than that cough, recognized by all as conservative, should sometimes threaten life.

The stupor of epilepsy may be regarded as the result of exhaustion from the convulsions, and as furnishing the repose necessary for recovery; like the convulsions it may prove excessive, destroying instead of preserving life.

Finally, attention is called to the fact, that in the apoplectic form of congestion of the brain, the pulse at the wrist disappears, and it is urged that this furnishes additional proof that this form is really due to epilepsy, and not to congestion of the brain.

While not yet prepared to accept fully all the statements and conclusions of Dr. Moxon, now submitted, I do none the less regard them as much nearer the truth than the generally accepted teachings on these subjects.

Leaving Dr. Moxon's views to the consideration they merit, a brief attention is now solicited to another cerebral subject, namely, to the

CAUSE OF RIGHT-HANDEDNESS.

In 1836, Dax concluded, from the observation of 140 cases of aphasia, associated with right hemiplegia and disease of the left side of the brain, that the faculty of articulate speech was located in the left anterior lobe of the cerebrum. About 1861, Broca succeeded in localizing this centre for speech more definitely in the same lobe, at the inferior part of the third frontal convolution, where it overlaps the Island of Reil. However, subsequent observations, while firmly establishing the rule, have presented two occasional exceptions. In the one, the lesion has been found elsewhere on the left side than at the point indicated; in the other exception, the lesion has been found at the corresponding point on the right side, and this fact bears upon the subject of right-handedness. However, it is pertinent to say now, respecting the first exception, that the probable explanation is, that when aphasia results from a lesion not at the indicated centre of speech, then that the lesion must lie between this intellectual centre and the medulla oblongata, involving the nerve fibres connecting

them, and thus cutting off communication with the nerves on which depends the mechanism of speech—these nerves being derived from the medulla oblongata.

What is the explanation of aphasia, when caused by a lesion on the right side? It is supposed to be due to the same cause as right-handedness, and it is certain that aphasia from a lesion on the right side has been generally observed in left-handed persons. The observations of Luys, of Boyd, and, so far as I know, of all anatomists who have investigated the subject, unite in proving that, in a vast majority of human beings, the left side of the brain is more highly developed than the right, weighing generally from 50 to 100 grains more. This fact, associated with the well-known truth that the left side of the brain presides over the right side of the body, and *vicê versâ*, suffices to explain why right-handedness should be so common, why the faculty of speech should be generally first instigated by, and should be subsequently made chiefly dependent on the left side, and why loss of speech should result from a lesion generally on this side; just as loss of power to write well and to perform other delicate mechanisms learned by the right hand follows any disability of this hand.

While physiologists generally have concurred in explaining the predominance of right-handedness by some peculiarity of cerebral endowment, such as the greater weight or the greater complexity of the left cerebrum, Mr. Charles Reade, the novelist, has written a very interesting little book, termed "The Coming Man"—who, by-the-bye, is to be ambidextrous, or either-handed—in which book he ridicules, with his usual force and arrogance, the theory of physiologists, and maintains the old view, that right-handedness is simply a matter of habit. However, no observer can doubt that left-handedness is congenital, and that, so far is this from being a matter of habit, that early and persistent efforts to correct it often fail.

Observation of the peculiar shape of the circumference of my own head, as delineated by a hatter's measure, has caused me to suspect that the association of right or left-handedness with superior development of the opposite side of the brain might be so well marked, that it could be determined, general-

ly if not always, which hand a person habituâlly used simply by examining his head. This suspicion has led me to collect the hatter's measure of the heads of ten or more left-handed persons, and thus far my *inadequate* evidence indicates that the left side of the head is prone to be the larger in right-handed persons, and *vicê versâ*. The left side of my own head so much predominates over the right, that this can be appreciated without any measure, simply by placing one hand on each side of the head. I am decidedly and hereditarily right-handed, and I here show you a hatter's measure of my head in contrast with a similar measure of the head of a decidedly left-handed medical student. You can readily observe that the latter's head is as distinctly lop sided on the right, as mine is on the left side. So great a difference is, I believe, exceptional; however, such an illustration will serve the better to illustrate the cause for my suspicion.

I am anxious to prosecute farther my observations on this subject, and I have called your attention to it now, chiefly to solicit your assistance in collecting a hatter's measure of the heads of as many left-handed persons as may be practicable. Those who may aid me must carefully see to it that, on taking the measure, marks are forthwith made upon it to indicate which is the left and which is the right side; without this the observation is worthless. Farther, the name, address and age should be stated, as well as the facts as to whether efforts have been made to correct it.

It is worth noting that the hatter's measure gives the measurement solely of a horizontal section of the head, therefore that this measurement is by no means a certain indication that the side which appears to be is really the larger; for such a measurement, even if smaller on one side, might be more than compensated for by greater depth or height on the same side, so that the apparently smaller side of the head might really be the larger. Admitting, for augument's sake, that which hand a man habitually uses depends on which side of his head is the larger, I have ventured to add one more conjecture to the many which have been suggested as to the cause thereof, and have thought it possible that this might

depend on the position in the womb; since that side of the brain, which might happen to be the more dependent during development, would be better supplied with blood, and be apt to grow better.

I will conclude by citing one statistical fact in regard to right and left-handedness. Out of 204 boys attending the Academical Department of the University of Louisiana, eight are left-handed—that is, about four in every hundred.

The Electro-Galvanic Theory of Yellow Fever—Disturbed Electricity the Exciting Cause.

By HENRY STONE, M. D.

"Principiis obsta: sero medicina paratur, cum mala per longas convaluere moras."—*Ovid.*

If, in a numerous family, the five members who occupied two rooms on one side of the house should suffer with symptoms of arsenic poisoning while the others escaped, we would naturally suppose that those five had been exposed to the action of that poison in some special manner, which would account for the fact that they suffer, while the others do not; and if we should find that these two rooms alone were hung with arsenical wall-paper, we could positively assert that the influence had its origin in the wall-paper, there being no other possible exposure.

Heat and moisture are the acknowledged indirect factors needed to create the peculiar condition requisite for the appearance of this king of fevers. Filth is justly considered to be the "absolute essential," but *how does it act?* All agree that neither one of the above can by itself alone, nor can the three by their combined action, create the morbid fitness needed for its appearance and spread, *unless there be present* some undefined *fourth* agency, which thus becomes the "essential" and of prime importance. All think this last is something floating in the air in a gaseous form, but it is probable that this "fiery some-

thing" will yet be found to be an altered condition of air electricity capable of causing corresponding derangement of the human nervo-electric fluid, and that, if heat with moisture be one blade of Dr. Barton's "shears of fate," and localized filth be the other, disturbed electricity *is the* "*rivet*," without which the two blades are perforce inoperative. Should this prove true, we will then have our dealings with an agent that, for brevity sake, we may say can not only be felt, but be seen, heard, tasted and measured.

Evaporation is the source of air electricity, and we know there must be impurity in the water for its evolution, as it cannot be given forth by water chemically pure. Therefore we find energetic development of the fluid along the banks of rivers subject to overflow, from stagnant ponds, canals and ditches, in localities with filth-polluted soil, where water is found near the surface, but most especially is the action intense where the fresh waters of large rivers unite with the salt water of the ocean, at points where large commercial cities are situated. When the disease has appeared in inland towns and settlements remote from these highways, the conditions of heat with moisture and local filth have existed, fulfilling the requirements of evaporation, with the invariable departure from the natural equilibrium of atmospheric and terrestrial electricity that results from those conditions, and causes a corresponding disturbance of the natural electric balance of the human being.

Decomposition of filth takes place by reason of chemical change in matter; is hastened by heat and moisture; is a slow combustion, and we know the slightest chemical action causes the liberation of an equivalent amount of electricity. During the combustion of many vegetable substances, their carbon and hydrogen give out negative electricity, and the oxygen of the air, the supporter of the process, gives out the positive. The chemical alterations of the blood of man during respiration and in the capillary circulation are the sources of animal heat, and we will call this force thermo-electricity, and assume that heat and electricity are identical, or that they are inseparable; that there can be no heat without electricity, and also that heat, electricity and magnetism are interchangeable.

The earth is a huge galvanic pile, undergoing various surface combinations and decompositions under solar action, and we will assume that the flowing of many craters beneath its surface through mineral ores and dissimilar strata of soil is constantly eliminating electro-galvanic force. The earth is a vast reservoir of negative electricity, which may and does vary considerably during the day at a given place.

The atmosphere may be regarded as normally positive, and is so uniformly the higher the altitude, though the lower stratum, *in which we live*, may become negative and does thus alternate during rainy weather.

The natural electricity of the human being is positive. All bodies, animate or inanimate, have a certain amount of the fluid, which is the natural quantity belonging to them, and which may become excessive or deficient, when the balance is impaired or destroyed. When the atmosphere has a greater quantity than its natural equilibrium calls for, we may call the constitution of the air thus formed sthenic, and the opposite asthenic.

When the natural balance is broken by long continued heat with moisture, though there may be strong efforts of nature to restore it by frequent thunder-storms, still, in consequence of the excessive heat and moisture, the balance is not restored, and, according as untoward electricity is formed, in a few filthy localities or premises, or generally over the whole area of an infected place, so we may expect this disease to prevail in a sporadic manner or as an epidemic, and to continue until cold weather, the season for the electricity to re-enter its domain, natural in quantity and quality and tension.

It may be that the loss of balance in the air and earth may precede the disturbance of health by a certain period of time, and that when the epidemic appears, the general condition of the air and earth may have become neutral; but as to this, little is known for the want of statistics. During the summer we know air electricity is in minimum quantity, while its tension is at a maximum, and also that the atmosphere becomes excited and inelastic during epidemic circumstances. There are certain meteoric hours established by numerous scientific

observations, from which we learn that tension of air electricity has two daily maxima and two daily minima, the former at 10, A. M., and 10, P. M., the latter at 4, A. M., and 4, P. M.; also at 4, A.M., there is a minimum register of the barometer, thermometer, of variation east of the magnetic needle, and also there is a minimum consumption of oxygen at that hour. There are therefore tides in the air as well as in the ocean.

Both nerve matter and muscular tissue are in a state of constant determinate electric activity, and the current proceeds along the track of the nerve trunks by preference, since they offer least resistance to its passage, being good conductors. In health the animal fluids are in delicate equipoise and harmony with the condition of surrounding objects, and especially of the atmosphere, upon which they depend for chemical changes of such vital importance; and the human body is constantly illustrating the laws of electric polarity in placing in their appropriate places those atoms without which organic life would cease. The nervous system is really a nerve-battery for the generation of force during life, and if the relative quantity of air electricity, or if its tension be changed, or if the due proportion of positive or negative fluids should vary, in oft-repeated and prolonged degree, there will be a change in activity in the human functions, either of excitation or depression, and we often find these changes in the nutritive processes apparently far out of proportion to the atmospheric vicissitudes.

A Leyden jar may be filled with electricity drawn from a man, and the same human being may be saturated or charged with the fluid until an outward current is established through the hair, beard and nails, and without injury to his health, so long as the excess is neutralized by suitable atmospheric fluid.

Electricity is a powerful nerve irritant and causes muscular contraction, and the contractions represent so much "work" done by the muscles, and are followed by increase of heat and disintregation of tissue. With an electric machine of medium power, the tension is hardly great enough to produce contractions of the superficial muscles, especially if the cellular tissue be very abundant; and, if produced, they will be incomplete.

The tension that may be obtained from a Leyden jar sufficiently charged can penetrate to the deep structures and cause energetic contraction; but, no matter how feeble, so long as it can be measured by an electrometer, it does produce contraction and sensation which is felt acutely in the nervous centers. If the exciter be placed over a nervous trunk, there is a sensation of a severe contusion of the nerve, followed by numbness that extends as far as the branches of the nerve are found. With tension enough (or intensity), the shock is so strong that the limb, or even the whole body, seems as if struck by lightning, and it has been observed that the negative pole is more exciting than the positive.

Now, if the earth should be found highly excited negatively, the air also in high negative tension, and if we should also find that the natural positive of the human being had been abstracted, leaving an excess of high tension negative struggling to escape and coalesce with outside fluid of suitable quality, and if, in addition, the animal heat should suddenly ascend to 108° F., would we not at once conclude that the latter was due to the preceding unnatural condition?

The writer supposes that, in yellow fever, the impression of the irritant, the untoward electricity, is made final upon the cerebro-spinal nerves, causing the general muscular contractions and pain, then principally upon the ganglionic system, causing excitation, to which succeeds nerve exhaustion or paralysis in greater or less degree, according to condition of the nerves as to susceptibility, receptivity or powers of resistance. The portal circulation soon feels the impulse, and the liver function is the first to be impaired, there being invariable perversion of it, and, in fatal cases, complete arrest. Nor is this surprising, when we consider the vastness of the vascular territory controlled by the splanchnic nerves.

But it is upon the great pneumogastric nerve that the shock falls in fullest force: that wonderful and specially endowed "governor" of the heart's action and of the respiration, having its origin in the very "vital point" of the brain, no larger than a pin's head, and the only nerve whose section on both sides, or paralysis, ends in speedy death; and the two

symptoms of the disease, the only two that should be considered *strictly pathognomic*, viz., the *slow pulse* and *the slow, sighing respiration* should entitle the disease to be called a *pneumogastric paralysis.* The writer takes the bold ground, well knowing it to be contrary to the general opinion, that nervous irritation of a peculiar kind, similar if not identical with electric excitation, is the main-spring of trouble in the disease and results in nervous exhaustion, such as is fully capable of speedily producing the great changes noticed in the blood, liver, kidneys and heart, and in fact, *that it is the cause of them and not their result.*

Of all the agencies that act upon the human frame, variations of temperature, if sudden and considerable, doubtless produce the most powerful results. The functions of life are voltaic-like, and the news battery may be reduced by cold weather to one-half its working capacity, or increased in equal ratio during a change to hot weather, and this is equally true of a compound battery. Heat first excites and, if prolonged, exhausts the power of the animal on which it acts. Cold first excites respiration, but in greater degree depresses, even to total inaction.

Nervo-electric energy being first stimulated by heat, we can understand how variations in the density of native currents should go hand in hand with atmospheric changes.

Dubois Reymond laid down this fundamental electro-physiological law for the motor nerves: "The motor nerve is not excited by the absolute amount of the density of the current, but merely by variations that occur in the density from one instant to another, and the physiological effect is the greater in proportion as the variations take place less or more rapidly, or as they are more considerable in a given space of time." It will be remembered that the current used in experiments upon the human frame is the induced or Faradaic, created by a succession of shocks of instantaneous duration following each other in rapid succession, "non vi, sed *sæpe* cadendo."

Used in this way, electricity is capable of disturbing the natural balance and causing enormous destruction of tissue, by "freezing of the forces" that already exist in a quiescent

state in the system. To the tinkling of a mule-bell has been attributed the starting of the avalanche.

Let us now group the symptoms of this fever, only those that are of value exhibiting the analogy, if there be any, between them and certain phenomena due to galvanization of the human nerves alive; and, for so doing, the writer makes no apology, as he feels sure the authenticity of the clinical records from which they are taken cannot be suspected, while perhaps the soundness of his inference may be questioned.

For this purpose we will take a Belgian family, newly arrived in Memphis, Tenn., to start a new life in "Happy Hollow," one of the gates of hell, in August, 1878: the woman comely with robust beauty, the man full blooded, and of energies illimitable, both looking the picture of health. After a short time we spend three days with them, we find that she has felt greatly exhilarated by the change, at times complained of giddiness and whirling in the head. Had a chill about day-break, followed by fever with intense headache; acute, tetanic pain of back, shooting forwards to the abdomen, upwards along the spine to the neck, or down the thighs to the calves of the legs, and felt especially where the fleshy calf becomes tendinous, at times assuming the character of muscular cramp, followed by a sense of fatigue, changing to one of numbness, or tingling of the flesh. Pulse 120, the highest, gradually falling to 80 on the third day, while the temperature rises gradually to 108°. Eyes fiery, glaring, blood-shot, like those of a "wild beast in the dark," "ferocious," protended. Pupils dilating. Intense, uncontrollable restlessness, tossing to and fro; unremitting wakefulness; muscular power decreasing. Respiration hurried at first, but becoming slower in number and accompanied with deep sighing; constant talking or singing; difficulty in swallowing; constipation, *short*, *nervous*, *hacking cough*, with more or less pain in the chest. Thirst increasing rapidly, soon to become insatiable, skin bathed in moisture, while intensely hot with a peculiar burning sensation, the heat "seeming to adhere" to your hand. On grasping the limbs firmly, "a stinging sensation of burning heat is felt." Pain intense over pit of stomach, and by pressing there steadily a deep-seated accumula-

ted heat is felt; a peculiar phosphoric odor from the person is observed. The face is crimson, bloated and contorted, with an expression either of anguish or stupidity. The physiognomy shows a something "fiendish beyond the ordinary phenomena of disease stamped upon the brow at an early period. No effort of the patient can disturb its reign; there it still sits, paralyzing those reacting efforts of nature which are ever struggling against disease, mocking the assumed quiet and levity of the patient."

During the next three days we find that she has miscarried; the excessive tumult is replaced by general calm and exhaustion; pulse 60, feeble, irregular, rhythm disturbed and second sound barely audible; intense burning pain in the stomach; thirst insatiable; constant, excessive and uncontrollable nausea; vomiting by a "gulping" or "pumping" process, by spasmodic action of the stomach alone, without pain or effort; hiccough; bleeding at the gums; tongue, when exhibited, remains protruded; skin heat natural; retention of urine from failure of bladder action; pupils dilated; loss of muscular power followed by exquisite sensibility of skin, especially along the inner side of the tibia (long saphenous nerve); slow, prolonged, sighing inspiration, short expiration. Recovery gradual; pulse fell to 40; pains in the head and limbs; senses blunted, prone to tears, vertigo, confusion of ideas; abscesses difficult to heal; irritability of stomach, sense of pain and fulness with nausea, watery diarrhœa.

The man went suddenly into coma. Heart's action rapid, intermitting, a sort of "churning" sound, without impulse; jugulars distended; heat increasing rapidly; convulsions, and death in 24 hours. After death, heat rose from 106° to 113° *at a point on the inner side of the thigh, about the lower part of the upper third.* The three-year old child was confined to bed an hour with fever and attack of spasmodic croup, after which the pulse fell twenty beats below the norm.

Let us follow Dr. Bennet Dowler in his experiments on the corpse of the man, and place the body on the floor, allowing the arm to lie horizontally and then strike the arm in the proper place, between the shoulder and the elbow, and it will

be seen to rise to the vertical with force enough to raise a five pound weight, and this not once, but hundreds of times. The left jugular is opened, and the blood "jetted" out until five pounds were collected.

On this Prof. Dickson, of Charleston, S. C., thus comments: "We learn from him the curious fact that the generation of "animal heat, which physiologists have chosen to point out as "a function most purely vital, does not cease upon the surper- "vention of apparent death. There is, he tells us, a steady de- "velopment, for some time, of what he calls post-mortem colori- "city, by which the heat is carried above the natural standard "and to a height rarely equalled in the most inflammatory "forms of disease. He has seen it reach 113°—far beyond the "natural heat of the central parts of the body, which is 97° or "98°. Nor is it at the centre or at the trunk, that this heat "is the greatest, but, for some unknown reason, on the inner "side of the thigh, about the lower part of the upper third. "I scarcely know any fact in nature more incomprehensible or "inexplicable than this." That was nearly thirty years ago; since then the electro-motive power of muscle has been measured in pound-lift.

The writer considers the condition of the nervous system, shown by the symptoms enumerated, as being one of paralysis, of greater or less degree, and to place side by side with them some of the well-known physiological effects of electric nerve excitation, he quotes from Claude Bernard, who says "with these two modes of action alone—contraction and dilatation of vessels—*the nervous system governs all the chemical processes of the organism.*" Under electric stimulus, there is not a muscular or contractile fibre that does not contract under the controlling influence of the vaso-motor centers, and afterwards dilate, when these *centers have been exhausted by over-stimulation*, and not a capillary vessel or a nerve fibril can escape its influence. Be it remembered that it is a fundamental law of electric excitation, that *excitement causes contraction, and, if continued in prolonged degree, paralyzes the nerve and its vaso-motor ganglia, and that this paralysis admits of enormous dilata-*

tion of the arteries, the vascular injection thus produced being aptly called their "ecstacy;" that this may result in rupture of their walls and passive exudation of the liquor of the blood into neighboring tissues, giving them a swollen and bloated appearance. The blood-vessels contract in proportion to their muscular fibres and the number of contractile cells they contain. The aorta contracts but feebly on this account, while the arterioles do so energetically, having abundant cells of this kind. The contractile fibres have this peculiarity of contraction, that they respond only after the current has been acting for a little while, and the *contraction continues for some time after the stimulus has been withdrawn.*

It has been fairly proved that the capillary circulation can be controlled by galvanization, and the inference is plain that native currents are constantly influencing the blood-flow, that this fluid may be deranged by electrolytic action, and that afterwards the various secretions formed from it may also be changed. When the blood is altered by retained elements that should be excreted, it is reasonable to suppose that the nervo-electric energy should be vitally changed; but we think that pathologists seek, in vain, in this altered condition of the blood for the primary cause of the disturbance; and that the order of research should be changed, and the exciting cause looked for in the aberrated nervous action, *for this is the cause.*

The action of the two poles of a galvanic battery is different; when applied to the blood, the positive pole coagulates it without pain or inflammation, whereas the negative pole renders it thin and fluid, with pain and speedy decomposition; and we know that fluidity of the blood and loss of ability to coagulate are characteristics of this fever, and become more apparent as the disease progresses.

We know that increase of heat in fever is due to chemical changes taking place in the system, but in this strange disease the excessive heat is due to the exaggerated amount of "work" performed by the whole muscular system during three days of *tetanic* contraction, which need not be sensible to the patient, and to the electrolytic change taking place in the blood. The amount of muscular exercise thus performed is shown by the

excessive quantity of waste matters in the urine, and probably in no other fever is this so great as after the awful combustion of yellow fever. While this destruction of tissue is taking place, new material should be furnished by good arterial blood, but is not, and, under the action of a stimulus from behind, calling for continuous activity, the muscle becomes self-consuming and appropriates its own form-elements, as Saturn swallowed his own offspring.

Now, if the theory be correct in the one particular, that there is the great wear and tear of the nervous tissue under some excitation of this kind, as claimed, then should we not expect to find in the urine an increase of the phosphates and sulphates, as usually after nerve-exhaustion? And as sugar has been made to appear in the urine, almost at will, after electric irritation of the pneumogastric, would we not be justified in expecting it to appear in the progress of this fever? Now, will it be worth anyone's while to look for it? Again, what is the acid found so abundantly in this fever? Is it lactic?

Amongst the best known and established effects of galvanization of the pneumogastric is the slowing of the respiration and of the pulse. The inspiration may be prolonged so as to become sighing, and the expiration shortened so as to be hardly perceptible, and the heart-beats may be slowed even to complete paralysis in diastole. With this irritant we can cause dilatation of the pupils, protrusion of the eyeballs, and nausea and vomiting, and such contraction of the stomach as would cause the "gulping" vomiting. Sobbing and sighing may be produced at will by irritating the phrenic nerve, and so may the hiccough. A short, nervous and hacking cough may also be produced by irritation of the pneumogastric; the larynx, the pharynx and the œsophagus may be made to contract, and every obstetrician knows the effects of electricity upon the contractile fibres of the uterus. A short reference to any modern standard treatise on physiology will show the reader that almost every prominent nervous symptom above enumerated can be and has been produced almost at will by proper handling of the agent. Does the candid reader fail to under-

stand why the pain should have been so excessive at the particular spot mentioned, after the *contraction* of the two powerful muscles that unite at that point, or why the saphenous nerve should be so sensitive in its superficial course along the tibia?

It is not yet known whether the glandular system has its own special electric energy, but this may soon be determined, and then we will be equally able to account for the exaggerated heat at that particular spot on the thigh, where there is such extreme vascular, nervous and lymphatic distribution, and where there is a principal dwelling place of nervo-electric energy. Death of the nerve, under electric exaltation, takes place from the top downwards, its rapidity depending upon the height of previous temperature; the higher this, the speedier the death, and even after the death of the nerve, contraction of muscle may be produced, even several hours afterwards, by its irritation. Quivering of the muscles is seen before and after death from yellow fever.

Putrefaction and death-stiffening also always occur earlier in proportion to preceding artificial elevation of temperature, and in this disease they take place so rapidly that many think, and with justice, that decomposition sets in even before death. Putrefactive changes occur speedily after death by lightning, the blood is excessively fluid, the phosphoric odor is observed, and, finally, physical electricity can be obtained long after physiological electricity has disappeared.

Ozone, or electrified oxygen, a product of electric changes in the air and somewhat dependent upon currents of air, has a phosphoric odor, acts injuriously upon man, and is capable of speedily destroying the strongest animal. Upon inhaling it, there is experienced a deep sense of oppression in the chest, a sort of asthma and violent cough. It has been claimed to vary with statistical fluctuations of some epidemics, and it is also asserted that there is a similar ebb and flow in activity of an electric machine during epidemics of yellow fever. Now, we notice this odor of phosphorus emitted from air confined and electrized in a bottle; also in the vicinity of an electric machine in full operation, from bodies struck by lightning, from water undergoing electrolysis, from the human body when sat-

urated with electricity in health, and this is *identically the odor emitted from the body in yellow fever*. If it can be produced at will from water electrolyzing, why may it not proceed from the blood undergoing similar change in this fever? It is the odor of phosphorus when exposed in the air. We know there is a certain amount of this substance in nerve-matter and human tissues generally; that, in the air, it burns without heat, and in oxygen gas is consumed with great splendor. Now, can it possibly be its combustion in the optic nerve by electricity, that causes the yellow fever eye to sparkle and look like that of a "ferocious wild beast in the dark?" This is a conundrum for the doctors. Dr. Joseph Jones states that the fatty degeneration seen in this fever resembles that condition witnessed after phosphorus-poisoning, and the question is propounded to him that was asked sixty years ago, "Is phosphorus concentrated electricity?"

Dr. C. H. Stone, of Natchez, Miss., one of the acutest observers of this fever, claimed that calomel had a "sedative" effect when given in a large dose, and that the quantity of it given should be *sufficient to be sedative*. After its use thus, *within the first* 12 *hours* of the forming stage, before any vital change had taken place in the blood, the fever, thirst, restlessness and irritability of the stomach subside as if by enchantment. He claimed that this tranquillizing effect of the mercury largely diminished the chances of serious damage to the blood and organs, especially the liver and kidneys, whose functions were thereby seldom suppressed. This effect is really "abortive," but can be obtained only by early use of the "divine remedy," as he styled it. What is to be done must be done quickly. "Principiis obsta: sero medicina paratur, cum mala per longas convaluere moras." As the assertion of one man, no matter how clever a practitioner he be, carries but little weight with it, the writer would be glad to have the concurrent testimony of those physicians who may be able to speak thereupon of their own knowledge. Is it possible that we have a hint of explanation of this soothing effect in the fact that mercury is classed as a positive electrode, and could thus

neutralize any excess of negative fluid that might be causing excitation? It should be remembered that grades of attack in this fever may be arranged in three classes, viz: (1) Those that are mild and self-curing; (2) those that require prompt and well-devised aids to relieve; (3) those that take their beds to die, that no human means are adequate to control.

Let us see now whether we can be justly charged with hazarding a mere hypothesis that is not only sadly behind the times, but not at all in accordance with the results of daily observation and the commonest principles of sound philosophy. Wherever yellow fever prevails, in cities where large rivers unite with salt water, or inland towns where streams of water, or ponds or marshes of stagnant water are found, or whether on plantations, or in isolated settlements, or wherever else the necessary conditions of heat with moisture and localized filth obtain, there is, from necessity, an unchangeable law of nature ever operating to produce electricity from water not chemically pure by the process of evaporation. It appears only in the warm seasons, when tension and quantity of air-electricity are at their lowest, and disappears when cold weather restores the equilibrium. Emanations of untoward electricity may be created and disturb the health of man at points where there are no marshes, the varying strata of soil affording the necessary chemical reaction. The certainty and suddenness of attack after exposure in an infected locality, show that no ordinary agent is at work, and its local character is proved, when we see that vessels on a sickly coast remain healthy if kept at a certain distance from the shore; that those of the crew who sleep ashore are attacked, and that, if infected, the vessel is restored by removal to a short distance.

We see the disease confined to a limited area on the ship, on one side or one end of the lower deck, and nearly always near the pumps; and when we consider the large quantities of copper, zinc and iron used in the construction of ships, undergoing chemical change in salt water, with the hold full of foul bilge, "Regla" ballast or coal, the air stagnant with high heat and superabundant moisture, it is not surprising that there should be spontaneous and powerful electric evolution from such

an energetic dynamo.* In infected cities the disease is as often confined to a few streets, to one street, to one side of a street, to a few buildings, to one house, to one side of the house, to one room of the house, and even to one corner of that room. It has been known to eat its way through a city square by square, "like worms in a cotton field." Do not these facts support the theory, by this exemplification of the law of electric distribution which governs the fluid in its attractions and repulsions, and allows the free, active electricity to spread over neighboring bodies, and thus to continue until the equilibrium is restored? This action decreases with the distance, and becomes almost imperceptible beyond a certain limit known as the *sphere of action* or *electric field*, now called "focus," and we know that electricity has been traced along the squares and wharves and bridges of a city, that it has been stopped at open squares and been neutralized by trees. The fact that Denaunure failed to find it in certain houses, does not disprove its existence in others under circumstances favorable for its formation.

The objection that this subtle fluid would soon be dissipated by atmospheric movement, is not a good one, for so long as the excitement of the earth's surface continues in a given locality, just so long will its effects be noticed.

The objection that some foul vessels escape, that some marshes are innocuous, that some localities are always peculiarly exempt, proves nothing, even if they are all apparently in similar circumstances. Nor is the objection a good one, that, other things being equal, we should expect this disease to appear at Calcutta, for we know not yet the necessary combinations of predisposing conditions upon which this exciting cause depends; but it is by no means improbable that, at an early day, there will be a scale of disturbed electricity alongside the other meteorological instruments now in handy use, that will enable us to say with near approach to certainty whether a community may or may not be in danger.

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*Deaths from yellow fever at St. Thomas, before it became a coaling depot for steamers, as compared with deaths afterwards, bear the proportion of 4 to 64; and an equally important fact must be mentioned, that the combustible and other qualities of coal exposed to the weather, as it is at that island, become much deteriorated. How far this loss may prove a pabulum to the yellow fever poison, is unknown, but the covering as well as inclosure of coal in tropical climates is worth attention. (Aitken.)

In this way can we probably explain the injurious effects of extensive upheaval of earth in the hot season of some past years, as in digging canals, foundations for large buildings, levelling of streets, caving of river-banks, removal of accumulated filth from beneath decayed houses, of exposing virgin soil to the sun's action and the imperfect drying of the land after overflows. The converse of these conditions is found in the reclamation of portions of certain cities, on the water's edge, as in Philadephia and Baltimore, by proper drainage, filling up with sand, and other radical sanitary measures which have been rewarded by disappearance of the disease under consideration.

Nor does any other theory satisfactorily explain the great and permanent insalubrity of Vera Cruz, with its filth-polluted soil and ever-present admixture of fresh and salt water. Also it explains why Rio Janeiro is a permanent centre of infection, while Petropolis, a few miles distant and at high elevation, has never been infected and is a place of refuge during epidemics for the unacclimated portion of the population, who have never tried to protect themselves by a quarantine.

The good effects of removal of a population from an infected city are well known, implying as it does a change from their habitual electricity that is disturbed to one of proper balance; and further support is given the theory by the almost universal testimony that thousands who fly to the country do not communicate the disease to others. Even though they die, despite the instances to prove the contrary, adduced by those of the opposite philosophy, who fail in every instance to state whether the local conditions of heat, moisture and filth were obtained in the neighborhood that has received the infection, they, as well as every one else, insist upon said conditions as being absolutely necessary to its spread, and thereby impair the value of their own evidence.

The immunity of the African race is due no doubt to the fact that their black skins radiate heat better; that their skin is thicker and is less conductive and rendered still more repulsive of electric passes by its oily secretions, though probably in greater measure to the fact of their feebler development of brain and nerve power. The lower animals may and do suffer

in some degree, but their heavy bony structure, thicker integument and still feebler nervous tissues offer still greater resistance to the passage of the fluid, as is shown by their being nearly always mutilated and torn asunder by lightning stroke, whereas only about six out of several hundred human beings thus stricken were mutilated.

One should naturally expect new-comers from a higher latitude to suffer in greater degree, according as the activity of their peripheral circulation is greater. During epidemics even the acclimated suffer some indisposition, due to this all searching agent, especially the pains of the back and head, and their bodies exhale the peculiar odor, but the rule is considered absolute, that one attack protects all through life. To attempt explanation of the most obscure of all the phenomena of this strange disease, the exemption from second attack, might appear an impious intermeddling with the affairs of Deity, and we can only take a very mechanical of it and say, at the risk of appearing puerile and absurd, that hard steel acquires magnetic properties slowly, but having once done so, becomes a permanent magnet.

There is a popular belief that telegraph operators, other things being equal, are especially liable to violence of attack, but we leave this enquiry for others to prosecute, simply asking whether, granting the theory, it might not be possible to create an artificial yellow-fever atmosphere, by combining the conditions in such a manner as to render them deleterious to the human being in this especial way; and again, can it have been possible that an electric atmosphere of that kind could have been formed on the "Plymouth" in Boston harbor in 1878-9?

The Havana commission speaks as follows, in its report to the National Board of Health, 1879, of Havana: "A very "considerable portion occupies the site of former mangrove "swamps, which have been filled up, in large part, with the "garbage and refuse from the streets. Swamps of this kind "still exist contiguous to the city. A very large proportion "of the people live where the subsoil water is reached from "two to six feet of the surface, and it is very common to find

" privies wherein the contents rise and fall with the tide. The " thin surface soil is very porous, and permits a high degree " of saturation from the subsoil water, from the frequent and " abundant rains and from excrementitious fluids. So great is " this saturation and the defective structure of the houses, " that a moisture mark is found high up on the walls of houses " from fifty to one hundred feet above the sea. As a general " rule good drainage is found in no part of the city. One is " often astounded at the impassable mud-holes, and by the " green, slimy, stagnant water present in the streets and in " the back yards of even a locality such as the Puerto Nuevo. " The facts just stated in regard to the soil are patent and in- " cessant causes of pollution of the air. About one-fourth of " the people live on paved streets; the remainder live on un- " paved streets which, for the most part, are very filthy, and " not a few of them are at times impassable in a vehicle. " Rough, muddy, or both, many of them serve admirably as " permanent receptacles of much decomposing vegetable and " animal matter. In fine, more than half the people live on " streets which are in a foully insanitary condition. Nine- " tenths of the houses are one-story houses; these occupy very " little space, have no back yards but a court or narrow vacant " space into which the sleeping rooms open at the side. In " direct contact with these are the kitchen, privy, and often " the stables, which terminate this court. There are no store- " rooms, pantries, closets or other conveniences for household " supplies, but there are four groceries on the corners of each " square, from which table supplies are obtained for each meal. " Some of the floors are of earth, or of planks almost in con- " tact with the wet soil. Ventilation between the ground and " floors is almost unknown. Most of the floors are on a level " with the sidewalk, and many are even lower than the level " of the streets. The privy is almost a part of the kitchen, " consisting of an excavation which often extends several feet " under the stone flags of the street, is never emptied until " when it will hold no more, which seemed to be generally " from five to ten years. It has no ventilating pipe, and belch- " es forth its nauseous odors at times even to the front door.

" Nothing more unwholesome and disgusting than the privies " can be conceived.

" In juxtaposition with them, is another excavation to re- " ceive the filthy refuse-water of the kitchen, laundry and " household generally, which is said to undergo a putrefaction " which renders it intolerably offensive, and aids notably the " contents of the privy to saturate the soil beneath the house. " The kitchen is usually under the same open shed with the " privy, and often in immediate contact with them is a stable. " In the summer season a fœcal or urinary odor prevails gene- " rally, and, in traversing the streets, a musty, nauseous odor " is distinctly perceptible, as it oozes from the doors and win- " dows which open on the street." The report concludes, by " considering it " a proven fact that the material cause of yel- " low fever, whatever its source may be, exists disseminated or " volatilized in the atmosphere surrounding the centres of in- " fection, and that the city of Havana constitutes a *permanent* " *centre of that kind.*"

Let the reader now take a stroll around a few squares of the "Garden District" of New Orleans, when all is clothed in perennial green and fair-seeming as a garden in Damascus, beginning at the corner of Third and Camp, remembering only that he is walking over the bed of a filled-up bayou; let him recall the fact of this disease first making its appearance there in several epidemics, and then let him candidly ask himself whether he cannot find, in the theory above enunciated, some explanation of the strange occurrences in that part of the city. Let him free himself for a moment from preconceived notions, and again ask whether he may not, with justice, consider every ditch, gutter, cesspool, drain and filthy gutter and street to be a galvanic trough, every vault beneath the surface and beneath the houses, without a flue or with defective ones, to be a galvanic battery, diffusing its death-dealing emanations by the rapid transit of still, damp air, damp floors and walls, into the sleeping apartments of people who deem themselves secure.

It would be quite an easy task for those skilled in such matters to institute systematic examination into the electro-gal-

vanic conditions of the "fever-nests" or "foci" when the disease prevails sporadically, for the instruments are simple and delicate, and the day is not far distant when they will be in universal use, and, moreover, when the biometer or electrometer for bed-side use will be in the hands of every practitioner and most likely supersede the clinical thermometer. It is not for individual effort to make the research, but to the general government will belong the opportunity of conducting necessary investigations on a sufficiently enlarged scale with the requisite degree of thoroughness and minuteness, with men possessing the talents and knowledge needed to study and extend the stock of information and to lay the results of their labors effectively before the public.

The writer has taken facts that have been known for years, but were unconnected, and if, in the earnest and honest investigation of a new and very obscure subject, he has failed to develop all the advantages that previous suggestions and the rapid progress of science have unfolded in an extensive field of enquiry, he can only reiterate that the subject requires and calls for a most extensive and cautious series of experiments and observations to be made by men more gifted than himself. This being the first attempt, so far as he knows, to formulate a theory based upon the analogy between certain known phenomena of electric nerve-excitation and certain prominent symptoms of yellow fever, the difficulties under which he labored have been very great. Perhaps it may be weak and premature, but the subject is of such vast importance and surpassing interest to every cultivated and thoughtful mind, that he determined to make one effort to direct enquiry in the direction where a new light shines and invites to combine a little progress with tradition. Indulgence is asked therefore for the faulty arrangement, and perhaps florid sketches, which may be attributed to a craving for notoriety, but it must be borne in mind that the writer has had to depend solely upon himself to present the subject in a proper manner. The style may be elementary and redundant, which could not well have been avoided, and yet it will perhaps have sufficient clearness of expression to be readily understood by the general

medical public for whom it was written, and it is earnestly desired that honorable and manly criticism will be extended. Technicalities have been avoided, and the names of those authorities have not been given, for want of space, who have all the credit of having established certain facts, but many will recognize old acquaintances.

The writer is especially indebted to Rosenthal, of Erlangen, who, in his recent remarkable work on "General Physiology of Nerves and Muscles," has almost told us what the vital force is. Now, will not some observers at least ascertain whether the urine will show the products mentioned, as likely to appear, if the theory be correct? If it be charged that mortal sin has been committed against the canons of the opposite philosophy, the writer has at least the consolation of knowing that those who *swear the other way* have not as yet, *by their own admission*, produced anything to establish the correctness of their own position, *beyond all peradventure of a doubt.* Their surmise that the "poison" adheres to the "surface of things," is a near approach to the truth, that being the seat of electricity. The question of disturbed electricity is entitled to respectful consideration only according as it has inherent probability, and must stand on its own merit, side by side, for discussion with the theory that teaches that there must be a poison of the nature of a ferment or sphere capable of multiplying itself indefinitely, and science must decide between the two. One has never been detected, the other is hourly handled and controlled.

Having depended much on the analogy claimed, the writer feels much encouraged in the belief that disturbed electricity will yet be proven to be the *exciting cause* of this fever; that there is a deficiency of air-electricity at high tension and probably negative; that animal electricity is in excess and also changed to negative; that the earth may be excited beyond the norm; that the irritation starts in the nervous system; that it will *yet be acknowledged that the vast organic changes are the direct result of the nervous aberration.* Every inference contained in the preceding pages has been drawn from a prodigious number of facts and statements made by the very highest

authorities, who observed correctly and drew strictly legitimate deductions which cannot be set aside as uncertain, and must be respected until disproved by others founded upon equally numerous and equally well observed data. After facts comes their interpretation, which constitutes true science, for without the connective idea, they are only so much rubbish.

"It is coming out more and more that yellow fever is a fæcal disease," says Dr. Parkes, a pretty high authority, and from what has been written above the moral is sufficiently obvious. Much may be done by wise and searching sanitation, and the writer makes only one more final suggestion, that if a small volume of atmospheric air, saturated with the miasm of putrid meat, be confined in a bottle and then treated with electric sparks, *it is at once disinfected* by the ozone formed. Man cannot control climate, but by helping himself to be clean he can trust a good deal to Him "who hath directed a way for the water-course, for the overflow of waters, or a way for the lightning of thunder."—Job 38–25, (Rev. Ed.)

A Resumé of 26 Cases of Puerperal Fever, which have occurred in the Lying-in Ward of the Charity Hospital, from Sept. 20th, 1880 to Feb. 1st, 1881.

By George T. Elliot, M. D.

(A Thesis for Graduation in March, 1881.)

Since the time that the medical profession has recognized that the puerperal woman was especially liable to septic infection and the pathological phenomena attending upon its development, the appearance of these phenomena, whether in private or hospital practice, has filled their minds with the greatest fears and anxiety. Great as is that anxiety in the

present, how much greater must it have been in those days when hygiene was in its infancy, when the knowledge of pathology was only rudimentary, when practitioners were without those valuable coadjutors—antiseptics, when hospitals were packed to such a degree that three, and even four, puerperal women would lie in the same bed, when, in a word, every condition prevailed, that would tend to favor the spread of a contagious disease from one patient to another. The long disfigniring rolls of deaths, from what is variously called puerperal fever, puerperal septicæmia, child-bed fever, metria, to be found in the reports of all the great lying-in hospitals of Europe, show a fearful mortality accompanying the march of the disease.

Now that we recognize that the most strenuous efforts and watchful care are needed to prevent the appearance of the disease, now that the possible sources of infection to a puerperal woman are well understood, we yet see, in the Charity Hospital, the lying-in ward placed both above and contiguous to the female surgical ward, its beds filled with patients with suppurating wounds and sores; while those who can get about, go from the latter to the former without let or hindrance; and we might almost say an invitation given to the disease to come and make its stay among us.

Towards the end of the year 1879, a new ward for lying-in women, was built. Divided into six rooms, of ample dimensions for two patients in each, well ventilated, newly furnished, and opening upon a common hall, it would seem as though everything had been done, which could make a woman safe during her confinement, but yet we have seen that surroundings were such as tended to favor the spread of any contagium. The first one of those cases, which I am chronicling, was a case of auto-infection, yet the strong hold which the disease immediately took in the ward would show that it felt itself to be in congenial quarters. The first confinement in the new ward was on January 6th, 1880. From that day until September 20th, 1880, cases of puerperal fever occurred from time to time, without, however,

causing any uneasiness, and, in fact, no reports having been kept, it would seem almost without recognition even.

Beyond a full account of the initiatory case, I do not deem it necessary to go.

The general symptoms which presented themselves in the other cases, will be mentioned under the head of Symptomatology.

Kate C———, age 18, primipara, the initial case, was confined September 20th, 1880. The 2d stage of the labor was rather tedious. Uterine inertia supervening, the labor was completed by the application of forceps, by the House Surgeon. The placenta was partly expressed and partly pulled out.

Being made comfortable in bed, patient remained in fair condition until 22d inst. At 10, A. M., on that day, she had a severe chill, followed by pain on pressure over uterus, and a sharp rise of temperature. (For temperature, etc., *vide* table No. 1.) Lochia stopped and vagina was dry and hot, tongue furred, pulse fast and full. From the 22d to 25th the disease progressed with varying intensity, the pain in the hypogastrium passing away. On the 25th she had two rigors; the symptoms of septic infection became more marked, and her condition more serious. The pain in the hypogastrium returned, she lost her appetite, and was delirious at times. The temperature remained high, remitting one or two degrees every day. Oct. 2d began to have some diarrhœa. Oct. 3d was examined *per vaginam* by the physician of the ward. A few hours after she had a rigor. Abdomen became very tympanitic and most acutely painful to the touch. All the other symptoms were intensified. Oct. 4th patient's pale and sunken countenance, the pinched nose, the parched lips, the twitching of the facial muscles, the low delirium, the carphologia show her to be *in extremis*. Excessive distension of abdomen came on, and gradually sinking, she began vomiting a black, grumous fluid and died early in the morning of Oct. 5th.

Post-mortem. A piece of the placenta was found, in a state of decomposition, on the left side of the fundus of the uterus. Pus in the pericardial sac and knee joints.

This patient, the only one who has died, was confined in room No. 6.

Between September 20th and October 1st, there were 9 women confined. They all developed puerperal fever; the time of development varying from 2 to 7 days after each delivery. It was observed, that the further from the initiatory case a patient was placed, the less severe was the course of the disease; the symptoms of pelvic inflammation were milder and more amenable to treatment. Thus, we saw the pain over either the uterus, broad ligaments or abdomen, to be of a more subacute character, in those patients in room No. 2, and much less complained of, than by patients in room No. 3. Again, those in room No. 3 were not so severely attacked as those in No. 4, and so on. In fact, in room No. 1, the last one of the first nine cases developed no pelvic symptoms whatever. How the poison was distributed, I shall not attempt to explain here. Every precaution was taken to prevent its conveyance. Carbolized solutions, separate syringes were used; the most perfect cleanliness observed; after the first cases, a different nurse attended to the washing and wants of a newly delivered woman—to no purpose, the disease appeared.

Recognizing the seriousness of the existing condition, it was decided to thoroughly disinfect each room as it became vacant. This was done by burning sulphur; the doors and windows being tightly closed, the sulphurous acid generated remained there for twenty-four hours. The walls were then cleaned, the furniture scraped and re-varnished, all bedding and linen used in the ward washed in carbolized solutions, and everything put in thorough order. The adjoining ward, used for patients not yet confined, was also cleaned and disinfected in the same manner.

The first case of labor after October 1st, occurred on the 14th inst. The woman was confined in the large ward above mentioned, contiguous to the rooms. This case was complicated by the placenta being retained, and delivered 1½ hours after the labor, by introducing the hand within the cavity of*

*Continued on p. 54.

Tables Illustrating the Daily Morning and Evening Range of Temperature and Pulse in the Cases Observed.

Case 1—Kate Campbell, aged 23. Delivered September 20, 1881.—Primipara. Presentation, Vertex—first position. Duration of labor, 8 hours. Labor completed by forceps.

	SEPTEMBER.											OCTOBER.				
Days . . .	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5
T. M. . . .	99.6	99.	104.6	103.6	101.4	103.2	105.	103.4	102.4	102.	103.	104.4	105	104.2	104.	100.4
T. E. . . .	98.6	100.	104.2	101.4	103.2	102.2	103.	104.2	105.	105.	105.	104.2	104.4	103.4	102.2	
P. M. . . .	92.	80.	120.	120.	88.	100	116	104.	84.	92.	104.	104.	136.	120.	156.	
P. E. . . .	80.	88.	116.	84.	92.	100.	100.	100.	116.	110	124.	132.	112	112.	120.	

Case 2—Barbara Aikens, aged 28. Delivered September 20, 1881. Primipara. Presentation, Vertex—second position. Duration of labor, 3 hours.

	SEPTEMBER.										OCTOBER.													
Days . .	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14
T. M . .	98.	96 6	98 4	98.6	99.6	98.4	105.	101.4	104.	104.	103.6	101.4	103.	100.4	98.6	103.6	104.	104.	100.6	98.4	99.	99.4	99.6	99.6
T. E. . . .	99	99.4	99.	99.6	99	100	102.4	102 6	102.6	102.6	104.	104.6	103.4	101.4	100.4	100.2	105.	101.4	100.	101.6	100.2	100.4	100.6	99.
P. M. . . .	80	80.	76.	80.	88.	84	120.	100.	132.	120.	120.	112.	140.	116.	96.	128.	116.	120.	96.	86.	110.	80.	80.	84.
P. E. . . .	80.	92	84.	92.	80.	96	108	124.	124.	124.	130.	108.	124.	124.	108.	124.	120.	108.	104.	104.	108.	96.	92.	84.

TABLES—Continued.

Case 3—Alice Bummer, aged 18. Delivered September 26, 1881. Multipara. Presentation, Vertex—first position. Duration of labor, 6 hours 30 minutes.

	SEPTEMBER.					OCTOBER.										
Days....	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11
T. M....		98 4	98.6	98.4	99.	101.	103.	101 8	104 6	99.6	99.	100.	98.5	98.5	98.5	98.5
T. E...	99.	99.4	100	105	103.4	101.2	104.6	100.8	103	101.4	101	102.6	98.5	98.5	98.5	
P. M. ..		80	76	80	120	84	96	100	112	80	76	88	72	84	76	72
P. E....	88	84	92	130	96	84	120	84	96	100	100	92	72	64	72	

Case 4—Philomena Mohr, aged 17. Delivered September 29, 1881. Primipara. Presentation, Vertex—second position. Duration of labor, 12 hours.

	SEPTEMBER.		OCTOBER.											
Days...	29	30	1	2	3	4	5	6	7	8	9	10	11	12
T. M....		98.	99 5	98.6	98.4	102.5	102.	100.4	103.	99.	98.5	98.5	97.6	97.8
T. E....	98.6	99	99.5	99	106	102.5	102.6	102	104	98.5	101.6	100.4	99	98.6
P. M....		76	84	80	76	96	80	68	80	72	72	66	60	
P. E....	80	80	84	80	112	84	84	72	84	72	88	64	60	60

TABLES—Continued.

Case 5—Catherine Smith, aged 20. Delivered October 1, 1880. Multipara. Presentation, Breech—first position. Duration of labor, 6 hours.

	OCTOBER.										
Days ...	1	2	3	4	5	6	7	8	9	10	11
T. M....		98.	98.	100.6	100.	100.3	98.5	98.5	98.5	98.5	98.5
T. E....	99.5	98.5	99	105	104	103	98.5	98.5	98 5	98.5	
P. M....		80	76	92	96	116	78	78	84	102	76
P. E....	92	80	80	136	140	116	78	78	72	80	

Case 6—Josephine Kaiser, aged 19. Delivered November 16, 1880. Primipara. Presentation, Vertex—second position. Duration of labor, 16 hours.

	NOVEMBER.															DECEMBER.		
Days....	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3
T. M....		98.	98.	97.6	98.4	100.6	98.	98.	99.	103.2	100.5	100.	100.6	99.3	99.4	99.	98.	98.
T. E....	98.6	99.6	100.6	101.6	102	100	99.5	100	98.6	104.5	101	102.4	102	102	101.2	99.6	98.5	
P. M....		84	72	72	72	92	92	76	80	100	100	92	84	100	84.	68	84	92
P. E....	92	96	92	80	100	72	88	84	84	116	88	80	80	80	76	88	60	

TABLES—Continued.

Case 8—Mary Tilford, aged 19. Delivered January 14, 1881. Primipara. Presentation, Vertex—second position. Duration of labor, 6 hours 20 minutes.

	DECEMBER.						JANUARY.															
Days . . .	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
T. M. . . .	100.	99.5	102.	100.5	102.6	98.5	100 5	99.	98.	102.6	98.6	101.	99.6	98.5	98.	97.4	98.6	98.	100.	98.6	98 5	98.6	98.
T. E. . . .	100	101.6	103.6	102	103.4	99	109.5	100.6	100.5	103.6	99.6	103	104	102	98.6	98	98	104.7	99.5	97.5	98	98	
P. M. . . .	88	100	104	92	100	84	92	84	80	104	80	88	76	72	80	76	80	84	100	96	80	76	72
P. E. . . .	92	100	132	88	104	88	88	92	92	116	88	100	120	100	80	80	80	136	92	80	80	80	

Case 7—Lucy Botti, aged 17. Delivered December 26, 1880. Primipara. Presentation, Vertex—first position. Malformed pelvis—forceps.

	JANUARY.													
Days. . . .	14	15	16	17	18	19	20	21	22	23	24	25	26	27
T. M. . . .	100.4	99.	101 2	101.2	101.5	103.	101.	99.7	99.2	99.3	99.4	98.5	98.5	98.
T. E. . . .	100.4	99.6	102.7	103	102.7	103.4	102.2	100.6	100.2	100.4	98.4	101.6	98.5	
P. M. . . .	88	88	84	100	112	104	92	84	80	76	80	76	72	72
P. E. . . .	84	84	92	108	100	100	88	92	84	92	80	100	80	

the uterus. She developed puerperal fever on the second day. There were no other confinements until Nov. 3d, when the small rooms were again made use of. In this and the succeeding confinements during November, no very decided symptoms showed themselves. The cases were of a mild type and ran a short course.

December opened with a mild case of the fever. The three succeeding cases were also mild, yielding easily to treatment. Only one in the next three confinements gave any symptoms. The month closed with a confinement on the 26th and 31st respectively. Puerperal fever was developed in both these patients, rapidly and with the most decided symptoms. During the month of January, six women were confined. Of that number, four developed the fever to a greater or less degree.

In concluding the enumeration of these cases, I think I should add that the "causa teterrima belli" has not by any means left us. In the month of February, the first patient confined had a heavy chill in the morning of the 2d day; a short time after, the thermometer marked 106¾°, and besides a metritis was most easily diagnosed; yet this patient's labor had been perfectly normal in every respect. Though the disease has run a mild course lately, yet its entire absence from the ward is most desirable; to that end no confinements ought to take place for some months. In the mean time, there would be an opportunity for a thorough disinfection and rehabilitation of the premises.

SYMPTOMS OBSERVED.

As a rule, the first symptom of infection was a chill, or rigors, occurring from the 2d to the 4th day after confinement; in some cases even later; in one case on the seventh day. A sharp rise of temperature usually followed immediately; 103° —105°—106° being reached in different cases. In other cases, the rise of temperature would be gradual, from the date of confinement to the time the chill occurred. In those cases in which there was no chill, the temperature either rose gradually up to the 2d or 3d day, when all symptoms were intensified, or a sudden rise was the first symptom observed.

Patients having a chill followed by fever.....18
Patients not having a chill, but fever..... 8

Coexistent with the rise of the temperature, the symptoms of pelvic inflammation developed.

Patients having pain in hypogastrium on pressure:
Over uterus alone.....8
Over one broad ligament only.....2
Over both broad ligaments only.....5
Over a part or whole of abdomen 5
No pain or tenderness at all.....6

The uterus was usually enlarged, even in those cases in which pressure upon the organ was not painful. The intensity, character and duration of the pain were very variable. In some, after two or three days, the tenderness ceased, to recur again. In others, slight at first, the pain would become in a short while very intense.

The pulse, at first full and bounding, would gradually become fast, and of low tension. A furred tongue and constipation almost invariably present. Complete loss of appetite a feature of a majority of the cases. The skin alternately dry and wet with perspiration. The secretion of milk, in some cases, stopped completely; in others, it recommenced after a few days. Again, in some, there was galactorrhœa.

The lochia, as a rule, were diminished in quantity, watery and offensive. In some, there was a complete stoppage; in others, no change. In six cases, after the symptoms and fever had abated and convalescense was progressing favorably, a chill, sharp rise of temperature and return of pain in pelvic organs occurred. After the continuance of these for a few hours, a sudden flow of blood from the vulva would be observed. Immediate relief of the condition and the reëstablishment of convalescence followed this.

The course of the fever was remittent in some cases, intermittent in others, and again *sui generis* in some.

TREATMENT PURSUED.

From the inception of the disease, cinchonidia sulphate or quinia sulphate was administered. From 20 grains to 40 grains a day were given while the fever lasted.

Turpentine stupes, and light poultices with tinct. of opium upon them, were found to be very beneficial in reducing the pelvic inflammation. Nourishment and stimulants, as brandy, etc., formed of course a prominent feature in the treatment of the cases. Plenty of fresh air, attention to the bowels, etc., the use of carbolized solutions in washing and syringing the genitalia, attention to cleanliness, and meeting indications as they arose, were the formulary followed.

Current Medical Literature.

TRANSLATIONS.

APHASIA.

The experimental corroboration of the localization of the center of language in the left hemisphere through the medium of hysteria. The telephone experiment.

Extract from a paper by Dr. J. L. Duénas.—*Cronica Medico-Quirurgica.*

Translated by Dr. Rodolfo Matas.

Probably no one would have thought that the localization of the center for articulate speech in the left hemisphere would have received a corroboration, so conclusive that it would have fixed as a fact the inductive inference (in regard to the location of this center), which is to-day universally known; and still less, that this experimentation would have been carried on, practically, on the living subject. In No. 37 of the "*Progres Médical*," of 1880, was published a remarkable article from the pen of G. Ballet, in which an account is given of the experiments performed by Prof. R. Lepine, in the service of Prof. J. L. Charcot *(Hospice de la Salpêtrière)*. I will not be prolix in the exposition of its contents.

Under the name of somnambulism, or hysterical lethargy and cataleptic state, Charcot recognizes two different states in which hysterical subjects may be placed by various procedures (gaze, intense or unexpected sounds, etc).

In detailing the phenomena of these different conditions, so that the demonstration of the subject under consideration be better understood, we will state: Supposing these experiments are performed on women who suffer periodical attacks of hys-

teria; that in these paroxysms or hysterical crises the three classic phases of a paroxysm follow each other, as has been shown by Charcot is proper to such paroxysms; that these patients also present the three hystero-genetic zones, the slight compression of which gives rise to the hysterical phenomena, and at the same time to a marked hemianesthesia; then in such cases the first state, or that of somnambulism, will be manifested in the following manner:

"Order one of these patients to look fixedly at an object placed before her, for example, a pen-handle. After a few moments she will incline her head either to right or left, the eyes will close, and a short or slightly sibilant inspiration, accompanied by a special movement of deglutition, will announce to you the fact that the patient is well hypnotized. This stadium is characterized by the following distinctive characters: 1st, there is no catalepsy; that is, if any of the extremities is raised, or placed in any special position, it will fall inertly without preserving the original attitude that was impressed upon it; but if a muscle is excited mechanically through the skin, by compressing or rubbing it lightly, a contraction will be induced. There is a remarkable degree of excitability of the muscles, and also a similar state of the nerves. If, therefore, the ulnar is compressed at its passage by the elbow, the muscles supplied by this nerve will contract, giving to the hand the appearance of the '*main en griffe.*' These facts have induced Charcot to designate this induced sleep, sleep with neuro-muscular hyper-excitability. 2nd. A fact of the greatest importance, when regarded from the point of view in which we are placed, is that in this state the power of speech will be maintained; the patient will answer questions addressed to her; she will count numbers, if so desired, recite verses, sing; she can also calculate; she is capable of writing, either at her own or others' dictation; she will draw, finally, if she possesses this art. By the expression of her countenance, she will manifest numerous sentiments; she will frown, smile, or throw a kiss, if requested. It is obvious that the faculty of language is preserved in its different phases."

The second stage is thus presented:

"It is easy to cause the patient to pass from the hypnotic to the cataleptic state. To obtain this result, it is sufficient to open the patient's eyes, i. e., to permit light to impress the retina. Then the phenomena which are observed are very different from those of the preceding state: 1st, all muscular hyper-excitability disappears, but the extremities preserve the original attitudes in which they were placed; in one word, there is catalepsy: 2nd, and this is the capital fact, all external manifestations of the intellect are suppressed. The patient does not speak; does not answer the questions asked her; she cannot write, draw or make the very slightest gesture."

We see, then, that between these two states there are the

most marked differences; but the most important, and which might be called characteristic, is the following: in the 1st, preservation of the faculty of speech; in the 2nd, the complete abolition of this faculty. Now we ask: could it be possible to induce both these states at the same time, and in the same patient? That is, could we induce the cataleptic state in one hemisphere, while the other would be simply hypnotized? This is what the observations begun a few years ago have finally succeeded in answering affirmatively. The following is the procedure by which the result is obtained:

"Hypnotize the patient by the ordinary methods and open one eye, leaving the other closed. The cerebral hemisphere which corresponds to this eye will be hypnotized, whilst the one which corresponds to the open eye will be in a cataleptic state. One-half of the body will then present the distinctive characters of the lethargic sleep, whilst the opposite half will manifest those of the cataleptic sleep; we have, therefore, combined in one individual, a hemi-lethargy and a hemi-catalepsy. But it is necessary to bear well in mind that, on account of the decussation of the fibres of the optic nerves, the right hemisphere corresponds to the left eye and *vice versa*. With such premises before us, it is easy to establish the fact that the faculty of language resides in the left hemisphere.

"A patient is hypnotized. The respiratory sound and the characteristic movement of deglutition have announced to us that the sleep is real; the nerves and muscles are hyperecitable, the analgesia has become generalized. If we order our patient to speak, write, draw or gesticulate, she will obey us. We open the eye; that is, we place the right hemisphere in a state of catalepsy. The aspect of the case has not been at all altered, at least as far as language is concerned; the patient continues to articulate words, she writes, draws and gesticulates, if so desired. But let us modify the existing circumstances. Let us close the left eye, which corresponds to the right hemisphere, and open, on the contrary, the right eye; that is, let us render cataleptic the *left* cerebrum, and then we will observe that communication with the external world is at once suppressed. In vain will we question the patient—she will not answer; in vain will we place in her hand a pen and entreat her to write her name—the pen will not move; in vain we will order a gesture, or a change of countenance—the hand will remain motionless and the facial traits will not be altered. But a moment before, in spite of the cataleptic state of the right cerebrum, all forms of language and mimicry existed; it has been sufficient to place in the same condition the left hemisphere for all these faculties to be instantly abolished. The conclusion is self-evident."

The experimental demonstration which with such success has been accomplished, and without compromising in the least the life of the patients, becomes at once much more evident by

simply varying the form of the experiment. For this purpose, after the patient is duly hypnotized, she is ordered to count; she begins with number one and continues speaking automatically. If the left eye, corresponding to the right hemisphere, is opened, she will not be detained in the course of her recitation; but, if the right eye is opened, the patient stops, to continue as before, when by closing the same eye the left hemisphere is brought back to its originally hypnotic state. If she recites a poetical composition, if she sings, we can interrupt her in the middle of a verse, of a word, or, if she write, in the middle of a letter, always that we wish it, by only verifying the occlusion of the right eye..... .....; if we open it once again, we will then witness the wonderful automatism of the nerve-cell, as it continues its interrupted work from the very place in which its detention was effected.

The experiments which I have just related have not been limited to one individual: they have been repeated in very many instances, and not only in the celebrated Hospital of the Salpêtrière, and by observers of the distinction of Charcot and Lepine, but also, and quite recently, in Germany by writers of such eminence as Heidenhain and Berger.

I will terminate this paper by the succinct relation of an extremely curious experiment of Heidenhain, which deserves special mention. It is the experiment significantly known by its author as the "telephone experiment." It may be thus described: If one hand be placed upon the forehead of a hypnotized patient, and the other upon the occiput, she will repeat the words pronounced in a loud tone of voice by the observer. By frequently repeating this experiment, it has been observed that this phenomenon only takes place when the hands are applied over the left side of the head, *never occurring when they are placed over the right side.*

All these facts, remarkable in more than one particular, which have given a mortal thrust, so to say, to the absurd pretensions of the spiritists, tend to confirm the notions that we now entertain about the symptom aphasia and of its anatomical significance. I believe, therefore, that the faculty of articulate speech localization in the left hemisphere, does not need another proof to remain definitely rooted as a fact in the minds, even of the most skeptical. We have had to contend enough in the proclamation of our truths, and we should cease all conflicts now among ourselves, which may be maintained in pure spirit of opposition, remembering that those who do so maintain contrary opinions forget the true aim of science, and also that, by so doing, they lower themselves to the level of its ancient detractors. If, in the history of aphasia, we meet any unusual fact of a difficult or impossible explanation, we should candidly recognize our susceptibility to error, the insufficiency of the means of investigation now at our command, and the immense complexity of this subject. We should never doubt

the results that time accomplishes, never doubt the truth of the positive method, for it is the only patrimony of scientific humanity, which will cause it to be feared and respected to the end of time.

A STUDY OF THE ACUTE ANÆMIA OF THE WORKMEN OF THE ST. GOTHARD TUNNEL, PRODUCED BY THE ANKYLOSTOMUM DUODENALE.

By Dr. NIEPCE, (d'Allevard.)—*Gazette des Hopitaux.*

Translated by Dr. R. MATAS.

During the whole time that the work of perforation was going on at the St. Gothard, the physicians in attendance on the miners and diggers of the tunnel were surprised to see a great number of these laborers sicken with a rapid loss of appetite, an enfeeblement of strength, an alteration of expression and a pallor of the countenance; a condition which resulted ultimately, in the majority of the cases, in a total inability to continue the work entrusted to them. Very soon the hospitals of Lombardy and Piedmont were overrun with these patients, who presented all the symptoms of a profound anæmia. A search was at once instituted to discover the cause of this ailment. The patients had been fed well enough; they had coffee, drank wine, and the water destined for their use was brought into the galleries where they worked, enclosed in tanks, on small wagons. It was drawn from the Tesino, and was of a limpid purity.

The physicians of the hospitals had soon numerous autopsies to perform, which demonstrated the presence of great quantities of ankylostomata in the small intestines, the number according in some cases to 3000 of these worms. Dr Dubini, of Milan, had already called attention to this worm in 1843, which was observed likewise in Egypt by Griessinger, and at Rio Janeiro by Brazilian physicians.

This entozoon is small, cylindrical, slightly curved, and of a rosy-grey color. Its head is slender, and its mouth is armed with a cup-like sucker, enclosing a horny apparatus in which are fixed four strong teeth. The pharynx is infundibuliform in shape, followed by an œsophagus which is strengthened with muscular fibres. The intestine terminates by an anal orifice situated near the tail. It possesses a double excretory organ, which empties itself in the middle portion of the œsophagus. The male is 6 to 9 millimetres long, the penis is long and double; the female is longer and larger than the male, and the vulva is situated in the posterior lower three fourths of its body. This entozoon is oviparous, and the egg gives origin to a larva of quite a rapid development. The ova are found sometimes in such great quantities that, in the hospital of Varesa, Dr. Campiglio counted from 50 to 80 eggs per gram of fecal matter. Of 100 autopsies, made in the hospital of Milan, of individuals

affected with different forms of disease, 20 cases were counted in which ankylostomata were present.

Professors Levis of Milan, de Erenzi of Geneva, Bozzolo, Bizzorero, Perroncito and Concato of Turin, have all established the presence of these worms solely in the small intestines. By means of the four teeth with which its mouth is armed, it attaches itself to the intestinal mucous membrane. It hides its head within this membrane, and penetrates as deep down as the submucous connective tissue. It causes a small ecchymotic spot, pierced in its center by a small opening, from which the blood issues and is poured in more or less quantities into the intestines. I have even seen some of the ankylostomata fixed upon the mucous membrane and gorged with blood, and have also been able to recognize, throughout the mucous lining, a considerable number of cicatrices caused by the bites of these worms.

It was found that the majority of the workmen at the tunnel, after six weeks of labor, gradually lost their strength and appetite; their respirations were labored, they complained of palpitation, their faces became pale and assumed a leaden, earthy aspect, without bloating. The mucous membranes generally lost their normal color, and a loud hæmic murmur became soon audible over the precordia. The temperature rose often to 37° (Cent.). [98⅗° Fah.?] The urine passed was not abundant in quantity. Drs. Grassi, Bozzolo and Concato, all recognized a great diminution in the number of the blood corpuscles, and at least half the normal quantity of hæmoglobin. It is evident that these entozoa, while living upon the blood of their victims, rapidly impoverish it; to this cause of enfeeblement, however, other factors must be added, i. e., that these laborers were constantly exposed to a temperature of 36° to 37° in the tunnel, and that the air which they breathed was deeply vitiated by the deleterious gases which resulted from the deflagration of the dynamite, the agent exclusively employed in the blasting of the rocks. It is evident, also, that the removal of the air was insufficiently carried on for the requirements of the case, notwithstanding the proper action of the ventilating machines, and that, finally, during the whole period that the works lasted, the fecal matters of all the laborers were permitted to remain within the galleries. It is evident that health could not long be maintained intact in the midst of such anti-hygienic surroundings.

The minds of the Italian physicians were pre-occupied with the origin of this worm, and, with the view of solving this question, they began numerous investigations. Knowing that the tile-makers of Lombardy were subject to attacks from the ankylostomata, they searched the water supplies of this country, but without success; their presence, however, was recognized in vegetables, and I learned from Prof. Concato that a village existed near Turin in which the inhabitants de-

voted themselves extensively to the cultivation of strawberries, and that most of the people there were afflicted with these parasites. In studying the composition of water, from its various sources, in the environs of Milan, I was able to recognize the ankylostomum in the water of a canal which supplies the factories of the city, and on the banks of which many of the laborers daily deposit their fæces.

All the vermifuges known were employed to combat this worm. Santonine, calomel and chenopodium anthelminticum were all given without effect. Dr. Bozzolo ordered from Rio Janeiro the diolaria, a kind of elixir used for this purpose in Brazil. Prof. Perroncito extolled the administration of the ethereal tincture of male fern, previously recommended by Trousseau as a remedy for tænia. As doses of from 3 to 4 grams proved ineffectual, it was increased to 10 grams, and in one instance it was even carried up to 20 grams. Most of the patients were unable to tolerate such heavy dosing, the stomach rejecting the remedy almost immediately after its ingestion; those, however, who succeeded in retaining it, got rid of all their worms. Thymic acid was then tried in 10 gram doses, and its administration was followed by the complete expulsion of the parasites. It is the only agent now employed, either in Geneva or in Turin, by Professors Erenzi, Bozzolo and Concato.

After the patient is once rid of these ankylostomata, he does not immediately recover. Many months elapse before he can regain his former strength. By the continued exhibition of tonics, analeptics, ferruginious compounds and chinchona preparations, he finally concludes by getting well. Notwithstanding this there are a good many who, in spite of all our care and attention and the best alimentation, end by succumbing to their ailment.

The facies of a patient afflicted with this anæmia is so characteristic, that in going through the wards of a hospital it is impossible to mistake it. This disease, which had not been observed or studied prior to the perforation of Mt. Cenis, has not yet been recognized in France. I believe it will be easy to find cases among the numerous Italian workmen who seek employment in the south of France. For instance, but a few days ago, while following the clinic of Professor Girard, of the Hotel Dieu of Marseilles, I passed by the bed of a patient whose face struck me as being that of a workman at the tunnel. I did not err in my suspicion, for he had been there just three months before, being obliged to return, after this time, in a broken state of health, to his native village near Pavia. Four of his comrades, who had left the works with him, had died. This patient did not seem to improve; he could not gain strength. I entreated M. Girard to place him at once under the thymic acid treatment.

Such is the malady which has received the name of "Acute

Anæmia of St. Gothard," a designation that would imply a limitation which is far from distinguishing it. I believe that the laborers who work in rice fields, and among whom anæmia and malarial fevers are of such frequent occurrence, must suffer, in common with the tile-makers of Lombardy, with these nefarious parasites.

CÆSAREAN SECTION PERFORMED IN A CASE OF PREGNANCY IN DOUBLE UTERUS.

Translated by O. R. Lanng, M. D.

The patient was a woman 22 years of age, who 5 months after marriage commenced to present the usual symptoms of pregnancy. In January, 1880, when her term should have expired, according to her calculation, the abdomen was of a corresponding size, and she expected every day to be delivered. A short time later she noticed the movements of the fœtus to be unusually lively; they ceased then and did not reappear. In the latter part of February she had violent pain resembling labor pains, followed by a period of tolerable health, until a hæmorrhage occurred in March, which lasted 8 days and terminated with a similar attack of pain; this repeated itself in April, and she was since that never entirely free from pain. She lost flesh and noticed a decrease in the circumference of the abdomen.

In the early part of June she entered the hospital. The examination here disclosed the existence of a tumor filling the greater part of the abdominal cavity, from symphysis to about one inch below the xiphoid process, occupying completely the right hypochondriac region; while to the left a hand could be pushed in between the tumor and the pelvic wall. The tumor was round, hard and perfectly smooth, not fluctuating. By auscultation nothing was heard; by vaginal exploration, the vaginal portion was found small, conical, virginal; uterus of normal size, anteflected, movable and pushed over to the left side. High up in the pelvis a small segment of the hard, round tumor could be felt, from which something resembling a broad pedicle issued, descending towards the supravaginal part of the cervix. The probe was introduced easily 6½ centimetres into the womb. Numerous red vitiligines were scattered over the lower part of the abdomen; mammæ were swollen and contained a liquid.

The history of the case showed that it was probably one of pregnancy; but, if so, it must necessarily be one of an abnormal character, as a uterus was clearly recognized besides the tumor; it was consequently natural to think of extra-uterine pregnancy. And yet several circumstances were against this theory. In spite of emaciation, the patient was enjoying tolerably good health, and had been able to walk about without difficulty. The tumor was not asymmetrical, with limits difficult to define and

parts of fetus easy to feel; on the contrary, the tumor was symmetrical, egg-shaped, without any trace of protuberances or fetal parts. At the same time the increased size of the uterus usually accompanying extra-uterine pregnancy was missing, and no decidua had been discharged. Although the diagnosis was very doubtful, it was nevertheless supposed that an extra-uterine pregnancy was the most plausible theory. Things were explained to the patient, and she insisted upon an operation, although the dangerous character of such an undertaking was not concealed from her.

On the day of the operation the temperature was 39° (102.1-5° F.), pulse 120. The incision was made in the linea alba, and when the peritoneum had been opened, a round, smooth tumor of a bluish-red color appeared attached by soft adhesions to the abdominal wall. Inspecting the tumor more closely, some liquid of a dirty yellow color oozed through a small hole in the wall. Supposing that the tumor was filled with such liquid, a large trocar was introduced, however without emptying any liquid At the withdrawal of the trocar, a fetal part presented itself; the opening was enlarged and the fœtus extracted. Good care was taken that no liquid should enter the peritoneum.

The length of the fœtus was 47 centimeters; it was much macerated, but without fetid smell. The tumor was drawn out in front of the abdominal wound. On the right side was found a broad ligament, with tube and ovary; through a short, broad pedicle, it was connected with the other uterus, which was of normal size. The pedicle was tied with thick catgut, strong ligatures were applied at *lig. latum*, below tuba and the ovary, and the pedicle was cut off 5-6 centim. above the ligature, leaving its lower bowl-shaped part standing. Nowhere in the pedicle could any communication be found with the other uterus, neither with vagina. The interior was entirely coated with decidua. This was dissected off, and the raw surfaces created by this were resected by numerous dry and superficial cat gut sutures. The bleeding, which had been quite profuse at the cutting off of the tumor, now ceased entirely. Peritoneum was cleaned and Ester's dressing applied. The operation had lasted 1½ hours.

During the four succeeding days the temperature reached 40° (104° F.); from the 4th day she was without fever, and one month after the operation she went home. Examining her at this time, the left uterus was felt yet to be anteflected, to the left and movable; to the right of it was felt what remained of the pedicle as a movable tumor of the size of a fist; also through the abdominal wall was it to be noticed distinctly.

The diagnosis proved itself consequently to be wrong, and being an intra-uterine pregnancy, this ought to have transpired without producing any particular influence on the patient's general health. The fœtus having died, an absorption of amniotic fluid

set in, causing the above mentioned reduction of the tumor. The attacks of pain occurring on several occasions were caused by a vainly started labor, the uterus compressing and encompassing closely the fœtus, thereby giving the tumor its round, smooth appearance. That the other uterus did not hypertrophy, and that no decidua was formed, is nothing extraordinary in a case of pregnancy with double uterus. The case in issue was a uterus bicornis, with a single vaginal portion. In as far as the supra-vaginal portion did not have any communication with the vagina, the pregnant half was incompletely developed. Whether this impermeability was existing previously or was due to an obliterating process during the pregnancy, is a question of contest. In case of previously existing impermeability, fecundation must have taken place subsequent to a wandering of the egg.(?)

The extirpation of the womb was here the only expedient, there being no communication with the uterine coats except through the incision. On account of the peculiar pedicle, the application of the ligature did not offer any difficulty. The author has in vain looked through medical literature for similar cases in reference to the indication for the operation.—*Hygiea*, March, 1881—*Hospitals Tidende*, May, 1881.

LONDON MEDICAL NEWS.

In the *American Practitioner* for May the London correspondent alludes to bad financial management at the St. Thomas Hospital, resulting in gradual curtailment of its operations, although the institution is richly endowed. *Apropos* of this development, Mr. Timothy Holmes, F. R. C. S., has read a paper on Hospital Management, in which he concluded "that it is essential for the proper management of any hospital that the medical staff should be efficiently represented in its government." Unfortunately, the lay governors of British hospitals are jealous, and resist any assumption of authority on the part of the medical staff as an encroachment on their rights.

The illness of the ex-Premier, Lord Beaconsfield, led to some complications among his medical advisers. His regular attendant, Dr. Kidd, is a reputed homœopath, and, when Dr. Quain was asked to consult, he at first declined. On being assured that Dr. Kidd was not treating his patient homœopathically, Dr. Quain finally consented, after taking advice with some of his fellows in the College of Physicians. Dr. Kidd is an M. D. of Aberdeen University, and dean of a Homœopathic School of Medicine.

[It appears, then, that in Britain, as in the United States,

there are apostates among physicians, and that professing homœopaths continue to practic medicine regularly, whenever it suits their purpose or the nature of the case.]

Mrs. Ernest Hart, wife of the editor of the British Medical Journal, has been estimating the loss of hæmoglobin in idiopathic anæmia, and finds it even more marked than the diminution and altered shape of the b'ood corpuscles. Dr. Coupland has called attention to a so-called anæmic fever, which he attributes to increased decay of the tissue elements. In such cases of anæmia, Dr. Broadbent used to say that the only valuable remedy is arsenic, iron being found useless, and sometimes harmful.

A Mr. Fairthorne lately recommends the addition of 2 drams of tomato or walnut catsup to each ounce of cod-liver oil, the mixture to be well shaken before taken.

CASE OF EARLY MATERNITY.

In the May number of the *Lancet*, Henry Dodd. M. R. C. S., relates the case of a child which began to menstruate at the age of 12 months. She was born August 8, 1871, and continued to menstruate until June 22, 1880, according to her mother's statement, when she became pregnant. In due time she was delivered of a seven-pound baby, after a labor of six hours. She must have become pregnant about two months short of nine years of age.

EXPERIMENTS ON EPILATION.

The April number of *Archives of Dermatology* contains Dr. C. Heitzmann's paper on the above subject, read before the American Dermatological Association. His plan was to extract the hairs, and then introduce caustic liquids into the bottom of the hair-follicles with an instrument similar to a hypodermic syringe. He used a glass tube two inches long, armed with a perforated platinum needle. On the opposite end was a rubber cap, pressure on which forced a drop of the liquid through the point.

Tincture of iodine was first tried, and the operation was followed by inflammation and the formation of small pustules. The result was unsatisfactory, inasmuch as the hairs reappeared in the majority of the follicles operated on. Trial of carbonate of potash, dissolved in an equal part of water, was still less successful.

Recourse was then had to caustic potash, in solutions of various strength. No weaker solution than 1 part to 4 of water proved satisfactory. A pustule generally followed the puncture, and about half of the hairs failed to reappear. For success, it is necessary to reach the papilla of the hair, and this cannot always be done, owing to the oblique direction of its shaft. Scars and pigmentation disappear in a few months.

Free application of cold cream relieves the inconvenience of the caustic applications.

Dr. Fox remarked that he had obtained much better results from electrolysis, according to the plan of Hordaway, and with less trouble. He used a platinum wire, which caused some pitting, but this afterwards disappeared. The operation gives some pain, but is not severe. Ladies usually say that it is less unpleasant than filling teeth.

Dr. Bulkley said that he now uses electricity in preference to the needle. He expects to succeed with half of the hairs on first trial, and on second trial with half of the remainder. The process is repeated as long as found necessary. He introduces the needle before starting the current, and causes the patient to make and break the current, holding a wet sponge electrode.

MASTURBATION AND OPHTHALMIA.

In the May number of the Louisville *Medical Herald*, Dr. M. Landesburg states that he has met a number of cases of chronic catarrhal conjunctivitis, which were totally intractable under the ordinary modes of treatment. Gradually he came to trace a connection between masturbation and this affection, and, on breaking up the habit, he found no difficulty in relieving the morbid condition. The paper is illustrated by a number of instructive cases, of both sexes.

CHLOROFORM AND CHLORAL IN COD LIVER OIL.

The *Canadian Journal of Medical Science* for May states, on the authority of Dr. Hager, that the addition of 10 drops of chloroform to 100 grammes of the oil renders it perfectly palatable, without impairing its qualities. Also 10 grammes of crystalized chloral hydrate dissolved by digestion in a sand-bath in 200 grammes of cod liver oil, render it more acceptable.

COPAIVA IN SCIATICA.

The above journal contains the following prescription, said to be wonderfully efficacious in this hitherto intractable complaint:

℞ Bals. Copaivæ, - - - - ℥iv;
Tinct. Lavandulæ, - - - - ℥iv;
Tinct. Hyoscyami, - - - ℥iij;
Potass. Bicarb., - - - - ℥j;
Mucilag., - - - - - ℥j;
Aquæ, - - - - - - ℥vj, M.

S.—A tablespoonful every 4 hours.

EDITORIAL DEPARTMENT.

MEDICAL COLLEGE REFORMS.

In the midst of the numerous proclamations and pledges of reform in medical teaching which annually deluge the country, the College of Physicians of New York city exhibits an earnest determination to elevate the standard of merit of its graduates by making rigid examinations the test for award of its diplomas. Of 146 candidates for graduation, only 96 were successful in meeting the requirements exacted. It can scarcely be surmised that this large percentage of failures was attributable to an accidental accumulation of poor material. My own experience as a teacher convinces me that year by year the medical classes of the University of Louisiana, in the aggregate, show improved states of primary education, and are thus better fitted to prosecute professional study.

I do not know that they are more industrious or ambitious, but, as very few young men are willing to have the word "rejected" written across their names when placed on the bulletin board of candidates for graduation, nothing is more certain to ensure determined exertion, than the knowledge that searching examinations are to be the tests of success.

The percentage of rejections in the Medical Department of the University of Louisiana at its latest examination fell considerably below that of the College of Physicians and Surgeons, but it was larger than upon former years, and sufficiently great to impress its students with an additional realization of the fact that the faculty were still determined to make its diplomas objects worth a struggle to obtain, and permanently valuable possessions when once won.

CORONERS AND THEIR DUTIES.

"In several cases of sudden death recently, where a physician had been summoned in attendance, sometimes arriving after death and sometimes a few moments previous, certificates of burial were issued, and although really cases for the coroner, his services were dispensed with by the certificates.

"To obviate this Dr. Beard yesterday addressed the following communication to Chief of Police Boylan:

"NEW ORLEANS, June 17, 1881.

Thomas N. Boylan, Esq., Chief of Police:

Dear Sir—I would most respectfully state that it has come to my knowledge that several physicians have given certificates of burial in cases of sudden death, without law or authority for so doing. I would request that you instruct the commanders of the different precincts to investigate all such cases and when there is a question of doubt to report the same in order that the matter may be properly investigated.

Yours, respectfully,
J. C. BEARD, Coroner.

"This letter had the effect of evoking the following order:

"To the Precinct Commanders:

You are instructed that, from and after this date, in all cases of sudden death, you are to find out if the deceased had the attention of a physician for at least twenty-four hours before the death. If not, the case must be reported to the Coroner, so that the proper legal certificate may be made."
—N. O. *Picayune.*

"By order of the Chief:
C. MACMURDO, Private Secretary."

The above is a report of the official correspondence between the present Coroner and the police department. The order issued by the Chief of Police is an important one. Whether he has exceeded the authority conferred upon him as an official is a question we will not attempt to decide. We propose to say nothing beyond making a few remarks of criticism upon the policy and wording of the order.

In the first place, we will assume that the Chief of Police sought, by issuing this order, to aid the Coroner in the discharge of his duties, by definitely declaring what cases of sudden death are properly within the scope of his jurisdiction and inquest.

We ought, in the second place, to assume that the Chief of Police was mindful of the fact that complaints of the "mercenary character" of the office, and of the "great evil of too much inquiry," go back as far as Coke and Blackstone in English law. We ought further to assume that he did not intend to make coroners' inquests compulsory, except in such cases as are indicated in the State enactments relating to coroners, as follows:

"SEC. 6. That 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 violence, then, and not otherwise, it shall be his duty forthwith to proceed and take inquest of said death."

Section 4 seems, indeed, to afford even more explicit evidence that the coroner's duties only relate to cases where violence is suspected as a cause of death. It reads as follows: "That it shall be his duty, on being informed of the violent death of any person within his parish, the cause of which is unknown, immediately to proceed and 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."

It is manifest, therefore, that the statutes of Louisiana limit coroners' inquests to cases of death where suspicions of violent causes exist, or are alleged.

In many cases of sudden death, or of death from chronic affections, medical science may receive valuable contributions from a thoroughly qualified medical person acting as coroner. It is, therefore, the policy of our profession to place as few restrictions as possible upon the character of cases to be investigated. We are, however, well persuaded that the order of the Chief of Police should be modified, so as to exclude all cases in which reputable physicians are willing to declare that death was produced by natural causes.

It would be monstrous to order coroner's inquests in all cases of sudden death unattended by physicians for as long as twenty-four hours prior to death. Cases of death from sunstroke, or from post-partum hemorrhage, or other child-birth accidents, may be seen in *articulo mortis*, or not until after death has occurred, and still the visiting physician be able to state the cause of death in each.

Again, it has occurred to the writer to have under observation cases of aneurism, or heart disease, in which sudden

death and the mode of death were so well anticipated and understood, that he was willing to make himself responsible for the proper diagnosis upon the death certificates.

It is the duty of medical practitioners to protect the families under their charge from unnecessary inquests, or visitations by the coroner. This can be done without any antagonism towards the aims of justice, and without violating conclusions to be derived from the mortality reports of this city or elsewhere. The truth is that, in so far as the great mass of coroner's reports in this country are concerned, we can venture to affirm that they contain as many errors in respect to causes of death, as are to be found in an equal number of instances of death with causes collected through other sources.

LECTURES UPON HYGIENE IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF LOUISIANA.

The faculty of this institution has considered it proper to add to its curriculum lectures upon Hygiene. These will be delivered by Professor Elliott, who will spare no pains to make the course instructive and useful. The lecture cards will indicate the hours, and those who may be specially interested in this study will have opportunity to attend.

NEW BOOKS PROMISED AND IN HAND.

Lea & Son will soon issue a new edition of Holmes' Surgery, thoroughly revised and re-written by Dr. John H. Packard, of Philadelphia. Specimens of the text and illustrations have been sent us, and the medical public can be assured that they will not be disappointed in any large expectations they may entertain of the value of the work. Armand Hawkins, 196½ Canal street, is the Southern agent for this work.

D. Appleton & Co. have issued a new edition of Niemeyer's Practice of Medicine, translated from the eighth German edition by George H. Humphreys, M. D., and Charles E. Hackley, M. D., New York, 1881. The work is in two octavo volumes, well executed. Its merits as a text book on medicine are well understood.

The Principles of Myodynamics, is the title of a little book written by J. S. Wight, M. D., Professor of Surgery in Long Island College Hospital. The author claims that great advantages are to be obtained in the treatment of fractures by a knowledge of the lessons taught in this book.

Scheffer's preparations of pepsin have given good results in our hands. A prescription very applicable in cases of atonic dyspepsia is as follows:

℞	Sacch. pepsin.....	℈v.
	Hydr. chlor. acid. dil.	
	Tinct. nuc. vom. aa	℥ii.
	Syrup aur. cor.....	℥iv.
	Infus. gentian.....	ℨv.

M. Ft. sol. S.; table-spoonful in water twice or thrice daily, after meals.—[Editor.]

EDITORIAL CORRESPONDENCE.

Oaxaca, Mexico, April 22nd, 1881.

Dr. Stanford E. Chaille:

Dear Doctor—In order to prosecute certain inquiries in regard to the climate of this place, it became necessary to reduce the records of temperature from "centigrade" to "Fahrenheit," and to facilitate this I prepared a table comparing the former with the latter. As it was little trouble, I also added "Reaumur." As I have never seen a table reducing Fahrenheit and Reaumur" to 10ths of a degree "centigrade," I send you a copy of the one I made. You may have such a one; if you have, this one may be of service to some friend.

I am delighted with the climate of this place. The temperature is pleasant, the air pure and the range of temperature surprisingly small. From records taken at the State University, I have made tables, from which I extract some of the principal data. I wish I had the records of New Orleans to compare with the same time.

Should Dr. Richardson be in the city, I think the accompanying table from the records of Oaxaca will interest him, as he has visited this place.

I am certain my wife's health is improving, though the

change for the better is not very marked. I am fattening, and will return to New Orleans much improved in health.

With kind regards,

I am truly,

WATKINS.

METEOROLOGICAL OBSERVATIONS.—OAXACA, MEXICO.

Altitude 5046 feet.

MONTHS.	1879.				1880.			
	Lowest Temperature Observed.	Highest Temperature Observed.	Range of Temperature.	Rain fall, Inches.	Lowest Temperature Observed.	Highest Temperature Observed.	Range of Temperature.	Rain fall, Inches.
January	43 1	70.6	27 5	.00	46.7	70.8	24.1	.00
February	44.9	71.6	26 7	.98	49.1	75.5	26 4	.00
March	45.5	69.8	24.3	.00	56.1	77.7	21.6	.39
April	58.1	79.3	21.2	.55	56.3	79.6	23.3	1.02
May	58.1	79.6	21.5	2.54	60.4	78.8	18.4	3.99
June	59.7	76.9	17.2	6.05	61.1	77.9	16.8	5.66
July	59.3	74.6	15.3	5.48	59.9	76.5	16.6	3.29
August	63.5	76.1	12.6	13 31	60.2	76.7	16.5	5.97
September	60.8	76.7	15.9	2.33	60 2	75.2	15.0	4.82
October	53.6	74.3	20.7	2.77	57.5	75 5	18.0	1.20
November	45.6	74.3	28 7	.16	52.8	75.5	22.7	00
December	45.5	69 8	24.3	.00	48.7	72.5	23.8	.51
Year	43.1	79.6	36.5	34.17	46.7	79.6	32.9	26.85

1879.

Severe shock of earthquake felt.....August 6th.

" " " " .....August 13th.

" " " " .....November 7th.

1880.

Severe skock of earthquake felt..... October 15th.

LACTOPEPTINE.

As this is the season of the year when troubles of the alimentary canal are most prevalent among young children, we deem it opportune to suggest the advantage of aiding the natural digestive powers of the little weaklings. The lactopeptine preparations (so-called) are designed to fulfill this purpose, and in numerous instances they have been found beneficial. Any of our readers who desire more particular information on this subject, will find in our advertising pages the formula of

a preparation offered to the profession by the New York Pharmacal Association. The formula itself is commendable, as well calculated to meet the indications, and the preparation has the highest praise of those who have tried it.

SEWING MACHINES AND DOCTORS.

Two ladies of New Orleans met at the Spanish Fort a few days since, when the following dialogue occurred:

Mrs. H. "Oh, is not this hot weather dreadful? and it is making so many people sick."

Mrs. E. "Yes, I am out here seeking relief from the terrible heat of the city, but as to sickness, I have a doctor in whom I put so much trust, that when he is in the city I feel that I and my family are safe."

Mrs. H. "Why that is just the way I always feel about my doctor. Who is yours?"

Mrs. E. "Doctor ———."

Mrs. H. "Why he is my doctor, too?"

Mrs. E. "Now, is not that nice? I feel like you and I had the same sewing machine."

A TYPOGRAPHICAL ERROR

Of serious import in the June number has been noted by the writer of the article on Iodoform. On page 1154 the prescrip- should read: ℞. Iodoform 3i.; vaseline ʒi. M.; instead of Iodoform ʒi.

Reviews and Book-Notices.

The Diseases of Children; a Practical and Systematic Work for Practitioners and Students. By William Henry Day, M. D., Author of Headaches: their Cause, Nature and Treatment, Member of the Royal Col. of Phys. of London, Phys. to the Samaritan Hosp. for Women and Children. Second edition. Re-written and much enlarged 8 vo. Pp. 752. Philadelphia: Presley Blakiston. 1881 .[Sold by Armand Hawkins].

The author remarks in his preface, "This volume is the outcome of private and hospital practice, extending over a lengthened period. My aim has been to make the work useful, and

to rely on clinical experience rather than on theories; which, even when proved, cannot always be brought to bear on points of practical interest."

Like most works on diseases of children, this is confined to internal maladies; other sources of information must be sought for their surgical ailments.

In the second chapter the author speaks highly of the value of milk for the nourishment of sick children, and takes occasion to mention the advantages of good condensed milk over the ordinary fresh cow's milk. The principal ones are the destruction of whatever germs might be in the milk by the heat used in condensation, and its freedom from fermentation. Besides, foul or spoiled milk cannot be converted into an acceptable grade of condensed milk. This reasoning is quite in accordance with experience in rearing children by hand and in the treatment of sick children.

The subject of tuberculosis is discussed at length, and the views of the most prominent pathologists of the day freely adduced. Here, as elsewhere, the author displays his preference for allowing the reader to exercise his own judgment, from evidence afforded, to the dogmatic enunciation of his own opinions. We, therefore, should conclude, from the experiments and observations brought to notice, that tuberculosis is not specifically infectious, inasmuch as it may be developed by the local irritation of various kinds of non-specific matter; also that heredity plays an important part in its genesis and development.

By contrast, we note with some surprise the ignoring of the strumous or scrofulous diathesis, except incidentally, in connection with diseases plainly dependant upon it.

Dr. Day adopts the view of those who regard true croup as a distinct disease from diphtheria, and in this opinion he is more positive than is his general habit.

Pneumonia he divides, as usual, into two varieties, croupous and catarrhal, or lobar and lobular, accordingly as we make the distinction pathological or anatomical. He admits the existence of the former variety as much more frequent than do most writers; but does not recognize it as a general or specific disease, according to the growing fashion of the medical

writers of the day. We are, therefore, not surprised to find that he adheres to some of the old antiphlogistic features of practice, such as blood-letting and the exhibition of antimony and mercury.

The volume is well arranged for easy reference, having table of contents, index and copious heading of topics following the title of each chapter. About a hundred formulas are collected at the end from those found in foot-notes through the volume. On the whole, we think that Dr. Day has given us a useful and acceptable book. S. S. H.

An Introduction to Pathology and Morbid Anatomy—By T. Henry Green, M.D., London, F. R. C. P., London, Physician to Charing Cross Hospital, and Lecturer on Pathology and Morbid Anatomy at Charing Cross Hospital Medical School, etc. Fourth American from the fifth revised and enlarged English edition. With 138 fine engravings. 8vo. Pp. 347. Philadelphia: Henry C. Lea's Son & Co. 1881. [Sold by Armand Hawkins, 196½ Canal street.]

This work represents the most advanced ideas in pathology. Thus, croupous pneumonia is regarded as a general, or specific disease, with a local lesion. Pulmonary tuberculosis is represented as an infectious malady, from experiments made on animals, but he recognizes the fact "that any inflammatory product may, under certain circumstances, give rise to a tuberculous process, and that although caseation of the product is most frequent, it is not essential in order for it to constitute an infective focus." He does not attempt to explain fully why the inflammatory products often fail to become infective, but suggests that it may be due to variation in the constitutions of different subjects and to varying conditions. However, he regards the products of scrofulous inflammation as the most common cause of tuberculosis.

This, then, is a kind of infection which operates exceptionally rather than habitually, and by means of ordinary matter as well as its own products! Such irregular results might satisfy the patrons of a fortune teller, but ought not to satisfy scientific minds. Infection happens, just now, to be a fashionable theory in medicine, and it follows that book-makers work

it up for all that it is worth—may be more. We suspect that its credit is rather overdrawn already.

It is unnecessary to enter into a lengthened notice of a work so well and so favorably known to the profession. Though of quite moderate dimensions, the volume contains all that will be needed by general practitioners and students, for whose use it was intended rather than that of teachers and writers.

S. S. H.

Lectures on Diseases of the Nervous System, especially in Women. By S. Weir Mitchell, M. D., Physician to the Orthopædic Hospital and Infirmary for Diseases of the Nervous System, etc. With 5 plates. 12 mo. Pp 238. Philadelphia: H. C. Lea's Son & Co. 1881. [Sold by Armand Hawkins].

This volume consists of 12 clinical lectures, mostly on hysterical complaints, to which are added two on chorea and one on nervous exhaustion. The large experience of the author in nervous diseases, and his uncommon tact in their management, qualify him eminently to speak upon the subjects here introduced, which have proved extremely embarrassing to most practitioners. The book is exceedingly interesting and instructive, and precisely suited to the wants of general practitioners.

S. S. H.

The Metric System in Medicine; containing an account of the metric system of weights and measures, Americanized and simplified, a comprehensive dose-table and three hundred practical illustrations of metric prescription-writing, selected from receipts in actual use in hospital and out-door practice. By Oscar Oldberg, Phar. D., Med. Purveyor, U. S. Mar. Hosp. Service; Prof. Mat. Med., Nat. Col. Pharmacy, Washington, etc. 12 mo. Pp. 182. [Sold by Hawkins.]

This little book is intended both to advocate the metric system and to facilitate its adoption by general practitioners. That system has already gone into use in the Marine Hospital service, and it is but natural that the author should desire its extension, but he he is reasonable in his advocacy. Thus he recognizes the advantage of a volumetric dosage of liquids, and accordingly proposes the term fluigram, instead of cubic centimetre. Another convenience proposed by him is the ex.

pression of tenths, hundredths and thousandths of a gram and fluigram by the words "dime," "cent" and "mill." Thus, a *fluidime* represents one and one-half minims, while a *dime* stands for one and one-half grains.

Those who like ready-made prescriptions will appreciate the magazine of fixed ammunition thoughtfully prepared for their use, and most of them will not mind the disregard of grammatical forms in the medical Latin. He who has to swallow the physic certainly will not complain of the language of the prescription, any more than the corpse will complain of the funeral arrangements; though each is considered the most important actor in the drama.

S. S. H.

Hernia Strangulated and Reducible, with cure by subcutaneous injection, together with suggested and improved methods for Kelotomy. By Joseph H. Warren, M. D., member of American Medical Association, and delegate to foreign countries for 1880 and 1881; member of Mass. Medical Society, etc., etc. Illustrated. Published by Chas. N. Thomas, 215 Tremont st., Boston. Sampson, Low, Marston, Searle and Rivington, London.

This work is a defence by Dr. Warren of the charge made against Dr. George Heaton (who, though not the originator of the treatment, has extensively practiced it both in this country and Europe), of being either an impostor or a quack, because of his unwillingness to make public his peculiar method of treatment for the radical cure of Hernia. The following extract from a letter written by Dr. Heaton is a sufficient defense, and clearly vindicates him from the unjust accusation: "Suppose then, an operation against which scepticism from a high quarter has already directed its attack should be announced to the world, the apparent simplicity of which was its obvious characteristic. What, according to the experience and reason of every physician, would be its probable destiny? It would be undertaken by surgeons of every grade of capacity, by quacks of every grade of villany. With the more skillful and more experienced of the former it would probably be attended with success. With those of less experience and manual skill it would undoubtedly be condemned, not from its own deficiency,

but simply from their inability to perform it. The attempts of the latter class would in a majority of cases prove most unfortunate, if not fatal to those who might fall into their hands. All the evil results would be attributed not to their true cause, but unquestionably to the operation itself." So much for this able advocate of the theory. Taking up the subject where Dr. Heaton left off, and applying the same principles together with improvements suggested by Dr Heaton's failures, and his own experience, the author has satisfactorily, at least to himself, demonstrated the practicability of a radical cure of Hernia.

Chapter 1 is devoted to a thorough description of the kinds and frequency of Hernia, followed by the descriptive and surgical anatomy. After going over the entire list of methods which have been used for its treatment, he then enters into a minute description of the method he employs, which consists in a subcutaneous injection of the internal and external rings, together with the instruments and solutions employed. The histories of several cases are reported, in which the operation was successfully performed, not however to the exclusion of cases where failure was the result.

There is much comprised within the pages of the book which recommends it to the intelligent and enterprising surgeon. Our most eminent surgeons are extremely skeptical on this subject; their experience and observation are against it, therefore they are slow to accept any theory of a radical cure of this disease. But the question may be asked: Why may not modern surgery accomplish it? Every new theory finds strong opposition, and this will prove no exception; but future experiments must demonstrate that even this may be accomplished. According to Dr. Warren, the method of cure is simple, never in the hands of even an operator of ordinary skill attended with fatal results, and in nearly every case where there were no unfavorable conditions existing, the operation has been uniformly successful. The work fully deserves to be read by every member of the profession who is interested in a question which has almost by common consent been regarded as having been decided in the negative: "Is there a radical cure for Hernia?"

J. M. W.

Meteorological Summary—May, 1881.
Station—New Orleans.

Date.	Daily Mean Barometer.	Daily Mean Temp'ture.	Daily Mean Humidity.	Prevailing Direction of Wind.	Daily Rain-fall.
1	30.131	74.5	78.3	East.	.12
2	30.131	74.7	73.3	East.	.....
3	30.091	75.5	68.3	East.	.....
4	30.073	76.3	71.7	N. E.	.....
5	30.034	74.9	72.7	East.	.....
6	29 964	74.1	75.3	N. E.	.14
7	29.939	74.1	75.7	S. E.	.06
8	30.003	72.1	81.0	S. E.	1.20
9	30.055	75.6	82.0	S. E.	.....
10	30.095	75.4	83.7	East.	.....
11	30.163	75.5	75.3	East.	.....
12	30.203	76.9	72.3	East.	.....
13	30.150	79.1	68.3	East.	.....
14	30.027	81.5	57.7	West.	.....
15	29.921	82.7	60.7	West.	.....
16	29.895	82.2	57.7	N. W.	.....
17	29.920	80 2	45.3	N. W	.....
18	29.932	76.0	43.3	N. E.	.....
19	29.902	77 6	57.3	North	.....
20	29.893	76.3	64.3	East.	*
21	29.904	75.2	73.7	East.	.01
22	29.928	77.8	71.3	N. E.	.02
23	29.968	78.3	70.3	S. E.	.....
24	29.981	77.1	73.0	S. E.	1.43
25	29.989	75.3	81.0	East.	.05
26	30 021	77.1	72.3	East.	.....
27	29.972	79.0	71 0	S. E.	.....
28	29.861	80.2	57.3	S. E.	.....
29	29 806	79.4	70 3	S. E.	.....
30	29.787	77.1	68.0	S. W.	.....
31	29.836	75.6	78.7	South	.17
Sums	....	...	....	.....	total
Means	29.986	77.0	69.4	East.	3.20

General Items.

Highest Barometer, 30.248.
Lowest Barometer, 29.784.
Monthly Range of Barometer, .464.
Highest Temperature, 89° 6′ May 15th.
Lowest Temperature, 60° on 1st.
Monthly Range, 29° 6′.
Prevailing Direction of Wind, East.
Greatest Velocity of Wind, 24th, 24 miles S. E.
Total No. of miles 4426.
Greatest daily range of temperature, 1st, 23° 8′.
Least daily range of temperature, 8th, 10°.
Number of Clear Days, 16.
Number of Fair Days, 10.
Number of Cloudy days, 5.
No. of days on which rain fell, 10.

COMPARATIVE TEMPERATURE.

1871.....	1877..... 73°.5
1872.....	1878..... 75°.5
1873.....73°.7	1879..... 76°.5
1874.....75°.66	1880..... 76°.6
1875..... 76°.2	1881..... —°.—
1876..... 74°.76	

COMPARATIVE PRECIPITATIONS.

1871.....inches.	1876: 7.10 inches
1872..... "	1877: 1.42 "
1873.18.68 "	1878: 8.11 "
1874. .22 "	1879: 4.63 "
1875..2.53 "	1880: 6.58 "

* Too small to measure.

L. DUNNE
Sergeant Signal Service, U. S. A.

Mortality in New Orleans from May 14th, 1881, to June 11th, 1881, inclusive.

Week Ending.	Yellow Fever.	Malarial Fever.	Consumption.	Small-pox.	Pneumonia.	Total Mortality.
April 21	0	3	21	0	6	157
April 28	0	2	24	0	2	165
May 4	0	5	15	0	6	168
May 11	0	5	9	0	4	170
Total....	0	15	69	0	18	660

NEW ORLEANS
MEDICAL AND SURGICAL JOURNAL.

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ORIGINAL COMMUNICATIONS.

On Color-Blindness and the Development of the Color-Sense.

BY DR. PAUL VON SEYDEWITZ,

Formerly Senior Physician to the East London Hospital for Sick Children and Dispensary for Women, London, England.

The question of color-blindness is by no means a new one. On the contrary, we may say, it is an old question, so far as the practical results are involved.

There are a good many people who confound certain colors, which to the majority of men are perfectly distinct, and the number of those who are unable to perceive certain colors at all is not small either.

This deviation of the optical sense has been observed, among others, by an English physician, Dr. Dalton, upon himself. He modestly called it "Daltonism," a designation which a portion of the French medical profession only too readily adopted; though the affection was known long ago by German, English and American Scientists, under the name of "color-blindness," or that somewhat barbarous one *dyschromatopsia*, for the word *dyschromatopseudopsia* for semi-color-blindness, or the confounding of one color with another, directly deriving from it, is quite as barbarous to our ear, if not even more so.

Be this as it may, we must object to the term "Daltonism"

on two grounds: first, because the precedence of the discovery is usurped, and secondly, the word color-blindness, or semi-color-blindness expressing satisfactorily the idea which is meant to be conveyed to the mind of the reader, is far preferable. If foreign and technical terms must be used, why not use the above quoted barbarous word, which to the scholar needs no further explanation, its meaning being clear from the etymology of the word itself.

We shall, in pursuance of our article, deal at length with the development of the color-sense, and now only state, that a French doctor—Favre, of Lyons, has made elaborate researches on the subject, and devoted a good deal of his time to show that more than ten per cent., i. e., one person out of ten, of those *he* examined, were color-blind and totally unfit to distinguish exactly one or more of the five elementary colors. Severe *dyschromatopsia*, or complete color-blindness, figures for *two*, the remainder for *eight*, in this percentage, i. e., belongs to the semi-color blind or those affected with *dyschromatopseudopsia*, or erroneous view of colors.

This deviation of the optical nerve interests public health, hence public sanitary science; also commerce and industry, and, among the public administrations, chiefly the signal service, railroad and telegraph companies, the postal service, the army and navy, etc., in short, the public at large. It is obvious that the latter must take a lively interest whether, for instance, a pilot, to whose care the welfare of a ship's crew and passengers is intrusted, holds his certificate of aptitude by full right or not, i. e., whether he possesses, besides the required degree of theoretical and practical knowledge, also a normal eye-sight, without which both must prove fallacious.

Finally, this deviation of the optical nerve interests even justice, as it may, ought and must influence judicial decisions in many cases where a tribunal has to pronounce upon the alleged guilt of a pilot, for instance, by whom a maratime disaster has occurred, and who might have mistaken one color for another, or not even have seen the signal at all, through the insufficiency of his organ of vision, not properly tested

when he passed his examination before the marine authorities in order to obtain his certificate.

Dr. Favre has compiled the cases of color-blindness which were proved before the French tribunals, because they had led to angry discussions, terminating in bloody brawls amongst vulgar people, or to fatal errors with fatal consequences in mistaken railroad or naval signals, and so on. He has also gathered cases of color-blindness amongst teachers and school children, amongst post-officials, where this affection leads to damaging errors, when the color and hence the value of post-age-stamps had been mistaken, and says that the errors are of so very frequent occurrence that the French authorities have thought fit to advise the increase of the diameter of the figures printed on the postage stamps.

A memoir of Dr. Favre on the whole subject was last year put before the Academy of Medicine at Paris, and ordered to be examined by a special committee and to be reported upon. We lack information whether this report has already been made and published, but we hope that the committee has recommended, or will strongly recommend, that in all public schools the pupils' eyes should be reliably examined as to a possible defect of vision in this direction, and, where the case permits, the eyes of those children be carefully educated, in order to bring the defect to the normal standard of healthy usefulness.

Of course we do not refer to those cases where the affection is constitutional, or rather pathological, as, for instance, in the so called *muscae volitantes* or motes, called by the French authors *mouches volantes*, and by the German authors *krankhaftes Mücken-sehen*, which are structures suspended in the vitreous chamber and described by the patients "as transparent or slightly yellowish, or translucent little circles with clear centres, or as filaments or granules, or as strings of globules of varying number, twisting about and floating at a certain distance in front of the eye."* No kind of treatment will or can remove them completely, though their number may be reduced, so as to ren-

* C. Bader's text book on the natural and morbid changes of the human eye. Gr. 8 vo. London (Trubner), 1868, page 326.

der them hardly perceptible, if the patient takes much out-door exercise, abstains from close work, especially at night, and avoids whatever may be weakening. This affection is, happily, rarely met among school children, it being almost entirely confined to the adult age, as it is caused by a slow formation of opacities in the vitreous chamber of the eye.

We hope further that the examining committee has insisted or will insist upon the necessity that everywhere by public administrations of any kind the examinations of colors be generalized, especially with regard to candidates for public offices, railway employees, telegraph operators, pilots and so on.

As we have said, we lack information whether and in what manner the Parisian committee chosen by the Academy of Medicine have proceeded, but we know further, that at the recent international medical congress at Milan the subject of color-blindness was on the programme, and that this important subject, so much fraught with evil of all sorts to mankind (when public servants are suffering from it), had found there competent men to discuss the question ably and extensively; whether fruitfully too, the future must teach.

If one of the great European powers, or the U. S. government, begins to grapple with the question in earnest, the others will soon follow, and if not of their own accord, public opinion will compel them to do so. What hitherto has been done (the test, for instance, with colored wool thread, concerning pilots), has proven to be almost worthless, at all events wholly inadequate.

We go even a step farther, and anticipate that the time is not distant, when legislatures at home and abroad will frame such laws as to hold all color-blind people directly responsible for every error they commit (as public servants), in order to compel them to seek for competent advice as to their state of vision, and at the same time the companies employing such men. Then, indeed, the public at large might be satisfied that their servants would be at the height of their position and duties, as far as their eye-sight is concerned, and we shall be spared the sad news of disasters at sea, or on *terra firma*,

brought about by a color-blind pilot, engineer, switch-man, etc., confounding signals.

We shall now enter on the discussion of the subject before us.

In the observation of the perception of our senses, we have a very curious example of the gradual development and perfection from the more simple forms to the higher and more delicate ones; for our senses have, evidently, only after a long education and a development spreading over many ages, attained their present exactness and minuteness of observation and distinction. This assertion seemed, until recently, especially valid with regard to the perception of color, or, to be more exact, to the perception of the different colors; just as now primitive peoples, as well as the so-called lower and uncultivated classes of society in civilized nations, content themselves with the distinction of what are called the prime colors, lacking altogether perception and denomination for their finer gradation. It was said, on good authority, that we encounter in the ancient nations of culture, whom the Germans comprise under the name of "Kulturvölker," such a manifest poverty of designation of color, that we could fairly conclude that with these peoples vision was at so low a point of development, that it only permitted them the distinction of a few bright colors, sharply contrasted against each other.

Those authors found the proof of this conclusion in the oldest writings, handed down to posterity from ancient time. So, for instance, it was asserted that the songs of the *Rig-veda* speak of three colors only, viz., black, red and yellow or gold-color, whilst nowhere the blue and green are mentioned, though the most numerous descriptions of Heaven and Earth, and the productions of the latter, occur in these songs. Likewise the blue color, it was said, is nowhere mentioned in the *Zend-avesta*, in the books of the Parsees, in the Bible or in the songs of Homer, though all contain, as it is well known, numerous references to and descriptions of Heaven and its magnificence. It is true, Homer had at his command a far greater number of names for the different colors than we encounter in the old Indian poetry, but, it was said, Homer's application of these names to the

different objects does not always convey to our mind a clear idea which color really was meant by this or that word which he uses; and sometimes he leaves us completely in the dark as to his meaning.

This uncertainty concerning Homer's definition and determination, or rather denomination, of the colors, induced the well-known British statesman, scholar, enquirer and searcher, Gladstone, as early as 1858, to subject Homer's color-denomination to a close and minute examination; and the result of that examination was the well founded opinion that Homer's designations of colors exhibit many contradictions, and that these contradictions chiefly occur in the choice of names for colors which we designate as green and red. Gladstone's later provings, in an English review, "Nature," induced at once another enquirer and searcher of the name of William Pole, who *is* color-blind, to make a still more close and minute examination of Homer's color-expression; and after a long investigation of the matter, Pole formed his opinion and declared that the songs of Homer must have had for their author a man afflicted, like himself, with color-blindness.

As in these immortal songs of Homer frequently objects of nature are described by their color, and as these objects exist still in the same coloration as in the time of Homer, the possibility of a comparison was afforded; and Pole was able to judge whether Homer (accepting the theory, *i. e.* admitting the hypothesis as being true, of Homer's color-blindness to the same degree as that of Pole) was consequent and correct in depicting the colors as he did. Furthermore Pole was able to make use of the existence of two distinct groups of denominations, which in Homer are kept distinctly separate, and the notions of which are never intermixed. These are:

For the group of the perception of the yellow color: *Xanthos*, *Erythros*, *Phoinix*, *Rhodeios*, *Chloros*, *Kyaneous* and perhaps Oinops;

For the group of the perception of the blue color: *Porphyreos and Ioeides.*

For neutral perceptions (not taking into account the words *Leukos* and *Melos*, with regard to which the perception or sen-

sation of the color images thereto appertaining is perfectly normal in Homer) the word *Polios* is used, which is of great importance for the argumentation of Pole.

Indeed, from his point of view, as a color-blind man, he succeeds in reconciling the apparent contradictions denounced by Gladstone, of which Homer seems to be guilty, when he gives the same color-description to two different objects, which for those whose vision is normal are quite differently colored. Pole argues that, to the color-blind, surely enough, those different colors present themselves under the same shading as described in the songs of Homer.

Let us take from Pole's argumentation some examples, in order to show that his hypothesis (for it cannot be considered anything else *as yet*, especially with regard to later researches in another direction, as we shall see hereafter) does by no means seem to lack a well-grounded basis.

The word "erythros" is, we may say, the most usual denomination in Greek for *red*. Gladstone expressed his astonishment that Homer seemed not even to have a clear idea of the red color, nay, even sometimes labored under an obvious misconception of that color, because of his designating with the word *red* the color of *nectar*, *copper*, *blood*, and most frequently that of *wine*, whose shading was only approximately red, being of a darker hue or shade than the bright color known to mankind under the name of *red*.

Now, this inconsistency vanishes, when we admit that Homer, in his quality as a color-blind man, could not have a correct conception of red, but perceived in the above named objects only the different modifications of a color accessible to his senses, i. e., the *yellow*. Blood shows different shading according to its quality. *Arterial* blood, to which fresh oxygen is conveyed, appears to the color-blind yellowish (and this too is in accordance with the meaning of Pole, for the peroxyd of iron, by which, as it is said, arterial blood is chiefly influenced, is decidedly yellow), while in *venous* blood the *yellow* disappears, and its place is taken by the *blue*, just as

venous blood offers also to the normal eye a great difference in color from arterial blood. Accordingly the word "erythros" in Homer would have to be accepted only as a denomination of color with regard to *arterial* blood.

In the same manner the word "phoinix," which Homer very frequently uses in denominating the color of the most dissimilar objects, explains itself. As designating the blood-color, it seems to be used synonymously with "erythros." But it designates also the color of a horse (which was all over "*phoinix*," with the exception of a white spot on the forehead)—of the back of snakes and dragons—of the skin of a lion—and in one and the same composition in the description of the snake, the word *phoinix* is used as a term of comparison, and is applied as well to the snake as to the *rain-bow*, with reference to the color of these so very different things.

All this points to the fact, that in all these cases there is only a question in color-blind men as to the sensation of *yellow* color shadings or blendings; in other words, where the normal eye perceives the different colors these objects really possess, the color-blind eye only sees the *yellow* color in its various shadings and blendings.

When the word "phoinix" (Odyss. VI, 163,) is made to serve as describing the palm-tree, and at the same time is used, as Gladstone presumes, for the color of that tree, it affords, so it would seem, one of the strongest proofs of Homer's color-blindness, for the confounding of *red* and *green* (which to those who have normal eyes is perfectly inconceivable) forms just one of the surest symptoms of color-blindness.

Pole declares the application of the word "phoinix" to the leaves of the palm-tree to be quite as justifiable, as in the application of it to a chestnut-colored horse, or to the skin of a lion, because these objects offer to him (Pole) only different gradations and modifications of the *yellow*.

Rose-red appears to the color-blind man like *pale-gray*, whilst a *darker rose* takes a more *yellowish* tint, and a *crimson* one a *bluish* tint.

No wonder, therefore, that to Pole there is nothing strange

in Homer's application of the word "rhodoeides" (ῥοδοειδής, rosy) to the color of the *olive-oil.*

Exceedingly difficult is the explanation of the word *kyanos* or *kyaneos.* It is generally translated as "dark-blue," which, to be sure, is in full accordance with the later comprehension of the word. If we accept this, we should hardly be permitted to place the work "kyaneos" in the group of the foregoing words, which comprise all those which designate a sensation of color *opposed* to that which is produced by the *blue* color.

Gladstone, however, after considerable hesitation, reflection and consideration, came to the conclusion that "kyaneos" refers in Homer rather to the *bronze color,* and at all events designates a very dark shading. For *blue* has Homer's "hyakinthinos," which occurs more rarely, and "ioeides," said of violets, of the sea, of steel; "iodnephes" (νοφος, dark) dark-violet-blue, designates *dyed wool* (Od. IV, 135) etc., as we shall see more amply when we speak of the second group. Pole, too, joins in this fascinating view—fascinating, because of its doing away with so many difficulties. To Pole, personally, the bronze-color gives the impression of a very dark color, almost black, but there is still a glimmer of yellow-brown about it.

The application of the word "Kyaneos" in Homer does not contradict this, even when he applies that term to the *eye-brow,* —the human hair,—dark clouds,—mourning dresses,—or the sea-sand when just freed from the retiring water, etc.

One of the most surprising facts is, that reference to a color so frequently occuring as the *green* color, is not to be encountered a single time in all the songs of Homer; for the word "chloros," which is used a couple of times in the signification of *green,* indicates, as Gladstone justly remarks, rather the absence than the presence of any definite color.

Now, we know that of all colors the green color becomes especially the stumbling block of the color-blind man, for all its different shadings appear to him as ever so many modifications of *yellow.*

Pole hit the correct meaning of the green color, when he described an object as being of a green color because it appeared

to him as being of *pale yellow* color, or, so to say, as being of a "washed out" yellow shade.

After this it no longer seems so very odd, when we find Homer characterizing with the word "chloros" a pale face—honey—clubs made of olive-tree wood—and even the nightingale, the plumage of which bird he depicts as *yellow-brown*, *olive-colored* and of an *ashy-gray* color.

Let us now proceed to the second group. Pole elucidates at first the idea of the expression "porphyreos" (generally translated "purple,") which appears most frequently in Homer in all its combinations and in manifold relations.

Gladstone meets with considerable difficulties, when he tries to define and to explain what Homer meant by the term "porphyreos," and he dwells at length upon the obvious anomalies this word shows in its different applications as used by the Greek poet. Finally Gladstone declares that Homer classes three different and very distinct colors, viz: *red*, *purple* and *gray*, in what he expresses by the term "porphyreos."

The second color which is perceivable to a color-blind man is the *blue* color, and a number of different shadings (which contain blue) appear to the color-blind only as ever so many shadings or modifications of *blue*. So, for instance, some crimson-red objects, which have a tendency to violet-blue, appear to them *blue*, although with a deeper shade, viz: dark-blue. Likewise the purple color and the violet color, and all that appears to the normal eye as *blue-green*, appear to them as decidedly *blue*. Also many *dark-gray* shadings contain for these men the blue color, or at least make upon them an impression as though they were in reality *blue*.

If we now presume that the old Greek bard was *dichromatic* (i. e., that he was physically unable to distinguish or to perceive more than two colors), then *purple*, necessarily, would have impressed him as one of the different modifications of *blue*. Under this supposition, viz: that Homer was dichromatic, his application of the term and name of the blue color, in his own manner, would again appear as perfectly justified. In his songs different parts of dress and household furniture

which we know were of very different colors indeed, but which could all produce the sensation of blue to a color-blind man, are called by him "purple;" also the *rainbow*, which has to color-blind people two colors only, viz: *yellow* and *blue*, and which, therefore, Homer, with equal right, could designate by this or that expression; further, *blood* (here is evidently meant the blue glittering *venous* blood); further, *dark clouds*, the *waves* and the dark colored *sea*, etc.

The *violet color* (*ioeides*) belongs quite as certain to the second group, since the *red* color in the violet is not perceived by a color-blind man. To him the *blue* appears, though rather dark than bright-blue. Homer uses this word also to designate the color of the *sea* or that of *wool* (which, as Gladstone presumes, might indeed have been of a purple-dye) and finally thus designates "living sheep." Now in this application this term must, certainly, appear to us the least comprehensible, because the color of *black* sheep seems to resemble, even to color-blind people, the *brown* rather than the *blue* color. In Homer it is however used in the combination ἰοδνεφής, "iodnephes," and possibly may designate a sort of *deep-violet*, in which the blue is less striking.

Gladstone mentions, under the designations of color, one which is called by Pole *neutral*, because it does not convey to the eye of the color-blind man one of the only two perceivable colors, *yellow* and *blue*. This is the term "polios," commonly translated as *gray* and *whitish*. *Polios*, as used in Homer, is the color of the *human hair in old age*—also of *iron*—wolf's skin (in which case *gray* seems to be a very appropriate translation), and "polios" figures no less than twenty four times as an adjective of the *sea*. In the sense of *whitish* we may possibly apply it to the foam of the waves, but if it really signifies *gray*, then we should have in Homer's repeated application of it to the green sea another and striking proof of the color-blindness of the bard, to whom the grey and the green were one, i. e., to whom the *green* color presented itself exactly the same as the *gray*.

The following synoptical combination (into two groups) of different objects, which Homer describes by one and the same term of color, enables us to perceive that all these color-desig-

nations offer no contradiction whatever, provided we range them according to the only two color-sensations which the color-blind are able to perceive, since no term belonging to one group is used for the designation of an object belonging to the other groups, except in one single instance, and, to tell the truth, that instance is a very doubtful one.

First Group: Objects which appear to the color-blind either as *yellow* or as *dark yellow*.

Ξανθός—*Xanthos:* Human-hair—horse's-skin.

Ἐρυθρός—*Erythros:* Copper—wine—nectar—(arterial) blood.

Φοίνιξ—*Phoinix:* Arterial blood—horse's-skin—dragon or snake—rainbow—jackal—lion—cloaks and gowns—red ship's prow—palm-tree.

Ῥόδειος—*Rhodeios:* Roses—olive-oil.

Κυάνεος—Kyaneos: Brown—dark eye-brows, dark hairs—dark clouds—a dark horse—a mass of armed men—black mourning dresses—sea sand—the surge of the sea—red ship-parts—snakes.

Χλωρός—*Chloros:* A pale face—freshly cut branches—honey—olive tree bark—the nightingale.

Οἰνοψ—*Oinops:* Red wine—oxen—the sea in the dark.

Second Group: Objects which appear to the color-blind man as *blue* or *dark blue*.

Πορφύρεος—*Porphyreos:* Different articles of dress, as well as of household furniture—the rainbow—venous blood—a dark cloud—dark waves—death.

Ἰοειδής—*Ioeides:* Violets—the sea—iron—dark-dyed wool-dark sheep.

To these two principal groups we must, in order to complete the matter, add a third group, though it will contain one single term only, viz:

Third Group: Objects which call forth no distinct idea of color to a color-blind man, i. e., which present themselves to his eye as a *neutral* sensation of color only.

Πολιός—*Polios:* Human hair in advanced years of life—iron—wolf's skin—the sea.

If the explanation of Pole, although we may doubt it, proves ultimately to be the correct one, then there will arise in connection therewith some very interesting and highly important questions for solution by the student. He would then be compelled to inquire whether the deficiency in the vision-apparatus of the eye of Homer, which has led to such a peculiar application of the terms for color-sensations, was shared by the whole Greek nation at the remote time in which Homer's songs or hymns are supposed to have been written, or whether that deficiency was confined to the vision-apparatus of the eye of the author of these immortal songs only. If the latter view were proved to be the correct one, these provings would be of great importance in determining the *authorship* of the hymns, the question as to which has so long occupied the attention of the learned world.

These disputes, by-the-bye, are of old date and remount even to antiquity itself; for seven cities disputed betwixt themselves the honor of being the birth-place of Homer. These were: *Smyrna*, *Rhodes*, *Colophon*, *Salamis*, *Chios*, *Argos* and, last not least, *Athens* the capital.

If in these epics (for they are many, and almost every Canto is à new Epos) a decidedly personal peculiarity were to be found, whence we should have to determine on an *individual person*, why, then we should have in the above mentioned investigations the strongest proof that all songs or hymns attributed to Homer really proceeded from a single author, and the dispute about the birth-place would perhaps be easily and satisfactorily settled by new historical investigations, singularly simplified by the certainty that one single person only is in question. If, on the contrary, (as so many learned men firmly believe to be the case, even after the recent denegations made, as we shall see shortly, by competent men) in these songs the degree or stage of the development or evolution of a whole nation of the epoch presents itself, then the theory seems almost to be confirmed, that the color-sense amongst the old Greeks was only partly developed, and we are enabled at the same time to know and to recognize exactly the nature of that deficiency.

It stands to reason, that it would be equally interesting to the physiologist and to the oculist, and a great boon to both sciences (optics and physiology), if it were possible to prove beyond doubt that *dichromatism* is only a lower stage or degree of development of human vision, from which degree, in the course of some thousand years, the minute, exact and fine color-sense of the present time has developed itself. This once proved, another still more interesting question would arise, whether the present state of the vision-apparatus of man has already attained its highest perfection with regard to color-sensation, or whether (though in the far future) it would rise to a higher standard still.

Having before us a remarkable article on the subject of development of the color-sense (which appeared in the German Annual of Invention of 1880,* edited by Dr. H. Gretschel, Professor at the Royal Academy of Mines, of Freiberg, and by Dr. Wunder, Director of the State technical schools of Chemnitz), we have plausible grounds to refer to those questions, but we shall also put before our readers, in largely utilizing said article, what has been said to the contrary by competent men, among whom we name Dr. Hugo Magnus, of Breslau.

Lazarus Geiger (*died* 1870) was the first to take up the idea of Gladstone and to develop it further. Being a linguist and an etymologist of great repute, as well as a philologist, he explained his views (myself being present) in 1867, at Frankfort-on-the-Main, at the annual migratory meeting of German physicians and naturalists, and contended that in time of yore the human eye had been susceptible only for the perception of the black and red colors, and that susceptibility for the different colors of the spectrum has developed itself very gradually; that, for instance, orange was earlier distinguished than yellow, yellow earlier than green, etc. He based his opinion in this respect not only upon the scarcity and uncertainty of the

**Jahrbuch der Erfindungen* und Fortschritte auf den Gebieten der Physik und Chemie, der Technologie und Mechanik, der Astronomie und Meteorologie. Herausgegeben von Bergrath, Dr. H. Gretschel, Professor der Königlichen Bergakademie in Freiberg und Regierungsrath, Dr. G. Wunder, Director der Technischen Staatslehranstalten in Chemnitz. 16 Jahrgang. 12 mo. Leipzig. 1880.

distinction of colors, as found in Homer, and brought to light by Gladstone in 1858, but he thought he had found similar appearances in the most ancient literature of the Parsees and Indians: in the Zend-avesta and the Rig-veda. What struck him most in the Zend-avesta, which lays so much stress on improvements, concerning the vegetable kingdom, and speaks so frequently of trees, was, that nowhere mention is made of the green color, and he believed a still greater poverty of color was to be found in the Vedas, especially the Rig-veda, where the contrast is reduced to *black* and *red* only.*

Weise's train of thought in this respect is similar,† for granted that the Indo-germans originally distinguished between light and darkness only, with regard to names for light colors, white, red and yellow were already employed before the separation of the Indo-german languages, but green and blue only very much later, viz: not alone after the European languages had separated from the Asiatic, but after the South-European languages had separated also from the North-European. In the Iliad, says he, the word green is not mentioned; it can be traced with certainty only in the Homeric hymns; and with respect to the blue color, the Greek considered it a long time after the Homeric age as a mere shade of black. Besides, it is not mentioned throughout the Vedas, the Edda, the Koran and the Bible.

Weise's assertion, however, is liable to serious challenge, especially with regard to the Koran and the Bible, and also to the Vedas, and among these especially to the Yadshur-veda and the Sâma-veda, and even the Rig-veda itself, the oldest of all. We do not speak of the Atharva-veda, because we share the opinion that this part of the Vedas was far later collected than the three former. The terms used in the Bible and the Koran to designate the "shade of black," of which Weise speaks with reference to the ancient Greeks, and which, at all events, was a notable approach to the recognition of the blue color, are up to the present time, though somewhat obso-

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**Geiger.* Uber den Farbensiun im Altherthum (1867).

† "Die Farbenbezeichnungen der Indogermanen." In Bezzenberger's Beiträgen I. S. 273 (1878).

lete, still in use in the Hebrew and Arabian languages as synoymous with blue.

In the beginning of the year 1877, Dr. Hugo Magnus, of Breslau, published two papers on "the historical development of the sense of color," in which he chiefly undertook to give a more profound physiological basis to the views of Geiger and to bring them to an intimate connection with Darwinism. But at the same time appeared, in opposition to the hypothesis of Geiger, several articles in the Darwinist Journal "Kosmos,"* the author of which was Dr. Ernestus Krause, of Berlin. Krause showed that the color-sense appears already perceptibly developed in insects† and some of the vertebrate animals of the lowest order;‡ hence it cannot well be supposed that it should ever have been absent in man, even at the very lowest degree of his development. With regard to the particularities demonstrated by Gladstone, Geiger, Magnus and others, Krause finds a very plausible explanation, partly in the deficiency of the original vocabulary or stock of words, partly in the deficient interest in a very acute distinction between colors, and in several other circumstances. The habit or usage of certain colors, or shades of colors, has particularly developed itself in close connection with the improvement and perfection of the process of dyeing, and above all of the art of painting.

It is not to be wondered at that the views of Krause have met with pretty general approbation, and the hypothesis of the color-blindness of Homer, whom (always provided that a single bard has written those splendid epics) some believe to this very day having been totally blind, and the gradual development of the color-sense in man in historical time, as spoken of in Geiger's paper, have lost more and more of their former adherents.

We may mention amongst the more detailed treatises on the

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* Bd. I., pag. 264.

† For instance in bees, which have been tested in this respect with differently colored bee-hives of the same size, which were purposely changed from their usual place to another, and *vice versa*, but without inducing the returning bees to mistake them for their own.

‡ As to the vertebrate animals of a higher order, we have a striking example in the early Biblic time, when Jacob experimented with his and Laban's cattle. Vide: Genesis XXX, 32-42.

subject those of Grant Allen* and of Professor A. Marty, of Chemnitz.†

Most of the facts upon which the advocates of color-blindness in man in the remote ages of antiquity rely, are, first of all, far from being exact. So, for instance, it is not correct that in the Zend-avesta the green of the vegetable world is nowhere mentioned. In *Yashts* VII, 5, of the Zend-avesta, the moon has a surname, meaning "developing the green," and previous to that there is question of the green of the gold-colored trees.‡

The Rig-veda, too, speaks of a "green" tree (IX, 5, 10) and has a word for blue, "*nîla*," which, like the Greek *kyaneos* (dusk-colored or dark-blue) already very early is used to designate pure blue. Furthermore, we find throughout the whole antiquity in high esteem a stone, the deep blue color of which, according to Magnus and Geiger, approaches the extreme boundary of the development of color. It is the azur-stone, *lapis lazuli*, called by the Indians of old *Vaidûrya*, and in the Bible *Sapphire* (not to be confounded with the blue precious stone now-a-days known under that name) and to which, with exception of its color, no precious quality belong. With it the heavens are compared in the Bible, when (Exodus, XXIV, 10) it is said of Jehovah: "And there was under his feet, as it were, a paved work of a sapphire stone, and, as it were, the body of heaven in his clearness."

That the Greek of the earlier centuries were well able to distinguish the different colors is clearly proven, as Marty justly remarks, by the remains of their ancient paintings. So, for instance, we find in the oldest temples, reaching as far

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* The origin and development of the color-sense. London, 1879. Appeared in German under the title, "Der Farbensinn. Sein Ursprung und seine Entwickelung, mit einer Einleitung von Dr. Kranse, Leipzig, 1880."

† Die Frage nach der geschichtlichten Entwickelung des Farbensinns. Wien, 1879.

‡ This explains satisfactorily the following so much criticised two verses of Gœthe, who lets his Mephistopheles say, in the second act of the first part of Faust:

"*Grau, theurer Freund, ist alle Theorie,*
Und gruen, des Lebens goldner Baum."

(Gray, my dear friend, is all thy theory,
And green alone the golden tree of life.)

Doubtless Gœthe knew very well this passage of the Zend-avesta, and finding so venerable a precedent in the primeval literature of the ancient Persians, did not hesitate to speak of a *green* tree, being at the same time a *golden* one; the more so, as he lays these words in the mouth of Mephistopheles, the arch-plotter and the paradoxical sophist *par excellence*.

back as the limit of the sixth century B. C., single pieces of architecture painted with green leaves, and a blue background to the *relief*, and as ceiling-ornaments.

Besides, the Greeks were, in the blooming age of the Hellenic literature, well aware of the defects in the designation of colors by Homer and other old poets, as it appears from a passage of the poet *Ion*, whom Athenæos, in his "Banquet of the Scholars," (Deipnosophistae, lib. XIII, cap. 81,) has conserved.*

Ion depicts in that passage an evening which he passed with the poet *Sophocles* in the island of *Chios*. The latter, with regard to the blooming face of a boy who serves the wine, quotes the verse of *Phrynikos:*

"The light of love shines on the purple cheek!"

whereupon a pedantic grammarian remarks that "purple cheeks" would not be a boon to the boy. But Sophocles answers laughingly to that objection, and says: "If so, then Simonides should be forbidden to praise the *purple* mouth of a singing girl; Homer to speak of the *golden-haired* Apollo and the *rose-fingered* goddess, for, indeed, fingers having the color of a red rose would rather befit the hand of a red-dyer than that of a beautiful woman."

Seemingly rightly therefore, declares Marty, the facts of ancient literature have been interpreted as color-blindness, "partly as a consequence of the gradual improvement of the judgment in colors and the greater interest for exact designation, partly as the emanation of the laws of poetical diction, and finally, partly because they are rooted in a change of the color-sensation."

In other civilized nations we also find already in the earliest times distinction of colors, as for instance, Victor Strauss† has shown that in Chinese authorities, which partly belong to very remote periods, some of them reaching back to

*Robertson Smith draws attention to this passage in "Nature," XVII, p. 100.

†"Ueber die Bezeichnungen der Farben Blau und Grün im chinesischen Alterthume" in der Zeitschrift der deutschen morgenländischen Gesellschaft, Bd. xxxiii. (On the designation of the colors *blue* and *green* in Chinese antiquity." Review of the German-Oriental Association, vol. 33.)

1700 B. C., names occur for the green and blue colors, principally for the sky-blue of the heavens, which is called "the vaulted blue" ("das gewölbte Blau"); and likewise for the green of the leaves. According to Professor Duemichen, blue and green occur in the old Egyptian names for colors, and in the old Egyptian oil-paintings, which, according to Lepsius, reach as far back as the fourth millenium B. C. All colors are represented, and it is especially striking that, in these paintings, leaves and grass are always green, water blue or greenish, iron tools and implements blue, etc.

Finally, the results obtained by the investigation of the color-sense of the low civilized nations are likewise remarkable. Allen has made such investigations on a larger scale, but Dr. Magnus (the same we mentioned above), and Dr. Pechuel-Loesche, of Leipsic, have also investigated this subject in their own ingenious manner.

The intention of the latter two investigators was essentially directed towards determining the capacity of the color-sense in uncivilized tribes by direct tests; furthermore, they intended to collect the idiomatic designations in which the different manifestations of color-sense are expressed by these nations. For that purpose single questions (the answering of which was deemed requisite) were synoptically grouped on a query-sheet, which contained likewise a scale of the most important colors, as black, gray, white, red, orange, yellow, green, violet, brown, in order to render possible a direct test of the color-sense.

These query-sheets were sent in numerous copies to physicians, missionaries, transmarine commercial firms, etc., and all the answers had to be returned to the Museum for the Advancement of the Knowledge of Nations at Leipsic. From answers, of which those from the missionaries were particularly abundant, could be won valuable results, which Dr. Magnus has recently published in a pamphlet under the title: "On the Color-sense of Different Peoples Living in a State of Nature."*

*Magnus über den Farbensinn der Naturvölker. Jena: 1880.

In general, the extent of the color-sense is the same in the tested peoples living in a state of nature (barbarous and semi-barbarous) as in civilized nations. A complete physiological want of sensitiveness for one of the chief four colors, red, yellow, green, blue, could be authenticated at no tribe whatever. But the knowledge of these colors is by no means equally developed in all semi-barbarous peoples, living yet in a state of nature. Whilst several of them showed a great dexterity and facility not only in the knowledge of the discernment of the chief colors, but also in the discernment of less distinct shades, mixed-colors and transition-colors; others, on the contrary, proved to be little experienced in the distinction of the transition-colors; and again, there was in some of them, if not a real insensibility with regard to the chief colors, yet a clearly manifested dullness of sensibility.

That dullness, or *quasi* insensibility, is essentially the case with colors of a shorter wave-length: green and particularly blue. It is quite astonishing how little knowledge about these two colors there is in some tribes. This is especially the case in the tribes called *Irula*, *Badaga*, *Koda* and *Toda*, in the range of mountains of the *Nilagiri* in the southern part of East India, where the color-sense of the aborigines is almost only developed with regard to the red color.

About the inhabitants of the Loyalty-Islands, one of the query-sheets reports: "The aborigines of this island recognize and distinguish colors very well, but confound the names they attribute to them. The same individual calls green *violet*, evidently out of want of exercise in designating that color. But I never found that they confound black, white and red."

The different peoples of Africa afford numerous proofs of their finer development of sensitiveness for red and yellow in contrast with blue and green. The shepherd-people of the *Damara* or *Ovaherero*, on the west coast, know how to name the colors, so far as they refer to the color of the skin of cattle, sheep and goats, accurately; but for all other colors which are not beast-colors, especially green and blue, they are unable to designate them by distinct names of their own lan-

guage, but they can pretty well distinguish colors and use foreign terms, when necessary to designate them. However, as they do not care in the least to be very exact in their expressions, they frequently find a word of their own for the fawn-color or fallow-yellow of their cattle; also for green and even for blue. Most of these tribes have already come in some contact with civilization, but there is not a great difference with respect to color-sense to be found amongst those who are already somewhat civilized, and those who are yet totally uncivilized. The latter distinguish the colors too, but are unable to furnish names for green and blue, and find it difficult to distinguish them; therefore, when for two so distinct colors as green and blue the denominations are wanting, the reason why can certainly not lie in a too small plasticity of the language.

Likewise we find the color-sense and the language extraordinarily developed with regard to the beast-colors in many Caffre and Basuto tribes, and the Caffre language has, for instance, more than twenty-six different expressions for the coloring and coat of cattle; for blue and green, however, (though they are perfectly able to distinguish them one from another) they possess one and the same term. It seems that this is attributable to a certain indifference towards these two colors.

Also the *Tschi-Negroes*, on the Gold-coast, show with regard to all colors of a middle and shorter wave-length such an indifference, that the missionaries believed at first that they were unable to distinguish anything in the way of color except white, black and red. Mr. Christaller, a missionary, offered an explanation to the point, by saying that these poor negroes had indeed not much occasion to test their power of distinction, as the Gold-coast is really, with regard to its vegetation, very poor in colors. Mr. Christaller is not far from being right and, as we see, enters here, perhaps quite unconsciously, albeit a christian missionary, the domain of Darwinism.

Virchow has likewise remarked a certain inertia of reaction *(Reactionsträgheit)* against colors of middle and shorter wave-

length amongst the Nubians, who in Berlin and other greater cities of Germany exhibit themselves in shows, etc.

Magnus, on the contrary, asserts that in no case could any inertia of reaction against red be established.

Magnus lays down, as the principal result of his and Dr. Pechuel-Loesche's investigations, that the designation of colors is precise only in the domain of the long-undulating colors, i. e., those having a long wave-length, but that it loses its normal power of discernment *(feste Gestalt)*, and becomes uncertain and obstructed *(verschwommen)* in two-thirds of the tested tribes at the boundary between yellow and green. Very rarely their precise discrimination extends to green. In reversed order, it was *never* possible to authenticate a uniform nomenclature for green and blue, but occasionally one for red and yellow was discovered.

Magnus concedes emphatically that, after these investigations, the point upon which *Geiger's* argument, rests, namely, the complete and simultaneous conformity between color-sense and color-terminology, can no longer be maintained; in other words, through the above detailed investigations that proposition is demonstrated as being erroneous. The idiomatic color-terminology of a people, therefore, has no definite relation to the development of the color-sense. As Magnus, at first, sided with Geiger, this admission is of value.

It seems therefore conclusive, that the attempts to assign precise boundaries to the different degrees of development of the color-sense (the narrowness or wideness of which was only fixed by the epochs of the literature which the defective color-nomenclature was taken from) have miscarried altogether. Magnus, to be sure, does not yet wish to call in question the theory of the gradual development of color-sense, but he would like to take the proofs for its correctness rather from the domain of physiology, and we must avow that we share his opinion, for we too cannot help thinking the troglodytes, who had for comrade and room-mate the *ursus spelaeus*,* possessed but a very lowly developed color-sense.

* The antediluvian *ursus spelaeus*, or cave-bear, being extinct, can now only be traced by its bones, according to which he was a good deal larger than the brown bear of Europe *ursus arctos*, and a great deal larger than our American bear.

Reliable results of investigations in the physiological direction seem to us far more able to entitle us to the hope that medical science will gain its point and afterwards arrive at a sound prophylaxis, if not actual cure of color-blindness. We therefore urge opthalmologists to submit the subject anew to a careful study; and after having thoroughly sifted the ascertained facts, and critically reviewed the literature belonging to them, to set earnestly to work by experiments upon a pure physiological basis.

A Case of Morphia Habit of Twelve Years' Standing Treated by Sudden Deprivation.

By H. H. KANE, M. D., New York.

The following case is so instructive in many points, and so aptly illustrates the dangers that often attend the plan of treatment so strongly advocated by Levenstein, of Germany, that I give it with considerable fullness of detail. It might be said that, as I have treated but this one case by the plan of sudden deprivation, I am condemning the method upon very meagre grounds. This might be justly urged, were it not for the fact that the literature of the subject is filled with the history of precisely similar cases; cases that stamp the plan as cruel in the extreme, fatal in some instances, and prone to cause either temporary or permanent mental alienation. It is the more to be regarded with horror, as a plan can easily be pursued that offers perfect safety, but little suffering, and a prompt recovery.

In my last work on morphia, I adverted to this case in passing.* Since that time other cases, in two of which death occurred, have been brought to my notice. One case of death under this treatment is also reported† by Dr. August Loose,

*Drugs That Enslave. The Opium, Morphine and Chloral Habits. Phila. 1881.

†Niedersächsichen Aerzteoereinsbund. Dritte Hauptoersamsung. Bremen. June, 1878. P. 14.

of Bremen, as having occurred under the care of Dr. Fiedler. It occurred during one of the severe collapses that characterize this barbarous mode of procedure.

My own case reads as follows:

Mrs. B.—Married; æt. 38; weight 160 lbs.; stout: puffy face; pallid countenance; wandering eyes; conversation childish and silly. Has never had children, pupils contracted, bowels constipated, hæmorrhoids; commenced the use of morphia, by the mouth, through the advice of her physician some twelve years ago, for the insomnia accompanying uterine disease. Having experienced the pleasant effects of the drug, she continued its use regularly, gradually increasing from ½ gr. in the 24 hours to 16 grains. At the end of a year she ceased to menstruate, and all her uterine trouble left her. A leucorrhoeal discharge, that had been quite profuse, was entirely dried up.

For the succeeding four years she seemed to gain in health very materially, and then slowly began to run down. From this time up to the time that I saw her, her general health would at one time be excellent, at another time poor. She suffered from what she called "malarial fever," once in every two or three months. She would have the regular chill and fever once every three days, but no sweating. These attacks were usually relieved by quinine, and aggravated by morphine, which during their occurrence she took in less than her usual dose. She had never lived in a malarial region. The most decided effect of the drug was the production of extreme irritability of temper, at which times her husband was decidedly afraid of her. Her talk in the intervals was very silly and "gushing." She imagined that every man who looked at her was madly in love with her, and without any compunction at once proceeded to deepen the impression by smiling and smirking at him, and in many cases exposing her person to deepen the impression, although her conversation was very silly. When she was left to follow the bent of her own thoughts, if any one engaged her upon some topic of interest and importance, she would answer rationally and appear like an entirely different person. Her memory was usually

good. Her custom was to lie awake at night reading and eating sweetmeats, and sleep during the forenoon. She says that she was driven to this through her inability to sleep, despite the taking of large doses of morphine.

Before she began to use morphine, she was a very hard drinker, locking herself in her house and consuming large quantites of whiskey and brandy. After taking the morphine, she abandoned the liquor. She was a woman of fine social position, highly educated and married to a professional gentleman of good standing.

I was called to see her in February, 1880, by the husband, who wanted me to prescribe for her "malarial fever," from which she was then suffering. Seeing her, I felt positive that she was using morphine to excess, obtained some of her urine, detected the drug in it, accused her of the habit, and finally obtained a confession, with the proviso that I should not tell her husband.

I was, of course, obliged to tell him, and a more thoroughly surprised man I never saw. He knew absolutely nothing of his wife's habit, nor had any of the physicians who had attended her in the past ten years suspected what was at the bottom of her numerous ailments.

A very surprising fact was that, instead of a partial or complete loss of sexual power as is usual in these cases, this lady was affected in a directly opposite manner; both she and her husband testifying to the fact, when questioned, directly and indirectly.

She, consenting to submit herself to treatment, was at once deprived of her morphia, her husband acting as nurse. On the FIRST day she only complained of lightness of the head, slight nausea, and pains in the limbs, most severe in the calves of the legs. On the SECOND day she was very restless, yawned requently, sneezed, complained of intense pains in limbs. Would toss from side to side of the bed. Bowels moved four times, vomited twice. During a short absence from the room, bribed one of the servants to get her some morphine, but the use was detected and the drug taken from her. THIRD DAY. Passed a very restless night. About 1, A. M., seized with

paroxysms of violent sneezing, then vomiting and purging, and finally delirium. She cried out loudly, ran about the room, attempted to jump from the window, tried to strike the nurse, and, catching her pet dog by the hind leg, wrenched it violently, dislocating it. This state of frenzy lasted for about three hours, and in spite of large and frequently repeated doses of the bromides.

The following day she laid upon her back, semi-comatose, pupils dilated and irregular, tongue thickly coated, and dark brown, breath fœtid, sordes on mouth and teeth, saliva dribbling from her mouth and soaking the pillow case. Does not recognize anyone. Have to force her to take nourishment. Vomits over her night-gown and passes fæces in the bed. Pulse 164; Temp. 97° F. At 12:30, P. M. sank in collapse; face previously purple, became very pale, eyes sunken and glazed, cold perspiration on forehead. Pulse almost imperceptible. Breathing shallow and rapid. Injected ½ gr. morphia and 3ii whiskey hypodermically. Hot bottles to feet and epigastrium. Gradually recovered. Still comatose. Again at night, about 1, A. M. an attack of morphia delirium of an acute character developed, and the performance of the night before gone through with.

On the following day, Dr. G. H. Wynkoop saw her with me in consultation. Advised active stimulation and nutrient enemata. The vomiting and purging were severe and persisted, despite large doses of astringents and bismuth, preventing feeding by the mouth or stomach and necessitating the hypodermic injection of stimulants and beef tea.

For the next three weeks she lay in about this same condition, the nights being broken by one or two hours of wild delirium, and the days by spells of sudden and dangerous collapse. She gradually gained bodily strength, but it was over two months before she was able to lift a tumbler to her mouth. In one month she began to know her husband and friends, but was more or less violent at night. Both day and night, when falling to sleep, she would dream some horrible thing, and upon awakening would carry on the conversation and incidents of the dream. Delusions and hallucinations were frequent. Those

things that she saw would, after a moment's looking, gradually enlarge, developing monstrous proportions. Some fancy grass bunched above the mantel she was constantly mistaking for a little old woman with a red hood. About her she would tel the most ridiculous stories. One night she dreamed that she had a baby in bed with her and had flattened it by rolling upon it. For the succeeding week or ten days her entire mind was occupied with this one subject, and she was constantly asking advice of imaginary doctors and nurses, as to how best to hold this "pancaked baby" without breaking it. This mental condition persisted fully three months and led us, at one time, to despair of her ever regaining her mind. She did, however, come out of it finally, but with very irritable temper and some silly ideas occasionally cropping out. The pains in the limbs, which yielded temporarily to the Faradic current, persisted for at least two months. Another very troublesome thing was a conjestion of the whole pharynx and larynx, giving rise to "tickling in the throat," which led to terrific spasms of coughing. Neither general nor local treatment seemed to relieve this and it finally (after five months) wore away.

This, then, is a case of the morphia habit treated by Levenstein's plan of sudden deprivation; a case especially suited, if any are, to this mode of proceedure, and one that should have given the best results. The history of the case speaks for itself. There was no organic disease with which to contend; not even serious functional disease. Aside from the horrible sufferings of the patient, the annoying delirium and frenzy, the slow progress of convalescence, the distressing vomiting and purging, the throat trouble and the persistent insomnia, hallucinations and delusions and pains in the limbs, the very tottering of the mind upon the verge of sanity, there must be considered the suddenness and severity of the collapse. Had not the nurse been faithful, intelligent and well instructed, death would certainly have occurred.

Compare this case, or indeed any one of the cases given in Levenstein's book, with one treated by rapid reduction. The advantages of the latter plan will be as follows:

1. Duration of treatment from two to ten days.
2. Never serious collapse.
3. Pain in limbs very slight.
4. Never active delirium.
5. Nausea sometimes, rarely vomiting; never severe purging.
6. Insomnia only partial and soon relieved.
7. Rapid convalescence.
8. No tendency to suicide.
9. No evil after effects on the mind.

I can give case after case, of as long standing, and taking larger daily quantities of the drug, treated here by me, where these points of difference have been distinctly shown. My conclusions are not based on a single case or a few cases, but on many, and the degree of suffering, as the treatment has been developed and improved, has been reduced, in many cases, to merely slight restlessness. Baths, which were formerly my chief reliance, I now rarely use during the period of breaking, and only as a tonic during convalescence. The bromides I throw aside, save in hysterical cases, as needless, and coca as worthless.

The plan of treatment by *slow* deprivation merits are the objections which Levenstein applies to it, while that by rapid deprivation and rational treatment possess all the advantages of both plans and none of their drawbacks.

191 West 10th st.

Some Experiments with Iodoform Locally Used.

By A. Dudley Sloan, M. D, Leota, Miss.

For the past few months I have been conducting some experiments with the topical uses of iodoform, in various combinations; and, although the field is neither an entirely new, nor, with me, an original one, yet the results of my experience

with this agent are of such positive character, that I thought a brief history of a few of the most striking cases would not prove uninteresting to your readers.

I am aware that attention has been already directed to the subject by other writers, but, so far as I can learn, it has been in quite a casual manner; nor am I yet prepared to give to the profession the results in full of my investigations on the therapeutic value of this drug. This paper, therefore, is intended to have reference to its action locally; a consideration of the indication for its administration internally, together with the study of its effects upon the system, will be reserved for another occasion.

My use of the drug was suggested by an article published in "*Walsh's Retrospect*," January Number, 1881, by Dr. H. C. Howard, of Illinois, and by brief mention of its properties in other journals. I therefore determined to give it an extended trial, and hence, have used it in the treatment of ulcers of various kinds, in chancre and chancroid, cervical catarrh and various abrasions of the cervix and os uteri, etc., and, whether the local lesion has been in the nature of an indolent sore, or inflammatory and phagedemic, the result, in my hands, has been uniformly successful.

From my record I select purposely, two cases of opposite characters, and of recent date, one an indolent ulcer of over two years' standing; the other a phagedemic chancroid; and append them without further comment.

Case 1.—J. L., a white girl, Irish extraction, æt. 12; active, intelligent, well-grown for age. For over two years has had a large ulcer on anterior aspect of left leg, near junction of middle and upper third. Has been under the observation of an intelligent neighboring physician for the past two years. Becoming thoroughly despondent, accompanied by her mother, a widow lady, she applied to me on the 22d February, for treatment.

Upon inspecting the parts for first time, three sores were observed; one large, central, with raised edges, and flabby granulations, dark, almost purple, about three or three and a half inches in diameter; the other two possessing the same

characters, but much smaller, and the whole surrounded by an extended areola of red, verging on purple hue, which the entire hand could not have concealed. These sores showed all the characteristics of the indolent variety, and bled on the slightest touch.

The skin and subjacent tissues are somewhat thickened, and very tender and weakly, inasmuch as at times they break down, and the sores coalesce and form one immense chasm.

Close inquiry failed to establish positively an hereditary taint, though the mother had a similar sore in the same situation, some twelve or fifteen years ago.

The patient was at once placed upon an alterative of iodide of potassium and bichloride of mercury internally, and black wash and citrine ointment locally, with directions to wear constantly a two inch rolled bandage extending from toes to knee.

May 5th. Nearly ten weeks since treatment was begun. The local applications have been changed from time to time, to meet varying indications, and according to promise, the treatment has been *faithfully* followed; yet, if there is any improvement at all, it is very slight. The *smallest* sore, indeed, is nearly healed, but in every other respect the parts remain uncharged. Washes, ointment and internal remedies, of every kind, are to-day discarded *in toto*, and the following application substituted:

℞ Iodoform, Bismuth subnit, } Equal measures.

Reduce to a powder, pack the sores thoroughly, and dust over surrounding parts, twice a day; after which apply *roller bandage* as before.

May 8th. Improvement since last record has been *rapid* and *positive;* indeed I have never seen anything to compare with it. The tenderness is reduced to a minimum, and the parts can be handled without the slightest pain. The sores have taken on healthy action, and healthy granulations are springing up everywhere. The parts are healing *en masse.* Directed patient again to use the powder *without* a wash of any kind.

May 16th. The case has now been under observation about

eleven weeks; and under the iodoform and bismuth treatment *twelve days.* The sore is entirely healed, the cicatrix appears to be sound and reliable, and the tenderness only slight. The cure is as gratifying as it has been rapid; and when it is remembered that this patient had been under treatment more than two years, with negative results; that she was confined to bed during the eleven weeks not a single day, we are enabled to appreciate the remarkable power which this compound, with a properly applied bandage, exerts over indolent ulcers.

With directions to continue the use of bandage ten days longer as a precaution against relapse, the case was discharged, *cured.*

Case 2.—Mr. T., æt. 26, an American and a planter, of full habit, verging on plethora. Height 5½ feet, weight, 195 lbs., complexion, eyes and hair dark. Had chancre and syphilis three years ago. Applied for treatment April 25th, with well developed chancre on prepuce, back of corona glandis. Other sores in process of formation. Thorough application of *nitric acid* detached slough from largest sore, exposing a deep cup-shaped cavity. He was then put upon *black wash* and ungt: hydrorg: nit. dil., locally.

May 6th. Patient confined to bed, with prepuce and glans greatly inflamed. The glans is the seat of a large excoriation; the old cicatrix has broken out afresh, and the prepuce is extensively involved, the sores spreading rapidly and beginning to slough. The prepuce being unfolded, and the parts exposed and dried, the sores and coronal sulcus were well packed with the powder; the foreskin was then permitted to roll forward and cover the glans, and a lotion of lead and opium applied. Discarding lotions, ointments, etc., the patient was directed to use the pack of *iodoform and bismuth* thrice daily, or as often as the parts became moist, and to *dispense entirely with ablutions.*

May 16th. Has been under the iodoform and bismuth treatment *ten days.* The first application seemed to arrest diseased action, and inaugurate the healing process; the change, indeed, was *immediate.* The sores are now all healed, except the

largest, which is reduced to the size of a pin's head, and rapidly closing.

In conclusion, I would state that I have used iodoform alone, and in ointment, as well as in combination with other drugs; but thus far I am constrained to give a decided preference to the combination with bismuth, as fulfilling an indication, and exerting a curative influence, which the drug alone, or otherwise combined, is not so prompt to effect.

In the class of cases aforementioned, it will be found to afford results far more satisfactory than ordinary methods of treatment. In fact, it is truly surprising with what facility and ease such cases can be cured with it.

It is a remedy that can be *relied* upon—a great desideratum—and with it the physician can with confidence undertake the treatment of cases, where, erst he was the subject of painfully conflicting doubts.

Of about a dozen cases of this class in which I have employed it, it has never failed to answer my most sanguine expectations, and as the remedy does not seem to be in general use, especially among country practitioners, I therefore trust that others may be induced to accord it the trial it justly deserves.

Erysipelas.

By J. P. Davidson, M. D.

(Read before the Orleans Parish Medical Society.)

In a strictly medical sense of the word, Erysipelas is an idiopathic, febrile disease, pursuing a somewhat regular and determinate course; attended by a characteristic inflammation of the integuments of the body; marked by an eruption; sometimes prevailing epidemically, and communicable from one person to another. The occurrence of one attack does not

act protectively against a second. Like other exanthematous diseases with which it is properly grouped, the eruption is preceded for two or three days by fever, and certain prodromic symptoms present themselves before the outbreak of the disease, such as anorexia, chilliness, alternating with flushes of heat, furred tongue, thirst and soreness of the throat, or swelling of the lymphatic glands, if the face be the seat of the cutaneous eruption, or swelling of the axillary or inguinal glands, if the extremities be primarily invaded. Not unfrequently nausea and vomiting, or intestinal irritation precede the appearance of the eruption. The fever is generally ushered in with decided rigors, a rapid pulse, and a peculiar burning heat of the skin. Upon some part of the surface a small distinctly defined red spot appears, somewhat raised, painful and sensitive to the touch, usually on one side of the nose, the cheek or the rim of the ear, and becomes swollen, hot and stiff. The intumescence and redness gradually, and sometimes very rapidly, extend, with a well marked elevated margin. In the face it is sometimes confined to the limits of the features, but more frequently it spreads over the whole scalp and head and downward to the neck, reaching as low as the chest There is commonly considerable swelling, the integuments being thickened and somewhat hardened by subcutaneous infiltration, distending the cellular tissues, and the loose texture of the eyelids, the scrotum, prepuce and vulva become strikingly œdematous. The swelling of the face is so great and rapid that, like the confluent form of variola, the features are well-nigh obliterated, the eyes closed, the nose, cheeks, lips and ears enlarged, the nostrils obstructed, rendering breathing difficult through them, the lips and mouth so dry and stiffened as to interfere with speech, and the meatus of the ears so narrowed that hearing is obtuse. When the scalp is involved, it is usually much swollen and puffy, and the whole head is enlarged. The eruption is attended with a peculiar burning, pricking, tensive and smarting pain.

The cutaneous inflammation, in many instances, rises gradually for three or four days, declining by degrees, without discernable effusion, and terminates with desquamation; more

frequently, after two or three days, the cuticle is elevated by minute eczematous vesicles, filled with serum; blisters of small size appear and incline to run together, often producing an extensive blistered surface. Somewhere about the fifth or sixth day these vesicular eruptions begin to shrink and dry, and crusts form, which detach themselves about the tenth or twelfth day, leaving their site covered with a new cuticle.

Such is the usual course of idiopathic erysipelas, but it often varies from the above description, as occurs in the ambulatory form of the disease, in which, while the part first affected pursues the regular changes, the disease presents itself in a distant part and passes through its own phases of increment and decline. This may occur again and again, prolonging the duration of the attack for several weeks.

While most generally the inflammation is superficial, in some cases it dips down into the subcutaneous areolar tissue, ending in suppuration, and even sloughing is apt to take place. This may occur in the loose tissue about the eyes, and perhaps oftener in the scalp than in the integuments of the face.

Diversities occur in the march of the disease, even in its least aggravated forms, and on the face I have known it to present one part healing with a perfectly sound skin, while in others vesicular eruptions appeared, and others discharging pus with superficial ulcerations. The fever continues while the cutaneous inflammation lasts, sometimes characterized by high temperature, and, when the scalp is invaded, delirium is apt to be an attendant symptom and of a violent character. In strong, robust constitutions the pulse will be full and strong, but not frequent, and the fever of an open, inflammatory kind.

In bad cases, particularly in persons of an enfeebled constitution, and a depraved state of health and habits, notably the intemperate, the fever from the onset of the attack is of an asthenic character with typhoid symptoms. The pulse is feeble and frequent, the surface of the body cool or of irregularly distributed temperature, dry, brown, or blackish tongue, sordes about the teeth and lips, great restlessness, subsultus, low muttering delirium or stupor. The eruption presents a livid

aspect, bloody serum fills the vesicles, with a tendency to spread into large blisters, or to gangrene.

The disease sometimes invades the throat primarily, or attains the mouth, nares and throat from contiguous parts. The throat, tonsils and tongue swell to such a degree and so rapidly as to endanger life by closure of the epiglottis. This form of erysipelas, under the appellation of "Black Tongue," prevailed in various parts of the West and Southwest in 1843, '44 and '45, in isolated districts, and was seen by me in the northern part of the State of Louisiana. The disease was of variable intensity, in some districts mild and amenable to treatment, while in others it was rapidly fatal, defying all treatment. In these fatal cases the submucous tissue of the whole throat was swollen and filled with serum and pus.

A sudden metastasis of the eruption from the skin to the brain, with delirium and coma, occasionally occurs, but I presume is rare, while an extension of the cutaneous eruption to the brain is not uncommon.

Retrocession of the eruption takes place, sometimes from cold or the effect of local applications. It may also ensue from the sudden occurrence of great prostration. An instance of this kind took place in a patient of mine during the war, who now resides in New Orleans. The disease was seated in the face and involved the whole head. Retrocession suddenly took place, followed by violent delirium, the patient escaping into the street, and requiring restraint. The skin was cool, pulse feeble and rapid. Under active stimulation by ammonia and milk punches, with rubefacient applications, the eruption was restored to the surface, and after a prolonged illness he recovered.

Erysipelas, notwithstanding the malignant cases cited, is for the most part a benign disease, and in private practice terminates favorably. The fever subsides with the cutaneous inflammation, and recovery takes place in from 5 to 12 days.

Death may occur from metastasis to the brain, with coma and convulsions. When it results from this cause, and the head is examined, serous effusion is found under the arachnoid, or in the cerebral ventricles, with distension of the veins

of the pia mater. Sometimes, however, no decided morbid appearances are discovered. Is is doubtful whether in all cases these pathological conditions can be ascribed to inflammation. The effusion may take place as the result of a passive hyperæmia, bearing analogy to the œdema of the subcutaneous tissue. Death may also result from internal inflammatory or congestive complications of a low and asthenic character, most likely to supervene under malignant and epidemical influences.

Like the acute exanthematous diseases, among which it is classed, erysipelas sometimes prevails epidemically, but it does not occur in the form of extended epidemics. There seems to be an undetermined atmospheric condition which favors the spread of the disease, and under its influence whatever causes impoverish the blood and debilitate the body, tend to the development of the disease. Beginning in a single case, it spreads to those in immediate contact with it, without such infection being ascribable to any pervading local cause. It is under such favoring atmospheric conditions that the disease diffuses itself in surgical wards and lying-in departments of hospitals, in jails, on board of emigrant ships, in asylums and other enclosed establishments. Under the prevalence of this epidemical influence, it is induced by the slightest irritation of the skin, the bite of an insect, the application of leeches, and follows the performance of surgical operations. I have myself undergone two attacks of erysipelas of the face, in both instances occasioned by the application of leeches to the eyes. A predisposition to the disease obtains in some persons. I had for a patient a planter of most exemplary habits and robust health, who was subject to the disease every spring and always seated in the face.

Contagion must be regarded as one of the most important causes of erysipelas. On this point, however, much dispute has prevailed. In England and France many eminent physicians have expressed their belief in its contagiousness, abundant evidence of which they have adduced.

As to the mode of its communication from a patient to healthy persons, no positive information or direct observations are as yet recorded. The poison does not seem to diffuse

itself over any extended distances; nor is it known in what stages of the disease it is most infectious—whether during the inflammatory or febrile stage, or during that of desquamation. The poison thus capable of atmospheric diffusion, within certain limits, is inoculable, and the serous fluid of the vesicles and of the œdema of the skin seems to be especially infectious by inoculation. Cases are cited in which vaccinal erysipelas was communicated by lymph transferred to the arms of healthy persons. During an epidemic of the disease in Boston, in 1850, it occurred so frequently in vaccinations that they had to be given up.

Of the anatomical changes peculiar to erysipelas, neither time nor space will permit me to enter upon any details. Information on these is not very advanced, owing to the scarcity of post-mortem examinations, except in complicated affections, and where death has been occasioned by the latter.

Numerous observations have been made upon the extensive occurrence of globular bacteria (punctiform bacteria of Ehrenburg; microspheres of Cohn) without spontaneous movement. They were first discovered by Hüter, then by Nepveu, Orth and Walberg, everywhere in the inflamed tissues, and especially abundant in the œdematous parts, much less so in the blood.

(Ziemssen's Cyclopædia, vol. 2d, Acute Infections, p. 445.)

To account for many peculiarities of the inflammation of the skin in erysipelas, forcible arguments are adduced by Ziemssen and Lukomsky in favor of "an agent which is in the broadest sense ferment-like or mechanical in its action, with an activity and vitality of short duration only, but with great capability of reproduction."

Ziemssen adds—"In the present state of our knowledge, we are led to attach ourselves to the indications presented by the bacteria, which as carriers or exciters, or at least attendants of the process, are surely found." By the published investigations of Lukomsky—"It appears that, in the animals experimented on, the bacteria (micrococci) were found only during the existence of the dermatitis, and that they disappeared simultaneously with its expiration." Some experiments of

Orth's, moreover, show that "The œdema of erysipelas is weakened in its infectious properties, as soon as the vitality of the bacteria is impaired by the use of carbolic acid and the like." (Ziemssen, op. cit.) Ziemssen concludes his remarks on the probable excitement of the cutaneous nerves produced by the rapid increase of the micro-organisms alone and the resulting elevation of temperature and other symptoms with this expression: "If, then, our knowledge of the nature of this mysterious disease is enriched by the proof that is connected with the immigration of these parasitic organisms only by a fact which requires for its full valuation further investigations in a new direction, it is still a great gain that a new departure may be taken from a definite point." (Op. cit.)

Many varieties of erysipelas are described by writers on the disease, the most of which have nothing specific and may be regarded merely as modifications. One variety, however, *erysipelas neonatorum*, it may be proper to notice from its fatality. It is of frequent appearance in early infancy, and is among the most fatal of the diseases which occur at that period. It presents itself most frequently between the third and tenth day after birth; but even when it attacks after the fourth month, the major portion of the cases terminate fatally. According to M. Trousseau, infantile eryisepelas is principally observed in Paris when puerperal fever prevails in the lying-in wards. In some foundling hospitals it is especially common, but less frequent under the more favorable conditions of private practice. The affection often runs a fatal course, with severe febrile symptoms, in a few days. Its causation is doubtless due in many instances to suppuration of the umbilicus, or possibly to phlebitis of the umbilical vessels.

Treatment.

The treatment of erysipelas has differed widely, based upon individual views with respect to the nature of the disease, leading to the trial of various measures. At an early day an antiphlogistic treatment was pursued, the prevailing theory of its sthenic character calling for venesection and tartarized antimony, etc. Copland and Andral were the first to oppose

this practice, and an opposite view of the essential symptoms led to the adoption of a supporting plan of treatment.

A rational view of the nature of the disease, that it will run a definite course and that it will generally terminate sooner or later in resolution, and cannot be cut short by any particular course of treatment, has had many strenuous supporters, and an expectant course of treatment been advocated by them. Looking at the history of erysipelas, and the divergent opinions that have been held respecting it, the preponderance of opinions is in favor of abstaining as far as possible from the abstraction of blood. In the outset of the complaint, with a full, frequent and hard pulse, with headache and active delirium, the cautious abstraction of blood by leeches behind the ears or by cupping may be beneficially resorted to. The bowels should be moved by some one of the saline cathartics and diaphoretics given, with evaporating lotions to the surface.

The treatment by quinine in sufficiently large doses, as advocated in this country by Jackson, and in England by Balfour, Campbell and others, has many supporters, under the opinion that it shortens the duration of the disease and lessens the typhoid and pyæmic symptoms.

Dr. Bell, of Edinburgh, introduced the use of the tincture of the chloride of iron in the treatment of erysipelas, giving from 15 to 25 drops at a dose every two hours, night and day, throughout the disease, without regard to the degree of fever or the delirium.

Dr. Balfour records many cases treated by him with the tincture of iron, and expresses his belief that we have in it "a certain and unfailing remedy, whether the erysipelas be infantile or adult, idiopathic or traumatic." I can bear testimony to the value of this remedy, having used it in all cases treated by me with favorable results, as well as having taken it myself when suffering on two occasions with an attack of the disease.

The local treatment of erysipelas has been as diversified as the internal remedies resorted to. In the early history of the disease abstention from all local applications was insisted upon as hurtful, and liable to occasion recession of the eruption, as

well as on the ground of uselessness and failure of those most commonly made use of.

There can be no question, however, that local remedies are of great use, but that they should be used with due caution. Evaporating lotions and cold applications to the head and sponging the surface of the body during the height of the inflammatory symptoms mitigate the burning heat, tension and pain.

It would consume too much time to enumerate the great variety of local remedies which have been recommended under the individual opinions regarding the nature of the disease. Astringent applications have been attended with good effects in many cases, such as a saturated solution of the sulph. iron, as advised by Velpeau. Also a lotion of Goulard's extract of lead, and a diluted tincture of iodine. Within a few years applications of carbolic acid have been used with reported beneficial effects, but I have had no personal experience with it. It would seem advisable, on account of its antiparasitic action. I have found by far the most soothing effect with most persons in the application of warm water by means of cloths wrung out of it and applied to the surface, and from bathing the inflamed skin with a mucilage of slippery elm or flax seed.

The extension of the cutaneous inflammation has been arrested by the application of a strong solution of nitrate of silver on the sound skin, an inch beyond the line of intumescence, and recourse has been had to a narrow strip of blistering plaster for the same purpose. Recently, Dr. Heppel, of New York, has adopted a new abortive treatment of erysipelas, and furnishes seven well observed, consecutive cases of abrupt termination of the erysipelatous process, consisting in brushing the boundary line, and the parts extending a finger's width on either side of it, with a ten per cent. alcoholic solution of carbolic acid, until the integuments thus painted show a decided discoloration. The local effect is very pleasing, no eczema resulting from the application. This procedure is not applicable to cases of rapidly increasing, migratory erysipelas. These severe cases, at an early stage, might have been arrested by the proposed procedure.

Whenever the cellular membrane is invaded with phlegmonous swelling and tension, free incisions should be made early, so as to relieve the swelling and distension, and to give free exit to the confined purulent fluid. After this has been practiced, the part should be covered with emollient poultices and kept at rest as much as possible.

In more serious forms of erysipelas, which assume a low, typhoid condition, with a failing pulse, and perhaps a tendency to gangrene in the local affection, it is necessary to support the system by stimulants and nutritious food; ammonia, sherry wine, quinine, opium, milk-punches, etc., should be given, and the stimulants graduated to the degree of depression or debility.

For the affection seated in the pharynx and endangering life by inanition, while a strong solution of nitrate of silver is locally applied, the vital powers should be upheld by enemata of beef tea and quinine thrown into the rectum, until the patient recovers sufficiently to take nourishment and stimulants by the mouth. If from the closure of the rima glottidis suffocation is threatened, a resort to tracheotomy may be necessary.

Current Medical Literature.

TRANSLATIONS.

CHARBON VACCINATION.

Translated by Dr. R. Matas, from *Gazette des Hopitaux*.

At a meeting of the French Academy, held June 14th, an interesting communication from M. Pasteur upon Charbon Vaccination was read, of which the following is a brief summary:

M. Pasteur, in his own, as well as in the name of his colleagues, MM. Roux and Chumberland, acquaints the Academy with the results of his new experiments in charbon inoculation, which demonstrate conclusively the preservative influence of the charbon virus, when weakened according to his method.

The Agricultural Society of the Marne, presided over by M. de la Rochette, placed at his disposal a flock of 60 sheep, besides 10 cows. Ten sheep were kept apart for purposes of comparison; 24 others, together with a goat and 6 cows, were inoculated twice, at twelve days' interval, with weakened charbon virus. These last animals, together with an equal number of other sheep, and four cows, which had not undergone the preliminary vaccination, were inoculated on June 2d, with very energetic charbon virus. Two days after, all the unvaccinated animals were found dead or dying, while the others survived and appeared to be in good health, excepting a ewe that was big with lamb, which died some days after.

The vaccinated cows, which were subsequently inoculated, are doing well; those that had been inoculated without being vaccinated, became very sick, but none died. M. Pasteur had previously announced, however, that the cows would present a much greater resistance to the charbon virus than the sheep. His experiments took place in the presence of a great many persons, among whom could be distinguished quite a number of veterinary surgeons, who seemed particulary anxious to witness the proceedings; and all present were fully convinced of the success of the experiments, one veterinary surgeon in particular, who expressed the desire to be vaccinated at once, to be free from the dangers of charbon inocculation.

The death of the ewe was attributed by the veterinary surgeon, who made the autopsy, to the previous death of the fœtus which she carried, and which was found macerated in the unbroken membranes.

MM. Blot and Depaul protested emphatically against this explanation, "for," said they, "the presence of a dead, but undecomposed fœtus, in an intact amnion, cannot exercise any evil influence upon the health of the mother." As the death of this animal may be due to many other causes, these observations do not, in the least, invalidate the facts reported by M. Pasteur.

[For the further information of those readers who may be particularly interested in these researches, we will state that, in order to diminish the virulence of the charbon virus, for purposes of prophylactic inoculation, M. Pasteur maintains his culture fluids at a temperature of 43° (Cent.) and in contact with the oxygen of an air deprived of all atmospheric germs. "In these conditions the bacteria are not transformed to germs: they multiply, then, only by segmentation, and finally become less and less active."

In this way M. Pasteur would hold in his power a series of liquids of all degrees of virulence, which would, so to say, range from those whose inoculation could never injure, to those again whose presence in the animal economy would determine instant death. In this ascending scale of poisons, the most feeble in the scale would serve as preservatives against the more

potent fluids, in such a way that, to render the protection most efficacious, it would be the best plan to recur to successive and gradual vaccinations.—*Translator.*]

ADDENDUM.

[From subsequent numbers, containing a report of the meeting held June 21.]

[During the seance a discussion of a lively and somewhat pointed character took place, in which MM. Bouley, Blot, Depaul, Colin and Jules Guérin took the most active part. The discussion was elicited by a paper read by M. Colin (d'Alfort), entitled "A Claim of Priority in regard to the Discovery of the Immunity from Charbon, which may result from the Inoculation of its Virus." In summarizing his paper, M. Colin stated that the right of priority had been accorded to him on the following three points, viz:

"1st. The observation and experimental demonstration of the immunity from charbon, which is conferred upon different species by the so-called preventive inoculations."

"2nd. For the demonstration of the fact that the method of charbon vaccination by (virulent) blood, heated to 55° and 57° Cent. (Toussaint's method), is without any value as a prophylactic measure."

"3rd. For the observation of a series of facts in regard to the part played by the lymphatic ganglia in the evolution and generalization of charbon conditions."

As the first of these statements is one directly and most intimately related to the preceding experiments reported by M. Pasteur, we have thought proper to present to the readers of this Journal a summarized account of the proceedings of this meeting.

Outside of the personal interest which is attached to all the labors of M. Pasteur, particularly in this instance, in which his righteous claims to originality and precedence have been impugned, the charbon question is now too prominently before the profession for any facts connected with it to be disregarded; besides, other more interesting points, from practical points of view, may be gleaned from this discussion. The press is loud in its praise of M. Bouley, whose brilliant and eloquent defense of M. Pasteur on this occasion won for him a most merited applause.]

DISCUSSION.

M. Bouley reproached M. Colin for his want of generosity in not recognizing the discoveries of others. The discovery of M. Pasteur has no relation whatsoever to the previous memoirs of M. Colin. M. Pasteur has discovered the means of attenuating several viruses to any degree he pleases, of transforming them into vaccines, i. e., into preservatives against the maladies that originate them, whilst prior to him M. Colin attempted to

vaccinate animals by inoculating a virus that he did not know how to weaken. These are quite different things.

In M. Pasteur's last communication we find that a question had been raised respecting a ewe with lamb, which, after being vaccinated on two different occasions, was inoculated with strong charbon virus, and died some days after this inoculation. In regard to this subject, M. Bouley read a letter from M. Rossignol, the verterinary surgeon, who performed the autopsy of this animal, in which is given a detailed account of this necropsy. The blood contained some bacteria, but none of those alterations which are ordinarily found in charbonous affections were visible in the cadaver; neither local œdema nor exaggerated vascularity of the lower layers of the skin, nor enlargement of the spleen, nor anything, in fact, that could possibly lead to the conclusion that death had been produced in this ewe by the charbon inoculation. In its uterus a macerated full grown fœtus was found wrapt in the membranes, which in turn did not contain a single drop of fluid. In fact, the membranes appeared torn and engaged already within the os. Probably the animal had died in an effort at delivery, which the fever of inoculation prevented it from accomplishing. The inoculation of all viruses seems to be much more dangerous in gravid females when almost at term.

M. Blot insisted, particularly, on demonstrating the contradictions of this latter. If the fœtus had been found only macerated and not decomposed, it was because the membranes had remained intact up to the last moment. The absence of the amniotic fluid proves nothing, for very often after the death of the fœtus the liquid is absorbed. M. Blot has had occasion to observe several instances of this kind. Therefore, he insisted again, that if the fœtus had not decomposed, it could not possibly have caused the death of the mother.

M. Depaul recalled the fact that Jenner, and he himself, had, in more than one instance, inoculated, without any evil results whatever, the strongest small-pox virus in subjects that he had vaccinated, without reference to the subject being a pregnant woman or not.

M. Colin stated that the researches with weakened virus for vaccination purposes did not at all represent a new idea. It is by taking, in this manner, the variolous virus from subjects lightly affected with small-pox, and by rendering this virus more and more feeble [by successive vaccinations?] that we were first enabled to inoculate the virus of variola in man, and more recently in sheep, for preventive purposes. M. Colin was able to carry out the same methods of attenuation in the case of chicken-cholera, charbon, etc.

M. Jules Guérin enquired from M. Bouley what had become of the famous results announced by M. Toussaint last year, in connection with his experiments in charbon prophylaxis. It

is true that M. Toussaint did not obtain his protective vaccine by the same method as M. Pasteur; but, if his method was the wrong one, should we not guard against a premature acceptance of M. Pasteur's conclusions? Should we not wait this time, more cautiously, for the sanction that time and experience alone can warrant, before permitting imprudent enthusiasm to lead us towards a path from which we may again return with discomfiture?

M. Bouley stated that M. Toussaint's method was not so defective. M. Toussaint's idea of vaccinating animals with weakened virus was certainly a just one. This method succeeds often in attenuating a virus, but not always; and it is in this particular that the procedure of M. Toussaint is infinitely inferior to that of M. Pasteur. M. Toussaint kept the defibrinated [virulent] blood for about twenty minutes at a temperature of 55° to 57° (Centig.)

Because of some unknown causes, it happens, sometimes, that the virulence of the poison resists the high temperature. As to M. Pasteur, he succeeds always, with the precision of certainty, and those who have followed him in his labors cannot possibly admire him too much. The marvellous discovery of charbon vaccination may not be made at one throw.

M. Pasteur had already observed that the virus of chicken-cholera became rapidly weaker, when it was preserved in contact with air. He then asked himself if the same result would follow with the charbon virus. But the case proved to be a different one. In contact with air the charbon virus remained always active. M. Pasteur searched for the cause of this difference, and he found it. Whilst the microbe of chicken-cholera always multiplies by division, without ever giving birth to germs, the bacteria of charbon multiply by the two modes, i. e., germ formation and division; and, when once reduced to the former condition, they resist all attempts at enfeeblement. It was then necessary to prevent this bacterium from germinating. This is what M. Pasteur succeeded in obtaining, by maintaining the charbon at a temperature of 45°. As long as it remains subjected to this temperature in contact with air, it progressively loses its potency, and no germ in the shape of a brilliant corpuscle is found in the fluid. This means once acquired, M. Pasteur became the possessor of a method of weakening the virus of charbon to any strength he desired. In fact, by lowering the temperature, he once more rendered possible the production of the brilliant corpuscles, which once born are almost indestructible, and which also announce with their presence a return of virulence, but of a potency just as diminished as that of the bacteria from which they sprung; in such a manner, that a definite virus may now be known to be innocent for evil, when injected in any animal; that another can kill only the most susceptible, and that another still can prove fatal only to the most refractory animals, etc.

Nothing, up to the present moment, could have caused us to foresee these results. And this method, which belongs solely and exclusively to M. Pasteur, is far from having reached its ultimate application. No one can premise the future of all its applications. Already in a competitive "concours," recently held at the veterinary school of Lyons, the judges of the examination witnessed the facts which prove that symptomatic charbon, a disorder totally different from bacterial charbon, may also be guarded against by the use of a prophylactic vaccine.

Admiration for M. Pasteur is felt even by the most skeptical in these matters in the presence of facts. If M. Colin had assisted the experiments of Pouilly-leFort, he himself would have applauded, if only by reflex action.

THE NATIONAL AND THE LOUISIANA STATE BOARDS OF HEATH.

[One of the provinces of this JOURNAL is to preserve a record of the medical history of Louisiana; but, aside from this object, we believe that the following papers will possess a positive interest with the majority of our readers.

The first was read at a meeting of the Louisiana State Board of Health, held May 19, 1881, by Dr. F. Formento, one of its members, and was adopted as an expression of its sense upon the points covered by it.—*Editors.*]

I have carefully examined and studied the communication made to this board at its last meeting, May 13, 1881, by Dr. Chaillé, Supervising Inspector of the National Board of Health, and I have given to the important subject laid before us all the consideration and attention it deserves.

This communication is of great interest. The propositions which it embodies are so varied in their character and purpose, the measures submitted for our approval and consent are so momentous, that body from which these proposals emanate is entitled to so much respect, that we deem it our duty to examine them seriatim, and at what will perhaps be considered too great a length.

Proposition No. 1 reads as follows: "That all reports of deaths and the original returns made by the attending physician of doubtful or suspicious cases of yellow fever to the Louisiana State Board of Health, or to any member thereof, shall be communicated to you (the supervising inspector) at once, whether they have been formally presented to a meeting of the State Board and entered on its files or not, and that if any of these cases shall appear to you (the supervising inspector) to be of a sufficiently doubtful or suspicious character to

demand it, you (supervising inspector) will, upon notifying the proper officer of the State Board, be permitted to investigate the case, in connection with such person or persons as may be appointed to accompany you by the State Board."

The proposition, which is almost a literal reproduction of a resolution approved April 19, 1881, by the Louisiana State Board of Health, is unhesitatingly accepted.

Proposition No. 2. "That the State Board will consent to a modification of the resolution lately adopted by it, relative to investigation of cases, so as to provide that, unless the report be ultimately unanimous, a majority or minority report shall be made to both boards, this being the course suggested by the National Board of Health."

With due respect for the suggestions of the National Board, the Louisiana State Board still adheres to its opinion, embodied in the resolution already adopted by it, that there should be only one report sent to both the National and State Boards, viz: the report of the majority of the Investigating Committee. By the resolution to which we refer, the State Board has constituted that Investigating Committee in a manner calculated to give the greatest security to both boards and to the public at large, as to the correctness of the decision at which they may arrive. One of them is to be selected by the National Board of Health, the other by the State Board; in case of disagreement, these two are to select an umpire of their own choice, having all the necessary qualifications as to competency and character. A decision arrived at by a majority of a tribunal so composed presents all the guarantees in point of certainty and correctness which may be expected in all human affairs, and we think that it would be improper and dangerous to impair the authority of such a decision by suffering a counter report to influence the public mind, and create perhaps a general panic. All measures adopted by either board, based upon such a majority report, will be more favorably received by the community and will inspire general confidence; the enforcement of such measures will be rendered thereby easier, and will be more willingly submitted to. In most cases, the boards would be without elements necessary to enable them to decide between two conflicting reports. By the adoption of one report, the duties of both the National and State Boards of Health will be greatly facilitated; all hesitation or controversy will be avoided in time when delay may be fatal; measures of sanitation recommended will acquire greater weight and will be productive of more beneficial results. These are the reasons which induced our State Board of Health to adopt the one report plan, and for the same reasons it feels compelled to refuse their assent to the second proposition.

Proposition No. 3. "That in view of the great importance of securing the reports of the earliest cases of yellow fever, and the special stress laid upon this point in his (the supervising

inspector) instructions, which, either through ignorance or negligence of those upon whom the State Board is forced to depend, might not otherwise be reported, the board (Louisiana State) be requested to approve of his (the supervising inspector) issuing an appeal to our physicians, medical and sanitary organizations, etc., to furnish him with such information as they may have. He (the supervising inspector) pledges himself, on condition of the approval, to report any information so secured as may be of value to the State Board."

It seems to us that such an appeal on the part of the Supervising Inspector of the National Board is superfluous. Our rules and regulations make it compulsory on the part of every practitioner of medicine, surgeon, druggist, master of any water craft, boarding or lodging-house keeper, principals or masters of any boarding school or seminary, etc., to report within twenty-four hours after the same may come under their treatment, cognizance or supervision, all cases of contagious, infectious, epidemological diseases, especially cholera, *yellow fever*, small-pox, diphtheria, trichiniasis, typhus or ship fever, or any of the grades of such diseases. The neglect to report all such cases renders the delinquent liable to a fine of twenty-five dollars for each and every offense, and in default of payment thereof to an imprisonment not to exceed thirty days. (See article 452 of an ordiance relating to contagious and infectious diseases, No. 4916, Administration series.) It is the firm intention of this board strictly to enforce the law on this subject.

The persons upon whom the State Board chiefly depends (and in its opinion justly relies) for early information, are its experienced, competent and sworn officers and the whole body of the licensed practioners of the city of New Orleans. The ignorance or negligence which seems to be apprehended by the National Board of Health does not very certainly refer to them. Outside of physicians the appeal sought for would have to be addressed to the very same parties upon whom the State Board depends in a manner for information, and we do not see, if the danger of ignorance or negligence on their part exists in their relations with the State Board, how the same danger will not exist in their relations with the National Board. With this remark we can see no objection towards granting to the supervising inspector the privilege of issuing his appeal, it being well understood that the information which may be given to him will not relieve the parties concerned from the duties imposed upon them of making their reports, as heretofore, to the Louisiana State Board, the only authority constituted by law to receive their official communications.

The fourth proposition reads as follows: "In the case of yellow fever appearing in the city during the summer, it is the desire of the National Board to co-operate in every way with the local authorities of the city to restrict the spread of the

disease and to stamp it out if possible, and to this end it will be prepared to pay for such services and materials as are necessary for this purpose. It will, therefore, become your duty (that of the superintending inspector) as its representative and chief executive agent in New Orleans, to decide what measures are necessary and proper for the purpose indicated, and to see that they are applied as promptly and energetically as possible.

In relation to this proposition we can but heartily approve and congratulate ourselves upon the so expressed desire of the National Board to co-operate with us in all measures intended to stamp out yellow fever, if possible. We should have, however, desired that the benevolent efforts of the National Board should not have been limited to the contemplated emergency of an epidemic already existing, but should have been extended to measures calculated to prevent its outbreak, thus applying the maxim so appropriately quoted by the honorable representative of the National Board—"In time of peace prepare for war."

We now come to the fifth and most important proposition or request made by the National Board to the State Board of Health, viz: "It is considered highly desirable by the National Board that infected ships should be as far as possible excluded from the Mississippi river, and the inspector will endeavor to secure the co-operation of the Louisiana board toward obtaining this result, by having said board pass an ordinance similar to the resolution passed by the Sanitary Council of the Mississippi Valley at its last meeting, to the effect that all vessels from ports in which yellow fever is prevailing, or from ports where contagious or infectious diseases are reported to exist, shall be inspected at Port Eads, and if any such be found to be infected, or to furnish reasonable ground for suspicion of infection, such vessel shall not be allowed to pass Eadsport northwise, except upon presentation of a certificate from the Inspector of the National Board of Health at the Ship Island Quarantine Station, setting forth that the vessel has been subjected to proper treatment, and is not liable to convey contagion."

With all deference and respect for the National Board, and in spite of our most earnest desire to establish friendly relations and promote our cordial co-operation in order to accomplish our most cherished object, our ambition to protect our city and State, as well as the States of the Mississippi Valley, from the introduction of foreign pestilence, of yellow fever more particularly, we must acknowledge that this proposition is a cause of surprise and regret to us, for it is entirely inadmissible and impossible that we could for a moment consent to it.

Ship Island is a sand bank, situated on the coast of the State of Mississippi, 100 miles from the mouth of the Mississippi river, entirely out of the course of any vessels coming to

to this port from any of the ports most likely to be infected, such as Rio Janeiro, Havana and Vera Cruz. Admitting that Ship Island was the safest and best equipped quarantine establishment in the world, that the said island presented all the sanitary advantages, with all imaginable facilities for loading and unloading vessels, for provisions, etc.; admitting that it was surrounded by deep water, permitting ships of heavy draught to load at the piers or wharves of said establishment; admitting all this, and everybody knows that the actual facts are quite the reverse, we say that this State Board of Health has no power conferred upon it by any of the several acts of the Legislature creating said board and establishing quarantine for the protection of the State of Louisiana, to order vessels out of the waters of Louisiana to any foreign or domestic port, or to any quarantine station under the jurisdiction of the United States or any State of the Union. To assume such power would simply be an abuse of authority on the part of the State Board, which would not be tolerated by our State authorities nor any foreign power. Admitting that we should have the power to prevent admission in the Mississippi river of a vessel of a friendly power, doing legitimate business with our port, we have no right to force her out of her way; to be submitted to a thousand vexatious annoyances and trouble; to oblige her to procure a certificate from the Inspector of the National Board of Health at the Ship Island Quarantine Station.

The distance from Ship Island to the mouth of the Mississippi River is one hundred miles; a sailing ship during bad weather and unfavorable wind might be several days on the way.

Supposing that a vessel, after obtaining this certificate, which is to open to her the gates of the Mississippi River, should have cases of yellow fever, or other infectious diseases, to declare themselves on board of her on her way back from Ship Island Station to Eadsport, an occurrence likely to take place under this latitude during the months of August and September, what then should be done with such a vessel? Should she be sent back a second time to the national station to undergo a second quarantine?

The proper place, the only one we recognize for vessels from foreign ports, bound for New Orleans, to be stopped, inspected and submitted to quarantine, established by the laws of the State of Louisiana, is our State Mississippi River Quarantine Station. It is admirably situated for that purpose, at a sufficient distance from our city to protect us from the neighborhood of infected ships, and yet near enough to procure provisions, supplies, acclimated laborers, physicians, nurses, etc., in case of necessity. It offers a safe and deep anchorage to immense fleets. This establishment has, under the administration of the present Board of Health, been put in a thorough

repair at a cost of nearly $7000. It represents a value of $60,000, with large warehouses for storing cargoes; also facilities for loading or unloading at the wharf. It has telegraph communications with all parts of the world. It is the best equipped and organized quarantine station outside of New York.

The rules and regulations governing our quarantine station are sufficiently strict to procure complete protection from foreign pestilence with as little detention and obstention to commerce as possible.

Should we accept the proposition to inspect vessels at Eadsport and not allow them to pass northwise, except upon the presentation of a certificate of the Inspector of the National Board of Health at Ship Island; in other words, should we force (if we had such power) the Ship Island quarantine upon foreign or domestic commerce, we should at once, to be consistent, abolish our State Board with its well equipped and costly quarantine establishments in the Mississippi River; we should at once abandon the power and authority conferred upon us by law; we should abandon the fulfillment of our sworn and sacred duties, that of protecting ourselves, the lives of our people, the interests of our commerce, not confiding to others, however great and powerful they may be, that sacred obligation.

Commerce once destroyed, as it would surely be by the enforcement of this strange and unnatural quarantine which is sought to be imposed upon us, we might as well abandon all our rights, powers and duties, for Louisiana would no longer need any protection. It would be entirely ruined, and would soon disappear from the family of States. For all these reasons, and many others which we could add to these, we respectfully refuse to indorse the fifth and last proposition submitted to us by the supervising inspector of the National Board of Health.

In considering the above-mentioned proposition emanating from the National Board of Health, we have acted fairly, honestly, good intentionally, as we have done on all occasions in which points of dissension have arisen between the National Board of Health and the Louisiana State Board. We consider it our duty, we deem it is due to both ourselves and our fellow brothers of the National Board, to give fully and explicitly our honest opinions and convictions on subjects of such vital importance as those that relate to the public health.

We hereby reiterate our most earnest desire to extend our friendly relations with all sanitary organizations, with the National Board of Health more particularly. The object we are striving for is the same. Public health is our aim and ambition. Each organization, in its own sphere of action, has its share of usefulness and contributes to the public good. From the combined, yet distinct efforts of all, beneficial results will certainly be accomplished. We of the Louisiana State Board shall always be found ready to co-operate to the utmost limit

of our power to do so, in all measures having in view the interest and welfare of our common country.

[REPLY TO THE ABOVE, READ AT THE MEETING OF THE LA. STATE BOARD HELD JUNE 9, 1881.]

To the Louisiana State Board of Health:

Gentlemen—In your report, adopted May 19, in reply to the five propositions of the National Board, submitted to you on May 13, you use the following encouraging language:

"We consider it our duty, we deem it is due both to ourselves and to our fellow-brothers of the National Board to give fully and explicitly our honest opinions and convictions on subjects of such vital importance as those that relate to public health. We hereby reiterate our most earnest desire to extend our friendly relations with all sanitary organizations—with the National Board more particularly. The object we are striving for is the same; public health is our aim and ambition." "We of the Louisiana State Board shall always be found ready to co-operate, to the utmost limit of our power to do so, in all measures having in view the interest and welfare of our common country."

The present representative at New Orleans of the National Board heartily reciprocates these sentiments, which encourage him to believe that you will patiently listen to some "honest opinions and convictions" opposed to your own, and that you are as anxious as he is to rid every question between you and the National Board of all misapprehensions and false issues.

On one subject, which may be termed the Eadsport and Ship Island quarantine question, it is respectfully but firmly believed that your report gives proof of serious misapprehensions respecting the position of the National Board on this question. Inasmuch as this same position has been taken by the Sanitary Council of the Mississippi Valley, and also by the Auxiliary Sanitary Association and the Medical and Surgical Association of New Orleans, it is not likely that discussion will cease until all misapprehensions have been removed, and some general conclusion has been reached on the true issue. As to what I may say on this subject, I beg leave to remind you that, although I represent in this city, for the summer only, the National Board, I still remain one of your constituents; that, as a citizen of New Orleans, my love for it, my home reputation, and my money interests all located here, greatly exceed any temptations which the National Board could possibly present me; and, therefore, that my convictions are not those of a salaried partisan, but of a fellow-citizen who has the permanent welfare of New Orleans nearest his heart, and who cannot be in any way so greatly benefited as by promoting its prosperity.

You have refused the request of the National Board—that you would co operate with it in not permitting vessels "infected or furnishing reasonable grounds for suspicion of infection" to pass Eadsport without evidence that they had been thoroughly disinfected at the Ship Island quarantine station, for the following reasons, as expressed in your report or in the discussion which followed: Because it would be illegal to grant this request; because vessels would forfeit their insurance policies; because the commerce of New Orleans would be so destroyed that even Louisiana would be ruined; and because the Ship Island quarantine could not furnish protection as efficient as is given by your own Mississippi River Quarantine Station. These four reasons for your refusal will now be considered.

1. THE ILLEGALITY.

On April 12, 1880, you referred this question to the Hon. J. C. Egan, attorney general, who on April 22 thus replied: "I consider that, for the purpose of quarantine, it would be in the power of your board to order ships coming to this port back to Ship Island as a condition to their entry, if, in your opinion, such a measure would tend to the better security of the State from infectious diseases." In addition to this official opinion I have consulted three of the most distinguished legal firms in this city, and all of them agree, even a member of one of these firms who doubts the expediency of such action, that your board has the power in question. The Hon. T. J. Semmes expressed his opinion in these words: "The State Board of Health has the power to exclude vessels from entering the Mississippi river, and as a necessary consequence can prescribe the terms of admission." My confidence in these opinions is so firm that nothing, unless a contrary decision by our highest court, is likely to shake it.

The attorney general adds to his conclusion the opinion that you ought not, without the personal service of your own agents, to regard the certificate of the chief medical officer at Ship Island as "conclusively satisfactory." No one has called in question your power and right, on making the requested concession, to impose such conditions as may be proper. The National Board would cheerfully consent to your posting one of your own inspectors at Ship Island itself, as well as at Eadsport, who, with your officers at the Mississippi river quarantine, could certainly furnish such additional evidence as would be "conclusively satisfactory" to you.

Finally, on this question of legality, it is worthy of your attention that local boards in adjacent States have not been embarrassed by it. By some of these boards infected vessels have been prohibited, until after their thorough disinfection at Ship Island, from entering their ports; by this measure, the only practical one, these boards have enforced the advice of

the National Board, which has never attempted itself to exercise any forcible compulsion, either on local boards or on infected vessels.

2. FORFEITURE OF INSURANCE.

The same legal firms were consulted on this question, and the reply was unanimous that vessels refused admission by you to the Mississippi river and advised to proceed to the quarantine at Ship Island would not, by their compliance, forfeit their policies. My attention was called to the highest authorities on the law of marine insurance—to Parsons, Phillips, Arnould and Kent, all of whom substantially agree that a policy is not forfeited unless the vessel deviates, without adequate cause, from its prescribed route; that "no act done under compulsion can be regarded as a deviation;" that the orders of officers of a State are compulsory; and that compulsion, even if illegal, protects the policy from forfeiture.

Four of the most noted presidents of our most respectable insurance companies were also consulted, and these likewise united in the opinion that vessels would not forfeit their insurance policies. They added that, should your board take the action required by the National Board, the underwriters in this city could take instant action to quiet every question; and that the same action could be taken, with brief delay, by underwriters in other ports, whether domestic or foreign.

This evidence has satisfied me that vessels, if required by you, whether indirectly or directly, to proceed from Eadsport to Ship Island for quarantine purposes, would not forfeit their insurance policies; and that if there were any such danger, the remedy would be promptly and easily found.

3. DESTRUCTION OF THE COMMERCE OF NEW ORLEANS.

You are not requested to prohibit the passage above Eadsport of any vessels whatever, except only those "infected or furnishing reasonable grounds for suspicion of infection." The amount of injury to commerce will depend on the proportion which the number of such vessels bear to the total number of vessels entering the Mississippi river. It is believed that the number of the latter has varied during the past ten years from about 800 to 1300 annually. To estimate the number of the former I have examined the evidence for the past ten years in the annual reports of your board, and have found that these contain nothing whatever to indicate that there has ever arrived in any one year more than six vessels, either infected or which would have been, under any interpretation suggested by the National Board, reasonably suspected of infection. Your report for 1880 is the most satisfactory one on this subject yet published, and is for an unusually prosperous year. Out of 1271 vessels entering the Mississippi river you did not deem it

a wise precaution to detain more than the exceptionally large number of 151, and of these there was not one which was either infected or reasonably suspected of infection. Only one vessel out of the total 1271—the bark Excelsior—ever gave any evidence either of infection or of reasonable suspicion of infection; and your own report also shows that there was no evidence of this at Eadsport, nor until this vessel reached New Orleans. Now, it is respectfully submitted that the detour of not exceeding six vessels annually from Eadsport to Ship Island and back could not prove by any means disastrous to the commerce of New Orleans.

It may well be urged that the phrase "reasonable grounds for suspicion of infection" is a very elastic one and liable to great abuse. But no one has disputed your power to fix precise limits to the signification of this phrase, and to assign to duty at Eadsport your own inspector, together with an inspector of the National Board, with orders to enforce no interpretation except your own of this phrase. It has never been denied that you alone have all the power in this matter, and therefore can dictate your own conditions. An inspector of the National Board at Eadsport could not, under present laws and regulations, exercise any more power there than its inspectors now at New Orleans and at the Mississippi River Quarantine Station exercise at these places, unless you saw fit to delegate to him some part of your own power. Surely it would be easy to check, when and how you pleased, the least tendency to injure the commerce of this city, whether this tendency was or was not justified by wise precautions for the public health.

These facts satisfy me that the injury to our commerce would prove insignificant in comparison with popular misapprehension on the subject, and slight in comparison with the good it is believed would ensue.

4. SHIP ISLAND QUARANTINE NO ADDITIONAL PROTECTION.

The National Board long since declared that it had no desire to "abolish the State Board," nor to usurp "the power and authority conferred upon it by law," nor cause you "to abandon the fulfillment of your sworn and sacred duties," nor to impair the resources of your board. On the contrary, the National Board would rejoice to see your power and resources increased; for, disregarding less selfish considerations, is it not evident that, since it is a paramount duty of the National Board to aid and co-operate with local boards, the greater the influence of these, the greater must be its own?

The National Board has requested you to co-operate with it in providing New Orleans with what, it is believed, would prove an additional protection to the public health, and urges this for the sake, not only of this city, but also of many adja-

cent communities who firmly believe themselves in constant danger whenever New Orleans becomes infected. Would the Ship Island quarantine, as a station of refuge for infected vessels, furnish any additional protection? Stripping the disagreement between the two boards of all misapprehensions and false issues, this, in my opinion, is the sole question for consideration.

On May 8 I inspected your Mississippi River Quarantine Station, and testify, with pleasure, that I found it better than I had expected, and that I detected nothing to indicate that the officers in charge were not discharging their duty to the best of their ability, and as efficiently as the circumstances and the means at their disposal permitted. But I think that our future protection demands that these circumstances and means should be fully appreciated, for thus only can our Legislature be induced to give you the liberal aid required, and thus only can we secure from others needed sympathy and aid.

You report that Louisiana has on the Mississippi river "the best equipped and organized quarantine station outside of New York." As I have not inspected all of the others, I cannot add my testimony to yours, but I do know that no place in the United States has proved itself as liable to yellow fever as has New Orleans, and, therefore, that our quarantines should be second to none in efficiency. Dispensing with minor criticisms, I found two very great defects at the chief one of our three quarantine stations.

First—If there be any police force, it is inadequate to prevent communication between the quarantine grounds and the neighborhood; it is inadequate to prevent the passengers and crews of infected vessels from communicating with uninfected vessels and with the residents below, above and over the river opposite to the station; it is inadequate to prevent such passengers and crews from occasionally avoiding at Eadsport or elsewhere your quarantine and in reaching this city by towboats or otherwise; and it is inadequate for the protection of Eadsport itself, as testified by Capt. Jas. B. Eads in his latter published this day in the *Democrat*. Unless more amply provided with funds I do not believe it in your power to remedy this defect.

Second—Sanitation demands the thorough cleansing of an infected vessel, and this necessitates the discharge of its cargo, while commerce demands that these things shall be done promptly and economically, and these demands require an abundant supply of cheap labor. When inspecting the Mississippi River Quarantine Station I found one vessel paying $6 a day to every laborer, and the number secured by importation from New Orleans was inadequate, even at this price, to ensure the thorough and prompt unloading, cleansing and reloading requisite for the conjoint interests of sanitation and commerce. This grave defect is also out of your power to

rectify. Nevertheless, however powerless you may be respecting the two defects cited, sanitarians and merchants, or both, will remain dissatisfied until some remedy for them is found.

The first defect is so inseparable from quarantine stations on the main land, that sanitarians unite in demanding their location on islands. Besides this inestimable advantage, I have been assured that an ample supply of laborers can be obtained at Ship Island for $35 a month. Further, I have much more confidence in the ability and will of the United States to make its station at this island as perfect as is practicable than I have in your gaining either from the Legislature of this impoverished State or from the Council of this impoverished city the aid necessary to perfect our three quarantine stations—an end which must be accomplished, unless we are to continue tampering with half-way measures. Appreciating fully our great misfortune that Louisiana has no island, for a quarantine station, at the mouth of our river, and that Ship Island is so distant therefrom, and conceding that the three reasons now given in favor of this station may not be considered conclusively satisfactory, I will advance an additional reason, which, combined with the others, has sufficed to convince me that good policy dictates concession to the request of the National Board. The health authorities of the adjacent States of the Mississippi Valley demand this concession as necessary to their protection, and declare that, if their demand is not heeded, they will be forced to interrupt our commerce with them on the least suspicion of danger. Yellow fever is a public enemy, and our neighbors have as much right to a voice in its exclusion from the Mississippi river as upon the exclusion therefrom of any other public enemy. Louisiana has not hesitated, when to its advantage, to vociferate that the Mississippi river is a national highway, and that all the States should contribute to its jetties and levees; now, when other States demand what they think essential for the protection of their public health, shall Louisiana inconsistently reply that the mouth of this national highway is exclusively under its control, and shall be managed regardless of their wishes?

5. GENERAL CONSIDERATIONS.

Several additional considerations deserve attention. Should our hope of greatly increased prosperity be fulfilled, then it is certain that our unacclimated population will increase, and thereby our danger of infection and our need for additional protection. Further, our traveling facilities will also be notably increased, with this the danger of infecting our neighbors, and with this their demands for better protection. These anticipated conditions will, it is to be hoped, continue to strengthen the pressure both within and without this city to keep itself clean and uninfected, and to adopt every reasonable precaution to

attain these ends. Hence, it is idle to expect the present issue will die out, and if it be not met fairly and generously, then, when disaster overtakes us, as it may in spite of all efforts and concessions, New Orleans will find itself a helpless victim to the indignant distrust and hostile action of its neighbors. In this matter the National Board represents not only a large number of your fellow-citizens, and in my belief, the health authorities of adjacent States, but also the same generous country which overwhelmed this city in 1878 with millions of dollars of bounty. Is it fitting to refuse a concession urged by such applicants, and to attribute to a mean spirit of commercial jealousy their anxiety to shield timid communities, which are not hardened by habit to our dreadful scourge, nor protected as we, in large numbers, are by acclimation? They ask no more than an apparent sacrifice of an insignificant fraction of our foreign tropical trade in lieu of what they deem better security both for them and for us, and in lieu of annual jeopardy to our inestimably more valuable interstate commerce. For my part, I advocate proving to our neighbors that we love them as ourselves, and I, therefore, would concede to them a voice, though opposed to our own, in controlling the importation of yellow fever into the mouth of our great national highway.

Your concession would result, I am confident, in diminishing our risks of infection, and thereby would tend to promote our growing grain trade, our European imports, our home manufactures and our languishing summer business. Your concession would certainly accomplish the very desirable end of giving notice—as, apart from the consideration of an inspector at Eadsport, should, I think, be given by you—to all owners, agents and captains that vessels, certainly infected, shall no longer be permitted even to enter our river, but must, when destined for the Mississippi, proceed directly to the refuge for such vessels at Ship Island. By such measure, you would teach them a much needed lesson—namely, to enforce that better sanitary construction and regulation of their vessels which has enabled some steamship lines to ply between Havana and New York for a decenniad without having had a single case of yellow fever on board. This good result alone weighs heavily in the balance against the slight temporary injury to our commerce, and would, by permanent advantages, ultimately more than compensate this commerce.

Further still, your concession would give you greater influence in eventually promoting measures most desirable for our commerce; such, for instance, as gaining the aid of the United States in establishing quarantine stations perfectly satisfactory both to adjacent States and to Louisiana; and such as the stationing of sanitary officers both at Rio and Vera Cruz, whereby our intercourse with these ports would be rendered much safer, and the interests of our coffee and other trades would be greatly promoted.

In conclusion, gentlemen, it is my conviction that this question merits your farther consideration—your personal inspection of the Ship Island Quarantine Station, and of all the subjects pertaining thereto—and that you would give great satisfaction to many of your fellow-citizens, within and without this State, should you consent to reconsider your refusal, based on what, I have now stated my reasons for believing, were misapprehensions of the position on this subject of the National Board.

Very respectfully yours,

STANFORD E. CHAILLE,

Supervising Inspector National Board of Health.

RECTAL ALIMENTATION.

In the *London Lancet* (reprint) of April, Dr. A. Ernest Sanson, after alluding to the administration by enema of hot water, alcohol and different stimulants, medicinal agents, solutions of albumen and fatty matters, speaks of the researches of Dr. Andrew H. Smith, of New York, relative to the administration of fresh blood by enema. Dr. S. found that both serum and corpuscles were absorbed. In an autopsy made a few hours after administration of a blood enema, it appeared that the large intestine, for nearly three feet, was lined with a coating of thickened blood, which indicated that retrograde peristalsis had taken place.

The blood used may be from either oxen or sheep, and it must be defibrinated as soon as drawn. It should be used within twenty-four hours. When there is no stomach digestion, two or three ounces may be injected every two or three hours; or in less quantities when it is used to supplement gastric alimentation. To meet the difficulty of obtaining fresh blood, it is prepared, concentrated and preserved in tin cans, ready for immediate use. The blood is carefully dried at a temperature not exceeding 110° F., so that a fluidram represents an ounce of ordinary blood. It can be dissolved in water below 160° F., and is then ready for use.

TREATMENT OF PAIN BY MECHANICAL VIBRATIONS.

Dr. J. Mortimer Granville, in the *Lancet* for April, relates that he was induced to try the effect of local refrigeration for the relief of labor pains, as long ago as 1864. The result was eminently successful, the uterine contractions not having been interfered with. Reasoning upon the *modus operandi*, he was convinced that the pain was neuralgic, and was relieved by *changing the state of irritation* of the affected nerves.

This lead to experiment, in ordinary facial neuralgia, by rapidly tapping the skin over the fifth nerve with a Bennett's percussion hammer, an ivory plexímeter being interposed. The

relief obtained was very remarkable. At first he thought the effect due to shock; later reflection convinced him that it was due to the substitution of one set of vibrations for another. He then devised an instrument for the purpose of producing a definite number of blows per second, and found the sensation produced by it on a healthy nerve, so situated as to be readily thrown into mechanical vibration, similar to that caused by the interrupted current of electricity. If prolonged, the vibration extends its area, producing first a tingling, then numbness and finally jerking of the superficial muscles. Applied to the frontal ridges or margin of the orbit, the result was nervous headache or migraine. By the intervention of a metallic surface, or one of stiff paper, the vibration may be considerably extented. Such an application over the abdomen has seemed to excite peristaltic action in the intestines.

Having tried the instrument for the relief of neuralgia, he found the pain sometimes arrested—sometimes, again, aggravated. Further experimentation showed that rapid vibrations were needed to relieve a dull, heavy or grinding pain, while a slower movement arrested an acute pain. His theory is, that all nerve action is vibratory, and that the neuralgic state depends on abnormality in the vibrations, however produced. Relief is obtained by change of rhythm in the movements.

SALICYLIC ACID FOR DIABETES MELLITUS.

In the same number of the *Lancet* is an abstract of a paper on the above subject by Dr. Latham, of Cambridge, Eng. He has tried the remedy in six cases, giving 10 to 15 grains three times a day. In two cases the sugar disappeared; in the others it was diminished; in all the thirst and quantity of urine was lessened.

His theory is, that the remedy enters into chemical combination with the *materies morbi*, which he supposes to be lactic acid, and that this and glucose have a similar origin. He concludes that salicylic acid is useful in this disease, but that further investigation is needed to indicate the class of cases for which it is applicable.

THE REST TREATMENT IN GYNÆCOLOGY.

In the *Maryland Medical Journal* of May 1st, is reported an interesting case by Dr. Horatio R. Bigelow, of Washington, D. C. The subject was a married woman, 28 years of age, but childless, presenting a sallow complexion, care-worn face and emaciation.

Previous to marriage she had been a school-teacher, and the mental strain of this occupation had produced nervousness and insomnia, with loss of body-weight. She also suffered from constipation, headache and both nervous and muscular weakness.

Two years previous to marriage, she had experienced a great affliction, which aggravated the above symptoms, and she became sallow, with yellow conjunctivæ, but had no pain referable to obstruction of bile. She was worse at each menstrual period, suffered from rectal and vesical tenesmus and intolerable backache.

Physical examination showed a short vagina with retroverted uterus; cervix soft and swollen; great tenderness about the neck of the bladder.

Attempts were made to reduce the displacement by means of the sound in the cavity of the uterus and by pessaries, but these efforts gave great pain, without any benefit. Opium was administered largely, for relief of pain, and iron, bark and other tonics. Other local treatment was used, which it is not important to mention. Still she gradually grew worse; her memory and sight began to fail, and she became unfit for any occupation.

At this stage the advice of Dr. Wm. Goodell, of Philadelphia, was sought. He found the same local condition before mentioned, together with chronic congestion; but he attributed the constitutional trouble to *neurasthenia*, induced by the worry of a teacher's life and the affliction superadded. The jaundice was attributed in part to malaria, but chiefly to spasm of the gall ducts due to nerve-shock.

The treatment which he advised was absolute rest in bed from four to six weeks, under care of a skilled nurse. She had no communication with persons outside, not even her husband, and was allowed to make no active movements. For two days she was allowed only skim milk for food—a glassful every two hours. Then six glasses of rich milk a day, dialyzed iron, and an aperient pill, as needed, were administered; also on one occasion bi-chloride of mercury and arsenic, to counteract a suspected malarial influence. The galvanic current was passed over the liver and ovary, and the faradic over the trunk and extremities. Massage of the muscles and the Swedish movements were also practiced. At the same time measures were used to rectify the uterine displacement and lengthen the vagina.

This treatment lasted six weeks, during which she had gained ten pounds in weight, three inches around the waist, and one and a half inches around each of the extremities. She was then allowed to get up, and take moderate exercise, followed by periods of rest. The milk diet and tonics were continued longer, and the recovery was completed.

[This is substantially the plan of treatment advocated by Dr. S. Weir Mitchell in the extreme cases of what is now termed *neurasthenia*, the main features of which are absolute rest of body and mind, careful feeding, massage and passive motion. There can be no doubt of the propriety and success of this plan of cure.]

ON NORMAL HUMAN PREGNANCY.

Dr. P. O'Connell, in the April number of the *Chicago Medical Journal and Examiner*, proposes the following questions and answers:

(1) Where does fecundation take place?

Ans. In the ovary or any spot between the ovary and the *os uteri internum.*

(2) What time do the spermatozoa take to reach the ovum?

Ans. From a few hours to fifteen days after coitus.

(3) What time does the ovum take to descend from the ovary to the uterus?

Ans. From two or three to fifteen or sixteen days.

(4) What relation does conception bear to menstruation?

Ans. They are correlated. Menstruation is dependent on ovulation. Conception may occur at any time between the menstrul periods, but there is greater aptitude for it immediately before or after menstruation.

(5) Does labor set in exactly at a time to correspond to a tenth recurrence of the menses, if conception had not occurred?

Ans. His own observations furnished a negative answer.

(6) Is sex dependent on the number of spermatozoa finding access to the ovum?

Ans. He thinks not. Mr. Newport ascertained that a too copious application of spermatozoa to an ovum is positively unfavorable to their action. Others assert that a single spermatozoon is sufficient. The author thinks very few are sufficient.

(7) Is sex dependent on time of conception relative to menstrnation?

Ans. Certainly not, as proved by twins of different sexes, conceived before or after menstrnation. [This view requires proof that both twins were conceived at a single coitus.]

(8) Is the first child carried to full term?

Ans. This is proved by his own cases.

(9) What is the duration of normal utero-gestation in the human female?

Ans. 275 days. He is led to this conclusion by his own observation and by the fact that this was the exact period of the intra-uterine life of Christ. The great disparity in the length of time, in different cases, from a single coitus to the commencement of labor, is accounted for by the time occupied by the spermatozoa in reaching the ovum, and by the ovum in arriving at the uterus. This may vary from a few hours to twenty days, or even more, accordingly as the ovum is met just within the *os internum* or at the ovary, or at some intervening point; gestation being reckoned from the time the impregnated ovum is lodged in the uterine cavity.

CALIFORNIA HEALTH RESORTS FOR CONSUMPTIVES.

The N. Y. *Medical Record* of March 19 gives the result of an investigation into this subject by a committee of the State Board of Health, under the authority of the Legislature, with a view to the location of a sanitarium. San Diego and Santa Barbara were found to possess all that is desirable in mildness and equability of winter temperature; but the former is found rather too humid (varying between 60 and 77 per cent.), while the latter has about the same humidity, and in summer has a high temperature and occasional fogs and bad winds. For the winter season and in the incipient stage, they answer satisfactorily.

Two places were finally chosen as more favorable than others, viz: Sierra Madre Villa, in Los Angeles County, and Atlas Peak, in Napa County. The latter is especially recommended, being on the Coast Range, about 1500 feet above the sea. Its mean temperature is 50° in winter and 74° in summer; its mean humidity 45 per cent., and it is free of fogs and harsh winds.

Besides, the locality is not malarious, and affords abundant facilities for camping and out-door life. There are no definite facts, however, from actual experience, to confirm their favorable report on this locality.

SODIUM ETHYLATE FOR NÆVUS.

Dr. W. B. Richardson, in the *Lancet*, gives his experience in the local application of this new remedy. His researches on the amyls, ethyls and alcohols were made between 1863 and 1871, and in observing the action of the ordinary alcohols, it occurred to him to try the action of one in which sodium or potassium replaced the remaining atom of hydrogen which belongs to the water molecule present in the alcohols. The sodium and potassium ethylates had previously been known to chemists, but it occurred to him that they might serve as caustics and antiseptics. He tried the antiseptic effect on the fresh brain substance of sheep and found it effectual; also that when in contact with animal substances they become decomposed, absolute alcohol and soda or potash being produced by oxydation.

He also found that the ethylate, when applied in the crystallized state, or highly concentrated, left the animal structure soft or fluid, as before; but when diluted with alcohol, the latter agent produced rapid coagulation of albuminous or fibrinous substance, so that the ethylate acted as both caustic and styptic. Experiment showed, however, that the sodium compound is much superior to the potassium ethylate as a styptic, and consequently better adapted to the treatment of nævus.

The plan is to apply it carefully to the spot to be acted on with a glass rod or camel's hair brush (the latter being de-

stroyed by once using). A dense scale forms, which gradually loosens and can be separated in a few days. Then the ethylate is again applied, and so on, until the nævus gradually contracts away and disappears. Poultices should not be used to hasten separation of the crusts. The time occupied in treatment varies, of course, with the size of the nævus, and may extend over several weeks.

Dr. R. has also found it quite successful in the removal of tattoo marks, and the superficial nævi called *mother's marks.*

In one instance he applied the ethylate, on a pledget of cotton, to *nasal polypi*, and two or three repetitions were followed by its permanent disappearance.

He made a similar application (ethylate diluted with an equal part of absolute alcohol) to one of the nasal passages in a case of unilateral *ozæna*, leaving the pledget of cotton about five minutes. This was followed by severe pain and some irritation for three or four days. There was then so much improvement that the girl submitted to the application three times more, when a complete cure was effected, which remained permanent at the expiration of several months.

In the treatment of a case of *lupus non exedens*, in the hands of Mr. Robert Ceeley, very favorable results were reported at the date of Dr. Richardson's writing.

In a case of *lupus exedens* in his own hands, he had succeeded in producing arrest of its progress, but without satisfactory cicatrization; still this result is quite favorable, compared with other modes of treatment. It prevented decomposition and fœtor; destroyed vascular growth, and restrained purulent discharge.

As to the use of the agent by subcutaneous injection, he is not satisfied. It has been used in one case of thyroid hypertrophy, with the effect of greatly reducing its size and relieving the previous dyspnœa. A severe cold having been contracted, with cough and expectoration, the thyroid became congested and inflamed, and an abcess formed. The patient then became despondent, made up her mind to die, and in fact did die of hemorrhage while all alone; but it is possible that she improperly interfered with the dressings.

Other uses to which this agent has been applied by Dr. R., are the removal of warts, destroying a small melanotic growth on the face, for a rebellious ring-worm, for the removal of a small loose hæmorrhoid, for destruction of the vascular growth dependent on an ingrowing nail.

For the relief of pain produced by the action of the ethylate, he applied laudanum. Chloroform must not be used, as it is liable to form an explosive mixture with the ethylate.

In the debate at the Medical Society of London, which followed the reading of Dr. Richardson's paper on the above subject, Mr. Wordsworth observed that nævi often disappeared spontaneously, even after temporary increase.

Mr. Spencer Watson had used sodium ethylate, but was not satisfied with the result, except for superficial nævi. Mr. Edmund Owen, after extensive trials, concluded that it will answer in superficial cases, but in deeper growths he had to resort to Paquelin's thermo-cautery. The latter agent has the advantages of rapidity and certainty of action. Mr. Roger Bell also had failed to obtain good results from the ethylate in large nævi. He also thought it too slow in its action.

Dr. Routh thought it might prove useful as an injection in uterine and other fibroids. Dr. Richardson would not advise its use by injection, except in case of extreme danger to life and after failure of other measures.

IMPROVED STYPTIC.

A late journal gives the following formula:

Collodion	100 parts.
Carbolic acid	10 parts.
Tannin	5 parts.
Benzoic acid (from the gum)	5 parts.

The ingredients to be mixed in the order above named, until perfect solution is effected.

TRUE VALUE OF LISTERISM.

The *Medical Record* of Jan. 29th, while admitting that the Lister method of treating wounds is at least equal to any other, thinks that its intrinsic merits are more than counterbalanced by imperfections and disadvantages incident to its strict enforcement. The same results are obtained by attention to perfect cleanliness, rest and drainage, at the same time discarding the spray and the elaborate dressings of the so-called antiseptic system.

DIPLOMA-SELLING COLLEGES.

The *Michigan Medical News*, of April 10th, remarks that the Mass. State Med. Society is making an effort to purge that State of quacks. To this end it has furnished to a legislative committee a list of medical colleges, regularly chartered, which confer diplomas without attendance or examination. These are: American University of Medicine and Surgery, of Philadelphia; Philadelphia University of Medicine and Surgery; Physio-Eclectic Medical College, of Cincinnati; Physio-Medical College, of Cincinnati; American Eclectic Medical College, of Cincinnati; St. Louis Homœopathic Medical College; St. Louis Eclectic Medical College; New England University of Medicine and Surgery, of Manchester, N. H.; University of Medicine and Surgery, of Haddenfield, N. J.; and American Vitopathic College, of Cincinnati.

MEDICAL PROMOTION: Dr. Geo. H. Rohe.

The *Maryland Medical Journal* of May 1st announces that Dr. Geo. H. Rohe has been elected Clinical Professor of Dermatology in the College of Physicians and Surgeons, Baltimore. [This will be gratifying intelligence to many of our New Orleans readers, who will remember that Dr. Rohe was but recently among us, and universally esteemed for his social and professional qualities.]

IMPROVED CATGUT LIGATURES.

The Medical Times (Philadelphia) of April 9, gives Lister's new method of preparing these ligatures, so as to obviate the objection of too great solubility in serous fluids. One part of chromic acid is dissolved in 4000 parts of distilled water, and to this solution are added 200 parts of chemically pure carbolic acid. An equal weight of catgut is placed in the solution and steeped for 48 hours. After drying, the catgut is kept in carbolized oil (one part to five of oil). A piece of this cord less than three-hundredths of an inch in diameter, after soaking in serum half an hour, bears a strain of over eleven pounds, while ten pounds, according to Mr. Lister, represent the utmost strain he is able to put upon a cord himself.

ACTION OF SUGAR ON CALOMEL.

From time to time notes have appeared in various journals, warning against the changes said to be produced in calomel by sugar and various other substances with which it is often prescribed; while many therapeutists advise that, so long as calomel is being taken, no salted food or acid drink should be allowed. M. Verne has submitted these views to the test of experiment; he made various mixtures of calomel with common salt (in solution), beet-root and colonial sugar, solution of citric acid, etc. These he examined at the end of periods varying from three to fifteen days. Although at the end of these intervals the mixtures he experimented with showed to the eye slight traces of change, chemically he could find no evidence of the presence of corrosive sublimate, or of any soluble salt of mercury.

He refers such accidents as have been reported chiefly to impurities in the drug, as supplied to the chemist; calomel is usually, to some extent, impure, and should always be washed with distilled water and alcohol. The danger of giving acid drinks with calomel is purely theoretical; it was proved that the latter, when exposed for fifteen days to the action of a 20 per cent. solution of citric acid underwent not the slightest alteration. M. Verne concludes that the sub-chloride of mercury is a much more stable salt than is generally supposed; it is, in fact, more stable than corrosive sublimate, as solutions

of the latter, when exposed to light and the influence of various organic substances, deposit calomel. Non-coagulated albumen, however, at the temperature of the body, reduced calomel rapidly and easily, transforming it into a soluble albuminate. Neither common salt nor sea salt, at 40° C., had any action on calomel, either when used alone or in the presence of albumen. —*Glasgow Med. Jour.*, from *Bul. Gén. de Therap.*

COCA—AN ANTIDOTE TO OPIUM EATING.

Dr. I. D. Irwin recites a case of opium eating in the *St. Louis Clinical Record*, in which sixteen grains of morphine were taken daily for a length of time; for the relief of which habit he prescribed the fluid extract of Coca (as prepared by Parke, Davis & Co.) in tablespoonful doses on the 20th July. On the 24th she was able to leave the city, taking with her an eight ounce vial of Coca, which she was advised to take in gradually diminishing doses until it was all gone, and then to take no more Coca. We heard from the case subsequently, the habit having been overcome and the use of Coca discontinued.

THE THERMOMETER IN DIAGNOSIS.

Dr. J. B. Bradbury, Physician to Addenbroke's Hospital, Cambridge, in his recent address in medicine before the British Medical Association (*British Medical Journal*), made the following interesting remarks on the diagnostic value of thermometry:

General thermometry has been found useful in diagnosing cerebral hemorrhage from alcoholic poisoning, the general bodily temperature (rectal) falling at first below the normal in cerebral apoplexy, but not in drunkenness. Such a case is recorded by Mr. Foster in the *Lancet* for December 27, 1879.

General thermometry also assists, as in differential diagnosis of true apoplexy from the so-called apoplectiform seizures, which occur in progressive general paralysis, disseminated sclerosis, cerebral softening, and also from uræmic coma. Charcot says, "I have demonstrated by repeated observations that, in true apoplexy, especially when it depends upon cerebral hemorrhage, the temperature constantly diminishes some moments after the attack, and afterwards remains, generally for at least 24 hours, below the normal standard, even when intense and reiterated convulsive fits occur;" whereas, in the congestive attacks (so-called apoplectiform seizures) which occur in progressive general paralysis and in disseminated sclerosis, "the temperature, on the contrary, rises above the physiological standard, and tends to become gradually more and more elevated, during the whole continuance of the attack."

In cases of cerebral softening, according to Bourneville, the "period of initial lowering" of temperature commonly met with in cerebral hemorrhage, is either absent or much less slightly marked; and, after the first two hours in a case of softening,

the temperature may suddenly rise to 102° or even 104°, though it soon descends again to the normal standard, and afterwards exhibits altogether irregular oscillations (unless the pons varolii be the part affected); whereas, in cerebral hemorrhage, it is found that if the temperature, after the "initial lowering," rises soon after the attack beyond 102.5°, it rarely sinks again to the normal standard, unless under the influence of a shock resulting from fresh hemorrhage.—(Bastian.)

In uræmic coma, according to Bourneville, the temperature of the body begins to fall at the outset of the seizure, and continues to sink as long as the coma persists, so that it may fall as low as 90° Fahr. in fatal cases. On the other hand, in coma due to cerebral hemorrhage or softening, the lowering of the temperature is slighter in amount, and, in cases not fatal within this period, rarely lasts longer than twelve or twenty-four hours.—(Bastian.)

ON A NEW METHOD OF ARRESTING GONORRHŒA.

By W. Watson Cheyne, M. B., F. R. C. S.

Mr. Cheyne, who had been studying the infective diseases of wounds, had the subject of gonorrhœa brought to his notice as probably belonging to this class. The extreme contagiousness of this disease, the existence of a distinct period of incubation, and the steady spread of the inflammation from a given spot, all point strongly to a parasitic origin. When gonorrhœal pus is introduced into infusions of meat, micrococci grow in large numbers, and sometimes bacteria. Dr. Neiser has also shown the presence of enormous numbers of micrococci in gonorrhœal pus and in pus of contagious ophthalmia, and the general history of the disease points strongly to the idea that these organisms constitute the essence of the disease. These micrococci are found not only in the urethral canal, but also in the inflamed mucous membrane. In the case of gonorrhœa, Mr. Cheyne supposes that at the time of infection a small number of specific organisms are retained in the urethra; that these go on developing; that the products of their growth irritate and weaken the mucous membrane in their vicinity; that the organisms then penetrate and live in that weakened tissue, and that the extension of this process over a portion of the mucous membrane of the urethra is the cause of the inflammatory symptoms.

If this view be correct, the problem to be solved for the cure of gonorrhœa would be, how to destroy these organisms without, at the same time, injuring the inflamed and highly sensitive mucous membrane.

There are two substances highly antiseptic and but little irritating: these are iodoform and eucalyptus. Used as an injection they would do little good, as they flow out quickly and probably would not come in contact with the whole mu-

cous membrane. Mr. Cheyne, therefore, mixed them with cocoa butter and made them into bougies of various sizes. These bougies are introduced into the urethra and retained by a strap and pad. The bougie rapidly melts, and the urethra remains bathed in antiseptic fluid for as long a time as is necessary. Moreover, from the size of the bougie (a No. 9 or 10 catheter tapering to a point), the urethra is, so to speak, unfolded, and the antiseptic thoroughly applied.

The formula which seems best is 5 grains of iodoform and 10 minims of eucalyptus in a bougie of 40 grains. The specific cause being eradicated in this way, the eurethritis is treated in the usual manner. First, an injection of a saturated solution of boracic acid, or an emulsion of eucalyptus oil (1 ounce of oil, 1 ounce of gum arabic, water 20 to 40 ounces), is used for two or three days. At the end of that time injections of sulphate of zinc, 2 grains to the ounce, may be given, and it is well to order diluents and alkalies. Mr. Cheyne has used this treatment in over forty cases, and in all the result has been the arrest of the disease. For a day or two the purulent discharge continues, but it steadily diminishes in amount, becoming in four or five days mucous, and ceasing altogether in a week or ten days. The scalding and pain rapidly diminish and disappear in about a day and a half or two days, as the case is no longer a virulent gonorrhœa, but a simple urethritis. —*The British Medical Journal.*

Editorial Department.

THE MEDICAL JURISPRUDENCE OF THE ATTEMPT TO ASSASSINATE THE PRESIDENT.

The psychology of the recent attempt to assassinate the President of the United States is an interesting subject for the physician's study. The question of sanity or insanity is one for the medical profession to answer, which, upon the trial of Guiteau, becomes the only tribunal to which it can be referred. The evidence, as far as disclosed, fails to give proofs of malice; neither does it show the previous existence of homicidal propensity. The act was not from sudden and irresistable impulse, since he had deliberately planned it. Neither does it appear to us that the charge of insanity can be supported by the claim that he was morally insane. There is no doubting

the fact, that a long career of vicious and selfish indulgence had sufficiently blunted his moral sense to cause him to commit an assault upon life, upon smaller incentive or provocation than would otherwise obtain. Legally, "moral insanity is said, by those who use the phrase, to consist in a specific inability to understand or act upon the distinction between right and wrong—a sort of moral color-blindness, by which persons, sane in all other respects, are prevented from acting with reference to established moral distinctions. Whether such a disease exists, and whether particular people are affected by it, are questions of fact like any others."

This definition of moral insanity is from an eminent English jurist.

Admitting that the charge of moral insanity could be sustained to the degree of acquitting the prisoner of malice, questions of culpability for the long career of vicious conduct which resulted in this state of moral obliquity, are for the discussion of the jurist.

The assassin's crime appears to us to be the result of disordered reason, but to have been prompted by the delusion that he was the chosen instrument to effect some great revolution which was to inure to his own personal benefit and advancement. It was not mistaken patriotism that led him to seek the life of a ruler more than usually popular and guileless; nor malice, so much as the foolish delusion that supreme authority had directed him to kill the President, and this being accomplished, his own future would be well provided for. The utter selfishness of the man, and his uniform littleness are so positively proven, that we cannot ennoble him so much as to credit him with a desire to commemorate his name, even by a monstrous crime, like the ancient incendiary of the temple at Ephesus. He is a weak, selfish and cruel person, and knowing that one of the most eloquent preachers of the present day boasts of the "intimacy" of himself and followers with the Deity, what wonder is there that he adopted this delusion for himself, and at last came to believe that this "intimacy" was with himself sufficiently established to acquit him of any crime?

Reviews and Book-Notices.

A Treatise on Diseases of the Nervous System. By Wm. A. Hammond, M. D., Surg. Gen, U. S. A. (retired list); Prof. Diseases of Mind and Nervous System, Med. Depart. Univ. N. Y., etc. With 112 illustrations. Seventh edition, rewritten, enlarged and improved. 8 vo. Pp. 929. New York: D. Appleton & Co. 1881. [Sold by Hawkins.]

The additional matter in the present edition consists of new chapters on myxœdema, syphilis of the brain, spinal cord and nerves, and the symptomatology of cerebral and cerebellar lesions; also additions on the subjects of cerebral congestion, diseases of the sympathetic nervous system, locomotor ataxia, progessive facial atrophy, chorea, epilepsy, neuralgia and others.

The chapters on insanity, found in the previous editions, are omitted, inasmuch as the author is preparing a special work on that subject: nevertheless, this edition contains about 40 more pages than the previous one.

Prof. Hammond has been for the last ten years the leading American author in this branch of medicine, and his work, which passed through six editions in the first five years (having appeared in 1871), needs no introduction to the medical public. Its translation into the French and Italian languages also attests its appreciation abroad. S. S. H.

Medical Electricity: A Practical Treatise on the Applications of Electricity to Medicine and Surgery. By Roberts Bartholow, A. M,. M. D., LL. D., Prof. Mat. Med. and Gen Ther., Jeff. Med. Col., Phila. Author of "A Practical Treatise on Materia Medica and Therapeutics," and of "A Treatise on the Practice of Medicine," etc. With 96 illustrations. 8 vo. Pp. 262. Philadelphia: Henry C. Lea's Son & Co. 1881. [Sold by Armand Hawkins, 196½ Canal street.]

The author states that he was led to prepare this volume from the want of a suitable text-book to be used in connection with his annual course of lectures, but he has also endeavored to adapt it to the wants of practitioners. Presuming, as is

doubtless true, that most of the readers of the book will be ignorant of the elements of the science of electricity, he devotes part I, consisting of 8 chapters, and nearly 100 pages, to Electro-physics.

Part. II, also containing 8 chapters, treats of Electro-physiology; part III, 2 chapters, of Electro-diagnosis; part IV, 9 chapters, of Electro-therapeutics; part V, 2 chapters, of Electricity in Surgery; and part VI, 2 chapters, of Thermo-electricity.

One of the features of this work is the importance attributed by the author to static, or franklinic, electricity, which has fallen into general neglect in comparison with galvanism and faradism. Dr. Bartholow speaks highly of its utility in chorea, superficial neuralgias, spinal irritation and several forms of paralysis.

From the multitude of complaints for which electricity in its various forms is recommended, one might naturally conclude either that it is a panacea, or an imposture. The truth undoubtedly lies between the two extremes. The imagination contributes an important but unknown modicum in the cure, while both this and the apparatus together often fail. Nevertheless it cannot be doubted that electricity is a powerful and valuable therapeutic agent, though somewhat uncertain, and practitioners should not allow themselves to be entirely ignorant of the subject.

For the purposes of a general practitioner this work can be fully recommended, being sufficiently complete without being too voluminous, and quite up to the present state of knowledge on the subject. S. S. H.

Photographic Illustrations of Cutaneous Syphilis. By George Henry Fox, A. M., M. D., Clin. Lecturer on Diseases of the Skin, Col. Phys. and Surg., New York, etc. 4to. New York: E. B. Treat. 1880.

The three concluding numbers of the series are now before us, containing the following illustrations:

Part 10.—Syphiloderma Ulcerativum (five cases).

Part 11.—Chancre; Chancroid; Periadenitis; Condylomata lata.

Part 12.—Syphilis hereditaria (three cases); Dactylitis syphilitica (four cases).

The twelve parts contain 48 photographic plates, taken from life and afterwards colored by hand, thus securing perfect fidelity to nature. The plates are accompanied by 106 pages of printed matter explanatory of the illustrations, including about 30 formulas of remedies.

This series, taken in connection with the previous photographic illustrations of skin diseases, will furnish its possessor with invaluable aid to diagnosis, and after trial will be found indispensable. S. S. H.

Atlas of Genæcology and Obstetrics. Edited by Dr. A. Martin, Prof. Gynæcology, Univ. Berlin. Containing 475 black and 37 colored illustrations from the original designs of 91 leading authorities, supplemented by numerous illustrations from J. P. Maygrier's Nouvelles Demonstrations D'Accouchements. Elephant folio. A. E. Wilde & Co. Cincinnati.

The same publishers have recently issued an Atlas of Human Anatomy, which has been so favorably received, that they are encouraged to offer the present atlas on a similar plan. The work will be published in 15 parts, at the moderate price of $1.00 each. Every part contains 4 plates and 4 pages of explanatory text, so arranged that the printed matter may fall opposite the plates, when the work is ready for binding. The size of the page enables the publishers to present figures of extraordinary dimensions, an advantage which can not fail of appreciation.

The first 4 parts are now before us, and the others will follow at short intervals. The whole will form a valuable addition to the library of any practitioner. S. S. H.

Aphorisms in Fracture. By Richard O. Cowling, A. M., M. D., Prof. Prin. and Pract. Surgery, University Louisville. 18 mo. Pp. 70. Louisville: John P. Morton & Co. 1881.

Most of the matter of this little pamphlet was read at the meeting of the Central Kentucky Medical Society in 1877. Afterwards it was published in the *Louisville Medical News.*

The aphorisms, 131 in number, are followed by criticisms of several leading surgeons, more or less favorable. Several pages are occupied with remarks on the title, "Fractured Femur; Does its Longitude vary with its Latitude." The real subject, however, is the plaster-of-paris dressing, and in particular its praise for fracture of the femur, in opposition to the authority of Prof. Hamilton of New York.

The little work will be found instructive and convenient.

S. S. H.

Transactions of the Michigan State Medical Society for the year 1880. Pp. 131.

The above society seem not to be given to speech-making, as this volume contains no address from the president or an annual orator. It is made up mostly of short papers on practical subjects, a few of which may here be noticed.

Prof. Eugene Smith, M. D., of Detroit, uses for ophthalmia neonatorum an honest 5 grain solution of lunar caustic, two or three times a day, instead of irrigating with rose-water or something equivalent. We have used a much stronger solution with ample satisfation.

Dr. T. A. McGraw stands up for the general pactitioner of the healing art, and believes doctors ought to be taught to practice all branches, with the exception of dentistry, and even undertake to extract teeth.

Dr. H. O. Hitchcock contributes a report on the Work of the State Board of Health. On this subject he is well qualified to speak, having been a member for some years in the past, and having a right to some pride in the success of that board. As the State laws provide for local boards of health in all the townships and incorporated towns in the State, all in affiliation with the State Board, the organization is calculated to be admirably effective, as it is in fact. One of the most useful features in the Michigan plan is the practice of holding several sanitary conventions yearly at important towns in various parts of the State, under the auspices of the State Board of Health. In this way a wide spread interest in sanitation is created and fostered throughout the State, the fruits of which will ripen within a few years.

Dr. A. F. Kinne relates a case of puerperal eclampsia promptly relieved by veratrum viride. This remedy has been a favorite hobby with many, particularly country practitioners; but we confess it is rather too skittish for our riding with any sense of security.

Dr. Wm. Fuller relates two cases of severe injury, treated conservatively and successfully, reliance being placed chiefly on the free use of whisky as an antipyretic. The use of one or two quarts daily he considers equivalent to the full effect of quinine as an antipyretic, and the remedy more manageable. For many subjects it would undoubtedly be a pleasanter medicine, and they might easily grow fond of it, as children do of worm lozenges.

This volume reads more like a medical journal than State Society transactions, but perhaps that is no fault.

S. S. H.

Transactions of the Medical Society of the State of Pennsylvania at its Thirtieth Annual Session, held at Altoona, May, 1880. Vol. 13, Part I. 8vo. Pp. 495.

The President, Dr. Nebinger, in his address, presents arguments in favor of higher education among medical men, both preliminary and professional. He also sustains the therapeutic efficacy of judicious medication, in opposition to the increasing skepticism of the value of drugs.

A Report on Medical Legislation, by Dr. R. Lowry Sibbet, gives a brief *exposé* of the irregular medical schools of Pennsylvania, which have contributed so much to bring American diplomas into discredit at home and abroad.

Dr. John T. Carpenter, in his address on Obstetrics, speaks chiefly of the eminent obstetricians of the past, who have illustrated this branch of medicine in his State.

Dr. John V. Shoemaker praises oleic iodoform and oil of ergot in certain skin affections; the former especially in strumous troubles and psoriasis, the latter in eczematous and scaly manifestations.

Dr. J. Solis Cohen makes some brief remarks on mechanical hyperdistension of the air-cells, in order to clear the lungs

of accumulations of morbid secretions which would be expelled in the ordinary way with some difficulty after severe coughing, but by over-distending the bronchioles and air-cells, the secretions are readily dislodged.

Dr. Wm. Pepper, in remarks on the treatment of asthma, recommends remedies in which the alkaline chlorides, bromides and iodides form the most important constituents.

Dr. Benjamin Lee, in the Address on Hygiene, remarks the frequency of bad plumbing in cities and the agency of sewer gases in the production of such diseases as typhoid fever, diphtheria and diarrhœal affections.

Dr. John B. Roberts commends the bromide of ethyl, as an anæsthetic more agreeable and convenient than ether, and safer than chloroform.

Dr. Isaac N. Kerlin contributes an elaborate paper on the Enumeration, Classification and Causation of Idiocy, illustrated by a carefully prepared table of 100 cases, to show the causes and circumstances connected with them.

A carefully prepared report on The Abuse of Medical Charities, is the result of the investigation of the subject by a committee. This shows that about nine-tenths of those who apply for relief at the hospitals of large cities are able to pay something. The remedy proposed is that of organization of the institutions in the several cities for the purpose of learning the circumstances of applicants, and requiring some pecuniary acknowledgment from those able to pay. There can be no doubt that indiscriminate medical relief inevitably tends to the pauperization of large numbers of people, who might and ought to be self-supporting, but who begin the habit of leaning on others by accepting or seeking medical charity.

As usual, a large part of the volume is occupied with reports from county societies, which possess only a local interest.

The Pennsylvania reports always rank high in comparison with others, and this volume is up to the usual standard.

S. S. H.

Popular Science Monthly.

The June number of this sterling periodical comes to hand with a large number of articles of more than usual interest. Among those specially interesting to the profession we notice, "*Clothing*," by F. L. Oswald, M. D.; "*Sunstroke and some of its Sequelæ*," by Dr. J. Fayrer; "*Glucose and Grape-Sugar*," by Prof. Harvey W. Wiley.

The latter enters into a full description of the manufacture of these products, which are now engaging so much attention, and are in such large demand. Their uses are enumerated and the question of their deleteriousness fully discussed. Prof. Wiley concludes as follows: "There is no reason to believe that glucose or grape sugar, properly manufactured, is any less wholesome than cane or maple-sugar."

Other articles of interest fill up the number, the whole constituting one of the best numbers of this monthly which has reached us in some time. Everyone taking an interest in the scientific questions of the present day should have this journal in his library.

Books and Pamphlets Received.

Thirty-fifth Annual Commencement of Starling Medical College, with Catalogue, Session of 1880-81.

The Injurious effects of the constant use of Baby-carriages and Bicycles on the Physical Development of the Young. By Henry H. Smith, M. D. Read before the Philadelphia County Medical Society, Nov. 10, 1880.—Reprint from the Philadelphia Medical Times, Feb. 15, 1881.

A Defence of New Orleans Against the Charge of Being a Sickly City—Being an Address to the Mayor and City Council of New Orleans. By D. Warren Brickell, M. D.

Strangulated Veins of the Uterus, and other Papers, Gynecological and Surgical. By Thomas H. Buckler, M. D., Baltimore. —Reprint from the Boston Medical and Surgical Journal.

Trance and Trancoidal States in the Lower Animals. By George M. Beard, A. M., M. D., Member of the American Neurological Association; of the American Academy of Medicine, etc., etc.—Reprint from the Journal of Comparative Medicine and Surgery, April, 1881.

The Dengue Fever of 1880 *in Savannah, Ga.* By Louis A. Falligant, M. D. Member of the American Institute of Homœopathy; Member of the Homœopathic Yellow Fever Commission, etc., etc. Re-print from the North American Journal of Homœopathy, May, 1881.

Constitutional Syphilis,—A Critic Criticised. By G. M. B. Maughs, M. D., St. Louis.—Reprint from the St. Louis Medical and Surgical Journal.

Shortening of Limbs after Fracture. By Lewis A. Sayre, M. D. Reprint from the *Medical Record*, April 16, 1881.

Locomotor Ataxia, Differentiated from Functional Conditions which Simulate it. By A. D. Rockwell, A. M., M. D. Reprint from the *New York Medical Journal*, May, 1881.

On Unnecessary Surgical Operations in the Treatment of the Diseases of Women. By Clifton E. Wing, M. D., Boston.

Clinical Illustrations on Favus and its Treatment by a new Method of Depilation. By L. Duncan Bulkley, A. M., M. D., Attending Physician for Skin and Venereal Diseases at the New York Hospital, Out-patient Department. Reprint from the *Archives of Dermatology*, April, 1881.

Announcement of the Twenty-First Annual Course of Instruction at the Bellevue Hospital Medical College, Session 1880–81.

Special Statistics of the Cesarean Operations in the United States, Showing the Success and Failures in each State. By Robert P. Harris, A. M., M. D., Philadelphia. Reprint from the *American Journal of Obstetrics and Diseases of Women and Children*, April, 1881.

Simple Methods to Stanch Accidental Hemorrhage. By Edward Bork, M. D., member of the Medical and Chirurgical Faculty of Maryland and Baltimore Medical Association, etc., etc. Reprint from *Indiana Medical Reporter*, Evansville, Ind.

Sixth Annual Announcement of Meharry Medical Department of Central Tennessee College.

A Case of Exophthalmic Goitre—Recovery under Electrical Treatment. By A. D. Rockwell, M. D. Reprint from the *New York Medical Journal*, June, 1881.

Ninety-Eighth Annual Catalogue of the Medical School (Boston) *Harvard University, Session* 1880-81.

The American Medical College Association, Fifth Annual Meeting, held at Richmond, Va., May 2d and 4th, 1881.

Capon Springs and Baths—Hampshire County, West Virginia.

Tenotomy in the Treatment of Congenital Club-foot; with a Tabular Report of Fifty-two Cases, and Remarks Illustrating the Management of the Deformity. By Ap. Morgan Vance, M. D. Late Interne of the Hospital for Ruptured and Crippled, New York. Reprint from the *Medical Record*, April 23, 1881.

The Pathology and Surgical Treatment of Hypertrophic Nasal Catarrh—Description of a New Operation for the Radical Cure of Nasal Catarrh. By Wm. C. Jarvis, M. D., New York, Associate Surgeon to the Throat Department of Bellevue Hospital. Reprint from the *Archives of Laryngology*, Vol. II, No. 2, April, 1881.

Fortieth Annual Announcement of the St. Louis Medical College, St. Louis, Mo., Winter Session 1881-82.

Announcement of the Medical Department of the University of Pennsylvania for the One Hundred and Sixteenth Annual Session, 1881-82.

Announcement of the University of Louisiana—Academical Department, Third Session, 1881-82.

Stenosis of the Larynx, with Fibrous Adhesive Bands of the True Vocal Cords; Tracheotomy, Rupture of Bands, and Cure of Stenosis by General and Local Treatment—Some Remarks Concerning the Value of the Galvano-Cautery in Treatment of Diseases and Growths of the Naso-Pharynx. By M. H. Daly, M. D., Fellow of the American Laryngological Association, etc., etc.

Meteorological Summary—June, 1881.
Station—New Orleans.

Date.	Daily Mean Barometer.	Daily Mean Temp'ture.	Daily Mean Humidity.	Prevailing Direction of Wind.	Daily Rain-fall.
1	29.762	77.9	73.0	S. W.	.40
2	29.824	79.8	68.7	West.	.....
3	29.906	82.7	65.3	N. W.	.....
4	29.987	81.6	55.7	North	.....
5	29.806	77 4	70.3	South	.....
6	29.787	78.1	68.0	S. E.	1.30
7	29.836	75.6	78.7	South	.12
8	29 762	77.9	73.0	South	*
9	29.824	79.8	68 7	S. W.	.....
10	29.906	82.7	65.3	West.	.....
11	29 987	81.6	55.7	South	.01
12	29.972	80.2	57.7	S. W.	.....
13	29.973	76 8	79.7	N. W	.....
14	29.992	80.9	80.3	S. W.	.....
15	30.000	83.8	73.3	East.	.....
16	29.967	84.7	70 7	East.	.....
17	29 968	85.8	66.7	East.	.64
18	29.972	84.7	68.7	East.	.....
19	29.943	85.6	67.7	South	.....
20	29.901	87.2	58.7	East.	.....
21	29.812	88.8	59.3	S. E.	.....
22	29.800	90.5	56.0	North	.....
23	29.897	88.3	60.0	East.	.....
24	29 954	85.1	65.3	South	.11
25	30.021	87.9	64.3	S W.	.01
26	30.048	86.0	63 0	S. W.	.01
27	30.068	85.2	62.7	West.	.60
28	30.062	86.2	69.7	S. W.	*
29	30.034	84.1	68.0	S. W.	*
30	30.018	83.9	70.0	South	*
31	.....	.. .	...	.....	.....
Sums	.... .	....	....	.....	total
Means	29.923	83.0	66.8	S. W.	2.84

General Items.

Highest Barometer, 30.112, on 15th
Lowest Barometer, 29.747, on 1st.
Monthly Range of Barometer, .365.
Highest Temperature, 97 0 on 22d.
Lowest Temperature, 71.5 on 1, 2, 6.
Monthly Range, 25.5.
Prevailing Direction of Wind, S. W.
Greatest Velocity of Wind, 6th, 23 miles N. E.
Total No. of miles 3952.
Number of Clear Days, 12.
Number of Cloudy days, 1.
No. of days on which rain fell, 13.

COMPARATIVE TEMPERATURE.

1871.....		1877.....	80°.6
1872.....		1878.....	81°.3
1873 .....80°.1		1879.....	80°.9
1874.....81°.3		1880.....	80°.1
1875..... 76°.2		1881.....	83°.0
1876..... 80°.1			

COMPARATIVE PRECIPITATIONS.

1871.....inches.		1876: 6.20	inches
1872..... "		1877: 2.75	"
1873. 6.68 "		1878: 7.35	"
1874. 9.62 "		1879: 2.96	"
1875..4.92 "		1880: 6.43	"

* Too small to measure.

L. DUNNE,
Sergeant Signal Service, U. S. A.

Mortality in New Orleans from June 18th, 1881, to July 16th, 1881, inclusive.

Week Ending.	Yellow Fever.	Malarial Fever.	Consumption.	Small-pox.	Pneumonia.	Total Mortality.
June 18	0	6	14	0	2	189
June 25	0	19	13	0	1	186
July 2	0	9	16	0	0	127
July 9	0	9	17	0	0	142
July 16		7	20	0	0	125
Total....	0	50	80	0	3	769

NEW ORLEANS
MEDICAL AND SURGICAL JOURNAL.

SEPTEMBER, 1881.

ORIGINAL COMMUNICATIONS.

On Rabies Canina and Lyssa Humana, with Special Reference to Dr. Bigelow's* recent Monograph, "Hydrophobia."

BY DR. PAUL VON SEYDEWITZ,

Formerly Senior Physician to the East London Hospital for Sick Children and Dispensary for Women, London, England.

I.—RABIES CANINA.

Among the scourges humanity is smitten with, hydrophobia (conveniently, but wrongly so-called), i. e., *lyssa* in man and *rabies canina* in animals, must be considered as standing in the front rank.

This terrible disease causes not only physical pain and mental agony in the highest degree, but it seems likewise to baffle medical skill in trying to combat it successfully. Once broken out and duly confirmed, the result has been hitherto invariably fatal, for the few cases on record which are alleged to have recovered are so isolated, and besides so doubtful (not with regard to the recovery, but to the true nature of the disorder), that if they, indeed, are genuine cases of hydrophobia, we may safely maintain they only confirm the rule by ex-

Hydrophobia: by Horatio R. Bigelow, M. D. 8vo. Philadelphia: 1881.

ception. We shall show hereafter that recently some new remedies and an apparently rational mode of treatment have made their appearance but, taught by the past, we should do well to withhold our judgment as to their efficacy in order to avoid a probable disappointment. So long as the intimate nature of the *materies morbi* in a relentless disorder remains unknown, and so long as we have to resort to hazard and symptoms in selecting therapeutical agents to cope with that disorder, our treatment will hardly be anything else but guesswork, and therefore we cannot help avowing that we have become somewhat suspicious when a new remedy is announced with regard to a known incurable disease, and when that malady is called cancer or hydrophobia, or such like, our skeptical mood is far from being inclined to change.

But if hydrophobia apparently proves to be irremediable when once it has been fully developed, there is a good deal of hope to prevent its outbreak by a judicious prophylactic treatment, both surgical and medical; and therefore it should never be omitted when the slightest suspicion exists that the germ of this infectious malady has been inoculated somehow in the body of man (in the majority of cases—90 per cent.—by the bite of a mad dog), and is already in an early stage of incubation, or as the popular saying has it, lurks in the system. We say purposely, "in an early stage," because the disease may be already in full vigor (as shown by the contagion it transmits), when yet to the eye of an expert observer it is perfectly latent.

Before we go any further, however, we shall introduce to our readers a new book on the subject written by Dr. Bigelow, a physician of Washington, D. C., which can be greeted by the American profession with encouraging cordiality. Though this monograph be little else but a compilation, or as the author says himself, an endeavoring to embody in compact form the literature pertaining to hydrophobia, and though he seems, we regret to say it, to have failed to appreciate a very important account by a well known authority, namely, the excellent article on hydrophobia by Prof. Bollinger, of Munich, in Ziemssen's Cyclopædia,* covering 82 pages (for had he done

*"Cyclopædia of the Practice of Medicine," edited by Dr. H. von Ziemssen, vol. iii. (*Chronic Infectious Diseases*), American Edition, edited by A. H. Buck, M. D., New York, 8 vo., New York, 1875.

so, he would have hesitated in making some of his statements); it will be received with pleasure by medical men in this country, and by the laity too, for it is written plainly, and yet elegantly, and *à la portée de tous*, as the French have it.

Dr. Bigelow is quite right in affirming that the bibliography of the subject is very extensive, and covering so large a field of diverse languages that few practitioners have the facilities of traversing it. We take his word that there never has been in American literature published an exhaustive treatise upon the disease, but we find his own treatise far from exhaustive. For instance, he says nothing of "rabies, or the disease as it is manifested in the other orders of the animal kingdom," and this on the ground that "such a discussion would require a separate volume and is the proper province of the veterinarian." Of the first reason let us say nothing, but we deny that the disorder in animals, being of the province of the veterinarian, is therefore either unworthy or improper for medical men to discuss. Hydrophobia, whether in man or animal, belongs above all to the domain of the scientist, and a medical practitioner *ought* to know how the disease operates in animals, to enable himself to appreciate justly the widely different symptoms in man and beast. So far as the veterinary profession is concerned, let us say that in Europe, where the spirit of caste in the diverse grades of society is quite otherwise apparent than here, some of the best veterinarians and professors of veterinary colleges are doctors of medicine (as was the case with our late friend Dr. Renault of the National Veterinary College of Alfort, near Paris), and after contributing in no small degree to the advancement of knowledge, have secured a world-wide reputation. Dr. Renault, for instance, remained to the end of his life a highly valued member of the Parisian Academy of Medicine; the director of the Vienna Imperial Veterinary College is also a doctor of medicine, and the above mentioned Prof. Bollinger, after having been professor at the Veterinary School in Zurich, Switzerland, accepted a call as Extraordinary Professor of Comparative Pathology at the University of Munich, and also as professor of comparative general pathology at the Central Veterinary School of Mu-

nich, Bavaria, both of which positions he has been filling since the spring of 1874. With regard to Berlin and London, we should not be surprised at all to find among the professors of veterinary schools remarkable physicians by education and diploma. And there is nothing very strange about such facts, for the higher scope of the previous studies European medical students are compelled to go through, comprising classics, mathematics, general knowledge, etc., before they are admitted to matriculation, and the special professional medical studies proper, they have to finish before they are examined for the degree of M. D., make them eminently fit, if they wish to devote themselves afterwards to veterinary surgery, to grapple scientifically with all difficult questions of epizoöty and those zymotic and contagious diseases which are transmitted from beast to man; as, for instance, charbon *(pustula maligna)* glanders *(farcinoma* or *equininia)* hydrophobia, etc. Without deeming it therefore in the least derogatory, we shall, in pursuance of our article, indicate to the reader how hydrophobia manifests itself in the dog and rabid animals.

This is after all only a friendly criticism, and takes nothing away from the merits of Dr. Bigelow's work just as it is. When we reflect that the library of the Army Museum in Washington alone counts over 3000 monographs, treatises, and articles bearing upon hydrophobia, as Dr. Bigelow informs us in his preface, we readily admit, that it has not been an easy task to state the various theories concerning the disease, and to give the latest views of its morbid anatomy and treatment; the more so, as the author has carefully sifted the foreign literature too, which proves him to be a linguist besides.

Although a medical man, who has studied the subject and remained familiar with its literature may not learn much by the perusal of Bigelow's "Hydrophobia," the ordinary general practitioner and the public at large doubtless will. The author himself does not pretend to add to the acquired stock of information by any personal investigation, or close scientific discussion on the nature of the rabid virus, the pathognomic value of the symptoms, the P. M. histological examinations,

etc. His intention was not to write for that select but restricted circle of readers, recruited from true scientists alone. Therefore he can be criticised from another stand-point than that occupied by an author who undertakes to teach the coryphei of science, whose authority is long and deservedly established, and whose assertions have a *prima facie* importance and an intrinsic value, commanding attention. Thus we are permitted to be encouraging in our judgment, and what would be considered too lenient from the former stand-point, turns out to be only fair from what we have assumed.

Dr. Bigelow quotes largely from very good authorities on the subject, like Dolan, Fleming and others, and we shall, for convenience sake, make therefore extensive use of the monograph in question which, we repeat, is to be considered in this country as a welcome contribution to the generalization of the knowledge on hydrophobia, and has the advantage of being compact and very cheap, for it contains only 146 pages of text, spaciously printed, price one dollar, so that as a book of reference, every practitioner ought to have it in his library, and a notable portion of the laity too.

After the nomenclature, which forms the first chapter, the author gives the history of the disease in a second; the pathology and morbid anatomy occupy another; then he devotes a chapter to incubation, influence of age, sex and climate, another to the symptoms, diagnosis and prognosis, and nearly the fourth part of whole book, three chapters, to the treatment which he divides into preservative, curative and preventive. The last three chapters bear upon the recognition of a mad dog, emergencies, etc., curiosities of literature, and finally, upon the most recent views of the pathology and treatment of hydrophobia.

The disease was known to the highest antiquity, though it may be that, according to Dr. Russel, Sanitary Inspector of New York, the Hebrew writers are altogether silent with regard to it. But that only rare allusions to it are discovered among other authors previous to the Christian era is incorrect,

as we shall see very soon. He goes also evidently too far in contending that probably *all* the brute creation, besides the human species, are subject to it.

Bigelow, p. 14, quoting as an authority Wise's *History of Medicine,* says: "The earliest distinct mention of the disease occurs in a Hindoo medical work of great antiquity, dating probably as far back as nine or ten centuries before Christ, written by a renowned physician named *Susruta.* It is observed therein that when dogs, jackals, foxes, wolves, bears or tigers become rabid, they foam at the mouth, which remains open, and from which flows saliva; their tails hang down; they do not hear nor see well; they snap at and bite one another, and thus communicate the same malady. The symptoms of hydrophobia in human beings who have been bitten are likewise detailed briefly, and are said to terminate in convulsions and death. Scarification of the wound and burning with boiling *ghee*—a sort of oil made from butter—are recommended, as well as various antidotes to be subsequently administered. This concise and remarkably accurate description of the affection, with suggestions for treatment, may be regarded as an epitome of all ancient and modern research upon the subject."

Yes, indeed, so "concise and remarkably accurate" proves that description to be, that some authorities on the matter refuse to believe in the genuineness of the passage. Some others even hold Susruta for a myth, and that Hindoo work for a fable, but this is incorrect. Susruta's work on the System of Medicine exists, and has even been translated into Latin by a German scholar of the name of Hessler; and *this* edition, in Sanscrit and Latin, appeared at Erlangen, 1844–51. Of course, the epoch of the original Hindoo work is very difficult to fix, on account of its remoteness, and because the old Indian Brahmanic Sanscrit literature, as well as the Buddhistic Prâkrit and Pâhli literature, is only lately taken into hand by scholars like Max Müller (with respect to the Vedas) and others. We must nevertheless confess that, in our mind, too, that passage is well calculated to foster grave doubts as to its alleged antiquity, especially nine or ten centuries B. C.

Simonides, the elder, flourishing about 650 B. C., would not have failed to utilize it in his famous satirical poem: *Περὶ Γυναικῶν*, (in which he traces the origin of women to diverse animals), and to record their descent from some rabid she-wolf or she-fox, or some other mad bitch. Now, Simonides says nothing about Susruta. Simonides, the younger, born about a century later (554 B. C.), renowned at the epoch of the wars of the Greeks with the Persians, remains silent about him, and so does *Buddha*,* "the wise," a contemporary of the latter and a Hindoo besides, who would doubtless have mentioned him, had Susruta been known at the time of Buddha, because this earnest reformer is so very explicit in his hygienic recommendations to the poor classes, which he undertook to free from ignorance and misery.

We cannot enter here into further details, but this much we shall yet mention, that Marx, in his comparatively recent investigations, comes also to the conclusion that the earliest descriptions of this malady have quite a mythical character. What gives value to this affirmation in regard to Susruta's writing on hydrophobia, is the fact that Marx, with Bollinger, myself and ever so many others, hold *Aristotle* (died 322 B. C.), for the very first writer on the subject, and that writer *does not admit hydrophobia in man.* Aristotle distinctly says: "This malady is fatal to dogs and also to other animals that have been bitten by a mad dog, with the exception of man." True, this latter passage has been often questioned as to its authenticity, but the majority of the recognized scholiasts, as well mediæval as modern, at least all those whom I have consulted, have not done so. Now, so strange a fact as the negation of hydrophobia in man could not have escaped their attention in commenting upon Aristotle, and must have roused their critical investigation as to its genuineness; the more so, if there had been already on record a description of the malady affirming the contrary, i. e. the liability of man. And

*I mean the founder of Buddhism, a son of King Çouddhôdama and the beautiful "Maja Devi," whose body, according to the *Lalitavistâra*, was "a bewitching illusion." Buddha called himself, Çramana Gaoutama, "the ascetic of the Gotamides," while his proper name, at his father's court, was: Siddhârta or Sarvârthasiddha, and his popular name, under which he is generally known, was Çâkyamouni, "the monk of the Çakyas," because of his father's belonging to the celebrated royal Cakya family.

furthermore, it is not to be supposed that Aristotle himself should not have heard of Susruta, had he then already existed and been (as *Wise* and *Bigelow* hold) so "renowned a physician." Likewise, Plato remains silent about him. Now, Plato was born 429 B. C., and about 400 B. C. traveled through Persia and India previous to his sojourn in Egypt. *He* surely would have heard of Susruta. Whether Hippocrates was acquainted with hydrophobia is extremely doubtful. A couple of passages in his works, alleged to point to the affirmative, can be perfectly read the other way. It is true Hippocrates died 377 B. C., when Aristotle, born 384 B. C., was hardly in his teens. On the other hand, Democritus describes hydrophobia as an inflammation, and classes it with the severe spasmodic diseases allied to tetanus, and Democritus was only ten years younger than Hippocrates, but the man of Abdera was, besides, a great traveler, and the physician of Cos was not, which may account for his ignorance of hydrophobia. About the time Aristotle wrote, we find the disease mentioned by Epicharmus, Xenophon, and the quoted Democritus, the "laughing philosopher." Of course, all later authors, poets, historians, etc., knew hydrophobia and speak of it. So, for instance, Plutarch (died 120 or 130 of our era), Pausanias, Pliny the younger, Andreas Carystos, Cornelius Celsius, Gaius, Themison, Eudemus, Virgil, Ovid, Horace, Dioscorides, Galen, and his contemporary Cœlius Aurelianus, etc.

We have dwelt so long on this historical point, because it must and will be deemed important by those who take a more lively interest in our subject, to inquire who really was the first author speaking about it. We shall now say something of the nomenclature of hydrophobia, and after our explanations shall drop this term in order to use other and more rational ones.

The ancient Greeks called the disease *lyssa* or *lytta*, the Romans *rabies*, and in the middle ages, when learning and science were almost exclusively in the hands of the clergy, the term *rabies canina* was constantly made use of in the Latin treatises mentioning or describing the disorder minutely. We

encounter also most frequently the word *hydrophobia;* but, as we have already said in the beginning, this name is an improper one, the more so as hydrophobia, or dread of water, may or may not be a symptom of the disease, a fact to which already the earliest writers, Endemus, Soranus and Cœlius Aurelianus alluded.

Dr. Bigelow, page 85, quotes Berkenhout, writing in 1783, who says: "I am even inclined to assert that the hydrophobia is not generally a symptom of the disease produced by the bite of a mad dog. It rarely happens that the patient has any aversion to water or other liquids, until by experience he finds an insuperable difficulty in swallowing. He then dreads the approach of water, having already found that the attempts to swallow any liquid produce a violent and painful convulsion, so that the symptom in question is rather a real difficulty in swallowing liquids than any dread of water. As far as my own experience reaches, I can with great truth aver that I have never yet met with a single patient who expressed any aversion to the sight, sound, or mention of water, until he had found by experience it gave him pain."

The misnomer, hydrophobia, Dr. Bigelow adds, is made apparent from an analysis of over two thousand cases, in which there was not one instance of "dread of water." The patients ask for it, but are prevented from swallowing by muscular spasms, these being entirely due to an exalted reflex excitability, as acting upon a diseased mental condition, in which consciousness is retained, but the will so enfeebled as to be unable to control the external manifestation of the appetite in such wise as desire commands. Herein lies a difference between the rabies of lower animals and the hydrophobia of man. The former drink with avidity. Sauvages writes: "Constat repetita apud Gallos provinciales experimentiâ, canes luposque rabidos bibisse, manducasse, flumen transisse, ut olim Marologii et bis Forolivii observatum, adeoque nec cibum nec potum aversari."

Dr. W. A. Hammond,* on this subject says:

"Although there are objections to the name employed to

* Diseases of the Nervous System, New York, 1876.

designate the terrible disease I now propose to consider, the same is true of all other terms which have been applied to it, and the present has the advantage of being well known. So long as we are obliged, through ignorance of pathology and morbid anatomy, to use a nomenclature based on symptoms, we must expect to be inexact. The name hydrophobia is as old as Galen, and still retains its preëminence, notwithstanding the fact that the symptom on which it is based is sometimes absent." Dr. Hammond, in saying so, goes both too far and not far enough. The terms *lyssa* and *rabies*, both meaning raving, are by no means so objectionable terms as hydrophobia; besides, by designating the disorder in man by the words *lyssa humana*, and in beast by the words *rabies canina*, as is the custom in Germany among the profession, a rational distinction concerning the disorder, which manifests itself differently in man and beast, is at once established and thereby ambiguity avoided. Until the exact nature of the disease and the poison which causes it are known, these two terms, *lyssa* and *rabies canina*, will do very well. Besides, Dr. Hammond could have safely added that we suffer altogether in medicine from a too verbose and oftentimes quite erroneous nomenclature, not at all based upon symptoms; as, for instance, is the case with the barbarous word *cholera-morbus*, which would better be named *gastro-enteritis maligna*, and the algid form, *gastro enteritis asiatica;* and he could have forborne to console himself that the improper term "hydrophobia" has the advantage of being "well known." Precisely on this ground errors are perpetuated, for if, only for convenience sake, those "who know better" contribute to prolong false notions, what shall be expected from the ignorant, but that they will be eager in propagating them, not because the terms expressing the notions to which they are applied are wrongly chosen, but because they do not know better and believe them to be correct, since they are used by those they consider justly to be experts in the matter.

If we have dwelt thus long on the mere name, or rather on one of the names given to a subject, the literature of which is an imposing library in itself, we have deemed it important to

impress our readers with the necessity of abolishing the term "hydrophobia," in spite of its popularity, hoping they will be induced to follow the German practice among medical men, in using henceforth the terms of *lyssa humana* and *rabies canina*, in preference to any other designation concerning this malady.

We will complete the nomenclature by quoting Dr. Thomas M. Dolan, who gives the following synonyms, adding some he has not mentioned: Lyssa, Küno-Lyssa, Phobodyson, Phangydron, Rabies Canina, Rabies Contagiosa, Entasia Lyssa, Canine madness; die Hundswuth, die Wasserscheu, die Tollwuth, die Wuthkrankheit, die Hundetollheit (German); la rage (French); rabbia (Italian); mal de rabia, hydrophobia (Spanish); turbarea (Roumanian); vallenskrack (Swedish); vandsky (Danish); Byechenstro (Russian); Byesnania (Servian); Wscieklizna (Polish); Wcleklost (Bohemian); Sagdüränah (Persian and Turkish); Kelev-schote (Hebrew), etc. We do not vouch for the exact correctness of the spelling of some of these words, derived from languages using other graphic symbols as letters than the Latin and neo-Latin languages, like the Russian, Hebrew, Persian, etc.; but we lack opportunity for verification in procuring us, in this city, dictionaries of said languages, and give the spelling as we find it. The learned reader will supply, and the average reader not care, whether there is a vowel or a consonant too much or too little in a word, he will have great difficulty to pronounce, anyhow.

We will now give a sketch of *rabies canina*, in order to enable our readers better to appreciate its diference from *lyssa humana;* of the symptoms and treatment of which we shall speak more explicitly hereafter, and especially of the point of differential diagnosis.

Rabies canina is considered as a neurosis, and lately by some physicians and veterinaries of note, like Virchow and Prof. Bouley, the successor of Dr. Renault, at the National Veterinary College at Alfort, near Paris, as a blood-disease. We may as well add at once that the same belief is extended to *lyssa humana*, which is no more generally considered as a pure *toxo-*

neurosis, as was the case some time ago; and there is even, as we will see by-and-bye, a pretty good number of expert authors who advance the theory of blood-poision, contending that the nervous centres are only secondarily affected. Dr Hammand, however, when putting the question: "is hydrophobia a disease of the nervous centres or a blood-disease?" answers peremptorily himself by saying that, in the present state of our knowledge, it is utterly impossible to answer such a question. In substituting the words "satisfactorily and proved by evidence" to his word "utterly," one might feel inclined to share his opinion, especially with regard to the double zymosis theory, i. e., first in the wound and then in the system at large.

In animals of the canine and the feline tribes, rabies develops itself, in the opinion of the majority of authors, spontaneously, but others deny this, as we shall see hereafter. Its fixed contagium can be transmitted to other domestic animals, horses, cattle, sheep, goats, rabbits, etc., even to poultry, and is readily absorbed by man. Dr. Thomas Hawkes Tanner, in his "Practice of Medicine," says M. Youatt has proved that hydrophobia has occasionally a favorable termination in the dog. We doubt this to be the case, if true rabies was fully confirmed. Of 131 dogs bitten by a rabid animal or inoculated by M. Renault, I being partly present when these experiments took place nearly thirty years ago, 63 presented no symptoms of disease during the four subsequent months. In the remaining 68, rabies was developed at periods varying from the 5th to the 120th day; 12 being attacked between the 30th and 50th day. The contagium adheres to the saliva and blood and to all secretions and excretions of rabid animals and patients. The ordinary mode of transmission is the bite, and sometimes the mere licking of the human skin: for, as the virus acts qualitatively and not quantitatively, but a very little quantity of it is sufficient to cause contagion, provided it gets into immediate contact with the blood of a healthy person. An imperceptible oozing out of a minute quantity of blood from a scratched cuticle, no longer protected by the epidermis, a bursted small vesicle, a denuded spot on some part of the highly sensitive mucous membranes, as ex. gr. of the lips or the inner surface of the cheeks, are all apt to absorb

readily, though not instantaneously, the rabid poison, just as vaccine matter will be absorbed after a small scarification of the skin to promote its direct contact with capillary blood. No wonder, then, that infection sometimes takes place by the mere licking of a pet dog which actually suffers already from *rabies*, when it yet seems, even to the eye of an expert observer, perfectly free from all disease. A mere want of precaution, caused in the majority of cases by sheer ignorance of the consequences, and a slight carelessness in the handling of dogs, may thus be punished by the contraction of an implacable disease, accompanied with unspeakable suffering. What alleviates the gloom of this course of events is the fact that, when the saliva of the mad animals has been retained by the protecting dress, and the clean teeth alone penetrate the tissues of the human body, there is generally not to be apprehended an outbreak from *lyssa humana*. The same must be said in regard to *rabies canina*, viz: when a mad animal bites a healthy one on a spot where the hairy part of the skin might wipe off and retain the saliva to which, as we said above, the fixed contagium, which is never volatile,* adheres, causing thus the wound to be inflicted with clean teeth.

Thus, Prof. Bouley, in his report to a French consulting committee of public hygiene, says that statistics furnish indication in regard to the more or less inocuousness of bites, according to the different parts of the body upon which they were inflicted. He could have added: and according to the animal which bites, for the bite of rabid wolves is the most dangerous, probably because they attack in preference parts of the body not protected by clothing, as the throat, etc., and because they bite deeper; then follow those of dogs, foxes, cats, badgers, martens and swine; and, finally, as least dangerous, the bite of rabid herbivorous animals.†

* *Bollinger* in *Ziemssen's Cyclopœdia*, Vol. III, p. 445, Amer. Edition, says: "The virus of hydrophobia is contained in the saliva and foam of the affected animal, also in the blood and salivary glands, and possibly also in still other solid and fluid portions of the body; it is always fixed, never volatile. It is probably capable of infection, even during the stage of incubation, and also continues active for some time after death—hardly longer, however, than 24 hours."

† Bollinger: Op. cit. p. 475.

Besides, the rabid animals retaining their characteristic mode of aggression, the herbivorous feel less inclined to bite, for the mad horse kicks, the sheep butts, cattle try to gore, etc. "If we compare," continues Prof. Bouley, "the fatal with the harmless bites made upon the same region, we find that out of 32 cases, where the face was bitten, 29 proved fatal, which gives for these wounds a mortality of 90 per cent. Out of 73 cases in which the wounds were upon the hands, the ratios are inverted; 28 wounds upon the arms were followed by only 8 fatal terminations; and 24 bites upon the lower extremities gave only 7 fatal cases—17 remained harmless—showing a mortality of 28 per cent., and an inocuousness of 70 to 71 per cent. And lastly, the ratio of mortality for wounds upon the body is shown as follows: out of 19 bitten, 12 cases were fatal and 7 bites proved harmless."

"These facts, which are confirmatory of those afforded by other statistics, demonstrate also, that rabid wounds upon uncovered or unprotected parts, such as the face and hands, are much more readily contagious than those of the arms and legs, which the teeth of the animal cannot reach without passing through a portion of the clothing that wipes off the virulent moisture from the teeth. It is true, the consequences of bites upon the body seem to conflict with this statement. But we must remember that generally these wounds are upon uncovered parts, such as the neck and the chest; and that when a man is bitten by a rabid animal upon the body, he is also bitten upon his hands, which are his natural means of defence."

Bouley dwells on the fact that death has been, according to statistics, the invariable termination of cases of *lyssa humana*, and that the patients have undergone the most frightful mental and physical sufferings "which," says he, "explains and justifies the terror of hydrophobia, which people of all classes entertain."

In this respect Bollinger (*Op. Cit.*, p. 473) says:

"In consequence of the totally incorrect ideas which prevailed in ancient times with regard to this most dreadful of all diseases, the fate of human beings who were seized with hydrophobia was indeed appalling. The nearest relatives fled from

the unfortunate patients, abandoning them to their fate, as though they were caged wild animals. Every one feared to be bitten, and fancied that, by merely coming in contact with the body, or treading upon the saliva of a diseased person, the malady might be contracted. And even in our day there are districts in Europe (the military frontier of Austria) in which the dread of hydrophobia, which, indeed, to the horror of the population and the despair of the surgeons, rages terribly, is so great, that human beings who are suffering from it, or who are suspected of being so affected, are shot by their neighbors (truly, a very summary treatment), whilst those who have been bitten by rabid animals not infrequently commit suicide."

Concerning the seasons in which *rabies canina* mostly prevails, we obtain from a communication of Bouley to the French Academy of Science,* April 1, 1870 (giving an analysis of departmental reports in Imperial France for the six years 1863-1868), for the spring, 89 cases; summer, 74; autumn, 64; and winter, 75. Professor Röll, of the Vienna Imperial Veterinary Institute, has found the disease is more prevalent in mild than in hot summers. In Algeria the disease is most frequent in autumn and winter. Faber, in his Würtemberg Statistics, shows *rabies* to be there most frequent in March, February, June and January; and least so in September, October and August. In *Upernavik*, the northermost settlement of Greenland (72° lat. N.) *rabies canina* broke out as an epizoötic in February, 1860. The thermometer stood then for some time at 25° F. *below* zero, and the favorable condition of the sledge roads contributed greatly to the spread of the disorder, which proved fatal to *all* dogs attacked.† In like manner in 1863, hydrophobia prevailed in epizoötic form in the northern portion of Greenland, completely destroying all the dogs in certain districts (Hamann).‡

Dolan says in this respect: "The influence of certain seasons in inducing the production of *rabies* has long been a popular notion, which, it would appear, the stern testimony of facts has not been quite potent enough to dispel. During the hot

*Bigelow, p. 77.

†*Hering*, Jahresbericht über Thierheilkunde, 1860, p. 55.

‡Leisering, Jahresbericht über Thierheilkunde. 1866, p. 448.

weather—the 'dog days,' as a certain portion of the summer has been designated*—it has been universally belived that the canine race is particularly liable to be attacked by madness, possibly from the apparent distress dogs manifest when exposed to heat, as evidenced by restlessness, panting, thirst, etc. The popular notion, that *rabies* is more common in summer than winter, is of the highest antiquity and seems to have

*The "dog days," or canicular days (dies caniculares), have of course nothing to do with canine madness, for they derive their name, as it is well-known, from the star *Sirius*, to the naked eye the brightest and largest of all the fixed stars, which derives its own name from *Siris*, one of the Egyptian appellations of the river Nile, because its heliacal rising gave warning that the overflow of the river was about to commence.

Canicula was the old name of the constellation of *canis minor*, and called probably "lesser dog" because it only contained 14 stars, whereas, *canis major*, in the mouth of which *Sirius* is situated, was called "greater dog" on account of this constellation holding 31 stars; and we know well, how arbitrary and fancifully astronomers of old proceeded when demominating constellations. At the present time these two groups of stars are called simply the great dog and the small dog, though they have retained among astronomers their old name *canis major* and *minor*, which, as the comparison lies between two constellations only, is perfectly grammatical. It is necessary however to add that the term *canicula* was also used to denote *Sirius* alone, which is less rational.

In order to be better understood by the general reader in our explanation of the term "dog days," we may be permitted to indulge in an elementary astronomical definition:

"When a star appears above the horizon and becomes visible shortly before sunrise, the rising of that star is said to be *heliacal*. In the case of a star which is close to the Sun's orbit, when that body, by reason of its course along its orbit is approaching the star, the sun rises after the star and sets after it, but when the sun has passed the star and is receding from it, the star begins to rise before the sun and sets before it. When the sun is close to the star in its rising and setting, or when both bodies rise and set at the same time, the latter cannot be seen, on account of the superior brilliancy of the former. When, therefore, the sun is approaching the star and the star becomes visible at its setting, just after sunset, it is said to set heliacally; but when the sun has passed the star, and it is visible at its rising just before sunrise, it is said to rise heliacally."

From the heliacal rising of *Sirius* the ancients reckoned their dog days, which were 40 in number (20 before and 20 after the *rising* of the star). At present our canicular days are variously reckoned, ex. gr. from July 3d to August 11th, or from July 24th to August 24th, having been thus redneed to one calendar month. The rising of the Dog-star was ignorantly supposed to be the occasion of extreme heat and diseases incidental to these days, especially in Greece, to which the custom of reckoning by "oporas" (the Greek name for dog-days) was brought from Egypt by travelers like Democritus, Plato and others. It was by mere accident that the rising of the star coincided with the hottest season of the year in the times and countries of old astronomers.

The time of the rising of Sirius depends on the latitude of the place, and is later every year in *all* latitudes, owing to the precession. In time therefore, though in a far future, Sirius will rise in the dead of winter, and then the dog-days will be the coldest season in the year.

The Germans, who call the heliacal rising and setting of a star: "der kosmische Auf und Niedergang eines Sterns," call the dog-days: "die Hundstage," and the French: "La canicule."

been connected in some cases with the celebration of the festum Cynophontia (sic) of the Argives.* But is it the fact

* This is not at all the case. Dr. Dolan seems to have forgotten his early lessons in Greek mythology, for the celebration he alludes to was as far from any connection with *rabies canina* or *lyssa humana*, as possibly can be. Obviously the festival Κυνοφόντις was in honor of Heroules and his twelfth and last labor, the bringing to the upper world and carrying back to Tartarus its terrible janitor, the three-headed (according to some, fifty-headed) hell-dog, *Kerberos* or *Cerberus*, an offering of Typhœus or Typhon, and his not less hideous sister Echidna, who was to the girdle a woman and below a dragon. The *Nemœan lion*, slain by Hercules; the Theban *sphinx*, whose riddle was answered by Œdipus, whereby the monster's self-destruction was caused: the Sicilian *scylla*, devouring all wrecked seafarers seeking refuge in the rocky grotto where it lay in ambush firmly grown to a rock, waiting for those who had escaped Charybdis, the mythic daughter of Neptune and Earth, but really a whirlpool in the Straits of Messina; the horrid *chimœra*, a fabulous monster of Lydia, which, according to Homer, had a lion's head, a goat's body and a serpent's tail, and was destroyed by the Corinthian hero Bellerophon; the gluttonous *eagle*, tormenting the benevolent Titan Prometheus, when he was fettered to the Caucasus by Volcanus, by order of wrathful Jupiter in punishment for having brought from Heaven to man the Divine spark and having taught mortals the use of fire; and many such like amiable creatures were the other offering of that worthy couple coming themselves into existence by that desparate union of Gaia or Gæa (our mother Earth), with gloomy Tartarus, the Mythologic Hell, which, however, need not to inspire us with more faith nor fear than Bob Ingersoll professes for the Christian Hell.

None of the Greeks of old had a more lively interest in Hercules and his last labor, than precisely the Argians or Argives, as we shall show directly. They were, as everyone knows, the old inhabitants of the eastern region of the ancient Peloponnesus, formed by the Peninsula Argolis, which lies between the bays of Nauplia (Napoli di Romania) and Ægina, in Morea, which is the modern name for the ancient Peloponnesus, forming the southern portion of Greece. The city of Argos where chiefly the feast "Cynophontia," as Dolan has it, was celebrated, was, according to tradition, founded about 1800 B. C., by legendary Inachus, a son of Oceanus and Tethys (not to be confounded with Thetis, the mother of Achilles, who was one of the most celebrated Nereids, and married to Peleus). Inachus, it was said, came hither (like Danaus, 1570 B. C., the father of the fifty Danaides, of whom all but one murdered their husbands on the wedding night, and were condemned according to the legend, as we all know, to fetch water in sieves, or to fill a barrel pierced by innumerable holes, in the infernal regions) with a number of colonists from Egypt. If there could be any reliance in legendary dates, Argos would thus have preserved its name since nearly thirty-seven centuries. Be this as it may, Homer most frequently, using the part for the whole, calls the whole Greek nation Argians or Argives, very likely because during the Trojean war the inhabitants of Argolis furnished the strongest quota of soldiers. At the end of that war, 1181 B. C., or according to others, 1127 B. C. (for all prehistoric dates are very unreliable indeed, and the fall of Troy happened still in the heroic age, which followed the mythic and preceded the historic age), Argolis was divided in the small kingdoms of Argos, Mycenæ, Tirinthus, Hermione, Trœzene and Epidaurus. Among its rulers of that remote epoch, we may mention Atreus, Agamemnon, Adrastus, Diomedes, and still earlier Eurystheus, the head of the Pelens family, the cowardly cousin of Hercules, and his temporary master in obedience to a Delphian oracle. Hercules was said to be a native of Argos, but this is an error, for, as he was the son of Jupiter and Alcmene, the wife of Amphitrion, king of Thebes, in Bœotia (whom the fickle God seduced in assuming the form and features of

that *rabies* is more frequent in hot than in cold or temperate weather, or in other words, that heat induces the disease? The evidence furnished by statistics, compiled in France and Germany, incontestably proves, that it is not during hot weather that *rabies* is most prevalent, but during the cold and mild seasons."

And further on he adds: "The best veterinarians agree that meteorological conditions and the different seasons have little effect in exciting or determining the evolution of spontaneous rabies, and that it is a disease which may appear in any kind of weather."

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her husband), Hercules was born at the Royal Palace in Thebes, though he had to hasten to Argos, called by his chieftain Eurystheus, and to begin his twelve years servitude. Unwilling to become even a temporary slave, he consulted the Oracle of Apollo at Delphi or Delphos, and there it was explained to him that this servitude was agreed to between Jupiter and Juno, a daughter of Saturn and Rhea, as an atonement for his semi-godly birth, and to appease the vindictive and jealous legitimate spouse of the Olympian ruler, who had felt greatly insulted by Jupiter's sexual congress with his (Hercules) mother. After this explanation Hercules, though deeply affected by this unjust expiation of the innocent for the guilty, submitted to his dire fate and went bravely to Argos. How vivid is still in my memory the recollection of the natural beauty and the artistic and architectural treasures of that truly classical land of wonder, when I first beheld it in the brightness of youth and the clearness of the deep-blue Grecian sky; how sweet is the remembrance of my roaming about with a good edition of Homer's immortal songs as sole guide, reading from the Iliad or the Odyssey about the high deeds of the ancient heroes, Hector and Achilles, and his friend Patroclus. Ajax and Ulysses, and ever so many others, in the very land where these heroes lived; pondering at the ruins of Mycenæ (where Agamemnon had reigned and was slain by his faithless, murderous wife Clytemnestra and her royal lover, the perfidious Ægisthus, king of Argos), over the stern dictates of fate; sympathyzing with his noble-minded brother, Menelaus, king of Sparta, mourning the abduction of his not less faithless, but more beautiful wife, the lovely Helena, the direct cause of the Trojean war. Her body, too, must have been "a bewitching illusion," as the Indian expression, we quoted on another occasion with regard to the virtuous mother of the founder of the Buddhist religion, says; an expression, besides, which we find oftentimes used in the Sanscrit literature (chiefly in the Brahmanic literature, for the Buddhistic Prâkrit-and Pâli-literature is devoid of all poetry), for instance, in the old Indian epos, "Mahâbhârata," or in Kâlidâsa's "Meghadûta," or in the lovely idyls of Dshayadeva about God Krishna, living as herdsmen among human shepherdesses (edited by a German scholar, Lassen, 1836, in Bonn, under the title "Gitagovinda." in Sanscrit and Latin, and in German by Rückert in the "Zeitschrift für Kunde des Morgenlandes," Vol. I, Bonn, 1837). How truly delightful it was to explore all these legendary places, which of late have come again into general notice by Dr. Schliemann's astounding discoveries and most valuable excavations. Those of our readers who have likewise, when young, traveled through the Orient, will easily comprehend our having been carried away for a moment by a digression, which, we readily submit, has nothing to do with the grim subject of *lyssa* and *rabies*, though it incidentally arose from Dolan's erroneous supposition about the festival *Κυνοφόντις*.

Let us here note in passing, that, in the last lines, Dolan shows himself a partisan of the theory of *spontaneous development of rabies canina*; but, though he is considered pretty good authority on the subject, his opinion, after all, does not settle this question.

Congenital rabies is not impossible and rather probable. Callignac relates such an instance*. A cow, which, 48 days before being attacked by the disease, had been bitten by a rabid dog, gave birth, while suffering from *rabies*, to a calf. The calf was likewise seized with *rabies*, although another cow was substituted for it to suck from. This quadruped wet-nurse escaped.

Transference of the rabid virus by intermediate vehicles is not on reliable record, and we may conclude the poison of rabies is eitheir not at all, or at all events only to a very slight degree, transportable. If minute particles of the virus suffice to propagate infection, it may be inferred, judging from anology with other infectious diseases (for instance, malignant pustule), that possibly certain parasites (fleas and lice), which are nourished from the blood of the dog, and which any dog is hardly free from, may transfer the poison by means of their blood-drawing apparatus and thus produce inoculation, just as the fact of communication of small-pox by flies can hardly be questioned. Some time ago a case of vaccination by the medium of a flea was reported in England,† and I can personally testify to another which occurred in the early part of summer, 1870, when I happened to be in Vienna.‡

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* *Wochenschrift fur Thierheilkunde.* 1872, *p.* 358.

†*Lancet*, June 22d, 1872.

‡At the Imperial Lying-in and Foundling Hospital in that city, it is customary to vaccinate the infants previous to entrusting them with their country wet-nurses paid by the government. This vaccination is generally done at the clinical lectures on that subject, twice or thrice a week during one hour, and partly performed by the students under supervision of Dr. Carl Friedinger, director of the Institute. All babies which have not been vaccinated at the end of the hour, are carried back to the wards to make again their appearance at the next vaccination-day. Now whilst I was present, one of those babies awaiting its turn for vaccination and lying close to another infant, which had been already vaccinated, showed, a couple of days afterwards, unmistakable signs of being successfully vaccinated at the elbow, just above the *olecranon process* of the *ulna*. Evidently the act of vaccination had been performed in this instance by a flea, of which penetrating arguments there was generally there an abundance, owing partly to the agglomeration of so many females, partly to the heat of the Vienna summer, and last, not least, partly to the peculiar

We may just as well here as elsewhere say that, among the false notions about *rabies* there is one which counts, among the laity as well as medical men, no few adherents.

It is the erronous idea that even the bite of an angry, though healthy, dog is sufficient to produce *lyssa*. Upon *a priori* reasoning this is extremely improbable, and Bollinger justly remarks: "were this the case, almost every dog-bite would have a lyssogeneous effect, inasmuch as dogs are, as a rule, apt to bite only when irritated and enraged." The fact is, that all modern scientists who have judiciously studied the question, have come to the conclusion that no dog-bite, or indeed no bite from any animal liable to contract *rabies*, however much that animal may be irritated, can produce *lyssa*, when *at the time of the bite* the animal is healthy and the disease not in a state of incubation. So much is certain, and we have good reason to believe that even at *very early* stages of incubation, a dog-bite will prove to be harmless, as far as *lyssa* is concerned. We insist upon the statement, that the best veterinarians (besides authors speaking rationally about *rabies*) are at the present time unanimous in denying emphatically the possibility of a dog-bite or any other bite being able to prodnce *lyssa* or *rabies*, provided the animal (no matter whether dog or cat, wolf or fox, etc., whether in rutting season or otherwise excited, irrascible and angry) is at the time of the bite healthy and not in a state of incubation. Some scientists go even further and say, that the communication of the disease from one animal to another by the consumption of the meat or milk of rabid animals is extremely rare, food of this kind being taken, as a rule, into the stomach without any ill-effect.

We are perfectly satisfied, if this was generally known, it would prevent apprehensions of the worst kind, would spare in many cases cruel cauterization (which, to be sure, must always be resorted to in doubtful cases, as we shall see later), and many persons who have at present an invincible aversion to a

notions on cleanliness of Austrian country folk. Dr. Friedinger showing me the case at his morning-visit, told me that such cases happened from time to time, and he was sometimes spared, as in the case before us, the trouble of having the child vaccinated anew, the flea-bite turning out to have performed the operation quite successfully.

strange dog would enjoy a wholesome tranquillity of mind in that respect.

Concerning the all important question, whether the rabid virus is or is not spontaneously developed in the canine and feline races, we may content ourselves in briefly stating that the best authorities at present (Virchow, Bollinger, etc.,) reject the theory of the spontaneity *in toto;* and Virchow states forcibly, that that doctrine has contributed most of all to involve in doubt the specific character of the disease. Bosquillon* denied rabies (or lyssa) to be a malady *sui generis*, and says the symptoms are to be ascribed to fright, or to local injury.

Girard and T. Simon (1809) described "hydrophobie" as an imaginary disease. More recently Maschka† and Lorinser‡ revived the old doctrine of Bosquillon, and R. White‖ had gone so far as not only to deny utterly the specific character, but also the infecting property of "hydrophobia," regarding it as nothing more than an ordinary inflammation of the œsophagus, the stomach and the muscles of respiration, trying to prove the validity of his views by several, though unsuccessful, inoculations upon cats, rabbits and other animals and finally upon himself; but proving only, as compared with numerous positive effects following inoculation and with all acquired clinical experience, nothing but his own foolhardiness, as Bollinger says, indulged in with impunity.

This latter able writer, and perhaps the best living authority on *rabies* and *lyssa*, Virchow, Bouley and others not excepted, thus sums up the discussion on the point of spontaneity of the rabid virus in the dog and kindred animals.§ "In conclusion, the views above expressed as to the mode of origin of hydrophobia may be summarized as follows:

"Hydrophobia, like all other infectious diseases, never arises spontaneously, but requires, as an indispensable antecedent causative factor, an infection, by the introduction into the or-

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* *Mémoire sur la cause d'hydrophobie, vulgairement connue sous le nom de rage.* Paris, 1802.

† *Prager Vierteljahrsschrift für wissenschaftliche Heilkunde*, 1871, III, p. 1.

‡ *Wiener medicinische Wochenschrift*, 1865, Nos. 19–21.

‖ *Froriep's Notizen fur Natur und Heilkunde*, 1826, Nos. 264, 266 and 268.

§ *Ziemssen's Cycl.*, Amer. Ed. vol. III. p. 441.

ganism of the specific *materies morbi.* All the etiological conditions, such as the season of the year, temperature, want of freedom, suppressed sexual appetite, age, sex, and race are to be regarded neither as direct nor disposing causes. Very many of the best observers, recent as well as old, such as Blaine, Youatt, Magendie, Dupuytren, Breschet, furthermore Schrader, Adam, St. Cyr, Peuch, Boudin, Virchow and others, reject the theory of spontaneous development, a theory which has been adopted in a great measure as a matter of convenience, until additional proof and more exact investigations shall have been made."

These "additional and more exact investigations" are very necessary indeed, and we ardently wish that they be undertaken by competent and conscientious searchers without delay. When we come to enquire what really *is* known about the nature and mode of action of the rabid virus, the answer to this question is well calculated to sadden us deeply, for the specific infecting principle of the disease is absolutely unknown. The saliva of mad dogs has been chemically and microscopically analyzed, but the result gave no clue whatever to its detection. All we know is, that the virus belongs to the endogenous morbific agents, that it remains (unlike other morbid or chemical poisons) within the organism for weeks and months without producing any morbid symptoms whatever, that it is never produced *outside* the animal economy, but always within, and that its action is analogous to certain vegetable or chemical nerve-poisons, acting chiefly on the nerve centre of the respiratory system, on that involving deglutition, influencing spasmodic contraction, etc.—in one word, on the central nervous system in general.

We are surprised that hitherto all investigations have been rather one-sided, i. e., limited to domestic animals and those of the dog tribe, as fox and wolf, and with the latter two very sparingly indeed. Now let us put the question to those in wealth and power, animated with a true desire to benefit humanity: why not extend this area? Why not call to contribution the *fauna* of the terrestrial globe, and even amphibious animals of the *genera* Chelonia, Sauri and Serpentes? Why

not experiment on tigers, lions, jaguars, buffaloes, bears, camels, camelopards (giraffes), the diverse pachydermata (elephant, hippopotamus, rhinoceros); on oviparous reptiles, as tortoises and turtles; among lizards, on the iguana of the Central American woods, and the dragon of Guiana (*thorictis dracœna*), their size being of 4 to 5 feet; among the venomous kinds of snakes (*elapidæ; crotalidæ*), chiefly on the East-Indian spectacle snake (*cobra-de-capello* or *naja tripudians*), the rock-snake (*bungarus cæruleus*), the rattlesnake (*crotalus*—of which *crotalus horridus* belongs to Southern and *crotalus durissus* to Northern America), the copperhead (*trigonocephalus contortrix*), and among the non-venomous (*serpentes innoxii*), on the boa family, for instance the gigantic boa constrictor or the huge anaconda.*

We think there could hardly be made a serious objection about feasibility in execution, or opposed as an impediment the miserable dollar-and-cent question. When we reflect how much money the U. S. government and those of the European great powers have spent and spend daily for scientific pursuits, geographical explorations and agricultural purposes, such an objection would at once appear to us as most futile. France alone has spent fabulous sums for the improvement of the equine race; expedition upon expedition has been fitted out by the United States and nearly all European powers for the discovery of the north pole. How trifling then, in comparison with these undertakings, would seem the cost for experiments of the kind we suggest! And to speak of the material difficulties such experiments would involve, should provoke only a quiet smile in the age of the English Channel and St. Gothard tunnels, of the Suez and Panama Canals, of the contemplated direct navigation of the Ontario and Erie lakes in spite of the Niagara falls, etc. And to doubt the zeal and

* The Cingalese serpent Anaconda is of such an enormous magnitude and strength, that it is able to swallow a horse of medium size at a gulp, of course after having broken every large bone in the body and covered it with a thick viscid slaver, as snakes in preparing their food generally do. After such a gastronomic feast the anaconda becomes, naturally enough, so clumsy and awkward as to be unable to move itself; it resembles an inert mass, can safely be approached, and may be then experimented upon at our heart's content; and, if deemed necessary, one could experiment upon young animals.

devotion of our modern scientists to be ready for such experiments, when called upon by any government, at home or abroad, or some wealthy institution, like the Smithsonian Institution or the London Zoölogical Garden-Association, would simply be an outrage on these laborious workers in the domain of science. Besides, personal danger would be almost *nil* to the experimenter. A snake, after dinner, or a royal tiger of Bengal, when under the influence of chloroform, would be as harmless to handle as a guinea-pig or a rabbit. When in 1868 the cattle plague raged in Texas and alarmed the Eastern and Western population to a considerable extent, scientific experiments of all sorts were made, and among others, thermometrical investigation on wild cattle and buffaloes. Now, methinks, to trust a clinical thermometer in the rectum of a non-chloroformed wild buffalo in the middle of a prairie, seems, at first sight, not very easy, still it was frequently and harmlessly done. The results of experiments like those we suggest might perhaps be startling, and at all events will be highly interesting and beneficial to science. There is by no means, *a priori*, any cause for discouragement about discovering by experiments of this kind something which might lead either to the recognition of the true nature of the rabid virus or to a remedy furnished by some venomous animal experimented upon. The inoculation of the rabid virus, if successful, proves fatal: granted; but who can tell whether the virus, *if* ineffectual as to the production of the disease in the organism of one of the snakes above mentioned, might not *so* influence the new organism as to alter the nature of the snake's venom—which might then perhaps act as an antidote to the rabid virus? In other words, if the snake, as is probable, will not be much affected by the rabid virus, perhaps its venom might; if so, change its quality, the snake's body serving all the while as a sort of living retort. Should, however, the altered poison of the snake prove to be a reliable antidote, then the snake's body would turn out to have been a new sort of crucible, yielding to the modern alchemist "the king."* Or the virus might neu-

*In alchemic terminology "king" or "regulus" designated the pure metal, freed, by the nealing process, from all impurities contained in the ore.

tralize the snake's venom and render it harmless. From a *venenosus* it might become an *innoxius.**

It is proper here to call attention to Mr. Pasteur's recent experiments on the attenuation of the virus of chicken-cholera and of charbon, and its inoculation upon animals. He thus produced a mild from of those diseases, and thereby rendered the animals unsusceptible to the virus in its full strength.†

A priori we have hardly the right to reject a hypothesis, however bold it may seem at first sight, merely on the plea of its improbability, and it would be futile to attempt a demonstration *a priori* of a supposed physiological impossibility. When the doctrine of transfusion was first put to proof, was there not every probability, that the mixing of the blood of mammals and birds would prove fatal to the animal? And this *ex cathedra* denounced probability, has it not received an *éclatant démenti?* Is the time past when Webster's axioma: "Experimenta vera fundamenta sunt ex quibus in arte medicâ veritates elici possunt," has lost its value and become less true than when first uttered? Is human life so little worth that we should not try at least to find out by new experiments what we have hitherto failed to discover?

We ask the reader's pardon to have indulged for a moment in pure speculation, and shall now speak briefly of the cadaveric lesions found in dogs succumbed to rabies, or more correctly speaking of the *post-mortem* findings of rabid animals.

Being, however, short of space, we must refrain from presenting to our readers more than a mere summing up of the ana-

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* As it may be considered interesting to our readers, we shall indicate here how to recognize at once, *i. e.*, by the mere aspect, if a wound inflicted by a serpent is a poisonous one or not.

Bollinger (op. cit., p. 542), says:

"The wounds produced by the bite, as it is the case with venomous serpents generally, are of a *penetrating* character, and two in number, thus, • • , whereas the wounds inflicted by a non-venomous snake are of a zig-zag shape: ⟩⟨ In consequence of the curved outline of the poisonous fangs, the wound likewise presents a curved shape, and in those portions of the body which the snakes are unable to grasp with their jaws, it penetrates but a short distance (about one millimetre) into the tissues; in other parts' *ex. gr.* upon the fingres and toes, the wound equals in depth the entire length of the fangs which have been forced into it."

† See last number of this Journal, page 121.

tomical lesions revealed by the P. M. examinations of rabid dogs and other animals having succumbed to rabies. We shall do it in the concise words of Bollinger :*

" We find as most important," says he, " a dark, thick and tar-like condition of the blood; œdema of the brain; more or less pronounced catarrhal alterations of the mucous membranes, especially of the respiratory and digestive canals, conjoined often with hyperæmia and ecchymoses; hyperæmia and cyanotic discoloration of the parenchymatous organs; an absence of the usual contents of the stomach and intestines, and the presence therein of indigestible foreign substances; and finally, the striking emaciation of the entire animal."

In this last point *all* authors agree.

In wild animals which have died of *rabies*, just as in cats, similar lesions are found,† upon *post mortem* examination, to those observed in dogs, as just quoted. " In herbivorous animals," expressly states Bollinger, " there is a complete absence of all characteristic changes, and Adam is of opinion that in cattle the morbid appearances are often similar to those of the cattle plague.

We shall have to give again the anatomical lesions as observed in P. M. examinations in the human cadaver; we may therefore here content ourselves to state that Bigelow, who does not intend to treat and discuss *rabies* more than he can help it, as we have seen by his preface, mixes the morbid anatomy of man and beast, in so far as he states what veterinarians have found in the latter, and says, page 45 : " Bruckmüller, after the most careful post-mortem examination of 375 rabid dogs, during a period of twenty years, arrived at the conclusion that the evidence furnished by dissection is of no value in defining or distinguishing the affection, and is worthless as a foundation for any theory."

According to Röll, the cadaveric lesions observed in canine rabies offer a certain similarity to those which are the consequence of acute poisoning by narcotic substances.

On the whole, as one can readily observe after what precedes,

* Ziemssen's Cyclopædia, Amer. Ed., vol. iii., p. 466.

† Köchlin, Œrth, Bruckmüller.

the P. M. room fails to throw any light on the subject. Its disclosures are almost *nil*. Either they are such as are found in the majority of cases where dogs and other animals have died from various causes, not rabies, or they are isolated, and probably in connection with quite extraneous causes, if they differ with the general findings.

As we are, after all, writing but a cursory sketch, and not a regular treatise on *rabies*, we shall henceforth be very brief, for want of space, confining ourselves rather to facts than to discussion. We can fairly do so, for what yet remains bears only on the description of the symptoms, diagnosis, differential diagnosis and treatment. We shall, however, for completion's sake, add a synoptical table showing the percentage of *rabies* among dogs of different breeds, and quote Dolan's instruction how to recognize a mad dog. The reader ought not to forget, especially for what follows, that in this article we have only *rabies canina* in view, i. e., the disease as manifested in dogs and other animals: if necessary to draw occasionally a parallel with *lyssa humana* (the subject of our next article), we shall not omit to state distinctly that we speak of man, as, in fact, we have done all along hitherto.

No specific changes are to be observed as resulting from rabies during incubation, either at the seat of the wound or in any other portion of the bitten or otherwise infected animal; and, as a rule, the wound after a bite heals very rapidly. If inflammation occurs, it is the exception. The time of incubation ranges from 3 to 5 weeks. Shorter or longer intervals (minimum 6 days, maximum 4 months and later) are exceptional and very rare. Haubner says, in 83 per cent. of all cases rabies breaks out within two months. One single case is on record where a dog has become rabid after eight months from the date of infection.

In the other dosmestic animals incubation varies from 2, 5, 7 to 10 weeks; exceptionally from 9 to 15 months.

Rabies appears in dogs in two different forms: first, the *violent* form; second, the *sullen* form.

We have said already that there is hardly any other disease about which so many fallacious notions exist among the general public and, alas! medical men, as *rabies* and *lyssa*. This holds especially good with respect to the characteristics of the affection, although we have long possessed admirable accounts; as for instance, those of Meynell, Youatt and Hertwig.

We can give here only an outline, but an accurate description of a malady present in so many varieties depending upon race, sex, age, physical condition, temperament, etc., is under all circumstances very difficult; for Hertwig rightly remarks, that hardly two cases correspond exactly.

In the first variety of rabies, the *violent* form, we distinguish three stages: 1st, a prodromic or melancholic stage; 2d. an irritative or maniacal stage; 3d, a paralytical stage. The duration of the first stage is from half a day to two or three days; that of the second not more than three, seldom four days; and the duration of the third and last stage, which invariably terminates fatally, depends on circumstances, and is directly developed from the second. In most cases death ensues on the fifth or sixth day, rarely later (seventh or eighth day), and life is *never* prolonged beyond the tenth day.

All cases of alleged recovery rest upon untrustworthy evidence, or upon diagnostical errors, *i. e.* recovery took place in cases where there *was not rabies*, but another disease mistaken for rabies. We do not know what the future may yet have in store, but for the present there is no going out of this dilemma: either rabies and fatal termination, or recovery, but not from rabies.

The animals, in the violent form, manifest at the outset a changed behavior. They become irascible, fidgety, sullen, restless. Their behavior towards their habitual surroundings is also altered. Either they are more confiding and friendly than usual, or more irritable, even extremely so; morose and easily enraged. On slight provocation they crouch and show fright, which indicates a condition of hyperæsthesia. They will often lick their cicatrized wounds, inflaming them again thereby, and frequently a moderate redness of the eyes may be observed.

Even at this stage the animals manifest a disordered appetite, and this morbid symptom is one of the most constant. They reject all food, touching only a few favorite bits, or the particles may drop from the mouth; but, on the contrary, they will swallow all sorts of indigestible substances, such as are never devoured by healthy dogs—hair, straw, dung, rags, earth, bits of leather and the like. They will eagerly lick cold objects, stones, iron, the noses of other dogs, and likewise their own urine.

The sexual instinct appears at times to be stimulated. Meanwhile they manifest constant uneasiness, appear shy, and seem subject to spectral illusions. They obey only with reluctance. Their movements show already uncertainty and weakness, and tremulousness is observed of the hind part of the body. Sometimes they squint on one or both eyes.

In this first stage the outward appearance of the animal is not much changed. Wrinkles are formed on the forehead, and consequently there is often a ferocious look; the conjunctiva is ordinarily strongly injected, the eye is kept shut from time to time for a few seconds, the pupils are moderately dilated.

A tendency to choke is not unfrequently noticed; also a difficulty in swallowing and a disposition to vomit; but, as it often happens that the early symptoms are insignificant, and not uniformly present, the greatest danger to man is therefore incurred at this stage.

A good many of these early symptoms are, however, of slight importance as to their diagnostic value, on account of their short duration on the one hand, and on the other because they are met with in other diseases.

Bollinger, whom we have to thank for the very concise manner in which he comprises the characteristics, and whose summing up we will give textually, says that at times the outburst of the disease is very sudden, in which case the early symptoms, supposed to be of a precursory nature, prove generally to have been active indications of its presence.

In the second, the violent or maniacal stage, says Bollinger, which is the period of actual rabies, the characteristics appear only spasmodically. Among them we note a change in the an-

imal's demeanor, continued absence of all desire to take food, a very striking propensity to bite, a peculiar alteration of the tone of the bark and the violent efforts made to break away and stray about.

When at large, the dogs wander about with no definite object, and travel over a considerable extent of country within a short time. Frequently the dog returns home, looking suspicious and sly or trying to slink away, but towards people he knows well, appears very friendly. Now, as Hertwig rightly remarks, a dog, previously faithful, which deserts his home, indicates always a high degree of mental disturbance, and if in this state he quietly returns home, he is all the more dangerous.

A great propensity to bite is remarked during the paroxysms, which sometimes may last for hours at a time, during which he evidences great strength; for instance, by leaping over high fences or breaking from a strong chain. The rabid animals are, during such paroxysm, in a state of delirium, subject to hallucinations, snap at the air, etc., afterwards relapsing frequently into a sort of stupor. Then their countenance is fixed and staring. Frequently the face twitches convulsively, while in the later stages there are occasional convulsions. Sometimes they manifest a decided insensibility to external expressions, and remain very quiet under blows. Bollinger tells us that, in consequence of this impaired sensibility, the rabid dog has been known to bite off both testicles together with the prepuce, or the end of the tail; or they will gnaw away their feet even to the bone.

In the intervals the mental aberration disappear or is modified, and the dog recognizes ordinarily his master. The voice is generally altered. A peculiar sound between a bark and a howl is uttered hoarsely and roughly. This short, sharp sound is often prolonged into a howl. This characteristic noise, which is a closely related pathognomic sign, is heard in no other disease of dogs.

No special dread of water is manifested. Adam states that in rare cases the animal suffers from spasm of the throat, when it tries to drink. Moreover rabid dogs will lick their own

urine, as said above, will splash in water set before them and freely drink thereof. By Meynell and afterwards by Blaine, Hertwig, Greve and others, it was demonstrated that rabid dogs tolerate the sight of water without any signs of excitement; and it is equally unfounded that there is any dislike to air, light and the glare of the sun. Fæces and urine are scanty.

A discharge of saliva and foam is scarcely ever seen. Only in a case of inability to swallow, saliva is emitted. Respiration is usually but slightly affected.*

As we said above, the third stage is developed directly from the previous stage. Within a short space of time the animals become changed in appearance by the sudden emaciation, the more striking from the short duration of the disease. The countenance is staring, the hair thoroughly roughened, the eyes sunken, dim and glistening; the lead-colored tongue projects from the mouth, which generally is dry and open; the tail droops, and the whole appearance is repulsive.

The general weakness constantly increases, especially in the hind parts; gait staggering and uncertain; the animals, hardly able to stand, tumble about like a drunken person. Often they lie curled up, as if trying to sleep, and raise themselves on their fore legs only when irritated. They still attempt to bite, or at least to snap, but are now to those around them only in a slight degree dangerous, on account of their physical exhaustion. The voice becomes hoarser and hoarser, breathing more difficult, pupils dilated, expression stupid and drowsy. The pulse, (which in the former stages has been on rare occasions only observed, on account of the uncontrollableness of the animal), if now felt, is found small and filiform. At times partial or complete convulsions set in, and soon arrives death and puts the unfortunate creature out of its misery.

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* Among the ancient traditions, so much credited still, let us mention the notion, that there is always a discharge of saliva from the mouth of rabid dogs, that the muzzle is covered with foam, that the tail is held closely to the hind legs, and that the dogs always run in a straight line. All these symptoms are purely imaginary. So long as there is sufficient strength, the tail is carried and wagged as usual; but with increasing weakness it droops. When there is no difficulty in swallowing, the saliva is not discharged, and the animal runs about as a healthy dog would, sometimes straight forward, sometimes in diverse directions, sometimes in circles. The notion that a healthy dog can recognize one that is mad by a peculiar odor, is likewise erroneous.

With regard to the *sullen* rabies, or the second form, we can be more brief still. Its average occurence is about one to five, or 20 per cent. "Whilst formerly" says Bollinger (p. 458, *op. cit.*) "the sullen form was commonly supposed to be the first, and the rabid form, on the other hand, the second stage of the disease, it would appear more rational to consider that in the former the melancholic stage passes at once into the paralytic stage, according to which view the second or maniacal stage is to be regarded as omitted, or, at the most, barely noticeable. The disease runs therefore a shorter course."

Paresis of the lower jaw soon supervenes in *this* form, the mouth remains wide open, and consequently only a slight inclination to bite and gnaw prevails, which, however, becomes soon impossible. Only when greatly irritated, the power of shutting the jaws and biting is retained. There is no aversion whatever evinced for fluids. In this form genuine frothing appears, resulting from the flow of mucous and saliva from the open mouth. A variety of phenomena analogous to those of the violent form may be added: peculiarly changed voice (but seldom heard), the mental disturbance, the change in the appetite, the absence of fæcal discharges, the very rapid emaciation, the paralysis of the hind parts, and the uniformly fatal termination, which results in two or three days.

Bollinger (p. 459, *op. cit.*) sums up these symptoms as follows: "To review the general features presented by these two forms of the disease, we would note, as the most important symptoms in violent hydrophobia, the changed behavior, the peculiar uneasiness, the tendency to slip away, the propensity to bite, the perverted appetite, the absence of all desire to take food, the intermittent mental disturbance, the rabid paroxysms, the peculiarly changed voice—the howling bark—the altered appearance, the absence of any dread of water, the rapid emaciation and the uniformly fatal termination after a brief illness.

"In the sullen form of hydrophobia the general features of the first stage are similar to those just described; paralysis of the lower jaw very soon appears, with the hoarse tone of voice, the disturbance of the mental faculties and appetite,

and emaciation; while the rapidly fatal termination is also preceded by symptoms similar to those of the violent form."

Want of space forbids us to add but a still more brief description of *rabies* in other domestic and wild animals.

The *horse* is, at the outset, greatly excited and subject to illusions, afterwards excessively frightened and inclined to bite; during the paroxysms it strikes and kicks violently, when the specific paroxysms, which are very severe, set in, and manifests a strong propensity to bite, even itself, tearing pieces of flesh and integuments from its flanks and forelegs, and seizing upon other animals. Then follows prostration and paralysis of the hind parts. Death generally in from four to six days.

In *cattle* the symptoms are partly similar to those of the horse, but they seldom manifest any disposition to bite. Mentally much disturbed; they stamp and butt, often so violently as to break their horns. Paralysis precedes death, which ensues in from four to seven days.

Sheep and *goats* show similar symptoms to those of cattle. Paralysis and death are observed to take place in from five to eight days.

Swine show fright first; they hide away, and noise excites them greatly, makes them wild and exceedingly dangerous. During the paroxysms, great disposition to bite. They tear first one ear, then the other. Respiration greatly increased. The visible mucous membranes assume a leaden hue, also the superficial integument. A viscid foam is discharged from the mouth. The eyes glisten. Death in from two to four days.

Cats, on account of their timidity, are not easily observed in the rabid state. Great uneasiness is manifested. They run about in an excited manner, and show a strong propensity to bite. Death in from two to four days.

The *domestic fowl*, when it becomes rabid, manifests great uneasiness and springs about wildly; its hoarse voice is noticeable, also a certain tendency to bite, and finally paralysis. Death probably within 48 hours.

Of the *wild* animals, in the *wolf* and *fox* the symptoms of rabies are quite similar to those in the dog. They lose their

aversion to man, and try to bite and attack men with great boldness, and the larger animals, especially dogs. In many instances they come into villages, cities, and even into houses. They have no dread of water, but all appetite for food is gone. At last they become extremely emaciated and die. Although but few observations are on record with respect to *hyenas* and *jackals*, we may say that these two and the badger behave similarly to the wolf and fox. Rabid *martens* are remarkable for their strong propensity to bite men and other animals.

The diagnosis of *rabies* in dogs is very difficult, and yet of great practical interest. No opinion ought to be based upon individual symptoms alone, but the picture of the whole ought to be borne in mind. Bollinger goes (page 467, *op. cit.*,) so far as to say that, in very many instances, an accurate diagnosis cannot be made solely from the symptoms observable during life, nor from the P. M. appearances alone. But by a study of the clinical and anatomical appearances taken together, the diagnosis may be correctly established. And even then there are exceptions, though few. In respect to the clinical diagnosis, great difficulties and frequent errors arise, on account of analogous symptoms in other dog-diseases.

Now let us say a few words about differential diagnosis:

Symptoms resembling those of *rabies* are observed in the parasitic enteritis, caused by tape-worm; in gastro-enteritis produced by poison (arsenic, corrosive sublimate, benzoic acid), or by foreign bodies in the intestine (bones and swallowed coins); in intestinal obstruction (invagination), caused by the collection of indigestible substances in the intestine (fragments of bone); in the case of foreign bodies in the ear (for instance ears of corn, or heads of wheat with the beard attached); in the case of parasites in the nasal cavities (pentastoma);* in the kidneys (large palisade-worm), or skin (mange); in uremia, in-

* This crustacean parasite was at first described as *tænia* (Chabert 1787). But Frölich and Lamarck studied the animal better, and the former called it *linguatula serrata* (1789) and the latter, *linguatula tænioides*. In 1809 it was very carefully studied by Rudolph; and the adult animal was successfully called by him, *pentastoma* and *pentastoma denticulatum*. Afterwards he adopted the name *pentastoma serratum*, whilst Siebold called it *pentastoma constrictum*, and the French (great admirers of Lamarck) call it still after him "linguatule tænioide," no matter if they speak of the young and sexless animal or of the grown one. It is, when young, 4 to 8 millimetres long and 2 millimetres wide.

duced by long-continued unnatural alimentation (starving, feeding with substances containing no salt). In poisoning by means of metallic preparations (the salts of copper and zinc), there are likewise produced appearances similar to those of *rabies*, constrictions of the pharynx, vomiting and acute gastro-enteritis.

Symptoms similar to those of hydrophobia may furthermore be occasioned by severe pain (toothache), by severe mental disturbance (deprivation of their young, extreme stimulation and non-gratification of the sexual appetite); also by various functional and anatomical changes of the central nervous system.

In this connection should be mentioned numerous cases of meningitis, encephalitis, hydrocephalus, blood-poisoning *(pyæmia, septicæmia)*; furthermore the whole class of mental diseases in dogs, which have hitherto been completely overlooked, their existence not having even been suspected by most observers.

Bollinger, from whose writings we are chiefly taking the above considerations, says very justly that there is no doubt about the prevalence among dogs of pure psychoses, such as mania and melancholia, unaccompanied by any material P. M. changes that can be detected; and these very forms of illness (having in part also a reflex origin) are frequently confounded with *rabies* and quoted in support of the theory of the spontaneous origin of the disease, although they are in no respect infectious. Greve admitted that, out of 20 dogs supposed to be rabid, 2 or 3 really are so. Faber says that, from 892 dogs brought into the veterinary institute at Vienna, suspected of being rabid dogs, from 1826 to 1830, only 31 proved to be actually rabid and succumbed; 61 were destroyed, because

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Its body is elongated and flattened and somewhat enlarged in the fore and attenuated in the hind parts, articulated and annulated.

The *pentastoma* has been found in cysts in man's liver (chiefly in Austria and Egypt), and in the peritoneum of rabbits and other herbivorous animals. Only in carnivorous animals, especially in dogs, it arrives to its full development. They are lodged there in the nasal cavities, the trachea, the lungs, etc. The adult animal approaches the form of a lance, is a little depressed and straightened toward the hind part and transversally folded, and shows an orbicular mouth with a range of crochets in a semi-circle. Whilst the males are only from 15 to 18 millimetres long, and 2 to 3 wide, the females reach a length from 5 to 10 centimetres, equivalent to nearly 4 inches of our measure. (One centimetre= ·39371 of an English inch). In the fore part they are 4 to 5 centimetres wide.

pronounced vicious and given to biting. Of 207 dogs in 1865 and 1866, pronounced and being suspected by medical men in Wurtemberg of being rabid, 108 only proved to be so.

The principal data, says Bollinger (p. 470, *op. cit.*), in determining the diagnosis of hydrophobia are: the previous history of the animal, the symptoms manifested during life; the acute and uniformly fatal course and termination, and the *post-mortem* appearances.

With regard to the treatment, we shall have done quickly. Prophylactically the majority of the therapeutic agents embraced in the materia medica have been tried (thus far to no purpose), after the infliction of the bite. Besides cantharides and cockchafers, arsenic, prussic acid, tartar emetic, alternately with sulphate of copper and zinc, not to mention carbolic acid and chloral. The latter* was administered to a rabid dog by Horand and Peuch without effect.

Albeit we do not attach an over-great importance to statistics which we cannot control, i. e., the circumstances under which they have been compiled, and the factors which have been taken into account, and which we know nothing about, we shall, notwithstanding, put before our readers the following, though incomplete, table furnished by Eckel,† as he is known to be a conscientious writer, and an expert too. As the reader will see, *rabies* attacks indiscriminately all sorts of breeds:

Mongrels of all kind	53	one-third per cent.
Small English breed	12	one-fifth "
Hounds	6	five-sevenths "
Sheep dogs	6	five-sevenths "
Fox hounds	6	one-third "
Poodles	5	"
Danish dogs and pointers	2	five-sevenths "
Pomeranians	2	two-sevenths "
Pugs and turnspits	2	one-seventh "
Mastiffs	1	three-sevenths "

* *Du Chloral*, études cliniques et expérimentales.' Paris, 1872.

† Bigelow, p. 137.

Bigelow fails to give the necessary explanation how Eckel comes to his figures: we are therefore unable to assign them their correct signification. Besides, the table contains only a limited number of breeds. Another list which follows, and is taken from St. Cyr, and on which Bigelow likewise omits to throw any further light, is still more unsatisfactory and almost unintelligible. We shall spare to our reader its reproduction.

Finally we shall now give Dolan's instructions: "How to recognize a mad dog."

1. The disease is not characterized by fits of fury at its commencement, but is, on the contrary, to all appearances, a benignant malady, though even then the saliva or foam is virulent and poisonous. The dog is at this period very dangerous, by its licking* rather than biting, for as yet it has no tendency to use its teeth.

2. At the commencement of the disease the animal's temper becomes changed. It is dull, gloomy and silent; seeks solitude and withdraws into the most obscure corners. But it cannot rest long in once place; it is fidgety and agitated; goes here and there; lies down and gets up; prowls about, smells, and scratches with its forepaws. Its movements, attitudes and gestures, at times, would indicate that it is haunted by and sees phantoms; it snaps at the air, and barks as if attacked by real enemies.

3. Its appearances is altered; it has a gloomy and somewhat ferocious aspect.

4. In this condition, however, it is not aggressive, so far as mankind is concerned, but is as docile and obedient to its master as before. It may even appear to be more affectionate towards those it knows, and this is manifested by a greater desire to lick their hands and faces.

5. This affection, which is always so marked and so enduring in the dog, dominates it so strongly in rabies that it will not injure those it loves, even in a paroxysm of madness; and even when its ferocious instincts are beginning to be man-

*We have explained above that "licking" of a rabid dog is only dangerous when the saliva comes into contact with the human blood.

fested and to gain the supremacy over it, it will yet yield obedience to those to whom it has been accustomed.*

6. The mad dog has not a dread of water, but, on the contrary, will greedily swallow it. As long as it can drink, it will satisfy its ever-ardent thirst; though spasms in the throat prevent it swallowing, it will nevertheless plunge its face deeply in the water and appear to gulp at it. The dog is not, therefore, hydrophobic, and hydrophobia is not a sign of madness in this animal.

7. It does not generally refuse food in the early part of the disease, but sometimes eats with more voracity than formerly.

8. When the desire to bite, which is one of the essential characters of rabies at a certain stage, begins to manifest itself, the animal at first attacks inert bodies—gnawing wool, leather, its chain, carpets, straw, hair, coal, earth, the excrement of other animals, or even its own, and accumulates in its stomach the remains of all the substances it has been tearing with its teeth.†

9. An abundance of saliva is not a constant symptom of rabies in the dog. Sometimes its mouth is humid, and sometimes it is dry. Before a fit of madness, the secretion of saliva is normal; during this period it may be increased, but towards the end of the malady it is usually decreased.

10. The animal often expresses a sensation of inconvenience or pain during the spasm in its throat, by using its paws on the side of its mouth, like a dog which has a bone lodged there.

11. In dumb madness‡ the lower jaw is paralyzed and

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*This paragraph seems to us to be too sentimentally colored. It is incorrect besides. We have seen above that many dogs, especially during a paroxysm, when the mental aberration prevails, snap and bite at everything that comes in their way and those dogs make no exception to their master and "those they love."

†We may justly wonder that Dolan passes under silence the pathognomic sign we related above, about the dog licking its own urine. The words "or even its own" refers to the solid excrement, and cannot be understood to cover also "urine." Excrement means only refuse matter discharged from the body after digestion, while we have to consider the urine as the chief blood-purifier.

‡It will hardly be deemed necessary to remark that Dolan means, by "dumb madness," the *sullen* form of rabies. It would have been better, no doubt, had it been translated so at once, or had Bigelow substituted the more correct term.

drops, leaving the mouth open and dry, and its lining membrane exhibiting a reddish brown hue; the tongue is frequently brown or blue colored; one or both eyes squint, and the creature is ordinarily helpless and not aggressive.

12. In some instances the rabid dog vomits a chocolate or blood-colored fluid.

13. The voice is always changed in tone, and the animal howls or barks in quite a different fashion from what it did in health. The sound is husky and jerking. In "dumb" madness, however, this very important symptom is absent.*

14. The sensibility of the rabid dog is greatly blunted. When it is struck, burned or wounded, it emits no cry of pain or sign, as when it suffers, or is afraid, in health. It will even sometimes wound itself severely with its teeth, and without attempting to hurt any person it knows.

15. The mad dog is always very much enraged at the sight of an animal of its own species. Even when the malady might be considered as yet in a latent condition, as soon as it sees another dog, it shows this strange antipathy, and appears desirous of attacking it. This is a most important indication.

16. It often flies from home, when the ferocious instincts commence to gain an ascendancy, and after one, two or three days' wandering, during which it has tried to gratify its mad fancies on all the living creatures it encounters, it often returns to its master to die. At other times, it escapes in the night, and after doing as much damage as its violence prompts it to do, it will return again towards morning. The distances a mad dog will travel, even in a short period, are sometimes very great.

17. The furious period of rabies is characterized by an expression of ferocity in the animal's physiognomy, and by the desire to bite whenever an opportunity offers. It always prefers to attack another dog, though other animals are also victims.

18. The paroxysms of fury are succeeded by periods of comparative calm, during which the appearance of the crea-

*Not always, as we have seen above. The peculiar changed voice exists also in the sullen form, only it is seldom heard.

ture is liable to mislead the uninitiated as to the nature of the malady.

19. The mad dog usually attacks other creatures rather than man, when at liberty. When exhausted by the paroxysms and contentions it has experienced, it runs in an unsteady manner, its tail pendent, and head inclined towards the ground, its eyes wandering and frequently squinting, and its mouth open, with the bluish-colored tongue, soiled with dust, protruding. In this condition it has no longer the violent, aggressive tendencies of the previous stage, though it will yet bite every one, man or beast, that it can reach with its teeth, especially when irritated.

20. The mad dog that is not killed perishes from paralysis and asphyxia. To the last moment the terrible desire to bite is predominant, even when the poor creature is so prostrated as to appear to be transformed into an inert mass.

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Let us say a few words in conclusion:

Our object in writing this first chapter of our article was to dispel current errors and to enable our reader to judge for himself. If he finds we have gained our point, we shall not regret having devoted time and labor for so laudable a purpose, in spite of the trying heat of the very "dog days," under latitude 29° 58′ north, longitude 90° west.

The Treatment of Hemorrhagic Malarial Fever.

By Thomas J. Turpin, M. D., Forkland, Ala.

A paper read before the Greene Co. (Ala.) Medical Association, November 9th, 1880.

Mr. President and Gentlemen—Having been appointed one of the essayists for this meeting, I have concluded to give you my views on hæmorrhagic malarial fever, confining my remarks principally to the subject of treatment. This is a disease which should engage our most earnest consideration, for the double reason of its practical importance to us as physicians, and the interest it should excite in our minds as men of science. Its

prevalence in our country; its great fatality, and the lack of accurate scientific investigation, and consequently our want of knowledge as to its pathology, are sufficient reasons why we should patiently study and faithfully record all the phenomena, in the individual cases which may come under our observation.

I regret to say that, of the large number of cases which I have seen, both as a student and since commencing the practice of the profession, I have kept no notes. It is to be deplored that the literature of the subject is so very meagre and unsatisfactory. We have papers published from time to time in the medical journals of the day, of which some few are from competent and trustworthy gentlemen, of high rank in the profession, and of interest and value: but the larger number of them add but little to what we already know of the disease, and utterly fail to suggest a satisfactory plan of treatment. Of the many essays I have read upon the subject, by far the best is one by Dr. W. A. B. Norcom, of North Carolina, published in the *Transactions of the North Carolina Medical Association* for 1874. There is a monograph on the subject, written by a French physician, Dr. Beranger-Feraud, who has had much better opportunities of studying the disease than any other member of the profession, having lived for years in Southern Africa, where the malady largely prevails, and having treated thousands of cases. The work is said to be replete with statistics and facts of the very highest value, and it is to be hoped that we may have a translation of it, into the English language soon.

I shall not occupy your time with a tiresome and useless discussion of the history, nosology and etiology of the disease. The name Hæmorrhagic Malarial Fever is the most appropriate that has been suggested, and seems to be the one most generally adopted by the profession. As to the etiology, no intelligent physician, who has a knowledge of the malady, can doubt that its cause is malaria and malaria alone.

I regret to say that the pathology of the disease has been very imperfectly made out so far. The lack of opportunities

for making autopsies, and the neglect of the aid of the microscope and chemistry in investigating the morbid changes in the blood, bile and urine, and other secretions, have seriouly retarded the advance of the pathological study of the disease. It behooves us, as members of a great and learned profession, to carefully study each and every case that may fall into our hands, and so far as we possess the ability and the means, to investigate everything connected with the subject, which is calculated to throw any light upon it. We country doctors, unfortunately for ourselves, and I think I may say unfortunately for the cause of science, do not possess that knowledge of Microscopy and Chemistry—those invaluable aids to the study of the science of pathology—or the instruments and means of making such knowledge available and useful, which our city brethren possess. But we can at least make records of all the cases we see, noting all of the symptoms and the effects of the remedies we employ, and preparing tables of the pulse, respiration and temperature, which will be of very great value. Let us hope that, in the near future, such light may be thrown upon the pathology, by the revelations afforded by necropsies, that the morbid processes and the lesions of Hæmorrhagic Malarial Fever may be as accurately defined as they now are in pneumonia.

I now come to the branch of my subject bearing the greatest practical importance: the treatment of the disease. Although our pathology is so obscure, we yet possess remedies that, in the majority of cases, can be relied upon to successfully combat the operation of the *materies morbi.* Remembering the invariable malarial origin of the disease, and the indisputable fact that, of the great number of medicinal agents which have been employed in the attempt to counteract the effects of malaria, in all its forms, nothing has ever been discovered that can at all compare in efficacy with the salts of cinchona, and that, of these salts, the sulphate of quinine has been proven to be much the most valuable, we naturally resort to this agent, expecting valuable results from its exhibition. Permit me to say, gentlemen—and I base the opinion not upon my experi-

ence alone, but also upon the experience of others more competent than myself to judge—that, except in those cases which appear to bear the stamp of fatality in their very inception, you will never be disappointed, however high your expectations may be.

Now, I am aware of the fact that there are in the profession gentlemen of the highest intelligence and most unquestioned veracity, who entertain a contrary opinion. It may be that, among those present to-day, are some who differ with me upon this point. Some do not stop with denying the value of quinine, but go so far as to say that it is actually capable of producing, and indeed does produce, the identical morbid condition we are now considering. This is to me the most astounding declaration I ever heard. I must say, with all due deference to those gentlemen who make it, that I do not believe one word of it, nor do I believe that the slightest evidence can be adduced in support of such a theory.

Certainly, in the articles which have been written in support of such a view, and in the conversations I have had with those who advocate it, I have failed to fine any reason which has the least appearance of plausibility. The utmost that can be said by the advocates of this belief is, that they are satisfied that they have seen the disease aggravated by the use of quinine, and in other cases, when the hæmorrhage had ceased, or was subsiding, the exhibition of quinine caused it to return. They say that no theory, however plausible, can be allowed for one moment to have weight against one well established clinical fact. I grant the force of the reasoning, but I deny that they have established it as a clinical fact, that quinine has any such effect as they claim it has. Facts are stubborn things, but a collection of so-called facts, when subjected to the test of impartial critical examination, often turns out to be a collection of fallacies. So I believe it to be in the case in hand. Quinine, to be of any service in these cases, must be used unsparingly. Heroic doses are called for. What, under ordinary circumstances, would be a large dose, in this disease is no dose at all. In the cases in which the disease appeared (to the non-

believers in quinine) to be aggravated by the salt, in my opinion the small quantity given had no effect whatever, and the morbid action went on without hindrance. In regard to the other cases, in which it is claimed that quinine brought on a return of the hæmorrhage, it is a well known fact that relapses often occur in malarial hæmaturia, and so I believe it to have been in these cases, the quantity of quinine given being too small to prevent a recurrence of a development of the symptoms in full force. Now, to use the argument as to clinical facts against those who have urged it in support of their view, I assert it as a fact gleaned from the clinical experiences of a large majority of the most competent and trustworthy observers in the profession, who have treated cases of this disease, that quinine is of undoubted efficacy in the treatment of the pathological state under consideration; and, further, it is capable, when properly used, of conducting to a successful issue the majority of these cases; and it is the only remedy of which the same can be said with truth.

I would say to those honest but deluded brethren who have allowed their minds to become imbubed with prejudice against one of the most potent agents God, in his wisdom, has placed in our hands for the relief of suffering humanity, look more clearly to your *clinical facts* in the future, abandon this untenable and pernicious *theory*, give your patient plenty of quinine, and you will have the satisfaction of seeing more of them recover. If there are any present who favor the views I am combatting and endeavoring to overthrow, I trust they will not be offended at anything I have said. It certainly is very far from my intention to treat them or their opinions with disrespect.

I have said that there are some cases which seem to be destined from the beginning to terminate fatally. I suppose no one who has had any experience in the matter will deny this. The patients seem to be so overwhelmed and prostrated by, and the system so surcharged with, the malarial poison, that no remedy can avail in preventing a speedy termination in death. Except in these cases, I believe that most attacks can

be relieved by the quinine treatment, if seen before the vital energies have been prostrated beyond the power of recuperation. The main object of the treatment is to get the patient into a state of cinchonism as rapidly as possible. It is frequently a very difficult matter to cinchonize a patient. To do so, the salt must be given in large doses and frequently repeated. When we have succeeded in thoroughly cinchonizing our patient, the effect must be kept up by giving smaller doses. We must maintain the effect for some time after the fever subsides, and the hæmorrhage and other symptoms disappear, which will take place promptly, whenever the full effect of the quinine is obtained. If you find your patient suffering with intense nausea, and vomiting everything taken into the stomach, do not waste precious time trying to give quinine *per orem*, but make it into a clear solution and administer by enema. It will be absorbed more promptly by the rectum than by the stomach. We might give it hypodermically, except for the large doses required; but, should there be any great irritability of the rectum (as happens in rare cases), besides intense nausea, it would be the next best way of introducing it into the system. In whatever way you give quinine, whether by the mouth, rectum, or hypodermically, let it be in solution, by all means. Recollect the stomach has a thick coating of mucus; is in a state of atony, and absorption takes place very slowly.

There are medicines which are valuable adjuvants to the quinine, and of these the first, in my estimation, is the oil of turpentine. Considering the congestion and sometimes the inflammation of the kidneys which we have, and remembering the stimulating effect of temperature on the kidney, we would suppose, *a priori*, that it would be an unsuitable remedy to use. Clinical observation has, however, established the fact that it will control the hæmorrhage more speedily and effectually than anything that can be given. I give it in twelve drop doses, repeated every three or four hours, for an adult, continuing it as long as there is any appearance of the hæmaturia. Its effect on the secretions generally is also very beneficial.

In cases where there is a great amount of pain over the region of the kidneys, dry cups are productive of good effects. Sometimes there is considerable pain and tenderness over the liver, and dry cupping and flying blisters accomplish much good. If we use blisters, we should be very careful not to allow them to remain on long enough to produce vesication, for if we do, the consequence will be great pain to the patient, increasing his nervous irritability, and the good effect of the blister will be marred.

I never use calomel, or any form of mercury, and think the patient will do much better without it. If purgatives are required, some simple saline medicine will be best. Some recommend mild, unstimulating diuretics, but I fail to see any indication for their use, unless there is a strong tendency to renal suppression, in which case they are to be commended. The bicarbonate of potassa has been strongly recommended by some practitioners, and is thought by them to possess some special curative action in this disease, aside from its diuretic effect; but I think the idea is incorrect, and the most that can be reasonably claimed for it is that, like buchu, uva ursi, spirits of nitrous ether, etc., it does good in relieving urinary suppression. Diaphoretics are prescribed by some, and no doubt good effects sometimes follow their use; but I do not approve of their use to any great extent, unless the attack is a very mild one, and there is no very great debility. Free diaphoresis, especially if brought about by means of warm baths, is very debilitating to the patient, and the depression which ensues more than counterbalances any good results we might expect from the treatment.

The objection to the most of these things is, that the patients are not generally able to take much medicine, and we should give only those remedies which are capable of doing the most good. These are quinine, oil of turpentine, sulphate of morphia, and a sufficient supply of nutritious and easily assimilated food. Keeping in mind the danger of renal suppression supervening, I was afraid to use morphia, until I read the article by Dr. Norcom, before referred to. Seeing it very

highly recommended by him, I gave it a trial, and with results so gratifying that I have since used it in all of my cases. It is better used hypodermically, although it can be given very well by the mouth. I give it in the dose of one-quarter grain, and find it best to keep up a slight degree of narcotism contemporaneously with the cinchonism. It quiets the stomach and controls the vomiting better than anything that can be given, and, by mitigating the nervous irritability, it greatly assists the action of the quinine. Ice freely allowed the patient to suck is very grateful, and does good by allaying the nausea.

Alcoholic stimulants have been said to be hurtful, but I think, judiciously given, they are often potent for good. Iced milk punch, pure port or sherry wine, or preferably, champagne, if the patient's means will allow of it, are valuable analeptic agents. Champagne acts well in allaying nausea and increasing the secretion of the kidneys. The use of chlorine internally has been advised, and in certain low states of the system, which obtain in this malady, it does good as a blood depurator.

There is one drug I must not forget to mention, for the reason that it has been extravagantly lauded by some, and especially by those who have such a holy horror of quinine, and that is the muriated tincture of iron. With these men it is the sheet anchor, and they give very little medicine besides. I can see no good reason for using it, and believe it to be much more harmful than beneficial. The muriated tincture is one of the most insoluble and valueless of the preparations of iron, and, in the atonic condition of the stomach in the disease we are discussing, it would stand a very slender chance of being absorbed at all, and certainly it can be absorbed to but a very limited extent. I believe that it simply irritates the already congested and inflamed stomach and still further increases the mischief. I do not not think that iron in any form is demanded, and if I did, the muriated tincture would be the last preparation I would think of using. It is really ridiculous, the extent to which the quinine-fearing doctors of the country

have succeeded in instilling this belief in the great curative value of iron into the minds of the unprofessional. They even claim that it has prophylactic virtues.

Many persons have acquired such a dread of quinine, as the baneful effect of the teaching of these men, that they will not take quinine to break up ordinary attacks of intermittents, and, by allowing the malaria to accumulate in the system, they succeed in bringing on an attack of malarial hæmaturia. In a good many houses in this county, large bottles—not vials—of the muriated tincture of iron occupy prominent positions on the mantelpieces, and the systems of the various members of the family are deluged with this drug, and clad in this *iron armor* they foolishly imagine themselves able to successfully withstand any assault which death, in the shape of hæmorrhagic malarial fever, may have the temerity to make. I do not expect to bend the *iron* will of any one of my worthy compeers to admit the truth of my statement, but I am impelled to the conviction that is a "most lame and impotent conclusion" at which they have arrived.

It only remains for me to make some remarks on the diet we must allow our patients. Nicely prepared soups or broths, boiled milk, soft-boiled eggs, and white wine whey, form a diet list which will be sufficient for any case we may have to treat. During the convalescence, the patient should exercise the utmost care to avoid any fresh exposure to malarious influences, and take Huxham's tincture of bark, in the dose of two drams *ter die*, for the space of ten days or a fortnight.

Gentlemen, I have endeavored to interest you in my subject, although I lack the ability to instruct you. In conclusion, may I be permitted to express the hope that my views may find favor with you, and that you may be so favorably impressed with the plan of treatment I advocate, as to be induced to give it a trial in the cases hereafter entrusted to your care.

Current Medical Literature.

TRANSLATIONS.

THE ETIOLOGY OF MALARIA.

Translated by R. Matas, M.D., from *Gazette des Hopitaux.*

At a meeting of the French Academy held April 26th, 1881, M. Burdel (de Vierzon) read an interesting paper upon the role played by microzoa and microspores in the causation of malarial affections.

The following is a *resumé* of the investigations of this writer:

That the researches and labors which for some years past have been published, with the object of demonstrating the nature of paludal and telluric miasms, have resulted in a belief on one side, that a species of alga of the genus palmella, and on the other, that the microzoa and microspores of different genera, were the causative agents in the production of these miasms; whilst, finally and more recently, MM. Tomasi Crudelli and Klebs believed this agent to be a schistomycete of the genus bacillus. We believe that we are authorized, after the experiments and studies we have made, to state:

1. That not only the algæ, palmellæ and the schistomycetes are far from possessing the febriferous properties which these investigators have thought proper to attribute to them, but also that the experiments upon which they have based their assertions, are of such a nature as to be conducive to profound error; first, because the bacilli developed by cultivation, are not the elements contained in the infected atmospheric strata which rest upon the miasmatic soil and that are respired by man; and second, because the morbid manifestations which follow upon the infection of these elements, do not at all resemble those which characterize malarial fever.

2. That animals in general, and rabbits in particular, cannot contract malarial fever by inoculations, and what experimenters have taken for the paroxysms of the fever, are nothing more than the irregularities induced by the vital reaction which results from the introduction of septic materials.

3. That intermittent fever, being by nature neither virulent, septic nor contagious, cannot be reproduced by inoculation.

4. That among the experiments made upon animals, with the intention of developing the symptoms of regular and periodic intermittent fever, none are more liable to mislead the investigator than those performed upon the rabbit. In proof of this, we will only refer to the inoculations which we practiced some years ago, with cancerous and tuberculous matters,

and to the more recent experiments performed by Prof. Vulpian, which seem to have caused death and developed a microbe in these animals, by the simple injection of normal saliva.

5. That we were able to inject, first into sheep, and then into ourselves and other healthy subjects, a solution containing, after due microscopic examination, a large quantity of microzoa, microspores, bacilli and schistomycetes, etc., collected from the lower layers of atmospheres which rested upon newly tilled soils and pools, and which contained all the palustrine elements; this, however, was done without our being able to notice any morbid alterations or pathological symptoms which at all approached those that characterize malarial intermittent fever.

6. Finally, as a conclusion to our researches, it is apparent to us, from all the evidence we have gathered, that the algæ, palmellæ, bacilli, schistomycetes, etc., are not the animated and specific germs which produce intermittent or malarial fevers; and that their presence or the part played by them in "telluric atmospheres," is only secondary and dependent upon other more important conditions. Another proof of this is, again, that not only their presence is far from being constant in telluric atmospheres, but that their genera and species vary according to the localities, seasons and hours of the day in which they are observed, and that often, very often, their presence is wanting, even in the places where the soil contains the most pernicious elements.

M. Colin (d'Alfort) supported M. Burdel's opinions in regard to the fallacies connected with experiments upon rabbits. What M. Burdel had said respecting rabbits he could repeat as regarded most other animals in connection with malarial fever. The flocks of sheep which browse near swamps and the bisons of the pontine marshes never contract these fevers; we can understand, then, how little value could be attached to experiments performed upon these animals.

THE PARASITIC NATURE OF MALARIA.

Translated by R. Matas, M. D. (*Gazette des Hôpitaux*).

That the phenomena of malarial intoxication are causally related to a parasite, an animated germ, is, as is well known, an idea of quite ancient origin; and, that this presumed relationship has given rise to numerous researches, that unfortunately have proved quite barren of results, is a fact equally well known. It is unnecessary for us to recall here the great number of researches which have been directed towards the elucidation of this question. It was in connection with this same subject that M. Burdel was led, only a few weeks ago, to make, in the rostrum of the academy, the sincere

avowal of the sterility of such investigations, his convictions being premised by his own experiments made in order to verify the researches of the most recent investigators.

Up to the present moment, the principal, if not the sole object of all investigators, had been to find the germs of malarial poisoning in the air, water and soil of marshy localities; it was but accessorily that they had occupied themselves with the analysis of the blood of subjects affected with malaria. In view of the little satisfaction to be derived from researches of this kind, made up to date, Dr. A. Laverau (*agrégé* of the Val de Grace), availed himself of a brief sojourn in Algeria, in the province of Constantine, to study the morbid impression produced by malaria upon the different tissues of the organism. His first researches demonstrated to him, at once, that the only lesion characteristic of malaria consisted in the presence of pigmentary elements in the blood.

What was the nature of these pigmentary bodies? How were they formed in the blood? In attempting to solve these different questions, he was not long in recognizing that, in the blood of certain patients suffering with intermittent fever of a rebellious character, there were present, by the side of the pigment elements, already described by various observers as melanæmic corpuscles (*leucocytes melanifers*), other elements, elongated or rounded, pigmented and very regular in their appearance, and which in no way resembled the leucocytes loaded with pigment. He suspected already that these elements were of parasitic origin, when one day, whilst examining one of these rounded and pigmented bodies in a preparation of fresh blood, he noticed that, at the periphery of this element, there existed a series of thin and transparent filaments, which moved with great rapidity. He soon found these elements in the blood of other patients, who were also affected with paludal fever. If any doubts had existed in his mind, they were now dispelled.

The presence of these elements in the blood constitutes, without doubt, the most constant and characteristic lesion of malarial toxæmia. This is what M. Laveran proposes to demonstrate in the interesting work which is now before us.*

These elements circulate with the blood; they can also be found in all the organs, in all the tissues which contain blood vessels. But they exist, particularly, and in such quantities, in the vessels of the spleen and liver, that they give to these organs that slaty coloration which has been observed by all physicians who have made autopsies in cases of pernicious malarial fevers. The abundance of these same elements in the capillaries of the brain and spinal cord gives to the nervous centres a greyish tinge much darker than that which is normal to these tissues, a condition which is also equally charac-

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*"Nature parasitaire des accidents de l'impaludisme, description d'un nouveau parasite trouvé dans le sang des malades atteints de fievre palustre." Broch. in 8o. Paris, 1881: chez J. B. Baillere et fils.

teristic. They acquire often in the liver a diameter three or four times greater than that of a normal leucocyte. In the liver they are situated within the vessels. In the spleen they are just as abundant in the spleenic pulp as in the vessels. In the capillaries of the lungs, kidneys, muscles, bones, etc., the same pigmentary bodies are formed that were recognized in the liver, spleen and nervous centers, only in less numbers.

Outside of the existence of these pigment elements in the blood, we find, in the necropsies of those who have succumbed to malarial fevers, no other constant lesions. These bodies are found also in the individuals who die from malarial cachexia, with the difference, only, that they exist in a much diminished quantity, and that instead of being disseminated through all the tissues of the body, they are localized generally in the vessels of the spleen and liver. Furthermore, secondary lesions are frequently found in the spleen, liver and kidneys, and more rarely in the lungs.

M. Laverau, as we might suppose, did not confine his investigations to the anatomical study of these corpuscles; he studied them in various ways, in their active state and in the blood in circulation. The boundaries which are forced upon us, in commenting upon his labors, do not permit us to follow him in this interesting part of his demonstration. We can only summarize the results obtained by him, and bring into relief, from a clinical point of view, the important consequences of his labors. We will state, only, that the new parasite discovered by M. Laverau in the blood of malarial fever patients is a hæmatozoon, which presents some of the characters of the oscillatoriæ.

What is the pathological significance of these microscopic elements? Are they the direct cause of the phenomena of palustrine poisoning, or do they play but an accessory part, their presence and development being due solely to the general enfeeblement consequent upon fever? This is what is important for us to determine. The answer to these questions is found in the following propositions:

1st. These microscopic germs are found nowhere else than in the blood of malarial fever patients. They have been searched for in vain in the blood of individuals affected with chronic diarrhœa and dysentery, typhoid fever, tuberculosis, etc.

2d. The necropsies of malarial pernicious fever cases reveal in the blood and in the capillaries of all the organs, and notably of the spleen and liver, a great number of pigment corpuscles which do not pertain to the history of any other disease.

3d. The hæmatozoa, which abound in the blood of patients who have labored for some time under malarial fever, and who have not been treated in a regular manner, disappear rapidly, soon after being placed under the influence of the cinchona salts. It is very probable that quinine cures malarial fevers because it destroys these blood parasites; and it is also proba-

ble that this explains why they are not found in the blood of individuals who are yet sick, although they have been for some time under the influence of quinine.

The hæmatozoa which develop in the blood of malarial fever patients are truly parasites, and not ferments. Malaria should then at once take its place among the parasitic affections. It would be a parasitic disease of the blood, just as trichinosis is a parasitic disorder of the muscles, and the itch a parasitic malady of the skin.

The malarial poison has not a period of incubation of definite duration, and it does not confer any immunity for the future to those who have suffered a first attack. That malarial affections are not contagious, although produced by a parasite, can be readily explained by the fact that this parasite lives in the interior of the body and not upon its surface.

By what mechanism could the germ now in question produce the varied phenomena of malarial intoxication? Once absorbed in some form and through a channel yet unknown, these microscopic elements develop and multiply in the blood during the irregular period of incubation, the patient during this stadium experiencing no ill symptoms; but in consequence of their increase and multiplication, they end by determining an irritation of the different organs, of which the fever, with its various characters, is a sequel. The intermittency can be explained, particularly by the irritation which these parasitic elements, once arrived at a certain stage of their development, produce upon the cord.

The presence of these microzoa in great numbers in the capillaries of the brain would also account for the delirium and coma of the pernicious fevers. The spleen, the favorite seat of these elements, produces, by the profound alterations which it undergoes, be it either in the acute or chronic forms of palndal poisoning, the profound anemia which is characteristic of all malarial fever patients.

Such are the principal conclusions which spring from the very interesting and ingenious researches of M. A. Laveran. It rests now with others, if our learned *confrere* of the Val-de-Grace does not charge himself with the complete elucidation of this question, to verify this fact—the production of malaria by a known parasite, to follow it to its consequences, and to find, by tracing to its origin, this very parasite in the state of complete development, or in its germ state, in the air, water or soil of marshy localities.

THE PRACTICE OF MEDICINE AMONG THE INDIANS.

By H. M. M'Clanahan, M. D., of Washington, D. C.

It shall be my aim to describe as clearly as possible the practice of medicine among the Indians, including in that term medicine, surgery and obstetrics. The writer has had the privilege of observing the customs of two tribes, to-wit

Gros Ventres and Assinniboins. From information received from persons conversant with the customs of other tribes, I am satisfied the practices are essentially the same among all tribes not having been influenced by civilized ways.

In this article I shall confine my remarks to the practice of medicine proper, reserving the subjects of obstetrics and surgery for future numbers.

To know why the Indian believes in his mode of treatment (for he undoubtedly does), it will first be necessary to ascertain his views as to the cause and nature of disease.

He does not consider himself as in any way responsible for bringing on a spell of sickness. He may expose himself to inclement weather and contract a severe cold; but the two do not stand in the relation of cause and effect.

He knows certain diseases are contagious; but he does not think the disease *per se* is catching, but that the person taking it is under some peculiar spell.

In a general way he does not consider that habits of life, changes of weather, or hereditary influences bear any relation to disease, but that it is governed by some higher power and entirely beyond the influence of man, so far as preventing it is concerned; but that an enemy can, by making bad medicine, cause it to produce sickness. All the manifestations of disease, are, therefore, due to evil spirits.

They have no distinct idea of what they mean by the term, some giving to the spirits the form of animals or insects; others, again, consider them an imponderable entity. Whatever may be the peculiar form of the evil spirit imagined by the individual, all believe this much to be a fact, namely, that it takes possession of the body, causing sickness and death. It is a matter of observation among them, that there are many forms of disease, as whooping cough, measles, diarrhœa, etc., but they do not look upon the different forms as distinct types of disease due to specific causes, but simply believe the spirit to be inhabiting different parts of the body.

The spirit is omnipotent, therefore can produce convulsions in one and diarrhœa in another. It will thus be seen that they give no consideration to rational causes but assign everything to a higher power. I have asked them why it is that the spirit will select one instead of another, when the natural conditions were the same.

In case a child is sick, the father believes he has in some way offended the spirit, and it punishes him through his child, he being too strong for it. Again they say an enemy can influence the spirit. This is called making bad medicine. I have known of several cases where a man, having several wives, is taken sick, and where some one of the wives gets the blame for making bad medicine.

It is not necessary to multiply examples, for they would only prove what has already been asserted, that disease is caused by

spirits. They give no distinct meaning to the term spirits. It is to them an all-powerful, always present *something*, capable of anything an imagination uncontrolled by reason can conceive of.

It will readily be imagined that the treatment will be essentially the same in all forms of disease. Such is the fact. Disease is an evil spirit, and the object in all cases is to drive it out of the body. Still they do employ other modes of treatment, but simply to relieve some local symptom and not to counteract the disease *per se*.

The treatment of the sick, except in cases of midwifery, is relegated to the "Medicine Man." He is a power among the Indians. They do not adopt the profession (if the term may be employed) from choice, but from a belief that they are called by some higher power. This call is not understood in the sense in which we employ it, but the person is supposed by them to have been instrumental in saving a life, and is thenceforward a Medicine Man. What medicines are used are collected and prepared by the Medicine Man, and their names and mode of preparation are profound secrets. The medicines they use are roots indigenous to the locality in which they reside.

The medicine man does not follow his calling from humanitarian motive, or for the love of science, but, like many in the civilized world, he believes the laborer is worthy of his hire. He has no stipulated fees, but takes all that he can get. His fees consist of horses, robes, wearing apparel, etc. He will take the last horse a man has. In justice to him, we must say, the Indians, as a people, exhibit the most remarkable disregard for property.

The treatment may conveniently be divided into two sections: the treatment of the disease, or, as they understand it, the spirit—and by treatment they mean the removal of the spirit; and second, the relief of symptoms.

To accomplish the first object, the medicine man decks himself in a most hideous costume. We will describe the average costume, premising with the remark that the dress varies with the number of articles procurable, the more the better. The face is painted, usually red, with yellow trimmings about the eyes and mouth. The hair, always worn long, has a tuft of feathers braided in on the crown, and to braids of hair hanging about the shoulders are attached horse-hair, rattle-snakes, shells, etc.; over all is dusted red and yellow paint. The ears are pierced by numerous rings, and suspended from them hang shells reaching to the shoulders. About the neck are strings of bright colored beads with birds' claws, pebbles, buffalo teeth, etc.

The wearing apparel consists of a shirt, made of muslin or raw hide, leggings, breech-clout, moccasins, and over all a blanket or buffalo robe. The shirt is daubed with paint, with

some hideous image on the breast. The leggins are made to fit closely, but with a wide strip along the outside, to which is attached beads, bones, etc. The blanket, or robe, in either case gaily adorned, is loosely thrown over the shoulders. Thus equipped, he is ready to go forth and terrorize the spirits. The patient is stripped and the performance commences. The medicine man goes through a series of gyrations and contortions, touching the patient with his hands, blowing upon the body, chewing roots and expectorating them over the body. The whole performance is involved in an air of mystery. Then comes the drumming, singing and dancing. For this there are two assistants who beat the drums. The drums are simply hoops, about twelve inches in diameter, covered with rawhide, and having loose pieces of metal attached to add variety to the sounds. The Medicine Man has a rattle made of a bladder, to which is attached a handle, and filled with pebbles. They gather around the victim, drum, rattle and sing, and keep up a constant to and fro motion of the body. The singing is easier imagined than described. If there is any music in it, I have never been able to detect it. I think the length of time occupied in these performances depends more upon the power of endurance of the actors than upon the condition of the patient. The number of repetitions varies with the condition of the patient and the ability to pay. The larger the fee, the greater the influence the Medicine Man has over his patient The Indian Doctor, in case the patient gets no better, protects his reputation very nicely, in that respect having the advantage over his white friend of the same profession. In some cases, it may be, the fee was not large enough. Again, some enemy has made bad medicine to counteract all his efforts. As a last resort, he may admit that he was not strong enough to scare the spirit.

Before leaving this subject, it may be of interest to some to learn of some of the tricks of the trade, for be it known the red man is not above deception.

He will console the patient by informing him that he hears the spirit, and that it has ceased its evil doings, and will soon depart. Or he may affect to see it in the air. No one is able to disprove the assertion.

Another very effective deception is to—as seen by those present—chew a bit of charred wood, and then place his mouth to the patient's body, and pretend to draw out the defunct spirit, and before the sick one's eyes to expectorate the blackened saliva.

We now come to the treatment of symptoms. They have learned, by observation, that it is necessary that the skin, bowels and kidneys should perform their several duties. Hence, when there is any derangement of these organs, they endeavor to correct it. As to the function of the skin, perspiration, they do induce that most effectually. Among all their prac-

tices, I know of none exhibiting so much ingenuity as the sweathouse. It is about eight feet in diameter, four feet high, and in shape like an inverted caldron. First they dig a hole in the ground, about one foot deep and eighteen inches in diameter. This is to be in the centre. Then around this, in the form of a circle, are placed willow sticks, firmly planted in the ground and about two feet apart. They are about eight feet high and all bent converging to a point in the centre, about four feet from the ground, and all securely fastened by willow twigs. Over this framework are placed blankets, several thicknesses being used, an opening being left for a door, which is closed during the sweating process. While this is being built a fire has been kindled near by, and in it have been placed several small pieces of stone to be heated. The persons who are to occupy the house, for several take a sweat at the same time, now divest themselves of all clothing, enter and seat themselves, tailor fashion, around the centre. A pipe filled with tobacco and lighted is then given them. An assistant now removes the heated stones with two sticks, and places them in the hole in the centre of the house, hands to those inside a bucket of water, and closely closes the door. The water is poured over the stones, when a volume of steam and heated vapor arises, filling the apartment. The bathers then smoke, and sing, and sweat, and sweat, and sing, and smoke. They remain inside about fifteen minutes, when they are bathed in a profuse perspiration.

If it be not freezing weather, the bathers go from the bath to the river and plunge in, for I should have mentioned that the sweat-house is built near a stream of water. Strange as it may seem, I have not seen any immediate serious effects from such a sudden change, forcing, as it must, a large amount of blood from the surface to the internal organs.

It is the custom of many to take frequent baths, not for the relief of any malady, but on general principles. During the winter season these sweat-houses are erected inside buildings; then, of course, the cold plunge is dispensed with.

For producing catharsis certain roots are used, but I have not been able to learn the names of any of these roots. As they are always given in the form of a decoction, I am inclined to ascribe more virtue to the menstruum than the drug. The object is also sometimes accomplished by a process of kneading, which excites the peristaltic movement of the bowels. I have heard of the syringe being used (one made from pithy wood), but among the Indians I have observed I have never seen it used.

In case of supression of urine, the Medicine Man would first drum and sing, then resort to the following:—

Heat small pieces of stone, wrap them in flannel and place them under the patient's back. In case of failure, then the steam-bath would be resorted to. Here, it may be observed, the treatment is not so wide of the mark.

The Indians have great faith in emesis. I do not know why it is they should resort to this in some cases and not in others. As a rule, this procedure is confined to children. It is accomplished by the use of decoctions. The theory of the treatment is, that if the spirit has made any bad medicine in the stomach, it can be gotten rid of.

The Indian has no faith in a medicine the effect of which he cannot see. The Medicine Man never gives any drug to be taken at regular intervals.—*Med. and Surg. Rep.*, (Phila.) March 26th.

SURGERY, AS PRACTISED BY THE INDIANS.

By H. M. M'Clanahan, M. D., of Montana.

This branch is not enveloped in a cloud of mystery and superstition, as is the practice of medicine, although far from being free from it. The reason is obvious. The causes of disease are not always manifest, even to the most cultivated, while to the Indian it is entirely a subject of speculation. However, the relations between cause and effect, in many surgical injuries, are so evident as to convince the most ignorant. But self-evident as the cause frequently is, the Indian is not satisfied with that alone, but goes further and seeks for a first cause to account for the accident, and here the influence of spirits is admitted. Some higher power must have influenced the horse to fall, or the bullet to strike him. Holding such beliefs, it will not seem strange that the Indian, before going to war, or to hunt, should endeavor to prevent accidents. This he does by "making medicine" before commencing the journey. Now, "making medicine" is a comprehensive term, and may mean songs, dances, supplication, or the wearing of charms. Before starting, the Indians will make dances, and sing songs to the gods, and wear about the body pieces of cloth, skins, etc., as charms. Thus equipped, he is ready for war or the chase. He now pretends to believe that no harm can come to him. I believe this is the reason why the Indian, at times, displays such courage, for naturally he is a coward. If, as often happens, the charmed Indian is injured, he does not lose faith in the charm, but explains it away by asserting that either his medicine was not strong enough, or the enemy's was stronger.

If a wound takes on morbid action, it is attributed to evil spirits.

Further views as to their ideas of cause will be given as various orders are taken up.

First, the treatment of wounds, however caused, involving injury to or destruction of tissue. There are certain general principles of treatment which are generally recognized, among which may be mentioned arrest of hemorrhage, removal of foreign bodies, and protection of the injured part by coverings.

For arresting hemorrhage they simply apply compresses

over the seat of the injury. A favorite application is the spider's web, applied intact. The blood, becoming entanged in the meshes, clots. In urgent cases, anything, as grass, dried leaves, and the inner bark, or pieces of blankets, is used. The Indian is aware that violent hemorrhage, uncontrolled, means death.

The primary dressing is left in place until removed by ulcerative action. Then the wound is examined, and any foreign bodies, as shreds of cloth, pieces of wood or earth, are removed. In rifle wounds the ball is not disturbed, unless in sight. They are not inclined to meddle, confining attention to the surface. As an application, marrowfat is probably most frequently used. Another favorite ointment is the fat of the prairie dog. In washing the wound, cold water is used. General or local fever is considered as evidence of the intervention of evil spirits, and not as a necessary result of the local lesion. In such cases the "Medicine Man" exerts his powers to dispel the evil genii. His manner of conducting the scaring process was described in the preceding article. The procedure would be the same in this instance. They have no fixed times for changing the dressings: as a rule, so long as the patients are comfortable the wounds are not molested.

Complications, as erysipelas, gangrene, and pyæmia are very rare. I have never seen such complications. Medicine men, however, tell me of cases where the flesh turned black. They said that in such cases the patients invariably died. When asked the reason, the reply was, "too strong for our medicine."

While on a digression, the following facts may be of interest: The air of the lodge is charged with wood smoke, from the open fire on the ground. There is free interchange of air. Meat hanging in the lodge is perfectly preserved at all seasons. I have thought the absence of the complications alluded to might, in part, be due to the antiseptic properties of the smoke. In punctured wounds the Medicine Man sometimes desires to introduce substances into the wound. For this purpose he procures the wing bone of the wild goose and removes the marrow. To one end of this is attached a piece of small intestine. The bone is then introduced into the wound, and the medicine into the intestine. Then, by drawing it between the fingers, the substance is forced through the bone into the cavity of the wound. Such is an outline of the Indian's manner of treating wounds.

We next proceed to give the treatment of fractures and dislocations. Most of the accidents of this class occur during the chase of buffalo. In civilized life many fractures are due to falls. Such causes almost never occur among the Indians. They wear moccasins, which have flat soles, and do not cramp the feet. The moccasin is made of rawhide, and does not become smooth, as does tanned leather. In compound fractures the treatment is more elaborate than in simple fractures.

The following is the treatment for that form: First, reduction by extension and counter extension. Some of the Medicine Men acquire considerable skill in manipulation, and their results are creditable. Next, all the openings are filled with extracts. Then, over all, is smeared a coating of the scrapings of rawhide boiled in water. This forms a gelatinous layer, having considerable force. Over this and around the entire limb is placed a covering of fine inner bark; the limb is then ready for the splints. The splints are made from willow or other wood, quite thin, and from one to two inches in width, and made long enough to extend the entire length of the bone. They are placed about one inch apart, and entirely around the limb, being held in place by circular strips of cloth. If it be an arm, it is carried across the chest and retained by a circular bandage about the neck. If a leg, the patient remains in the recumbent posture for some days; but not during the entire time of the healing process. The rule is for the patient to commence to walk as soon as he can bear the weight of the body upon it without causing pain.

In simple fractures the treatment is not so elaborate. The splints are applied next the skin, in the same manner as in compound fractures. The original dressings are not changed unless, from swelling, the arm becomes painful. In comminuted fractures the limb is dressed as in compound fractures. When spiculæ of bone, thrown off by the efforts of nature, appear on the surface, they are drawn away, but are not searched for. I have never heard of the Medicine Man performing an amputation, and in severe comminuted fractures death often results.

In dislocations the treatment is similar to that in fractures. From what I have seen, I judge the reduction is often imperfectly accomplished. The joint being bound up in splints until pain has ceased, the result is frequently a stiff joint. I saw a case, where the middle finger had been dislocated backward upon the dorsal surface of the articulating metacarpal bone. It had not been replaced, and the result was an artificial joint, allowing of considerable motion. The head of the metacarpal bone was partly absorbed, so that the contour of the joint was not greatly changed. The finger *appeared* much shorter than natural.

In common with all other races of man, the Indian suffers from venereal diseases. He is aware of the existence of such diseases. He is ignorant of the fact that secondary and tertiary forms are the results of the primary disease. They are looked upon as distinct diseases. The following dialogue will illustrate his ideas of cause. The victim is suffering from gonorrhœa: —

When did you get this? "Last week." Did the woman have any disease? "No." How did you get it then? "She make bad medicine so as to give it to me." The victim was

very indignant to think she would play such a mean game on him.

This idea that a woman can give a man the clap at will, is the cause of frequent domestic disturbances.

The treatment consists in taking, internally, a balsam that is collected from the wild cherry and other trees. They use no injections. What the result in these cases is, in many cases, I do not know, but I have never seen a case of stricture and have never known of one to suffer from retention of urine.

For syphilis I have never been able to learn of any treatment. As before remarked, it is not recognized as a distinct disease, and its manifestations would be treated as distinct lesions. As a clinical fact worthy of notice, I can say, as the result of my observation, that syphilis does not make the terrible ravages as among civilized people. Inherited syphilis is more marked than acquired.

Counter-irritation is a favorite form of treatment for many ills.

The instrument employed is a piece of flint drawn to a sharp edge. The skin is scored until blood exudes freely. This treatment is employed for all swellings and tumors, and any deep seated pains. For painful forms of ophthalmia scoring the temple is frequently employed. But it is while mourning that this practice is most universally employed. I saw one woman whose entire body was lacerated in this way, so that she left blood-stained marks in every impress of her feet.

In incontinence of the urine the treatment generally is the sweat house, but sometimes the Medicine Man will attempt to draw off the urine, using for this purpose a quill. It often happens, that there is a free flow of blood following this procedure.

Considering the severe winters in this latitude, it is surprising how few suffer from frostbite. Most Indians paint the face with vermillion, daubing it on thickly, which, I think, protects it from the cold somewhat. Then they very seldom apply water to the surface of the body in winter. To protect the feet, fine dry grass is placed inside the moccasin, which produces friction, thus maintaining the heat of the part.

Such is an outline of the Indian's idea of the practice of surgery. Experience has taught him a few facts, but I doubt if he is any wiser than his ancestors were in the year 1492. If he should live for ages to come uninfluenced by the whites, he would know no more than he does now.—*Med and Surg. Rep.* (Phila.) April 23d.

WOMEN AS PHYSICIANS.

There is nothing like logic of facts. To it all theories must be brought and tested. It is vain to attempt to escape its verdict.

The question whether women are calculated to be successful

in the profession has been debated vigorously. Now is the time when we can ask, *have they been* successful? The record is before us and open for inspection.

The Valedictory Address of Dr. Rachel L. Bodley, Dean of the Woman's Medical College of Philadelphia, placed this matter before her hearers. Her theme was a statement of the work accomplished by their Alma Mater in the thirty years of the existence of the College, as exemplified in the professional careers of her 276 daughters sent out as medical graduates during that time. To enable herself to speak with precision Dr. Bodley sent to each of the 244 surviving graduates (32 had died in the thirty years) a circular containing eight questions, to which she solicited answers. The questions were designed to cover the prominent features in the experience of the medical women gradnated by the College, in the practice of their life work—its professional character; its pecuniary rewards; its social status; its teaching work; its membership in medical societies, and finally, that important question in sociology touching the influence of the study and practice of medicine upon woman's relation as wife and mother. Of the 244 surviving graduates, answers were received from 181, and of this number 151 are in active practice as doctors, the remaining 30 having given up, for various reasons, among which are domestic duties, philanthropic work, other business, poor health, retired, old age; and in some instances no reason was assigned.

We shall give the words of the lecturer on some of the other points:—

The second question related to the predominating character of the medical practice of the 151 who are thus actively engaged, whether gynæcological, obstetrical, surgical or medical. The responses are as follows:

Gynæcological practice predominating, 32; obstetrical, 9; medical, 9; surgical, 3; general practice, without discrimination, 34; gynæcological and obstetrical, 19; gynæcological and surgical, 6; gynæcological and medical, 26; obstetrical and medical, 6; surgical and medical, 7. Total 151.

The third question relates to the social status of the woman physician in the community in which she dwells.

One hundred and fifty-one answer this question, and of these 144 report cordial social recognition. These answers are often emphasized and frequently accompanied by testimonials in proof thereof. Seven report negatively. These seven dwell in communities which may not be named here, since the announcement would be accompanied by possible annoyance to the ladies interested. These exceptions recall the character of public opinion twenty-five years ago, in many communities which are now happily advanced and reformed to the extent of permitting every woman to cultivate her talents and to engage heartily in whatever good work her hands may find to do.

The fourth question interrogates in reference to the work accomplished by the woman practitioner, as resident or visiting physician in hospital, asylum, charitable institution, or as physician in college or school for girls. To this question 157 make reply: 59 are thus engaged. The record in this regard is inspiriting. In our own State of Pennsylvania, one is physician in charge of Woman's Hospital of Philadelphia; one is resident physician to department for women in State Hospital for the Insane of the South-eastern District of Pennsylvania; one is assistant physician of State Hospital for the Insane, South-eastern District of Pennsylvania; one is assistant physician Pennsylvania State Lunatic Asylum, at Harrisburg.

In New York, one is resident physician of Nursery and Children's Hospital, Staten Island; one is assistant resident physician, same institution; one is resident physician House of Mercy for Girls (a charitable institution); eight are assistant physicians in the Woman's Hospital of Philadelphia, and in the New England Hospital in Boston; besides these are consulting and visiting physicians to hospitals and charitable institutions, members of consulting boards; one alumna occupies the responsible position of physician to the State Industrial School, Lancaster, Mass.; others have in the past occupied similar positions, as the position of resident in our own Woman's Hospital, resident of the N. E. Hospital for Women and Children in Boston, the late Mission Hospital of Philadelphia, etc., etc. Besides this service in hospitals, several record themselves as resident or visiting physicians to schools for girls; one as an auxiliary visitor to the State Board of Charities in Massachusetts, etc., etc. One states that she was City Physician for one year to the city of Springfield, Mass. Another is now Health Officer to the city of Charlotte, Michigan. The frequent mention in the answers to this fourth question, of being physicians (usually without salary) to "Home for Erring Women," "Orphans' Home," "Home for Girls," "Reformatory School for Girls," "Infirmary for Infants," "Children's Home," "Home for Aged and Infirm Persons," etc., etc., suggests the wide and fruitful field opened by medical work to true-hearted women, skillful and wise physicians, wherein they may accomplish great and lasting good for their race.

The fifth question relates to the monetary value of the medical practice per year, and is answered by 76 ladies.

24 as much as $1000, and less than $2000.
20 as much as $2000, and less than $3000.
10 as much as $3000, and less than $4000.
5 as much as $4000, and less than $5000.
3 as much as $5000, and less than $15,000.

Four report sums varying from $15000 to $20,000 per year. Ten report less than $1000 per year.

The average income is found to be $2907 30 to each seventy-six.

The four who report the exceptional large sums are established practitioners, and have reported the amount each year for several years.

These sums may, probably, be relied upon by the social statistician as fair averages of the income of women physicians, since many are careful to state that they give only actual receipts, as indicated by bank book or ledger, and several decline to attempt to reply, stating as the reason that they are too busy to make an accurate estimate, and they are unwilling to hazard a guess. Several, who make no estimate, reply that they are able to support comfortably families varying in size (frequently stating the number in family), father, mother, and brothers, mother and sisters, several nephews and nieces, etc., etc. Three women doctors report having accumulated sums sufficient to permit them to retire from active service.

Question sixth referred to the work for which woman is preeminently fitted, that of medical teacher, and specified separately institutions of learning and popular audiences of women. Fifty-four answer this question affirmatively. Among these are seven professors in medical colleges in Philadelphia and New York, and twice that number of lecturers and instructors in our own college and in the medical college for women in Chicago. The statements which have come in relative to the popular course of lectures on medical subjects, for women, are highly gratifying. Sometimes the audiences have been large ones, in cities; sometimes they have been "talks in my office," with my patients; sometimes "instruction of my office students;" and often "lectures on physiology and hygiene" in girls' schools; and oftener still, as private letters which have accompanied answers have stated, the teaching has been of the character set forth in the letter of an alumna who is practicing far out on the Western prairies, when she writes: "I am daily thankful for the privilege of teaching women (in their homes) how to take care of themselves and how to preserve the health of their children."

The seventh question is the inquiry which, in later years, has assumed (with us) especial interest, in deciding the professional status of women physician, viz., that of membership in medical societies. Sixty-six reply affirmatively to this question. "Are you a member of a county, State, or other local medical society?" Of these, four reside in California, one in Connecticut, one in Delaware, four in Illinois, one in Indiana, three in Kansas, two in Massachusetts, five in Michigan, two in Minnesota, one in Missouri, one in New Hampshire, fifteen in New York, six in Ohio, fourteen in Pennsylvania, three in Rhode Island, one in Tennessee, one in Wisconsin—seventeen States in all.

The professional ability of many of these ladies has been recognized by election to membership in more than one State

or local medical organization. Thus, the accomplished author of the Boylston prize essay for the year 1876 reports membership in six societies, five in New York city, and in the American Medical Association. Another alumna, practicing in the largest city in Ohio, reports membership in four societies, three prominent local organizations, and the American Medical Association. Then, again, especial distinction has been conferred upon others by enjoyment of sole members as women practitioners of medicine, as in the Boston Gynæcological Society, where membership has been accorded to but two women, and both of these are alumnæ of our college. Seventy-three different medical societies in all, throughout the United States, have thus honored women. Five of our graduates have represented their respective State societies in the American Medical Association, viz.: Delegates from Rhode Island, Ohio, Illinois, New York and Tennessee. But eight women have as yet enjoyed this honor of representation in the American Medical Association. The preponderance is, therefore, in favor of our college—five out of eight. An alumna, practicing for some years in Minnesota, writes that she holds the appointment of delegate to the American Medical Association for 1881. Montgomery County and Delaware County (Pa.) Medical Societies, have each elected a college alumna as a delegate to the Pennsylvania Medical Society, which will meet in Lancaster in May, 1881.

While to Pennsylvania it may be gratifying to note the number (14) admitted to membership throughout the State, the membership in regular medical societies in the county of Philadelphia is far from satisfactory, if we had the time to enumerate localities who have granted membership to women. The papers have come in from all our Philadelphia Alumnæ (30 in number) with the brief answer, "No." One Alumna writes from Iowa, that on the 3d of February, 1881, she was invited to accept the position of member of the Medical Examining Committee of the medical department of the Iowa State University.

To the last question (the eighth) 61 make answer. The inquiry is worded thus: "What influence has the study and practice of medicine had upon your domestic relations as wife and mother?" As it is concerning the phase of influence suggested by this question that our critics make their severest comments, so it is the most difficult to present truthfully the impression made by the answer received. I have decided to let the statistics speak for themselves.

The answers of the 50 married ladies who respond to this question tabulate as follows: Influence, favorable, 43; not entirely favorable, 6; unfavorable, 1.

Unmarried ladies reply to this question, after striking out from the line the words "wife and mother." Three state that the study and practice of medicine have prevente dmar-

riage, while a fourth states definitely that she has "remained single for reasons entirely distinct from her profession."

Returning to the answers of married women, because these possess the greater general interest, I remark that the song of domestic life, as I have listened with ear attent, has been sung in no minor key. In the melody (as the tabulated statement shows) are a few discordant notes, but these are such that a master might throw in to enhance the harmonies of his strain. For example, a thoroughly conscientious mother writes from her nursery, where three quite young children claim the mother's ministry: "The *study* of medicine is of great benefit, but the practice often interferes with the duties to my family." The clear, pure quality of the replies, as a whole, is truly inspiriting; for example: "Purifying and ennobling. Married a physician since I began practice. Am the mother of a boy of eight years of age." Another: "As wife my duties have never been interfered with; as a mother I have been incalculably benefited. * * * My husband is also a physician. I am often enabled to assist him with his cases, both in diagnosis and treatment, and I often find his advice of great value to me. We are, mutually, a help to each other."

The general impression which these statements convey cannot be misconstrued. Even allowing for the natural bias of the lecturer in favor of the cause she advocates, there can be no doubt but that the results she states will compare very favorably with those from a similar number of male graduates. As far as it goes, it is a strong vindication of the propriety of those women studying medicine who have tastes and talents in that direction.—*Med. and Surg. Rep.*, March 26.

BIRTH-RATE AND NATIONAL PROSPERITY.

The *N. Y. Medical Record*, of March 26, contrasts the birth-rate of the German people (40 per 1000 annually) with that of the French (only 26 per 1000). The later are prosperous and happy, notwithstanding their late defeat by the former and the heavy war indemnity; while the Germans are oppressed with poverty and crime, and multitudes are emigrating.

On the other hand Netherlands, with a dense population and high birth-rate, is prosperous, and the people are contented to stay at home; while Sweden, with a spare population and low birth-rate, sends out a large emigration. The writer attributes the discontent of the German people to the oppression of their military system, [but this cannot reasonably account for it, as the military system of France is equally oppressive, while that of Sweden is perhaps the lightest on the continent of Europe. Evidently the problem of national prosperity and contentment is a complex one, in which the birth-rate is not the governing factor nor military service the most important.]

TRICHINOSIS IN NEW ORLEANS.

Dr. C. B. White, Sanitary Director of the *New Orleans Auxiliary Sanitary Association*, recently made a report on the above subject, from which we quote:

The search for trichinæ spirales in the hogs slaughtered at the abattoir has been continuous, diligent and thorough.

I submit Dr. Payne's report in full:

NEW ORLEANS, June 1, 1881.

To C. B. White, M. D., Sanitary Director of the New Orleans Auxiliary Sanitary Association:

Sir—I have the honor to report that under your direction I commenced April 7, 1881, to examine such slaughtered hogs as I found from day to day at the buildings of the Crescent City Live Stock Landing and Slaughter House Company.

The aim of these examinations was to ascertain to what extent the meat offered for sale for food in this market is rendered dangerous to health and life by the worm trichina spiralis, and also to acquire such other information as may ultimately redound to the benefit of the citizens of New Orleans.

The method of conducting these examinations may be described in a few words. From each recently slaughtered hog to be inspected, small portions are clipped and placed in a vial by themselves. The number of specimens taken from each animal is never less than four, and are selected from the pectoral, diaphragm, abdominal and ham muscles, thereby enabling the investigator to view those parts of the body of the animal most commonly the seat of trichinæ. The appearance of the meat, the animal's food, and the locality whence he came, and other facts of importance, if there be any, are written down. The next step consists of taking the various specimens and examining them carefully by the aid of a good microscope. Small portions are dissected out lengthwise of the muscle, giving a good view of what is termed the striated fibre of voluntary muscle. If there be any trichinæ present they can be readily recognized imbedded in the muscular structure. In this way I examined, to May 1, 325 hogs, the number of specimens inspected with the microscope being 1300. The number of hogs inspected during the month of May was 1065.

The number of specimens examined under the microscope was 4260. Parts of a very large proportion of these specimens were also examined by Dr. Devron and yourself, so as to set aside any question as to the accuracy of the observations. The result of my own examinations to June 1st may be briefly stated thus: Number of hogs examined, 1390; number of specimens examined, 5560; animals infected with trichinæ, 1.

The hogs were reported to have been received from the following localities: Unknown, 90; New Orleans, 52; Texas, 38; Ouachita, 907; West, 303; total, 1390.

The trichinous hog, reported as having been received from St. Louis, was not badly infected, only nine trichinæ being found in one circumscribed locality in a pillar of the diaphragm; otherwise the meat was sound. The animal was not recently infected, and the trichinæ were not visible to the natural eye. The time of slaughtering the animals is from two to six o'clock in the afternoon; and as it is considerably past six o'clock when the specimens are all collected, the microscopical examinations have to be made during the following day.

Accompanying this report are tables showing the record in detail of each hog examined. Some matters of interest in connection with this subject are necessarily not considered here.

An extended series of examinations, such as are here mentioned, would, most probably, establish the fact that the meat sold for food in this city is much more wholesome than the public has been led to believe; and it will be gratifying to many persons to have this matter thoroughly and satisfactorily investigated. I have the honor to be, your obedient servant,

J. T. PAYNE, M. D.

Dr. White made the following remarks on the above report:

In reference to the trichinosed hog found, it is to be said that the danger to the community is not great. The trichinæ being in the capsulated condition would, if present in numbers, have been instantly detected by the watchful naked eye. So that even if this meat were eaten raw, a dangerous attack of trichinosis is improbable. As the trichinæ were only found on microscopic examination after the animal had been offered for sale in the market, it suggests the importance of the thorough baking, boiling, roasting or frying of all pork before being eaten, and the importance of having a microscopic expert familiar with that disease of animals, who should have time to make and complete examinations before exposure of meat in market, and with authority to condemn and destroy all found unhealthy. The contrast between the experience of Dr. Payne—one trichinosed hog in 1300—is quite pleasant as compared with a Chicago report of 8 trichinosed hogs in 100; and in 1875, Dr. Sutton, of Aurora, Ind., reports an equally bad condition of things prevailing in Dearborn and Ohio counties, Ind. It is proposed to carry these observations on for some months, until it is ascertained whether the exemption of Southern raised hogs is apparent or real.

Again July 8th, Dr. White, sanitary director, submitted report of investigation of Dr. Payne for trichinæ in hogs slaughtered in this city.

In June Dr. Payne examined 4060 specimens from 1015 animals, and found them all free from trichinæ.

He has thus far examined 9620 samples from 2405 hogs, and found trichinæ in but one animal, which came from St. Louis.

A large majority of the animals examined came from the Lafourche country.

Dr. White said that he was satisfied that continued investigation would demonstrate that Southern bred hogs were exempt from the disease. Dr. White was instructed to have the investigation continued.

And more recently Dr. White read the following report on trichinæ in hogs:

July 31, 1881.

To C. B. White, M. D., Sanitary Director of the New Orleans Sanitary Association:

Sir—I have the honor to report that I have, during a part of the month of July, continued my inquiries as to the wholesome condition of the hogs slaughtered for food in this market. I have, by the aid of the microscope, examined 621 hogs, taking no less than four examples from each animal. The number of specimens examined was 2484. Two hogs that came from St. Louis by rail were found to be infected with trichinæ.

The animals examined were reported as having been received from the following localities:

England 1, Tennessee 3, New Orleans 13, unknown 25, Louisville 33, Ouachita 294, St. Louis 252. Total inspections to Aug. 1st, 3026.

I have the honor to be, very respectfully, your obedient servant. J. T. PAYNE, M. D.

Since this report four hogs, infected with trichinæ, have been found. They were from St. Louis.

Dr. White read a letter from Dr. Geo. Homan, of St. Louis, to whom he had transmitted the results of the inspections. Dr. Homan stated he would refer the facts to the local trichinæ committee. An effort will be made to trace the hogs to the original owners.

FOR ORCHITIS.

Dr. Sabadini *(Medical Record)* recommends an ointment composed of one part of iodoform to 10 of vaseline.

VACCINATION AS A MODIFIER OF SMALL-POX.

Dr. H. L. Green, of Cedar Rapids, Iowa *(N. Y. Med. Rec.)* relates the following remarkable case:

A young lady remained two days in attendance on a case of small-pox. She then left it, and six days after was vaccinated with bovine lymph, Nov. 12. On the 16th the arm became swollen, and the vaccine vesicles appeared; while at the same time was manifested the primary fever of small-pox, and by the following day the course of the vaccinia was checked. On Nov. 18, the eruption of small-pox first appeared on the face

and body, but began to dry up on the 24th. During this latter period the vaccinia again became more active, the arm being red and painful, but with no definite local development. The secondary fever of the small-pox was much diminished in duration and intensity, and there was no pitting.

[The vaccine virus in this case must have been remarkably energetic, as it is usually found that vaccination, after four days from exposure to small-pox, fails to exert any protective influence whatever.]

TRICHINOSIS.

In the Philadelphia *Medical and Surgical Reporter* of March 26, mention is made of the restrictions imposed on the importation of American pork into several of the European States, owing to the real or alleged existence of trichinæ in the animals. The French authorities declare that a large proportion of American pork is trichinous, and in consequence the Minister of Commerce, on the recommendation of the Council of Hygiene, has prohibited the further importation of pork from the United States.

On the other hand, Dr. John H. Rauch, Secretary of the Ill. State Board of Health, declares that 11 deaths have occurred in that State from trichinosis since 1866, and that these were all due to eating raw ham or sausage; also that "of the millions of hogs that have entered Chicago in the past two years, only two have died of trichinosis." The author of the article in the Reporter doubts the accuracy of this statement, and adds that the disease is far less serious in the hog than in man.

He also adduces the experiments of M. Vacher, of Paris, who found by actual test with a leg of pork boiled thoroughly, that after half an hour, the thermometer placed in the flesh to the depth of 2½ inches registered 80°F.; in an hour, 118°; in an hour and a half, 149°; and after 2½ hours, when the meat was thoroughly cooked, 165°. M. Vacher thought this temperature insufficient to destroy the parasites.

A SUCCESSFUL REMEDY FOR DIPHTHERIA.

Dr. J. W. Alexander, of Columbus, Ohio, in the March number of the *Ohio Medical Recorder*, recommends the following as eminently satisfactory in his hands:

℞. Pulv. Potass. Chlorat. ʒj;
Syrupi ʒiiiss;
Misce et adde
Acid. Sulphuric. Aromat.,
Tinct. Ferri Chlorid., ā ā. ʒj. M.

S. A teaspoonful every two hours, for an adult. Precede

the dose by a drink of water, or a little food. Keep the solution warm, to prevent precipitation of the chlorate.

He does not undertake to explain why this combination is more successful than the usual chlorate of potash and iron mixture, or sulphuric acid, given separately.

UTERINE DISEASE AND INSANITY.

Dr. Leonard F. Pitkin communicates to the same Journal the result of his observations on nearly 150 cases of insanity in women. In nearly every one he found some uterine disorder, which generally antedated the access of mental trouble. The usual history was, that constant pain had interfered with sleep and nourishment, and in some cases had lead to the opium habit.

Editorial Department.

THE PRESIDENT'S CASE.

The medical gentlemen in charge of the President seem to have quite abandoned hopes of his recovery. The civilized world joins in lamenting the tragic occurrence which may result in the death of the chief magistrate of a great nation. But, in connection with this event, our profession cannot hope to escape severe inquisition and criticism on account of its failure to secure a different issue. There is a feeling common to the laity, and one can scarcely declare that our own ranks are free from it, that competency in practice is inseparable from successful results. While in our reflecting moments we all understand how incorrect this method of reasoning is, it is yet true that we may fail in duty to ourselves and our colleagues in question, if we do not at all times, and under all circumstances, defend them from such assaults and prejudices as we know to be unjust.

The clinical report of the case has not yet been given to the public, and all criticism of the professional conduct of the case should be held in abeyance until this publication is made. Surgeons in attendance have pledged the profession that a faithful report shall be published at the proper time. When

this shall appear, it will be a proper object of scrutiny and criticism. We venture further to say that, no matter how severe these criticisms may prove to be, those most deeply concerned will make no complaint if the strictures are dignified and courteous in spirit and word.

One of the most embarrassing duties the medical attendants of the President have attempted to perform, has been that of issuing frequent bulletins for the Associated Press. Whether this duty was voluntarily assumed, or officially imposed upon them, we do not know. It is however certain, that a physician or surgeon is seldom so much at fault, as when he undertakes to lay before thousands of non-professional and unsympathizing readers almost hourly accounts of his patient's condition and treatment. The occurrences of the sick room,—even those of the greatest moment to the physician, or patient, are very differently appreciated by the average newspaper reader. The surgeon is intensely gratified that his patient retains an enema until his stomach recovers its functions; but when he undertakes to recite the process to the outside crowd, they overwhelm him with ridicule.

Unquestionably there has been something to condemn in the telegraphic garrulity of these bulletins, but where the fault lies we do not know. Again, it is a most mortifying misfortune that the solemnity and terrible responsibility which this case devolved upon our profession, were not sufficient to banish thoughts of self, and probably aspirations for office. We must protest that we do not make this remark with any intentions to reflect upon Dr. Baxter, who seems to have been the only member of our profession openly accused of seeking office through his attentions to the President.

We know nothing of his motives, and have not been advised of anything to condemn in his conduct. But when Dr. Bliss informs a newspaper reporter of the occurrences between himself and Dr. Baxter, and adds that "Dr. Baxter will never be Surgeon General," it looks to us very much like evincing a disposition to suborn the prerogatives of his own position, to work detriment to another.

When the excellent gentlemen associated in this case make their report, it will be seen, we imagine, that they have had no responsibility for the errors we have mentioned.

THE MOREHOUSE PARISH MEDICAL SOCIETY

Effected an organization July 18th, 1881, by adopting a constitution and electing the following officers:

President, Dr. T. W. S. Baird; Vice-Presidents, Drs. J. D. Hammonds and R. S. Cotton: Secretary, Dr. Beauford; Corresponding Secretary, Dr. W. E. Pugh: Treasurer. Dr. G. B. Marble.

They start with high hopes and a promise not to hide their light under a bushel; in other words, to let us know what they are doing. We feel a little proud and encouraged, as one might in announcing that a man child is born into the world. There are not many such children in Louisiana, for our physicians have not been happy in this sort of conception; the birth-rate has been low and the death-rate high. We do not suspect any unlawful tricks to prevent conception; the cause must be either infertility from organic defect, or long-delayed puberty. Let us trust that it is the latter, and hope for better luck in the future.

Reviews and Book-Notices.

A Practical Treatise on Impotence, Sterility, and allied Disorders of the Male Sexual Organs. By Samuel W. Gross, A. M., M. D., Lecturer on Venereal and Genito-urinary Diseases, Jeff. Med. Col., Phila., etc. With 16 illustrations. 8 vo., pp. 174. Philadelphia: Henry C. Lea's Son & Co. 1881. [Sold by Armand Hawkins, 196½ Canal st., New Orleans.]

The four chapters of this work treat respectively of Impotence, Sterility, Spermatorrhœa and Prostatorrhœa, the two former occupying most of the book.

The distinction made between impotence and sterility renders necessary their consideration in separate chapters, the

former being defined inability to perform the sexual act, either from want of erections or some anatomical abnormality of the organs; the latter implying either absence of the seminal fluid or its infertility. Impotence is discussed under the following heads: 1. Atonic impotence; 2. psychical impotence; 3. symptomatic impotence; and 4. organic impotence. The first is regarded as generally due to hyperæsthesia of the prostatic portion of the urethra, in the ratio of 137 cases out of 149 under the author's observation.

With reference to etiology, the author remarks: "From independent researches, which were first published in 1877, I long ago reached the conclusion that impotence was generally induced by subacute or chronic inflammation and sensibility of the prostatic urethra, which were frequently associated with stricture, and which were usually due to masturbation, gonorrhœa, sexual excesses, and constant excitement of the genital organs without gratification of the passions."

The author has made some curious observations on masturbators. Thus, of those who never contracted gonorrhœa, one in three had an elongated prepuce; one in five an inflamed meatus: one in two-and-a-half an exquisitely sensitive urethra; the same proportion had prostatic or abnormal seminal discharges; of 69 who suffered from atonic impotence, and 70 who had seminal incontinence, all but 18 had stricture. Exclusive of these special cases, his notes show that 13 per cent. of cases of stricture are due to masturbation, and Otis is quoted as having traced 9 per cent. to the same cause.

On the other hand, he remarks: "I have never known insanity, dementia or phthisis to follow onanism, as they are said to do by Ritchie, Esquirol, Pinel, Deslandes, Maudsley, Smith, Acton and other writers, nor have I ever met with the distressing cases described by Lallemand; and I fully agree with Sir James Paget in the statements that masturbation does neither more nor less harm than sexual intercourse practiced with the same frequency in the same conditions of general health and age and circumstances." Its more baneful effects are accounted for by the fact that the solitary habit is commenced earlier and practiced oftener than the other, which requires the presence and consent of two parties.

On the relative frequency of male and female sterility the author has made 192 observations, in which husband and wife were both examined, and the former was found at fault in 33 cases, or 17 per cent.

With regard to the effect of diseases of other organs upon the functions of the male reproductive organs, Dr. Gross remarks: "We may assume that, while diseases of the kidney and brain exert a most prejudicial influence upon the formation of zoösperms, affections of the other great systems interfere with their development only to a slight extent."

In the chapter on Spermatorrhœa, he classifies seminal incontinence under three heads, as follows: 1. Nocturnal emissions, usually attended by erections and erotic dreams; 2. Diurnal pollutions, excited by trivial causes and attended by slight sensations; 3. True spermatorrhœa, a continual dribbling of semen, without excitement or sensation. In the various forms of this affection, as well as in atonic impotence, the author finds hyperæsthesia and stricture of the urethra predominating conditions, which render it important to make an exploration of the urethra as a preliminary measure. The prognosis is considered more favorable when the local lesions are due to gonorrhœa than when induced by masturbation. For nocturnal emissions, the author relies chiefly on the steel bougie, potassium bromide and atropia; while for diurnal pollutions and spermatorrhagia he uses electricity, ergot and strychnia.

Prostatorrhœa is stated to be commonly a complication of other disorders of the generative organs, and even when not so associated to be in most cases due to masturbation. The nervous prostration is less than in true spermatorrhœa, but its intractability renders it a very serious malady.

We have thus alluded to the most important topics treated in this little volume, to enable our readers to gather some idea of its contents and to assist them in apprehending its merits. They may safely conclude that the work has sufficient worth to stand without undue praise, and that it is well worth adding to a physician's library. S. S. H.

Anatomical Studies upon Brains of Criminals: A Contribution to Anthropology, Medicine, Jurisprudence and Psychology. By Moriz Benedikt, Professor at Vienna. Illustrated. Translated from the German by E. P. Fowler, M. D. 8vo. Pp. 185. New York: Wm. Wood & Co. 1881. [Sold by Hawkins.

"That man thinks, feels, desires and acts according to the anatomical construction and physiological development of his brain, was even in olden times (Erasistrates) a conviction—or yet more precisely—it was a dogma among reflective natural philosphers."

The above quotation from the preface might aptly serve as the *argument* of the work. It is evidently the belief of the author, though he does not pretend to have discovered a key to the solution of the problem.

His work is based upon a critical study of the crania and brains of 22 criminals, and his observations determine chiefly, and almost solely, deficient development of the convolutions, together with exaggeration of fissures, throughout the brain. In 9 out of 16 cases observed, the cerebellum was not found covered by the occipital lobe: in 3 it was barely covered, and in the remaining 4 completely so, according to the prevailing rule in brains of the European type. His conclusion therefore is, that the criminal propensity is nowise akin to monomania; although the majority of criminals are unable to restrain themselves from repeated infraction of recognized law. He accepts the fact, however, "that the same defect of moral sensibility and will may remain concealed by superior mental organization and greater dexterity in criminal contrivance; or it may be obscured through complications with mental disorder."

The introduction, comprising 16 pages, is devoted to the anatomy of the normal brain; and here it may be remarked that the ordinary subjects found in dissecting rooms are not fair representatives, in cerebral development, of the average population, inasmuch as hospital inmates are mostly drawn from the lower grades of society, and consequently would not afford a fair standard of comparison.

Rather more than 100 pages are occupied with anatomical observations upon the 22 individuals before mentioned. The remaining 47 pages are devoted to recapitulation and generalization of the preceding observations. Among the most im-

portant of the latter is his investigation of the inquiry, "whether, from an atypic skull we are able to determine an atypic brain." To this question he has not been able to find an answer satisfactory even to himself.

Some of the points examined in this connection are the following: The relation of the upper occipital curve to the covering of the cerebellum by the occipital lobe; the relation of the parietal curve of the skull to the development of the anterior, central and parietal lobes of the cerebrum.

Our readers may already conclude that we are far from considering this work a finality on the subject treated: in fact it is but an imperfect beginning of a tedious and difficult study. Still it is a step in the right direction, and ought to be received with thankfulness.

The work of translation might have been better done. The English is not always grammatical, and some words occur which have hardly obtained recognition. On page 183 and elsewhere we find "aplasia." The word is evidently of fresh coinage, but a slight knowledge of Greek gives a clue to its meaning. On the same page we find "asymitries," which is probably intended for *asymmetries*. By "Erasistrates" (see opening sentence of this notice) he obviously means *Erasistratos*, a worthy of antiquity.

The want of an alphabetical index at the close is sure to be noticed and regretted by the reader. S. S. H.

Supplement to Ziemssen's Cyclopædia of the Practice of Medicine. Published by William Wood & Company, 27 Great Jones street, New York, 1881. For sale by Armand Hawkins, Medical Bookseller, 196½ Canal street, New Orleans.

The object of this supplement is to give a concise account of the progress made in the various departments of medicine during the time that has elapsed since the several volumes of the Cyclopædia were published, each of the subjects treated being brought up to the date of the present volume.

The contributors to this volume are men whose names are guarantees for solid research and correct conclusions.

Dr. Shattuck, of Boston, contributes the paper upon Typhoid Fever, in which he discusses very thoroughly the antipyretic

treatment of the disease. All experience tends to show that the pyrexia of this disease is, directly or indirectly, the *point d'appui* of attack. Dr. Shattuck's paper strongly favors injection of cold fluids through the rectum.

Dr. Sternberg, of the army, has taken the subject of yellow fever, and has treated this disease in his usual thorough and instructive method.

The general arrangement of the volume is made to correspond with that of the great work which it is designed to supplement, and the reader will find that it gives a completeness to the design altogether indispensable to the student or practitioner. The paper, printing and execution of the book are not to be surpassed.

Books and Pamphlets Received.

First Annual Report of the Astronomers in charge of the Horological and Thermometric Bureaus of the Winchester Observatory of Yale College, 1880-81.

Post-Partum Atrophy of the Uterus. By Walter Coles, M. D., Consulting Physician to the St. Ann's Lying-in Asylum. St. Louis. Reprint from the St. Louis Courier of Medicine, August, 1881.

The Speed Pic-nic, July 4th, 1881.

A Probable Cause of Tardy Painful Labor, not Hitherto Recognized. By George H. Rohé, M. D. Reprint from the New York Medical Journal and Obstetrical Review, August, 1881.

Hip-Joint Disease; Death in Early Stage, from Tubercular Meningitis. By Forest Willard, M. D., Lecturer on Orthopœdic Surgery, University of Pennsylvania. Reprint from the Boston Medical and Surgical Journal.

Are all Anæsthetics Dangerous which contain Chlorine, Bromine, or Iodine? By Edward T. Reichert, M. D., of Newark, New Jersey.

Abortive Treatment of Pneumonia. By W. Y. Gadbury, M. D., of Yazoo City, Mississippi. Read before the State Medical Association of Mississippi.

Medical College of the State of South Carolina, Annual Announcement of the Trustees and Faculty. Session of 1881 *and* 1882.

Transactions of the American Dermatological Association, 4th Annual Meeting, September, 1880.

Seventh Annual Report of the Touro Infirmary and Hebrew Benevolent Association of New Orleans.

Compend of Anatomy. For use in the Dissecting room, and in preparing for Examinations. By John B. Roberts, A. M., M. D., Lecturer on Anat. and Oper. Surg., Philadelphia School of Anat., etc., 16 mo. Pp. 198. Second edition, revised. Philadelphia: C. C. Roberts & Co. 1881.

A New Form of Nervous Disease. Together with an Essay on Erythroxylon Coca. By W. S. Searle. A. M., M. D. 12 mo. Pp. 138. New York: Fords, Howard & Hulbert. 1881.

The Applied Anatomy of the Nervous System; being a study of this portion of the human body from a standpoint of its general interest and practical utility, designed for use as a text-book and a work of reference. By Ambrose L. Ranney, A. M., M. D., etc. With numerous illustrations. 8vo. Pp. 500. New York: D. Appleton & Co. 1881.

A Practical Treatise on Impotence, Sterility and allied Disorders of the Male Sexual Organs. By Sam. W. Gross, A. M., M. D., etc. 8vo. Pp. 174. Phila. H. C. Lea's Son & Co. 1881.

Anatomical Studies upon Brains of Criminals: a Contribution to Anthropology, Medicine, Jurisprudence and Physchology. By Moriz Benedikt, Professor at Vienna. 8vo. Pp. 185. New York: Wm. Wood & Co. 1881.

A Paper on the Relation of the Minute Blood-vessels to the Fat Cells in the Fascia of the Calf's Neck. By Wm. R. Weisiger, M. D., of Manchester, Va.

The editors request the reader to correct *before reading* the article of Dr. v. Seydewitz on *Rabies Canina* the following

ERRATA.

Omit, in the title, the word "special," and read *critical* instead

Page 165, line 11 from below, instead of "whole book," read *the whole book.*

Page 167, last line of foot-note, instead of "Cakya family," read *Çakya family.*

Page 172, third line from above, instead of "blood-poision," read *blood-poison.*

Page 177, sixth and eighteenth lines from above, in the foot-note, instead of "offering," read *offspring.*

Page 178, eighth line from below, in the foot-note, instead of "Rückert," read *Rückert.*

Page 181, line six from above, add to the names in the parenthesis *Sir Thomas Watson.*

Page 185, line six from above, instead of "from," read *form.*

Meteorological Summary—July, 1881.
Station—New Orleans.

Date.	Daily Mean Barometer.	Daily Mean Temp'ture.	Daily Mean Humidity.	Prevailing Direction of Wind.	Daily Rain-fall.
1	29 972	84.0	72.0	West.	.65
2	29 954	84.8	71.1	North	.....
3	30.053	84 6	73.0	N. E.	3.24
4	30.060	82.4	70.7	S. E.	.13
5	30.066	84 0	68.0	East.	.....
6	30.093	86.0	69.3	N. E.	.....
7	30.088	86.5	74.3	East.	.....
8	30.052	86.3	73.0	N. E.	.....
9	30.048	87.0	72.3	N. E.	.....
10	30.081	86.1	70.3	South	*
11	30.061	86.2	74.7	South	.....
12	30.031	84.4	73.3	N. W.	.04
13	30.018	81.3	73.3	S. W.	.10
14	29.990	80.5	74.7	S. W.	.89
15	30.051	79.5	73.3	S. E.	.22
16	30·115	79.7	73.3	West.	.03
17	30.040	83.6	68.0	S. W.	.....
18	29.903	85.1	71 3	North	.02
19	29.856	84.1	75.3	S. W.	.....
20	29.930	84.5	75.0	S. W.	.....
21	30.033	85.9	75.0	West.	.....
22	30.015	86.4	74.3	West.	.....
23	29 935	86.4	75.3	N. W	.....
24	29 906	85.7	72.3	N. W.	.....
25	29.913	85.5	75.3	West.	.14
26	29.922	83 9	76.0	West.	.05
27	29 914	84.6	76.0	S. W.	1.13
28	29.895	85.9	74.3	N. E.	.....
29	29.922	84.1	62.0	East.	.....
30	29.981	83.1	71.7	East.	.02
31	30.007	84.2	72.7	East.	.....
Sums	.....	.....	.....	.....	total
Means	29.997	84.4	72.6	West.	6.97

General Items.

Highest Barometer, 30.145.
Lowest Barometer, 29.823.
Monthly Range of Barometer, ...
Highest Temperature, 94.8.
Lowest Temperature, 73.5.
Monthly Range, ...
Prevailing Direction of Wind, West.
Greatest Velocity of Wind, 26 miles N. E.
Total No. of miles 4569.
Number of Clear Days, 6.
Number of Cloudy days, 25.
No. of days on which rain fell, 15.

COMPARATIVE TEMPERATURE.

1871.....	1877..... ....
1872.....	1878..... ....
1873.....	1879..... ....
1874.....	1880..... ....
1875.....	1881..... ....
1876.....	

COMPARATIVE PRECIPITATIONS.

1871.....inches.	1876: .... inches
1872..... "	1877: .... "
1873. .... "	1878: .... "
1874. .... "	1879: .... "
1875..... "	1880: .... "

* Too small to measure.

L. DUNNE,
Sergeant Signal Service, U. S. A.

Mortality in New Orleans from July 23d, 1881, to Aug. 13th, 1881, inclusive.

Week Ending.	Yellow Fever.	Malarial Fevers.	Consumption.	Small-pox.	Pneumonia.	Total Mortality.
July 23	0	10	11	0	3	109
July 30	0	18	16	0	4	138
August 6	0	10	18	0	0	93
August 13	0	4	14	0	2	101
Total....	**0**	**42**	**59**	**0**	**9**	**441**

NEW ORLEANS
MEDICAL AND SURGICAL JOURNAL.

OCTOBER, 1881.

ORIGINAL COMMUNICATIONS.

The Foreign Commerce of New Orleans and the Epidemic of 1878.

By STANFORD E. CHAILLÉ, M. D.,
Professor of Physiology, etc., Medical Department, University of Louisiana.

To promote the common welfare no lessons are more needed than those which teach the people that "public health is public wealth." In the interest of the former it is often necessary to impose sanitary restrictions upon the commerce on which the latter largely depends, thereby apparently proving that the one is to be gained at the expense of the other; hence, it becomes an important duty of sanitarians to study the influence of the one upon the other, to demonstrate that the two interests, though at times apparently antagonistic, are really and permanently the same, and to strive constantly to diminish any temporary antagonism by imposing on commerce burthens as light as may be consistent with the preservation of the public health.

Actuated by these views, some study has been given to the foreign commerce of New Orleans during the three years, July, 1877, to July, 1880, the three last years for which the Annual Reports from the U. S. Treasury Department have yet been published, and the three years which permit the year of

our last disastrous epidemic, 1878, to be compared with its preceding and its succeeding non-epidemic year. The financial facts are detailed in the appended statistical table, and attention is called to some important lessons taught by this table.

It, however, should not be forgotten that the following remarks concern solely the *foreign* commerce of New Orleans, and not its domestic commerce, which I am as yet unable similarly to estimate, although very desirous to do so, since it is universally conceded to be much more valuable than our foreign commerce, and would therefore teach a still more forcible lesson of the financial injury inflicted by an epidemic. The value of the foreign commerce of all the United States annually varied, 1877-1880, from about $ 1,200,000,000 to $ 1,600,000,000, while the value of the internal commerce of solely the entire Mississippi valley has been recently estimated at $ 17,500,000,000, but what considerable proportion of this sum total belongs to New Orleans is not stated.

For the two non-epidemic years cited in the table, the value of the products involved in the foreign commerce of New Orleans amounted to about $ 100,000,000.* This amount was diminished more than one-fourth during the epidemic year. To determine what loss this inflicted, it is necessary to determine what amount of profit is derived by New Orleans from its foreign commerce. Reliable business-experts assert that this city does not derive an average profit on the sum total of either its imports or exports of more than five per cent., and I have heard no estimates exceeding ten per cent. The former estimate is accepted as the safer, and the calculations based on it can be readily multiplied or divided in accordance with the views of the reader. The lesson sought to be taught will not be seriously affected by any probable estimate. Accepting the five per cent. estimate, New Orleans derived from its foreign commerce during each of the two non-epidemic years about $ 5,000,000 profits. It lost by the epidemic of 1878, in the single item of foreign commerce, more than $ 1,250,000, and it is important to note that more than $ 1,000,000 of this

* The total imports and exports for the year 1880-81, are reported to have exceeded $ 116,000,000.

loss resulted from our diminished trade with our largest customers, those too from whom this city runs no risks of infection by yellow fever.

Our infection is endangered by our imports and not by our exports. The latter exceed the former about nine times, but of this relatively small amount of imports (about $ 11,000,000), from one-half to two-thirds of the whole are brought from the countries most dangerous to New Orleans, especially from Rio, Vera Cruz and Havana. However, the profit to this city on its imports, from all countries habitually or frequently infected with yellow fever, does not exceed from $300,000 to $400,000 for the entire twelve months of every year. But the chief products of these countries, coffee, tobacco and sugar are gathered by the producer and imported to us in very much larger proportion during the eight months, October–May, than during the four months of our chief liability to infection, June–September, so that probably less than one-fourth of our infective imports are brought to New Orleans during the four months of greatest danger. These reasonable estimates lead unavoidably to the conclusion that New Orleans does not derive annually more than from $75,000 to $100,000 profit from its dangerous intercourse with infected countries during our yellow fever season; hence, this city could not lose more than $100,000 annually, even if all imports from infected foreign countries were altogether prohibited during the four most dangerous months.

Present quarantine restrictions cannot cause the loss of more than a fraction of this sum, and if these restrictions were every year publicly advertised at a date sufficiently early to enable all engaged in this infective import trade to prepare for these restrictions, it is probable that even this fraction of loss would be much reduced, inasmuch as the demand at this market for these imports during the summer could be, in large measure, anticipated in the spring.

The great value and danger of our imports from Brazil* and

* During the three years cited in the table, the imports from Brazil amounted to about one-third of the total imports to New Orleans. A report furnished by Mr. W. B. Merchant, United States Auditor of Customs, shows that not one-fifth of these Brazilian imports were entered during the four months, June — September, and further, that coffee contributed ninety nine and one-quarter per cent. of the total value of all said imports.

Mexico constitute a very strong argument for the posting at Rio and at Vera Cruz, as now at Havana, a United States Sanitary Inspector of vessels, in order that vessels bound to this port, as to all other ports of the United States, might be subjected, prior to their departure, to all sanitary precautions practicable for preventing the importation of infection.

For reasons stated, it is concluded that the profit to New Orleans on, what may be termed, its specially infective intercourse, does not exceed $100,000 annually. The loss of this profit would bear heavily on a few special occupations, but would amount to comparatively little, so far as the community as a whole is concerned, and would be very insignificant when compared with the loss attending an epidemic. The most moderate detailed estimate of the total loss to New Orleans by the single epidemic of 1878 exceeded $15,000,000. Only three and a half per cent. interest on this amount would yield forever an annual revenue sufficient, not only to refund the loss by the annual prohibition of our infective intercourse, but also to provide this city with perfect quarantines and to complete thoroughly and promptly those reforms which are indispensable to our local sanitation.

Although a few still question the efficacy of quarantine as a measure of protection, all sanitarians are agreed as to the great importance of local sanitation. To the future of New Orleans this is a matter of pre-eminent consequence. Municipal authorities have hitherto failed to give it due attention, and it is to be feared that the day is far distant when tax payers will have sufficient confidence in such authorities to contribute willingly the necessary funds. In such case, either New Orleans is likely to languish under the affliction of avoidable disease, or the people must help themselves by their own voluntary organizations. For this purpose the New Orleans Auxiliary Sanitary Association was originated. It has already accomplished much good work, but not a tithe of what is necessary; in it every interested citizen can have a voice in determining the measures to be adopted and in regulating the expenditures therefor, and it presents to the people the best hope and the most trustworthy agency for promoting,

through local sanitation, that public health which is public wealth.

Previous allusions to the probable results to this city of absolutely prohibiting its infective commercial intercourse have been made for the purpose of illustrating, among other things, the extravagant estimates of those pecuniarily interested citizens who are wont to exaggerate grossly the injury inflicted on our commerce by quarantine restrictions, but these allusions do not indicate my advocacy of such a policy. My view is that vessels need not be quarantined longer than necessary for the incubation of the suspected disease and for the thorough cleansing and disinfection of the vessel and its contents—the efficiency of the purification during detention being far more important than the mere time of detention.

Finally, commercial experts are more competent to discuss some of the questions now presented than the writer, who would heartily welcome any criticisms which would tend to correct error and establish truth.

The statistical data on which my conclusions have been founded present many other facts of general interest and are herewith appended.

TABLE—*Showing the Total Value in Dollars of the Merchandise (coin and bullion excluded) involved in the Foreign Commerce of New Orleans, and especially its commerce with all foreign countries habitually or frequently infected with Yellow Fever; compiled from the Annual Reports of the U. S. Bureau of Statistics for the three years, July 1st, 1877, to July 1st, 1880, the last Report yet published.*

	Foreign Countries.	1877–1878.		Yellow Fever, 1878-1879—Epidemic.		1879–1880.		1877–78.	Y. F., 1878-79. Epidemic.	1879–80.
A.	Without the Yellow Fever Zone.	Imports.	Exports.	Imports.	Exports.	Imports.	Exports.	Total Imports and Exports.	Total Imports and Exports.	Total Imports and Exports.
1	Great Britain	2,239,848	46,666,172	1,645,679	32,642,433	3,639,569	50,062,342	48,906,020	34,288,112	53,701,911
2	France	88,170	18,712,125	798,965	11,514,505	682,071	19,834,864	19,592,295	12,313,470	20,516,935
3	Russia	.....	4,098,944	.....	9,034,488	.....	5,215,574	4,098,944	9.034,488	5,215,574
4	Germany	175,543	6,782,565	96,193	4,147,604	130,416	4,574,384	6,958,108	4,243,797	4,704,800
5	Italy	116,928	2,496,500	270,781	1,544,323	284,378	3,114,291	2,613,428	1,815,104	3,398,669
6	Spain	47,333	2,140,095	38,022	1,725,244	553	2,255,680	2,187,428	1,763,266	2,256,233
7	Belgium	470	1,140,059	1,741	664,863	65,113	1,690,010	1,140,529	666,604	1,755,123
8	Netherlands	31,453	1,172,452	1,134	808,758	25,631	1,166,905	1,203,905	809,892	1,192,536
9	Austria	66	109,050	.....	194,273	28	514,614	109,116	194,273	514,642
10	Gibraltar	.....	618,282	.....	97,550	325	359,207	618,282	97,550	359,532
11	Sweeden and Norway	.....	425,256	25	.....	.....	90,866	425,256	25	90,866
12	Portugal	.....	73,195	.....	11,700	44,304	.....	73,195	11,700	44,304
	Totals of Class A	3,491,811	84,434,595	2,852,540	62,385,741	4,872,388	88,878,746	87,926,406	65,238,281	93,751,134
B	Within the Yellow Fever Zone.									
1	Brazil	4,416,766	6,637	2,160,319	.....	3,366,154	.....	4,423,403	2,160,319	3,366,154
2	Mexico	1,197,080	707,330	1,052,519	975,502	996,113	1,113,280	1,904,410	2,028,021	2,109,393
3	Cuba	3,043,697	189,260	1,035,872	447,236	1,041,605	262,142	2,232,957	1,483,108	1,303,747
4	Central American States	81,328	140,310	99,859	73,314	135,431	38,395	221,638	173,173	173,826
5	British Honduras	20.536	63,990	8,514	48,527	187,698	129,074	84,526	57,041	316,772
6	British West Indies			10,959	24,015	10,379	9,038		34,974	19,417
7	French West Indies	.....	.....	.....	.....	327	.....	.....	.....	327
8	U. S. Colombia	.....	12,222	.....	10,028	.....	11,344	12,222	10.028	11,344
9	Venezuela	1,980	4,749	.....	.....	.....	.....	6,729	.....	.....
10	Fr. Br. and other African pt's	57	30,940	15	17,250	874	.....	30,997	17,265	874
11	Azore, C.Verde & Madeira Is.	.....	.....	.....	.....	384	.....	.....	.....	384
	Totals of Class B	7,761,444	1,155,438	4,368,057	1,595,872	5,738,965	1,563.273	8,916,882	5,963,929	7,302,238
	Totals of all Fr'gn Countries	11,253,255	85,590,033	7,220,597	63,981,613	10,611,353	90,442,019	96,843,288	71,202,210	101,053,372

The Foreign Commerce (coin and bullion included) of New Orleans and of the United States, compared	New Orleans	96,843,288	71,202,210	101,295,644
	United States	1,210,519.399	1,202.708,609	1,613,770,633
		Tonnage.	Tonnage.	Tonnage.
The tonnage of vessels from Foreign Ports entering the port of New Orleans and all the ports of the United States compared	New Orleans	718,163	657,789	760,910
	United States	11,5 30.52 7	13,772,360	15,240,534

Blood-Letting and Kindred Questions.

By M. SCHUPPERT, M. D.

In our views and actions comprising the arts and sciences, changes and alterations will take place, which, like in the customs and habits of man, extend often over longer or shorter periods. The science of medicine is not exempt from these observations. It happens here also that, for instance, a specified treatment for certain diseases may have fallen for a longer or a shorter time into total oblivion, have become obsolete, or be out of *fashion*—"Changeful *fashion*," pervading social life in so many directions, reigning supreme in wearing apparel, has, it seems, extended its tyrannical influence equally over medicine. When we observe opinions formerly held of certain processes, the application of remedies, or methods of treatment, exchanged for others without an apparent benefit, we feel induced to attribute such changes to the dominant power of *fashion*, however much the pride of the intelligent may try to disown it. Theories and practices current and dominant at one time are thus exchanged for others not seldom the contrary of those formerly entertained. We may place here the operation of blood-letting. There were times, as the historical records of epidemic yellow fever will prove, and the elder members of the medical profession of this city can bear witness, when the abstraction of blood was considered the main treatment of that disease, when the lancet and the scarificator wandered from house to house. To-day it would be difficult to find a barber with cups unbroken, whose knives were not blunt and rusty; and in regard to venæsection, you might in vain ask even amongst the younger members of the profession for a lancet; and though that instrument may probably be met with in the pocket case, yet how many use it, or are able to handle it with the necessary dexterity?

Now my object to-day, gentlemen, in bringing this matter before you, is to argue the question, whether it be right to treat the abstraction of blood so thoroughly and universally as a hy-

pothetical, ambiguous remedy, or even consider it as a worthless remnant of a barbarous age, a useless ballast in our therapeutics, or whether it ought not rather to be viewed as of higher value and be oftener employed than it is at the present time. A remedy which at one time has been so highly favored, which has been considered a *ne plus ultra*, a sheet-anchor in our therapeutics, and which under circumstances has been estimated as a peerless, life-saving remedy, ought, I think, justly to claim some consideration before being condemned to utter oblivion as an obsolete, good-for-nothing, deceitful remedy. If I have read history aright, it was from the errors committed in its application either at the improper time, or in the quantity abstracted, or under a mistaken diagnosis of the disease, that bloodletting aroused suspicion, which finally led to its total abandonment after even its adherents and defenders had become chary of its use.

To the diseases in which blood-letting may still be considered life-saving belongs, for example, ecclampsia, or puerperal convulsions. This life-threatening disease is well-known to all practitioners, and when we hear that Ramsbotham, of 59 cases, lost but 12 by death; that Meigs, of 29 cases, had but 5 deaths; and Houston, of 13, only 2 deaths, and inquire into the cause of such a small percentage, we shall be informed that in their cases they abstracted from 30 to 70 ounces of blood, opening often the veins on both arms at the same time. I may mention one more practitioner, the celebrated Dr. Rush, who made use of the lancet in this deadly affection in a Sangrado fashion.

Further, in congestive and inflammatory diseases of internal organs, in wounds comprising the peritoneum, in traumatic injuries of the brain and other viscera, the abstraction of large quantities of blood is equally as often life saving, yea, has to be considered the only proper remedy indicated. I do not stand isolated in this assertion. Abernethy, one of England's greatest surgeons at all times, will be my second and bear me out in my statement. I am well aware that Abernethy's enemies (and who is without

such, the more so in our profession?) have called him "another Sangrado;" but they stand rebuked by his statements uttered in his own terse language. In speaking of a variety of what he called sympathetic inflammatory fever, he said to his students: "This is the only variety of that fever which I need particularly to notice, and having given you the description, I shall proceed to what, in the language of the schools, is termed the *ratio symptomatum*, or the explanation of the nature of what they are pleased to call the symptoms. But, hang it, I need not trouble you with this, the symptoms explain themselves; they are the natural consequences of the excitement of the heart and arteries and the disturbed state of the digestive organs. I may go at once then to the treatment. Treatment! there is no treatment. The disease is the natural consequence of the injury; it must inevitably take place. You may mitigate, but you cannot cure it. What must you do then, to mitigate the affection of the sanguiferous system, which is called fever?

"It is evident that there is too much action. You must try to lessen it then. How? Why, taking away blood! Blood is the natural excitement of the heart and arteries, and if you diminish the blood, you diminish the excitement. But in taking away blood, you rob the patient of a vital fluid; consider what you are about, recollect that you cannot cure the disease, and take care that the course you adopt may be calculated to mitigate. I will still put the case of a man with a compound fracture, where considerable constitutional vigor is necessary for the reparation of the injury. Do not take away his blood, which is his life; for you may find, after a certain time, that he will stand in need of every degree of vital energy to recover from his injury. I have seen a patient bled and bled, and 2 or 3 days after the medical man had been glad to throw in the bark, and try every means when it was too late to give strength and vigor to the constitution of the patient. Your only warrant for bleeding is, that the action of the fever may perchance induce greater debility than the loss of blood. Action wears out strength, and if, by lessening action, you can save strength

in a greater degree than it will be impaired by the loss of blood, then you are warranted in bleeding."

Whatever we know better to-day, since pathological anatomy has given us the means hereto, still, we cannot but approve the nicety with which Abernethy here distinguishes between the two conditions, and draws the distinction between the authorization for bleeding or not bleeding. I will not weary you in reading the chapter to the end, attractive as it is, yet I cannot avoid citing from the author once more:

"I will add a word or two more," he says in another part of this chapter, "to prevent any surprise which may be felt at the observations I have made in respect to bleeding. It may be said that patients are sometimes bled, and bled largely, and that this profuse bleeding appears to do them good. Undoubtedly there are cases in which we are obliged to bleed profusely, but this is not on account of the fever, but the cause which produces it. If a man has been shot through the body—if an internal and vital organ is injured and inflammation comes on in that organ, the pulse will not be so full and strong, but it will be very frequent, and on bleeding the patient the blood will be found cupped and highly inflammatory. The pulse will rise on bleeding, and the patient will be in some degree relieved. The inflammatory symptoms, however, will return, and you bleed him again, until you diminish the inflammation of the vital organs. In such cases the patient can only be saved by the most resolute conduct on the part of the surgeon, in pursuing a mode of treatment which would otherwise appear most outrageous. You must either let the inflammation of a vital organ kill the patient, or run the hazard of killing him yourself with the lancet. In such a case the surgeon is justified in adopting the alternative. It is in fact his duty to say, I will rather be the executioner myself, than suffer the disease to kill the patient. It is only by the most determined conduct that the inflammation of a vital organ can be subdued. We do not, however, bleed here for fever, but for the inflammation, which, if suffered to continue, will injure irrevocably an organ essential to life.

"It is really very curious to know," Abernethy continues, "how a patient may be bled under such circumstances. I have lived in London all my life, and am very chary of taking patients' blood; but still, if some were to see how I bleed a person having inflammation of a vital organ, they would wonder how the same person could act so differently from his ordinary practice. In such cases you should bleed the patient upright until he faints; put a stop to all action of the heart and arteries for a time, and when this is renewed, bleed him again until he faints, open veins in both arms, nay, open more veins if necessary. It is by such resolute conduct alone, that you can save the patient."

Bloody, but golden words, little known, or understood and rated below their true value. It does good to hear such manly, vigorous defense of a sound opinion, based and fortified upon an extensive experience. Times and customs have changed, but not so has human nature. Even in the furor of blood-saving days will the words of Abernethy stand like a pillar in the storm, indestructible; will light up, as with electric lamp, the cimmerian darkness of misinterpreted pathological phenomena, and be comprehended in their full and true value by every thinking, undaunted, fearless surgeon.

I do not hesitate to assert that, in certain diseases, there is in a proper, timely and bold abstraction of blood, the only safety for preserving the patient's life. The great mistake which is often committed, and which, no doubt, has mainly assisted in bringing in discredit the abstraction of blood, lies in the tardy action of the surgeon. Having finally concluded to take the proper measures, he is still satisfied with abstracting small quantities of blood, which are of no consequence whatsoever. To cause a free flow of blood by cutting ¾ of the vein's lumen, or to reopen a vessel for even a second or a third time—who ever heard of such a bold procedure in our times? Can it then be otherwise, but that the result will be an unfavorable one? How long would my son have lived, after being sunstruck in June, 1878, with a temperature of 107½° F., if I had not bled him profusely; if I had not opened the veins in

both arms simultaneously, till the temperature was reduced to near its normal degree?

How many of the lives which were lately lost from the effects of our overheated atmospheric air could have been saved by a timely abstraction of blood, and how many will still follow, if a recommendation given in one of our newspapers by an anonymous writer be heeded, recommending ice-cold water internally and externally to be applied, is hard to say. More pernicious counsel cannot be given, or be followed in the generality in which it has been suggested. How many have not met death outright from the drinking of a glassful of cold water, or even an exposure to a cold draft of air, while in an over-heated, fatigued condition? If death does not instantly follow, inflammatory diseases of internal vital organs are sure to set in subsequently, to which persons will rapidly succumb. I could give more than one such heartrending example out of my own experience, where young blooming maidens and married women met an untimely death from a sudden lowering of the bodily temperature.

In the heart of Germany I became acquainted with a kind of *customary bleeding*, during my academical studies. I occasionally attended in one or the other village a dozen of young, full-blooded country girls, who assembled at the house of one or another, and while the feet were immersed in a bucket of warm water, I opened the saphena veins, abstracting from twelve to sixteen ounces of blood from each one. This was done every year in girls from the time when sixteen years old, till they were married, and never did I hear of any bad consequences. On the contrary, they were a set of healthy, hearty, robust country girls, who certainly will attain the same old age as their parents and grandparents, and who likewise were accustomed to the same habit.

It also happened during my student life, that I heard a celebrated professor of pathology ridicule a brother-in-law of his, an equally distinguished medical man and excellent surgeon, for an attempt to save the life of a man, suffering a stab wound of the abdomen, by still bleeding him profusely. "What is the use of bleeding a man, who will readily die of internal hemorrhage?"

asked the professor; a proof that he was no experienced practical surgeon, as high as he was esteemed by the medical profession for his other scientific attainments. I also once heard a former and distinguished professor of physiology of the University of Louisiana assert, that no person with a shot-wound perforating the lungs could recover. As far as my own experience at that time extended, I could but contradict him to a limited degree. To-day I could support that contradiction with two more cases, two penetrating wounds of the lungs, to which I might add one of the liver; all three were saved, to the best of my judgment, by a free application of the lancet, by repeated profuse abstractions of blood.

How often are *not* sinned against the teachings laid down here? A mixture with doses to be administered hourly, may be frequently repeated, a bladder may be successively emptied with catheter, tapping of cysts of the abdominal cavity be often effected, but repeated venesection? never! A discrimination between sins of commission and of omission ought not to be permitted. One is as inexcusable as the other. A medical man who suffers a person to die, whose life might have been saved by a timely and proper venesection, will load himself with a heavy responsibility. There would not be much difference, if the patient had been killed outright by the administration of a drug, the poisonous action of which the practitioner was ignorant of.

I have never observed people to die from a proper abstraction of blood, but I firmly believe that many of those I have met with in a dying condition might have been saved by a timely and proper blood-letting. In penetrating wounds of the chest and abdomen, in traumatic lesion of the brain, in congestion of vital organs, in diseases with hæmorrhagic tendencies, as in remittent and yellow fever, the scarificator and the lancet might, under circumstances, be considered life-saving instruments, which cannot be supplanted by any other method of treatment.

From the first epidemic of yellow fever which I attended in 1853, as well as all subsequent to that ever memorable one, I have had the opportunity to become convinced as long as our

present knowledge of that disease does not experience further developments, that of all the known and tried methods of treatment, there is none which can by far be compared with a free abstraction of blood. From the time in 1853, the 22d of May, when the first case of that terrible epidemic had fallen into my hands, up to the day that I myself fell sick, I had fully become convinced that all the highly recommended remedies, with the exception of the use of the lancet, were but a collection of fallacies, delusions and errors.

An observation we so often meet with in life, and of which the science of medicine can claim no exemption, is "l'extremes se touchent," which induces me here, after having bestowed so much attention to blood-letting, to say a few words in addition to blood-saving, *par excellence.* The unsatisfactory results frequently obtained in former times by blood-letting, be it from an improper application, or an insufficient abstraction, or a defective diagnosis, led finally to a total abandonment of a treatment entitled to the highest praise, and one of the most valuable *adjuvantia* in our therapeutical arsenal.

True, such a relinquishing of former adopted remedies does not stand as an isolated fact in that department of the healing art. From the Capitol of Rome to the Tarpeian rock is but one step. The abstraction of blood once abandoned, we need not wonder to approach a time in which one of the main pillars consists in the preservation of blood, in which medical men endeavor to prevent the loss of blood, even in surgical practice, and it is here that I intend to make a few additional remarks.

We are aware that what is known as the method of Esmarch encompasses, as its main object, the saving of blood in surgical operations. I need not describe the *modus operandi*, which is sufficiently known, nor mention the operations in which it is mainly employed. The cotemporary use of Lister's antiseptic method, which has so thoroughly revolutionized the science of operative medicine, and so greatly altered the statistical records of the mortuary lists of surgical operations, renders a comparison of the results obtained in operations under the application of Esmarch's apparatus, with those ob-

tained in former times, next to impossible. With the impossibility of comparing, for instance, the operation of amputation, as formerly performed with a comparatively large loss of blood, and the present conservative methods, we cannot bring the proofs, that there has been gained anything by it.

The saving of blood by the use of the apparatus of Esmarch, aside from its limited application in capital operations on the limbs, seems to me in the average an illusory one. In the majority of instances, as far as my own experience extends, the loss of blood from capillary vessels, small veins and arterioles, after the removal of the constrictory bandage, has commonly been quite as large, if not larger, than in the old method by the use of the tourniquet.

But there is another circumstance associated with Esmarch's contrivance, to the importance of which I most earnestly call your attention, a serious condition succeeding large wounds of flesh as well as of bone. All divided blood-vessels, as long as the constriction lasts, remain dry at their cut ends; they do not bleed, but gape, and have an open lumen; and during that period of a free communication with the atmospheric air, an infection with micro-organisms might easily take place, a circumstance of immeasurably greater importance than the saving of a few ounces of blood, and which infection could not well happen as long as those cut vessels were bleeding. We exchange here a dubious gain for a dangerous proceeding or, to use a common phrase, like paying Peter in robbing Paul.

But these are not the only objections to be made. We are aware that we may prevent the infection to a great extent, if we operate under spray or a current of carbolic water, by irrigation; still, aside from this interfering with the operation, it may cause a poisoning by an absorption of carbolic acid, of which the most unquestionable proofs (and of which Billroth has, to my knowledge, already counted nine cases), are in my possession.

What I have said here of Esmarch's method is sufficient, at least in my eyes, to condemn it as a delusive, if not a dangerous innovation; and such not merely for the reasons above advanced, but as conveying the idea that *loss of blood* had to

be considered under all circumstances a censurable, reprehensible and nefarious proceeding, rampant with danger, in contradistinction to what I have asserted, that it ought rather to be regarded a life-saving and life-preserving measure.

Case of Opium Habit Cured by Sudden Deprivation.

By CHARLES CHASSAIGNAC,

Resident Student of the Charity Hospital.

(Service of Dr. Matas.)

The fact that the opium habit prevails of late to a great extent, must render interesting all facts pertaining to its cure.

Dr. Kane, of New York, presents in the JOURNAL for August a single case, arguing from which he deprecates the system by sudden, and that by slow deprivation, recommending one by rapid reduction.

We agree in his condemnation of slow deprivation, believing that a gradual weaning involves the danger of easy relapse and causes a greater totality of suffering, although diffused over a longer period of time. We cannot admit, however, that he has shown the rapid reduction plan to be the best in all cases.

In his most interesting work, "Drugs that Enslave," the doctor gives three histories: two, of cases treated by sudden deprivation, and one, in which he illustrates the effect of the method he advocates. For the former cases, in both of which it is true there were collapse and other very distressing symptoms, the results were as follows: The first was a man taking as high as sixteen grains of morphia, hypodermically, in a day; *nine days* after the treatment was instituted his "condition was satisfactory; he slept at first for three, afterwards for five hours, at last during the whole night."* The second, a woman who injected as much as eight grains daily, left the "Institution" one month after her entrance, "all her bodily functions having become regular." † On the other hand, the

*Kane, "Drugs that Enslave," page 109.

† Ibid, page 114,

case treated by rapid reduction can be summarized as follows: A woman who had been injecting daily only six grains, remained two months under treatment—one whole month after the last hypodermic was given her by the doctor. She suffered more or less throughout the treatment; had several "severe hysterical tetanoid seizures"—had "spasm of respiratory muscles," necessitating the inhalation of ether—also "distressing nausea and vomiting, some diarrhœa, symptoms of collapse,"* etc., before she got well.

Surely the first two cases compare favorably with the latter, and a careful consideration of them leads us to a conclusion far different from that of Dr. Kane.

With the opium habit, as with everything else, no exclusive treatment can be formulated, and in choosing one the physician must, above all, use his common sense and judgment. We believe, however, that in the majority of instances the system by sudden deprivation is preferable, as we can always have ready our hypodermic of morphia, *to be used if the symptoms become really alarming*, thereby changing the treatment, as it were, to that by rapid reduction.

In conclusion, we give the result of our favorite method of treatment in a weak man, a confirmed opium eater, who was taking enormous doses of the drug; certainly an unfavorable case for any treatment; nevertheless, the result was all that could be desired.

Case.—George H., a farmer, aged 45 years, born in Alabama, married, and with four children.

In the fall of 1856 he began suffering with "tic douloureux;" different anodynes were administered, of which he preferred morphia; consequently every fall and winter, at which seasons he suffered most, he used it in ordinary doses. Had typhoid fever in 1860; it left him weak, nervous, still with his "tic." He often had nervous attacks, accompanied by clammy sweats, to relieve which he took larger doses of the drug. By the beginning of 1861, he was taking it regularly in doses of gr. j–ij three times daily by mouth, for its stimulant effect, these doses producing none other. He now joined the Confederate

*Op. cit., pp. 121-123.

army, continuing to eat morphia and taking increased doses when exposed to fatigue, as just before a battle; at these times he felt exhilarated and indifferent to all danger. At the close of the war he returned to his farm, managing it himself, persisting in his habit but compelled to increase the dose steadily.

Reaching 1876, he was taking 3j and more of morphia daily. This becoming too expensive, he substituted for it the gum opium. He soon had reached such a point of tolerance that he ate daily 300-400 grs., largest amount he ever took being 500 grs. He now also largely indulged in alcoholic liquors.

He had gradually lost flesh and become weaker until, no longer able to perform his duties, he determined to go to the Charity Hospital, "to get cured or die." This was after being confirmed in the habit for over twenty years.

He was admitted June 17th, 1881. Had taken opium that morning; was very weak and emaciated; complexion sallow and appearance haggard; pupils contracted; nervous and hyperæsthesia marked over entire surface; no evidence of any "tic;" ideas were disconnected and his mutterings endless.

Treatment by sudden deprivation was determined upon. He was placed upon potassium bromide and cannabis indica, being carefully watched to prevent possibility of his getting opium. Despite large doses of above drugs, he passed a sleepless night. Next day he complained of pains in the abdomen and could scarcely be prevailed upon to eat a morsel. In the evening he piteously begged for opium, asking to be allowed to rest and resume treatment next morning. Of course his wish was not granted and he spent a second night of suffering.

On the third day, at noon, he was suddenly seized with a severe chill. Seated upright in bed, with drawn features, his teeth chattered and his whole frame trembled like the aspen. He was covered with perspiration; pulse was rapid, weak, and slightly irregular; dorsal decubitus was painful; he complained of excruciating pains in abdomen and epigastrium, intensified by pressure, and of great "internal heat." He became delirious, but at no moment was he in a state of collapse.

He craved cold drinks, which the irritable stomach immediately rejected. This condition lasted about five hours; a hypodermic of gr. ¼ of morphia had no effect, the free use of bromide of potassium finally quieting him.

That night he had frequent greenish watery stools, accompanied by pain and obstinate vomiting. His mind was now deranged, the tendency being toward exaggeration; for instance, he assured us he had had two hundred evacuations during the night. He had to be watched, as he would rise from bed (once jumping over its head-board), and wander in the building, imagining he was at his country home.

Bismuth, catechu, and kino were given to relieve choleraic symptoms and the other remedies continued; brandy and milk punch were all he could be induced to take as nourishment.

There was only very slight improvement for two days, and his nights continued sleepless. However, on June 22d, fifth day, the frequency of evacuations and the vomiting greatly diminished, and he obtained some rest. Improvement continued; on the 25th his bowels had become about regular, and vomiting had entirely ceased. He could now eat, but his mental vagaries continued, though abating considerably.

The doses of bromide and cannabis were steadily diminished, and his mental condition gradually improved.

A month after inauguration of treatment, he was taking no medicine; was active, eating well, sleeping all night, and his mind had reached a solid basis.

When questioned upon the subject, he asserts most emphatically that he would rather die than take any more opium.

A Case of Repeated Trephining.

By P. B. McCUTCHON, M. D.

[Read before the Orleans Parish Medical Society.]

Mr. President and Gentlemen:

I wish to present this evening the history of a man who has been trephined five times. Jefferson Jones, native of Kentucky, age 29 years, mulatto, occupation laborer, habits tem-

perate, was admitted to the Charity Hospital October 13, 1880. States that in 1875, while working in the coal mines of New Streetsville, Ohio, he and his fellow-laborers were attacked by a mob of strikers. He was knocked senseless by a piece of iron ore, and then tramped upon by the mob, who left him apparently dead.

The blow was received on the head about the occipital protuberance. He was attended by a physician in the neighborhood. He was totally blind for six weeks, or two months; after this he apparently entirely recovered, and worked as a laborer for two years.

About this time he began to suffer from severe pain in his head (in the place where he had been struck). A small tumor appeared, which continued to increase in size, and the pain became more and more severe. He consulted a doctor, who declined to operate. He soon sought the advice of another physician, who punctured the tumor, and dark blood instead of pus escaped. He was then trephined for compression, after which he recovered and returned to work as a laborer.

He continued well for a year and a half, when the old symptoms returned. He was trephined in another place a second time. This operation does not appear to have given much relief, for symptoms of epilepsy began as soon as the wound had healed.

Six months after the second trephining, he was trephined by Surgeon Long, of the Marine Hospital Service, at Louisville, who found the bone which had grown over the hole made by the second operation, to be cup-shaped, with the convex surface pressing upon the brain, apparently causing the epileptic seizures. The patient was not relieved even by the third trephining, and six weeks afterwards the skull was cut down upon at the site of the third operation, and a triangular shaped piece of bone was removed, which was found carious.

The patient recovered and resumed work, and was not troubled again for some months. During the latter part of the summer of 1880, the severe pain in the head returned. He

came to New Orleans and was admitted to the Charity Hospital on October 13th, 1880. He states that he has never had syphilis, nor any venereal disease. Upon admission the scalp was found to be much thickened, and the scars of the former operations were plainly visible. The patient groaned almost continuously. Sulphate of morphia and bromide of potassium were exhibited in vain.

Accordingly, on the 22d October, Dr. Logan trephined the patient, making the fifth time the operation had been performed. A piece of necrosed bone was removed, but *no pus* was found, although in two of the former operations (according to patient's statements) pus was found. This operation relieved the patient very much, and he rapidly gained strength and flesh. A little pain remained, which soon disappeared upon the use of 15 gr. doses of iodide of potassium and tonic treatment.

On November 20th he left the hospital and sought work in a coal yard in this city. About the 20th of March, 1881, he returned to the Hospital for the purpose of having a sequestrum of bone removed, which I found too firmly attached to be separated. He had no recurrence of pain, and the wound was almost entirely healed.

My thanks are due Mr. Fitch, resident student of the Hospital, for these notes.

The interesting points in this case are the number of times the patient was trephined and the marked, though temporary, improvement that followed the greater number of operations; and in the next place, the absence of pus. We had in this patient an example of dry or non-suppurating caries. The causes of osteitis and caries are predisposing and exciting. Here we could find no predisposing cause, and the blow with a piece of iron ore was the exciting cause.

We find, upon examining the history, that after six weeks' suffering, there was apparently a complete recovery; and, not until two years had expired, did any symptoms appear which indicated pressure upon the brain.

The Radical Cure of Stricture of the Urethra.

By R. B. NALL, M. D.

[Read before the Memphis Medical and Surgical Club, May 31, 1881.]

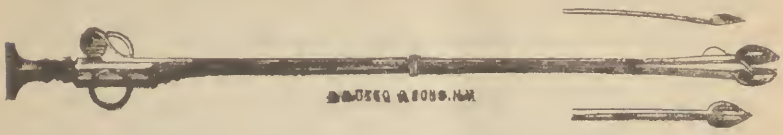
That the operation of incision, for the radical cure of stricture of the male urethra, particularly the pendulous portion, is superior to all other methods when combined with appropriate treatment, both prior and subsequent to the operation, is no longer questioned by some of our most distinguished genito-urinary surgeons, contending as they do that, by a strict observance of the rules laid down for the eradication of these troubles, almost invariably success will be obtained, and a complete restoration of the normal caliber of the urethra.

Many years ago this operation was advocated and employed by great teachers, but their indefinite ideas of the pathology of these troubles rendered it impossible for them to contrive perfect instruments, well adapted to the treatment of urethral contractions. It is true that, by reference to the pages of the works of these great men, masterly pieces of ingenuity may be seen to be represented, but they were defective in their mechanical construction, and consequently have been supplanted by instruments better adapted to our recent and more thorough knowledge of the pathological changes which occur in the urethra.

It is impossible for me to give you even concisely a description of the many contrivances which have been invented for the purpose of radically curing urethral strictures. To exclude the efforts of the older authorities, a proximate idea may be formed by examining the illustrated catalogues of our instrument manufacturers, where various and copious forms may be seen. As perfection of action is the object desired in the use of all instruments, or at least as near as human ingenuity will allow, I propose to exhibit to you this evening a urethrotome, which I think is better adapted for the cutting of strictures of the male urethra than any instrument of similar design, which has been constructed.

For the correct diagnosis of size, location and extent of stricture the bulbous sound is indispensable. For obtaining the natural caliber of the urethra, the urethro-metre is required·

For the radical cure of the co-arctation the urethrotome is necessary. Now the thought occurred to me that if all the functions of these instruments could be blended into one (a urethrotome), much trouble and pain from pre-investigation



could be avoided. The urethrotome, as you here see, consists of two parallel bars, the upper bar of which is grooved and is traversed by a small blade. This knife finds a place of concealment in the upper half bulb attached to the distal extremity of the bar; each has attached to its vesical extremity a half bulb, the circumference of which, when closed, is No. 20 French scale. It admits of a limited amount of separation, and can be enlarged to 40. It is accurately graduated, and any size can be obtained between these numbers by observing the scale just above the thumb-screw which governs the magnitude of the instrument by a concealed rod in the lower bar. The mechanism is simple, in which consists its utility, and it is only to be seen to be fully comprehended.

The superiority of a knife in a bulb is self-suggesting, and the most casual and superficial observer would often feel the want of it to free the sound, when the shoulder comes in contact with posterior face of the cicatricial contraction, frequently requiring some force for its extraction.

Sir Henry Thompson recognized the superiority of an instrument of this structure, as may be seen by the following language, page 229:

"Any of these instruments may be provided with a bulbous extremity, within which the blade usually lies concealed, so that it may be used as a bulbous sound for the purpose of indicating the position of the stricture, the utility of which is not to be doubted." But as every stricture is an individuality and differs so largely in caliber, a simple bulb at the distal extremity concealing a knife, such as designed by Dr. Gross, Jr., for severing contracted bands, possesses a limited sphere of action, for the reason, if the caliber of the

stricture exceed the bulb, we are entirely disarmed. Again, it being devoid of any powers of separation, we are unable to render the penis tense and immovable, so as to fix the organ in a definite position for incision. This deficiency of action can be supplied by having a dilating bulbous urethrotome, possessing, as it does, powers of adaptability; the bulb is forced well up behind the contraction, and the certainty of incision assured, as well as its confinement to diseased tissue.

The urethrotome devised by Dr. Otis for dilating in urethrotomy possesses no power of recognition of its own. Other instruments are employed for predetermining the diseased site, and, because of the mobility of the urethra, I regard this manner of operative procedure as uncertain, including undoubtedly in the cut a good deal of healthy tissue, both anterior and posterior to the stricture, the source, in my mind, of some profuse hemorrhages and other untoward complications which have arisen in the history of internal urethrotomy. If the caliber of the contraction is below 20 F. S., of course some antecedent dilatation is necessary. This may seem to be an objection to the bulbous urethrotome, but it is more apparent than real, for we know that ante-scrotal strictures are not cured by dilatation, however systematically done or continuously employed. Besides, the slight distension which the urethra is subjected to for a short time prior to the operation for the permanent cure, reduces the hyperesthesia of the parts and renders them more tolerant of surgical procedure. The construction of an adaptable bulb at the vesical extremity of a urethrotome is, I think, very desirable and useful, as it certainly does enable us to ascertain with precision the exact location of the trouble and to determine on which aspect of the urethra the pathological changes are most salient, thereby enabling the surgeon to apply the instrument to that portion which most destroys the consentaneous action of the detrusor muscles. I claim superiority for this, for the following reasons:

1. That the urethrotome itself defines the diseased tissue.
2. The incision is confined to the co-arctation.
3. It subserves the purpose of a urethrometer.

4. The functions of the bulbous sound, urethrotome and urethrometer are all blended into one simple instrument. For strictures of large caliber this instrument is particularly fitted both for diagnosis and treatment.

Current Medical Literature.

IS RIGHT-HANDEDNESS ACQUIRED?

If any of our readers did not come across the essay of Mr. Charles Reade, the novelist, on "The Coming Man," which was issued some two or three years ago in Harper's Half-hour Series, they will do well to look it up. Mr. Reade is of the opinion that the matter of right-handedness and left-handedness is purely a matter of education, and should be summarily stopped, as under its influence the race is only half developed. He gives a great deal of curious history—in his more curious way—in support of his position, and takes especial delight in knocking the wind out of any physiological or pathological conditions that may have been made to explain the superiority of the right limbs. The more direct blood-supply of the brain on the left side, and its action through decussating fibers upon the opposite side of the body, he treats with notable scorn, averring that the numberless instances of "same-sided" paralysis after cerebral injuries destroy entirely the tenability of the theory.

It is quite possible, we think, that the true physiological reason for right or left-handedness has not yet been made out, but we are by no means convinced that there is not an essential cause quite independent of any matter of education. Mr. Reade is of the opinion that under the prejudice of ages the child is whipped into the use of his right hand to the exclusion of his left, but we take it that no amount of punishment has changed nature in this respect. The history of every left-handed person is that he is so in spite of every correction he had in his childhood. The familiar examples of men who after the loss of the right hand have developed dexterity of the left, and the ambidexterity of acrobats, pugilists, etc., show the great power of education over inherited proclivities, but do not stand against this inheritance.

Ambidexterity is a good thing to acquire, and we quite agree with Mr. Reade that physical education should have it in view. It is especially a good thing for surgeons to have, but they very seldom acquire it to any extent. We have seen some who said

they were ambidextrous, but they appeared simply to be equally awkward with either hand. It would be very convenient in many operations to be able to use either hand; but there are very few strokes that cannot be made with either hand, by shifting the position of the surgeon, and no one, whatever his pride may be upon the subject, will in times of danger—the spouting of a great vessel, for instance—trust to his inferior member.

Neither Mr. Reade nor any other writer upon the subject has, we think, recognized how fearfully and one-sidedly we are made, They have considered that this development was confined to the muscular apparatus of either side; that we are right-handed, right-legged, right-jawed perhaps, or the reverse; but the fact is, the same development appears in the senses. We are quite sure that it appears in one of these at least—that is, the sight. Concerning the hearing, taste, and smell, we have collected no data; but as to the sight the following are facts. We judge of distance and form by the aid of both eyes, through the angle of vision thus formed—as any one can verify as to distance by the familiar experiment of trying to put the hook at the end of a pole through a ring with one eye closed—and as to form by the use of the stereoscope; *but we judge of direction entirely by one eye, and that eye the right or the left, according as the individual is right or left-handed.*

The sportsman brings his gun to the shoulder, right or left, according as he is right or left-handed; and the corresponding eye is next to the barrel, along which it sights. It may be considered that first perhaps as a matter of convenience, and afterward of education, that the particular eye was used in either instance. But it is not, and direction was judged of by that particular eye long before a gun was taken in hand. It is the habit of many in taking aim to close the unused eye. It does not make a particle of difference, however, if it remains open, as it does nothing whatever in the matter of judging direction either to confuse or to assist. Many noted shots—Dr. Carver, for instance—shoot with both eyes open. Now make these simple experiments, and see what we mean. As you sit in your chair point to any object across the room, with both eyes open, with no attempt at "sighting." Close the left eye, and you will find you are still accurately on the object; but close the *right* eye, and you will discover, with your present vision, you are pointing clear over to the right. This will be the case if you are right-handed; if you are left-handed, the reverse will be the case. But you will say, of course, "Because I have pointed with my right hand if I am right-handed, or my left if the reverse." If you think so, try the other way. You being right-handed, point with the left, and *vice versa*, and you will discover that it makes not a particle of difference.

This is a matter which we have tested by a number of experiments on right and left-handed persons. Only in one instance

did it fail, and that was a curious one—where a right-handed person judged of direction by his left eye; but the sight of his right eye was notably defective.

If this fact of people being right or left-eyed is an old one, it has not reached the specialists of this locality, to whom the matter was referred.—*Louisville Med. News*, Feb. 19.

A CASE OF CHRONIC VOMITING, IN WHICH NO FOOD WAS TAKEN, EXCEPT KOUMISS, FOR SIXTEEN MONTHS.

Dr. H. Sutherland read notes of this case. The patient, a girl aged 24, on admission, had been for five years under his care at St. George's (Hanover Square) Dispensary. One year and seven months ago, vomiting commenced; the attack came on at first only once a fortnight, but lately it occurred always once, and sometimes five or six times, a day. As far as could be ascertained, there was no organic disease of the stomach; no tenderness on pressure, cachexia, nor any other constitutional symptoms. Every known remedy was tried to allay the vomiting—bismuth, opium, hydrocyanic acid, creasote, carbolic acid, hyposulphites, etc.—without any satisfactory result. All attempts to cure the case by dieting had failed, and the patient could keep nothing on the stomach, as food, except koumiss, which she had taken for sixteen months. She was, however, able to retain a quinine and orange mixture, and also sherry in small quantities, for brandy made her sick immediately. The uterus was not displaced. The object in bringing the case before the Society was to ask if any member could suggest any remedies or mode of treatment in this distressing case. The President remarked that it was interesting to know that koumiss could be retained by a stomach which refused all other food. Dr. Jagielski said that his experience of koumiss was favorable to it as a food, when other substances failed. He considered the special value of the material to lie in its permitting recovery of the digestive organs to take place during its use, and the subsequent resort to other diet when this had occurred. The literature of koumiss had much increased in the last fifteen years; but he considered Dr. Sutherland's an unique case, inasmuch as the patient seemed decidedly to have improved. He thought it would be interesting to arrive at an accurate diagnosis respecting it, as an aid to future treatment. In those cases where disinclination to food, and especially to milk, existed, koumiss was an admirable substitute. In its preparation, it underwent a double fermentation, the casein of the milk being broken up by the carbonic acid, and thus its digestion and assimilation in the stomach were more readily secured. In his own practice, the most typical case, as illustrating the value of koumiss, was that of a phthisical patient. Dr. Broadbent, believing the case to be hysterical in nature, would look for an explanation of the details in

the nervous condition of the patient, rather than in the food taken. This opinion he considered supported by the facts adduced. The nervousness, irregular menstruation, morning and evening vomiting, etc., pointed to the conclusion that it was an example of hysteria. It was an extraordinary case, and might take rank with the accounts of fasting girls and similar cases. Mr. Longhurst inquired if any local treatment had been resorted to. Dr. Rogers suggested that the full significance of the case was not understood. His experience tended to convince him that there was an intricate association in such patients between the mental state and the physical condition. Dr. B. O'Connor had found the application of nitrate of silver to the os uteri of service in persistent vomiting. Prepared milk, and Valentine's extract of beef, in teaspoonful doses, he generally found well borne. He considered the prolonged expiratory murmur a peculiar symptom. Dr. Wilberforce Smith thought it important to know what diet had been employed before the koumiss was tried. He considered the patient's improvement due to the physiological rest to the organs. Milk would not secure this, the effort at digestion being too severe a strain; and, in order to obtain perfect rest, abstinence from nitrogenous food needed to be enforced. The vomiting might be nervous. Cream served as an admirable food, and fat boiled bacon with water-biscuits as an alternative diet; beef extract was devoid of nitrogen, and non-nutritious. Injections of nutritive enemata were advisable. Dr. Dowse desired to know how much koumiss had been given in the twenty-four hours. He considered this case to be similar in its details to others recorded, and recommended that solid instead of liquid food should be tried for a day or two. The President inquired if the blistering of the epigastrium had been tried. Dr. Sutherland said that every other food tried on the patient had failed to be retained. She did no work. He did not believe her to be hysterical, though her voice somewhat resembled that of hysterical aphonia. She would not keep to her bed for any time. She was bad-tempered at home, and somewhat suicidally inclined. He had not applied silver nitrate to the os; the patient was over-sensitive to examination. Physiological rest she had had in plenty; alone, it did not avail. Injections were equally useless to her. He had not tried the effect of blistering the epigastrium.—*British Medical Journal, February* 19.

CASES OF DIABETES TREATED WITH SALICYLIC ACID.

Dr. Latham had been led to try salicylic acid in cases of diabetes, from theoretical considerations, arising out of a hypothesis as to the curative action of the same drug in acute rheumatism. He had contended that the substance cured acute rheumatism by entering into chemical combination with the

antecedents of the *materies morbi*, which was probably lactic acid. The glucose of diabetes might have a common origin with the former, and the administration of salicylic acid might be equally serviceable in preventing its formation. He had tried it in six cases of diabetes with very varying success, but still with such results as seemed to warrant further trial and investigation. In one case, the sugar had entirely disappeared. The patient, a married woman, aged 53, had, in June last, great thirst and polyuria, passing seven to eight quarts in twenty-four hours. The specific gravity was 1042, and the amount of sugar was large. The symptoms had begun two months before. Under a regulated diet, she improved much; but on December 2d, when the salicylic acid was tried, she was still passing three pints of urine during the night, of specific gravity 1025, and containing a quantity of sugar. Fifteen grains of salicylic acid were given three times a day, and distinct improvement immediately followed. The sugar gradually disappeared, till on December 22d, the specific gravity being 1017, there was no trace of sugar, but under the microscope, crystals of oxalate of lime and of uric acid. On December 28th, she was suffering from rheumatic pains in the joints. She had experienced the same for the first time in her life a few months before the diabetes was discovered. In another case the sugar disappeared from the urine after salicylic acid was administered; but the patient meanwhile had swelling and suppuration of the parotid gland and surrounding tissues, of which he died. In a third case, the results were ambiguous. Three other cases are at present in the hospital under treatment. Dr. Latham had not ventured in any of the cases to try the enormous doses of fourteen to sixteen grammes daily which had been given in Germany (in the Medical Clinique at Kiel; see *Berliner Klinische Wochenschrift*, 1877). In the above cases, even sixty grains a day had been sufficient to produce some of the physiological effects of the drug. He thought the remedy was of use in diabetes; but in what cases, or under what limitations, must be matter for further investigation.—*British Medical Journal, February* 19.

LUTON'S EXHILARANT MIXTURE.

Dr. Luton, of Reims, has found that the following mixture produces a highly exhilarating effect, somewhat similar to that of nitrous oxide, especially in excitable temperaments:

℞. Tincture of ergot, 5 grams.
Sol. of phosphate of soda ($\frac{1}{10}$), 15 grams.
Take in a quarter glass of sugared water.

This produces "a lively gaiety and uncontrollable hilarity."
—*Bull. Gén. de Térap.—Med. & Surg. Reporter.*

SOME TABULAR RESULTS OF THE MOVEMENT-CURE.

By Benjamin Lee, A.M., M.D.

Presented to the Philadelphia County Medical Society at the Meeting of November 24, 1880.

Many members of this society will remember having seen in Machinery Hall, at the Centennial Exhibition, a very interesting exhibit of apparatus intended for administering the Swedish movements. The table which follows is an abstract from the report to the National Board of Health, at Stockholm, of the Medico-Mechanical Institute of Gothenburg, Sweden, in which similar apparatus is in use. It covers a period of five years, from 1867 to 1872:

Diseases.	Number of cases.	Cured.	Benefitted	Not benefitted.
Diseases of the heart, functional	10	9	..	1
" " " organic	49	..	42	7
Rush of blood to the head	28	10	16	2
Recurring hemorrhage from nose	2	2	..	..
Defective capillary circulation	7	7	..	..
Paralysis of all forms	25	7	15	3
Tabes dorsalis	3	..	2	1
Muscular atrophy (partial)	12	2	8	2
Chorea	3	3	..	..
Writer's cramp	1	1	..	..
Neuralgia	12	6	5	1
Nervous exhaustion	64	10	41	13
Constipation	43	20	16	7
Dyspepsia	36	12	22	2
Pulmonary catarrh	13	4	8	1
" consumption	14	..	9	5
Emphysema	11	..	11	..
Scrofula	3	2	1	..
Debility with anæmia	67	9	52	6
Chlorosis	128	44	77	7
Rheumatism	48	14	31	3
Disordered menstruation	8	2	4	2
Uterine displacements	14	3	9	2
Spermatorrhœa	13	8	3	2
Spinal curvatures	62	20	33	9
Contracted joints	11	2	8	1
Chicken-breast	30	7	23	..
Total	717	204	436	77

One of the most important and successful institutions for carrying on this mode of treatment outside of Sweden is that of which Professor Axel Sigfrid Ulrich, M.D., is director, in the city of Bremen. Professor Ulrich is a man of acknowledged ability, as witnessed by the honors which he has received, being a Knight of the Swedish Order of Wasa, Member of the Medical Society of Stockholm, and correspond-

ing Member of the Royal Society of Medicine and the Natural Sciences of Brussels, of the Medico-Chirurgical Academy of Barcelona, of the medical societies of Paris, Antwerp, Athens, etc., etc.

I append a summary of the twenty-third annual report of his institution for the year ending July 1, 1879:

Diseases.	Received.	Cured.	Greatly improved.	Improved.	Unimproved.	Irregular in attendance.	Still under treatment.
Anomalies of innervation, disturbances of nervous activity (chorea, etc)	2	..	.	2	..	..	..
Neuralgia	3	..	..	1	1	1	..
Nervous debility	5	1	1	1	..	1	1
Disturbances of the circulation, plethora, rush of blood to the head, menstrual disorders	3	1	2	..	..	..	..
Constitutional affections, scrofulous diathesis	7	2	3	1	1	..	..
Local thoracic affections, feeble respiration	2	1	1	..	..	..	..
Abdominal affections, constipation, cardialgia, dyspepsia	10	6	3	1	.	..	..
Spinal curvatures	59	23	17	14	..	..	5
Rheumatism	8	7	1	..	..	..	..
Paralysis	5	..	5	..	..	..	..
Joint-diseases	2	..	2	..	..	..	..
General debility	6	5	1	..	..	..	..
Total	112	46	36	20	2	2	6

During the same period the following cases were successfully treated by massage alone: Sprained ankle, 6; sprained knee, 2; sprained wrist, 4; sprained fingers, 3; tendo-vaginitis of foot, 2; chronic synovitis, 2. The average number of sittings in the cases of sprain was between 5 and 6. This, I am aware, will scarcely seem credible to those who are accustomed to put a sprained ankle or wrists into splints, starch, or plaster, and see it drag along for weary months before it again becomes a useful member. With the immediate, persistent, and frequent use of this means, however, few sprains will disable the sufferer for more than three or four days, and many will be entirely relieved at a single sitting, if it follows the accident within an hour or two.—*Philadelphia Medical Times*, February 26th.

PROFESSIONAL SECRETS.

By F. R. Sturgis, M.D., New York City.

From an item in the *New York Medical Record* I note that the medical profession of Pennsylvania, with the encourage-

ment of the *Philadelphia Medical Times*, is trying to secure the passage of an act not only to render knowledge acquired by a physician during professional attendance a privileged communication, but also to prevent a physician from using such knowledge in any way, shape, or manner.

The argument made in support of such a law is that such a one has lasted for some time in New York State with satisfactory results. Such, however, is not the case. In the last published report of the Transactions of the State Society of New York (1880), the president, Dr. Didama, of Syracuse, in his inaugural address, makes the following remarks, which, as they are so pertinent to the matter in hand, I shall quote in full:

"Some modification seems desirable of the statute forbidding physicians from divulging any information acquired at the bedside of the patient.

"The code of 1876, section 834, reads, 'A person duly authorized to practice physic or surgery shall not be allowed to disclose any information which he acquired in attending a patient in a professional capacity, and which was necessary to enable him to act in that capacity.'

"On the face of it this statute seems to shut the mouth of the educated physician trained to habits of reticence, while it leaves unrestrained the babbling tongue of every unprincipled quack who happens to hold a bogus or forged diploma, and who is, consequently, not 'duly authorized.'

"The courts hold not only that a physician is forbidden to divulge any knowledge affecting the character or reputation of his patient, but that he shall not be permitted to testify to any information which he may have received from the sick person regarding any disease whatever. Gross injustice may result, and probably has resulted, from the enforcement of this law. In one instance within the knowledge of the speaker, where a patient sued a druggist for dispensing too large a dose of medicine, the attending physician was not only prohibited from testifying to the actual facts which he had observed, but was instructed by the learned judge to base his opinion, as an expert, solely on a set of symptoms detailed by the patient and his wife, symptoms which the physician knew did not exist and could not have been produced by the dose in question.

"The outcome was an unjust and exhorbitant verdict against the defendant."

Here, then, it is distinctly asserted that injustice was wrought by this law, or, certainly, by the interpretation of the law, and the physician was made, and in other cases is liable to be made, an unwilling accomplice in what he knows to be a piece of gross injustice.

Nor is this all: he may, by this tying up of his tongue, be made the tool of some unprincipled scamp, and by his silence

seem to give assent to what he knows is a piece of downright rascality. The following correspondence, which is taken from the *New York Medical Record* of October 19, 1878, will, perhaps, illustrate my meaning and the dangers which attend the act as it at present stands. The piece is headed "Professional Secrets and Professional Obligations," and is addressed to the editor of the *Medical Record :*

"I find such a difference of opinion between medical men as to the responsibility of a physician to his patient in certain circumstances that I am induced to ask for a brief space in the columns of the *Record* to refer to the subject.

"It is a subject of vital importance, and should be seriously considered by those whose lives are devoted to cure and *prevention* of disease.

"A young man, while under treatment for constitutional syphilis, brought to his physician a lady suffering from some slight temporary ailment. Upon leaving the office, he remarked in effect, 'Doctor, I wish you to cure this young lady soon, as we expect to be married shortly.' The doctor took occasion privately to remonstrate very emphatically with the young man, informing him of the evil consequences which were sure to follow. The reply was, 'I cannot help it: the invitations are out, and I cannot withdraw.'

"The remonstrance was unheeded, the marriage accomplished, and now 'the most beautiful young lady' the physician had ever seen is suffering with syphilis in a severe form, the doctor having reason to fear grave, and perhaps fatal, complications. Thus, through ignorance on the part of the lady, criminality on the part of the man, and *professional obligations* on the part of the medical adviser, was this work accomplished."*

So far as the legal aspects of the case go, the physician was, in my belief, right, entirely right; but as regards equity, ah! that is another matter, for many of us are sadly aware that law and equity are not by any means synonymes. The law as it stands at present is a gross injustice to all concerned: it gags the mouth of the reputable physician, but permits the gabble of the charlatan. Note well, I pray you, "a person duly authorized to practice," etc. The charlatan is not "duly authorized." It does not protect the physician as a witness, for, while the law seems so to do, the astute lawyer will call upon him as an expert and get all he wants out of him, and often without any pecuniary return to the physician.

More yet. The law converts the family physician into a wolf in sheep's clothing. He knows all that goes on below the surface; he appreciates the danger, he realizes the dreadful consequences, and yet the law, as now applied, forces him into being a scoundrel. Come; put the *argumentum ad homi-*

* The rest of this article is omitted, as not pertinent to my argument.—F. R. S.

nem. How would those of us who have marriageable female relations like to see any one of them engaged to a man whom we knew to be diseased, and whom we could not warn her against for legal reasons or professional obligations? And after the deed is done, how would the doctor feel while looking at the wreck he had helped to make, knowing that but for the law he could have at least done his duty by giving a note of warning? In the parable of the man who fell among thieves most of us are accustomed to regard the priest and Levite with feelings of contempt; let us as physicians, then, see that we do not by any voluntary act place ourselves in a similar position.

The Medical Society of the county of New York, so far from being satisfied with the law, to its credit be it said, instructed its delegates to request the State Society to examine into the expediency of urging the abolition of this law. What the result may be no man can say; but one thing is certain, that in New York City many regard the law as unnecessary, injurious, and unjust.—*Philadelphia Medical Times*, February 26.

NOTE ON THE HYGIENIC INFLUENCE WHICH MAY BE EXERTED BY HOUSE-PLANTS UPON INDIVIDUALS WHO ARE PREDISPOSED TO PHTHISIS PULMONALIS.

By Ely McClellan, M.D., U. S. A.

For the past three years there has been almost constantly under my observation a case which seems to be thoroughly corroborative of the views advanced by Dr. I. M. Anders, in his paper "On the Hygienic and Therapeutic Relations of House-Plants."*

E. M. is a gentleman 30 years old, who belongs to a family in which there is a marked history of phthisis pulmonalis. His physical appearance would indicate that he might be subject to the disease, but he has, as yet, escaped its development.

The history of this case involves the families of both the father and mother. The father, although born of tubercular parents, escaped the disease, but the mother died at comparatively an early age, leaving a family of five children, four of whom have died of consumption. Of these children three died between twenty and twenty-five years of age; one died in his thirty-ninth year, after a long illness, the last two years of which were under my observation.

E. M. is the youngest of the family. His life, with the exception of the last eighteen months, has been devoted exclusively to sedentary pursuits. At twenty-three he married, and, as he was then engaged in an occupation which required

* Philadelphia Medical Times, May 8, 1880.

his residence at an isolated locality, for both amusement and occupation his wife commenced the cultivation of house-plants. She soon became an enthusiast, and a profusion of plants, especially those of the foliage varieties, accumulated in her house. As they resided in an extremely changeable climate, where during the cold months constant watchfulness is necessary for the preservation of plants, her bedroom and the adjoining sitting-room were arranged for that purpose.

Before his marriage E. M. complained of, as he expressed it, "a weakness of the chest and a constant liability to take cold." Since his marriage, with the exception of an occasional dyspeptic ailment, he has seemed a healthy man; and it is but reasonable to attribute his escape from the disease which has destroyed so many of his family to the fact that he lives, and has lived for the past seven years, in apartments well stocked with thrifty plants.—*Ibid.* December, 1880.

INTRAVENOUS INJECTION OF MILK.

By Austin Meldon, F. R. C. S. I., M. K. & Q. C. P. I., M. R. I. A., Surgeon to Jervis Street Hospital.

At the last meeting of this Association I read a paper on the "Intravenous Injection of Milk." At that time my experience was derived from five cases; and there were only twenty-two cases on record. Since then, however, I have performed the operation twenty times. And my object in again bringing forward this subject is to give briefly the results of those cases. Twelve of them were performed in cases of phthisis, in all of which the patients had reached an almost moribund condition, with the result that, in every instance, without exception, life has been prolonged. In one, the patient had apparently only a few hours to live, yet, after the operation, he rallied so much that for some months he was able to follow his usual avocations. At the end of that time, when he was rapidly getting worse, I repeated the operation, with result of improving his condition, although only for a still shorter time. He has since succumbed. In another case, that of a lady, the subject of well marked phthisis, who came from India for the purpose of having the operation performed, I injected four ounces of goat's milk. From the date of the operation she commenced rapidly to improve, and within a fortnight all her worst symptoms were relieved. Three months later, however, they returned; she has since died. A third case was similar to this in all particulars. In all the other cases the patients are still alive. In one of them there was dyspnœa, which was not, however, increased by the operation. Diarrhœa, where it existed, was invariably checked; in fact it was difficult to free the bowels for a few days after the operation. Perspiration was at first increased, afterwards lessened; cough was always

relieved. The general feeling left on my mind was one of disappointment at the very temporary improvement which followed in all these cases; and I fear that in cases of phthisis much benefit cannot be hoped for beyond lengthening life for a few months.

I have operated on four cases of pernicious anæmia, all of which were cured by the injection. In one, the transfusion was performed twice, in the others but once. Two were cases of exhaustion from hæmorrhage, both of which recovered. One was from uterine hæmorrhage, which recovered very rapidly. The second was from recurring hæmorrhage from a wound of the palmar arch, which bled at intervals for four weeks. The patient was so exhausted that he was quite unable to walk across the room. I injected six ounces, and repeated the same quantity on the following day. In three weeks this patient was as strong as before the accident. The last two were cases of exhaustion after typhoid fever. Both were benefited by the operation, one recovered and the other has since died.

Such has been my experience of the intravenous injection of milk. I look upon it as a much better and safer operation than transfusion of blood.

The difficulty in obtaining and defibrinating the blood, and the danger of coagulation in injecting it, in my opinion account for the reason that the operation has not come into general use in cases of emergency. It is quite different with milk. In any place, whether it be town or country, it is easily procured within a few minutes, and with proper precautions the operation is devoid of danger. Some deaths have occurred during or immediately after the operation, but in these cases the milk was either acid or kept for too long a time, or too large a quantity had been injected. The milk of any animal kept in confinement is slightly acid even when it leaves the udder, and as the blood will not tolerate the presence of an acid, it is not to be wondered at that very unpleasant symptoms often develope when milk in that state has been injected. To prevent the possibility of this, I always add ten grains of carbonate of ammonia to each injection. This, besides rendering it certain that the milk is alkaline, prevents that depression which so frequently follows the operation. I invariably use goats' milk, as it is much more easy to bring that animal in close proximity to the patient, thus avoiding any unnecessary delay between milking and the injection. I never use more than six ounces of milk. When time will not allow fresh milk to be obtained, that at hand may be boiled and strained.

This was done in two of the successful cases. In conclusion, I have only to hope that in suitable cases a fair trial may be given to this operation, which seems already to have fallen into unmerited disrepute both here and in America.—*Brit. Med. Jour.*, Feb. 12th.

CHOLERA TREATED BY HYPODERMIC INJECTION OF CHLORAL-HYDRATE.

The following cases of cholera were treated by the hypodermic injection of a solution of chloral-hydrate (one grain to ten minims of water).

Case I.—At Partabgarh Dispensary, on April 23d, 1880, in a male, aged 4, a Hindoo, collapse had just set in. One grain of chloral was injected. He recovered.

Case II.—April 25th; a male, aged 20, Hindoo. When he was first admitted, collapse was pending; he very soon passed into severe collapse. At 7 P. M., six grains of chloral were injected; and again at 10 P. M. On the 26th, four grains were injected at 3 A. M., and six grains at 9 A. M., and again at 4 P. M. In all, twenty-eight grains were injected. Collapse was passing off at 4 P. M. Urine was not passed, however, till the morning of the 28th. He had reactionary fever, for which he was treated with quinine. He recovered.

Case III.—A male, aged 35, Mussulman, was admitted on April 28th, at 10 A. M. He was attacked the previous morning; he was now in intense collapse, with severe cramps. Six grains of chloral-hydrate were injected at 10 A. M., 2 P. M., 3:30 P. M., and 7 P. M. At 10 P. M., collapse was still intense; but he had passed a few drops of urine. Six grains of chloral were injected. On April 29th, at 2 A. M, six grains were injected. At 7 A. M., the collapse continued, but he had passed more urine. At 2 P. M., I injected six grains of chloral. In all, forty-two grains of chloral were injected. At 3 P. M., the collapse was passing off. He had slight reactionary fever, for which he was treated with quinine. He recovered.

Case IV.—A male, aged 35, Hindoo, had been a patient in the dispensary for lupoid ulceration since May 30th, 1880. On the morning of June 30th, decided symptoms of cholera manifested themselves; he passed characteristic rice-water stools; had vomiting and severe cramps; pulse barely perceptible; collapse was evidently pending. At 10 A. M., I injected six grains of chloral, and again at 11 A. M. At 1 P. M., he had passed urine. He had no cramps; the pulse was not improved. At 1 P. M., six grains of chloral were injected, and again at 3:30 P. M.; the total amount being twenty-four grains of chloral. At 7 P. M., the pulse was improving; he passed urine. On July 1st, he was convalescent, and recovered.

Case V.—On July 5th, a female, aged 30, Mussulman, was admitted in severe collapse. She was four months advanced in pregnancy. At 7:30 A. M., six grains of chloral were injected; and the same quantity at 10:15 A. M., 3:30 P. M., and 7 P. M. Improvement began after the last injection. She slept well during the night; passed urine in the morning. She was discharged on July 7th.

The hypodermic treatment of the collapse stage of cholera, with chloral, has engaged my attention in a late epidemic of the

disease in this district (Oudh) in Upper India, to which I am attached. Unfortunately only five cases, those now submitted to the profession, were treated at a dispensary. All these recovered. Twenty cases were treated at their homes, at varying distances from head-quarters; and except in three cases in which chloral was injected twice, each of the patients had only one injection. For adults, six grains of chloral is the quantity used in each injection. The twenty cases referred to were all in different degrees of collapse. Amongst these, there were seven deaths, or thirty-five per cent. Amongst the population at large, the proportion of deaths to attacks was sixty-four per cent.

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Civil Surgeon, Partabagrh, Oudh, India.

[*Brit. Med. Jour.*, Feb. 12th.

SARRACENIA FLAVA.

By H. H. BAKER, M. D., Cleveland, Ohio.

I report the following case: John B., æt. 23. During the summer of 1880 this patient, whose home is, and always has been, in Cleveland, was engaged as a hand on a boat navigating the Ohio river. The change of climate, and especially the drinking of the river water, brought on a most severe and obstinate diarrhœa. On reaching Cincinnati his condition was so bad that he was forced to leave his employment, and repairing to his boarding house he placed himself under the care of a physician of good reputation. He remained under treatment for two months, when, failing to receive substantial benefit, he came home. His condition on reaching home was such that his parents, who are intelligent and well-to-do German people, had little or no hopes of his recovery, and a week was allowed to elapse before any physician was called. I was then summoned, and found the patient very much emaciated, with a troublesome cough and ten or twelve evacuations of the bowels daily. He was able to sleep but little, and said that his bowels moved four or five times every night. The dejections were watery and of the color of bile. The simplest exertion seemed to put the patient almost out of breath, and he would pant rapidly for ten minutes after walking a few feet. I considered the prospect rather gloomy, and gave a guarded prognosis. I prescribed sarracenia flava in doses of ten drops every four hours, together with small doses of tincture opii deodorata at bed time, and occasionally during the day if necessary to relieve pain. Improvement was rapid; in two days the dejections became of a more natural color and diminished frequency, and in two weeks the case was cured. This was about two months since, and the patient has had no return of the trouble, and is now working regularly.

The only treatment in addition to that already mentioned was pepsin and tonics, and there seems no reason for doubt-

ing that to the sarracenia belongs the entire credit of having cured the diarrhœa. Probably digestion would have been re-established, and with increased appetite the strength slowly regained without the use of any other medicines, though, of course, this was much hastened by the means employed.

The whole amount of sarracenia used was one ounce and a half of the fluid extract.

I feel justified in strongly urging the trial of this new remedy in all cases of chronic diarrhœa, believing that, in at least a large proportion of cases, it will prove a remedy of more value than any other in the materia medica.—*Therapeutic Gazette*, February.

RHAMNUS PURSHIANA (CASCARA SAGRADA) IN CONSTIPATION.

By JOHN E. BRACKETT, M. D., Professor of Materia Medica, Medical Department, Howard University, Washington, D. C.

I have used the drug now continuously in my practice for more than two years, to the exclusion of almost all other medicines belonging to its class, and I have yet to record a single failure in obtaining a cure sooner or later. I have used it alone and in combination with other medicines, as, for instance, extract of malt, berberis aquifolium, compound tincture of gentian, elixir of calisaya, compound tincture of cinchona, simple syrup, syrup of tolu, and glycerine. The berberis aquifolium was added in cases associated with rheumatic pains of the joints, scrofulous swellings or ulcers, and in simple debility; the addition of the bitter tonics was in all cases to invigorate digestion and increase the appetite in patients requiring such treatment, and how often one finds loss of appetite, impaired digestion, mal-assimilation, with consequent debility, both general and local, associated with chronic constipation. In cases of that kind I always have found the addition of gentian, calisaya or cinchona, excellent adjuvants. The extract of malt is added when a combined nutrient and digestive stimulant is desired—then, too, the large proportion of diastase renders preparations of malt most effective in those forms of disease originating in imperfect digestion of the starchy elements of food, a condition frequently found among a people subsisting almost wholly on a diet of vegetables.

It is not necessary that I enumerate cases cured by cascara sagrada, with which I am cognizant; their name is, I might almost say, legion; and to select from this number any cases worthy of special mention would be quite as fruitless, for they are all of equal interest to me. I can only say in conclusion, that if there be any of your readers who have not given this new remedy a fair trial, I should advise them to do so at once, feeling assured that the results will exceed their most sanguine expectations.—*Ibid.*

CASCARA SAGRADA IN CONSTIPATION.

By H. C. Shipley, M. D., Forks of Capon P. O., W. Va.

The first case I have to report is that of a lady æt. 67. Paralysis of the right arm. Obstinate constipation. Left foot badly scalded, the result of an accident prior to the attack of paralysis. Constipation, however, was of long continuance—what might with propriety be termed chronic. Was called to see her on the 12th of December. Commenced the treatment by giving her cascara sagrada ʒj, tincture nux vomica 10 gtts, to be repeated every three hours during the first twenty-four hours; afterward four times a day. Visited her again on the 14th, and to my astonishment found the constipation entirely overcome. Duplicated the prescription, and repeated the dose three times a day. Visited her again on the 16th and continued this course. On my fourth visit, the 19th, found her in a decidedly convalescent condition, and up to this date, fifteen days since, she is entirely well. It is proper to remark that the only dressing used for the foot was ʒij grindelia robusta to a tumbler full of water, which had to be duplicated twice or three times.

My second case was a lady æt. 17; married. Was confined Nov. 7th. Was attended from that date up to the 9th of December by a pretended doctor, when I was called to see her. This pretended doctor had pronounced hers a case of hysteria, and was using tr. ferri chlor. 10 drops three times a day, with 5 grains of pulv. rhei. at night. I found the patient with tongue heavily loaded with a dark and very tenacious coating. Sordes on the gums, teeth and lips, an exhausting diarrhœa, pulse 120, small and wiry, anxious expression of countenance, features pinched, skin shrivelled and shrunken, extreme tenderness over the region of the womb, excessive soreness of the vulva, extending upward into the vagina—soreness so great that I could not make a satisfactory digital examination, patient also very anæmic. I diagnosed it as a case of typhoid diarrhœa, with endometritis. Prescribed:

℞ Cascaræ Sagradæ, ʒijss;
Berberis Aquifolii, ʒij;
Piscidiæ Erythrinæ, ʒij;
Syrup. Simp., ℥iij.
M. Sig. A teaspoonful every three hours.

Local applications to vulva, ʒij grindelia robusta to half pint of warm water, to be repeated every hour.

Dec. 11th, my second visit, found marked improvement in all the symptoms, Continued the above course, except to substitute the rhus aromatica in the same quantity, for the cascara, and four times a day instead of every three hours.

Dec. 13th. At this visit found her sitting up, with tongue and mouth perfectly clean, pulse nearly normal, countenance sprightly and cheerful, pain, tenderness and diarrhœa gone,

and her only inquiry was to know what she could eat. On the 15th, through the overwhelming assiduities of her friends, she ate pretty freely of "kraut" and pickled pig's feet; result, relapse. Was sent for again on the 16th, when I found her with all the entire list of untoward symptoms. Being determined to give these highly lauded remedies a fair test, I must confess it was with some misgivings that I again resorted to their use, fearing that at this critical juncture, a confirmed relapse, as I feared, and of a form of disease that has always been regarded as dangerous, they might fail me. However I duplicated my first prescription, and directed a teaspoonful every three hours, and to my great and agreeable surprise on the 17th I found her all right, at which time I gave her ℥ij eucalyptus in ℥jv water, as a tonic. M. Sig., teaspoonful four times a day. Recovery rapid and eminently satisfactory. The result of my experience in these two cases being so satisfactory, I am still further testing them in some others, and especially in several old chronic ones, the results of which I will report hereafter, if agreeable.—*Ibid.*

EQUISETUM, COTO BARK, JAPANESE PERSIMMON, JUDAS TREE, GOA POWDER, ETC.

By A. B. Stewart, M. D., Santa Barbara, Cal.

Equisetum has been given in three cases of chronic enuresis. The first case, an adult female, having suffered day and night for years of enuresis, came under treatment for excoriation of the external parts due to irritation of the escaping urine. Having taken various medicines from sundry physicians for "the weakness of the bladder," without benefit, she was not disposed to do anything more for it; but was finally prevailed upon to take the fluid extract of equisetum in from five to ten drops three times per day. For the first three months the improvement was all that could be expected, and gave hope of a final cure; but after a six months trial the patient became discouraged and abandoned its use. She says that it has done her more good than any other medicine she has ever taken, and is better now than before taking it. Judging from the medicines formerly taken, I think the origin of the present trouble is due to syphilis.

Case second was an elderly gentleman, whose enuresis was due to diabetes insipidus, which has lately proved fatal. The equisetum gave marked relief.

Case third, a female child, three years old, "has from infancy been troubled with wetting the bed at night." Strychnia, belladonna and the various remedies usually given in such cases having given but temporary relief, the fluid extract of equisetum was given in from one to four drop doses, but failing to give relief after two months' trial it was abandoned.

Coto bark I have given in several cases of phthisical diarrhœa and other cases of a similar character, and am pleased with its action.

Japanese persimmon (kaki) is a most valuable remedy in all cases of diarrhœa, especially in subacute and chronic cases.

Judas tree (cercis Canadensis) has proven an average success in diarrhœa, but I prefer both the coto and the persimmon to it. Probably one reason being that the other two are more acceptable to the taste of patients, which has led to their having been more frequently given.

Cascara sagrada is one of the best laxatives I have ever given in habitual constipation, but I find it objectionable to the taste of many; a few refuse to take it on that account.

Guarana has proven successful in about two-thirds of the cases of nervous and sick headache in which I have given it. In the latter it is better to combine it with bromide of potassium.

Damiana has been successful in the treatment of two cases of loss of sexual appetite.

Goa powder has given me great satisfaction in the treatment of a severe case of tinea capitis and an old and chronic case of ringworm. It is a convenient form for the use of chrysophanic acid, and depending upon the latter for its action requires watching to avoid undue irritation. I have found Goulard's cerate a splendid application for such irritation.—*Therapeutic Gazette*, February.

TANNATE OF QUININE IN WHOOPING COUGH.

In 1867, Binz (*Berl. Klin. Woch.* No. 9, 1881) was induced on theoretical grounds to employ quinine in the convulsive cough of children, other drugs having frequently failed in his hands to give relief. He found it most effectual in alleviating the violence and duration of the paroxysms of whooping-cough. The attacks became less frequent and less severe, and the vomiting ceased. When quinine was given quite at the commencement of the illness, the spasmodic element was suppressed, and the attack assumed the form of a severe, though manageable bronchitis. To obtain these good results, it is necessary to give the remedy with no sparing hand. Twice a day the patient must take as many decigrammes as he is years old (a decigramme is a grain and a half), so that a child four years old would require six grains at a dose; at ten years of age he would want fifteen grains; at fourteen, 21 grains, and so on.

The treatment must be steadily persevered in, for no immediate effect is observed. As a rule, there is no improvement until the patient has taken the full dose for three or four days, but then the progress is rapid. These results have been confirmed by one of Binz's pupils, Jansen (*Klin. Beiträge zur*

Erkenntniss und Heilung des Keuchhustens, 1868), and by Hagenbach (*Correspondenz. für Schweizer Aertz.*, 1881, and Gerhardt's *Handbuch der Kinderkrankheiten*, 1877), who as director of the Children's Hospital at Basel, has had many opportunities of investigating the subject. Hagenbach considers that, in the treatment of convulsive cough, quinine must be awarded the foremost place. The difficulties—at times insuperable—of inducing children to take such a bitter medicine as quinine, have been overcome by using the tasteless tannate of quinine. During a severe epidemic of whooping-cough in the neighborhood of Rheindorf, Dr. Becker used this preparation with the greatest success. Hagenbach, in corroborating Becker's statements, says that it is best to give the tannate of quinine as early as possible, the dose being twice a day as many decigrammes as the child is years old. In his experience, the attacks have in a few days considerably abated, and the vomiting has ceased. He also used it with considerable success in the ordinary catarrhal affections of children. It is best given in a little sugar and water. In only one case did it induce constipation, whilst, in another, it arrested an attack of diarrhœa. Unfortunately, tannate of quinine is a very uncertain preparation, containing at one time 10 per cent., and at another 25 per cent., of the alkaloid. On this account it is a good plan to use the neutral tannate of quinine, made by precipitating the alkaloid with tannate of ammonia. The great objection to the employment of these salts is their expense, but there is good reason to suppose that they will soon be obtained by a new chemical method at a more reasonable rate.

It would appear that quinine produces its beneficial effects by a specific action on the organism which causes whooping-cough; salicylic acid and carbolic acid acting in the same way. Chloral-hydrate probably acts by lessening reflex action, and we know that its effects on the spinal cord are so marked that it is used as an antidote in cases of strychia poisoning. The great objection to chloral in whooping-cough is, that it soon loses its effect unless the dose be increased. With quinine this is not the case; and, although it acts slowly, it is certain. It exerts no direct action on the nerves, but gradually destroys the poison itself. No hesitation need be felt in increasing the dose of tannate of quinine if necessary.—*London Med. Record.*

APPLICATION OF CALOMEL DUST IN THE TREATMENT OF PTERYGIUM.

To the Editor of the Lancet:

SIR—I desire to call the attention of ophthalmic surgeons to a new and, I believe, most effective treatment of pterygium. It consists in the daily application of calomel dust. This disease is very prevalent in Tokio, and for several years in a considerable ophthalmic practice I have used this application with

marked benefit in all cases, and in many the cure has been so complete that no trace remains of the affection. I have long tried the old methods with the usual disgusting want of success; but, so far as my own practice here goes, I have now confidence in being able to cure the disease with hardly any risk of failure. Old and fibrous growths are stubborn, but often these have sometimes yielded. Your obedient servant,

HENRY FAULDS, L.F.P. & S.

Tsukiji Hospital, Tokio (Yeddo), Japan, Sept. 1st, 1880.

To the Editor of the Lancet:

SIR—The treatment of pterygium by calomel dust was frequently adopted by Mr. Henry Power at the Royal Westminster Ophthalmic Hospital as far back as 1870, during the tenure of my house-surgeoncy under that gentleman. The treatment appears to be new in Tokio, but it is not in London. Calomel and quinine dust used by Mr. Power proved to be exceedingly efficacious in some cases, especially in those of debility. Quinine, calomel, oxide of zinc, etc., are valuable in pterygium, corneal opacities, granular lids, and all such pathological states.

I am, Sir, yours obediently,

P. W. DE LA MOTTE, M.R.C.S. Eng.

Staines, Nov. 22d, 1880. *Lancet*, Feb.

MEANS OF TREATING INFLAMED HEMORRHOIDS.

The treatment used by M. Chéron, *Revue Medico-Chirurgic.*, to combat congested and engorged states of the uterus, is based on the exosmotic properties of glycerine, and consists in the use of vaginal suppositories of this substance, rendered solid by the addition of a small quantity of white glycerine. M. MacAuliffe, in the *Journal de Med. et Chir. Pratiques*, having often obtained good results from this method of treatment, had the idea to use the same application to inflamed hemorrhoids. He prescribed suppositories containing:—

℞.	Glycerin, - -	3 parts;
	Gelatine, -	1 part;
	Ext. bellad. vel opii,	gr. ss.;

The gelatine is melted in the glycerine, and suppositories are obtained of sufficient consistence for introduction into the anus. The result of this medication surpassed his expectations; a notable amelioration was observed after the first application, and three generally sufficed to dissipate the inflammation.

The suppository should be as deeply introduced as possible; in about an hour after the patient experiences a desire to evacuate the bowels, and the first stool is liquid; this results from the affinity of glycerine for water, and this exosmotic action being exercised through the mucous membrane covering the memorrhoidal tumors, produces their depletion.—*Philadelphia Med. and Surg. Rep.*, January 8.

THE SUPPRESSION OP SYPHILIS.

At the meeting of the American Public Health Association in New Orleans, Dr. J. L. Gihon made the report of the committee on the suppression of Syphilis. We presume that the report was Dr. Gihon's orignal work, knowing how much time he has devoted to the matter.

The wide spread of syphilis was contended for in this report by statistical data of some value, but we do not think it sufficient to convince every one that about one person in fifteen even in New York is affected with syphilis, either acquired or inherited. The statistics aside though, there is no doubt that all who heard the paper were willing to admit that syphilis prevails to such an extent as to excite the apprehensions of medical men and philanthropists in general. We seem to have arrived at that period in our national history when an effort must be made to limit the spread of the blighting disease.

The plan suggested by the committee is that State Legislatures be asked to enact laws making it a crime for a person to communicate a contagious disease, such as small-pox, scarlet fever, or venereal disease, to another.

Now it is very desirable that syphilis in particular should not be communicated from one person to another, and that it should be stamped out entirely. But it must be a very inexperienced man who would hope that legislation could be procured to bring about this end. Even if legislators were ever so deeply impressed with the evil of increasing the spread of syphilis, it would require a degree of wisdom not usual among law-makers, to shape a statute that would not be open to abuses of the most flagrant character. What a temptation any law to punish the spread of syphilis would be for women of ill-fame, to smurch the character of any man whom their caprice or enmity would suggest as a mark. The proceedings in court would be necessarily of the most demoralizing character, and the prurient ears of the lounging multitude would be regaled by attendance on the courts, and nothing but evil grow out of it to them.

But the real difficulty would be to prove the indentity of the carrier of the contagion. The complainants, except in rare cases probably prostitutes, even with the best intention, could only swear to probabilities. On the other hand, in the rare case that a male was the compainant, this very fact that he was willing to make such a public confession of his own shame, would or ought to vitiate his testimony in the estimation of any jury. The impossibili y of a law being framed for the suppression of syphilis seems greater as we look more intently at the subject.

What is to be done then? We recognize the necessity for action; now what is our remedy? We are sorry to say it is not one likely to be looked upon with much favor by those who see the necessity for speedy action. It is not to license houses

of prostitution, for upon this point we are of the opinion that communities and law-makers should not recognize the existence of such houses, much less endorse them by admitting them a necessary evil coming under legitimate inspection and supervision by officers of the law.

Our only hope is in the chastity and purity of young people. These should be taught the danger of syphilitic blight by their parents. This instruction should be quiet, dignified and serious. It should be attempted at such time as the watchful eye of the parent will deem best. It should be so thorough, that young women would refuse the acquaintance of a man reputed to be syphilitic, and that a young man would limit his intercourse with a reputed syphilitic to the merest civilities.

In other words, if the moral and religious and mental training of our children is imperfect in this respect, if a robust public sentiment does not grow up condemning lewd men and tabooing them from free intercourse with our young women, if young men and women are not encouraged to marry earlier, if the habits of society are not to encourage young people to commence life humbly, then it is useless to talk about enforcing morality by law.

After all, the question of the suppression of syphilis is one in which the whole community must take its part; the minister, the physician, the humanitarian, are all to use their influence by pointing out the evil and showing the way of escape.

There is one practical point, however, at which an experiment could be begun, to determine how far the limitation of syphilis is practicable. In every large sea-port town there is a United States Marine Hospital and Surgeon. There are many sailors seeking employment in new vessels. These sailors are the media for the spread of syphilis largely, from one country to another, and from one port to another. If there was a law requiring that every sailor seeking employment on a new vessel should be examined, and all syphilitics either rejected or put under new treatment, it would open the way to a great reform. The organization of the Marine Hospital is amply sufficient for this purpose, and the necessity for action in this direction has more than once been ably presented by Surgeon-General Hamilton. If, in addition to the inspection of seamen as above indicated, municipal authorities would show some interest in the matter, by refusing to license brothels, and throw the weight of their influence in favor of the Seamen's Homes, where liquor is not sold, then the experiment would be fairly inaugurated. But like all reforms it would grow slowly, without it had the sympathy and endorsement of the public.

We fear the secret of the solution of suppression and limitation of syphilis is not near at hand.—*N. C. Med. Jour.*, Feb.

THE NON-IDENITY OF SMALL-POX AND COW-POX.

Sir Thomas Watson in the *British Medical Journal*, Jan. 17th, 1880, declares that vaccine disease is *sui generis*, and in no sense owes its origin to small-pox. He says the attempts made forty years ago to procure fresh lymph for vaccination purposes, by inoculating the cow with the virus of human small-pox, were a mistake; * * * that the ensuing so-called vaccination was not vaccination at all, * * * but the introduction of small-pox to the community * * * in multitudes of places to which otherwise it might never have come.

We are glad to see this candid recantation of the theories of the identity of cow-pox and small-pox by this eminent teacher. The conclusion to which he gives his assent so late in the day, has been sufficiently demonstrated in Virginia and North Carolina during the last twenty years.—*N. C. Med. Jour.*, Feb.

EUCALYPTOL IN ALBUMINURIA.

By Wm. B. Hazard, M. D.

A gentleman, aged forty-five, was for several weeks engaged in the reconstruction of a building and was thus constantly exposed to sewer gas. Very soon he was attacked with a pronounced form of malarial fever and total disarrangement of his digestive apparatus. In delaying appropriate treatment his condition became more aggravated and serious.

When at last the patient came under our observation, moderate ascites and anasarca had been superadded. The general appearance of the patient denoted hydræmic cachexia. The pallor of his skin was somewhat changed by a yellow tinge; liver and spleen enlarged but not tender. The vital functions were sluggish throughout, stool and urine scanty. The microscopic examination of the latter did not reveal any evidence of renal disease, but on the proper test precipitated a large quantity of albumen. Aside from these symptoms the patient was at no time entirely free of fever as indicated by the increase of temperature and pulse, but there were exacerbations of a very marked tertian type, which terminated without the usual supplementary critical discharges. The skin was altogether inactive.

These are, in the main, the pathological features presented. The patient could not comply with the advice to leave the premises, and the cause of his sickness could not, therefore, be removed. It should, however, be mentioned, that the progress of the work gradually lessened the effluvia from the sewer.

The first object of treatment was to arrest the febrile disturbance with large doses of quinine. This was only partially successful; even the addition of arsenic and iron did not break the fever until the sewer had been put in complete order. Up to this time no special attention had been paid to the dropsy,

with the hope that with the effectual removal of the cause, its effects would spontaneously terminate. In this expectation Prof. B. was not only disappointed, but the dropsical collection even increased and materially interfered with respiration. The percentage of albumen likewise augmented. Moderate purgation had no effect in giving relief. Hot air and variously medicated baths did not change the inaction of the skin. Various diuretics failed to increase the urinary secretion. "Thus," Prof. B. remarked, "I had almost arrived at my wits' end, when it occurred to me to employ the diuretic action of eucalyptol." It was prescribed in the shape of an emulsion, and the dose gradually increased from five to fifteen drops four times a day.

From the start the patient realized the beneficial effects of the remedy. Above all, the albumen in the urine steadily diminished, and at the end of ten weeks' use of this remedy the patient was completely relieved of his dropsical symptoms. Repeated examinations of his urine have since been made, but not the slightest trace of albumen has been discovered.

Since then Dr. B. has treated two other patients in similar but less aggravated conditions, with eucalyptol, and accomplished the same prompt and enduring benefits, and for these obvious reasons he feels warranted in commending this drug as a reliable diuretic to the profession.

It only remains to say, that the eucalyptol which the Doctor employs in his experiments, and which was used in the cases just referred to, was furnished by Messrs. Sander & Son, of Sandhurst, Australia.—*St. Louis Clin. Rec.*, Feb.

GUTTMAN ON PILOCARPIN IN DIPHTHERIA.

Dr. George Guttman, of Cronstadt, writes in the *Berl. Klin. Woch.:* Knowledge of the physiological action of pilocarpin and of its effects upon bronchial catarrh, giving rise to moist *râles*, led me to believe that, administered in diphtheria, it might loosen the diphtheritic membrane through the induced abundant salivary secretion, while it would not excite any inflammatory condition. The result of the proposed treatment was, above all expectation, brilliant and striking. In April, 1879, an entire family of seven fell sick, one after another with diphtheria; three exhibited the severest typhoid symptoms. The second case I treated with pilocarpin in moderate doses. The next day I found a copious salivation, and fragments of pseudo-membrane floated in the expectorated matters. Pilocarpin was administered also to the other five patients. In addition, the usual general treatment was followed; quinine, tannin locally, gargles of lime-water and pepsin. The patients recovered in from two to four days. Since these first cases, down to August, 1880, sixty-six cases of diphtheria (*rachen-*

bräune) have come under my care; fifteen exhibited the worst of the diphtheritic symptoms, of which, according to my previous experience, at least two-thirds would have certainly died; thirty-three would have been termed bad cases, the membrane being extensive; the remainder were slightly affected. I gave pilocarpin to all; only in the first cases, quinine and gargles also; they recovered, as a rule, in periods of time varying from twenty-four hours to three days; of the fifteen worst cases, two recovered in nine and eleven days, the rest in two to five days. All patients who came early under treatment while the pseudo-membrane was still loosely adherent, without exception were cured within twenty-four hours. The doubt that these cases were not truly diphtheritic is not to be raised, since they were examined with the utmost care, and in the worst cases the contagion could be distinctly traced. Under the action of the pilocarpin, not only were the membrane and infiltration dissolved in the salivary flow, but also the violent inflammatory condition yielded to its influence, the deeply reddened mucous membrane soon became moist, pale red, and in every respect of normal appearance. Led by these results, I prescribed pilocarpin in violent pharyngeal cases, angina aphthosa and tonsillaris, always with most happy results, the disease yielding in a short time. In two cases of violent tonsillitis, in which the tonsils were so swollen that water could be taken only with great difficulty, and scarification was positively indicated, not only did the swelling disappear, but the entire group of inflammatory symptoms, the one in twenty-four hours and the other in thirty-six. In the few cases of membranous croup that have fallen into my hands during the past fifteen months, pilocarpin has proved a faithful ally, and I believe it will prove as effective as in diphtheria of the fauces. Two cases of laryngitis stridula yielded promptly to the same drug, which is safer and more convenient than the usually prescribed emetic. Others have used pilocarpin under my advice, and agree with me in maintaining its excellence in diseases of the nature described. In the administration of this remedy I combine pepsin to combat the gastric catarrh usually present. My formula is as follows: ℞ Pilocarpini muriat., gr. ½-¾; pepsinæ, gr. j-1¼; acidi hydrochlor., gtt. ii; aquæ dest., ʒ iiss. M. sig. A teaspoonful hourly for children. For adults: Pilocarpini muriat, gr. ss j; pepsinæ, gr. xxx; acid hydrochlor., gtt. iij; aquæ dest., ʒ viij. S. Hourly a tablespoonful. I have never observed any undesirable effects of the drug, even when it has been continued until complete recovery, possibly because I give a small amount of generous wine after each dose.—*London Medical Record*, February 15.

ZELTWEG ON THE TREATMENT ON BURNS.

The author, as physician in chief to a large iron mining and smelting company in Styria, has cases of burns very frequently

presented for treatment, and has found the following method most successful. The wound is first cleaned (without opening the blisters) then disinfected with a 2 per cent. solution of carbolic acid, and covered with a thick furniture varnish prepared from linseed-oil and litharge, in which 5 per cent. of salicylic acid has been dissolved by warming. The varnish is allowed to dry and another coat applied; over this a layer of Bruns's cotton is placed, about 2-3 centimetres in thickness. The wound seldom suppurates, generally healing under the varnish, which is finally removed as a dry pellicle, no change of the dressing having been necessary. Should, however, suppuration be indicated by the setting in of fever, or by the occurrence of painfulness, the dressing is removed from this locality; if the spot be not over 5 centimetres in diameter, nothing further is done than to strew the moist surface with dry powdered salicylic acid; if larger, an opening is cut in the dressing, the salicylic acid is applied as before, and then covered with a fresh layer of cotton. The scars become by this method entirely smooth, white, and are not hypertrophied.—*Ibid.*

PERNICIOUS MALARIAL FEVER: ITS TREATMENT.

By Louis Starr, M. D., Physician to the Episcopal Hospital, Philadelphia.

* * * * The point of greatest importance in treating pernicious malarial fever is to get the patient as quickly as possible under the influence of quinia. This is most readily accomplished by administering the drug hypodermically, since it must often happen, as it did in three of my cases, that patients are unable to swallow, or that the large dose required when giving the medicine by the mouth is rejected soon after being swallowed, and since cinchonism follows more slowly and less certainly the employment of suppositories of quinia. The objection to the hypodermic method is the danger of producing an abcess or an eschar at the position of injection. Such a result, though common when the necessary solution is effected by either sulphuric acid or muriatic acid, occurs infrequently when the quinia is dissolved by the aid of lactic acid, or even when it is simply suspended in glycerin. In the three cases referred to, and in a number of instances of ordinary malarial fever, and in several of typhoid fever recently treated in my wards, a solution prepared according to the following formula was used:

℞ Quiniæ sulphatis, gr. xx;
Acidi lactici, ℥xx;
Aquæ, ℥lxxx. M.

Twenty minims of this solution, containing four grains of sulphate of quinia, were injected at once into the subcutaneous tissue of the arm or thigh. After the injection there was often

slight redness, swelling, and tenderness about the puncture, but in not a single instance was an abcess or an eschar produced.

Four grains of sulphate of quinia may be taken as an average hypodermic dose for cases which are sufficiently severe to demand this mode of administration. This quantity is equivalent to three or four times as much by the mouth. The injection may be repeated once, twice, or three times in twenty-four hours, according to the urgency of the symptoms.

If the pernicious paroxism is prolonged, and the power of deglutition is lost, the strength must be maintained by nutritious enemata. Under these circumstances, the rectum should first be thoroughly emptied by a large simple enema, and then, at intervals of four hours, from four to eight fluid ounces of milk and four fluid ounces of beef-tea may be injected alternately. This gives twelve or twenty-four fluid ounces of milk and twelve fluid ounces of beef-tea per day, and is about as much as the rectum can dispose of. As, however, the quantity of liquid so introduced is small, it is a good plan to inject, three times during the day, half a pint of water. Both the food and water should be warm when injected, and the addition of pepsin and malt to the former probably facilitates its absorption by producing changes analogous to those of digestion. If stimulants are indicated, half a fluid ounce or one fluid ounce of brandy or whisky may be added to each enema of milk and water. Any irritability of the rectum may be overcome by the use of tincture of opium, gtt. v or x to each enema, and it will be found that the food is much more readily retained and disposed of if the large simple enema is repeated once daily, to clear away any material that may have escapsed absorption. The act of injection should be performed slowly, and afterwards a warm flannel cloth should be held to and pressed lightly against the anus for a few moments.

Revulsion by sinapism applied to the nape of the neck and to the calves is of great service in aiding to bring about reaction in malarial coma.

After the pernicious paroxysm, is broken the plan of treatment does not differ from that followed in malarial fevers generally.—*Medical Times.*

TREATMENT OF CARBUNCLE BY ETHER SPRAY.

Zimberlin (*N. Y. Med. Rec.;* from *Schmidt's Yahrb.*, No. 1, 1881,) has obtained favorable results in two cases by this method. The first was a malignant pustule, which, on the fifth day, was as large as a fifty cent piece, and surrounded by an intensely red areola. Ether spray from a Richardson's atomizer was directed upon it and its temperature reduced. On the following day the pustule was found covered with a

dry scab and surrounded by a large inflammatory areola. Five days later the inflammation had subsided, the scab came away, leaving only a sensitive skin behind it. The same treatment was successful in a case of carbuncular œdema in an arm which it had already been decided to amputate.—*Medical Times.*

ATROPINE IN MENORRHAGIA AND HÆMOPTYSIS.

Tacke (*Berliner klinische Wochenschrift*, No. 6, 1881.) having had occasion to prescribe sulphate of atropine hypodermically in a case of wandering eczema, found that the patient's menstruation, which had been hitherto excessive, became and continued moderate after the first hypodermic injection. He subsequently had a similar experience with two other cases, and a case of hæmoptysis was also markedly improved, whence he concludes that atropine hypodermically administered, is as valuable a remedy against menorrhagia and hæmoptysis as ergot, and as it is not so liable to cause inflammation of the subcutaneous cellular tissue as the latter, it is much more easily administered hypodermically, thus avoiding any tendency to gastric or intestinal disturbance.—*Quarterly Epitome. Canadian Journal of Medical Science.*

ON MILK INDIGESTION IN YOUNG CHILDREN.

Dr. Eustace Smith states that children who are brought up in the usual way upon milk and milky foods may suddenly begin to exhibit symptoms of indigestion which renders an immediate change of diet indispensable, if serious consequences are to be avoided. The same thing may occur in children who have been weaned at the usual age; and it is therefore sometimes met with in young children twelve or eighteen months old. The symptoms are due in the majority of cases to an inability to digest cow's milk, the inability being either temporary or caused by some casual derangement of the stomach and bowels which induces an acid change in the food; and this is the more common form of indigestion, or the fault is in the milk which is too heavy for a child whose digestive organs are sound and healthy. The general symptoms of this form of milk indigestion are divided by Dr. Smith into three classes, according as the permanent feature is constipation, vomiting, or diarhœa. In cases where constipation is a marked symptom and griping violent, a full dose of castor oil clears away the curd and allays the symptoms for a time. In a large majority of cases of milk indigestion in infants reared at the breast, the fault is in the digestive organs of the child; an attack of gastric catarrh having rendered him for the time incapable of digesting his mother's milk. In these cases the indigestion is a temporary failing and is easily remedied by suitable treatment.

In cases where the complaint is acute, severe vomiting is usually the most prominent symptom. The diet in these cases must be restricted to equal parts of veal broth and thin barley-water, given cold in small quantities at a time; whilst warmth is applied to the belly and extremities, the child being kept perfectly quiet. The best sedative is the liquor arsenicalis—half a drop for the dose—given with a few grains of bicarbonate of soda in some aromatic water. After a few days of such treatment the power of digesting milk usually returns, though at first it should be given sparingly, and freely diluted with barley-water, only once or twice a day. Looseness of the bowels is a common consequence of milk indigestion, the child becoming at first flabby and then obviously wasted. For a case of this description Dr. Smith ordered an alkaline solution of iron, with half a drop of liquor arsenicalis in each dose. This was afterwards changed to quinine, disolved in iron-water and cod-liver oil.—*The British Med. Jour.*, June 4, 1881 (*Practitioner*).

DIAGNOSIS BETWEEN CYSTITIS OF THE NECK OF THE BLADDER AND PROSTATITIS, AND BETWEEN THE LATTER AND COWPERITIS.

Le Concours Médical (1880, page 532) gives the following from Fournier:

CYSTITIS.	PROSTATITIS.
1. Characteristic vesical tenesmus; frequent and imperious desire to urinate.	1. Vesical tenesmus less marked; rectal tenesmus more noticeable; frequent urination not present.
2. Micturition especially painful at the moment when the last drops of urine are passed.	
3. Excretion of a dysenteric liquid mixed with pus and blood, at the last moment of urination; pure blood sometimes passed.	3. Nothing of the kind observed.
4. Simple perineal sensibility; irradiating pains towards the anus, less violent than in prostatitis.	4. Deep perineal pains (very severe, and increased on movement, defecation, etc.)
5. Prostate normal.	5. To the rectal touch the prostatic tumor is perceptible; very tender, hard, etc.
6. No retention of urine.	6. Dysuria, retention of urine, etc.
7. Few or no general symptoms.	7. General symptoms, fever, loss of appetite, etc., pretty well marked.

Cowperitis is sometimes very hard to distinguish from prostatitis, because the two glands are so near together, and this is especially the case when the disease is somewhat advanced, the whole locality being swollen and phlegmonous. However, careful exploration will usually serve to distinguish the two affections. The passage of an acorn bougie will also serve to show the absence of pain in the neighborhood of the prostate. The course of cowperitis is also different. It shows itself as a phlegmonous tumor adherent to the bulb, limited to the point occupied by Cowper's glands, and having, at first, no connection with the canal of the urethra. The pus in cowperitis points very rapidly toward the perineum, and the vesical symptoms are so slight that some writers have denied the possibility of complete retention in cowperitis.—*Philadelphia Medical Times.*

TREATMENT OF ABSCESS OF THE LIVER.

Dr. Randolph Winslow, in *Annals of Anatomy and Surgery*, contributes an excellent article on this subject, and closes his paper with the following conclusions:

The following summary represents the results of my investigations in regard to the surgical treatment of abscess of the liver:

1. The liver should always be aspirated in a case of suspected abscess, in order to verify the diagnosis.
2. Many small and a few large abscesses have been cured by one or more aspirations; hence this method should always be employed at the first exploration, and we should then wait until it refills. If the pus collects slowly and in small amounts, it may be again aspirated; if quickly and in large quantities, aspiration is not to be relied upon.
3. Incisions should be made into the abscess cavity at the most prominent portion of the tumor, whether in an intercostal space or not; and irrespective of the presence or absence of adhesions.
4. Rigid antiseptic precautions add much to the safety and certainty of a successful result.
5. When Listerism is impracticable, good results will be generally obtained by simple incision or puncture by a trocar and canula, followed by the introduction of a drainage tube, and the daily use of carbolized injections.
6. Any af these methods are preferable to leaving the case to nature.

NEW METHOD OF APPLYING NITRIC ACID AS A CAUSTIC.

W. R. Speirs writes as follows to the *London Practitioner:* The fact that no hint, however simple, should be lost for want of recording, if it be efficacious in practice, must be my excuse

for asking you to publish the following account of the treatment of a facial nævus by the application of a strong and fuming nitric acid.

In February, 1880, I was consulted by a lady whose infant, then six months old, had a nævus about the size of a hazelnut situated on the left cheek, close to the outer canthus. In fact its upper margin encroached so much upon the palpebral surface that it might more properly be described as a nævus of the lower eyelid. It was an ordinary capillary nævus, and the skin covering it was thin and discolored. It could be almost emptied by compression, but quickly reappeared when the pressure was removed. As it was increasing rapidly in size, the mother was anxious that I should interfere. In deciding upon the plan of treatment to be followed it was necessary to take into consideration the situation of the tumor and the important and delicate structures in its immediate vicinity. It was also desirable that the cicatrix should be as small as possible, and that no contraction of the skin should occur to cause ectropion. The child had already been vaccinated, or I should have been disposed to adopt what I have found a very successful plan with small nævi, namely vaccinating the tumor. Ligaturing in any form did not seem to be a method of treatment that would be applicable in the present case; and the actual cautery would have been equally inadmissible. The application of a strong caustic, such as nitric acid, seemed most feasible, but the method of using that remedy recommended by Mr. Syme (an account of which is given in Vol. V., of Holmes' Surgery), appeared to me to be troublesome and too painful, from the length of time it required, to be suitable in the case of so young a child. The following mode, however, proved highly satisfactory, and besides was easy of application. I took an ordinary two-ounce vial, selecting one with as wide a mouth as possible. Having broken off the body close to the neck, I inverted the latter over the nævus, pressing the rim of the glass firmly down upon the skin. This had the effect of forcing the tumor well up into the neck of the vial; and when the acid was applied by means of a pipette, it acted freely upon the whole surface of the nævus. Before removing the vial neck I carefully mopped out all excess of acid with some cotton wool on a probe. I then had the satisfaction of beholding a well-defined circular slough, rather depressed, but with clean cut edges as if a punch had been used. The child suffered very little pain, and was easily pacified by being put to the breast. The action of the acid was found to have been entirely confined to the tumor, which was completely obliterated. No unnecessary loss of tissue took place, and consequently no cicatricial contraction or distortion of the eyelid.

It is now twelve months since the operation was performed, and the scar is scarcely perceptible, only becoming slightly crimson when the child cries.—*St. Louis Med. and Surg. Journal.*

THE PATHOLOGY AND TREATMENT OF DIARRHŒA IN PHTHISIS.

By C. Theodore Williams, M. A., M. D., etc.,
Physician to the Hospital for Consumption and Diseases of the Chest, Brompton.

Diarrhœa is often the cause of fatal termination in phthisis, its exhausting discharges reducing the weight and impoverishing the blood more than the cough and expectoration, or even than the fever. Three different kinds of diarrhœa are met with during the course of the disease. 1st, That arising from acidity of the primæ viæ; 2nd, from intestinal ulceration; 3rd, from lardaceous disease of the intestines. A great deal of the diarrhœa connected with the first stage of phthisis is attributable to the first cause, and many practitioners think when they have allayed this, they have arrested ulceration, whereas they have only got rid of dyspepsia. It is unnecessary to dwell on this form, which as a rule arises from over-feeding patients, and is accompanied by a coated tongue, tenderness in the right hypochondrium and epigastrium, loaded urine, anorexia, flatulence, and frequent light-colored stools.

The second form, or intestinal ulceration, is the commonest cause of fatal diarrhœa in phthisis, and prevails in a considerable proportion of third-stage patients. Louis found ulceration of the intestines in five-sixths of his cases, Bayle in 67 per cent. of his, Lebert in 67 per cent. of his, Breslau ones, and in only 39 per cent. of his Zurich ones. The Brompton Hospital post-mortem book for the last twelve months gives the following: Out of seventy-five cases of phthisis in which the intestines were examined, sixty-one had ulceration of a tubercular nature, giving a percentage of 81, a higher percentage than that of either of the above authorities except that of Louis. It is only right to state that a most careful search was made on each occasion by the present pathologist, Dr. Ewart.

The pathology of tubercular ulceration requires a large number of specimens to display its exact cause, most autopsies only showing the last destructive stages.

Ulcers are to be found occasionally in nearly the whole intestinal tract below the duodenum, but they are so extensive and involve so great an amount of the mucous membrane of the large intestine as often to give it an entirely worm-eaten appearance, and in many instances the large intestine of a case of phthisical diarrhœa cannot be distinguished from that of tropical dysentery, so well portrayed lately by Sir Joseph Fayrer in his Lettsonian Lectures. In the small intestine, however, especially in the ileum, we are able to trace the early steps of the ulcerative process, and I hope the cases I am about to relate will illustrate these. The first stage consists of an inflammatory hyperplasia of the solitary and agminate glands, as shown by their prominence when the intestine is opened. The second stage consists either in their conversion into pustules by formation of matter, or by their undergoing caseation.

Either phase is followed by the third stage, which is the evacuation of their contents, leaving behind ulcers with smooth floors and sharp, clear-cut edges. Up to this point the process is held by many authorities to be inflammatory, and not strictly tubercular. After a while grey tubercle is detected in the flow of the ulcer, which in time undergoes caseation, causing extension, vertical or lateral, of the original ulcer.

The secondary tubercles follow the line of the blood-vessels, and sometimes are seen from the peritoneal surface, demonstrating how deep these ulcers extend. When ulceration has arrived at this stage, each spot presents thickened irregular edges and an uneven floor. The intestinal wall around them is generally thin and wasted, and it is often easy to recognize the ulcerations from outside without opening the intestine. In time these patches, extending, join neighboring ones, and eventually the whole circumference of the mucous membrane becomes a mass of disease. It is in this condition that we often find the colon and sigmoid flexure. Before ulceration, however, reaches this degree, it is not uncommon to find separate ulcers of great length; Louis found one measuring eight inches, the floor being formed by the muscular coat, except in the centre, where even this had disappeared, and only the peritoneal coat remained. Considerable thickening of the peritoneal coats, especially in the region of the ulcers, takes place, and thus it is that perforation is comparatively rare. When it occurs, peritonitis is inevitably set up, but even then it is sometimes of a localized description, the extravasations being walled off by fresh adhesions. As a rule, however, the peritonitis is general, and death soon follows the perforation. Rindfleisch gives a case where several coils of the intestines were adherent, and perforations took place in the adjacent portions in five different places. Occasionally vessels are penetrated by the ulcerative process, and death occurs by hæmorrhage. Hanot states that he saw two such instances in the service of M. Lasègue, in each case the amount of blood lost being very striking. After death the source was found to be a small opening in a vessel in the middle of a Peyer's patch, which was deeply ulcerated. Biermer gives a case of large intestinal hæmorrhage following tuberculous ulcer of the rectum in a child.

These are the most unfavorable pathological courses of the process; but, on the other hand, the ulcer may shrink, the walls become more indurated, and at length form a puckered cicatrix in the mucous membrane, largely contracting the circumference of the intestine; and in patients dying of chronic phthisis these scars are occasionally seen.

Accompanying the ulcerative changes we often find considerable swelling of the mesenteric glands, but this is generally the case in the later stage of the disease. Walshe found alteration in these glands in from one-third to one-fifth of his cases of phthisis.

Treatment.—The treatment of the first form of diarrhœa need not detain us long, as it consists of simply correcting the dietary and ordering a few doses of alterative and purgative medicine, with some alkali to reduce the acidity. The second form—that arising from ulceration—requires very careful attention. The great point to be kept in view is the healing of the ulcers, and this can only be attained by shielding them from all irritable substances, and by promoting a healthy granulating action. The treatment, in fact, resolves itself into three sets of measures.

1st. Rest in bed and the administration of only such food as can be quickly and easily assimilated without causing much distension of the intestine or the accumulation of flatus. Such are chicken broth, beef and veal tea, milk gruel, blanc-mange, always combined with liquor pancreatus, and prepared after the admirable methods of Dr. Wm. Roberts, of Manchester. Dr. Jagielski recommends koumiss specially in these cases.

2d. Warm applications to the abdomen in the form of linseed poultices, turpentine stupes, or hot water fomentations, to reduce the pain and promote a certain degree of derivation to the skin. If the pain be severe, I have found the application of a small blister over the area of tenderness on pressure, as recommended by Dr. J. E. Pollock, very advantageous. I have noticed in some obstinate cases that when the blister has risen, the diarrhœa has been considerably reduced, and pain existing in the abdomen at the time has subsided.

3d. Internal medicines. When we have reason to believe that the ulceration is slight and confined to the small intestine, the diarrhœa may be treated by bismuth and opium, or by some astringents. The liquor bismuthi et ammoniæ citratis (B. P.) is a convenient form, but not always so effective as the powdered carbonate or the nitrate of bismuth in ten to twenty-grain doses. Dover's powder combined with it in ten-grain doses is often effective. The most powerful astringent is the sulphate of copper in a quarter to half-grain doses combined with half-grain to a grain of solid opium. Of the various vegetable astringents I have found tannic acid in four-grain doses to answer best, far better than rhatany and catechu, but in all cases I combine it with a certain amount of opium to reduce the irritability of the ulcers. Indian bael, especially a preparation of the fresh fruit, is often efficacious in checking the diarrhœa if the ulceration be limited. If, however, the ulceration attack the large intestine as well as the small, it is obvious that more local treatment is advisable, and recourse should be had to injections or suppositories. The enema opii (B. P.) administered twice a day is sometimes sufficient, and may be strengthened by the addition of acetate of lead, four grains to an injection, or of tannic acid, five grains. This is a small injection, and it is doubtful how far its local effect reaches. Where the ulceration is very

extensive, and involves the greater part of the large intestine, an attempt ought to be made to apply the remedies more thoroughly to the mucous membrane; and for this purpose injections of larger amount—from a pint to a pint and a half—may be used, consisting of gruel or of starch, or, best of all, of linseed tea, and all containing a certain quantity of opium (thirty to forty minims of the tincture). I would specially recommend the linseed tea, as it appears to exercise the same beneficial effect on the ulcers of the large intestine as it does in follicular ulceration of the throat. One of the most obstinate cases of intestinal tubercular ulceration I ever witnessed yielded to linseed tea injections, after almost every other treatment had been vainly tried, the ulcers apparently healing, the diarrhœa ceasing, and the patient living for two years afterwards, and dying of pulmonary lesions. In cases where the stools are very fetid, I have added glycerine of carbolic acid to the injection with advantage. In many cases, however, it is desirable to give the large intestine as much rest as possible, and not to stretch the ulcerated mucous membrane through any distension by fluids; in these cases suppositories of morphia (from half a grain to a grain) or of the compound lead one, or of those of tannic acid are indicated, and the treatment of the diarrhœa arising from lardaceoous degeneration of the intestine is not very hopeful. Where the very channels of assimilation—viz., the villi—have undergone degeneration, as well as the various structures from which the succus entericus is poured out, it is difficult to see how treatment can restore the lost tissues. Dr. Dickinson's researches show that the loss of alkali is the chief characteristic of the disease. Dr. Marcet's analyses show that the chief chemical feature is deficiency of phosporic acid and potash, and excess of soda and chlorine, and on this principle we should give phosphates of potash. When, however, the disease has so far advanced as to reach the intestine, it may be considered beyond any effective general treatment. We must be content to restrain the diarrhœa if we can by astringents, the more powerful the better. Tannic acid in from two to four grain doses, with dilute sulphuric acid, sulphate of copper or sulphate of zinc are the most useful, and injections of these substances do some good.—*London Lancet.*

UTERINE SUB-INVOLUTION—ITS PATHOLOGY AND TREATMENT.

Dr. Edward Alcorn, of Hustonville, Ky., in the *Obstetric Gazette*, contributes an interesting article on this subject. His paper concludes as follows:

Symptoms.

Pelvic weight and dragging back-ache; supra-pelvic pain dysuria in the early stages; menorrhagia; later, perhaps

scanty menstruation; ovarian pain, usually located in the left side; a peculiar burning pain on top of the head; leucorrhœa, often profuse, and tinged with blood, with burning pain about the vagina and vulva, together with all the hystero-neuroses, usually observed in the female sex.

Pathological Condition.

Uterus uniformly enlarged, the cavity often admitting the sound three to four inches; soft, flabby, succulent, low in the pelvis, and then generally retro-displaced. Usually endo-trachelitis; catarrh of the endo-metrium, of a low, chronic type; uterus hyperæmic; cervix bluish red in color; uterine muscular fibre, areolar tissue and vessels, also parametric tissue, lax; all fibres longer than in the unimpregnated condition.

Dr. Beck, of London, who studied this subject microscopically, in a very critical, careful way, states that the enlargement was due more to the increased size and amount of the soft tissue present in the wall of the uterus, as well as the internal surface, than to the increased size of the contractile fibre cells. He makes no allusion to preponderance of muscular fibre, or fatty degeneration.

The cavity of the uterus is always increased in size, the cervical glands are hypertrophied, and fungoid growths are often observed.

When these pathological changes take place, we have the areolar hyperplasia of Thomas, the uterine sclerosis of Skene, and the chronic metritis of Scanzoni and Schroeder.

Treatment.

All agents whose tendency is to contract the blood-vessels, muscular fibres and produce absorption of enlarged areolar tissue are indicated. Hot injections, iodine to the cervix and endometrium, carbolic acid and iodized phenol to uterine cavity, saline baths, general friction massage, electricity—local and by baths—(faradic chiefly) scarification and leeching to the cervix at weekly intervals. Tonics of iron, quinine, strychnine, ergotine, etc. Always reduce any luxation of the organ if existing, unless contraindicated by old adhesions, and maintain the normal position by a well-fitting, comfortable pessary.

All super-incumbent weight from the abdomen should be taken away; the clothing should be supported by the shoulders and not by the hips, as is usually done. In women, whose abdominal muscles are much developed, relaxed and covered with a thick deposit of adipose matter, the external supporter answers "a long felt want."

A lacerated cervix or perineum should always be attended to ere any further steps be taken toward treating a sub-involved uterus.

Injections of hot water, after the method taught by Emmet of New York, should be used continuously.

According to his teaching, all pelvic congestion is venous, and the term "chronic inflammation" is a misnomer, so far as it applies to the organs in that cavity, because the arterial vessels are not involved in that process. It is in the chronic venous congestion, constituting the chief factor in sub-involution and hyperplasia that its use is so beneficial.

The douche is preferred to the ordinary syringe; the stream is continuous and uninterrupted; the patient should be prone, hips elevated, thereby emptying the pelvic veins by gravitation. The water should be as hot as can be tolerated. Nervousness and sleeplessness, frequent accompaniments of this morbid condition, are often allayed by the hot douche just before bed time.

Topical applications of Churchill's tr. of iodine to the uterine cavity by means of a probang are very beneficial. A method preferable is the introduction of soluble medicated bougies into the cavity by means of a hard rubber tube devised by Drs. Barker and Mundé, of New York.

These tents or bougies are introduced without difficulty and allowed to remain and dissolve, the cervix being plugged with cotton to prevent the escape of the fluid.

Very little pain follows this procedure. Now and then colicky, suprapubic pains supervene in highly nervous subjects, but as a rule no pain follows. These bougies are medicated with iodine, iodoform, zinc, etc.

The injection of alterative agents into the substance of the cervix has been employed by Mundé, of New York, Bennett, of London, and Delore, of Paris. The first named claims to have had no pleasing results from the method. The experience of Dr. Lusk, at Bellevue Hospital, has by no means been gratifying. He had one case of peritonitis, and death to follow the treatment. Ergotine, iodine, iodide of potassium and chloride of zinc have been the agents employed by these experimenters.

Local depletion has proved favorable in the hands of many gynecologists. Dr. Mundé says that the indications for local depletion are two-fold, viz.: 1st. to disgorge the loaded uterine vessels in acute inflammation or chronic hyperæmia; and 2nd, to stimulate the sluggish circulation, either by unloading the estalic veins and the resultant reflux of a fresh stream, or by the nervous shock of the depletion. All authors claim better results from the scarification than the natural or artifical leech. Butler's instrument I use through a cylinder speculum. It is thrust into the cervix to the depth of $\frac{1}{8}$ or $\frac{1}{4}$ of an inch, and from one to two ounces of blood withdrawn. Secondary hemorrhage rarely follows.

A tampon soaked in glycerole of tannin applied to the cervix will preclude the possibility of hemorrhage. The time I prefer for local depletion is immediately after menstruation.

The tampon of cotton wool, of itself, is a valuable agent in the treatment of sub-involution. Its object is to retain the uterus in its normal position or in any position it may be desired to place it, and as a means of sustaining a prolapsed ovary; in addition to this, as a mechanical support and stimulus to the pelvic vessels, and an alterative to the pelvic tissue by means of direct pressure.

These tampons should be saturated with the glycerole of tannin. The hydragogue effect is sometimes marvelous when allowed to remain twenty-four hours. Sims says of it: "Glycerine has a great affinity for water, and when applied to the cervix, as above directed, it sets up a capillary drainage by osmosis, producing a copious watery discharge, depleting the tissues with which it lies in contact and giving them a dry, clean, inoffensive, healthy appearance."

The tampon can only be applied satisfactorily by means of a Sims' speculum.

Ferruginous tonics should be used continuously in cases where there is a tendency to menorrhagia.

In such cases, strychnia, digitalis, and all vegetable tonics should be used continuously and persistently during the treatment.

HEALTH RESORTS OF WESTERN TEXAS.

In the *Chicago Med. Jour. and Examiner*, Dr. F. Charles Lawrence, of Kerrville, Texas, speaks of the health resorts of South-western Texas, in regard to their adaptability to consumptive invalids. The objections named to San Antonio are its altitude, (only 700 feet above the sea) an atmosphere rendered humid from proximity to the San Antonio river and the San Pedro creek, and the character of the soil, which renders the roads extremely muddy in wet weather, and dusty in dry weather.

He observes that most of the San Antonio physicians send their invalid patients to Bœrne, a small village 30 miles North-west of that city; but this locality is objectionable on account of a clay sub-soil, the damp south winds which always follow the cold northers, the bad quality of the water, and a malarious atmosphere.

His own place, Kerrville, is 36 miles northwest of Bœrne, or 66 from San Antonio, and its advantages are thus enumerated: 1800 feet elevation above the sea; the pure, clear water of the Guadelupe river; a gravelly sub-soil and excellent drainage; a high range of hills to the northward, which intercept the cold northers; a distance of 250 miles from the sea, which deprives the south winds of their dampness; the almost entire absence of snow and ice in winter; good carriage roads and excellent hotel accomodations at moderate prices. He adds that the heat in summer is never excessive, the temperature

being moderated by constant Southern breezes, and that one can sleep in the open air for eight months of the year with impunity.

The place is accessible by a daily line of comfortable hacks from San Antonio.

SALICINE IN ACUTE RHEUMATISM.

In the *Indiana Medical Reporter*, Dr. C. J. Fox, of Williamantic, Conn., claims wonderful success in the use of the above remedy during the last four years. The history of a typical case is thus outlined:

Mrs. A., æt. 32, was seized June 8, and was found with extensive effusion in the ankles, wrists, metacarpal and phalangeal joints. At his first visit she complained of great pain, with a pulse of 110, temperature 102°, respiration 33. On the evening of this day her temperature rose to 103°, and she was then put on 10 grain doses of salicine every 2 hours. June 10, the temperatare fell to 100.5°, when the dose was increased to 15 grains every 2 hours. June 11, the apex of the heart was found displaced, with a systolic *bruit*. June 12, temperature 102°–103°; pulse 120; respiration 40. The dose was then increased to 20 grains every 2 hours. June 13, temperature reduced to 100.5°. June 15, pulse, temperature and respiration normal. This attack, therefore, lasted one week, while a previous attack, under other treatment, lasted 6 weeks.

HYPODERMIC INJECTIONS OF STRYCHNIA FOR PROLAPSUS ANI.

The same journal quotes from the New York *Medical Record* an article on the above subject by Dr. Leonard Weber, of New York.

He inserts the needle into the cellular tissue parallel to the rectum, and about three-quarts of an inch from the anus, and injects one-twelfth grain for an adult. The operation is repeated every 48 hours till complete recovery takes place, and from 4 to 8 injections are needed. The pain is not severe, and he has found no inflammation or abscess to result.

CARBONATE OF LITHIA IN CYSTITIS.

In the March number of the *Physicians' and Surgeons' Investigator* (Buffalo, N. Y.,) Dr. S. H. Moore speaks of this remedy as a specific in the complaint mentioned. He cites a case of rheumatism of several years' standing, which was associated with acute inflammation of the kidneys. He prescribed 3-grain doses of the carbonate of lithia every hour, till relief was obtained; then continued every two hours and afterwards every four hours. On the following day the patient was relieved of both complaints.

In irritation of the prostate gland and of the urethral tract he finds instant relief; and even in varicose veins he finds the relief as prompt as in cystitis.

[As he does not attempt to explain the *modus operandi* of the remedy, we are left to conjecture, and it would be a tax on one's faith to trust it in varicose veins. In vesical catarrh, dependent on or associated with excessive acidity of the urine, the action of this richest of the alkalies is easily understood; and it is reasonable that it should prove useful in acute and subacute rheumatism, as it certainly does in gout.]

BENZOATE OF SODA IN ACUTE RHEUMATISM.

Dr. David Macewan, in the *Brit. Med. Jour.;* March 5, states that he was led to try the benzoate in this disease from the chemical resemblance of benzoic to salicylic acid. The use of the remedy for a year in a number of cases has convinced him of its utility. He gives it in a mixture [solution], 15 to 20 grains every 2 or 3 hours, until relief is obtained. It is then continued in diminished doses for one or two days longer. The advantages of this remedy over the salicylate are, that it does not produce the nausea and depression nor the unpleasant head symptoms so frequently induced by the other.

PILOCARPIN FOR NIGHT-BLINDNESS.

The following prescription has been going the rounds of the medical press:

℞ Pilocarpiæ, ... gr. iss.;
Aquæ destillat, . . ℥ Lxxv. M.
S. Inject 25 minims hypodermically.

The remedy is supposed to have a stimulating effect on the retina. A single case is given to illustrate its effect, in which relief followed the third injection. [It is obvious that further testimony is needed].

CHAULMOOGRA OIL AND GURJUN OIL IN LEPROSY.

In the *Brit. Med. Jour.* of April 9, Mr. John D. Hillis speaks favorably of his trials of the above-named remedies in leprosy. He gives the former in 10 minim doses in emulsion with milk, and also applies externally a liniment to the affected parts, composed of one part of chaulmoogra to 15 of olive oil. He has, however, obtained better results with the gurjun oil, and thinks it destined to come into general use for leprosy. Its failure in certain cases he attributes to the advanced stage of the disease, to hereditary taint, or previous attacks of small-pox, syphilis or yaws.

[Failure of the remedy on account of hereditary taint would, we presume, allow these drugs substantially the same value as the whole list of discarded remedies for this malady, since it is generally regarded as hereditary, rather than acquired.]

Mr. James Startin also bears favorable testimony to the value of chaulmoogra oil, based upon the progress toward recovery of a case of the anæsthetic variety. He gave it in capsules, 5 minims for a dose, gradually increasing from 3 to 15 doses a day.

TRACHEOTOMY AT ONE SECTION.

M. St. Germain has had two hundred and twenty-seven tracheotomies without serious results from the operation, and does not believe in the ordinary slow successive incisions of the different tissues over the trachea. His operation (*Gazette des Hôpitaux*, January 15, 1881,) is as follows: The child is placed on a table, its shoulders resting on a hard cushion and the head held by an assistant. The larynx is firmly grasped by the left hand, and held as if to draw it away from the vertebral column. A narrow bladed straight bistoury is then plunged into the crico-thyroid membrane, the operator being guided in its direction by reference to the position of the sternum. The depth of the incision is about four tenths of an inch. The cricroid cartilage is then divided by a sawing motion, as also the isthmus of the thyroid gland, two or three rings of cartilage, and the skin. In withdrawing the instrument, the incision is lengthened in a downward direction, for about a tenth of an inch. The edges are then separated and the canula inserted. He claims that no serious hæmorrhage follows the operation.—*Chicago Medical Review.*

EDITORIAL DEPARTMENT.

WHO OWNS THE PRESCRITION? THE PURCHASER. WHO IS ITS CUSTODIAN? THE APOTHECARY.

(New Catechism.)

The *Louisville Medical News* has struck a timely chord in asking and answering this question. Although the subject is trite, the exact status of prescriber to the prescribed for, and

the latter's position to the druggist, differs so much in different countries, that the moral aspects of the case are worth consideration.

We will take an example. Mr. A. enters the office of Dr. B.; describes his symptoms, is given a prescription, pays the fee and departs. He goes to an apothecary and has the prescription filled. The disease from which he is suffering is of a paroxysmal character, and the relief obtained is prompt. Some time afterwards he suffers with the same symptoms and needs the same remedy. The bottle containing the remedy is not at hand. The druggist does not recollect the number, or, should he do so, finds printed on the margin of the prescription, "not to be repeated." Nothing is to be done now, except to get the druggist to violate the express orders of the physician, or go himself again to Dr. B., and pay another fee for the same advice and prescription. And, in all probability, Dr. B. has forgotten what he prescribed before, and this prescription has less effect than the former.

To whom does the prescription belong? Certainly not to Dr. B. He has given it to Mr. A. and received for it what he considered its cash value. Not to the apothecary; he has only to fill it when requested to do so. It certainly is Mr. A.'s, and should be kept in his possession or destroyed, as he sees fit.

We further believe that under no circumstances has the physician a right to prevent the repetition of the prescription, unless as a matter of caution, and that caution should be given to the holder thereof; the patient being fully impressed by him of any harm arising from its continuance. We have good reason to believe that more frequently the caution to the druggist is for no other reason than to make a clap-trap for another consultation fee.

There are many good reasons for the patient retaining the original as written by the practitioner. It enables the physician in long continued cases to have a record of the remedies prescribed; for, unless the doctor is possessed of methodical habits of a high degree, he seldom keeps a duplicate, and an-

other good reason is that, should the case pass from his hands, the physician in attendance can familiarize himself with the treatment instituted by his predecessor.

The practical bearing of the subject has been recently illustrated to us by a visit to Mexico, where a system entirely different from the one in vogue in the United States has been, and still is, carried out. In the City of Oaxaca the medical faculty is ably represented, and the drug stores compare favorably with those of any other city in the republic. Here the apothecary, on receiving a prescription, fills it, and having taken a copy stamps it and returns the original. The purchaser is still the holder and takes pains to preserve it. Generally each family has a book, in which the physician writes the prescription. Time and again when practicing there, or in consultation, the mode of treatment followed was laid before the practitioner, greatly facilitating him in his knowledge and enabling him to fully appreciate what has been done.

VULGARITY IN MEDICAL JOURNALS.

In the *Southern Practitioner* for September, published at Nashville, Tenn., appeared an article by "a thoroughbred M. D.," which not only surprised us, for the editors of that periodical have reputations comparing favorably with other professional men throughout the country, but which we consider a blot on medical journalism. The dirty story has no connection with the subject written about, and no one can accuse Dr. Parvin of provoking vulgarity while dealing with a subject which had best be allowed to "regulate itself." The author has concealed his identity under a *nom de plume*, and we wish that the journal publishing his article, had had the forethought to do likewise.

FEVERS SIMULATING YELLOW FEVER.

The following CIRCULAR, to be issued by Dr. S. E. Chaillé, Supervising Inspector, N. B. H., in October, 1881, is an effort to procure information valuable to the profession. We feel assured the Doctor will have earnest and hearty support in

obtaining reliable data. On completion, his researches will be published, and it is to be hoped, in this journal.

Albumen in the urine and tendency to hæmorrhages, however infrequent in malarial fevers, do certainly exist in a small proportion of cases, and we hope the forthcoming statistics will be the result of a combined effort on the part of the medical profession in and around New Orleans to differentiate between malarial and yellow fevers.

CIRCULAR TO THE MEDICAL PRACTITIONERS OF NEW ORLEANS AND ITS VICINITY.

OFFICE OF THE SUPERVISING INSPECTOR
Of the National Board of Health,
New Orleans, La., October, 1881.

Dear Sir—The prevalence in New Orleans and its vicinity of hæmorrhagic malarial, "pernicious," or other fevers, liable to be mistaken for yellow fever, is a subject of so much sanitary importance to New Orleans, that all such cases deserve special investigation annually. Among other particulars, the differential diagnosis and the extent, during successive years, of the relative prevalence of such fevers and of yellow fever merit careful study. Such a study for the present year, during which New Orleans has been exceptionally and, as is believed, entirely free from the poison of yellow fever, would prove valuable. This, however, cannot be accomplished without the co-operation of all the medical practitioners in this city and vicinity, to every one of whom this circular has therefore been addressed.

In addition to such further information as each physician may be disposed to furnish, you are respectfully solicited to report the following particulars in reference to *every case*, whether directly or indirectly known to you, of such fever as may have occurred during the year 1881, and as may have presented, at any time during its course, any of the usual symptoms of yellow fever.

DETAILS SOLICITED, VIZ:

Name; age; sex; race (if colored, specify whether negro, mulatto, or quadroon); occupation; place of birth; residence (localizing it with care and specifying the number of the family and of other persons residing therein); time of residence in New Orleans, or its vicinity; acclimation, or extent of previous exposure to yellow fever; disease; locality where probably contracted; dates of the duration of the sickness; termination; symptoms simulating yellow fever; symptoms differentiating the case from yellow fever; previous history, habits, or other circumstances which may throw light on the case; treatment; name and address of the attending physician.

For the object in view, it is as important that physicians who have no knowledge of the occurrence of any such cases as

are referred to, should so report, as that those should report who have had such cases; it is therefore earnestly requested that the former will not neglect to forward at least a postal card furnishing this valuable negative information.

It is hoped that all replies will be mailed by November 1st; that they will include all cases from January 1st to November 1st, 1881, and that any cases which may occur during November and December will be forwarded by January 1st, 1882, in a second report. Yours, very respectfully,

STANFORD E. CHAILLE,
Supervising Inspector, N. B. H.

Please address Dr. Chaillé, Box 1689, New Orleans, La.

A BOOK ON NURSING.

The accompanying letter to the senior editor of the Journal was not intended for publication, but the scheme proposed possesses so much practical value that, if properly handled, it will be of essential service in the household. We have long been advocates of such instruction in schools as will fit the youth of our country to assume the duties of adult life, and we feel convinced that a knowledge of physiology will expel many of the factors which keep alive fanaticisms whose strongholds are ignorance.

A work as proposed by the correspondent will inculcate the proper attention to be bestowed on the sick as regards nursing and other domestic care. We have many books by leading men of the profession upon nursing and dietetics principally restricted to infancy, but one occupying the scope proposed at present we have never seen.

It is a very difficult task he is assuming to perform. The success depends entirely upon the degree of knowledge, address and practical skill he is able to infuse into it. We very much fear it will be a failure, since every individual practitioner of medicine is likely to have his own ideas relative to family prescriptions and the care of the sick, which he will not surrender to any other authority, and no book can be written which will square with all or a majority of these.

We, however, commend the writer's intentions, as expounded in his letter, and hope that he will devote to his work such a

hearty spirit and perfect understanding that its accomplishment shall be productive of great good.

Prof. S. M. Bemiss, M. D.:

Dear Sir—I would respectfully solicit an expression of opinion regarding an important matter.

Perhaps no form of quackery is more extensive or harmful than the "Patent Medicine Humbug."

Physicians are looked upon as useful in times of danger, but at other times the people seem to be the unresisting prey of the quacks and their baleful nostrums. All the ground between health and severe sickness is practically abandoned. The profession, having abundant resources at hand, has never given to the world any domestic remedies *as such*, and has not this neglect specially invited the ravages of quackeries?

Backed by appropriate resources, having the authoritative endorsement of the profession, ought not the physician to retain supervision over the families under his care during intervals of comparative health, thus supplanting the evils of quackery and educating the people with regard to the necessity of skillful medical supervision even in slight ailments, which, if badly treated, may result in serious disasters?

Might not some appropriate domestic remedies, such as would be recommended by physicians in common ailments, not requiring professional care, and sufficient in variety for all family nursing, be systematized and endorsed by the American Medical Association, or other competent medical authority, to replace these secret and dangerous nostrums?

Might not a short course of lectures be introduced into our medical colleges, giving special instruction in regard to such remedies as could properly be put into the hands of the people?

Might not appropriate legislation be secured in the different States, prohibiting the indiscriminate sale of such nostrums as have not been endorsed by a competent medical board?

Pernicious books promising to make every man his own doctor are found in almost every house, but good books on legitimate nursing are rarely found.

I propose to write a book on nursing, drawing a sharp line between the province of the nurse and that of the physician.

And I wish to refer to some such remedies as the profession can endorse for domestic use, and to make the work an assistant, and not an antagonist to the busy practitioner.

It seems to me as if the dignity and usefulness of the profession might be enhanced by a better recognition of the province of domestic medicine.

Please to state if this object meets with your approval, and make any suggestions.

I propose to correspond with at least one member of the faculty of each of our medical colleges, and with other eminent medical men, and if this object commends itself to the profession, I hope then to awaken some interest on the part of the general public. Yours, truly, A. M., M. D.

MEDICAL LEGISLATION IN GEORGIA.

The following bill was introduced into the Georgia Legislature and passed the House unanimously. It is a step in the right direction, and the unanimity of the members voting upon it gives promise of much hope in future medical legislation in the State:

A LAW TO REGULATE COMPOUNDING AND VENDING MEDICINES IN GEORGIA, AND TO ESTABLISH A PHARMACEUTIC BOARD.

A Bill to be entitled an act to establish a board of pharmaceutic examiners, and to prescribe the powers and duties of said board, and to regulate the compounding and vending of medicines, drugs and poisons in the State of Georgia, and to provide a penalty for the infringement of the provisions of this bill.

PREAMBLE.

Whereas, In all civilized countries it has been found necessary to restrict the traffic in medicines and poisons, and to provide by law for the regulation of the delicate and responsible business of compounding and dispensing the powerful agents used in medicine; and

Whereas, The safety and welfare of the public are endangered by the sale of poisons by unqualified or ignorant persons; and

Whereas, The power of physicians to overcome disease depends greatly upon their ability to obtain good and unadulterated drugs and skillfully prepared medicines, and the sophistication and adulteration of drugs and medicines is a species of fraud which should be prevented and suitably punished; therefore,

SECTION 1. The General Assembly of the State of Georgia do enact, That within sixty days after the passage of this act, the Governor of the State shall appoint five experienced druggists or practical pharmacists, who shall have been actively engaged in the drug business within this State for the last three years immediately preceding their appointment, and these five druggists or practical pharmacists so appointed shall constitute the board of pharmaceutic examiners, and who shall hold their office for the term of three years, or until their successors shall have been legally appointed and qualified. That three members of said board at any regular, called or adjourned meeting, shall constitute a quorum for the transaction of business. That any vacancy which may occur in said board by reason of death, resignation or otherwise, shall be filled by the Governor for the unexpired term.

SEC. 2. Be it further enacted, That immediately and before

entering upon the duties of the office, the members of said board shall take the oath prescribed by the constitution of the State for State officers, and shall file the same in the office of the Secretary of State, who upon receiving the said oaths of office shall issue to each of said examiners a certificate of appointment.

SEC. 3. Be it further enacted, That immediately after the appointment and qualification of said examiners, they shall meet and organize as a Board of Pharmaceutic Examiners, elect a chairman, and adopt such rules, regulations and by-laws, as they shall deem necessary to carry into execution the provisions of this act.

SEC. 4. Be it further enacted, That said board shall meet at least once every twelve months, at such places as a majority of the board may determine, and that the board also hold special meetings as frequently and at such places as the proper discharge of its duties shall require; the same to be convened by order of the chairman, and the rules or by-laws shall provide for the giving of proper notice of the time and place of all such meetings to the members of the board and to the public.

SEC. 5. Be it further enacted, That it shall be the duty of the said board to grant licenses: 1. To pharmacists who, after three years' experience in a drug store kept by a licensed apothecary or pharmacist, have graduated in a college of pharmacy, acknowledged by the American Pharmaceutic Association, and who shall exhibit to the said board a diploma of the same. 2. To pharmacists who have obtained a diploma from an authorized foreign college or examining board, and who shall exhibit the same to the board of pharmaceutic examiners. 3. To physicians who are graduates of a regular medical college, and who shall exhibit their diplomas to said board; also to druggists who shall produce to said board satisfactory evidence of having been engaged in the drug business for a period of ten years next preceding the time of application. 4. To druggists who, after three years experience in a drug store kept by a licensed apothecary or pharmacist, shall have passed a satisfactory examination before said board of pharmaceutic examiners. All licenses granted shall be signed by a majority of the whole board, and shall specify the ground upon which such license is granted and shall be in such form as the board shall prescribe.

SEC. 6. Be it further enacted, That all persons applying for examination and license shall pay to the board of pharmaceutic examiners the sum of fifteen dollars, and, if passing the examination, shall be furnished with the license as hereinbefore provided, for which no further fee shall be required or paid. Should the applicant fail to stand a satisfactory examination, no fee shall be required for a subsequent examination, such subsequent examination not to be granted within six months

after the first. And it shall be the duty of the board to keep a record of its transactions in a book to be kept for that purpose by one of its members—said book to be turned over to their successors in office.

SEC. 7. Be it further enacted, That all persons now lawfully engaged in the compounding and vending of medicines, drugs and poisons in the State, shall, on or before December 1st, 1881, and every person who shall be hereafter duly licensed under the provisions of this act, shall, before engaging in any business under said license, register in the office of the ordinary of the county wherein he resides, or intends to conduct said business, in a book to be kept for that purpose by said ordinary, his name, nationality and credentials, and date thereof, under which he is entitled to engage in such avocation. For each registration the ordinary shall receive fifty cents, to be paid by the party so registering, and a certificate of such registration, stating the terms of the same, shall be given to him by said ordinary.

SEC. 8. Be it further enacted, That no person shall engage in the compounding or vending of medicines, drugs or poisons within this State without a full compliance with this act, except (1) such druggists as are exempt from the operations of the present laws by the statutes of the State of Georgia; (2) physicians putting up their own prescriptions and dispensing medicines from their own office; (3) country merchants selling family medicines—not poisons; (4) assistants in drug stores where the manager has complied with the requirements of this act.

SEC. 9. Be it further enacted, That any person who shall violate the provisions of either of the two preceding sections of this act, or shall register fraudulently, shall be guilty of a misdemeanor, and upon conviction shall be punished by a fine not to exceed one hundred dollars, imprisonment not to exceed three months, either or both at the discretion of the court. In all cases of prosecution under this act, the burden shall be upon the defendant to show his authority.

SEC. 10. Be it further enacted, That all the fees for examination and licenses, and one-half of the fines collected from convictions under this act, shall be paid to the Board of Pharmaceutic Examiners, to defray the expenses of the same, and as compensation for their services.

SEC. 11. Be it further enacted, That this act shall take effect from and after the date of its passage.

SEC. 12. Be it further enacted, That all laws and parts of laws militating against the provisions of this act are, and the same are hereby, repealed.

An examination of the bill elicits criticism on several points. In the first section, in regard to the mode of constituting and perpetuating the board of examiners, we can only say that if

the State can perpetually boast of as patriotic and impartial an executive as the present incumbent, the method will work well.

In paragraph 3, sec. 5, the latter part of the clause is by far too comprehensive. A man who has been peddling medical nostrums can prove before any court that he has been engaged in the "drug business."

Paragraph 3, sec. 8, reads as though the country merchant knows the ingredients of patent medicines. How is that ubiquitious personage to know anything about the poisonous nature of the "family medicines" he is selling? If the law be so vigorously enforced as to compel a declaration from the patentees, under oath, setting forth the composition and innocous character of their productions before the vendor is permitted to sell them, the law will work well.

Again the bill says nothing of the responsibilities of licensed druggists—negligence in compounding or handling, and the malicious sale or use of drugs are no doubt provided against in other statutes of Georgia. It is, however, true that very few States in the union are sufficiently careful to restrict druggists in the sale or dispensing of hurtful medicines to minors, servants, or other irresponsible persons. Careful statistics would probably show that, in a large proportion of cases where suicides are accomplished by poisons, these are bought by proxy.

As a whole, we commend the bill as a great gain in medical advancement, and congratulate the State on the performance of a duty to her citizens.

TRAINING SCHOOL FOR NURSES.

The physicians of New Orleans are to be congratulated that a training school for nurses will soon be established. Our estimable *confrère*, Dr. D. C. Holliday, Vice President of the Board of Administrators of the Charity Hospital, has taken the matter in hand, and is urging it forward with that vigor so characteristic of him. New Orleans physicians are thoroughly acquainted with that pink of perfection, "Sairy

Gamp." She exists among us in all the reality of life, and the only trouble is that faithful copies of Dickens' famous prototype flood the market. Let us hope that the character of the nurse will be so improved that she will assist rather than retard the efforts of the practitioner. We have no fear but that success will attend the arduous task undertaken by Dr. H., and wish him God speed its accomplishment.

Reviews and Book-Notices.

The Applied Anatomy of the Nervous System, being a study of this portion of the human body from a standpoint of its general interest and practical utility; designed for use as a text-book and a work of reference. By Ambrose L. Ranney, A. M., M. D., Adjunct Professor of Anatomy, and late Lecturer on the Diseases of the Genito-urinary Organs and on Minor Surgery, Med. Depart. Univ. City of New York; author of a "Practical Treatise on Surgical Diagnosis;" "The Essentials of Anatomy," etc. With numerous illustrations. 8 vo. Pp. 500. New York: D. Appleton & Co. 1881. [Sold by Hawkins, 196½ Canal street. Price, in muslin, $4.]

This volume consists of a course of lectures delivered by the author to the medical class of the University of New York during the course of 1880-81, and chiefly as they were reported at the time. Though the original language of the lecturer is preserved, the arrangement here is by chapters, preceded by table of contents, and followed by index.

The interesting feature of the work is the physiology of the various contents of the cranial cavity, which is mostly debatable ground, but has engaged the attention of some of the ablest living workers. Though their labors have not yet achieved much that is positive and final, they are probably on the right track, and they, or their successors, will learn something that will bear the test of time and experiment. Then later on will follow a practical application of physiological knowledge to the therapy of diseased conditions. This will be better than the accidental discoveries of blind empiricism, more sure in results and more creditable to science.

Medicine as an *art*, it is true, has for the most part attained its present rank by utilization of accidents and experiences; but it is time that its votaries should cultivate it as a *science*, by subjecting nature to the inquisition of experiment, in the strict methods of science. So great has been the recent progress in the physiology of the nervous system, that medical men who desire to keep in sight of the front can no longer rely on the systematic text-books, though they are reproduced at intervals of unprecedented brevity.

This work was orginally addressed to medical under-graduates, but it will be equally interesting and valuable to medical practitioners who still acknowledge themselves to be students. It is to be hoped that their number is not small.

S. S. H.

A New Form of Nervous Disease, together with an Essay on Erythroxylon Coca. By W. S. Searle, A. M., M. D., etc. 12 mo. Pp. 138. New York: Fords, Howard & Hulbert, 1881. [Sold by Hawkins. Price in muslin, $1 50.]

The author's definition of the new disease is quoted from pp. 70-71:

"Let me state, plainly and simply, my theorem: There is a new form of disease—one never before described in books and comparatively recent in occurrence—which, although it may be called epileptiform, is not epilepsy nor epileptoid, i. e., never develops into epilepsy. It is a disease which does not involve destruction or impairment of mental power, nor mania; it seldom produces unconciousness: it is marked by decided symptoms not to be found in cerebral hyperæmia, neurasthenia or epilepsy: from it are absent many of the conspicuous and distinctive symptoms of those diseases; and it is almost or quite always curable."

The above definition is preceded by clinical notes of about a dozen cases in the author's practice. These are well described, and aid greatly in illustrating his views. As European writers have failed to recognize the disease, there may be reason to suppose that this, like Dr. G. M. Beard's "Neurasthenia," may be an American production of quite recent date.

The author has submitted his views to Charcot and Prof.

W. A. Hammond, and gives their replies. The former admits it as a new disease, but declares that he has never met it; the latter has met cases, and thinks the cerebral condition one of hyperæmia, and not epileptic in nature.

As to treatment, Dr. Searle, being an adherent of the homœopathic faith, relies for radical cure on specific attenuations of drugs, which it is not necessary to name here. He is, however, liberal enough to attribute temporary relief to certain "antipathic" remedies, among which the erythroxylon coca takes prominence.

About one-third of the volume is occupied with an essay upon this drug, on the virtues of which he is quite enthusiastic. He attributes to it all the excellencies of tea and coffee, without the undue excitement and muscular tremors which the latter produce when freely used.

Throughout the book the author shows an acquaintance with the ideas of the best medical writers (not homœopathic), and only a few pages, in which he describes the specific treatment of the malady, betray his irregular proclivities. S. S. H.

System of Surgery, Theoretical and Practical, in Treatises by Various Authors. Edited by T. Holmes, M. A. Cantab, etc., etc. First American, from second English edition, thoroughly revised and much enlarged by John H. Packard, A. M., M. D., etc., assisted by a large corps of the most eminent American Surgeons. In three volumes, with many illustrations. Philadelphia: Henry C. Lea's Sons & Co. 1881.

The first volume of this work has just been laid upon our table. A brief summary of its contents exhibits a division into five parts: Part I. General Pathology, comprising, Inflammation, by John Simon; Hectic and Traumatic Fever, and treatment of cases after operation, by John Croft, Esq. Then follow articles on Collapse, Scrofula and Syphilis, and one on Tumors and Cancer, the latter by Sir James Paget. Part II. Morbid Processes. Part III. Injuries in General. Part IV. Complication of Injuries. Part V. Injuries of Regions.

The work is beautifully gotten up and profusely illustrated, many of the illustrations being colored. It is needless to add anything beyond this brief notice. The intelligent reader is

able to appreciate the value of this addition to our surgical literature. The book may be ordered through Armand Hawkins, Medical Bookseller, 196½ Canal street, New Orleans, at prices astonishingly low.

Compend of Anatomy for use in the Dissecting Room and in Preparing for Examination. By John B. Roberts, A. M., M. D., Lecturer on Anatomy and Operative Surgery, Philadelphia School of Anatomy, etc. Second edition, revised. 18 mo. Pp. 198. Philadelphia: C. C. Roberts & Co. 1881. [Sold by Hawkins. Price in muslin, 75 cents.]

It is obvious that this little work is in request rather as an aid in preparing for examinations, than for use in the dissecting-room. Its flexible covers render it a convenient pocket companion, for consultation at odd moments or in an emergency. In short, it is one of those little conveniences generally condemned by teachers and used all the same by pupils, like "ponies" by students of the ancient classics. S. S. H.

Books and Pamphlets Received.

Announcement and Catalogue of the St. Louis College, Physicians and Surgeons, Session 1881-82.

Glaucoma Caused by Mental Worry. Illustrated by the Report of a Case. By Leartus Conner, A. M., M. D. Detroit. Reprint from the *Detroit Lancet*, July, 1881.

Tubercular Laryngitis or Laryngeal Phthisis, A Paper read before the Ann Arbor Medical and Surgical Society. By C. J. Lundy, M. D., Professor of Diseases of the Eye, Ear and Throat, in the Michigan College of Medicine, Detroit.

Forty-Fifth Annual Announcement Medical Department of the University of Louisville, Session of 1881-82.

Extra Census Bulletin—Report of the Cotton Production of the State of Louisiana, etc.

The Relation of Fat Cells to Minute Blood-Vessels.—By Wm. R. Weisiger, M. D., Manchester, Va.

The Applied Anatomy of the Nervous System.—By Ambrose L. Ramsey, A. M., M. D., Adjunct Professor of Anatomy and late Lecturer on the Diseases of the Genito Urinary Organs and Minor Surgery in the Medical Department of the University of the City of New York, etc., etc.

Hip Injuries, including Hip-Joint Disease, and Fractures of the Femoral Neck, Splint for. Read before the Philadelphia Academy of Surgery, June 7, 1880. By DeH. Willard, M. D., Lecturer on Orthopœdic Surgery in the University of Pennsylvania. Reprint from the Philadelphia *Medical Times.*

Observations on the Births, Marriages and Deaths, in Massachusetts, in 1879.

Louisiana: Her Resources, Advantages and Attractions.

The Quality of Mental Operations Debased by the Use of Alcohol. By J. L. Wright, M. D., Bellefontaine, Ohio. Reprint from the Alienist and Necrologist. St. Louis, July, 1881.

Medical College of Ohio, Cincinnati, Sixty-first Annual Catalogue and Announcement. Session of 1880–81.

Announcement of the Twenty-first Annual Course of Instruction at the Bellevue Hospital Medical College. Session of 1881–82.

Trichinae: How to Detect Them, and How to Avoid Them. By John Phin, M. D.

Second Annual Announcement and Catalogue of the North-Western Medical College of St. Joseph, Missouri Session of 1881-82.

Announcement of the First Annual Session of the Medical Department of the University of Denver, Colorado. Session of 1881-82.

Annual Announcement of the St. Paul Medical College, Medical Department of Hamlin University of Minnesota.

Catalogue of the College of Physicians and Surgeons, Baltimore, Md.

The Annual Announcement of the Department of Medicine and Surgery of the University of Michigan for 1881-82.

Meteorological Summary—August, 1881.
Station—New Orleans.

Date.	Daily Mean Barometer.	Daily Mean Temp'ture.	Daily Mean Humidity.	Prevailing Direction of Wind.	Daily Rain-fall.	General Items.
1	29.922	83 0	69.7	East.	.....	Highest Barometer, 30.115, 25th, 30th.
2	29.829	82.8	70.0	N. E.	.06	Lowest Barometer, 29.808, 6th.
3	29 910	82.7	75.0	S. W.	.03	Monthly Range of Barometer, .307
4	30.025	82.5	80.7	South	1.41	Highest Temperature, 94.2, 15th.
5	29 942	81.1	85.0	S. W.	.62	Lowest Temperature, 74.5, 18th.
6	29.849	78.7	84.7	S. E.	1.48	Monthly Range, 19.7
7	29.903	79.6	85.0	East.	.03	Prevailing Direction of Wind, East.
8	29 975	81.4	79.7	S. E.	.02	Greatest Velocity of Wind, 30 miles
9	30.037	81.7	78.0	S. E.	.03	N. E., 15th.
10	29.978	83.4	71 0	West.	.....	Total No. of miles 5349.
11	29.941	81.0	74.0	S. W.	.....	Number of Clear Days, 15.
12	29.987	81.9	75.0	South	.....	Number of fair days, 11.
13	29.993	84.1	72.0	N. W.	.....	Number of Cloudy days, 4.
14	29 936	85 3	68.7	West.	.....	No. of days on which rain fell, 9.
15	29.892	85 1	70 0	N. W.	.48	
16	29.930	82.8	73.3	East.	.....	COMPARATIVE TEMPERATURE.
17	29 971	81.1	63.0	East.	.....	1871..... .... | 1877..... 83.1
18	29.993	81 5	58.3	S. E.	.....	1872..... .... | 1878..... 83.5
19	30.006	82.2	64.3	S. E.	.....	1873..... 81.2 | 1879..... 81.0
20	29.990	82.9	64.0	South	.....	1874..... 83.9 | 1880..... 81.3
21	29.946	84.2	65.7	South	.....	1875..... 79.3 | 1881..... 82.8
22	29.942	86.0	75.3	North	.....	1876..... 82.2 |
23	26.973	85.2	99.3	N. W	.....	COMPARATIVE PRECIPITATIONS.
24	30.053	83.7	69.3	N. E.	.....	(Inches and Hundredths.)
25	30.070	83.3	61.0	East.	.....	1871..... .... | 1877..... 2.54
26	29.981	82.7	56.0	S. E.	.....	1872..... .... | 1878..... 5.31
27	29.927	82.3	58.7	East.	.	1873..... 8.30 | 1879.....10.44
28	29.820	84.2	55.3	N. W.	.....	1874..... 4.82 | 1880..... 4.60
29	29.943	84.2	62.7	S. W.	.....	1875..... 8.61 | 1881..... 4.21
30	30.067	83.2	70.3	East.	.....	1876..... 4.44 |
31	30.079	81.5	73.0	N. E.	.....	
Sums	.... .	..	....	.....	total	
Means	29.962	82.8	70.2	East.	4.21	

L. DUNNE,
Sergeant Signal Service, U. S. A.

Mortality in New Orleans from August 20th, 1881, to September, 10th, 1881, inclusive.

Week Ending.	Yellow Fever.	Malarial Fevers.	Consumption.	Small-pox.	Pneumonia.	Total Mortality.
August 20	0	10	16	0	2	123
August 27	0	17	14	0	0	111
September 3	0	20	16	0	0	112
September 10	0	10	11	0	2	94
Total....	0	57	57	0	4	440

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Syphilis in its Relations to Matrimony.

Read before the Orleans Parish Medical Association, September. 1881.

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This subject naturally resolves itself into two phases. First, the relations of syphilis to contemplated matrimony; and, secondly to the married state. The first phase is that which will now engage our attention.

THE RELATIONS OF SYPHILIS TO CONTEMPLATED MATRIMONY.

At the threshold we are met with the question: Should the syphilitic marry at all? If I were forced to reply, I would do so in the affirmative; but it will hardly be necessary to enter into an argument here. The fact is, that such persons will marry, and the practical question is—how can we lessen the risk of bad consequences? Under what conditions may we, as surgeons, consent to the marriage? This question we propose to endeavor to answer. To do so, we must first consider the dangers to be avoided and the proper course to avert those dangers. What then are the dangers? They vary in accordance with the following considerations. (1.) The age of the syphilitic diathesis: (2.) The location of the syphilitic manifestations or "accidents"—as they are called by our French confrères. (3.) The duration and character of the

treatment the subject has received; and, (4.) The character of the diathesis as respects (*a*) its gravity, (*b*) its obstinacy, and (*c*) its tendency to recurrence.

1. *Age of Syphilitic Diathesis, as bearing on the subject of contemplated matrimony.*

We need hardly say that, other things being equal, the younger the diathesis the greater the danger—nay, the worst dangers arise even before the diathesis is known to have been acquired. I allude to the risk incident to—

(*a.*) *The period of incubation.* This danger, I do not think, receives the attention it deserves. The long period of incubation of true syphilis is a pathological fact which has hardly yet received universal recognition, even in the ranks of the profession; and how utterly ignorant the laity still remain on this point is a matter of almost daily observation on the part of those surgeons who see much of venereal complaints. Let me remind my hearers that three weeks is the now almost universally recognized average period of incubation, while excellent observers, such as Guerin, Fournier and others, have recorded cases where it extended to ten weeks and over (71 and 75 days). I have now a case under treatment in which the incubation seems to have extended to 109 days, as follows:

Case No I.—K., white, aged 22, a gentleman by birth and occupation, and evidently giving a true statement, for he is extremely anxious to do all in his power to facilitate the treatment.

Had connection March 1st, 1881, and none from that time till the sore appeared. Within a few days after said connection had a gonorrhœa, which has been only partially relieved, and this *prevented* further sexual intercourse.

June 21st, 1881; applies to me on account of the continuance of an obstinate gleety discharge, and especially because he is alarmed about a small sore which had appeared, June 18th, on the internal surface of the prepuce, its anterior portion. While the sore is small—not as large as the tip of the little finger—it is based on an indurated and elevated mound, involving over one quarter of the periphery of the prepuce.

The more or less continuous discharge from the urethra had produced an irritable condition of the mucous surface of the foreskin, and I hoped that possibly this might account for the induration, while some accidental cause might have produced the lesion; especially taking into consideration the fact that no sexual intercourse had taken place for 109 days before the sore appeared. The inguinal glands are barely perceptible to the touch. Treatment for the gleet was instituted; black wash was prescribed for the sore, and he was instructed to report twice a week for examination.

August 10th. Nothing special was observed till this day, when the whole covered portion of the body is dotted over with syphilitic macula and roseola—a characteristic case. The inguinal glands are slightly enlarged and the sub-occipital decidedly so.

Here there is a period of incubation, occurring in a case in which there can be no reasonable doubt as to the accuracy of the facts, quite sufficient to carry with it a dangerous sense of security. Had it not been for the prolonged gonorrhœa there would have been nothing to arouse any doubt in the mind of this young gentleman as to the propriety of his getting married at any time within the dates mentioned. Indeed, if we accept three weeks as the average period of incubation, there is abundant time in which the uninstructed layman might marry, and wake up in a few weeks to the sad consciousness that he was not only a syphilitic himself, but that, with the first development of the initial lesion, he had inoculated his bride. Such cases abound in the records of syphilography. One might suppose that a becoming respect for his future wife would prevent any one from indulging in illicit intercourse so soon before the expected event; but the facts are otherwise, and it behooves us to recognize these facts and to advise our clients accordingly.

Nor must we forget another danger incident to the period of incubation. A man contracts the virus at an intercourse say two weeks before he marries: a week or ten days elapse, and he finds a chancre on his penis. If he be ignorant of the long incubation of hard chancre, he may suspect the virtue of

his bride and the grossest and most cruel injustice be visited on her head.

What inference is then to be drawn from these facts? We will embody it in the following proposition, which may be regarded as a rule for our guidance when our professional advice is sought under such circumstances:

Proposition No. 1.—A surgeon should decline to approve of a contemplated marriage in any case when his client has had sexual intercourse with a reasonably to be suspected party within, say, 90 days before the day to be appointed for the marriage.

The case I report is so rare—so far as I know, unique—that we will discount the 19 days. This may appear to some a severe law to announce. Not so. The delay is of comparatively no consequence when compared with the danger involved—a danger referable to the professional adviser as well as the parties themselves. The responsibility the surgeon assumes when he gives positive advice in such matters is very great, and he should hedge himself around with every reasonalbe precaution. We should allow for, not only the standard, but the possible incubation. If any other cases of equal or longer incubation than that reported by me should hereafter appear I will even prefer to lengthen the probationary period above mentioned.

It will not be considered irrelevant at this stage of the discussion for me to offer a suggestion. I allude to the great probability that cases of prolonged incubation are not infrequently lost sight of from the fact, that the very parties most apt to become subjects of syphilis are those who seldom refrain from illicit indulgence long enough to enable us to identify the party or the date of actual infection. I have no doubt but that in this way many a case has been attributed to an act of sexual congress much later than that at which the virus was really absorbed. I have more than once met with cases in which the circumstances were such as to make it by far more probable that a connection long antedating the accepted period of incubation was the true source and time of infection, rather than any of those subsequently indulged in.

In such cases it has been impracticable to entirely eliminate the possibility of mistake. In the case reported above, however, I can see but little possibility of error. I am, therefore, prepared to assert my belief that a much longer period of incubation may occur in syphilis than what is now accepted as the utmost limit; and I would venture the prediction that the time will come when further clinical observation will demonstrate the fact that the period of incubation in this disease may, sometimes, be as prolonged as that in some cases of hydrophobia. At least I can see no reason why it may not be so, and I hope that the attention of other syphilographers will be so turned in this direction as to throw further light on so interesting and important a phase of this kaleidoscopic disease.

Let us next consider the dangers incident to

(*b.*) *The Primary Stage.*—Were the phenomena of this stage always visibly developed the surgeon's duty would be plain enough in the premises. Indeed the patient would hardly need to be told—unless he be exceptionally brutal—that he has no right to marry. But we must not forget that this primary stage is sometime so indefinite; the sore has been so small, so dry and so transient; or so hidden within the meatus, as to have escaped the observation of the patient; while its unusual location—as on the lip, finger, etc., may ward off suspicion as to its nature. How often do we meet with undoubted syphilitics who cannot recollect any local phenomena—sometimes even when they have been feared and looked for?

What proposition then shall we formulate in regard to the dangers of this stage as bearing on contemplated matrimony and as a rule for our guidance when consulted thereon? Let us suppose a case. A client wishes to marry. He has had illicit intercourse and perhaps with a woman whom he afterwards learns has syphilis—possibly has given it to a friend. He is sufficiently alarmed to appeal to us for advice. We interrogate him as to dates, and he informs us that over three months have elapsed since the connection. So far, so good: the period of probation allowed by our first rule has been passed, and he

has not detected any local symptoms. We institute a careful personal examination with a negative result. We interrogate him carefully as to whether he has had any—the least—sore or abrasion anywhere on or about the privates, the perineum, the thighs, the hypo-gastric region, the hands, the lips, the buccal cavity, or the tongue. We ask him whether he has, or has had any—the least—discharge from the urethra, or any soreness during, or impediment to urination, or whether he has observed any lump along the course of the urethra as it passes through the spongy body. While thus prompting his memory we are ourselves carefully examining each part and organ mentioned. Still no evidence of the fell disease is found. He demands our opinion as to his fitness for matrimony. It is true that he may possibly run some risk, and we can hardly assure him of positive safety. We must leave him to assume some of the responsibility himself. But when we consider that ninety days have elapsed, and that usually in this time the stage of syphilitic adenopathy has arrived; when accordingly we look for but find no enlargement of the inguinal, suboccipital or epitrochleal glands--I think we are authorized in giving our consent, for the chances of his having the disease amount to almost nothing. His case would then come under the control of our first rule. But it must be remembered that we cannot be too cautious under these circumstances, and therefore our examination, oral, as well as physical, must be minute and exhaustive. With this proviso therefore, our rule for action in regard to the primary stage of syphilis would be, simply

Proposition No. 2.—Marriage must be positively prohibited during the stage of Primary Syphilis.

(*c.*) *The Intermediary or Adenopathic Stage.* — For convenience of description we may here consider not only the stage of perceptible glandular enlargement, but also that interval generally found between the healing of the chancre and the enlargement of the glands to such a degree as to be recognized by the touch or sight. It is more than likely that the adenopathic processes which culminate in perceptible enlargement have been going on from a very early date, at least

coincidently with the chancral induration. In my experience nothing is more indefinite than the advent of perceptible glandular enlargements; and this statement applies with equal force to the degree of enlargement and to the number of glands involved. It behooves us then to remember that the phenomena of this stage, both in regard to the time of their appearance and the degree of their development, are sometimes so indefinite as to demand great care on our part for their detection. Thus forewarned we may apply the same rule here as in regard to the primary stage, i. e.—

Proposition No. 3.—Marriage is to be prohibited during the stage of syphilitic adenopathy.

But before we leave this stage of the discussion, perhaps I should invite attention to two possible sources of error. We must bear in mind that the lymphatic glands are sometimes naturally so large, especially in the groins, as to be readily perceptible. This fact may or may not be known to the patient. The question should be asked, however—the value of the reply depending on the intelligence and reliability of the patient. I need hardly say that scrofulous subjects are most likely to present this peculiarity.

Again: I have known a few cases in which the inguinal lymphatics have continued perceptibly enlarged for years, and that, too, after prolonged and thorough treatment, as in

Case No. II.—M. M., aged about 30, white. Was treated first by me seven years ago for a typical case of syphilis. He was attended by me from the first appearance of the hard chancre, and the treatment was continued carefully, at proper intervals, for three and a half years. Every evolution of the disease yielded readily to treatment, and for the last four years no diathetic phenomena have presented themselves; but the inguinal glands on both sides have failed to disappear. He consulted me about four months ago in regard to his marriage. I again examined him and found several glands on each side as large as a medium sized grape. I did not regard this as any evidence of an active diathesis, and I gave him my approval.

(d.) The Stage of Generalized Syphylis, or so-called Secondary and Tertiary Syphilis. What constitute the dangers here? They vary in accordance with the varying degrees of activity presented by the disease in its irregularly intermittent evolution. Herein lies the chief trouble. There is no disease so treacherous in its behavior, and this feature belongs to it to the end. You hardly ever know when you have final control of it. Treatment subdues it, and the patient thinks himself well. He too often gives little heed to our warnings, and neglects to follow the programme we have laid down for him, or does so but carelessly. He feels well; sees no evidences of disease; first becomes careless, and then forgets or intentionally stops the prescribed treatment. He enjoys a fancied security for a period of extremely indefinite duration, and returns to us with another crop of syphilides, or some bone trouble or visceral complication. Very often in these periods of presumed recovery he visits us for advice as regards a contemplated marriage. What are the dangers he would incur? It becomes our duty to lay them clearly before him, as the cogent—nay, they should be imperative—reasons on which we base our positive refusal to give our sanction to such an "unholy alliance."

These dangers depend largely on the location and character of any ph nomena which may be present, or may have shown a tendency to recur; on the duration and character of the treatment he has received; on the general quality of the syphilitic phenomena, as to gravity, obstinacy, etc., and on the age of the diathesis. The latter will now engage our attention—the former will be considered further on.

In the first place, it is universally admitted that, other things being equal, the younger the diathesis the greater the danger, both to the wife, and—either through her or independently of her—to the children. When we come to consider the bearing of the *location* of the special phenomena on the dangers under review, we will see that the earlier symptoms reveal themselves more especially on the skin and mucous membranes, and are therefore, on that account alone, more apt to convey contagion. But the danger consists more in the recognized clinical fact

that these phenomena are more active in themselves—as proven by actual experimentation—than those of a later appearance. I need not stop here to cite cases to prove this. The records teem with them; and the personal experience of many of those now present will confirm my assertion. Nor will I lose time by referring to the well known experiments of over-zealous medical students on themselves to prove the fact that the so-called secondary accidents possess undoubtedly the contagious element.

Indeed, we can hardly say that the so-called tertiary phenomena are at all transmittible, except through the recondite agency of heredity. But this is truly an exception of great consequence. It refers not only to the child, but, through it, to the mother, the wet-nurse, and even others who may be thrown in contact with it. What, then, are we to say to a party suffering from general syphilis who consults us in regard to a proposed matrimonial alliance? The degree of danger in a given instance may be roughly estimated, but not accurately defined. Many elements must enter into a proper consideration of each case. But, so far as the age of the diathesis is concerned, we must remember that syphilis is a disease which tends to exhaust itself in time, and that, therefore, the older the case the less the danger to others—markedly so to the wife. Even this proposition, however, admits of the following modification:

Syphilis is a disease whose diathesis is expressed not by continuous, but by intermittent phenomena, the intervals of quiescence varying as much in duration as do the successive outbursts differ in their degree of activity. So delusive are these periods of quiescence as to frequently deceive the parties, and sometimes their medical advisor. It seems to have been proven by carefully recorded cases that impregnation effected during a period of quiescence is less apt to endanger the offspring than when the same result is effected while the parent is passing through one of the active stages. So far as the wife is concerned, it is, of course, self-evident, that direct contagion must be infinitely more imminent during an active

evolution of the disease. It is, indeed, very doubtful whether it can occur under any other circumstances.

It, therefore, follows that we must modify the proposition. "The earlier the diathesis the greater the danger," by the proviso that the party be not suffering from any phenomena indicative of the fact that he is passing through one of the active phases of the diseases. For example, there would be less danger in a case of say three years' duration when all syphilitic phenomena are in abeyance, than in a case of four or even five years' duration in which active symptoms are present. This refers to the immediate risk. We must not forget that the future dangers might be aggravated by the subsequent development of active phenomena. Here, however, the corrective or proplylactic influence of post-matrimonial treatment and management may be brought into beneficial requisition. It follows, then, from a consideration of the above points, that while the danger varies in each case, it is, nevertheless, present in all, and the rule should be that we must firmly disapprove of marriage in the case of any party suffering from constitutional syphilis till such a period has elapsed as to lead to a reasonable belief that the diathesis is permanently controlled. Now this will do very well for a general statement; but can we not be more definite? Can we not say what we mean by "such a period"? Can we not measure it in time? The concurrent experience of the medical world may perhaps warrant us in saying that we can at least give an approximately definite reply, particularly if the patient has been subjected to efficient and thorough treatment. Perhaps the period laid down by Fournier may be adopted. He says in his recent work on "Syphilis and Marriage":

"To regard for the moment only the fact of the age, I do not think that a syphilitic subject should be permitted to think of marriage until after a *minimum period of three or four years* devoted to a most careful treatment."

I do not consider this rule at all too stringent. It requires at least this time to see that the diathesis continues subdued, and a large part of this period should have been devoted to

a prolonged and thorough treatment, as we will see further on.

And in this connection we must bear in mind another point as influencing our decision. The requisite treatment in some cases is more prolonged than in others, or it may have been instituted at a later date. Under such circumstances, it may occupy so much of the latter portion of the above mentioned term as to make the period so short between the cessation of the treatment and the proposed marriage, that we are left in doubt whether the diathesis is temporarily held down by the treatment, or permanently overcome In such cases, then, the rule of three or four years must be modified with a proviso, that sufficient time has elapsed since the termination of the prescribed treatment to clear up this element of doubt. Here then arises another point; how long a time should elapse after the treatment has been finished, before marriage is to be permitted? The data in our possession are not sufficient to enable us to formulate a positive and definite rule on this point. Keys, in his recent work on "The Venereal Diseases" (p. 78, Wood's Library Edition), says that "a man should not marry until at least three good years lie between him and his chancre, and at least one year has elapsed since the disappearance of the last symptom which can be ascribed to syphilis. Also, it is wise for a man not to marry until he has passed through a prolonged, mild mercurial course, and kept himself under observation for *a number of months* [italics mine] after all treatment has been suspended." Not very definite, but perhaps as definite as our knowledge at present admits. Fournier, after alluding to the treacherous character of many cases of supposed cure, says, "an immunity prolonged, without any therapeutic intervention, alone constitutes a veritably substantial guarantee with relation to marriage:" and further on, he says, "in order to fix a minimum, I conclude, from my personal observation, that it would be imprudent to reduce this period of complete immunity to less than from *eighteen months to two years.*" (op. cit. p. 98 Am. translation. Appleton & Co., 1881.)

As bearing on this point I beg leave to offer the following condensed notes on one of my cases.

Case No. III.—G. W., white, aged 23, was treated by me for a moderately severe case of syphilis, commencing Aug. 6th, 1872, and terminating Feb. 26th, 1874, at which time he left the city. He had had no evidence of the disease for four or five months before leaving. He promised to continue the programme of treatment I laid down for him, which consisted in taking every alternate month a combination of bi-chloride of mercury and iodide of potassium (gr. $\frac{1}{20}$ of the former, and 8 of the latter three times a day) for at least six months more. In the fall of 1877, he paid me a visit. He reported that he had carried out the treatment for one month regularly, but after that, having not a single symptom of disease, he became careless, and soon abandoned all treatment. In the fall of 1874, he married. In 1875 his wife had a mis-carriage, and in 1876, another; while she also suffered for some months in 1876 from an eruption which the attending physician declared he believed to be syphilitic, and which only yielded to mercury. He has himself been at times tortured with persistent headache which could only be controlled by large doses of iodide and bromide of potassium. These headaches had first come on about six or seven months after the cessation of treatment.

Again: I think we may affirm that clinical facts warrant us in saying that with the female the period of probation should be extended at least twelve months. I need expend but little time in veryifying this statement; for it is admitted that the maternal heredity of syphilis is far more pronounced than the paternal. I need but cite the statistics of the Lourcine for ten years, compiled by Dr. Le Pileur, by which one of the points established was that "of 260 infants born at term and living, 141 died within a very short time (only 22 surviving more than one month"), (Fournier, op. cit. p. 66); to say nothing of the abortions, miscarriages and still-births, and of those which died later from the effects of the inherited diathesis. Our daily experience teaches us that paternal heredity, bad as it is, produces no such dire results. Keys assigns five years as the probationary period for women.

Looking over the whole ground, then, and disclaiming any intention of dogmatism, we may say in regard to the question of marriage as influenced by the stage of the disease—

Proposition No. 4.—No man who has been the subject of generalized syphilis should be considered a fit subject for matrimony before at least three and a half years after the first appearance of the chancre: no woman till four and a half: and at least twelve months in both cases should have elapsed after cessation of treatment without the appearance of any symptoms referable to the disease.

We pass on now, as intimated in the beginning of this article, to consider

(2.) *The Location of the Syphilitic Phenomena, as Bearing on the Dangers of Contemplated Marriage.*

In regard to the period of incubation and the primary stage little need be added here to what has already been said. Of course the chancre being most frequently located just where most intimate and prolonged contact occurs, and on a surface tender and easily abraded, is by far the most frequent source of infection. But we must not forget that its occurrence in unusual locations may, in certain cases, even enhance the danger by failing to excite the apprehension of the party. In this way most innocent persons may most innocently become poisoned. If, for example, it be located on the lip or even the tongue, its virulent secretion may, in kissing, affect a member of the family or the sweetheart. This danger, however, appertains not so much to a labial chancre, which, according to my experience, is usually large and prominent, as to the mucous affections of the earlier stages of generalized syphilis—as we will see a little further on.

Nor need we be detained in considering the periods of secondary incubation and glandular involvements. The chancre having usually healed, these periods do not yield any infecting secretion, and are, therefore, not directly dangerous, but only prospectively so in cases of contemplated matrimony.

But when we come to discuss the dangers belonging to the earlier stages of generalized syphilis as influenced by the loca-

tion of the phenomena, we have a most important subject demanding careful consideration.

Let us first bear in mind the fact that the disease at this stage affects especially the cutaneous and mucous surfaces—and, of the latter, those portions most exposed to contact with others. The dangers here refer, indeed, almost exclusively to the mucous and the muco-cutaneous surfaces. On and about the genitals we have to fear the slightest solution of continuity or new growth, a mere crack, an enlarged papilla, a mucous patch, a little vesicular or pustular eruption coinciding with a corresponding early syphilide on the skin, as all decidedly possible media for infection. The last mentioned is sometimes mistaken for simple herpes and pronounced innocent. A careful investigation of the history and other symptoms should always be made, before giving a positive opinion under such circumstances; and if any doubt hang over the case a little "patient waiting" on the part of the subject will assuredly be "no loss." Indeed, in dealing with this whole subject it will be noticed that "patient waiting" is the chief burden of our song. It must necessarily be so. Patient waiting is a large part of the penalty all parties so affected must pay; and they should pay it willingly and liberally.

The affections of the lips and mucous surfaces of the mouth, tongue and fauces are decidedly infectious. A mere fissure on the lip may convey the contagion, an apparently mere trifle to the patient who has not been fore-warned; and mucous patches often prove the cause of transmitting the disease to others. These are perhaps the most dangerous of all the early phenomena of generalized syphilis, ranking in this respect second only to the primary lesions: indeed, they are even more dangerous to innocent parties; because to such they are often the only media of transmission. Accidental syphilis is frequently transmitted in this way, as has been abundantly proven by hygienic and clinical observations too numerous to mention.

And here it would be well to bear in mind the fact that mucous patches, especially about the mouth, are sometimes found at a late stage of generalized syphilis—even sometimes in the

earlier stages of the so-called tertiary period—and that they, in some cases, show a wonderfully obstinate tendency to recur and recur again and again; particularly in the persons of those who use much tobacco. As illustrating the fact of the late recurrence of mucous patches, I will offer one case.

Case No. IV.—C. W., white; aged about 32; attended by me for a hard chancre, followed by generalized syphilis, from November 18th, 1877, at intervals, to January, 1881. His treatment was fairly regular; but he was not as frequently under my personal direction as I would have desired. All the symptoms yielded readily under treatment, however, except the mucous patches, which recurred at intervals as late as three years from the appearance of the chancre. He is a tobacco smoker.

Besides their often unexpected recurrence, the mouth lesions of generalized syphilis are sometimes so small as to become dangerous from their seeming insignificance. Sometimes a mere crack in the mucous membrane may produce a contagious secretion; and perhaps, it will be our safest rule to say that—

Proposition No. 5.—Any open sore, fissure, or papillary growth on the mucous membranes or skin, of a party the subject of a syphilis of less than three years duration, may become a source of infection.

No duty, in my opinion, is more imperative than that the surgeon should earnestly impress these dangers on the minds of such patients. If he fail to do so he may find himself partly responsible for most melancholy results to most innocent parties,—mothers, sisters and brothers, sweethearts, little children, may, any of them, become contaminated by a kiss given in ignorance or forgetfulness. And it is surprising how little heed is sometimes paid to our warnings in this respect. Not long ago I happened to be present at the house of a gentleman with a large family, when one of my patients, who was at the time under treatment for numerous mucous patches on the inner surfaces of the lips and the edges of the tongue, entered the porch. He was intimate in the family, and unhesitatingly began to kiss the little ones who crowded around him.

It had been hardly a week since I had fully cautioned him against just such proceedings, and here, before my face, he was violating my most earnest injunctions.

In the event of females contemplating marriage, the location of the lesion still further complicates the matter. Here we have the additional danger arising from the fact that "accidents," of either the primary or the generalized stage frequently find secure hiding places in the folds of the vagina—oftentimes the woman herself being unconscious of their existence. Apparently innocent, small, mucous pustules or fissures about the anus or perineum of a woman, are also more dangerous than correspondingly located and similar lesions on a man. They are extremely apt to come in contact with the exposed male organ itself; while such lesions on a man come in contact only with the cutaneous surfaces of the woman, if there be any contact at all.

The location of the later or "tertiary" phenomena has, we may say, no influence on the dangers under consideration, at least so far as infection is concerned. As regards the more remote dangers, however, it will be well to bear in mind that where a marked tendency to visceral syphilis, or syphilis of the nervous system, has been developed, these remote dangers are certainly increased. The best authorities agree that in such cases the dangers point, with special emphasis, in two directions. The party is more apt to become incapacitated, and the offspring is more apt to be affected by some form of hereditary syphilis. Perhaps I am wrong in speaking so positively in regard to the enhanced dangers of heredity in such cases; but not in regard to the fact that nervous or visceral "tertiary" syphilis is much more apt to incapacitate for the performance of the duties of either husband or wife, the bread-winner or the house-keeper, than when other parts of the body are affected. A man or woman may work without a nose, but not without a healthy brain or active liver.

In estimating the dangers, then, in any given case, all these points should enter into our calculation, and we may lay down the following as a rule :

Proposition No. 6.—The fact that a case of generalized syphilis has shown a marked tendency to involve the viscera or the nervous system should be regarded as greatly enhancing the remote dangers in matrimony. The patient should be fully advised thereof, and the surgeon should not incur the responsibility involved in an unconditional consent.

So much, then, for the dangers as influenced by the localization of the phenomena.

3. *Duration and Character of Treatment, as Influencing the Dangers in Contemplated Matrimony.*

With the ever-accumulating evidences before us of the beneficial effects of mercury and iodide of potassium in controlling syphilitic manifestations in all the stages of the affection, I need hardly stop to enter into discussion with those very few medical men who assert that these agents have little or no effect. Statistics might be easily produced; but I need only request any experienced physician to refer to his own cases and ask himself if he would be willing to dispense with these agents and rely on time, tonics, expectancy or any other means, as to be for a moment compared with them. When I speak, therefore, of a sufficiently thorough treatment as one of the pre-requisites to the obtaining of our consent to marriage, I allude to the prolonged use of these two agents, as both curative to the existing accidents and prophylactic in regard to others which would otherwise be extremely liable to present themselves. The thorough and prolonged treatment by means, mainly, of these agents, in accordance with the well-nigh unanimous views now taught by syphilographers, is perhaps the most important of the conditions to be demanded of the patient. This is truly a prophylaxis which extends its influence beyond the individual to others who are innocently ignorant of the danger or yet unborn; and unless the party has undoubtedly availed himself of the full benefit of this prophylaxis he should shoulder all the responsibility himself, and by no means have it in his power to afterwards shift any of it on his physician. We cannot be too explicit on this point; not only to shield ourselves, but as a sacred duty we owe to innocent third parties, and also in-

deed to the consultant, for thus we would do all in our power to save him from himself.

But we must try and be more definite. I speak of a prolonged and thorough treatment. What do I mean by a prolonged and thorough treatment? It does not come within the scope of this article, to enter into details regarding the treatment of syphilis; so that my reply to this query must be of a very general character. The length of the time to be expended in the treatment differs somewhat in different cases. Perhaps the best criterion by which in any given case we can test the fact as to whether we can dispense with further medication, will be found, again, in a little "patient waiting." If in six months or a year—better the latter—after a tentative cessation of treatment no syphilitic phenomena present themselves, we may give our consent to marriage—provided, however, that the terms of proposition No. 4, have been complied with. This you will recollect requires that at least three and a half years in a man, and four and a half in a woman, have elapsed since the chancre. During this time one case may have required two, and another three years of treatment. Certainly no case should be trusted with less than eighteen months, or two years of mercurial and iodide of potassium treatment. Exactly how these agents are to be respectively used must vary with each case, according to principles well recognized by syphilographers. We may, therefore, formulate the following as, in a necessary general way, the proper rule to guide us.

Proposition No. 7.—No syphilitic should receive the consent of a surgeon to his marriage who has not been under treatment with mercury and iodide of potassium for at least two years, and who has not tested the efficacy of said treatment by at least twelve months exemption from any active syphilitic phenomena, these twelve months having been passed without any specific treatment.

4. *The character of the syphilitic diathesis as influencing the dangers of contemplated marriage.*

No one case of syphilis is of exactly the same quality as another, as Fournier expresses it. The variety is infinite; but the

features which specially interest us in this discussion refer to (*a*) the general gravity of the phenomena; (*b*) their obstinacy under treatment, and (*c*) their great tendency to repeated recurrence.

(*a*) Some cases of syphilis may well be called malignant; sometimes all through the successive stages, sometimes only in the later periods. In such cases of unusual gravity, it is but proper that we should be particularly careful to insist on the full requirements as embodied in the various propositions already announced or about to be laid down; or even to require still more stringent safeguards. It is impossible to formulate a positive rule of action in regard to such cases which would not necessitate a repetition of what has been already said. Some cases might even involve the necessity for entirely refusing our consent. Particularly is this the case when the gravity of the phenomena are exhibited in the form of visceral or neurological complications, especially if the case be further characterized by either or both of the additional features of obstinacy under treatment or unusual tendency to recurrence.

(*c.*) *Obstinancy under treatment.* Here again is a feature of syphilis deserving of consideration in the present connection. This feature does not necessarily co-exist with malignancy, but is a quality *per se.* The usual remedies fail to have their accustomed effect, or these remedies have to be employed more vigorously and longer—for some reason not by any means apparent. Under such circumstances we should be more cautious than if the case did not possess this unpleasant characteristic. So, too, in regard to those cases which present an—

(*c.*) *Unusual tendency to recur.* Here we should be particularly circumspect, and the period of tentative cessation of treatment should extend beyond the already prescribed twelve months—this extension to be regulated by the degree to which this tendency to recur has exhibited itself. I need hardly remind my hearers of the fact that this feature presents itself sometimes to a startling degree, even under otherwise favorable conditions. So far, then, as the dangers referable to the

special character of the syphilitic diathesis are concerned, we may say—

Proposition No. 8.—Should the case present a history of (*a*) unusual gravity in its manifestations, (*b*) very marked obstinacy under treatment, or (*c*) more than ordinary tendency to recurrence, the consent of the surgeon should be withheld for a decidedly longer period than under other and more favorable conditions, and his assent should, in extreme cases, be even indefinitely suspended.

Such, then, gentlemen, are the views to which a careful review of my own experience, together with that recorded by the best authorities on such matters, has led me in regard to this subject, so important in all its bearings—so important to ourselves; to our patients; to the community at large, in a sanitary point of view, and to the sacred relations of the family, on which depends in so marked a degree the whole social fabric of advanced civilization.

To complete the consideration of the subject I should next discuss the relations of syphilis to married life. But this is a subject of itself, and to do it justice would require a longer time than would be appropriate at one meeting. I may make it the subject of another paper hereafter, having already taxed your patience sufficiently.

In order to focus the discussion on the important points, as well as to epitomize the conclusions I have arrived at, I will repeat here the various propositions already announced:

Proposition No. 1.—A surgeon should decline to approve of a contemplated marriage in any case when his client has had sexual intercourse with a reasonably to be suspected party within say 90 days before the day to be appointed for the marriage.

Proposition No. 2.—Marriage must be positively prohibited during the stage of Primary Syphilis.

Proposition No. 3.—Marriage must be also prohibited during the stage of Syphilitic Adenopathy.

Proposition No. 4.—No man who has been the subject of generalized syphilis should be considered a fit subject for

matrimony before at least three and a half years after the first appearance of the chancre—no woman till four and a half; and at least twelve months, in both cases, should have elapsed after cessation of treatment without the appearance of any symptoms referable to the disease.

Proposition No. 5—Any open sore, fissure or papillary growth on the mucous membranes or skin of a party, the subject of a syphilis of less than three years duration, may become a source of infection.

Proposition No. 6.—The fact that a case of generalized syphilis has shown a marked tendency to involve the viscera or the nervous system should be regarded as greatly enhancing the remote dangers in matrimony. The patient should be fully advised thereof; and the surgeon should not incur the responsibility involved in an unconditional consent.

Proposition No. 7.—No syphilitic should receive the consent of a surgeon to marry, who has not been under treatment with mercury and iodide of potassium for at least two years, and who has not tested the efficacy of said treatment by at least twelve months' exemption from any active syphilitic phenomena—these twelve months having been passed without any specific treatment.

Proposition No. 8.– Should the case present a history of (*a*) unusual gravity in its manifestations; (*b*) very marked obstinacy under treatment; or (*c*) more than ordinary tendency to recurrence—the consent of the surgeon should be withheld for a decidedly longer period than under other and more favorable conditions, and his assent should, in extreme cases, be even indefinitely suspended.

Hæmorrhagic Malarial Fever.

By G. G. BUFORD, M. D.

Bastrop, Louisiana.

Read before the Morehouse Parish Medical Society at its September meeting.

The various phases of this disease, the barrenness of scientific works upon the subject, and the differences of opinions that prevail in relation to its pathology and treatment, make it

an interesting subject. It is not strange that there should be some divergence of opinion, and it is right there should be, on all questions that are yet *sub judice.* Providence has wisely ordained that we should not all view things through the same mental medium, or regard them from one stand-point. This conflict of mind is the great propelling power to efficient advancement in scientific knowledge. This is the refining process through which all of the fundamental and settled principles of science have had to pass, that are worthy of our esteem and confidence.

The article which I submit to the test of your mental crucibles to-day, cannot escape the trying ordeal, and I hope if nothing worthy is found in it, to commend it to your regard, that it may at least lead your scrutinizing and analyzing minds to the development of some important truths.

Names—Since the notice of the medical profession of the United States was first called to this disease, it has been variously described by different writers, and each advocating his own theory, and assigning to it a name agreeable to his idea of its pathology. Dr. Michel, of Alabama, proposed the name of Hæmorrhagic Malarial Fever. Dr. Ghent that of Black Jaundice. Dr. Owens, of Arkansas, Cachæmia Hæmorrhagica, and others have offered the names of Icteroid Pernicious Fever. Malignant Congestive, Purpuræmia, Malarial Hæmaturia and Swamp Fever. It is known and called here in common parlance, by the two latter names. I do not know whether Dr. Michel was first to propose the name, Hæmorrhagic Malarial Fever or not, but it is decidedly the most unobjectionable name for the disease, though it is rather long and does not express any definite pathological idea, and is the better for this very reason, since so little is known for certain about the pathology of the disease.

History.—The attention of the medical profession seems to have been first directed to this disease in the South, or southern United States, about 1860, though doubtless it existed prior to this date, sporadically, if not endemically. A disease in many respects similar was described by French physicians

as being common in the Danubian provinces in 1851 to 1859. This is a climate very much like ours, and, from their statements, the disease must have been no other than the hæmorrhagic malarial fever of our Southern States. It first made its appearance in Thomas county, Ga., about 1843, and seems to have been confined to this section for nearly twenty years. After this it spread in rapid succession over Georgia, Florida, Alabama, Mississippi, Louisiana and Texas, and, in fact, in almost every malarial district south of Mason and Dixon's line. Some writers contend that the disease has existed from time immemorial, or, in other words, ever since the human family has inhabited hot, malarial climates, and been exposed to such causes as now produce the disease.

Be this as it may, we find no mention made of it in systematic treatises on medicine of an earlier date. Those who urge this ask why it is that there is any cause to produce Hæmorrhagic malarial fever now more than has always existed? Why it is, we are unable to say, but it is a truth well established. This is a question that is now as inscrutible as was the riddle of the Sphynx, but it will be solved when scientific knowledge advances far enough to demonstrate why it is that malaria manifests itself in so many protean forms of intermittent, remittent, continued fevers, neuralgia, dysentery, etc.

This disease is more prevalent in the country immediately bordering on the Mississippi river and its southern tributaries.

Clinical History.—The clinical history of this disease presents similar features in all parts of the country, variously modified. It seems to occur principally during the late fall and winter months, but occurs endemically and not epidemically.

Those who are suffering from repeated malarial attacks, seem prone to the disease, and like most all other malarial diseases one attack prepares the system for often repeated attacks, whenever the system becomes surcharged with the poison. The attack is ushered in with a chill, usually the third of a series, sometimes the first, and is followed by a well

marked state of pyrexia, which subsides partially or wholly without any perspiration. The fever usually partakes of one of the characteristic types of malarial fever. It is either remittent, intermittent or continued. If intermittent there is a subsidence of the fever and a periodical recurrence, and if remittent only a remission and periodical exacerbations, while in the continued type we have the fever continued and and interrupted at intervals, of 4, 6, 8, or 24 hours, by chills or rigors. There is not usually as much cephalalgia as is common mon in chills and fever, but a painful restlessness referred to the hypo-chrondriac and lumbar regions, also to the extremities, accompanied with thirst and the most inveterate nausea and vomiting I have ever seen. The respiration is somewhat sighing, and labored, skin dry, and fever rises to 100°, 103°, in some instances to 105½° during first 24 or 48 hours, and then falling and fluctuating from 101° to 103°. The tongue is covered with a thick yellow fur. Statistics show, that males suffer from the disease oftener than females for reason that they are more exposed. Early in the disease the patient urinates but seldom, not more than twice in 24 hours, and then very copiously. In a deep vessel this fluid looks black, but when poured into a shallow dish, or mixed with water, the brilliant yellow tint is brought out. Its black appearance comes from concentrated yellowness. In a deep dish it usually varies from the color of port wine, to that of inky blackness. The color of the conjunctiva, and skin varies from saffron to bronzed yellow, showing a complete infiltration of bile; bowels, usually constipated at first, but afterwards there are free dejections of a tarry tenacious substance, and later in the disease a dysentery, or a severe diarrhœa.

Generally there are sequelæ, the disease seeming to expend its force on some one organ and leaving it in a crippled condition. The organs that suffer most are: Kidneys, spleen; liver and stomach, the frequency in the order named. The first discharge of bloody urine is soon after the chill is ushered in. If a blister be applied bloody serum collects under the cuticle, or rather a bloody-looking serum. This is serum colored with bile. A very small blood-letting causes syncope, and the blood

appears broken down and dissolved. If the patient lives long enough and the blistered surface be poulticed, the discharges from the denuded surface will stain the poultice green, like green paint. There is sometimes epistaxis, and hæmorrhage from the bowels. The vomiting is incessant, and the ejections are colored with a greenish substance resembling bile, sometimes so thick and dark as to look like black vomit, but very distinct from it.

Duration.—It has been variously stated that the disease runs from four to twelve days. Dr. Malone, of Indian Bay, Ark., states that "Malarial hæmaturia may be cut short in a few hours, or may continue for several days. Fatal cases usually terminate on the third day; rare cases in a few hours, and other cases not till eight or ten days have elapsed." He continues: "How long the disease would last without treatment I have no idea. I have seen cases," says he, "terminate fatally in 18 to 24 hours and from 5 to 9 days." Under proper treatment the disease will yield in from 4 to 48 hours. Sometimes the access annihilates the powers of resistance and the patient dies before therapeutics can reach him. The mode of death is exhaustion from hæmorrhage, most commonly from the kidneys, in a very few cases from the bowels, and one or two cases are reported of death from epistaxis. In other cases we have suppression of the urine and uræmic poisoning, with profound stupor on the one hand, or uræmic intoxication, with delirium, coma and convulsions on the other.

Diagnosis.—Swamp fever was formerly considered a hybrid of yellow fever, but this ground was abandoned as untenable.

The onsets of both are similar, each is ushered in by a chill and followed by a hot stage. The difference is shown in one or two hours. Yellow fever is continuous, swamp fever intermittent, remittent, or continuous. The former is confined to the latter part of summer, and is epidemic and infectious, while the latter appears usually in the winter, and is neither epidemic nor infectious. The one is checked by frost, the other aggravated by cold weather. In yellow fever the yellowness does not appear usually till the secondary fever; in swamp fever it

appears at the time or shortly after the inception of the disease. Bloody urine is always present in hæmorrhagic malarial fever, but is sometimes wanting in yellow fever. Black vomit is pathognomonic of yellow fever, but is seldom found in hæmorrhagic malarial fever, of the true coffee ground variety. One attack of yellow fever gives immunity, while one attack of hæmaturia predisposes the patient to an unlimited number of attacks. Yellow fever occurs epidemically, swamp fever endemically. Hæmorrhagic malarial fever, is diagnosticated from jaundice and hepatic affections, by the initial severe chill, sudden appearance of the bronzed-yellow color, instead of the slow appearance of the saffron color, also by the gastric and enteric disturbances and the dark tarry evacuations in the place of the scanty clayey dejections.

Prognosis.—One should be very guarded in giving a prognosis, for some cases, which, at first, seem very mild, change in a short time to be the most intractable.

The mortality seems to have been greater formerly than now. The treatment was then the deduction of theory, now the result of empiricism. Much depends on the physical stamina of the patient and promptness of treatment. The tendency of the disease is to death, and the prognosis unfavorable.

Etiology.—The *materies morbi* is what is generally known as malaria. We are all satisfied in placing this as the grand pathogenic factor in most of the diseases of our Southern States, and it is a cloak for our ignorance of the cause. The causation is doubtless a specific morbific agent. "In 1717, Lancisci, an Italian writer, advanced the theory of marsh miasm as the cause of intermittents, remittents and continued fevers, and called this marsh miasm, malaria." Since then it has been held accountable for almost every form of disease that infests warm, swampy countries, That the cause is of telluric origin is undoubted. Prof. Salisbury, of Ohio, claims to have found the cause of malarial fevers in the spores emanating from a certain species of algoid plants called Palmellae, which belong to the lowest class of known vegetable organ-

isms. If this theory be true, then swamp fever must be assigned to the same cause. Dr. Malone, of Arkansas, thinks the origin due to a minute organism, probably a specias of cryptogamia. Whether the cause be animal or vegetable, whether the gemiasma of Dr. Salisbury, or a species of minute organism, probably a species of cryptogamia, or some microscopic entity of zoonic origin is a *questio vexata* that will have to be determined by the savants of the future, while we of the present will have to content ourselves by saying that it is of a malarial origin.

Pathology.—It seems that there are no well marked anatomical lesions of any of the various organs that are present in all cases. Only the abdominal viscera seem to suffer any great degree of derangement, either anatomically or functionally.

The following are the abnormalities generally found in a *post-mortem.* Rigor mortis peculiarly great. Discoloration complete and extensive, skin and cellular tissue every where yellow, the muscles are of a brownish red. Dura mater yellow, thoracic viscera even to pericardium partake of the same yellowness. Stomach usually filled with a dark grumous bile looking mass, mucous membrane thickened and vascular. Spleen abnormally enlarged and of a firm solid consistency, the natural result of chronic congestion induced by chronic malarial poisoning. All autopsies reveal the fact that the kidneys are more seriously deranged both in their parenchymatous and vascular structure? than any other organ. They are generally enlarged, firm and of greenish color, showing no marks of active inflammation. On section they are found congested and streaked with greenish traces. The liver is usually found but little deranged, not congested as is the general opinion. The gall bladder is usually found full of a tarry black thick substance There are no appreciable lesions of the nerves, though there must be some atrophic condition of the nerve cells. Blood under the microscope shows an increased ratio of white corpuscles and an attenuated and broken down condition of the red corpuscles with a liberation of the hæmatine.

The urine consists of the natural elements with the addition

of blood and bile variously modified, sometimes the blood constituents in excess, and sometimes the biliary coloring matters.

There can be no doubt that malaria is the cause directly, or indirectly of the pathological conditions found in this disease. The pabulum of malaria seems to be the red corpuscles of the blood. By its catalytic force breaking down and dissolving them, thereby rendering the blood hydræmic directly and indirectly unfitting it to perform properly its function of carrying food, especially oxygen, to support this system, and tissue degeneration is the result. The nervous system seems to be the first to break down under this process of mal-nutrition.

This is shown in the liver spleen and kidneys, not being properly stimulated so as to properly perform their accustomed duties.

It is difficult to say whether the cerebro-spinal or sympathetic system of nerves suffers the more. On account of the fineness of the textural fabric and composition of the nervous structure, their pathological lesions are not seen by the unpracticed observer. But they must be in an unhealthly condition since they fail to perform their function in the animal economy. In patients suffering from malaria we usually find first, a pale anæmic appearance caused by the hydræmic condition of the blood; secondly, muscular inactivity from want of innervation; thirdly, functional derangement of liver, spleen, bowels and kidneys, from the functionally diseased condition of the cœliac plexus. "The result of these condi ions when they have proceeded far enough is the nervous affections known as chills. There can be no doubt that malarial poison after it has thoroughly saturated the body, will for sometime lie latent and then manifest itself by suddenly and seriously deranging the cerebro-spinal nerves. The result of this sudden derangement is a chill, during which that part of the abdominal sympathetic known as the solar plexus, becomes functionally diseased, and we find the liver, spleen and kidneys more or less disturbed. The result of the diseased state of the solar plexus is a temporary paralysis of the liver. "The elements of the bile, biliverdine and cholesterine, which exist preformed in the blood are

retained, until that vital fluid becomes saturated with these component parts of the bile." The liver is only partly paralyzed, and its functions of separating the bile elements is sus pended and those properties that should be separated are allowed to pass into the general circulation. Autopsies show that there is no engorgement or congestion. "Bile often accumulates in the economy from sudden fright- bites of venomous serpents, pyæmia and also chronic malarial toxæmia, because its oxidation or elimination ceases. We have impaired nutrition generally from the malarial cachexy present in all hæmaturic patients, and it is highly probable that we have a special pathological condition of the kidneys, from their continued efforts to eliminate the poisons, especially the bile, from the blood." The pathogenic action of bile is not confined to the change in the corpuscles, but extends also to solids. Late researches show that fatty degenerations is one of the common results of the diffusion of bile through the system. The retained products of biliary secretions are largely eliminated by the kidneys, consequently they are liable to take on whatever pathological condition the bile constituents are capable of inducing. On page 631 of Cornil and Ranvier's Pathological History is found the following quotation: "In every form of icterus, the coloring matter of the bile passes into the uriniferous tubules. When the elimination of biliary pigments is very great, there is produced a special parenchymatous inflammation of the kidneys.

The yellow color is varied with greenish lines; the cut surface present a similar appearance, to the unaided eye; the tubuli are seen to contain biliary pigment.

Sections of the renal substance show in some tubuli of the cortical substance, a granulo-fatty degeneration. The kidney after having undergone this degenerative process is larger and this with the retained blood accounts for the size of it found in *post mortem*.

When this degenerative process is complete the kidney in some patients who die with hæmaturia, is found to be a pultaceous mass inclosed in its proper capsule but completely broken down. In order that we have hæmorrhage from any

organ there must be one or two of the following conditions present, viz: first, weakened capillary walls, second, increased blood pressure and third, altered condition of the blood so that exosmosis is more liable to occur. The last of these conditions is general in its effects, ths first and second are often local, but may combine their influence upon the same system of blood vessels, when we must from necessity have hæmorrhage. This is accounting for hæmorrhage on the physical grounds of force and resistance. It is plain that if the force is increased and the resistance remaining the same there will be hæmorrhage. Also, if the force remains the same, and the resistance is diminished, we have the same result. Now also three conditions may produce hæmaturia, viz: first, altered blood; second, weakened condition of the blood vessels in the kidneys; third, a pathological state of dynamics of the system.

Either two of these conditions combined may produce hæmorrhage. In all forms of malarial toxæmia the blood is in an altered condition and is especially so in hæmaturia. This is shown by the bronzed yellow hue of the skin and conjunctiva which is not due simply to the hyper-secretion of bile, but also to the want of consumption or oxidation in the system or to obstructed discharge from the liver. Arrested consumption is the least, assailable explanation of the phenomena. Second, the weakened condition of the walls of the vessels of the kidneys arises from the same cause as that which has been pointed out as inducing the degenerated condition of this entire organ. Third, blood pressure in general, and the strain on the renal vessels in particular may arise either from the congestion during the cold stage, or from the increased heart's action during the stage of pyrexia. The kidneys of all hæmaturic patients are not altered to the same extent, as shown by the rapid recoveries of some, but the hæmorrhage demonstrates the fact that the initiatory steps—erronious nutrition, which must precede all forms of degeneration—have begun, thereby rendering the cleavage or breaking down of the fleshy structures more easy. The pathological condition of the spleen and kidneys at the inception of the attack of malaria determines

whether we shall have an attack of simple malarial fever, manifested in one of the three characteristic forms, or whether there is to be an attack of hæmorrhagic malarial fever of the remittent, intermittent or continued type. If there is but little tissue degeneration, or erroneous nutrition has gone only far enough to produce a weakened or relaxed condition of the walls of the vessels, and not enough to produce rupture under the pressure, we have hæmorrhagic malarial fever of the intermittent type. If erroneous nutrition has gone far enough to bring about quite a relaxed state of the vessels, we have hæmorrhagic malarial fever of the remittent variety. And the continued type with recurring rigors at four, six, eight or twenty-four hours, if fatty degeneration is complete. I think that the differences of opinion as to whether the urine contains blood, or bile, or both, can be harmonized by applying the above mentioned degrees of fatty degeneration. In the first or intermittent type, in which the urine is not highly colored, responding to tests for bile but showing no blood corpuscles under the microscope, is found the intermittent forms of the disease. The second or remittent type is more fatal, showing graver pathological lesions, and is the variety in which we find blood and bile, or blood corpuscles, which pass into the urine, probably by diapedesis or slight ruptures of the minute arterioles within the malpighian corpuscles. The third or continued form is still more fatal than either of the other two forms, and if the patient does recover it is a long time before the retrograde metamorphosis restores the organs to their normal condition, if it ever does, and this is why some patients are so prone to recurring attacks. Indeed, so prone are they that even a slight fever, or an overdose of quinine may precipitate them into an attack of hæmaturia. Whenever there is the greatest amount of textural rottenness there the vessels are most liable to give way to the blood pressure. This sometimes occurs in the schneiderian membrane and from the mesenteric vessels of the lower bowels, but, from the anatomical relation of the internal organs, it occurs most frequently from the kidneys. The greenish ejections that are so often vomited in the early part of the

disease, and sometimes changing to a dark grumous mass, and improperly called black vomit, are but the hæmorrhages resulting from the inflamed state of the stomach, or the regurgitation of bile mixed with the mucous and peptic secretions of the stomach. The dark, tarry evacuations are not so often, if ever, the result of hæmorrhage; but the bowels being constipated, the biliary discharges, which are always in an abnormal quantity, are intimately mixed with the secretions of the bowels and fæces. If a small amount of this mass be spread out on a sheet the greenness will be seen. So great is the colorific properties of the mass usually found in the gall bladder that a minute quantity is capable of imparting to a large amount of fæces this deep yellow, greenish-black appearance.

Treatment.—As there has been an unremitting logomachy concerning the naming of this disease, so there has been in reference to the treatment, each urging and prefering the treatment most compatible with his ideas of its pathology. All agree that the cause is malaria, and most advocate the treatment that is best practised in the treatment of malarial diseases.

Calomel is often given, theoretically, to relieve the congested portal circulation. This arises from a mistaken idea, for autopsies show that there is little or no congestion of the liver. It seems that if nature has given an antidote to malaria, that it is certainly stored in the cinchona alkaloids, yet many eschew quinine altogether and pronounce it absolutely poisonous. I think this antipathy to quinine can be accounted for on scientific physiological grounds. It is customary in the Southern states to give quinine in enormous doses in the treatment of malaria to combat it at once, and this is the better practice in fevers of a congestive type and simple remittents, etc., etc., but will not do in hæmorrhagic malarial fever. Large dose of quinine usually render inactive the reflex inhibitory centres, while small ones seem to increase their activity.

Those who so much depreciate the use of quinine in this disease, I think must give it in large doses, and in so doing aid

the hæmorrhage by rendering powerless the inhibitory centres, thereby increasing the heart's action and dilating the capillaries. Quinine is also mostly eliminated by the kidneys and is an irritant to them, in this abnormal condition and of course the greater the amount of the irritating substance the greater the irritation. The patient should be kept moderately cinchonized from the time that the bowels act freely till the close of the disease, the quinine should be given hypodermically if not retained when given *per orem*. A mild saline cathartic should always be given to carry off the accumulated fæces and open the bowels. The therapeutic endeavor should be directed to allaying the nausea, diminishing the arterial preasure, aiding diuresis and diaphoresis.

Any class of drugs that will meet these indications will be useful in the treatment of the disease, provided that there are no contra-indications. Cold or cool water should be given *ad libitum*. It will often be ejected for several times, but should be repeated till the stomach retains it. It will allay the inflammation of the stomach, and is the best diuretic, as well as a good diaphoretic. The kidneys need stimulating in order to aid them to carry off the blood and prevent occlusion of the tubuli uriniferi. Turpentine and buchu I consider to be the best of this class of drugs—the latter a mild unirritating diuretic; the former, in doses of from 2 to 6 minims every hour, a good hæmostatic and diuretic, in this fulfilling both indications. Opium and astringents are liable to produce suppression of urine and uræmic poisoning. Sponging the entire person with tepid water is often beneficial in aiding diaphoresis and allaying the restless uneasiness of the lumbar region and lower limbs.

The points to fight against are death from hæmorrhage, or from want of nourishment and uræmia. The worst case of nausea and vomiting that I have ever seen I controlled by moderate inhalation of chloroform, kept up for two or three days, with the very best of results. As there is complete anorexia and the tendency is to death from exhaustion, there should be no chance omitted to feed the patient. The stomach may be made to retain the food if in liquid form by giving it

largely diluted, and quite cool, or if solid, by moderate use of choloform. Copious draughts of cool, fresh buttermilk are both grateful to the taste and stomach of the patient. The sulphites are highly recommended in the treatment of this disease. Dr. G. B. Malone, of Arkansas, claims to have treated 44 cases, with 100 per cent. of recoveries, and says that not a single death has been recorded where it has been used in his practice, and the surrounding vicinity. I have never used it, but will try it, as it is simple, and seems effective. The doctor administers cold or cool water till the nausea is allayed, and then gives:

Hyposulphite of soda, - -	gr. xxx;
Aqua, - - - - -	℥i.

Dissolve, and then add—

Ext. buchu, - - - - -	℥i.

S. Repeat every 3 hours, and if rejected immediately, and if retained for some time, repeat only the hyposulphite. The sulphites and hyposulphites have been used in the treatment of this disease for years in Georgia, Alabama and Florida with gratifying results. Close attention should be paid to the hygienic surroundings of the patients, and no cold currents of air be allowed to blow over them. There is sometimes a distressing dysentery during the convalescence which may be relieved by doses of sulphate of magnesia and laudanum. I had one case of obstinate constipation which was relieved by 3 minims of nitro muriatic acid 3 times daily; also a case of gastralgia which was relieved by a teaspoonful of lime water before each meal. The depraved condition of the blood demands that there should be a resort to the hæmatic restoratives at the earliest possible moment. The iron by hydrogen, or the mur. tinct. fer., with sulphate of quinia, I consider the better. I have also used the following pill with advantage in the treatment of chronic malaria:

Arseneous acid - - -	gr. v.
Phosphorus - - -	gr. j
Fe. fr. H. - - - -	℥ ij.
Sul. Strychnia - - -	gr. iij.
Pul. Aloes - - - -	℥ j.
Sul. Cinchonidia - - -	℥ ij.

M. 100 pills.

Sig. 1 before each meal, and continue till all taken.

This pill should be continued for a month or two in anæmic patients.

Resumé.—In way of recapitulation I will formulate some of the points:

1st. Hæmorrhagic malarial fever is the most unobjectionable name.

2d. The disease is new only in the United States.

3d. The cause is malaria.

4th. The cause of the degenerations of the kidneys is indirectly malaria, and directly bile.

5th. The urine may or may not contain blood.

Digitalis in Cardiac Dropsy.

BY DRS. MOORE AND ANDRSON.

Surgeons, City Hospital, Mobile, Alabama.

The following case came under our observation at the City Hospital, at this place, and through the kindness of our much esteemed and very competent superintendent and resident physician, Dr. Wm. T. Hamilton, was subjected to our management:

Mary Kelly, native of Ireland, age fifty years, was admitted to the hospital on the 28th of June last.

Her mental faculties were not of the highest order; in fact, the great width between the eyes, vacant stare, and her peculiar facial expression, indicated a mental condition not many degrees removed from idiocy.

Her extreme deafness, with the above described peculiarity made her personal appearance anything but prepossessing, and served to increase the difficulty of making a correct diagnosis. It will thus appear, that at the outset your correspondents were unable to arrive at anything in the patient's past history, by which the real nature and seat of the disease might be revealed, and an intelligent line of treatment prescribed.

Symptoms.—These, save an œdematous condition of the lower extremities, and a somewhat anæmic appearance of the patient,

were not at first well marked. After a few days however, she complained very much of constipation, great nervousness, anorixia and insomnia; loss of appetite and inability to sleep being especially pronounced.

Efforts at micturition very painful, and the quantity of urine voided in 24 hours amounted to but little more than actual suppression. Its spec. grav. 1008, and in color very much resembling milk. Upon applying the test (heat and nitric acid) it was found, much to our surprise, entirely free of albumen. At this period of the disease the patient was treated upon general principles, and the symptoms met as they arose. Thus, laxatives, tonics and sedatives, large draughts of flaxseed tea combined with spts. ether. nitrosi, were freely administered. This treatment availed much in alleviating the pain and distress caused by micturition, in increasing somewhat the quality and quantity of the urinary secretions, and in allaying nervous disturbance; but it was, of course, powerless to effect permanent good.

Suspecting, from the persistent œdema of the lower extremities, that the heart was at fault, a closer examination was made, and the real seat of the disease discovered. The cardiac impulse was found exceedingly weak, with the rate of pulsation much quicker than normal—running to 95 per minute, when the patient was in a state of perfect composure, but reaching, when under the least stimulus, such as walking a few feet, 130 per minute. The systole was very prolonged and distinct. The feelings produced by the lightest exercise were those of asphyxiation, or, to use the patient's expression "smotherin."

In order to relieve, if possible, cardiac embarrassment, and to stimulate the urinary organs to increased action, the following combination was directed to be given in accordance with the Forthergillian theory of "plenty of cold water."

℞. Tr. Digitalis, - - ℥ii;
Spts. Ether, Nit. - - ℥i;
Fl. Ext. Buchu, - - ℥i;
Aq. men. p. qs. - - ℥viii.

ℳ. Tablespoonful three times daily.

Then, to revitalize the blood, and increase the strength and activity of the whole system, the following was prescribed:

℞. Potass. Bicarb.
Fer. Sulph. - - aa. ℥ss;
Acaciæ pulv. qs.
ℳ. ft. mass. div. in pil 90.
Sig. One three times daily, increasing one each day.

The first prescription has been repeated twice, and the last one once. Under the treatment, the symptoms entirely disappeared some time since, and have not yet reappeared, although the patient was discharged two weeks ago. She expresses herself as feeling as well as she has ever been. But, it is certain, that she is now able to do the most difficult work which can possibly fall to the female lot—scrubbing, scouring, washing, etc., and performs this service without murmur or complaint.

Report on Yerba Santa—Its Therapeutic Uses.

By L. F. SALOMON, M. D.

[Read before the N. O. Medical and Surgical Association.]

Within the last two or three years there have been brought to the notice of the medical profession a large number of new remedies, many of which, it is true, are worthless, but among the long list we find a few which merit our consideration. One of these, to which I desire to direct your attention this evening, is Yerba Santa, or Eriodyction Californicum, which has proved, in my hands, a valuable therapeutic agent.

The fluid extract of the leaves is, I believe, the only preparation in the market, the dose of which is from ten minims to one dram.

As a remedy in all forms of acute inflammation of the air passages it is useful. It may be used alone in solution with glycerine, or in combination with expectorants or anodynes. I prefer the former method of administration, as glycerine is the best vehicle, and makes a better solution than syrups or

water, both of which precipitate the gummy portion of the preparation.

Its mode of action I am not prepared to assert positively, but am of the opinion, from my observation of its effects, that it acts specifically upon the mucous membranes of the air passages as an astringent. Further observation of the effects of the drug will doubtless demonstrate its physiological action.

It is not my purpose to enter into an elaboration of theories or facts, but but simply to bring to your notice the types of cases in which I have found the drug prove beneficial, by citing one case of each type, which will serve as examples, and demonstrate the classes of cases in which it may be used.

I.—*Acute Bronchitis.*

Mrs. M., aged 30, has been subject to one or more attacks of bronchitis every winter. The attacks have invariably been very severe in character, with much bronchial irritation and incessant harassing cough, to such an extent as to prevent sleep either night or day. The acute stage of the attacks would usually last six or seven days, in spite of all the orthodox remedies, and it would be three or four weeks before the cough finally ceased.

I was called to see her one day, at about 3, P. M., suffering from an acute attack of bronchitis, which had begun the night previous. Cough was incessant, and substernal distress very great. Having in view my former experience in her case with different remedies, I concluded to try the Yerba Santa.

I therefore prescribed the remedy in half dram doses of the fluid extract, to be taken every three hours. Three doses were taken before bed-time. After the first dose, the cough was ameliorated, and upon taking the third, she went to bed and slept without awaking the entire night.

She continued the medicine the two following days, and was entirely relieved. My attention was arrested by the rapidity with which the acute inflammation of the bronchial tubes was controlled. There was no second stage; no secretion of mucus after the first few doses. The attack appeared to have been aborted.

I have used the remedy since then in a number of cases of acute bronchitis, and always with a favorable result.

2.—*Laryngismus Stridulus.*

A child eight years of age is subject to repeated attacks of bronchitis every winter. Upon the advent of the inflammation, as is frequently the case with delicate children, this child, after going to bed at night, would be invariably seized with an attack of laryngismus stridulus.

Having been called to see her in the beginning of an attack of bronchitis, I prescribed the Yerba Santa in ten minim doses every three hours. The cough was modified, and she passed through the attack without having experienced the distressing laryngismus.

This case directed my attention to a new use for the drug, and since then I have used it in several similar cases as a prophylactic. A dose of the remedy administered at bedtime to children subject to spasm of the glottis, was never followed by an attack.

Whether this was *post hoc* or *propter hoc* may be questioned, but, from the uniformity of my experience, I am of the opinion that the freedom from attacks was due to the remedy.

3.—*Bronchorrhœa.*

I was asked to see an infant, aged 2 years, affected with a bronchitis of several weeks' duration, with profuse secretion of mucus, which, owing to the child's age, blocked up the air passages and seriously interfered with respiration. Was informed that the usual remedies had been given without producing any result. Ordered Fl. Ext. Yerba Santa in five minim doses, three times daily. In four days the profuse secretion was entirely arrested and the child rapidly recovered.

In adults, as well as in children, I have witnessed its beneficial effects in arresting bronchorrhœa.

4. The cough of measles I have often seen relieved by this drug. It is more palatable to a child than the orthodox reme-

dies, and as it does not disturb the stomach is much more desirable.

Thus, gentlemen, I have, without wearying you with details, briefly outlined the types of cases in which Yerba Santa has proved useful in my hands, leaving you to judge whether it may prove as beneficial under your administration, and to decide upon its value as a therapeutic agent.

To summarize, we may say that Yerba Santa will rapidly relieve acute bronchitis, is a prophylactic for laryngismus stridulus, will arrest profuse secretion of mucus in chronic as well as acute bronchitis, and is useful in allaying the cough of measles.

As to its use in chronic bronchitis my success has not been so uniform. Although relieving some cases, in the majority, after giving it a fair trial, I was compelled to abandon its use and resort to other remedies.

I never find larger doses than one-half fluid dram necessary, although it may be given in much larger doses without producing any ill result.

Current Medical Literature.

AMPUTATION OF REDUNDANT SCROTUM FOR THE RELIEF OF VARICOCELE.

Illustrated with New Instruments to Facilitate the Operation.

By M. H. Henry, M.A., M.D.,

Late Surgeon-in-Chief State Emigrant Hospitals, Ward's Island, New York, etc., etc.

[Read before the New York Academy of Medicine, April 21, 1881.]

Ten years ago I published an article* on amputation of redundant scrotum in the treament of varicocele. I gave a terse account of the disease, my own personal experience and my impressions of the value of this operation based on the experience of many distinguished *confrères* who entertained views similar to my own of the value of this procedure. In that article I described a new instrument and gave the result of three

* The American Journal of Syphilography and Dermatology, vol. ii., p. 220.

successful operations—rendered so, I believe, by the use of this instrument. My own experience at that time covered a period of some fifteen years. My subsequent opportunities I shall speak of farther on. During the past ten years extraordinary opportunities have been afforded me of observations on the extent and existence of varicose veins and varicocele in private and public practice. If the publication of these observations does no more than attract a little additional attention on the part of my *confrères* to the value of this operation for the treatment of varicocele, I shall feel that I have been, at least, compensated in my effort to place the same before them. In my former article—published in 1871—I shared the opinion of most authorities that varicocele was an affection of frequent occurrence. It was estimated that about ten per cent. of all male adults suffered from this disease. My own personal experience during the past ten years leads me to very different conclusions. Let me state why. As chief surgeon of the Police Department of New York, I have for many years examined, with my colleagues, applicants for appointment on the force. The result shows the following: during the years 1876–80—five years—1978 appicants submitted to thorough examinations, and of this number 41 were rejected for varicocele, and 61 for varicose veins of the lower extremities; 7 of the 41 cases of varicocele had also varicose veins of the legs. No one was examined who was not of age, nor—so far as it was possible to ascertain—beyond thirty years of age. These restrictions limit the examinations to the age in which, according to all standard authors, varicocele is most likely to occur and be developed to its greatest extent.

This will, to many, seem a small percentage of cases for the large number examined, and it might, without reflection, lead to the belief that the examinations were not very rigid. They are; but it is accounted for in the fact that the applicants are mostly men of the lower working classes, and of robust health, and of more than ordinary good physique. It affords evidence that varicocele is an affection confined, to a great extent, to persons of feeble or impaired constitution, or delicate habit of body—excepting those cases where it suddenly follows an injury or severe strain. This view is sustained by the experts in venereal diseases. The percentage is, at least, one in ten of those suffering from this class of affections, especially of those suffering from syphilis and old cases of stricture and gonorrhœa. During my term of service as surgeon-in-chief of the State Emigrant Hospital, covering a period of more than seven years, cases of varicocele were rare, notwithstanding the service was very large. From January, 1873, to January, 1880, in my division, 10,227 patients were treated. This number included cases covering the whole range of surgery and surgical diseases. I am unable to give any reliable statistics. The records were so imperfect, and the assistance afforded me so in-

adequate, that it was impossible to utilize for reference this interesting field of observation. I believe, however, that the only cases of varicocele called to my attention were in the venereal wards, and coexistent with some other disease.

In the reports of the surgery of the Pennsylvania Hospital, published in 1880, among "the more interesting cases from 1873 to 1878," I find an account of only six cases of varicocele. Five were treated by ligation of the veins, and discharged cured. There is no report of any subsequent examination of any of these cases.

Before referring to the pathological features of varicocele, and the operation I advocate for its relief, let me detain you by stating what we understand as varicocele: it is a term applied to a morbid dilatation of the spermatic veins. The enlarged veins hang down below the testicle, and reach upward into the inguinal canal, and, when very voluminous, conceal the gland, encroach on the septem, and extend to the other side of the scrotum. The dilatation is not confined to the veins exterior to the gland, those of the organ itself are frequently varicose, and enlarged veins may often be distinctly seen ramifying between the tunica vaginalis and tunica albuginea. All surgeons are so familiar with the general features and views entertained of the causes of the disease that we need scarcely repeat them in this paper; but, in order to appreciate the benefits of and the indications for the operation, it is necessary to consider the pathological changes which take place in the various structures composing the spermatic veins and scrotum.

The main changes that take place in the veins are: 1st, the elongation of the vein; 2d, its tortuosity; 3d, the loss of the function of its valvular apparatus; and 4th, the loss of resiliency of the veins, which is of various degrees of intensity. This loss of resiliency is due to certain structural changes which take place in the walls of the vein, consisting of a thickening of their coats by proliferation of their connective-tissue elements, following which there occurs fatty degeneration of the muscular elements, which, later on, may increase to a complete calcific degeneration.

In taking these changes into consideration it will readily be seen that the various cases met with present phases varying in proportion to the extent of the progress of the pathological changes—namely, those in which there is very little loss of resiliency, in which the varicocele would be slight, and those in which there is an absolute and entire loss, in which case the varicocele would be exceedingly large. As a result of this varicose condition of the veins, greater or less atrophic changes may take place in the testicle. These changes which take place in the veins react on the scrotum, which gradually becomes enfeebled, lengthened, sometimes thinned and redundant. This redundancy, which is probably due to an atony of its dartos muscle, may consist of walls of scrotal tissue of nor-

mal thickness, but from clinical observation I think I am warranted in stating that there is thinning of the scrotal walls in the majority of cases; the intensity of this condition is in direct relation to the extent of the varicosity. It may be well to mention in this connection that in many cases, particularly where this thinning of the scrotal walls exist, there is frequently a decided enlargement of the superficial scrotal veins. To relieve these complex conditions existing in varicocele, of which I have given this short sketch, many operations and appliances have been advocated by various authors in the works on surgery.

It may be well to remember that in some cases, after the veins have attained a certain size, they seem to accommodate themselves, to a great extent, within the distended scrotum, and cause little or no acute pain. Even in these favorable cases, however, acute symptoms are likely at any time to manifest themselves and set up, under unfavorable conditions, all the distressing and painful features of the most inveterate forms of the disease. Aside from the distress caused by the "dragging sensation" and pains in the back, the loins and thighs, the inconvenience of chafing in warm climates, and the annoyance to those constantly on their feet, is of no small account, and calls for surgical interference promising relief.

The aims of most surgeons have been mainly to find some palliative to relieve this morbid condition; others have exerted themselves to establish a treatment that promised a radical cure.

Among the many appliances that have been advocated at different times I have found none that have afforded the relief claimed by their authors. The plan suggested by Mr. Wormald is simply a temporary palliative. He proposed to contract the scrotal bag by drawing the most dependent portion through a ring made of soft silver, covered with wash-leather, and then preventing its escape by pressing the sides of the ring together.* This could not possibly afford more than temporary relief, or during the continuance of the applied instrument.

Mr. Curling† states that relief from this contrivance is sometimes afforded, some preferring it to a suspender; but such was not his experience. The ring, he found, was "equally annoying to the patient's feelings, and cannot always be steadily fixed so as to answer the purpose intended." In a case related to Mr Curling by Mr. Coulson, "the patient compressed the ring so tightly as to cause a slough of the integuments, which, having separated, was followed, fortunately, by such contraction of the part as to raise the testicle and afford relief from the uneasy symptoms of the complaint." I have met with a similar result following a case of sloughing due to a phlegmonous erysipelas.

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*Holmes' Surgery, vol iv., p. 613.
†Ibid., On Diseases of the Testis, Fourth Edition, p. 533.

In the use of a truss with the pad pressing on the external ring to diminish the calibre of the spermatic veins, and advocated by Mr. Curling, only a small number are relieved after using the instrument for many months. It is a complicated instrument, and the great difficulty in keeping the pad nicely adjusted to the proper spot, the general inconveniences experienced in wearing a truss, and the small chance of a radical cure, certainly offer little temptation to surgeons to advocate this measure of treatment. The method of slinging up the testicle, suggested by Mr. Morgan, of Dublin, is exceedingly irksome to the patient, and scarcely offers more advantages than the apparatus and methods I have already mentioned.

I am daily more than ever convinced that the best appliance yet suggested for temporary relief is a good, clean, nicely fitted suspensory bandage, and I know of none better than those made of perforated vulcanized rubber cloth, with a good, strong, elastic band and simple tape-fastening. Care should be exercised to get one that fits well—not too tight, nor too loose. They seem to exert a very gentle pressure, and at the same time support evenly all the parts; besides these advantages, they can be easily cleaned with a sponge or damp cloth.

All the operations heretofore suggested for the radical cure of the disease have had for their object the occlusion of the veins. Very little can be said in favor of the complex operations proposed by the French surgeons. Those of MM. Ricord and Vidal, of obliterating the veins by ligature and *enroulement*, besides being attended with danger, are, in a large proportion of cases, of little or no benefit; and even when the obliteration is perfect, it is too often associated with complete atrophy of the testicle. The injection in the veins of persulphate of iron, advocated a few years ago, and more recently that of a solution of carbolic acid, deserve mention; but there is danger of exciting phlebitis. A French surgeon, M. Dubrueil, proposed a modification of Vidal's operation of obliterating the veins by the application of the galvano-cautery. He claims that by this operation phlebitis is avoided.

Mr. Henry Lee,* of London, recently advocated the removal of a portion of the anterior skin of the scrotum, and subsequently dividing the veins which are to be obliterated. All the steps of the operation are conducted through the wound made by the removal of the skin. The veins are temporarily compressed to prevent hemorrhage, and then divided. The cut orifices of the veins are sealed with the black hot cautery, which, if of proper temperature, is allowed to adhere to them for five or six seconds. The ligatures and needles used in compression are then removed, and the edges of the skin brought into apposition from below upward by carbolized sutures.

Union by first intention takes place more or less perfectly,

*At a meeting of the Royal Medical and Chirurgical Society. *Lancet*, January 15, 1881.

and the patient is allowed to follow his avocations in three or four days.

Mr. Pearce Gould described an operation he had performed eleven times—passing a loop of platinum wire around the spermatic veins subcutaneously, and then connecting it with a galvanic *écraseur*, making it burn its way through the veins. He states that two cases were incomplete, but that nine were successfully cured. Mr. Lee, in some subsequent remarks, said that *his object in interfering with the scrotum was to prevent any return of the varicocele.* If Mr. Lee's operation is to effect a radical cure—which he claims—of the varicocele, by obliterating the veins, and the removal of the redundant scrotum is of no service, I fail to see how his interference with the scrotum, such as he describes, will prevent any return of the varicocele. I allude to these suggestions because they emanate from a distinguished surgeon, who seems to have ignored the results of those who have advocated the removal of the scrotum for the relief of enlarged spermatic veins.

In the removal of a redundant scrotum in the manner I shall describe, for the relief of varicocele, no more than ordinary skill is called for. The success of any delicate surgical operation depends mainly on the care and management before, during, and subsequent to the operation. I have ventured to allude to many little details because I am fully impressed that they bear a most important relation to the chances of success.

Success in any operation depends on attention to details. Failures are too frequently the result of neglect of these so-called trifles. Cases of minor surgery have frequently—by neglect of details—been converted into cases of major importance.

DESCRIPTION OF INSTRUMENTS.

The instrument which I have called scrotal forceps, or clamps, consists of two parts (Fig. 1). The main part of the

Fig. 1.

instrument has two double-curved blades, made of steel, about ten inches long, sufficiently heavy to give strength and admit of pressure without injury when in contact with the tissues. The handles are large enough to admit of a good grasp without cramping. That part of the instrument below the joint is curved as nearly as possible according to the natural lines of the raphæ, from the upper anterior part of the scrotum down to and under the scrotum, so that it embraces, when placed in front of the

scrotum, the entire and exact portion which it is desired to remove. The coapting surfaces are evenly notched to prevent the tissues from slipping, affording a more secure hold on the soft parts, with less pressure and less injury than smooth surfaces. The blades are only thick enough to give strength, without leaving too much tissue in front.

The handles are curved so that, while they maintain a direct medium line they do not interfere or press on the genital parts. The double spring, besides giving additional security and compactness, renders them, to a great extent, self acting, easy of manipulation, and that, at times, of very great consequence, ability on the part of the operator to perform the operation without the aid of additional assistance.

The screws in the handle and at the end of the blades afford a complete and perfect hold of the parts to be removed. They are not adjusted until the operator is perfectly satisfied that he has embraced the exact portion to be removed in front of the blades.

The extra blade is made of steel, nickel-plated, and is maintained in the right anterior surface of the clamp by two small pins that fit in grooves cut in the clamp. It is easily inserted with a little pressure, and removed as easily by pressing downward and forward; it is then dislodged by slightly raising the extreme end. The extra blade, when in position, leaves a fenestra to afford the surgeon the facility of inserting all his ligatures, should he prefer it, before dividing the parts. The thickness or amount of the tissue left in front of the main blade and between that and the extra blade, which is the guide for the part to be removed, is ample to assist union, and if the division is a clean one, and the stitches are close and evenly inserted, the pressure and tension is so slight, or rather, divided over the entire cut surfaces, that there is little probability of ulceration through the stitches before union has taken place.

When the part has been removed the extra blade is displaced, leaving a free border exposed in front of the main blade about a quarter of an inch in thickness. In a few minutes the whole wound can be stitched without any inconvenience. The clamp is, of course, not removed until this is accomplished.

Besides the clamp, the only instruments necessary are the scissors or scalpel, needles, with either silk or fine silver wire for sutures, a few acupressure needles, a few *serres-fines*, silver pins, and some adhesive plaster.

For the removal of the redundant portion I prefer scissors to the knife. I am inclined to think the hemorrhage is apt to be less and the cut edges heal more readily by first intention. I cannot give any positive explanation for this, but such is my impression. When the double layers of the scrotum are tightly compressed between the blades of the clamp, it forms a very dense, tough substance, and requires a pair of very strong, sharp scissors to cut through. It is as dense as

cartilage. A strong pair of scissors will, with some extra effort, serve the purpose; but, to insure an easy and clean removal of the part, I use a cutting instrument which I have named cartilage-scissors (Fig. 2). I have dispensed with the

Fig. 2.

rings. These scissors can be grasped and handled with the utmost ease. By the aid of the springs on the inner sides of the handles they are self-acting so far as opening the blades. They are curved on the flat side. They are not only useful for this operation, but will, I think, be found to serve better, and are handled with greater facility, than any other scissors, wherever a cutting instrument is needed for cartilage or other dense or thickened tissues.

Before the operation, the patient should have free evacuation from the bowels. If there is any tendency whatever to looseness, it is advisable to give an opium suppository. Before any anæsthetic is administered the patient should be carefully examined, and the forceps applied while in a standing position; this will afford the surgeon the best oppurtunity to decide the exact portion of scrotum to be removed. If this precaution be taken, there is no danger whatever of his removing too much tissue. I am satisfied there is much more danger of his not cutting off enough. The patient being placed in a recumbent position, his thighs well separated with folded towels, the forceps are applied by placing the blades in front and under the anterior portion of the scrotum, and held in a direct median line. The end of the forceps being close to the perineum, the scrotum is then engaged between the blades of the forceps. Care must, of course, be exercised not to include anything more than the scrotum. As soon as they are adjusted and the proper amount of tissue to be removed engaged between the blades, the screws should be tightened and the part removed.

I find that by carrying the incision very low down, to the lowest and most pendulous part of the scrotum, it affords the easiest egress for any little portion of blood or serum that might collect there, and at the same time prevent, or at least lessen, the chances of an abcess. While I have never met with any such complication, I am nevertheless aware of the possibility of such an occurrence.

I use the ordinary interrupted suture; it affords advantages over the running stitch, should it subsequently be found necessary to divide one or two stitches in case of hemorrhage, or in case of severe œdema. If the interrupted suture be used, each stitch being independent of its neighbor, affords facilities

under these circumstances which I think are of no small value. The stitches should be close together. I have used silver pins and the figure of 8 ligature—the same as practised in cases of hare-lip—in three of my operations. They all did well.

Teats, or angular points, are sometimes left at each end of the wound, which may prove, at times, annoying and unsightly; this may be avoided by a slight rounding of the corners when the part is removed.

Should any vessel be divided requiring special attention, the application of a small acupressure needle will be found most serviceable. If the bleeding occurs on or very near the border of the incised parts, I apply a *serre-fine* or acupressure needle.

In persons of a feeble or debilitated constitution, diffuse hemorrhage may occur, as in any surgical operation. This is best treated by the local application of ice or of a solution of the persulphate of iron. In persons of a true hemorrhagic diathesis the operation should not be performed.

It has been suggested that there was danger of a retraction of the dartos muscle in amputation of the scrotum; this, I think, cannot possibly occur if the forceps are used with ordinary care. Even if such an accident should take place, the spasmodic action—for it is scarcely more—can be easily overcome by the application of iced cold water.

The treatment following the operation is very simple: a few strips of India-rubber adhesive plaster are fastened around the testes to assist in maintaining the cut edges of the scrotum in perfect apposition and to prevent any dragging on the stitches; a broad strip of adhesive plaster is then placed under the most dependent part of the scrotum and fastened on either side of and above the pubis. The wound should be kept perfectly clean and sponged three or four times daily with a weak solution of carbolic acid and water. Should any untoward symptoms manifest themselves, they would, of course, be treated on general principles.

When the wound has entirely healed, and the patient able to go about, I have been in the habit of advising the use of a suspensory bandage for some time. This precautionary measure is, I think, of decided benefit, allowing, or rather assisting, the enlarged veins to recover from their morbid size and condition.

The main objections urged against this treatment by persons who have never witnessed any of the good results of the operation, is the fear of erysipelas. I have never seen any complication of the kind follow the operation, nor do I believe that there is any greater tendency to excite any phlegmonous inflammation in this operation than there is in any other surgical procedure in other parts of the body. The adoption of Lister's apparatus and method of after-treatment would doubtless, lessen the risk in the estimation of those who resort to it in their operations.

I was first led to perform this operation because it was suggested by Sir Astley Cooper,* who published five cases which he regarded as successful in their results, and an additional case with some extraordinary features—submitted by Mr. Key—who was also in favor of this operation, and preferred it to that of ligation of the veins. The difficulty in the performance arose from the want of a proper clamp. The one I presented ten years ago has met, I am pleased to state, with universal approbation. I have now performed the operation fourteen times during the past ten years without any unpleasant results. My cases have ranged between the ages of nineteen and forty-five. The varicoceles were all on the left side, excepting in one instance, when both sides were involved. Nine of the fourteen cases healed perfectly by first intention. The remaining five healed partially by first intention and subsequent granulation. Those that healed by first intention made perfect recoveries within a week. The longest period of confinement in any of my cases was fifteen days. This was the case of a young gentleman of feeble constitution, who had led an irregular course of life for some time before the operation. I operated in his case in February, 1878. The following year he called on Sir James Paget, and directed his attention to the results of the operation. That distinguished surgeon assured him it was a success. I had an opportunity of examining this patient about three months ago. The result was all that could be desired. In another case, operated on in May, 1872, I examined the patient in January last, and the result was equally satisfactory. My cases were mainly from other parts of the country, and thus I am unable to give particulars of the results. I am led to think they were successful, because I enjoined them to let me know if at any time they felt that the operation was not satisfactory to them.

In June, 1870, I assisted a surgeon of this city, who removed the redundant scrotum for varicocele, from a lad fifteen years of age. The want of a proper clamp rendered the operation a tedious and unpleasant one; there was no union by first intention, and for some time the case looked very unsatisfactory. By chance I met him April 7th, of this year. I examined him and found the result to be a good one. He was perfectly satisfied.

In 1863, a gentleman, twenty-seven years of age, consulted a surgeon of this city for relief from severe suffering, due to a varicocele of left side. The veins were ligated by Ricord's method. The pains in the back and thighs continued with the same severity, with the addition of more intense irritation and swelling along the course of the spermatic veins and in the inguinal region. This proved such a serious annoyance that, in 1864, he submitted to amputation of the redundant

*Cooper: On the Structure and Diseases of the Testis. London, 1841.

scrotum. I was present at the operation. The surgeon removed a large section entirely from the bottom and most dependent part, forcing the testes up high, so that when the patient assumed the erect posture the testes bulged out in front of the penis, and became an additional annoyance. A third operation was performed—the removal of a section from the anterior surface of the scrotum, along the median line. He was relieved of his suffering with the exception of the irritation and swelling in the course of the spermatic veins in the inguinal region. In 1870 he consulted another surgeon, who pronounced that he had a hernia. Under his advice, he wore a truss for one year. In 1871 he sought the advice of another distinguished surgeon, who assured him he had no hernia, and confirmed his own impressions that his suffering was due solely to the ligation of the spermatic veins. He continues the use, more or less, of a suspensory bandage. April 14th, of this year, I had an opportunity of examining him. The scrotum presented a normal appearance, and the spermatic veins were no longer any source of annoyance. He stated that he felt perfectly well and said that if asked which operation he thought most advisable, he assured me the removal of the redundant scrotum would be his choice.

He said that he would, under all circumstances, condemn ligation of the veins.

I give the details of this case because they furnish evidence of a practical character, after a lapse of sixteen years from the time the first operation was performed, and additionally, because they are given by an educated gentleman of much more than ordinary intelligence. One well-established clinical fact from such a source is of more value than a hundred expressions of opinions without foundation.

Conclusions.—1. Varicocele is a disease that may occur at any period from boyhood to middle life. 2. It occurs mainly in early manhood. 3. It is not of such frequent occurrence as generally believed. 4. It is mostly met with in persons of delicate or impaired constitutions, or in those who have become enfeebled by disease or venereal excesses, or both. 5. In robust persons it may follow a severe strain, or direct injury in the region of, and along the course of the spermatic veins. 6. It is some times complicated with disease of the testicle, hydrocele, and hernia. 7. A correct diagnosis is easily made with ordinary care and attention. 8. Ligation of the veins is not without risk and danger to life, and does not offer any decided prospects of a radical cure. 9. Ligations of the veins does at times cause loss of virility, and atrohpy of the testicle. 10. The obliteration of the veins by the galvanocautery has, so far, proved only a substitute for the ligation of the vessels. 11. Amputation of the redundant scrotum offers, at least, as good a prospect of cure without any chance of

injury to the glands, and without risk to life. 12. Union by first intention becomes as nearly as possible a natural sequence. 13. Dangers from hemorrhage and inflammation are reduced to a minimum. 14. The operation with this instrument is easy of accomplishment.—*The Medical Record.*

CÆSAREAN HYSTERO-OÖPHORECTOMY, OR PORRO'S OPERATION.

By Alex. Russell Simpson, M. D., F. R. S. E.,
Professor of Medicine and Midwifery and the Diseases of Women and Children in the University of Edinburgh.

Object of the Operation—Porro was led up to his bold proposal by a consideration of the conditions under which the Cæsarean section had been so frequently fatal. In his own city, for example, no woman who had ever been subjected to the operation had survived. It seemed to him that the chief source of danger lay in the wounded uterus. This was sometimes the source of a fatal hemorrhage. In whatever way the lips of the incision might be brought together at the moment of operation, they were liable, in the changing moods of the puerperal uterus, to become separated. There might take place an escape of blood, not immediately dangerous in amount, but dangerous from its liability to escape into the peritoneal cavity, where it sometimes set up fatal peritonitis. The usual puerperal secretions from the inner surface of the uterus were liable to escape into the abdomen. The tendency to peritonitis was further increased by the chance of septic matters passing up along the genital canal and through the gap in the uterine walls. All these risks were likely to be lessened, if not entirely removed, by the removal of the injured organ. The wound-surface of the stump would not be so great as that of the necessary incision through the uterine parietes; and the stump would be amenable to the means of controlling hæmorrhage that have given good results in the removal of ovarian and uterine tumours through an opening made in the walls of the abdomen. Fortified by such considerations, and by the results of experiments on the lower animals, which showed that more recoveries took place when the wounded gravid uterus was removed, than when it was left after the fætuses had been extracted by Cæsarean section, Porro carried out his idea successfully in the woman who was thus the first in Pavia to survive a Cæsarean labour.

The removal of the ovaries is a necessary complement to the removal of the uterus. The loop that encircles the neck of the uterus has the ovaries within its embrace; and they are cut off with the uterus, instead of being left adherent to the stump. If they were left, and retained their vitality, the return of their functional activity might easily give rise to periodical troubles

in a patient to whom they were no longer of any physiological value.

It is no drawback, but rather an advantage attaching to this procedure, that it annuls the further reproductive powers of such patients as are fitting subjects for its employment. For the most part, they are delicate, deformed, diseased, without the power to rear and care for more than a single child. The cases are few, where a woman who has to be delivered by a Cæsarean operation, will be anxious to multiply her children.

As experience has grown in connection with Cæsarean hysteroöphorectomy, further advantages have been found to attend it. In cases of malacosteon, for example, which furnish a notable contingent of the women operated on, the patients who survive have been seen in one or two instances to recover distinctly from their disease. After any other kind of delivery, cases of malacosteon usually become worse; and the successful result of these, Porro's operations, has raised the question whether double oöphorectomy should not be had recourse to as a curative measure in other cases also.

Again, we are not obliged to wait the onset of labour, or to use means to start it, as in the ordinary Cæsarean operation we are compelled to do. The chances for the child are thus greatly improved; and, as it sets us free to choose our time for operating, we put the mother also in a more favorable position for success.

Such being the nature of the Porro procedure, it is easy to see what are the

Indications for the Operation.—It will be applicable to all the cases where Cæsarean section is called for. British obstetricians have always been very shy of this grave operation. Indeed, but for the faithful advocacy of Hull* and Radford,† it ran some risk of being ranked among the condemned operations. Little wonder, when we see, from Dr. Radford's table of 132 cases, that only 23 women, or 17.42 per cent., survived the process. Less wonder, if in Scotland the operation was rarer still; for, of the 18 women tabulated by Dr. Radford as having been subjected to the Cæsarean section, not a solitary individual survived. Sir James Simpson used to refer in his lectures to one successful case as having occurred in Scotland, which had, however, not been registered in any scientific table. It was performed under unpromising circumstances, by a rude operator, and with a rude instrument; for the operator was a cow in the Queen's Park, and the instrument her horn. But the high mortality in Britain may be read the other way; and G. A. Michaelis‡ and other continental writers have read for us the lesson, which a recent discussion in the Dublin Ob-

*Defence of the Cæsarean Operation. Manchester: 1799.

†Observations on the Cæsarean Section, Craniotomy, and on other Obstetric Operations. Second Edition. London: Churchill, 1880.

‡Abhandlungen aus der Geburtshulfe, p. 131. Kiel: 1833.

stretical Society on an interesting paper by Dr. Kinkead* leads me to think we shall soon effectually learn for ourselves, that the high mortality is largely due to our very timidity; for often the performance of the operation was delayed until various other means of delivery had been attempted, and was only had recourse to as a *dernier resort* when the woman's chances of recovery had already been thrown away. The table of the Porro's operations which I have given above shows a mortality to the mothers of 58.3 per cent., whilst the lives of 79 per cent. of the children were saved. If the mortality still seems high, it should be remembered that, whereas many fatal cases of the classical Cæsarean operation never saw the light, all the Porro's operations have been tabulated, whether favorable or unfavorable; and in a considerable proportion of them the child was already dead, and the mother in a hopeless condition before she was subjected to the operation. But, if the statistics improve, as they are likely to do when the conditions of success come to be more clearly understood, then I do not doubt that the supplementing of the Cæsarean operation with the utero-ovarian amputation will help markedly to widen the field of its application. We need not always be tied down only to operate where the pelvis measures less than two inches in the conjugate diameter of the brim; but in the case of women with a pelvis somewhat roomier, yet still so narrow as to call for the sacrifice of child after child, we shall be warranted in giving them the satisfaction of seeing a living infant by an operation which they have a distinct chance of surviving. The indications for the operative interference have not in all cases been recorded; but the following table shows the conditions which have called for the operation in 62 of the cases already carried out, with the relative mortality to the mothers and children:

Indication for Operation.	No.	Mothers.		Children.	
		Saved	Lost	Saved	Lost
Rickets	46	24	22	39	7
Malacosteon	8	4	4	6	2
Dwarf pelvis	1	4	—	1	—
Osteo-sarcoma	1	—	1	—	1
Stenosis vaginæ	1	—	1	1	—
Uterine fibroids	4	—	4	1	3
Partral rupture of uterus	1	—	1	—	1

Before discussing the various steps of the operation, it will be well to try to determine

The best time for operating.—In certain cases the operator has no choice. He comes to a patient already in labour, and he sees that the woman has no chance of delivery but by *sectio Cæsarea*. The sooner he can carry out the operation, in

*Dublin Medical Journal. Vol. lxix, p. 445. 1880.

such a case, the better. For the law laid down by Sir James Simpson,* that the mortality of parturition, both to mother and child, increase with the increase in duration of the labour, has been abundantly illustrated in the statistics of Cæsarean labours drawn up by Kayser† and others. It is one of the great advantages of the operation supplemented by Porro's procedure, that the operator can choose his date, and regulate the circumstances with due precision. I believe that the best time for the operation is at the full term of pregnancy, on the first day on which the patient is likely to fall in labour. It will be well even to be prepared to anticipate it, should any symptoms of labour set in at earlier date than the expected day, as in the case recorded by Professor Veit‡ of Bonn. The propriety of having recourse to the Cæsarean section, before the onset of labour, has been advocated and discussed by Drs. Braxton Hicks,§ Barnes,|| and others. But, where it was deemed desirable to operate before gestation had run its course, it was seen to be a necessity in the operation, as hitherto practiced, to have the uterus in action before the operation was begun, lest, after its evacuation, hæmorrhage might occur from the unexcited, inert, inactive organ. The Porro's complement relieves us from this fear, and leaves us free to open an uterus which has not yet entered on its parturient function. The advantages of operating before the uterus has begun its work are, at least, these three. 1. We are not so liable to meet with trouble on the part of the bladder. A glance at Braune's plates of the frozen sections of a woman in advanced pregnancy, and in full labour, respectively, lets us see that, in the non-parturient gravida, the bladder is a pelvic organ; whilst, during the process of parturition, it is lifted above the symphysis pubis, and becomes abdominal. 2. We are saved the difficulty that several operators have experienced, during the removal of the child, from contraction of the uterus round its neck. 3. The uterus will not have taken on the hyperæmia of an organ in full functional activity, and the hæmorrhage will be all the less. These considerations affect more the maternal chances as dependent on the local conditions, and without regard to her general state and vigour. We should remember, besides, that the child, in whose interests we are exposing her to the Cæsarean risks, may begin to have its chances of survival influenced by the conditions of labour, especially if early rupture of membranes take place.

Technic of the Operation.—In carrying out the operation itself, we begin with

1. *Incision through the Abdominal Wall.*—The only question,

* Selected Obstetrical and Gynæcological Work. Edited by Dr. Watt Black, page 412.
† De Eventu Sectionis Cæsarea. 1841.
‡ Zeitschrift fur Geburtshülfe und Gynakologie, v, 256 1880.
§ Transactions of the Obstetrical Society of London, vol. x, p. 45. 1869
|| Obstetric Operations. Third Edition, p. 427.

in regard to this incision, is that concerning its length. All operators now make the opening in the linea alba, but of lengths varying from 5½ inches (13 centimètres) to upwards of 7 inches (18 centimètres). The shorter incision is certainly to be preferred, and it should run from below the umbilicus to within 3 centimètres of the pubes. When it becomes necessary to elongate it, it should be extended upwards to the left of the umbilicus. Operators who have made the long incision have done so in carrying out a modification first suggested and carried out by Professor Müller* of Berne. The modification consists of enlarging the abdominal wound sufficiently to allow the protrusion through it of the unwounded uterus, which is to be surrounded with a cord, or with the noose of a *serre-nœud*, so that the circulation is arrested before the incision is made through its walls. The object of this modification is to lessen the risk of escape of blood and uterine contents into the abdominal cavity.

This preliminary extrusion and constriction of the uterus, however, introduces special elements of danger. To the mother there is the additional risk attendant on a larger wound; the increased exposure of the peritoneal cavity; and the liability to protrusion and injury of the intestinal coils. To lessen these the upper part of the wound had sometimes to be stitched up before the opening was made into the uterus. Even when the wound was of considerable length, difficulty was experienced in getting the uterus to protrude, and its size had to be diminished by evacuation of the liquor amnii. So for the child, fresh risks are incurred, especially from the interference with the placental circulation, leading to temporary asphyxia, and probably to attempts at intra-uterine respiration. Hence, for example, in Dr. Elliot Richardson's, the only successful case that has yet been reported from across the Atlantic, he says:† "At birth, the child was in a condition of suspended animation—so that considerable effort had to be made at resuscitation." To such risks, I think, we are hardly warranted in subjecting the child.‡ The only condition in which it might be advisable to continue Müller's proeedure would be where the waters had been evacuated, the child being dead, and the uterus possibly the seat of noxious material. In all other circumstances, contenting ourselves with a short abdominal incision, we proceed with

2. *Incision through the Uterine Wall.*—It is during the opening of the uterus that there arises the greatest risk of hæmorrhage. The risk is, of course, increased, if the line of incision fall through the placental area. This risk may be quite inev-

*Centralblatt fur Gynäkologie, 1878, No. 5.

†American Journal of the Medical Sciences, January, 1881.

‡Dr. Harris bids me note that in the thirteen cases in which Müller's modification was adopted, seven mothers were saved.

itable. If our palpation have led us to suspect that the placenta is attached to the anterior wall, if the blueish appearance of the uterus as it appears through the abdominal opening confirm the impression, and if Halbertsma's* suggested application of Middeldorpf's akidopeirastic make us sure, we still do best to cut through the centre of the anterior wall. To make the incision closer to the margins of the uterus, simply introduces the risk of wounding the large branches of the uterine arteries. The hæmorrhage, as I have stated, in my own case was trifling. I had the advantage of having to do with a quiescent uterus, and an anterior wall free of placental attachment. The opening, made with a sharp bistoury, in the upper part of the surface, was carried right through the membranes of the ovum, and of size sufficient to allow of the introduction of the finger, which guided a probe-pointed bistoury in extending the incision downwards. It must be of length sufficient to allow

3. *Extraction of the Child.*—This requires to be accomplished with all possible rapidity. Perhaps, in most instances, it does not greatly matter how the child is laid hold of. I notice that, in a large proportion, it has been seized by the lower limbs and so extracted. But, as the interference first with the uterine walls, and then with the child itself, is apt to excite it to respitory efforts, if the uterine wall closes around the neck, as has sometimes happened, these respiratory efforts endanger the vitality of the child as long as the head is within the uterus. Hence it is theoretically better to lift out the head first; and, in the case I have related, it was practically easy of accomplishment.

4. *Management of the Placenta.*—As the Cæsarean operation used to be carried out, the next step consisted in the detachment and removal of the placenta and membranes. The uterus had to be emptied, and security taken for a free escape of its contents through the cervical canal. That Porro and others, before proceeding to extirpate the uterus, should have continued to remove the placenta, seems to me only a survival of the old method of operating. There is no good to be gained by it; for the uterus collapses sufficiently to allow its easy extrusion through the abdominal orifice, though the placenta be left adherent to one of its walls. The separation and extraction cost some valuable seconds, and must occasion and allow an increase of the hæmorrhage.

5. *Securing of the Stump.*—In carrying out the utero-ovarian extirpation two different methods have been followed, corresponding to the two methods employed in the removal of these organs when they are the seats of morbid growths. The pedicle has sometimes been secured according to the extraperitoneal method; sometimes according to the intraperitoneal.

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‡Centralblatt für Gynäkologie, v. 97, 1881.

a. Extraperitoneal Treatment of the Pedicle. — In carrying out this method operators have encircled the uterus and broad ligaments about the level of the isthmus with the noose of a wire écraseur, such as the serre-nœud of Cintrat (which was the instrument used by Porro in his first case), or with a similar instrument furnished with a thin strip of metal instead of wire for constriction, or with such a chain as is found in the ordinary écraseur. When the wire or metallic loop or chain has been tightened so as to compress the structures firmly without producing any laceration of them, the uterus, Fallopian tubes, and ovaries are cut off with knife or scissors, and the stump in the grasp of the constrictor is secured in the lower angle of the abdominal wound. The portion in the bite of the écraseur sloughs and separates, at a period varying from fourteen to fifteen days.

This method has, *first*, the advantage of being capable of rapid execution, so that there is a correspondingly brief exposure of the peritoneal contents. It allows, *secondly*, perfect control of the wound, which is brought to the surface. *Thirdly*, it lessens the risk of any exudation taking place after the operation into the peritoneal sac.

b. Intraperitoneal Treatment of the Pedicle.—When the pedicle is to be treated so as to be dropped and left to heal within the peritoneum, the uterus must first be provisionally constricted with an écraseur or an Esmarch's band, or an ordinary piece of fish-line or whipcord. At some distance above this constriction, the uterus is clipped or cut off. A needle in a fixed handle will then carry a strong double silk ligature through the centre of the stump, just below the constricting band. The ligature is divided, and the needle withdrawn. The same needle then carries through the lower part of the left broad ligament a single thread, which will serve to secure the utero-ovarian vessels of that side. The needle, before being withdrawn, is to be threaded with one end of the double ligature, which had been carried through the middle of the stump. This will be used to secure the large uterine artery and vessels in the left half of the isthmus uteri. The needle will, in the same way, be passed with a single thread through the right broad ligament, and, as it is withdrawn, will bring back the other end of the double ligature that had first been introduced. I have stated in my report how I thought to simplify this procedure by using three ligatures instead of four, but was obliged eventually to introduce the four. Veit brought the edges of the peritoneum together over the cut surface, according to the plan recommended by Schroeder.

The favorable results obtained from this intrapertoneal method of treating the stump of ovarian tumours—results much more satisfactorily than those obtained by the use of the clamp—lead one to believe that, in Cæsarean hytero-oöphorec-

tomy, it will betimes also give better success; but as yet the results have been disappointing.

6. *Cleansing of the Peritoneum.*—In most cases, more or less blood has passed into the peritoneal cavity. This may occur even where the uterus has been brought through the abdominal wound, and ligatured before being opened. The peritoneum requires, therefore, to be carefully cleaned out; and some operators have proceeded, further, to establish a drain through the pouch of Douglas and the vaginal canal, so as to prevent the accumulation of blood and serum in the cavity. For the most part, such drainage is unnecessary.

7. *Closure of the Wound.*—The abdominal wound is closed, as after an ovariotomy. Where the pedicle is secured in the lower part of the wound, it must be cauterised freely, so as to wither the surface; and it must be dressed with antiseptic cotton, which will absorb the discharge which sometimes occurs very freely from it.

The patients who have survived have usually had a period of convalescence of one or two months, protracted in some instances by umbilical herniæ or cervical fistulæ. Among the fatal cases, death resulted in twenty from peritonitis, in three from hæmorrhage, in two from shock, in two from tetanus, in one from thrombosis, and in one from pulmonary œdema.

General Result.—If we look at the general result of all the cases we have brought together, we see that 30 mothers were saved, and 42 lost; and 57 children were saved, and 14 lost; whilst the condition of the children in one of the cases is unknown. This gives a total of 87 lives spared, and 56 lost. If the patients had been delivered by some of the head-crushing procedures, then all the 72 infant lives would have been sacrificed; and, with the usual loss of about 1 in 5 mothers, there would have been at least 14 maternal deaths; that is to say, at least 88 of the 144 lives would have been lost, and only 58 saved. The proportions would nearly have been reversed.—*British Medical Journal.*

EMPYEMA AND ITS TREATMENT.

The *Medical and Surgical Reporter*, Sept. 24th, 1881, contains the translation of a clinical lecture by Prof. W. Wagner, of Königshütte, which presents with great clearness the value of the surgical treatment of empyema. The history of a case is given, and the lecture concludes as follows:

With Lister's dressing the treatment of empyema has entered a new stage, and the operation is not only one that is under all circumstances admissible, but even, at least in simple empyema, entirely without danger.

Formerly it was considered safest to defer the operation for empyema as long as possible; to-day the principle is everywhere recognized, to operate as early as possible.

In empyema we have nearly the only abscess in which we are forced to select the most resistant wall for the opening, while the movable walls are removed from our reach. The re-expansion of the compressed lung, the reapposition of the same to the resisting walls of the thorax are the chief objects which we must strive to attain. And here lies the entire difficulty in treating this affection; the unconditional indication to operate as early as possible. As long as the pleura pulmonalis is soft and the lung is yet expansible, we have the best chances for recovery. If we operate in the earlier stages of empyema we have the most favorable chances for the re-expansion of the lung and for the re apposition of the walls of the abscess. On the contrary, the older such an abscess becomes, the thicker the pleura, and the more resistant will the inner wall become, and the less expectation can there be for the closing of the cavity.

But how shall we operate? Various trocars and aspirators have, during the last two decades, been tried, and occasional cases have been reported, in which a cure has been effected after one or more punctures had been made; but the chief difficulty of this method of operating lies in the fact that a small portion of the pus must always remain in the pleural cavity, which often gives rise to a renewal of the empyema.

Batz has tried to remedy this by constructing a trocar with two arms, through which the pleural cavity may be washed out with an antiseptic fluid, and to the exclusion of air. I have made two trials with this apparatus, but the results have not been satisfactory.

The principles which at present govern the treatment of empyema do not allow us to resort to puncture more than once. If we do not succeed in effecting a permanent subsidence after one trial, we must forthwith resort to the operation by incision. The older we allow an empyema to become, the less favorable are the chances for success with the incision, and by repeated trials at puncturing and aspirating, we lose much valuable time. I, therefore, regard the operation by incision as the most proper one to resort to.

In what manner and where shall we operate? It is clear that we must endeavor to obtain the most complete evacuation of the pus. For this purpose we should make the opening at the lowest point of the thoracic cavity. This would be in the eleventh intercostal space, near the spinal column. Rational as this seems, there are nevertheless reasons which make this ideal point untenable; the pleura may have become united by some old pleuritic process, and the apposition of the diaphragm to the chest wall may prevent the free discharge of

pus. Therefore, the fourth, fifth, or sixth intercostal space in the axillary region has generally been chosen for the operation. In our case, as you see, I chose the ninth intercostal space, near the spine. I must admit that I would not recommend this point; the difficulties in the way are not light. The muscular coats are thicker, and therefore more arteries must be ligated, thus rendering the operation tedious; again, it may happen that, as already stated, adhesions of the pleura exist, and thus the abdominal cavity may be entered.

Notwithstanding the fact, therefore, that this point is very favorable to the evacuation of the pus, we must, nevertheless, look upon it as inadvisable to operate here.

If we make the incision higher, we must lay the patient in such a position that the point of incision is the most dependent portion of the body. If we operate in the fifth or sixth intercostal space, at the edge of the latissimus dorsi, then lay the patient on his side, raise the lower portion of the trunk a few inches, we have the most favorable position for the evacuation of the thoracic cavity. Grown persons are easily kept in this position, but in children it is more difficult.

Before we operate, we must consider whether it is advisable to use anæsthetics. I believe that we may use them in all cases, without more fear than we have in any other operation. Sudden deaths during operations for empyema cannot be attributed to the chloroform, but are generally caused by cerebral anæmia, embolus, etc., etc.

The technic of the operation is very simple. An incision one and three-fourths to two inches in length is made along the upper edge of the rib, then the muscles are divided, layer after layer, until the pleura is exposed, then the latter is opened with a narrow bistoury. We may also operate as König advises, by resecting a piece of the rib about four-fifths of an inch in length and entering the thoracic cavity through the periosteum and pleura. The pus should not be allowed to flow too freely. Where it is possible, the finger should be introduced into the wound in order to ascertain the condition of the walls of the cavity. The quality of the pus shou'd also be carefully noted. If the latter is fluid and of normal smell, if it contains no fibrinous flakes, or coagula, the cavity need not be washed out at all, and a drain may be introduced immediately after the evacuation. If, however, the pus has much smell, or if it contains coagula, or flakes, it is necessary to thoroughly rinse the cavity.

Carbolic acid solution is not considered appropriate for this purpose, because it has been known to produce carbolism (dark green urine and symptoms of collapse, and even death), therefore I have lately employed a seven to ten per cent. solution of boracic acid. König recommends three to five per cent. solutions of chloride of zinc. Salicylic and thymol solu-

tions are also employed, and five per cent. solution of acetate of aluminium is recommended. It is necessary that the solutions used be of sufficient strength to exclude the introduction of all infectious organisms and the rinsing should be continued until all flakes, etc., are removed.

If we find the pleura thickened and hard or covered with pseudo membranes and coagulæ we must employ stronger solutions and endeavor to produce the most thorough disinfecting and alterative action. After the cavity has been thoroughly cleansed a thick drainage tube should be introduced. Its length should not exceed two inches, as longer tubes easily produce a hurtful irritation. The tube is kept in position as already stated.

That it is not necessary to use a spray during the operation, and until the bandages are applied, in order to preserve a complete antisepsis, is, I believe, not yet decided, notwithstanding the influence which has been brought to bear against this procedure of late. I have at least used it in all cases during the operation and at all changes of the dressing.

At the first dressing I lay a large ball of quilled carbolic gauze immediately over the drain, over this a layer of ten per cent. salicylic wadding, then the typical eight layers of Listerian gauze with which the entire side of the trunk from the axilla to the pelvis should be covered. The edges of the dressing are to be covered with thick strips of salicylic wadding and the entire dressing fastened with rollers.

In most cases the first dressing may remain for twenty-four hours. It should not be allowed to remain longer than this, because the drain may become displaced. For the same reason it is advisable not to allow the subsequent dressings to remain too long.

Repeated rinsing of the cavity at the renewals of the dressing is only necessary in the more complicated cases. If the pus has an objectionable odor, or if coagulæ or flakes continue to be discharged from the wound, I consider a daily rinsing of the cavity with a disinfecting solution as absolutely necessary until the, in such cases, high temperature is permanently reduced.

VOMITING OF PREGNANCY.

Dr. J. S. Warren, *N. Y. Med. Record*, March 26th, considers the vomiting of pregnancy due to various influences, mental ones included, and to remedy it requires a careful diagnosis of its cause, whether it be simply reflex, or due to some other organic condition. Its treatment, therefore, resolves itself into the correction of all disturbances, functional or organic, as far as possible, which are known to excite dyspeptic symptoms, before a simple irritation becomes a confirmed gastritis, and

the stomach rejects the remedies that would most easily relieve the original disorder. First among these, Dr. Warren recognizes a constipated habit and the emotional element, and these, he holds, should receive the prompt attention in pregnancy. The latter of these is, he says, relieved by no remedies more generally than by the bromides of potash and soda, given, as a rule, in full doses late in the day, on an empty stomach. Constipation can be overcome by any simple laxative. After these, the purely sympathetic disorder must be attended to if vomiting persists. The most patent remedy for this, in his experience, is Fowler's solution, in drop doses on an empty stomach. When thus given with a restricted diet, it has seemed to him nearer a specific for this complaint than any other medicine. After it has been used for a while it may be found of advantage to suspend it and use nitro-muriatic acid, with tinc. nucis vomicae, especially if there is any inactivity of the liver or kidneys, or if anorexia exists.—*Journal of Nervous and Mental Diseases.*

HAMAMELIS VIRGINICA AS A LOCAL APPLICATION.

Dr. William Henry Netherclift, Medical Superintendent of the Chelsea Infirmary, writes as follows in the *British Medical Journal:*

Having during the past few months given a somewhat extended trial to the new extract of Hamamelis Virginica, called "hazeline," I beg to place the following memoranda at the disposal of the readers of the Journal:

As a local application in irritable and inflamed piles situated at the margin of the anus, where the remedy can be readily applied, I have never met with its equal. In most of the cases submitted to the treatment, the relief was immediate and permanent. My plan has been to have the part bathed in the solution three or four times a day, and a piece of lint dipped in it kept applied to the anus during the intervals. All urgent symptoms have passed away, as a rule, in from twelve to twenty-four hours.

In chronic and intractable ulcers of the varicose or eczematous description, I have met with excellent results by using the hazeline after the fashion of a water-dressing. I may add that about two hundred cases of ulcerated legs pass through my wards annually.

COD-LIVER OIL IN PHTHISIS AND BRONCHITIS.

Dr. T. Lauder Brunton, writing on this subject in the London *Lancet*, says:—

One of the most powerful expectorants is simply a little warm food in the stomach, and in cases of chronic bronchitis,

in which the patients complain of violent coughing immediately after rising, one of the best expectorants is a glass of warm milk either with or without a little rum, and a biscuit or a piece of bread, about a quarter of an hour before they get up. A little warm beef tea will have a similar effect. After taking this for a short time they generally tell you that the sputum comes away much more easily than before, and they are not so much exhausted by it. But perhaps the remedy, *par excellence*, not only in cases of phthisis, but in chronic bronchitis, is cod-liver oil. Persons suffering from long-standing chronic bronchitis will often come to a hospital to beg for cod-liver oil, saying that it eases their cough far more than any cough mixture. Other oils or fats have not this power to the same extent as cod-liver oil. We cannot say positively what the reason of this may be, but I think there is no doubt about the fact. My own belief is that cod-liver oil is more easily assimilated than other oils, and not only so, but more easily transformed into tissues themselves. Whether it owes this property to its admixture with biliary substances or to its chemical composition, we cannot say. Dr. Weir Mitchell quotes a remark made by an old nurse, that "some fats are fast, and some fats are fleeting, but cod-liver oil fat is soon wasted." By this she meant that there were differences in the kinds of fat accumulated under the subcutaneous tissues of men, just as there are differences in subcutaneous fats which accumulate in horses. The horse fed on grass soon gets thin by hard work, while the fat laid on when the horse is feeding on hay and corn is much more permanent. Persons fattened on cod-liver oil soon lose the fatness again, and this, I think, points to the power of ready transformation which the oil possesses. Supposing that it does possess this power, we can readily see how very advantageous it will be. In chronic bronchitis, and in catarrh and pneumonia, we have a rapid cell-growth, but want of development. The cells lining the respiratory cavities are produced in great numbers, but they do not grow as they ought to do. They remain, more or less, lymphoid cells, instead of developing into proper epithelium. They so rapidly form, and are thrown off so quickly, that they have not time to get proper nutriment, and if they are to grow properly we must supply them, not with an ordinary kind of nutriment, but with one which is much more rapidly absorbed, and is capable of much more rapid transformation in the cell itself than the usual one. This power is, I believe, possessed by cod-liver oil, and to its quality of nourishing the rapidly formed cells in the lungs in cases of bronchitis and catarrhal pneumonia I believe its great curative power is owing. —*Canada Medical Record.*

VIBURNUM PRANIFOLIUM IN UTERINE DISEASES.

Dr. E. C. Mann, in the *Boston Med. & Surg. Jour.*, writes

that he has obtained great satisfaction from the use of this drug in congestive and neuralgic dysmenorrhœa. One case was accompanied by epileptiform convulsions, and yielded promptly to the remedy. He regards it as a sedative with specific action upon the nerves of the uterus.

[This indigenous remedy is chiefly known and valued as a preventive of threatened abortion, and its *modus operandi* in the latter trouble is reasonably the same as suggested above.]

INSANITY AND UTERINE DISEASE.

In the *New York Medical Record* of April 9, Dr. L. Putzel opposes the opinion expressed by Dr. Pitkin in a previous number of the same publication, that one or more of the various uterine diseases, either functional or organic, are almost invariably present in female lunatics. Dr. P. concludes that insanity among women is largely due to uterine ailments. On the other hand, Dr. Putzel is satisfied, from numerous *post mortem* examinations, of which he has not preserved accurate observations, that there is less uterine disease among insane women than among the sane.

[It is evident that the question can not be settled by the conflicting impressions of different observers, without recorded figures.]

FEEDING INFANTS.

Reading in the *Medical and Surgical Reporter*, April 30th, page 490, "Constitution of Human Milk," by F. Hoffe Seyler, leads me to offer my substitute for human milk, which may, for aught I know, be new to some of your readers; to me it did not come from reading, but from a determined effort to prevent a bottle-fed baby from dying of inanition. The history of my little patient is the usual one of vomited and defecated, undigested curds, with emaciation and pain, in spite of pepsin, subnit, bismuth, lime water, etc. I ordered milk, one part, the whites of eggs, well beaten, two parts, warm water, one part. Place in the nursing bottle and allow only at regular intervals of three hours. Continued pepsine. Allowed no sugar, believing that cane sugar in the stomach of the infant with undeveloped salivary glands is incapable of behaving like sugar of milk. The result was all that could be desired, the patient improved at once and soon became as plump and perfectly nourished as any breast-fed baby could be. This method of feeding only occurred to me last summer, and the opportunities for verifying its value were not numerous, but in the dozen cases tried the results were eminently satisfactory. I got rid of a large amount of the caseine and substituted fresh albumen in its place.—*G. Law, M.D., in Med. and Surg. Rep., Western Lancet.*

A UNIVERSITY OF PANTOPATHY.

The same journal announces that the Eclectics of Michigan have presented a petition, with 5000 signatures, to the legislature, asking an appropriation of $3,000 annually for the support of a chair of "eclectic" medicine at the State University. This is demanded in consideration of the amount paid by the adherents of that faith during 30 years for the support of "allopathy" (so-called); [and probably they are encouraged by the success of the homœpathic sect in acquiring a foot-hold at the university.

It may be expected that the Spiritualists and the Mormons will soon come to the front with a similar request.]

CARBONATE OF LITHIA.

Dr. S. H. Moore, of Buffalo, in the March number of the *Physicians' and Surgeons' Investigator*, recommends the above remedy as a specific in acute rheumatism and cystitis. The following is his formula:

℞. Lithiæ Carbonat. ℥j;
Acid. Citric. ℥ij;
Syrup Simp.,
Aquæ destillatœ, ā ā, ℥ij. M.

S. One tablespoonful every hour or two, as the case may require.

He reports relief to follow within a few hours.

The same remedy is recommended for the pain of varicose veins; [but, as he offers no explanation of its mode of action, one must receive his testimony with such faith as he can exercise.]

INJECTION BROU.

The following is believed to be the formula of the much-vaunted gonorrheal injection of that name, taken from the register in the French public offices:

℞ Zinci. sulp.,	. . . . .	grs. viij (.52);
Plumbi. acet.,	. . . . .	grs. xv (1.);
Tinct. catechu,	. . . . .	℥j (4.);
Tinct. opii,	. . . . .	aa ℥ iij (96.).
Aquæ,	. . . . .	

Am. Practitioner, Feb.

HYPODERMIC INJECTION OF MORPHIA IN PUERPERAL ECLAMPSIA.

In the same journal, Dr. N. S. Hill asserts that this resort never fails in his hands. It is supplemented by copious venesection and the inhalation of chloroform for a short time. The amount of morphine used is one-half grain. [We can bear personal testimony to the value of hypodermic morphia in this fearful affection.]

Editorial Department.

In place of an editorial, we present to our readers the following communicated papers:

SOME REMARKS ON HOMŒOPATHY.

By A. F. M.

The following is a clipping from the *N. O. Times*, and, although appearing in a daily newspaper, we reproduce it here, as well on account of its characteristic tendency, as because we think it but proper that the article should not be allowed to pass without some corrections.

HOMŒOPHATHY.

It is unwittingly demonstrated in the house of its enemies.

To the Editor of the Courier-Journal:

Last Sunday's *Courier-Journal* contained the following from the *Philadelphia Ledger*.

"At the last meeting of the International Medical Congress (Allopathic) in London, that most eminent chemist—perhaps in the world—Pasteur, of France, described his experiments to an audience in St. James' Hall, of doctors from all parts of the world. A fine glass rod is dipped in the blood of a fowl which is dying of chicken cholera. The drop of blood is then placed in a vessel containing a prepared fluid which has been boiled and rendered perfectly clear. In a short time this 'culture vase,' as Pasteur calls it, begins to swarm with tiny organisms. Taking one of these tiny forms again on a glass rod, and dropping it into a second vessel of clear fluid, the same ferment and generation goes on, and this experiment may be repeated from vase to vase, until the hundredth or thousandth colony is reached, always with the same effect.

"The curious part of the experiment is that if you take a healthy fowl and put under its skin a drop from any one of these vases, even the furthest from the first, it will die of chicken cholera, precisely as it will if you put under its skin a drop of blood from an infected fowl. Prof. Pasteur found that by leaving an interval of time between the passing of these tiny germs from one vase to another, the small organism changed its quality. Instead of being passed directly, a week, a fortnight, a month was allowed to go by before the germ from one swarming vase was dropped into another. Accordingly as the interval was prolonged the disease communicated grew weaker when put into the fowl. If it killed eight out of

ten from one vase, it would kill but five out of ten from the next, and so on in reduced proportion, until finally a vase was reached that did not kill any. The fowls would show symptoms of illness, but would recover.

Now for the strange but most instructive part of the story. A drop of infected blood from the chickens that had died from the cholera had no longer any fatal effect on these vaccinated fowls.

Now we see that while the germs in their crude state killed the fowls that were vaccinated, yet after Prof. Pasteur had reached a certain point of attenuation or infinitesimals, a mild or similar disease to cholera was set up which prepared the system to resist the action of the crude or original germs of cholera. This is homœopathy, pure and simple. The most bitter opponent of homœopathy cannot deny that the drop of blood taken from the infected fowl was not divided into infinitesimals, and yet we have it demonstrated beyond the shadow of a doubt by one of their best experimenters and closest observers that when one drop of the liquid containing far beyond the decillionth part of a drop of the original infected blood was injected into a fowl it produces a disease or symptom similar to the original from which it was taken.

Hahnemann never claimed any more for his system of medicine than this. Neither can the most ultra Hahnemanians or high dilutionists ask anything more. With all these facts before them, I cannot see how the intelligent opponents of homœopathy can any longer deny that there is virtue in potentized medicines.

With the demonstrated facts before them, and the light of science as bright as the noonday sun shining in their pathway, is it not strange or incomprehensible that intelligent professors of medicine, as many of the allopathists are, will not stop in their bigotry and prejudice, for a few hours only, until they can examine the merits of homœopathy before they any longer condemn it unheard and untried?

The writer continues: "Sir James Paget, one of the most distinguished British physicians, in thanking M. Pasteur on behalf of the Medical Congress, said that, while Dr. Jenner was mobbed and had to fight human beings, Prof. Pasteur's investigations for the benefit of property, flocks and herds, met with no opposition.

Homœopaths throughout the world will also thank M. Pasteur for demonstrating in the house of their enemies the principles upon which the homœopathic law of cure, similia similibus curantur, was founded by Hahnemann. That is to say that he experimented on animals and fowls, and came to a similar conclusion to which Hahnemann arrived, after experimenting upon himself.

Hahnemann tested the various poisons on himself until he found those that produced symptoms similar to cholera. His next step was to find the attenuations or potencies of the same remedies that would cure cholera without producing aggravation of the symptoms. He thus established the law of similars and of attenuations.

Like Jenner, he was branded as a quack and humbug by his quondam medical brethren, and was forced to leave his native country.

It is a sad commentary on human nature that every investigation for the alleviation of human suffering must first be rejected and its inventor persecuted before it can be adopted by the medical profession and introduced to the public for their good."

As to the facts from which the author of the above article draws his conclusions, we have one addition to make, viz: when the author says that "Prof. Pasteur found that by leaving an interval of time between the passing of these tiny germs from one vase to another, the small organism changed its quality," he ought to have mentioned that the "culture vase," where it is desired to raise a mitigated product, must have a certain supply of atmospheric air; allowing an interval to elapse having been proved not to be sufficient to produce a mitigation of the toxic vigor of the liquid. Pasteur's experiment is otherwise described correctly.

The homœopath is, as a matter of course, perfectly welcome to appropriate the result of Pasteur's experiments, if it can do it any good in the way of corroborating his theory; but for us, it is very difficult to see any analogy between Pasteur's experiments and Hahnemann's theory.

In the first place Pasteur's experiments demonstrate the generation, development and poisonous action of a parasite. When a drop of blood from a cholera-sick chicken is transferred to a "culture vase" it contains some parasites, germs, "tiny organisms" or "microbs," as they are called technically. Transferred to the second "culture vase," containing a liquid, congenial to their nature, the microbs will multiply very rapidly; a drop from this vase transported to a third vase, will give the same result and so on *ad infinitum*. And the same thing will occur if we take a chicken instead of a "culture vase." In the chicken the microbs will multiply in the same manner, and so

rapidly that the chicken soon dies. From one chicken the microbs may be transplanted to a second one, from the second one, to a third one, and so on. But in all this we have to do with a parasite, with a living organism, which reproduces itself continually. A division in a homœopathic sense—we were on the point of saying in a Pickwickian sense—does not take place. A man who happens to be father of six children with equal justice can be said to be divided into six parts. In homœopathy potentation occurs in some mysterious (dynamic?) way by diluting to an infinitesimal dose or quantity, some dead organic, or inorganic, vegetable, or mineral substance In Pasteur's experiment the vigor of the original drop of blood is not at all attenuated by being reproduced *ad infinitum*. The tenth crop of microbs is just as powerful as the first one; it is by allowing the atmospheric air to act that the virulence is diminished.*

Hahnemann never knew anything about parasites. At his time itch was yet considered a constitutional disease, which was treated by internal remedies, and he was, in fact, very much put out when it was discovered that itch was a local irritation produced by the itch-mite (*acarus scabiei*). He declared it to be an invention by his enemies to annoy him. His acolytes, for instance, the once famous Lutze of Köthen, continued yet for many years to claim that whenever a person had suffered from itch, at no matter what remote date, the first thing to be done to cure the accidentally existing illness, was to give medicines to the effect of eradicating the formerly existing itch.

This much about the potentiation, which however, we understand, quite many modern homœopaths have abandoned as absurd.

Now, about the second point in Pasteur's experiment, which the homœopaths appropriate as a proof of the correctness of their theory: that a disease producing certain symptoms is

* In what way the mitigation is brought about by admitting atmospheric air, we do not know; neither do we know whether the microbs have degenerate in quantity or in quality.

cured by a remedy producing similar symptoms in a healthy person—*similia similibus*. In Pasteur's experiment, a cholera-sick chicken is, however, not cured by being given of the mitigated or less virulent liquid; the chicken once attacked with the cholera or being brought to suffer from this disease by inoculation with the virulent liquid, dies, no matter what is done to it, no matter whether the mitigated virus be administered to it afterwards or not.

The mitigated virus acts as a prophylactic, in the same way as an inoculation of cow-pox virus acts as a prophylactic against small-pox. A chicken which has been "vaccinated" with the mitigated virus and has got over the effects of the "vaccination" is in a similar condition as a person who has had an attack of typhoid fever, yellow fever, measles, scarlatina, etc., being proof against a second attack of the same disease, to a certain degree, at any rate.

In order to establish an analogy with homœopathy it must be shown that the inoculation acts in a curative way, not exclusively prophylactically. The homœopath might sooner draw an inference from the theory of the Norwegian physician Bock, who devoted most of his life to show that constitutional syphilis was to be cured and was cured by inoculation with syphilitic virus.* It is well known that Belladonna on account of its faculty of producing an eruption resembling the eruption in scarlet fever, has been given as a prophylactic against this disease, however, without advantage; and Hahneman in conformity with his theory, *similia similibus*, gave it as a curative agent, probably with as little benefit.

We shall make free to take advantage of this opportunity to express some remarks on homœopathy and medical science in general. Before entering upon the subject, we want to state, however, that we are speaking at present exclusively about internal diseases; all that can be classed in any way as a surgical disease, subject to surgical treatment have nothing to do with the question.

We would then state that it is by no means out of any ill will that we are opposed to homœopathy, and have endeavored

*This however is more isopathy than homœopathy.

just now to refute to some of its assertions; and opposition is not at all superinduced by any high admiration of the results obtained by general medicine as practiced by the old school; we will even venture to say that we have quite a poor opinion about its therapeutic power. We are most willing to accept from homœopathy anything of value it is able to offer us in the line of specifics—and we understand homœopathy to treat exclusively by specifics; there are some—there are few, it is true, but there are some specific remedies, which the old school has adopted (not from homœopathy, however) a long time ago and holds very high. Mercury and iodide of potass. in syphilis, quinine in malarial fever, ipecacuanha in dysentery arsenic in psoriasis, etc. We are utterly unable to explain how these drugs exert their curative effect, yet we feel happy in possessing them, in spite of the mortification we feel in not being able to understand their action, and we only wish that we possessed some more specific remedies, as reliable as these. We would be only too happy to adopt anything from homœopathy, but it must be worth while adopting. Some years ago homœopathy produced bromine as a specific in diphtheria; this remedy has since been tried extensively and has proved a failure.

Several years ago a prominent homœopath, of this city, published a pamphlet, headed by the query: "Why are not all physicians homœopathists?" in which he comes to the conclusion that the cause is that the physicians are lacking courage to declare themselves homœopaths. If they were not moral cowards they would all be homœopaths, according to his opinion, so glaring are the merits of homœopathy. Our learned *confrère* will excuse us for being of a different opinion as to the cause; it is not because we entertain, as we have already stated, any high opinion of the efficacy of the remedies the old school recognizes, that we do not all turn homœopaths; it is simply because, as we think, there is nothing in homœopathy, and we cannot see that anything is gained by changing the name.

The efficacy and the worth of homœopathy have been tested fairly and impartially, and the results obtained by homœo-

pathic treatment, in hospitals, for instance, have invariably been inferior to those obtained by the usual treatment. The results the homœopaths boast of, based upon the certificates of laymen, are fictitious and of no value.

We might mention one objection more against homœopathy, viz: that the homœopathic theory is incomprehensible and full of mystery.

Finally, a few words as an explanation of the apparent success of homœopathy: Hahneman started appealing to the laymen to be judges in his controversy with the medical world, an appeal to which the public responded cheerfully, finding it very flattering to decide a medical question, and of course deciding in favor of homœopathy, that being something new. The laymen always feel tempted to play doctor, it is so fascinating to perform a cure, and with the innocent homœopathic remedies they could not run any risk. The apparent success of using a homœopathic remedy in some ailment, which would have passed off by itself, if left alone, is enough to make a layman a faithful believer; particularly so if he happens to see a case of pneumonia ending with a crisis on the 7th day; the aconite, belladonna, or whatever may have been given on the occasion, as a matter of course, gets full credit for the cure.

New Orleans, October, 1881.

AMERICAN PUBLIC HEALTH ASSOCIATION.

The Ninth Annual Session of the American Public Health Association will be held at Savannah, Georgia, Nov. 29th to Dec. 2d, inclusive. The session of 1880 was held in New Orleans, and the amount of work accomplished impressed us with the fact that the A. P. H. A. in its field was a hard working and most influential body. Junketing and excursions were not in the order of business. It was work from first to last. We hope New Orleans will be largely represented. The President of the Association is Dr. C. B. White, of New Orleans, and the Secretary, Dr. Azel Ames, Jr., of Boston.

OPHTHALMOLOGY: MIDDLEMORE FUND PRIZE ESSAY.

The interest on the fund of £500 given in trust to the British Medical Association by Mr. Richard Middlemore, of Birmingham, to found a prize for the best essay on Ophthalmology, having accumulated for three years, the Committee of Council now offer, in accordance with the terms of the trust deed, a prize of £50 for the best essay on the Scientific and Practical Value of Improvements in Ophthalmological Medicine and Surgery made or published during the past three years. The successful essay will be the property of the Association. Essays must be in English or accompanied by an English translation, and forwarded under cover, with a sealed envelope bearing the motto of the essay, and containing the name and address of the author, addressed to the General Secretary of the British Medical Association, 161 A, Strand, London, and must be in his hands on or before May 31st, 1882.—*British Medical Journal.*

PRIZE ESSAY.

The Committee of Selection appointed by the chairman of the Section on Practical Medicine, Materia Medica and Physiology, at the recent meeting of the American Medical Association, have selected, and hereby announce, as the subject for the prize to be awarded in 1883, the following question:

What are the special modes of action, or therapeutic effects upon the human system, of water, quinia, and salicylic acid, when used as anti-pyretics in the treatment of disease? The essays must be founded on original experimental and clinical observations, and must be presented to the chairman of the committee of *award* on or before the first day of January, 1883.

N. S. Davis,
H. D. Holton, } Com. of Selection.
W. B. Ulrich,

Obituary.

Alfred Charles Holt was born in Augusta, Ga., on the 11th of July, 1820. While he was yet a lad, his father, a planter, removed with his family and all his property to Wilkinson County, Miss., where his brother, Dr. David Holt, resided.

The chief characteristic of young Holt was the singular union in him of gay recklessness with fervent piety; nor were

the two—strange as it may at first sight seem—inconsistent. As a boy he "feared the Lord and served his own Gods." As a man he feared and served the Lord, and Him only. When about the age of 16 years, he was sent with his brother, John T. Holt, now of Crystal Springs, Miss., to Oakland College in that State, and all of his college mates, many of them now well advanced in years, will remember him and his most prominent traits.

After graduation, he determined on the study of medicine, and read under Dr. C. H. Stone, then of Woodville, afterwards of Natchez, attended lectures in New Orleans, and graduated with honor at the Jefferson College, Philadelphia, in 1843. The same year he began the practice of his profession at his home in Woodville, and distinguised himself highly in the terrible epidemic of yellow fever which scourged that community the following season.

After a few year's sojourn at Tunica, La., the choice of a new field not having proved propitious, he returned to Woodville and there continued the arduous but scarcely enviable labors of that most useful class of citizens—the "Country Doctor."

His sound judgment, and his tender heart, always alive to and sympathetic with suffering of every kind, attached his friends to him firmly; and his commanding person and noble air, together with his gentle gravity of manners, first attracted and then won the confidence of all strangers whom he met. One of the best criteria of his true character and disposition was the success he met with among his old school-mates and the companions of his early manhood, whose unbounded confidence, respect and love he held to the last.

Dr. Holt was an "Original Secessionist," and a leading member of the Convention which passed the ordinance withdrawing Mississippi from the Union. Upon the breaking out of the war he was appointed by his State the Medical Commissioner to the army of Northern Virginia, and filled, later, the same position in the Army of Tennessee. Selling all that he had, at a great sacrifice, he was in the field, without pay, for the whole term of the war, and on every battle field where Mississippians were engaged, he devoted his utmost energy,

skill and means to the succor of the wounded and the suffering. Confederate or Federal, it was enough to be in need, to secure his best aid; but for the sick and wounded of his native county no sacrifice seemed to him ample enough to attest his devotion.

At the close of the war, utterly broken in fortune, with little left of the handsome competence his own energy had secured, he removed to New Orleans, and soon acquired a good practice. Disappointments, and some opposition, and occasional despondency, of course, waited on him at first; but these he met with native courage and constancy and in the end overcame.

At the reorganization of the New Orleans School of Medicine he was appointed Professor of Clinical Medicine and discharged the duties of that important chair with highest satisfaction to his colleagues and pupils, until his ill health compelled him to withdraw from its arduous labors.

Sick as he was, however, the misfortunes of his adopted State enlisted his most active sympathy, and through all the dark and perilous years of reconstruction, Dr. Holt was ever found in the front rank of the sternest and most uncompromising opponents to Radical rule, and carpet bag knavery.

On the redemption of the State, and the organization of the lawful government, which he had been among the foremost to secure, he was appointed by Gov. Nicholls one of the administrators of the Charity Hospital, and that grand institution has cause forever to remember the invaluable service he rendered her without fee or reward. To his untiring devotion, and wise forethought, and judicious administration, she mainly owes the splendid lying-in-wards, which he made for the first time worthy of her, and of the public charity she represents.

Meanwhile, a private practice which had grown to be of the largest, pressed more and more heavily on his failing strength. Post after post of honor and trust, he was forced, reluctantly, to relinquish; but in the service of his friends and of humanity, he spent himself, unselfishly, to the last, and closed his honorable labors only with his life. He died at Summit, Miss., in the arms of his family, on the night of the 5th of October, and

was buried at New Orleans, the following day—followed to the grave by a large concourse of distinguished citizens, by a numerous cortege of his professional brethren, and by that best tribute to any man's life, the prayers and heartfelt tears of good women, to whom he had been, in all the gravest conjuncture of life, their most trusted guardian and friend.

Early in life, Dr. Holt married Miss Mary Williams, a beautiful and accomplished lady of Mississippi. As the fruit of this happy union one son and three daughters survive to cherish the memory and perpetuate the name of a good, wise and most useful man.

Necrology.

Died, in New Orleans, March 12th, 1881, **Dr. R. C. Boyer,** a native of Philadelphia, Pennsylvania, aged 56 years. A graduate of the Medical Department of the University of Louisiana, class of 1852.

Died, in New Orleans, September 22d, 1880, **Dr. John M. Cullen,** a native of Mississippi, aged 33 years. A graduate of the Medical Department of the University of Louisiana, class of 1869.

Died, in New Orleans, December 15th, 1880, **Dr. John Bridges Johnson,** a native of Charleston, South Carolina, aged 34 years. He graduated in the Medical Department of the Universlty of Louisiana, class of 1868.

Died, in New Orleans, February 27th, 1881, **Dr. George W. Dirmeyer,** a native of New Orleans, Louisiana, aged 52 years. He graduated in the Medical Department of the University of Louisiana, class of 1851.

Died, in New Orleans, April 25th, 1881, **Dr. William D. Vance,** a native of New Orleans, Louisiana, aged 27 years. He graduated in the Medical Department of the University of Louisiana, class of 1879.

Died, in New Orleans, August 29th, 1881, **Dr. Edward Scratchley,** a native of the Island of Ceylon, aged 65 years. He was a graduate of the University of France, class of 1839.

Died, in Summit, Mississippi, October 5th, 1881, **Dr. Chas. Alfred Holt,** a native of Augusta, Georgia, aged 61 years. He graduated in Jefferson College, Philadelphia, class of 1843. A biographical sketch of his life appears in the present number of the JOURNAL.

Died, in New Orleans, September 12th, 1881, **Dr. A. Foster Axson,** a native of Charleston, South Carolina, aged 65 years. He graduated in the Charleston Medical College, class of 1836. A biographical sketch of his life will appear in the December number of this JOURNAL.

Reviews and Book-Notices.

A Manual of Histology. Edited and prepared by Thomas E. Satterthwaite, M. D., of New York, President of the N. Y. Path. Soc., Pathologist to the St. Luke's and Presbyterian Hospitals, etc.; in association with Drs. Thomas Dwight, J. Collins Warren, William F. Whitney, Clarence J. Blake and C. H. Williams, of Boston; Dr. J. Henry Simes, of Philadelphia; Dr. Benjamin F. Westbrook, of Brooklyn, and Drs. Edmund C. Wendt, Abraham Mayer, R. W. Amidon, A. R. Robinson, W. R. Birdsall, D. Bryson Delavan, C. L. Dana and W. H. Porter, of New York city. With 198 engravings. 8 vo. Pp. 478. New York: Wm. Wood & Co. 1881. [Sold by Armand Hawkins, 196½ Canal st. Price, in muslin, $4.50.]

The coöperative plan of book-writing is now extended from practical medicine and surgery to histology; and, if there be propriety and utility in the former, why not in the latter? There is certainly gain in thoroughness and freshness of work, and it is the business of the chief collaborator to preserve unity of plan.

As the work is exclusively an American production, it is in-

teresting to note such original investigations here presented as the physiological desquamation of the blood-vessels, the nature of nerve-termini, the intimate structure of the striped muscular fibre and nerves, and the newly discovered fat-columns.

The opening chapters are devoted to the microscope and the methods of preparing objects for examination; the remaining ones to the minute anatomy of the various kinds of tissues and the most important organs of the economy. Sixty-five of the illustrations were specially prepared for this volume, forty more here appear for the first time in book form, while the others are mostly borrowed from the works of Stricker and Frey. Each article is followed by a copious bibliography bearing on the same subject, and it is curious to notice that at least nine-tenths of the references are to the productions of German authors. As these lists were prepared by Dr. Wendt, one of the collaborators, who is presumably of Teutonic birth, it is evident that he is pleased to make a liberal display of the contributions of his countrymen.

The extension of medical studies to graded courses of three and four years in the leading schools of our country gives room for the application of the microscope to anatomy; and to those who thus prepare themselves to become experts in pathology and diagnosis, this book will prove a convenient companion and useful helper. S. S. H.

Books and Pamphlets Received.

Announcement of the Twenty-third Annual Session of the Long Island College Hospital, Brooklyn, N. Y. Session of 1881–2.

Report to the Illinois State Medical Society on Laryngeal Tumors. By E. Fletcher Ingalls, A. M., M. D., Lecturer on Diseases of the Chest and Physical Diagnosis, and on Laryngology, Rush Medical College; Professor of Diseases of the Throat and Chest, Women's Medical College. Reprint from the Transactions of the Illinois State Medical Society for 1881.

Report on the Section on Gynecology for the Seventh Congressional District to the Medical Association of Georgia convened at Thomasville, April 20th, 1881. By S. H. Stout, A. M., M. D., of Roswell, Ga. Reprint from the Transactions of the Medical Association of Georgia, twenty-second annual session, 1881.

Transactions of the College of Physicians, Third Series, Vol. V.

Ovariotomy During Pregnancy. By H. P. C. Wilson, M. D., Baltimore. Reprint from Volume V., Gynecological Transactions. 1881.

Report of Section on Opthalmology and Otology. By Samuel Theobold, M. D., Surgeon to the Baltimore Charity Eye and Ear Dispensary; Opthalmic and Aural Surgeon to St. Vincent's Hospital. Baltimore. Reprint from Transactions of the Medical and Chirurgical Faculty of Maryland, 1881.

Chunic Pelvic Abscess: A Contribution to the Differential Diagnosis of Abdominal Tumors. By A. F. Erich, M. D., Professor of Diseases of Women, College of Physicians and Surgeons, Baltimore; Surgeon in charge of the Maryland Woman's Hospital, &c. Read at the Clinical Society of Maryland.

Transactions Mississippi State Medical Association at the Fourteenth Annual Session held at Winona, April 6th, 7th and 8th, 1881.

Transactions of the New Hampshire Medical Society for 1881. *Nineteenth Annaal Session.*

The Compend of Anatomy. For use in the Dissecting Room and in Preparing for Examinations. By John B. Roberts, A. M., M.D., Lecturer on Anatomy and on Operative Surgery in the Philadelphia School for Anatomy, etc.

Anatomical Studies upon Bruises of Criminals. A Contribution to Anthropology, Medicine, Jurisprudence and Physchology. By Moseiz Benedikt, Professor at Vienna. Translated from the German by E. P. Fowler, M.D., New York.

The Applied Anatomy of the Nervous System. By Ambrose L. Ranney, A.M., M.D., Adjunct Professor of Anatomy, and late Lecturer on the Diseases of the Genito Urinary Organ and on Minor Surgery in the Medicine Department of the University of the City of New York, etc., etc.

Meteorological Summary—September, 1881.
Station—New Orleans.

Date.	Daily Mean Barometer.	Daily Mean Temp'ture.	Daily Mean Humidity.	Prevailing Direction of Wind.	Daily Rain-fall.
1	30.070	82 0	74.0	East.	.....
2	30·038	82.9	68.3	East.	.....
3	29.984	85.1	61.3	S. E.	.....
4	29 962	85.9	63.0	N. W.	.....
5	30.053	83.8	74.7	East.	.....
6	30.068	83.5	74.3	East.	.02
7	30 054	82.7	75.0	East.	.12
8	30.072	81.1	72.7	East.	.....
9	30.054	82.0	70.1	North	.....
10	30.059	81.4	71 1	North	.....
11	30.063	83.1	66.0	South	.....
12	30.046	84.3	66.2	N. W.	.....
13	29 961	82.4	71.2	East.	.04
14	29.789	78.7	83.0	East.	1.19
15	29.713	76 0	65.0	N. W	1.22
16	29 979	71.9	50.1	N. W.	.....
17	30.085	72.0	38.2	North	.....
18	30.043	74 9	50.0	N. W.	.....
19	30.002	77.6	63.2	North	....
20	29.999	77.8	67.0	East.	.17
21	29.985	79.6	71.1	East.	.....
22	30.015	79.1	70.1	East.	.....
23	30.035	79.0	78.2	East.	.....
24	30.020	80.6	74.2	East.	.....
25	30.007	77.7	85.2	East.	.30
26	29.981	79.3	79.1	East.	.16
27	29.987	78.1	90.1	S. E.	1.15
28	30.015	79.6	86.1	S. E.	.08
29	29 984	80.7	77.0	East.	.....
30	30.005	80.1	80.1	East.	.02
Sums	....	...	....	.....	total
Means	30.004	80.1	70.5	East.	4.47

General Items.

Highest Barometer, 30.039, 17th.
Lowest Barometer, 29.560, 15th.
Monthly Range of Barometer, .479
Highest Temperature, 92.0, 4th.
Lowest Temperature, 6.30, 18th.
Monthly Range, 29.0
Prevailing Direction of Wind, East.
Greatest Velocity of Wind, 24 miles S. E., 27th, 24 E., 29th.
Total No. of miles 5142.
Number of Clear Days, 17.
Number of fair days, 10.
Number of Cloudy days, 3.
No. of days on which rain fell, 12.

COMPARATIVE TEMPERATURE.

1871	....	1877	78.4
1872	....	1878	78.7
1873	78.8	1879	78.5
1874	78.9	1880	76.8
1875	76.6	1881	....
1876	79.1		

COMPARATIVE PRECIPITATIONS.
(Inches and Hundredths.)

1871	....	1877	13.21
1872	....	1878	2.64
1873	3.19	1879	3.15
1874	4.21	1880	7.48
1875	7.89	1881	.....
1876	.26		

L. DUNNE,
Sergeant Signal Service, U. S. A.

Mortality in New Orleans from September 10th, 1881, to October 15th, 1881, inclusive.

Week Ending.	Yellow Fever.	Malarial Fevers.	Consumption.	Small-pox.	Pneumonia.	Total Mortality.
September 17	0	13	19	0	1	93
September 24	0	17	10	0	6	99
October 1	0	16	13	0	2	99
October 8	0	15	10	0	3	101
October 15	0	11	13		4	90
Total....	0	72	65	0	16	482

NEW ORLEANS
MEDICAL AND SURGICAL JOURNAL.

DECEMBER, 1881.

ORIGINAL COMMUNICATIONS.

Hydatiform Mole.

By E. S. LEWIS, M. D.,

Professor of Obstetrics, Medical Department University of Louisiana.

The following report of a case of hydatiform mole may not prove uninteresting to the Association. The patient, a native of Vicksburg, aged twenty; married three years, fell under my observation in Biloxi, August 14th, 1881. She was anæmic, anasarcous, and presented an abdominal development usual in a seven months' pregnancy. She gave the following history: Previous to marriage had enjoyed excellent health, was ignorant of any hereditary or acquired taint; soon became pregnant, miscarrying at six months of a dead fœtus, for which no cause cou'd be assigned. The puerperal convalescence was rapid and menstruation recurred normally after a few months, until the latter part of April, 1881, when she ceased to see. The usual symptoms of pregnancy appearing soon thereafter. About the latter part of June, after considerable exertion about the house, she was taken with a flooding which persisted up to my visit. She stated that the quantity lost was at times considerable. The abdomen developed rapidly. She was advised to go to Biloxi, where, at the request of Dr. Champlin, who had recognized the gravity of the case, I was consulted. By palpation a movable elastic tumor was discovered extending two

fingers' breadth above the umbilicus, but broader in its transverse diameter. That it was uterine was recognized by the alternate contrictions and relaxations. No sounds could be heard on auscultation. Vaginal examination showed the external os a little softer than normal, but the cervix firm and of ordinary size. Ballottement furnished negative results. The cessation of menstruation in April, the reflex disturbances following and the occurrence of hemorrhage after unusual exertion in the latter part of June, left me no room to doubt that pregnancy existed. The difficulty lay in accounting for the rapid uterine development. Two hypotheses could be inferred. 1st. That concealed hemorrhage had gradually caused the distention of the uterus, or that it was due to cystic degeneration of the chorion. In the other forms of molar pregnancy the development not being so rapid or so large. When questioned, she did not remember passing the characteristic grape-like vesicles. The discharge she stated were sometimes bloody, and at other times sero sanguinolent. In the absence of the vesicles, I attributed the rapid development to concealed hemorrhage, the serum only draining away.

By my advice she left Biloxi for New Orleans Monday morning, August 15th, 1881. Upon reaching the city she was taken to the City Hotel, where she is still residing until sufficiently strong to return to Vicksburg. I did not learn of her arrival until Tuesday morning at three o'clock, when her husband came for me, stating that his wife was very ill. I found her suffering with uterine pains, pulse feeble, over one hundred and twenty to the minute. She had also lost a considerable amount of blood. The cervical canal was undilated and I could not introduce my index finger within the os. Prescribed two ounces of Squibb's ergot, and directed that she be given a teaspoonful at first and a half teaspoonful every hour until my return. I saw her again at 9:30, A. M., Tuesday 16th. She had taken but one dose, which had occasioned so much pain that she refused to take any more. She was suffering considerably and begged for relief. A chloral and bromide of potash mixture was prescribed, and finding that by steadying the uterus the index finger could now be wedged within the cervical cavity I introduced through a Hunter's bivalve speculum the

smallest sized Barnes' dilator, which was distended with water and left in place. Saw her again at 11 A. M. The dilator had been expelled and the cervical cavity readily permitted the introduction of the index finger. A larger dilator was now used, and at 3, P. M., a still larger one, which I thought when expelled would allow the breaking up of the mass within the uterus and its removal. At five o'clock, finding the dilator had come away I called on Prof. Logan for assistance. After anæsthetizing the patient the dilitation was found insufficient to allow the introduction of two fingers. It was therefore thought best to continue the dilatation through the night, giving a teaspoonful of ergot every two hours.

When seen the next morning, Wednesday, 17th, she was very much exhausted, had not rested during the night and had vomited frequently. The cervical cavity was found shortened but the index and middle fingers could not be introduced without considerable force. An attempt was made to introduce the largest bag, but not succeeding the next in size, after some dfficulty, was made to pass and distended with water. Feeling the importance of giving relief at once to my patient, assisted by Prof. Logan, at 4, P. M., Wednesday, chloroform was again given, but nothing could be accomplished with the hand. A stout pair of placental forceps was now guided along the index finger into the uterus, the blades separated and then closed. No resistance was offered in withdrawing them. A small portion of the contents was included within the blades and proved to be a small mass of grapelike vesicles. The same operation was repeated again and again, sometimes a considerable portion coming away, at other times scarcely anything. The instrument was occasionally swept around between the mass and the uterine walls so as to effect detachment whilst pressure was exerted above until the entire contents of the uterus were expelled, about a large chamber-pot full of grapelike vesicles and firm dark clots. To diminish the risks from hemorrhage and from scepticæmia, the uterine cavity was thoroughly washed out with very hot carbolized water. An opiate was administered. She was seen again about 9, P. M. Her temperature was 102½; pulse sharp, exceeded 120 to the minute. Prescribed 24 grains of quinia in 4 doses, 6 grains hourly.

Thursday, 9½, A. M. Pulse 136; T. 105½. No tenderness over uterus. Had taken the quinine prescribed. Passed a bad night. Prescribed 60 grs. of quinine in solution, with directions that 10 grs. be given every hour. 3½, P. M., the uterine cavity and vagina were thoroughly washed out; 40 grs. of quinine taken. Patient restless; complains of her head; T. 103½. Given a hypodermic of $\frac{1}{6}$ of a grain of morphine and $\frac{1}{180}$ of atropia. From the effects of this opiate she slept two hours. Another ten grain dose of quinine was administered, and ten grains more two hours after. 9, P. M.: T. 104; gave another hypodermic of morphia, and directed that the 60 grain solution be renewed and continued—the first two doses every two hours, and the subsequent doses every three hours.

Friday, 9, A. M. Patient still with fever; T. 103½. 40 grs. quinine taken during the night. No tenderness over uterus; some slight discharge of blood. Quinia continued in same doses every two hours; directed that champagne, brandy toddies, Ducro's elixir beef be given during the day. Two large evacuations occurred in the night, which seemed to afford relief to patient. At 3, P. M., her husband came for me with the statement that the fever had risen. Saw her, with Prof. Logan, at 3½, P. M.; temp. 104½, but pulse stronger and not exceeding 120. Notwithstanding two carbolized injections a day, intra uterine and vaginal, the discharge was highly offensive owing to membranous shreds that were passed in a state of putrefaction. The following day, after severe uterine pains, considerable portions of the decidua were passed, and with its expulsion the fetor disappeared from the discharge which assumed more of a mucous character.

Sunday. Still fever; T. 101½. Quinia discontinued and tinct. of iron subsituted—twenty-five drops twice a day. 6, P. M. A slight chill occurred followed by fever; temp. 102. Gave 10 grs. of quinia. The following day, Monday, all fever had disappeared, Patient nourishes well, still takes twenty-five drops of tinct. of iron twice a day, and is convalescing rapidly, being now in her tenth day since the uterus was emptied, and for three days temp. does not exceed 99°.

Regarding the pathology of vesicular mole, all agree that it is due to degeneration of the chorion villi from constitutional or local causes, the embryodies, the developmental energy expending itself upon the chorion which undergoes cystic degeneration. The epithelium appears to be the part first affected, and the whole interior of the diseased villus becomes filled with cells. The connective tissue of the villus undergoes a remarkable proliferation and collects in masses at individual spots, the remainder of the villus being unaffected. By the growth of these elements the villus becomes distended, and many of the cells liquify, the intercellular fluid thus produced, widely separating the connective tissue so as to form a net work in the interior of the villus. Thus are produced the peculiar grape-like bodies which characterize the disease. In this instance the distention was due as much to the collection of blood in the uterus as to the vesicular formation. In either, or in both conditions, there is great danger. Several instances of very considerable and rapid uterine development from concealed hemorrhage have occurred within my experience, of which one will be cited as fully illustrating the dangers attending the complication of gestation. The first, Mrs. L., living on Montegut street, near Dauphine, was four months pregnant. When called to see her, in December, 1875, she was lying in bed on her back, breathing with difficulty and suffering excruciating pains in the abdomen, which was distended to the size of an eight months' gestation. The countenance was pale and hippocratic. The pulse frequent and feeble. A profuse serosanguinolent non-offensive discharge had saturated the sheets and towels applied to the vulva. The rapid development of the uterus in six hours, from the size of a four months to that of an eight month gestation made the diagnosis of concealed hemorrhage evident. I was informed that she had tried to produce abortion by the introduction of a piece of whalebone in the cervical cavity, but could not elicit further information b cause of her great suffering and reticence on the subject. Before any assistance could be rendered her and whilst absent seeking for help she died, but whether from the combined effects of pain and hemorrhage, or from rupture of the uterus, I could

not determine. No autopsy was held and the deputy coroner, a non-professional man, furnished the certificate without making an examination.

Report of the results of the use of Chaulmoogra in cases of Leprosy.

Translated by E. H. PHUMACHER, U. S. Consul, Maracaibo, Venezuella.

"RESULTADO del aceite Chaulmoogra en el tratamiento de la lepra tuberculosa. Casos recojidos en el Hospital de Lâzàros de Maracaibo en la "Isla de la Providencia."

Núm. 66.—P. C. 32 años de edad, casado, de Maracaibo, católico, comerciante. Tiene 13 años de enfermedad. La forma que ha presentado en él la lepra es la maculosa. La marcha de la enfermedad ha sido lenta y ha permanecido á veces como estacionaria. Tiene este enfermo antecedentes hereditarios, su padre murió elefanciaco. Tratado por el Chaulmoogra desde hace seis meses con una interrupcion de quince dias despues de empezado (dósis: principió por tomar 4 gotas diarias en agua natural aumentando sucesiva y lentamente hasta llegar â diez y seis al dia) ha habido los siguientes sintomas de mejoria.

Salida de vellos en las partes que habian sido deprovistas por la enfermedad, (miembros inferiores) y en algunos lugares en que habian cambiado de coloracion, han adquirido su color normal (rejion dorsal); los pelos de la cejas que habian empezado â caerse se han fortalecido notablemente, habiéndose limitado la caida â toda la mitad externa de ambas cejas que han quedado en estado de verdadera epilacion; disminucion de la rémora circulatoria venosa, y de las determinaciones varias que ella producia, como el edema de las extremidades inferiores, de las manos, & &. La cicatrizacion de úlceras caracteristicas extensas y profundas que habia en los pies y en las manos y que amenazaban producir graves multilaciones. La rejion interna y posterior de los miembros inferiores, en la cual la anestesia era completa, ha recobrado algo de su sensibilidad y se ha hecho obtusa. La fiebre héctica que desde hacia 4 años le

UNITED STATES CONSULATE,
MARACAIBO, September 7th, 1881.

Dr. T. J. TURNER, U. S. N., Secretary of the National Board of Health, Washington.

Sir: I beg to enclose a report and translation of treatment of Leprosy with *Oil of Chaulmoogra*, a remedy which is at present attracting much attention in this section. Whether it is really beneficial, or whether, like the "*Cundurango*" of former years, it will prove simply a temporary sensation, remains to be proved by further experience. As in Maracaibo and its vicinity, Leprosy is unfortunately abundant, I shall have opportunities of examining closely the effects of the remedy, and it will give me pleasure to keep you informed upon the subject.

I am, sir, your obedient servant,
E. H. PLUMACHER.

consumia, ha desaparecido; como tambien no esperimenta con tanta frecuencia cierta censacion de calor interno que mui à menudo le molestaba. El estado moral del paciente es hoi mucho mejor que anteriormente.

Núm. 65.—J. M. O. 40 años de edad. Lepra maculosa, 3½ años de enfermedad, no hai antecedentes hereditarios.

Tratado por el chaulmoogra desde hace seis meses. Siguiendo el mismo método que el anterior, acusa los siguientes signos de mejoría: Desaparicion de los dolores osteócopos de los miembros, aumento de energía muscular, agilidad, aumento del apetito, mayor actividad en las funciones dijestivas,aparicion de nuevos pelos en las partes en que se habian caido.

Los síntomas que ha presentado el medicamento en este enfermo son los mismo que apuntamos en el caso anterior, con la ùnica diferencia, de que en este la constipacion de vientre no es tan pronunciada.

Actualmente el enfermo presenta una capsulo—íritis acompañada de queratitis del segmento inferior de la cornea (ojo izquierdo), enfermedad de la cual padecen casi contínuamente los atacados de lepra y ocasiona propagandose a las demas membranas del ojo la pérdida completa del organo, atrofia de los músculos inter-oseos, y de las eminencias tenar é hipotenar, padece de vez en cuando, despeños.

Síntomas del medicamento.—Al principio del tratamiento el medicamento produjo diarrea (cámaras biliosas y acuosas, hasta 8 diarias) hoi por el contrario hai estreñimiento pronunciado, necesitando frecuentemente del uso del Seltzer para deponer, eructos acidos poco despues de tomar el medicamento y sensacion de constriccion en la garganta al tiempo de tomarle; irritacion frecuente de los intestinos gruesos principalmente del recto con tenesmo y conato pronunciados; disminucion de la secrecion de las glàndulas salivares, y aumento de las sudoríparas. El medicamento es soportado difícilmente por el enfermo apesar del tiempo que hace que le emplea. Este enfermo àntes de tratarse por el chaulmoogra, estuvo sometido a varios tratamientos entre ellos el antisifilítico, sin éxito ninguno.

Núm. 82.—N. M. 20 años de edad. Lepra tuberculosa, 5 años de enfermedad. Tratado por el chaulmoogra, empezó por tomar dos gotas y hoi toma una dragma en dos de agua natural, diariamente. Al principio del tratamiento el enfermo se encontraba enormemente tuberculoso, la piel tenia una coloracion bronceada, llena de surcos, aceitosa y reluciente, las mucosas se encontraban descoloridas, todo el cuerpo estaba lleno de manchas lividas ó de un morado más ó ménos pronunciado, anestésicas. La fisonomia horriblemente desfigurada por multitud de tubérculos situados en las alas de la nariz, en los labios, carrillos y sobre todo en las orejas que eran verdaderamente monstruosas á causa del crecido número de tubérculos de que eran asiento. La voz apagada y gangosa, debilidad en la vista, torpeza en la percepcion de los

olores, embotamiento del tacto á causa de la anestesia casi general, caida de los vellos, pestañas y cejas; algunos tubérculos empezaban á supurar; al exámen del pecho presentó síntomas insipientes de tuberculósis pulmonal, hoi despues de seis meses de tratamiento no interrumpido presenta los siguientes sintomas de efectiva mejoria. Los tubérculos en gran parte han desaparecido dejando en su sitio un poco engrosada la piel, las orejas, los labios y nariz han tomado un aspecto casi natural. El color de la piel más claro, ménos aceitosa y reluciente, la sensibilidad está más aumentada, principalmente en las manos; ántes sudaba mui poco, hoi lo hace abundantemente; la tos ha desaparecido, y se ha contenido la caida de los pelos, y principian á salir nuevos. La potencia genital que parecia extinguida ó considerablemente debilitada se ha fortalecido, y el enfermo acaba de contraer matrimonio.

Sintomas del medicamento.—Exactamente los mismos que en los casos anteriores, solo que este no ha tenido estreñimiento. Soporta perfectamente el medicamento.

(Translation.)

REPORT OF THE RESULTS OF THE USE OF CHAULMOOGRA IN CASES OF LEPROSY.

LEPER HOSPITAL, MARACAIBO.

No. 66. P. S., 32 years of age, married, merchant. Has been afflicted thirteen years with spotted leprosy, the disease having progressed slowly, at times remaining stationary. This patient has hereditary predispositions, his father having died a leper. Has been treated with oil of chaulmoogra for six months, taking at first four drops in water daily, and gradually increasing the dose to sixteen drops.

The following ameliorations have been observed:

1st. Hair has re-appeared upon the limbs in places where the disease had caused it to fall out, and the back, which was much discolored, has assumed its normal condition.

2d. The eyebrows, which had commenced to disappear, have become thicker, and the falling out is now limited to the outer half of each.

3d. Diminution of obstructed blood circulation and of its various effects, such as the *œdema* of the limbs, hands, etc.

4th. The cicatrization of extended and deep characteristic ulcers in the hands and feet which threatened to produce grave mutilations.

5th. The interior and posterior parts of the limbs, where there was complete anesthesia, have recovered to a certain extent their sensibility.

6th. The hectic fever, which for four years has consumed the patient, has disappeared, and he does not now experience so frequently the sensation of internal heat which at times has troubled him greatly.

7th. The moral state of the patient is to-day much better than formerly.

The symptoms during the chaulmoogra treatment were as follows:

At the commencement, the medicine produced diarrhœa, the patient having as many as eight bilious and watery operations daily; now, on the contrary, there is marked constipation, necessitating the frequent use of seltzer; also while taking the medicine, there is a sensation of constriction in the throat, and afterwards acid eructations. Now, there is frequent irritation of the large intestines, particularly of the rectum, with pronounced *tenesmus* and with a diminution of the salivary secretion and augmented perspiration.

The medicine is with difficulty endured by the patient, notwithstanding the length of time he has used it. Before treating him with chaulmoogra, various remedies were used, among them anti-syphilitic prescriptions, but without result.

No. 65. J. M. O. 40 years of age. Has had spotted leprosy three years and six months; no hereditary predisposition. Has been treated with chaulmoogra six months. Following the same method as in the preceding case, the following ameliorations are observed:

1st. Disappearance of the bone pains in the limbs.

2d. Increased agility, muscular energy and appetite.

3d. Greater activity of the digestive organs.

4th. Appearance of hair in parts of the body from which it had fallen.

The symptoms during treatment are the same as in the preceding case, except that the constipation of the bowels is not so marked. The patient now suffers from a *capsular-iritis*, together with *keratitis* of the lower segment of the cornea of

the left eye, a peculiar disease with which lepers are almost continually afflicted, and which, extending to the other membranes of the eye often causes complete loss of that organ.

No. 82. N. M., 20 years of age. Has had tuberculous leprosy five years. Commenced treatment by taking two drops daily of chaulmoogra, and is now taking one drachm in two drachms of water.

At the commencement of the treatment (six months ago) the patient was terribly tuberculous, with a bronzed, greasy and shining skin, full of furrows and ridges; the mucous membrane of the mouth was discolored, and the whole body was covered with livid and brown spots. The face was horribly disfigured by a multitude of tubercles on the nose, lips, cheeks, and, above all, in the ears, which were truly monstrous, on account of the great number of tubercles that had there found lodgment.

The voice was snuffling and suffocated, the sight greatly weakened, and the sense of smell and touch almost paralyzed, on account of the partial anesthesia of the body. The eyebrows, eyelashes and hair of the limbs had fallen out. Some of the tubercles were commencing to suppurate, and an examination of the chest showed symptoms of incipient pulmonary tuberculosis.

To-day, after six months of uninterrupted treatment, the following ameliorations were observed:

1st. The tubercles have in a great measure disappeared, leaving the skin somewhat thickened, the ears, lips and nose having assumed an almost natural appearance.

2d. The color of the skin is clearer, less greasy and shining; sensibility is augmented, particularly in the hands.

3d. Perspiration is abundant, which before was scarcely perceptible.

4th. The cough has disappeared and the fall of hair is arrested; new hair beginning to grow.

5th. The genital power, which appeared extinguished or greatly weakened, has so increased that the patient has recently been married.

The symptoms during treatment have been the same as in the preceding cases, except that the patient had no constipation. He endured perfectly the medicine.

E. H. PLUMACHER.

Maracaibo, Sept. 3, 1881.

United Twins.

Reported by P. E. ARCHINARD,
Resident Student in the Pathological Department of the Charity Hospital, New Orleans.

(Read before the New Orleans Pathological Society.)

In teratology, double or twin monsters are classified according to their external connections, the union of their internal organs being pretty generally uniform in members of the same class.

Among them the most important, because of more frequent occurrence, are those in which the attachment is situated along the front of the body, such as the xicophages, in which the connection is at the xiphoid cartilages. A good example of this is found in the renowned Siamese twins; the sternophages or thoracodidymus connected all along the sternum; the gastrodidymus connected along the median line of the abdominal wall; finally, the thoraco-gastrodidymus, in which the attachment is along both the abdomen and thorax, of which the Sardinian sisters have furnished an interesting example.

In addition to the foregoing, important and tolerably frequent cases of double monstrosity have occurred, in which the attachment was along the side of the head or the back, instances of which are the symphysocephalus, or twins united by the head, as the Carolina sisters; the tetrascelus, with heads and trunks united laterally; the pygodidymus, in which the union is at the sacrum, the rectum being either single or double. Of the latter class, the best representatives were the Hungarian sisters, whose existence was known early in the last century.

A very curious and interesting specimen of united twins, belonging to the class thoraco-gastro didymus, has been sent

recently to the pathological department of the Charity Hospital by Dr. Harrison, of Port Hudson, La.

These twins have been carefully examined by Dr. H. D. Schmidt, pathologist of the hospital, who believed the case of sufficient interest to deserve publication, and requested us to prepare a description of same and present it to the NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

Desirous to make the case as interesting in an obstetrical point of view as it was in a pathological one, we have endeavored to obtain all the particulars possible concerning it. Regretting that we have not ascertained anything that can be of any service in this description, except the following, kindly sent by the donator of the specimen.

The mother of the twins was a colored woman who lived in the neighborhood of Port Hudson a little before the epidemic of 1878, at which time and place she gave birth to the twins, being attended by a practitioner of the neighborhood, who took the specimen home as an addition to his collection. This practitioner died during the epidemic, and the twins then passed into Dr. Harrison's hands with no further history than that referred to.

We shall confine ourselves therefore simply to a description of the specimen and make a few remarks as suggested by its examination.

The fœtuses were well developed. No external sign of malformation could be detected, and, as far as could be judged, by their size which equalled thirteen inches; their combined weight, seventy ounces after having been three years in a powerful dehydrating agent; by the fact that the testicles had already descended into the scrotum and by the absence of the pupillary membrane, the foetuses must have completed at the time of their birth at least the seventh month of intra-uterine life, and they must have died either shortly before. or during labor, as the lungs were found totally carnified.

They were both of the masculine sex, faced each other and were connected by a strong band, consisting partly of soft and partly of hard tissue, extending from the top of the chest to near the symphysis pubis. This band held the foetuses pretty

firmly together, and they could not be separated for more than three-fourths or one inch. From the lower part of this connection, on the side which we shall henceforth call the front of the united twins, was situated one umbilical ring, from which emerged one single cord. That had been cut within two inches of the cicatrix, so that we cannot positively say that it was single throughout and led to only one placenta; but we are justified in assuming as much from the arrangement of the blood vessels in its interior. These vessels were five in number, viz: four arteries, two from each foetus, and one large vein which which in the umbilicus divided into branches, one going to each fœtus.

A hard cartilaginous plate circular in form and measuring one inch in diameter, was found within this umbilical ring. This plate consisted of liver tissue which became hardened, and into which extravasation of blood had afterwards taken place. The fluid and soluble parts of this blood had gradually been absorbed and nothing but crystals of hœmatin remained.

To avoid confusion, we will name the twin, on left hand side in front, Alpha, and that on the right, Beta.

To study the internal connection, two incisions were made on both sides of the connecting band in front, and two posteriorly, the skin, fasciæ and muscles divided, and the ribs exposed. The latter had a very peculiar arrangement, as follows: The left ribs of Alpha articulated in front, by means of their cartilages, with a sternum placed edgewise with regard to the bodies of the two fœtuses; to the other side of this sternum the right ribs of Beta were attached. Posteriorly, the manubrium only of a sternum existed, to which Alpha's two upper right ribs and Beta's two upper left ribs articulated, the other ribs of the two fœtuses, on the sides just mentioned, articulated, rib with rib, by means of their cartilages.

On account of this arrangement, and also because the right side of the abdomen of Beta was in immediate contact with the same side of Alpha's, and at the same time the left side of chest of Alpha was attached to the same side of Beta's, the fœtuses were doubly twisted on longitudinal axes down

through the middle of their respective bodies. The lower part of Alpha's body faced the front and his upper part the back. Beta had exactly the reverse position. This twist was almost destroyed by the cutting which was necessary to expose the great cavities.

The incisions, already mentioned, continued through the ribs, laid open the thoracic cavities, and the same, following the arches of the ribs, exposed the abdominal cavities. The latter were pefectly distinct in the two twins. Each possessed the normal organs in a normal position, and was separated from the other in the lower part by several layers of peritoneum and higher up by the two united livers, the muscular walls in these places being deficient.

The union of the two livers was as follows: The left lobe of liver of Beta was bound in such a way to the right lobe of that of Alpha, that both organs, unless examined carefully, might be taken for one. Aside from this union and from the fact that the falciform ligament was common to the two organs, there was no anomaly; the gall bladders, ligaments, blood and bile vessels, all these were as in a normal condition.

The thoracic cavities were distinct. Each cavity contained the normal organs in position, with the exception presently to be mentioned. The left side of thorax of the one was in opposition to the same side of the other; the only partition existing between them consisted of a large pericardial sac, which contained a double organ, the united hearts of the fœtuses.

These hearts were fused together in such a way that the left cavities occupied the front, and the right cavities occupied the posterior part of the organ. Instead of eight, there were only six cavities, viz: One common right auricle occupying the base and posterior part of the organ and receiving on both sides the superior and inferior venae cavae of the fœtuses. This auricle communicated with two distinct right ventricles by two auriculo-ventricular openings guarded by tricuspid valves, and as is usual in the fœtus, with the left auricle, by means of two foramina ovalia; one common left auricle, situated at the base and anterior part, receiving the pulmonary veins from the four lungs and communicating with the right

auricle and two left ventricles; two distinct though small right ventricles, the septum between them being entire and each having its own pulmonary artery; two left ventricles with a deficient septum, so that the contents of the one freely mixed with those of the other, each, however, possessing its own aorta. In other respects the twins were normal.

These monsters differ from others, which have been described by different authors, in that they combine the malformations of two or three classes. Among the deviations in them from the regular types may be mentioned the common auricles and the foregoing twist which enabled the organs of the two to be united without a change in their absolute position. In the Siamese twins, for instance, which bore some resemblance to these, the livers were united, but there was lateral displacement of the abdominal viscera in one of them. The Sardinian sisters were almost similar to these twins as regards their external connection, but as to their internal union we are unable to say how much they resembled these, not having been able to find a published account of their *post mortem* examination.

To the question whether it would have been possible for the Port Hudson twins to live, we see no reason in the world why an affirmative answer could not be returned. The fact of their having attained, if not maturity, at least a viable age, and their perfect development seem to us sufficient to demonstrate the plausibility of this assertion. The only objection that could be brought against this, would be the union of their central organs of circulation; to us this appears an additional advantage, with this proviso, that the action of the four ventricles be synchronous. Suppose, for an instant, a morbid process arising in some organ, say the kidney of Alpha, this process would, of course, cause the retention in the twin's blood of certain impurities which are generally ejected from the body through this emunctory, this impure blood would be carried to the heart, and there, in the auricles, would mix with an equal quantity of pure blood from Beta; and after this mixture the blood circulating through both fœtuses would be diseased, but the morbid material being reduced to a minimum, would be less likely to be followed by serious consequences.

Many theories have been advanced as to the origin and causes of double monstrosity. Omitting the ideas entertained at the time when all malformations were believed to be the presage of divine vengeance, and even to indicate in certain cases different calamities likely to befall humanity, we will only consider three of the most modern views on the subject.

Of these the first attributes the existence of double monsters to the development of two germs, which at some period of intra-uterine life have coalesced; the second ascribes their origin to one germ, compound from the beginning and developing two primitive grooves; and the third gives as the cause of the same, an excess of plastic activity contained in a single germ.

The supporters of the first theory can only bring forward, in favor of the coalition of two separate germs, the difficulty of imagining the development of two perfect beings in any other way. They do not seem to be aware that two united perfect beings form rather the exception than the rule, in cases of double monstrosity. Nor do they take into account the fact, that between the highest classes just mentioned, and the lowest, where duplicity of some unimportant organs is only found, there exists a uniform gradation; for if they did, they would refer the origin of all these malformations to the same cause, and would not try to explain the first set of cases by supposing the coalition of two germs, and the second by an excess of plasticity in one germ.

Again, they affirm the coalition of two germs without attempting to say at what time of intra-uterine life this union takes place, or in what manner it is effected. Nor do they offer any explanation as to the reason why so large a number of twins are born enclosed in a common amniotic sac—without any union existing between them. They also omit to mention why it is that united twins are always connected by similar organs, and are always attached externally by corresponding parts of their bodies; and thus they lead us to suspect that they would tolerate such absurdities, as the magnetic attraction of organs, or animal electricity, provided these would add to their theory.

Finally, they offer no solution for the cases when other organs besides the united ones are found deviating from the normal type; and why in these cases similar organs are always similarly affected in the two fœtuses. Therefore, as this first theory, which attempts to prove that double monsters are caused by the coalition of two germs in utero, has been shown to be deficient in many respects and to be satisfactory in none, we can with justice reject it from the list of the probable explanations of these phenomena.

The second theory is simply a repetition of the first, expressed in dissimilar verbiage; we might, therefore, use the same arguments against it, for it matters little whether two primitive grooves are developed from one or two germs, the mode of their union remains to be proved. This theory has but few advocates, and has been brought forward only to establish an analogy between the human germs and chickens' eggs, which are often found with double yelks, an analogy which has not as yet been placed on a solid basis. Granting that in some cases the human germ, like the chicken's, might be double, it has been proved, some time ago, by Thompson, of England, who succeeded in hatching a few dozen double-yelked eggs, that in most of them only one yelk was fertilized for only one chick was hatched, from the other eggs twins were begotten, but in no case were these joined together. Hence this does away with the compound germ.

Now, in the last theory, in which double monstrosity is simply treated of as a monster per excessum, we find the only plausible reasoning, equally applicable to all cases of malformation when the parts are superabundant. This, we can also very easily prove, holds good in all situations where the two others have been found wanting, and is further strengthened by the fact, that not only the plastic activity in a germ may sometimes be found in excess, but that frequently it may be found badly distributed, so that beings may exist with supernumerary organs, notwithstanding the absence of other organs.

Hence this explanation must be accepted in toto, that double monsters and united twins are caused by an excess of plastic activity in a single germ.

Diphtheria.

By F. M. Thornhill, M. D., of Columbia, La.

A great deal is being written upon the subject of Diphtheria in the different journals and periodicals of our profession, both in this country and Europe; and, as there is perhaps no subject within the domain of medicine more replete with interest to the medical practitioner than this disease, I am induced to venture a few remarks upon the conclusion arrived at by myself in regard to it.

The great question now agitating the mind of the medical world, relative to diphtheria, is that of its identity or non-identity with pseudo-membranous croup, many learned and experienced physicians contending that the two poisons of diptheria and membranous croup are in all essential particulars indentical, and that their pathological lesions are the same; while, on the other hand, others, equally gifted, declare that to their minds there are no two diseases, whose separate and distinctive differences are more clearly established than these are.

From my limited experience and nine years' study of the two diseases, I am brought to accept the teachings of the latter class. As the nature of the morbific agent in diphtheria has never been determined, I shall not attempt any solution of a question that has baffled the search of the best medical talent up to this time, nor shall I offer any speculations as to its etiology or its probable nature, further than that it is a specific blood-poison, separate and distinct in its nature, producing certain alterations in the circulating fluids, resulting in fibrinous exudations upon the fauces, tonsils and perhaps sometimes throughout different portions of the alimentary tract. That it is a general blood-poison is fully shown in the fact that the false membrane is frequently formed on abraded surfaces of the exterior of the body, the conjunctiva and other mucous membranes; and from the degree of constitutional depression often present from the very incipiency of the attack. These characteristics, together with the albuminuria, which is never absent, I believe, except in the mildest of cases, all point conclusively, in my opinion, to the constitutionality of the disease, and set at rest the theory of its local nature.

In regard to its contagiousness, there is nothing of which I am more fully convinced, notwithstanding some able physicians deny that it is contagious at all. Recently a Dr. Birkhead, of Louisville, Ky., has communicated some articles to the *Medical Brief*, in which he says he has no proof of its contagion or infection—has never seen but one case in the same family, although there may have been six or eight children having free intercourse with each other.

He has only noticed sporadic cases of the disease or its synonym, pseudo-membranous croup, as he regards the two diseases as identical. He defines diphtheria as being a highly inflammatory and constitutional disease, differing but little, if any, from pseudo-membranous croup; and, if they are not identical, his observation and experience have not revealed the diagnostic symptoms.

My experience does not accord with that of Dr. Birkhead and others. I will relate an instance in support of its being contagious. In 1878, diphtheria prevailed to some extent in our town and community, and the first case that I remember to have treated immediately in the town, occurred in a family where there were two children, aged respectively nine and eleven years. The youngest was attacked, or rather I was called to the case, on the 19th August, the disease having manifested itself two or three days previous. I found the tonsils and fauces, on examination, to be covered with the ash-colored false membrane peculiar to diphtheria, with some enlargement and induration of the submaxillary glands. Some sores on the feet and legs soon became covered with the false membrane. Notwithstanding there was complete anorexia in the case, the patient survived until August 30th, dying of asthenia. After the death of the patient, the mother went to her sister's, a distance of nine miles in the country, with her surviving child, who in a short time was attacked with diphtheria, which ran a mild course to recovery.

The sister visited had three children, the youngest of which was attacked in a few days, and died on the third day, of asphyxia, which I wish to remark in passing is the only case of diphtheria I have ever seen die of asphyxia, notwithstanding

our authorities say that is the most frequent mode of death. The other two children of the family in regular succession contracted the same disease, which came near terminating their lives. Could this have been a mere coincidence? Here we have an instance of the poison having been communicated to a family living in the midst of a healthy rural district, where no disease of the kind was prevailing, all of whom, in regular order, contracted the disease.

I am aware that a single swallow is not always valid evidence of the advent of summer, but with considerable experience in this disease, I have never yet known a case to occur in a family in which there was more than one child, without all the children contracting it, except it be in the case of very young infants, which my observation and experience lead me to believe it has a tendency to spare. This is a question upon which our text-books do not speak; at least I do not remember to have seen it any where.

Another point upon which our authorities are silent, so far as I have read, is as to whether one attack affords immunity against subsequent attacks, or not. In all the literature upon the subject of diphtheria which I have ever read, I find no mention made upon the two latter points. All writers upon the subject matter define the disease as being peculiar to childhood and early life, without saying whether it has a tendency to spare any particular period of it. It is my opinion that it rarely or never attacks infants under one year of age; at least such has been my experience. I have often noticed of diphtheria occurring in families where there were several children, that all would take the disease except infants at the breast, who would invariably escape.

In regard to second attacks, if we accept the theory of the specific nature of the poison, the natural deduction would be, that one attack protects against subsequent ones, as this is the rule that governs in all diseases, whose poisons are of a specific nature. The above conclusions are also borne out by my experience, as I have never seen a second attack in the same child, although I have known them, after having had the disease once, to be exposed frequently to the epidemic influences

of the poison without contracting it. I should like to hear from the profession upon these questions. Dr. Jacobi's recent work upon diphtheria I have not seen, but West, Tanner and other standard authors give us no light upon these two questions; neither have I ever seen anything in the journals relative to them. Tanner, in his work on the "Theory and Practice of Medicine," does make a casual reference to the matter of second assaults, in speaking of scarlatina and diphtheria prevailing epidemically in connection with one another. In this he says: "that these diseases are separate and distinct, and that one attack of scarlatina protects against future ones, but does not protect against diphtheria. A person may suffer from the latter disease more than once, the last seizure being as violent as the first." But, as remarked before, I have never met with a second attack in the same individual, and very much doubt its occurring any oftener than second attacks of all specific and contagious diseases.

While it is not my purpose, in this article, to discuss the true relationship between this disease and croup, I at the same time wish to be allowed to mention some of their most prominent and distinctive differences. In diphtheria there is a train of phenomena presented from the first onslaught of the attack, showing the operation of a toxic agent upon the system, much more powerful and malignant in its nature than in that of croup. The constitutional depression and general debility show that the life-forces have been impressed in a degree out of all proportion to anything ever seen in croup. The rapid and extensive exudation of the fibrinous material upon the throat, respiratory tract, alimentary canal, and sometimes even extending itself into the cavities of the heart, besides the early appearance of albumen in the urine, followed by its unpleasant train of sequelae, paralysis and aphonia, and the ultimate tendency to death by asthenia, all serve to show clearly the difference between this malady and croup.

The exudation in this latter disease is confined to the larynx and trachea, and is never followed by paralysis or aphonia, and but rarely, if ever, attended with albuminuria; and lastly, its non-infectiousness is sufficient to enable us to establish a differ-

ential diagnosis, and the existence of two separate and distinct diseases.

We come now, in my view, to the most important consideration connected with the subject of diphtheria—that of its therapeutics. There, perhaps, never has been such a unanimity of opinion reached among physicians in regard to the treatment of any disease, as now obtains among them with reference to diphtheria; therefore every educated physician is presumed to understand the plan most generally adopted in the treatment of this disease. As it is admitted we have nothing approaching a specific remedy for the cure of diphtheria, I have only one objection to file against the treatment now pretty generally adopted, and that is the unvarying indiscriminate use of the tincture perchlor. iron in such heroic quantities. Like Dr. West, of London, I have only found it a valuable agent, and nothing more. I have never seen reason to believe that, when ordinary doses of a remedy fail, extraordinary ones will succeed; and when I hear of a physician giving thirty or forty drops of iron every hour or two, for several days and nights, I do not know whether to marvel more at the endurance of the patient, or the hardihood of the doctor. I usually give tinct. iron in ordinary doses, combined with chlorate potash, every three or four hours, with stimulants and support.

I believe there are cases in which the powers of assimilation are so enfeebled as to render the administering of iron totally inadmissible when its use tends still further to incapacitate the stomach for the appropriation of other remedies and of food. I believe, if there is any remedy that tends directly to eliminate the poison from the system, it is the iodide of potash. I always therefore give two or three grains every three or four hours, combined with four or five grs. chlo. potass., alternated with tinct. iron and chlo. potass., also using sulph. quinia, as the case requires.

Such, in the main, is the plan of treatment which has given me the most satisfactory results in the treatment of diphtheria. I have no faith in the use of local remedies to control the amount of exudation. Lately some physicians are claiming

good results from the use of salicylic acid, as a local application, in controlling the exudation. I have had no experience with it myself, and am not prepared to speak for it.

Imperforate Anus—Operation—Recovery.

By LUTHER SEXTON, M. D.,

Hazlehurst, Miss.

On the 22d of September I was called to see a baby (Lucy Minor), stout and hearty; weighed 8 pounds at birth, but it had not defecated since its birth, Sept. 20th, though it had been given oil and salts on two different occasions. On examination, I found it fretful, a little feverish, with abdomen considerably distended and tympanitic on percussion. The natural inference of Dr. Purnell and myself was that there was an accumulation of gas and feces.

Upon examining the rectum we found it impervious and decided to operate at once, and after debating for some time over the different operations, viz: Littres', Callisen and Amussat, we finally performed the perineal operation, because we thought we could detect fluctuation in that location, and preferred making the opening at the proper place. I will not describe the operation further than saying I made the first incision by transfixion and then cautiously dissected up the curve of the sacrum, avoiding the illiac vessels, bladder and peritoneum, till the gut was reached, which presented a dark, glistening appearance. On making an incision into this at least half a pint of very dark meconium passed from the child, with a large quantity of gas; this was not offensive. I did not bring down the mucous membrane of the gut and stitch it to the skin, as recommended, because I did not think it practicable in this case. The gut was found rather high up and the parts were so tender that I did not think that sutures would hold, and I expect to keep the parts constantly dilated to prevent contraction, and think this will answer every purpose. I cannot tell yet what control it will have over the sphincter muscle; in fact, I am not certain it has any. I was cautious

in not making the opening too large, as I did not want to wound it, if it was there. The baby is doing well; has its actions naturally; is healthy in every way; no other deformity, nor has there ever been any in the family. The mother and father are well grown and perfectly healthy in every way. It is hardly necessary for me to say I used the ordinary carbolized dressing, with every precaution in regard to cleanliness.

CORRESPONDENCE.

A Case of Monstrosity.

MERIDIAN, MISS., June, 1881.

Messrs. Editors:—In a recent number of the NEW ORLEANS MEDICAL AND SURGICAL JOURNAL Dr. Burke, of Texarcana, Texas, reported the case of delivery by him of a monstrosity in March of this year. And as he desires to hear from the profession, I will state briefly that on April 22d, I delivered quite a similar one. Indeed the cut and description given by Dr. B. could not better portray it, *i. e.* attachments, etc. Unfortunately I did not weigh mine, but would judge the weight also about the same (14 lbs).

The patient was Hattie N., col'd, eighteen years of age, primapara, and had been in labor three days, attended by a midwife. Upon examination, I found the os fully dilated, but rather high for so late a period after the beginning of labor. The membranes were intact and quite tough and difficult to rupture. After the rupture of the membranes, however, the heads came down into the hollow of the sacrum, but the patient was greatly exhausted, and ergot had to be frequently and freely administered, together with stimulants, to keep up uterine contraction.

Now, after the head became fixed in the hollow of the sacrum—I say head, for I had only felt one—and I found it to be small and in first position, although uterine contractions were somewhat feeble, I could not imagine why the slightest effort would not expel it, inasmuch as I had decided that the pelvis

was of usual dimensions; and notwithstanding the fact her mother died in labor, and her only sister at her single confinement was in labor six days, as stated to me by a physician as well as herself, and who has a vesico-vaginal fistula as a result.

Finding no advancement at this time, I decided to wait no longer. Chloroform was then administered by Dr. Smith, of this city, and I delivered the head presenting; but, in attempting to hook my finger in the axilla, I felt another head in a transverse position. Traction on the first head produced a corresponding movement of the other, which caused me at once to suspect a monstrosity. Finding delivery impossible in that position, one blade of the forceps was introduced, and the other head rotated, and the occiput brought under the symphysis, when it was easily delivered.

They were perfectly formed, females, one umbilicus, and gave evidence of having been dead but a short while.

The doctor wishes to know the best mode of preserving them. I put mine in alcohol, and in a day or two the abdomen became greatly swollen, and of a green color, and I thought decomposition inevitable; but I dropped in the jar—which was quite full and overflowing at the lid, on account of the swelling—an ounce of hydrate of chloral. The green color and swelling disappeared in few hours, and I have them now well preserved. J. H. BLANKS, M. D.

Fœtal Deformities Not Due to Heredity.

By J. M WATKINS, M. D., New Orleans, La.

Read before the New Orleans Medical and Surgical Association, Nov. 6, 1881.

Mr. President and Gentlemen—There are serious difficulties to be contended with in preparing a paper for your consideration. One is the selection of a subject which has not already been repeatedly submitted for discussion, and secondly, after having made a selection to so treat it as to merit some degree of attention, and to have it prove a matter of interest to you. In view of these facts I have concluded to call your attention to the subject of "Fœtal Deformities not due to Heredity."

It is not my intention to occupy your time in a relation of those cases treated of in works on Physiology and the Diseases of Children, such for instance as the various forms of talepes, spina-bifida, atresia, hare-lip, spontaneous amputation of the fœtal limbs in utoro, etc., but rather to attempt to substantiate a fact, and if possible, to elicit some reasonable hypothesis as to the modus operandi of maternal impressions.

There are members of the medical profession exceedingly skeptical on this point, the utterances of some few of which, I will here quote:

Dr. C. H. Wagner, in the *Homœopathic Courier*, of St. Louis, says: "In view of the fact that no nervous connection exists between the mother and fœtus, and that there is not even a direct blood communication between them, it is strange that any reasonable physician can yet entertain the notion that the mother's mind has an influence in causing pathological conditions which are known as marks."

Dr. Isaac R. Swigart, of Bannerville, Pennsylvania, in an article in the October number of the *Philadelphia Medical and Surgical Reporter*, says: "I venture the assertion that there is not an intelligent woman in the world who goes through the allotted period of gestation without 'impressions.' They have longings, and many other peculiarities, both mental and physical, yet no one thinks of placing these in the light of 'causes.' After having many impressions, while waiting, and thinking, and planning, and dreading, it is scarcely possible to produce a monstrosity to which none of these impressions will apply. The impression never takes definite shape until the mother sees which one of her impressions is most nearly reproduced, then all the others fade away, and the outline of that which comes nearest, is studied and rehearsed—still the poor mother imagines, and the doctor helps her to believe, that a mark was placed upon her babe, through the workings of her own mind."

Dr. R. H. Stevens, in the *Michigan Medical News*, of September, 1880, in reply to Dr. Thomas Wilson, who has written an able article on the subject of "Mothers' Marks," attempts to prove the fallacy of the theory, but having read both, I think

Dr. Wilson has decidedly the best of the argument. Dr. Stevens, after stating that "we (the non-believers) choose to account for the monster deformities we occasionally see in a more simple, rational and common-sense way," fails to explain this "simple, rational and common-sense way," which some of us are so anxiously seeking after.

It is hardly wise to denounce a popular superstition which has existed through so many ages, especially when the experience of facts stands in the way of our exploding the theory, and since recent researches clearly demonstrate the wonderful influence of the mind over the functions of organic life, and that strong mental emotions may cause perverted growth, or an arrest of development.

The first case recorded is taken from Genesis, 30 Chap., 37 Verse. Jacob, the herdsman of his father Laban, "took rods of green poplar, hazel and chestnut and made the white appear which was in the rods, and set them in the watering-trough when the flocks came to drink, and they conceived and brought forth cattle, ring-streaked, speckled and spotted." If in the whole history of the race no other such array of facts were blazoned forth to proclaim the truth and universality of the law, I would be willing to accept this as clearly demonstrating its truth; but, so far from being an isolated case, it is only one, I may safely say, among thousands which have occurred.

Let us look for a moment at the opinions expressed by eminent authors of works on Physiology. Carpenter says, "It is well known by breeders of animals that a strong mental impression made upon the female by a particular male will give the offspring a resemblance to him, even though she has no sexual intercourse with him." Dalton says, "that various deformities and deficiencies of the fœtus originate in certain cases from nervous impressions made on the mother." Flint says, "that there are cases of deformity caused from violent emotions of the mother can not be doubted."

To substantiate the opinions of the above mentioned authorities on physiology, I will mention a few cases reported by capable and honest members of the profession:

Dr. Miller, of Cincinnati, relates the following: "Wm. Gray, a farmer, aged 32 years, is afflicted from birth with a bald spot on the top of his head; otherwise, his head is perfectly covered with hair. This is due, it is believed, from his mother having fainted early in pregnancy, from seeing her husband brought home with a portion of scalp torn off by a fall."

Dr. William Hunt is authority for the following: "A woman 8½ months pregnant, received fatal burns from her clothes taking fire, a large portion of the body being involved. The next afternoon she gave birth to a well-formed, still-born female child, the body of which had the appearance of being recently burned; the epidermis being raised in blisters, and corresponding exactly in position with the burns of the mother."

Dr. Goyder, at a meeting of the British Medical Association, mentioned having amputated the finger of a man, whose daughter, then one month pregnant, assisted in the operation. She finally gave birth to a child, at full term, in which the corresponding finger was absent."

"A negro woman, 8 months pregnant, was thrown from a horse, and fell with one leg, at its lower third, across a sapling used for binding hay on a wagon. 24 hours after she aborted. The child had a well-defined ecchymosis on its leg, corresponding with the leg of the mother which was struck."

Dr. Thomas Wilson, in the June number of the Obstetrical Journal of Great Britain and Ireland, mentions the following cases: "A woman, a few days before the birth of her child, while ironing, burned her hand. Her child was born with two vesicles, corresponding both in situation and shape, with those on the mothers hand."

"A woman, three months before her confinement, in the act of removing something out of a large chest, was struck on the crown of her head by the falling lid, with such force as to cause her to faint. Her child at birth commenced to moan, was unable to nurse, and died at the end of forty-eight hours. A post mortem examination revealed, on reflecting the scalp, the upper and posterior portions of the parietal and parieto-occipital regions to be of a very dark color, resembling ecchymosis. The calvarium, on being removed, carried with it

the dura mater, which adhered to the fontanelles. Under the arachnoid, and over the left occipito-parietal lobes of the brain, there was a good deal of effused blood, the membranes of the meninges were also hyperaemic, but the brain itself was healthy."

Dr. R. L. Payne, ex-President of the State Medical Society of North Carolina, states that "on one occasion visiting a physician and seeing a monster preserved in a bottle, said, "Why, Doctor, this is a turtle!" The Doctor told him he had delivered the monster, and before even he or the mother herself had seen it, she asked if it was not like a turtle, and went on to say that she had been very much frightened by a large sea turtle during gestation.

These are but a few of the multitude of cases which might be appropriately mentioned, but I have selected these few only on account of their special interest, and as serving to explain the great weight of facts which present themselves in favor of the theory of the transmission of maternal impressions. One can hardly form a just estimate of the number of these cases which occur, as only a comparatively small proportion of them find their way into the journals, and yet nearly every journal reports a greater or less number of such cases during the year.

Dr. J. B. Bolton, in an article in the *St, Louis Medical Journal*, after reporting three interesting cases, says: "These marks are more likely to occur about the third or fourth months of pregnancy." On the other hand, some one, whose name I am at this time unable to call, says: "Admitting the fact of maternal impressions, and with all the evidences before us, this is not difficult. I think it can be proven that during any period of pregnancy the fœtus is susceptible of being marked." For instance:

In the case reported by Dr. Goyder, the woman was 1 month pregnant.

In the case reported by Dr. Hunt, the woman was 8½ months pregnant.

In the cases reported by Dr. Wilson, the first woman was 8½ months pregnant, the second was 6.

With this necessary reference to the subject of deformities, as introductory, I come now to the special object of my paper, which is to call your attention to that known as Anencephalus, and to suggest it as a probable, if not to conclusively prove it to be, one of the causes of prolonged gestation.

One great difficulty in the way of proving a fact of this character is the inaccuracy attendant upon the history furnished by the mother, and the comparatively few cases, the records of which are at our disposal. In the cases, the partial histories of which I have been able to obtain, two arguments are suggested in evidence of the fact of its being one of the causes of prolonged gestation. The first of these, is the invariable history, in every case where mention is made of the length of time pregnancy existed, that the period of gestation has been prolonged to 9½, and even in some cases to more than 10 calender months. In nearly every case, this has been mentioned as one of the prominent symptoms, and yet, no one who has written on the subject, as far as I am able to learn, has regarded it as due to the peculiar formation, or associated the two as cause and effect. The second argument in favor of a prolonged gestation is the extraordinary development of the fœtus, in some of these monsters, the length and the measurements around the shoulders and across the hips are exceedingly great. These two facts occurring so prominently and persistently, certainly afford strong presumptive evidence in favor of the theory. As regards the cause of labor, Hodge, in his admirable work on Obstetrics, says: "We must content ourselves with the declaration, that when the fœtus is matured, uterine contractions spontaneously occur for its expulsion." In view then, of the lack of positive knowledge as to what constitutes the exciting cause of the efforts to expel the fœtus at full term, it is correspondingly difficult to assert positively, the non-existence of what particular factor results in a failure to excite these contractions. It seems, however, a reasonable supposition, that the absence of the vault of the cranium, which constitutes so large a proportion of the bulk of the normal fœtus, may account for the delay in its expulsion.

I have not been able to consult any works on Teratology, and the information obtained from authorities on Obstetrics and Diseases of Children in reference to the subject is exceedingly meagre; especially is this so in works on Obstetrics. Prof. J. L. Smith, of New York, in his work on the Diseases of Children, furnishes a graphic illustration of a case, and his remarks, though brief, are exceedingly interesting.

I will now call your attention to the following table, and to the history of such of the cases as I have been able to obtain. To the former, that is to the table, with a view of noting the weight of evidence it furnishes in support of the theory of a prolonged gestation, and to the latter the history of the cases, to consider to what extent they favor the theory of maternal impressions and their effect on the fœtus in utero.

No.	Name.	Age	Residence.	Date of ex. confin'm't	Date of confin'm't	Color.	Sex.	Weight.	Period of gestation.
1	Mrs. P..	...	New Orleans	.....	1862	w	....	12	10 mos. over.
2	Mrs. —	40	"	.....	1869	w	M	12	10 mos.
3	Mrs. V..	36	"	Sept. 3d..	Oct. 11, '79	w	M	12	"
4	Mrs. G .	38	.....	Feb. 15th.	Mar. 25, '79	w	M	10½	"
5	Mrs P..	36	New Orleans	.....	1877	w	M	14	"
6	Mrs. B .	20	Nashville ..	... .	Dec. 11, '80	w	M	....	"
7	.....	....	England . . .	.....	May — '80	w	....	....	"
8	Mrs. L .	22	New Orleans	.....	.....	w	M	13	"
9	Mrs. W.	24	"	.....	.....	w	M	11½	9½ mos.
10	Mary...	22	Louisiana ..	.....	.....	c	M	12	9½ mos.
11	Mrs	30	New Orleans	.....	1872	c	M	10	9½ mos. over
12	.....	....	London	.....	1880	w	....	...	10 mos.
13	.....	...	Pen'sylv'nia	.....	1881	w	M	....	.....
14	.....	....	.....	.....	.....	....	....	....	.....
15	.....	....	.....	.....	.....	....	..	..	.....

Cases Nos. 12 and 13 are only valuable; the first, because of the period of gestation being mentioned, and the second, the sex of the child.

The records of these cases are exceedingly rare, if I may judge from the numerous works on Obstetrics, and the number of Medical Journals I have examined to so little purpose; the most interesting of the cases mentioned in the table having been furnished me by Drs. Holliday and W. H. Watkins.

Aside from the evidence in favor of the two leading propositions which constitute the gist of my paper, I desire to call

special attention to the fact that of the 13 cases enumerated, in every case in which mention is made of the sex of the child, in no single instance has this peculiar deformity occurred in a female. I mention this without any comments, having none to make, since I can see no reasonable method of explaining what relationship could possibly exist between sex and this deformity. But to say the least of it, it is exceedingly singular, and further inquiry may add to its importance.

According to Leishman, the average weight of the fœtus at full term is 7¼ lbs., while Playfair estimates it at 6½ lbs. Cazeaux says, of 3.000 children born in the Hospitals under his supervision, the average weight was 6½ lbs., and only one of them weighed as much as 10 lbs. "This one," he remarks, "was enormous." These figures considered, in connection with the table I have just read, where the average weight of the nine children was 12 lbs., is strong presumptive evidence of delayed parturition. If not, how can we account for the excessive development of these children? It can scarcely be regarded as a coincidence, especially since the weight in every case was unusual, and there are no physiological conditions known to exist by which we may account for it. On the contrary, regarding these cases as originally cases of Hydrocephalus (which is the view generally entertained by authors of works on Obstetrics), in which the bones of the skull have yielded to the great and continued pressure of the fluid, we would reasonably expect a lowered vitality, and consequently a weak, puny infant. To discredit a theory, without substituting one more positive for it, can hardly be considered a wise policy, and yet it seems far-fetched to account for the occurrence of this affection by referring it to a preceding condition of Hydrocephalus. To attribute it to a failure in the development of the brain and cranial bones strikes me as being exceedingly more rational, and perfectly in accordance with the same failure of development which occasionally takes place in other portions of the body.

The next feature of interest presented in the table, is the unusual length of the period of utero gestation. According to Playfair and other recent and standard authorities, the average

period of pregnancy is from 274 to 280 days, and of 150 cases reported by Cazeaux, the period of gestation averaged 276 days. By reference to the table it will be seen, that of the thirteen cases recorded, the shortest time of pregnancy was 9½ months, or 289 days, and the longest, which was positively and definitely ascertained by the physician himself, without any reliance on the mere statements of the mother, is ten months and ten days, or 315 days; with an average of the 13 cases of 302 days. This latter estimate is not strictly positive, as in several of the cases the time was stated to have exceeded ten months, though the exact number of days, in the majority of the cases, could not be accurately determined, consequently it may have been a little more or a little less. The following history of cases Nos. 1, 3 and 5 will now be referred to briefly, for the purpose, as I have already stated, of considering to what extent they favor the theory of maternal impressions, and their effect on the fœtus in utero.

Mrs. V., the mother of six children, all delivered at full term, healthy and well-formed, when pregnant about the third month with the seventh child, saw a butcher kill a pig in the yard by striking it in the head with an axe. She was very much impressed at the time, but in a few days seemed to think nothing more of it; after a lengthened period of pregnancy, which by reference to the table will be seen to have existed more than ten months, she was with great difficulty delivered of an anencephalic fœtus weighing 12 pounds.

Mrs. P., during the seige of Port Hudson, visited her husband, who was then in the army at that place. While there, and even after her return to New Orleans, she was constantly apprehensive that the top of her husband's head, he being in the pits, would be blown off by a shell. After a prolonged gestation of fully ten months, she was delivered of a monster, anencephalic, and weighing twelve pounds. Mrs. P., the second wife of the same gentleman, several years after, while fixing some window-shades, on moving the ladder she was using, having neglected to remove the hatchet or hammer from the top shelf, it fell, striking and cutting her on the head. Whether alarmed from the knowledge of the case of her hus-

band's first wife or not, she insisted that the child would be born without a head, and, after a pregnancy of nearly ten months and a half, she gave birth to a fœtus identical with the former, weighing 14 lbs., and enormously developed.

These are the only histories mentioned in connection with the cases I have cited, though in cases Nos. 7, 12 and 13 the fact of the mothers having been frightened during pregnancy has been stated by the physicians reporting them. I regret that more time has not been at my disposal for the purpose of enabling me to collect a greater number of cases, together with such histories, as would have served to strengthen the already respectable array of evidence furnished in support of the truths I have endeavored to substantiate.

Firmly impressed as I am from the amount of evidence to be obtained in favor of the fact which is accepted by many, that maternal impressions may result in physical deformities to the fœtus in utero, I have failed if I have not succeeded in reflecting the firm conviction of its truth entertained by men whose prominence in the profession entitles their opinions to great weight, and who are sustained by a public sentiment which has existed through hundreds of years.

The second proposition—As to anencephalus constituting one of the causes of prolonged gestation, though it has no such array of facts to sustain it, not having received the attention of Obstetricians, still, in view of the evidence furnished by the few cases mentioned, it seems reasonable grounds on which to base an argument, leaving to the future, so pregnant with new truths, as well as with anancephalic monsters, to demonstrate the correctness of the theory.

The Sixteen Commandments of the Paris Academy of Medicine.

Translated by Dr. D. C. Holliday, New Orleans.

The Academy of Medicine in Paris has condensed into the following sixteen propositions the most important hygienic rules for the care and management of infants. We reproduce

them here with the sincere hope that all mothers and nurses will commit them to memory and observe them as faithfully as the ten commandments of holy writ:

I. During the *first year* the only suitable nourishment for an infant is its own mother's milk, or that of a healthy wet nurse. Suckling should be repeated every *two* hours—*less* frequently at night.

II. When it is impossible to give breast milk, either from the mother or a suitable nurse, cow's or goat's milk given tepid, reduced at first one-half by the addition of water slightly sweetened, and after a few weeks one-fourth only, is the next best substitute.

III. In giving milk to an infant always use glass or earthenware vessels, not metalic ones, and always observe the most scrupulous cleanliness in their management, rinsing whenever used. Always avoid the use of teats of cloth or sponge so frequently employed to appease hunger or quiet crying.

IV. Avoid carefully all those nostrums and compounds so liberally advertised as superior to natural food.

V. Never forget that artificial nourishment, whether by *nursing bottle* or *spoon* (without the breast), increases to an alarming degree, the chances of producing sickness and death.

VI. It is always dangerous to give an infant, especially during the first two months of its life, solid food of any kind—such as bread, cakes, meats, vegetables or fruit.

VII. Only after the *seventh* month, and when the mother's milk is not sufficient to nourish the child, should *broths* be allowed. After the first year is ended, then it is appropriate to give light broths or paps, made with milk and bread, dried flour, rice, and the farinaceous articles, to prepare for weaning. A child ought not to be weaned until it has cut its first 12 or 13 *teeth*, and then only when in perfect health.

VIII. A child should be washed and dressed every morning, before being nursed or fed. In bathing a child, temper the water to the weather, carefully cleanse the body, and especially the genital organs which require great cleanliness and care; and the head should be carefully freed from all scabs and crusts which may form. Where the belly-band is used, it should be kept on for at least one month.

IX. An infant's clothing should always be so arranged as to leave the limbs freedom of motion, and not to compress any portion of the body.

X. An infant's clothing should be studiously adapted to the weather; avoiding at all times, exposure to the injurious effects of sudden changes in temperature without proper covering; but nurseries and sleeping apartments should invariably be well ventilated.

XI. An infant should not be taken into the open air before the fifteenth day after birth, and then only in mild fair weather.

XII. It is objectionable to have an infant sleep in the same bed either with its mother or nurse.

XIII. No mother should be in too great a hurry to have a child walk; let it crawl and accustom itself to rising on its feet by climbing on articles of furniture, or assisted by the arms of a careful attendant. Great care should be taken in the too early use of baby-wagons, etc.

XIV. No trifling ailments in infants, such as colics, frequent vomiting, diarrhœa, coughs, etc., if persistent, should be neglected—a physician's advice should be at once obtained.

XV. In cases of suspected pregnancy, either of mother or nurse, the child should be weaned at once.

XVI. A child ought to be vaccinated after the fifth month, or earlier should small-pox be prevalent.

Current Medical Literature.

POTASSIUM PERMANGANATE AS AN ANTIDOTE TO THE VENOM OF SERPENTS.

A note communicated to the French Academy by M. de Lacerda (Rio Janeiro)—*Gazette des Hopitaux.*

(Translated by Dr. A. D. Matas.)

In order to study the action of certain chemical and botanical substances upon the phenomena which follow the inoculation of the venom of serpents, we began two months ago a series of experiments, which have led to results of the highest scientific and practical importance.

After recognizing the worthlessness of the perchloride of iron, borax and nitrate of mercury, tannin, and various other chemical substances in relieving the effects of poisonous ophidian inoculations, we determined to try a substance which furnished us truly wonderful results—we refer to the permanganate of potassium.

The results obtained in the first series of experiments, by injecting the active venom of the bothrops, diluted in distilled water, into the subcutaneous areolar tissue of dogs, demonstrated plainly that this substance (the permanganate) was capable of arresting completely the local toxic manifestations of the venom. In carrying out our experiments we proceeded thuswise: A sufficient quantity of cotton was subjected to the bites of the reptile, and the venom collected in its meshes was diluted in a small quantity of distilled water usually 8 to 10 grains of this menstruum); a Pravaz syringe was then filled with this solution and half of its contents injected into the cellular tissue of the buttock of a dog. One or two minutes after, or even after a longer lapse of time, an equal quantity of a filtered 1 per cent. solution of potassium permanganate was injected into the same region. These dogs, when examined the next day, did not present the slightest local lesion, at most a very small tumefaction, localized about the seat of the injection, without any infiltration or any other sign of irritation. And yet, the same venom which had served in these experiments, when injected without the antidote, always produced great local tumefaction and more or less voluminous abscesses, associated with considerable loss of substance and destruction of tissue.

The results achieved in this first series of experiments by the simple hypodermic injection of potassium permanganate encouraged us to try the same substance in cases of poisoning from the intravenous injection of the ophidian venom.

Here, again, the permanganate of potash answered perfectly to our expectations. We have now repeated our experiment 30 times, and have barely met with two failures. These failures, however, may be attributed to various causes, which do not affect the general efficiency of the agent now under discussion. First, we may state that these experiments were conducted, in these exceptional instances, on badly nourished, very feeble and young animals; and again, the injections of the permanganate were administered too long after the introduction of the poison, when the heart's action was on the verge of suspension.

For a certain number of cases we injected intravenously half a syringeful (Pravaz's syringe) of a solution of the strength of 12 or 15 serpent bites (on cotton) in 10 grains of water, followed half a minute latter, by 2 centigrams of a 1 per cent. solution of potassium permanganate. Outside of a very transient agita-

tion, and sometimes of an acceleration in the cardiac pulsations, which hardly ever lasted over a few minutes, the animal experimented upon, never manifested the slightest morbid phenomena. The inocculated animals were carefully observed for several days after the experiment, but they always seemed to be perfectly healthy.

In another series of cases, we injected the venom into the bladder and waited for the manifestation of the characteristic poisonous symptoms. Just at the moment when the pupils were observed to be greatly dilated, when respiratory and cardiac troubles, contracting involuntary micturition and defecation, indicated a condition of profound intoxication, we injected intravenously, 2 to 3 c. centimeters of the same 1 per cent. solution of potassium permanganate, repeating the injections, one after another, until we observed, usually at the end of 2 or 3 minutes, or five at most, that the above phenomena disappeared; a condition of general prostration was the only perceptible result of the experiment, and this was hardly ever protracted over 15 or 25 minutes. If the animal was then placed on his feet, he could walk very well; he could run if compelled to, and in fact deported himself throughout like a healthy dog. And yet, other dogs that had received within their veins the same quantity of pure venom, without any counteracting agent, died every one, more or less rapidly.

These truly remarkable results, which attracted general attention, were witnessed at different times, not only by His Majesty, Don Pedro, who kindly honored us with his presence in our first experiment, but also by persons highly conversant in these matters, physicians, members of faculties, and members of foreign diplomatic corps, etc.

I therefore believe myself justified in asserting that the permanganate of potassium is a true antidote to the venom of serpents.

ORIGIN AND DIFFUSION OF ENTERIC FEVER AND DIPHTHERIA.*

By WILLIAM STRANGE, M. D., President-Elect of the British Medical Association; Senior Physician to the Worcester Infirmary.

Of all hindrances to the establishment of a scientific basis for medical practice, the greatest, I take leave to say, is the too prevalent custom of carrying deductions from a limited number of facts up to an extreme degree of accuracy. So captivating is the result of this process, that one is immediately led to believe that the question at issue is solved; and the reader, unless he be more than usually on his guard, is very apt to believe that the question is solved for him also. And

*Read in opening a discussion in the Section on Public Medicine at the Annual Meeting of the British Medical Association at Ryde, August, 1881.

in no department of the wide field of medicine is this error so often committed as in that of etiology, which treats of the origin and diffusion of diseases.

Now enteric fever has long been the battlefield for opposite parties to tilt at each other; and the cause is not far to seek. It is no other than the use of the *deductive* in place of the *inductive* method of reasoning, which is so frequently adopted when a question of causation comes under discussion. Each combatant has observed a limited number of facts, and verified them as facts. The conclusions deduced from them become his theory—his eidolon. And a nice well-rounded theory looks so well, that few of us are able to withstand its blandishments. Facts which oppose this theory are either boldly denied, or, if that may not be, they are so manipulated by the mind that, instead of opposing, they come to support the favorite dogma. Big names, we know, carry weight; whilst more modest and less aspiring, yet equally trustworthy observers, are apt to keep their observations for their own use, and so error is perpetuated.

The time will not allow of my quoting authorities, or citing times and instances, either of observation or publication, in regard of the matters now under discussion. I am familiar with most of the authorities on enteric fever, from the first distinct proof of its specific distinction from typhus fever made by our valued associate Dr. A. P. Stewart, forty years ago, down to the present day. I will merely recall to your recollection the names of Brétonneau, Gendron de Leure, William Budd, Corfield, and others, as advocating one theory of the causation of enteric fever; and Louis, Andral, Murchison, Alfred Carpenter, and others, who have chiefly supported the other. To avoid circumlocution, let me define these two theories at the outset.

To take the later and more aggressive theory first: it states categorically that enteric fever is a specific febrile disease of the order of the exanthemata, just as much so as are small-pox and measles, with which two species it is supposed to have many analogies. Like them, it is originated and propagated by specific disease-germs which pass out of the intestine of one sufferer into the system of another person by the ordinary channels used by other diseases; viz., by the atmosphere, by imbibition by means of polluted water or food, or perhaps by immediate contact of the healthy with the sick. The late Dr. W. Budd of Bristol is taken to be pre-eminently the apostle of this theory in this country, from the great care and minuteness with which he investigated his facts, the clearness with which he stated them, and the seeming cogency of the deductions which he drew from them.

The other theory, called by Murchison and his followers the pythogenic theory, although it does not deny the existence of

disease-germs, which certainly are sometimes cast off by the intestinal canal of the sufferer to reproduce themselves in the intestines of others, teaches that enteric fever originates in some unknown *materies morbi* (microzymes, or fungi, or chemical product), which is generated in sewage, is putrefying human excrement, or in other animal matters, at uncertain times, and under conditions not yet accurately defined; and that this *materies morbi* may be conveyed in the atmosphere, in water or food, or by fomites, or, possibly, very occasionally, by direct contact of the healthy with the sick.

A third or intermediate theory, held by some, makes it necessary for the specific germs of theory No. 1 to be developed or rendered virulent by admixture with sewage or other foul or decaying organic matters in which they grow, or at least undergo some change by which they become more active and capable of diffusing the poison to an extraordinary extent

Now, in starting a discussion upon the origin of enteric fever, I do not think it necessary that I should pin my faith to the correctness of either theory, or to try to persuade you that such and such a view is the correct one. Rather, as it seems to me, I ought to lay before you the salient points of correspondence or of antagonism of facts to either theory, and, by eliciting the opinions of many observers upon these facts, corroborated by their own experience, to induce some one to gather up the scattered threads of the argument, and by *inductive*, and not by *deductive* reasoning, to construct them aa unassailable theory.

Let us examine, first, the first-named theory. And here let me say that I have carefully re read every line of Dr. Budd's classical work; and I do not hesitate to say it of one whose memory I hold in affectionate admiration, that anything more misleading than the deductions in that book, truly drawn as they are from the facts before him, is scarcely anywhere to be found in the whole range of medical literature. Dr. Budd, as you are aware, collected a mass of facts, all going more or less to prove that, in the remarkable outbreaks of enteric fever inquired into by him, he was able to trace the introduction of the disease to the affected locality by some person who was either at the time suffering from the disease, or who had lately been in contact with some person so suffering; or, at all events, had lately arrived from an infected locality. The celebrated case of North Tawton is a typical instance of this. On the arrival of the presumedly infected person, the disease spreads in the house, to the adjoining houses, then to others in the district, and then to a distance; but always, when at a distance from the original focus, a carrier of the infection was traced. This was so at Chaffcombe, and at the convent near Bristol. Observe, however, what Dr. Budd does not omit to point out, that all these places, at the time of the outbreak, were the abode of sanitary

abominations quite sufficient, according to the pythogenic theory, to breed the fever of themselves, or, as we say, *de novo*. Thus, at St. Arno's Court, where there was undoubted evidence of a person introduced from an infected district, Dr. Budd relates that the main drain of the building had long been blocked up; and that, at the very time of the fever, a perfect cesspool of sewage was found under the very building! But, then, these abominations (says Dr. Budd) has existed for months—yea, for years—in the same condition, yet no fever makes its appearance until the germs had been introduced by an infected person. If any suggestions are made that, after all, these insanitary conditions might of themselves have given origin to the disease, under some unknown influence, the suggestions are put aside, with pity for those who make them, as "too preposterous and absurd." Now, the deductions from these cases, as I have said, are so well drawn, and were so convincing to the minds of the author and of those who were associated with him in the inquiry, that it appears as though nothing could be said against them. So far as they go they are unassailable. But, mark what a fatal error runs all through the book! No mention at all is made of the hundreds of cases recorded by other observers, in which the most careful inquiry failed to discover any probable—aye, even possible—introducer of the contagion. You are, in fact, led to suppose that what Dr. Budd has seen himself is all that *can* be seen of the disease. He found no outbreak unless, to already filthy conditions of dwellings, etc., the specific poison was introduced *ab extra*. Yet, you know that Dr. Murchison and others have related how the introduction of enteric cases into fever hospitals scarcely ever conveyed the infection to the nurses and attendants; and all hospital physicians can tell how seldom it spreads to the neighboring patients when introduced to our general hospitals, notwithstanding some laxity in dealing with the discharges. This depends on one condition only: namely, that the sanitary arrangements of such hospitals are good, and that proper means are adopted to keep them good whilst such cases remain in the hospital. This important proviso will come into prominence presently.

What then, is the summary of Dr. Budd's own cases and of those of similar observers, and the deductions to be drawn from them? Only this. For a long period—sometimes, it would appear, even for years—very insanitary conditions of dwelling houses, of their surroundings, filthy privies and piggeries, foul drinking-water, etc., may exist in a given locality, especially in country districts, without giving rise to an outbreak of enteric fever. We can all verify this proposition. But when, to these conditions, the propagating germ, brought from a distance, is added, then the yeast is set to work, and the germs multiply in a medium suited to their growth:

namely, in the intestinal canal of those attacked by the disease. The germs are cast out thence upon the earth, into the privy, into the drain, the water-course, or elsewhere. The people of the house to which the introducer has arrived are the first to be attacked, then others at a great distance, both up and down the district. Note, however, that in every case where these disease germs have been carried by persons going from an infected locality into an uninfected one, the same insanitary conditions have existed in the latter as in the former neighborhood. The hot-bed was already prepared, so to speak, awaiting only the spawn to bring forth an abundant crop. The deduction as to the necessity of the previous introduction of the special disease germ, from the facts narrated, you will see it perfect.

But now, with respect to those other cases, quite as numerous and quite as carefully observed, in which, the same filthy conditions existing, no trace of the introduction of disease germs, *ab extra*, can be found on the most careful inquiry; and in which the discharges from the intestines of the sick have *not* spread the disease. Surely, in investigating the origin and diffusion of such a disease as enteric fever, all the observed facts must be taken into the account, and have their proper value assigned to them? And if known facts are not sufficient to enable us to construct a workable theory of the causation of the disease, we must wait for more facts and look out for more light.

Now let us look at the second theory, the so called pythogenic origin of enteric fever and also of diphtheria. After lying in peaceful repose for years, the stench of its filthy drains and cesspits only offending the noses of the passers by, some village is suddenly wakened up by a tithe of its inhabitants being attacked by enteric fever or diphtheria. What has happened? Has some person been discovered who has brought the germs on his person or clothing from an infected district? And have these germs got into the waters and drains, where they immediately gave birth to a swarm of infant germs, which speedily diffused themselves all over the infected area? This is what ought to have happened if Dr. Budd's theory be true—true at all times and in all places.

Now, I have seen a great deal of the origin of enteric fever in my time, and have met with a great number of intelligent country practitioners, and I believe there is scarcely one of the latter who has not said, or who is not ready to say, that in his experience, after most careful inquiry, in the great majority of cases, no introduction of the poison, *ab extra*, can be made out. I might mention scores of cases from my own note-book, but similar instances must be present to the minds of all.

Now, it may be asked, why introduce the question of the origin of diphtheria to complicate that of enteric fever? Be-

cause of the proved, and, I believe, sufficiently acknowledged, double origin of diphtheria. Here is Sir W. Jenner's statement as to the etiology of the disease, published in 1861: 1. "That diphtheria is contagious"—admitted. 2. "That the infecting element does not require for its development any of the ordinarily considered anti-hygienic conditions"—granted also, if we say not always required. 3. "That it is very doubtful, even, if any of the anti-hygienic conditions favor its development, or give to it a more untoward course when it occurs." This proposition is more than doubtful, and is entirely opposed to the experience of those who have seen much of the disease amongst the poor, especially in country districts, where it can be observed with greater accuracy than in large towns. For valuable facts, and arguments based upon them, in reference to this point, see a paper by Mr. Fosbroke in the *Sanitary Record* for March last.

It cannot be, and I think is not, denied, that cases of diphtheria may have a double origin: first, from filth and foul or damp air, which engender sporadic cases, and these may sometimes so act as to give rise to an epidemic of the disorder. Secondly, from direct contagion, more especially when the disese prevails epidemically. The *de novo* origin of diphtheria, then, is not disputed. The contagious origin is not disputed, and it does not require anti-hygienic conditions for the contagion to act.

Now, the characteristic features of enteric fever and diphtheria have much in common. In each case we have to deal with a poison in the blood, introduced *ab extra*, multiplied in the bodies of the sick, and cast out thence from the surface especially affected, viz., the intestinal canal in the one case, or the mucous membrane, of the throat and pharynx, in the other. The poison, whatever be its nature, produces in each case its specific symptoms, and the contagion, when conveyed to another subject, always produces the same disease. The two poisons, therefore, are specifically distinct, although arising apparently in the same media, and entering the body by the same channels. Filth of some kind, chiefly, if not entirely, of animal origin, seems to be the initial medium whence the poison is derived, and it is not in our power to say which of these two very distinct diseases will be produced by contact with the same filthy medium.

Now, can any one at this point answer this question: Why, admitting diphtheria to have this double origin, enteric fever may not have it also? Are there not other diseases of analogous nature which exhibit an origin in two sets of conditions? Erysipelas breaks out in hospitals and in private houses also, without any introduction *ab extra*. From attacking cases under the care of the surgeon, it makes its way to the adjoining beds under the care of the physician. If you doubt the

fact of contagion here, and assign the outbreak to anti-hygenic conditions affecting all alike, we will follow the patient to the private house into which he carries the disease, although the place may be in possession of the most perfect wholesomeness. It appears to me that the philosophical physician ought to endeavor to reconcile all these conflicting observations by availing himself of all analogies by which one disease can throw light upon another, and not by forcing them all into one category, willy nilly, for the sake of backing up some foregone conclusion, or of building up some specious theory. He will also see if he cannot lay his hand upon some *third* factor, some *tertium quid*, by the aid of which the discrepancies of evidence may haply be adjusted; or, if he cannot, try to discover some hitherto unsuspected analogies by which the conflict may be ended, and the diverse facts made to lie down together in peaceful agreement.

Returning once more, only for a moment, to the first theory, that of specific germs necessary to generate and reproduce enteric fever. The difficulty of accounting on this theory for the isolated cases which arise apparently *de novo* is immense, if not insurmountable. It is proverbially difficult to prove a negative; and, no doubt, it may be conceded to Dr. Budd and his followers that the introduction of these poison germs to sewage, to foul air, even to the earth, may give rise to a most rapid and extended multiplication of them, and to their diffusion by various means over a considerable area. But if every case which arises, whether in the remote farmhouse or rural cottage, or in the dense rows of the crowded city, is to be accounted for only on this theory, these germs must be almost universally diffused through earth, air, and water—must be, in fact, ubiquitous.

Now what do we actually find to be the case? This: Where no fever cases has been before, whenever the house-drain is choked up, when the cesspit is more than usually filthy and stinking, when the water-closet is out of order; when sewage, even from a simple drain in the country village, enters a well and pollutes the drinking water, *there and then* enteric fever occurs in cases too numerous to be ignored. If all these cases are caused by some sanitary fault simply giving exit to the specific germs of the disease, supposed to have been imprisoned there from some long ago previous case, how universally diffused they must be! Again, we find that, whenever sewage matters laden with the excreta of human beings do gain entrance into a well, those who partake of the water are almost certainly immediately attacked. On the other hand, I have never been able to trace with certainty a single case of this disease to the drinking of our river-water, which, although filtered through gravel and sand, could scarcely escape conveying some of these minute specific disease-germs, if they were so

universally diffused as, to accord with the one theory, they must necessarily be. These germs ought to find their way into the river, which is the main sewer of the district, in countless millions, were Dr. Budd's theory absolutely the only correct one; for they would enter it from every sewer and drain along its whole course. Are these things so? I trust and believe not.

Another objection to this theory: If you confine the emanations, say from a badly ventilated water-closet, or the effluvia from a foul drain, you will probably very soon originate enteric fever or diphtheria. But let in plenty of air, cut off the closet by a cross-current, and the house is safe. Now, if the *materies morbi* were of the nature of living organisms, would they be likely to be so easily killed or rendered harmless by a little fresh air? But if, on the other hand, the *materies morbi* be of pythogenic origin, that is, probably, a chemical product generated by some process of putrefaction, then we can well understand its destruction by chemical action, or its oxydation in pure air; and can explain how it happened that the specific germs in Dr. Budd's cases only operated when the sanitary conditions surrounding the patient were such as to promote these putrefactive changes.

Not to weary you by any further discussion of antagonistic theories, let me briefly point out the direction in which I think we should work in order to add to our stock of real knowledge bearing upon the etiology of these two diseases.

1. I would suggest that all available facts as to the origin, spread, and true nature of enteric fever and diphtheria, should be marshalled side by side, without prejudice or favor to any theory.

2. I would collate the facts derivable from the history of cognate diseases, such as cholera, yellow fever, erysipelas, and place them alongside the above; and also collate the phenomena of certain diseases of animals—chicken cholera, for example, with those observed as above.

3. Compare the conditions under which the diseases in these two last prevail with those observed of enteric fever and diphtheria.

4. Inferences may now be drawn which will be available as landmarks, or provisional propositions, with which to go to work in the construction of a theory of the origin of these two diseases.

Allow me, in conclusion, to state what I look upon as correlated facts already known in the inquiry.

I think it is proved that enteric fever, however it may have commenced, is sometimes propagated from person to person by close propinquity, or actual contact, with the intestinal discharges. I had a clear case of this in my own house. And a *materies morbi*, which may or may not be composed of living

specific germs, is sometimes conveyed from the sick to the healthy *at a distance*, where it takes effect in producing exactly the same symptoms as in the initial case. But, in this event, in the great majority of cases at least, the sanitary surroundings of those who receive the disease are very faulty. This was the case with the epidemics of cholera, and it is still the case with the spread of diphtheria and erysipelas. These diseases seldom spread in a wholesome house or district.

It is also proved, as far as a negative proposition can be proved, that a *materia morbi* of unknown nature, be it fungoid, or be it chemical in composition, is often bred in drains, sewers, privies, or on damp or foul surfaces, or in earth matter saturated with sewage matters; and that this *materies* gives origin to enteric fever and to diphtheria without the action of any specific germ derived from the body of a previous patient. Unless we accept this proposition as founded in fact, the origin of thousands of cases of these two diseases is involved in impenetrable mystery. And if this proposition be accepted, then we must conclude that some specific or quasi-specific organism (or germ, if you please), or else a mere chemical product, is formed in such matters, *de novo*.

These substances, organisms, or chemical products, whatever they be, undoubtedly become capable of self-multiplication and intensification in the glands of the intestine on the one hand, and on the mucous membrane of the throat and pharynx on the other. They also now become capable of conveying their respective diseases by direct contact, as in the first-named proposition; and, to many minds, this is the usual order of events in the origin and diffusion of both enteric fever and diphtheria.

Finally, there are analogies observable between these two diseases and erysipelas and some well-known forms of septicæmia. Recent experiments, including those of Pasteur, Burdon-Sanderson, George Harley, and especially of Gravitz, go to show the remarkable fact that certain deleterious organisms—fungi, etc.—may be so cultivated, by repeated inoculation into living tissues, that, from comparative harmlessness, they pass on to a condition of true infectiveness, their virulence increasing with each fresh inoculation. Gravitz even believes, and in this he is supported by other German observers, that inoculation with germs of "low culture," or with a very minute quantity of the *materies*, will confer immunity from future attacks. Does not this lead up to the presumption, to say the least, that the poisons of typhoid and diphtheria, whatever may be their real essence, in passing through the bodies of patients, acquire increased virulence, and so give rise to those phenomena of direct contagion in some instances, which Dr. Budd and his followers so strenuously contend for in all?

Here, then, we come in sight of that *tertium quid*, that something *ab extra*, to which I have already alluded as apparently

necessary to harmonize and reconcile the various conflicting phenomena of these diseases. And it will be pushing investigations in this direction to their utmost attainable limits that I shall look for any real extention of our knowledge of them. Could the funds of our Association be better employed than in aiding skilled investigators to pursue these inquiries in a field which seems to promise the greatest results from scientific cultivation?—*British Medical Journal.*

TYPHUS AND TYPHOID.

By E. Halsey Wood, A. M., M. D., Hersy, Mich.

In a former article published in this journal, I gave it as my opinion that "the medical mind is incapable of distinguishing between typhus and typhoid fevers."

In proof of the assertion, I cited 66 cases reported by Dr. Jenner in 1846, of which 23 were typhoid, and 43 were (probably) typhus. The difference between these cases was only determined by post mortem examination. In accordance with the teachings of medical science, a correct diagnosis of disease should be made at its outset; and it seems unfortunate that the difference between these two diseases can only be fairly made out by the revelations of an autopsy.

I propose in this article to adduce additional proof of my original assertion, and to point out clearly and succinctly the means of differentiating these diseases from each other.

In *Walsh's Retrospect* for July, 1881, I find two articles, one on "Typhus Fever," by Alfred L. Loomis, M. D., of N. Y., and the other, "On the Treatment of Typhoid Fever," by L. S. McMurty, M. D., of Ky. It seems strange, but these two gentlemen are considering the same disease, as will appear by contrasting their utterances:

TYPHUS—LOOMIS.

Typhus fever is regarded as the result of a morbific agent, or poison, and typhoid is not to-day thought to be caused by a specific poison, and is therefore not contagious.

Fresh air is, I believe, the only agent that has a neutralizing power over the poison.

If the temperature reaches 105° or 106°, place the patient in a cold bath to reduce the heat of the surface.

Of all articles of diet, milk is the best.

Signs of heat failure begin to develop, as indicated by a feeble and irregular pulse.

There are chasms over which patients with typhus fever have to pass, and you may, by a judicious administration of stimulants, carry them over.

TYPHOID—M'MURTY.

Typhoid fever is never of spontaneous origin, but is produced by a specific poison, which always comes from some one suffering with this specific fever.

It is generally conceded that we have no antidote to the typhoid poison.

When the temperature reaches 105° or 105.5°, the cold bath must be resorted to as an antipyretic measure.

Milk is *the article* of diet in typhoid fever.

An irregular and feeble pulse, with coolness of extremities, denote failure of the heart power.

For the relief of this condition, alcohol is the remedy. Just at this stage is often the critical point, and the use of alcohol may safely tide the patient over.

These writers differ on two points. Dr. Loomis says: "Constipation is present during the whole course of the fever;" and "there is no danger of intestinal hemorrhage in typhus fever." Dr. McMurty says: "Diarrhœa is one of the most frequent, troublesome, and dangerous symptoms;" and "hemorrhage of the bowels in typhoid fever is always an alarming symptom, and not of infrequent occurrence."

On the evening of May, 19, 1881, Dr. Edward G. Janeway read a paper on "Typhus Fever in New York," before the New York Academy of Medicine, from a report of which I extract this statement: "Of the cases sent to the hospital as typhus, some had proved to be other diseases, as phthisis, pneumonia, meningitis, pleuritis, small-pox, scarlet fever, syphilis, malaria, etc."

An epidemic of what was termed typhoid fever occurred in Denver, Colorado, during the summer and autumn of the years 1879 and 1880, a report of which, by Dr. H. A. Lemen, is before me, and I will copy from it to show that the epidemic was clearly one of typhus. The epidemic was attributed to three potent causes, to-wit, foul air, filth, sodden soil and polluted water.

In reference to foul air it is stated: "The atmospheric conditions which prevailed at Denver during the greater part of the summer and autumn of 1879 were peculiar, and long to be remembered. The heavy damp snows which are usually precipitated in March and beginning of April, were wanting. There was more than an average of rain fall in May. The sprightlier thunder showers and hail storms of June and July, were almost entirely wanting."

In addition, the sources of water supply for domestic uses were polluted by sewerage from the streets of the city; and the soil was said to be "filth-sodden" from contamination by cesspools and privies.

But it is from the enumeration of the symptoms alone that the disease must be judged. And these are given as follows: "Early spontaneous diarrhœa, appalling hemorrhages from the bowels, an eruption mainly on the abdomen and chest, of a purple hue, resembling the symptom characteristic of measles, and which was usually associated with a purplish hue of the lips and finger tips, and a dusky hue of the countenance."

"The latter cases were very suggestive of typhus fever," continues Dr. Lemen, "but as a number of them had intestinal hemorrhage or diarrhœa, and as the prevailing epidemic was unquestionably typhoid, and, furthermore, as the disease did not attack the attendants, whether nurse or physician, they were considered well marked cases of ataxic and adynamic typhoid fever."

On page 8 of the report, Dr. Lemen says: The disease was not diagnosed positively until a group of characteristic symptoms presented. There are said to be "headache, sleepless-

ness, spontaneous diarrhœa, and hemorrhage from the bowels." "In a few cases a purplish or livid eruption was extensively diffused over the chest and abdomen, which cases were marked by frightful hemorrhages from the bowels."

Post-mortem examinations of typical cases were made, and there was found extreme congestion of the mucous surface of the intestinal tract for a long distance above the ileo-cœcal junction, and general engorgement of the abdominal organs.

Dr. Lemen addressed inquiry among the leading physicians, asking them to give their estimate of the number of cases of typhoid fever during the years 1879 and 1880 in the city of Denver.

It is gratifying to observe that one physician, Dr. W. F. McClelland, answered: "I should say a very few cases of pure typhoid fever prevailed in either of the years named."

Dr. Loomis, in the paper referred to says: "The pathological lesions which you will find at the post-mortem examination will decide the differential diagnosis positively."

Dr. Lemen's report is the history of an epidemic of "typhoid" fever. How utterly erroneous is this diagnosis of the disease which prevailed in Denver during those years the foregoing extracts clearly show. The description of the disease bears out this opinion, especially in the single symptom of the "mulberry rash," which is pathognomonic of typhus alone, and confirms the view previously expressed by the writer, that "in this country typhus seldom presents any mulberry or diagnostic rash," for the report states this was present but "in a few cases."

It would seem that the post-mortem appearances ought, according to Dr. Loomis, to have decided the matter positively. But the congestion and general engorgement that are present are recorded as verifying the diagnosis of "typhoid." Examinations were made in a sufficient number of instances, it is stated, to set at rest all cavil concerning the nature of the disease.

The congestion and engorgement are the characteristic appearances of typhus, and not of typhoid. I have no hesitation in expressing my firm conviction that the epidemic which prevailed in Denver during the years mentioned, was an epidemic of typhus, and I cite the history of it as confirmatory of the opinion given at the beginning of this article. The report is interesting in that it makes no mention of a specific cause of the disease, but attributes the epidemic to the influence of a number of special factors of causation. This is a recognition of the doctrine that this class of diseases is due to the environment of the individual.

But if in a city of 40,000 people, with more than 200 physicians, such a tremendous error is possible, how much more likely is it to occur in the rural districts of the country, where typhus occurs sporadically every season. The truth is the error

is committed in 99 cases out of 100, throughout the whole extent of the country, owing to the lamentable ignorance of the profession, and their consequent inability to differentiate between these two diseases. To correct this error, to supply this deficiency, and enable the practitioner to positively recognize the two diseases, a schedule of their symptomatology is herewith given :

TYPHUS.	TYPHOID.
Is a hyperthermy.	Is a fever.
Is a congestive disease.	Is a disease of inflammation.
Is a ganglionic disease, and is due to gangliasthenia.	Is (probably) a cerebral disease, and due to cerebrasthenia.
Symptoms.	*Symptoms.*
Frontal headache.	Headache, not frontal and slight.
Insomnia	
Bad dreams.	Sleep not disturbed by dreams.
Weariness.	Debility, and not a tired feeling.
Asthenopia.	Vision not blurred.
Pain at the nape of neck, running to base of brain, and thence to frontal region.	None of this pain in typhoid.
Pain at sacro-spinal junction.	Pain in lumbar region.
Extremities cool.	Extremities hot.
Hands congested, and at length sweating, giving the "washerwoman's hand."	Hands dry and of natural color; no "washerwoman's hand" in typhoid.
Hemorrhage from bowels due to congestion, usually copious, and rarely absent.	Intestinal hemorrhage rare, and if it occurs, is due to ulceration.
Pain in long bones due to congestion of medulla.	No pain in the medulla of the femur or tibia.
Conjunctiva conjested.	Conjunctiva clear.
Anorexia or nausea, or vomiting.	Anorexia, nausea seldom, and vomiting never.
Countenance a darkish red, or of a dusky hue.	Cheeks slightly hectic, never dusky.
Nails purple or dark red.	Nails of natural hue.
Patient apathetic.	Patient capable of emotion.
Patient restless.	Patient stays in bed.
Occurs during late summer and autumn usually, but may prevail at any season.	Most frequent during winter months
Post-mortem reveals general congestion.	Post-mortem discloses the characteristic pathological lesions, and no congestion.

The view here given, and previously expressed in relation to typhus, is greatly at variance with accepted opinion on the subject. The question as to which is correct can be very readily tested. It is said there is a poison which causes typhus, and that there is no antidote to it.

Dr. McMurty, in the paper referred to, says: "The patient at the onset of the disease thinks that he is suffering from cold

or disordered digestion (biliousness), and will endeavor to throw off the headache and malaria by purgative medicines and exercise."

If Dr. McMurty or any other man will at this stage of the disease ask his patient a few questions, such as these: Do you feel weary? Do you sleep badly? Do you have bad dreams? Do you have pain over your eyes? Do your eyes blur? and if these questions are answered in the affirmative, and if then he will prescribe bromide of ammonium in full doses, he will find that he has an antidote to the poison (so-called), and eventually he, and every man who so prescribes, will conclude that there is no poison in the case, and that typhus is a ganglionic disease. When this conclusion is arrived at, medical men will be able to differentiate the two diseases, and the dictum at the beginning of this article will then be untrue. The cause of the reproach will have been wiped out.—*Michigan Medical News.*

ANTISEPTIC INHALATION IN PULMONARY AFFLICTIONS.

Dr. J. G. Sinclair Coghill, Physician to the Royal National Hospital for Consumption, concludes an article in the British Medical Journal, as follows:

The apparatus is extremely simple. It consists of a space for a pledget of tow or cotton-wool, enclosed between the perforated surface of the respirator and an inner perforated plate, which can be raised so as to permit the tow to be saturated with the antiseptic solution. Elastic loops are attached to pass over the ears, and retain it in position. The inhaler may be procured either plain, or of a slightly smaller size, and covered with black cloth, for wearing out of doors. The pledget of tow, which may be changed once a week or so, should be sprinkled with from ten to twenty drops of the antiseptic solution, from a drop-stoppered phial, twice-a-day at least, according to the extent to which the inhaling may be carried on. Of this the patient is the best judge, and the length of time and quantity of solution should be regulated by tolerance and effect. The most important times for inhaling are for an hour or so before going to sleep at night, and after the morning expectoration, which leaves the suppurating surface or cavity dry to be acted upon—disinfected, so to speak—by the antiseptic vapour. A great many of my patients have of their own accord come to use the respirator almost continuously day and night, from their experience of its good effects. I attach the utmost importance to the mode in which the respiration is conducted while inhaling. The patient should be carefully instructed to inspire through the mouth alone, and expire through the nose. In this way, the breath is drawn through the saturated tow in the perforated chamber of the inhaler, and passes directly into the lungs laden with the antiseptic materials. Expiring through the nose only, necessarily involves a complete circula-

tion of the medicated air. The breathing should be short at the begining of the inhalation, but gradually deepened, so as to displace and affect the residual air in the more distant portions of the lungs. This form of respiration itself is not only of great use in favouring the circulat on of the blood in the lungs, and thus aiding both local and general nutrition through that fluid, but it helps very much the expulsion of the sputa by means of the increased energy and thoroughness af the expiratory acts. Indeed, the great objection to the ordinary respirator lies in the shallowness and rapidity of breathing which it involves, in consequence of which the lungs, being imperfectly expanded and contracted during each act of respiration, become themselves literally fatigued, and the breath is drawn in and forced out so feebly, and at the same time so quickly, that there is not time for it to be dispersed into the fresh air, but it returns each time into the lungs only partially changed. The extremely fœtid odor which the apparatus rapidly acquires is sufficient proof of this. One of the patients in the Royal National Hospital here, when I was working out this subject, made a pasteboard respirator for antiseptic inhalation of such a shape as to include the nose; but it was found to have all the objectionable points of the ordinary respirator, and certainly did not permit sufficiently free access of the medicated air to the lungs, a large amount of the antiseptic material being lost by absorption on the convoluted walls of the tortuous nasal channels.

After many trials of the now formidable list of antiseptics, I find that carbolic acid, creosote and iodine, in combination with sulphuric ether and rectified spirits of wine, are the most efficacious and satisfactory. The want of volatility in boracic, salicylic and benzoic acids, and their salts, proves a bar to their employment by this method. Dr. Horace Dobell, who has had a very favorable experience of this treatment, writes to me that he has found thymol, in the form of Shirley's thymoline, very grateful and efficient, in many cases, where the smell of carbolic acid and creosote was intolerable either to patients or to their friends. Of the three antiseptic agents I chiefly use, I find iodine most useful in the second stage of phthisis, when the expectoration is passing from the glairy into purulent character. I use a tincture, for inhaling purposes, made with sulphuric ether instead of spirits of wine; and this etherial solution has a singularly soothing effect on the cough and pulmonary irritation. In combination also with carbolic acid as carbolized iodine, or iodide phenol, it is extremely useful in purulent expectoration accompanying the resolution of pneumonia, both catarrhal and croupous. In the stage of excavation, whether tubercular or pneumonic, the combination of iodine with carbolic acid and creosote is most potent. The acid seems to have the greater influence in checking the amount and purulent nature of the sputa; while creosote acts more as a sed

ative in the cough, apparently by reducing the irritability of the pulmonary tissues. The addition, also, of varying proportions of sulphuric ether and chloroform greatly assists in soothing and allaying irritation. These combinations also act frequently like a charm in the profuse expectoration of purulent bronchitis, as also in bronchial asthma. Dr. Thorowgood, in the Lettsomian Lectures for 1879, describes my antiseptic respirator, and adds his valuable testimony to its efficacy in bronchial affections. I have also noticed that patients, while using this form of inhalation, frequently experience great relief from the aches and flying muscular pains which often occasion much distress in the advanced stage of phthisis.

In connection with these observations, the following formula may be taken as an adaptable basis for the antiseptic solution for inhaling: ℞ Tincturæ iodi ethereal is, acidi carbolici, āā ʒii; creosoti vel thymoli, ʒi; spiritûs vini rect., ad ℥i. M. Where cough is urgent, or breathing embarassed, chloroform or sulphuric ether may be added at discretion. In the formula which I published in 1877, a small quantity of glycerine was introduced, with a view to aid solution and fix the materials; but I found it unnecessary, and also that it clogged the respirator, and soiled everything with which it came in contact.

Whether these substances act by destroying the germs to which the formation of pus is attributed by the great teacher of the antiseptic method, or by their abortive effect from a physical cause, such as coagulation, on the cell proliferation in the seat of morbid action, I do not profess to know; but the effect of this antiseptic inhalation in diminishing expectoration, and with it the cough, in the various forms of phthisis, during the resolution of pneumonia and in the purulent stage of bronchitis, acute or chronic, with dilated bronchi and fœtid expectoration, is certainly most remarkable. The following are the first four of a list of cases of phthisis, selected by my friend, Dr. Grant, resident physician at the Ventnor Hospital, in which antiseptic inhalation was employed throughout as an adjunct to general treatment.

Case I.—M. B., aged 32, a tailor. Third stage, right side, with moist crepitations all over the back, and second to third stage at the left apex. He was admitted on January 8th. The sputa were nummular and bloody, four ounces in amount. He was discharged on March 18th; sputa, two drachms, no tinge. He was under treatment ten weeks; he gained 10 lbs.; and was discharged with crepitation much diminished in all parts of the chest, and signs of dry vomicæ at both apices. The other treatment consisted of hypophosphites and cod-liver oil, with iodine paint over the chest.

Case II.—E. M., aged 20, a shopwoman, of strumous cachexia; had a very moist excavation at both apices. Expectoration amounted to four ounces, and was muco-purulent. She was under treatment eighteen weeks. The expectoration was

entirely stopped, and she was discharged with the moist sounds greatly diminished and the cavities contracting. There was great long-continued pyrexia in this case. The other treatment consisted of quinine and hydrobromic acid, atropia and oxide of zinc, cod-liver oil, and iodine to the chest.

Case III.—J. B., aged 25, domestic servant, had phthisis in the third stage at both apices. At first there was considerable pyrexia. The expectoration was three ounces, frothy and muco-purulent; in ten weeks it was reduced to half an ounce. He was discharged with the disease arrested; the physical signs in the right apex as before, and the left apex much drier. The other treatment consisted of quinine and hydrobromic acid, and afterwards quinine and phosphoric acid.

Case IV.—J. G., aged 31, time-keeper, had the disease in the third stage, very moist, at the right apex; in the first stage, at the left apex. Expectoration amounted to one ounce, muco-purulent and nummular; hæmoptysis was intercurrent. After ten weeks treatment, there was no expectoration; and he was discharged with the cavity completely dried and contracting rapidly, and physical signs absent from the other apex. This patient gained 9½ lbs. The other treatment was chiefly quinine and hydrobromic acid, and ergotine hypodermically for hæmoptysis.

These cases have been taken at random, and are by no means those in which we have seen the best results from antiseptic inhalation on the amount of sputa.

To be able, also, by this means to dispense, to a great extent, with cough-mixtures, *et hoc genus omne*, is in itself no small advantage in the treatment of a class of diseases in which it is so necessary to preserve, if possible, the appetite, with the digestive and assimilative processes undisturbed and intact. If there be sputa collected in the lungs, there must be cough; the *rationale* of treatment then is to prevent, if possible, the material from being secreted which demands cough for its expulsion. To attempt to stifle a cough under such conditions by sedatives is erroneous in theory, and most dangerous in practice, apart from the other mischeivous effects of preparations to which I have already referred.

I may say here, that my later and wider experience of this form of antiseptic inhalation in phthisis laryngea, if such a disease exist *per se*, of which I have grave doubts, or, as I would prefer putting it, in phthisis complicated with affection of the larynx, has not been so favorable as my earlier cases led me to expect. It seems to have too drying or astringent an effect; and, in all such cases, a warm moist vehicle is preferable for the antiseptic material, if such be indicated.

I have now, for nearly five years, employed antiseptic inhalation, as a regular part of the treatment, in all lung-affections characterized by purulent expectoration, both in my private practice and in the Royal National Hospital for Consumption.

I find that all patients take to it very readily, become very speedily impressed with the amount of relief it affords, and inclined to continue it on their own account, without the encouragement and suggestion which many other details of treatment often require. Any difficulty on the score of odor is easily met in the great variety of antiseptic materials from which to choose. I have received a great many communications from members of the profession, many of them in large practice among *poitrinaires*, expressing their high opinion of its value. I am sure the results of this auxiliary to general treatment, in appropriate cases, will be found most encouraging.

A METHOD OF REMOVING THE TONGUE

By James Taylor, M. R. C. S., Surgeon to the Chester General Infirmary.

The operation is performed as follows: An incision about one-sixth of an inch long is made through the skin only from the upper edge of the hyoid bone forwards; this incision is simply to facilitate the passage of the needle. The forefinger of the left hand is passed along the dorsum of the tongue until the point of junction of the tongue and epiglottis is defined; the end of the forefinger is maintained at this point for the present. A strong curved needle, having a length of six inches (exclusive of handle), with eye near the point, and armed with the platinum wire of the galvanic écraseur, is passed through the little incision directly backwards in the middle line until the point is felt by the tip of the forefinger of the left hand (in its course the needle, being in the middle line, can by no possibility damage any important tissue). Then the handle is well depressed, and the needle pushed on, the point being guarded and guided by the left forefinger until it is protruded through the mouth. The wire is secured first by a pair of forceps, and then a finger is passed through the loop, the loops drawn forwards, and the needle withdrawn. We have now the loop of platinum wire traversing the base of the tongue directly in the middle line from before backwards, the loop brought forwards through the mouth, and the ends of the wire hanging out of the little incision in front of the throat. The next step is to pass the loop of wire over the apex and sides of the tongue, pulling the ends of the wire at the same time; we thus get the whole tongue encircled by one loop of the wire. It is now advisable, but not necessary, to seize the apex of the tongue with a vulsellum. Next adjust the ends of the wire to the écraseur, connect with the battery, and slowly begin to work. In from ten to fifteen minutes the wire loop will emerge from the little incision, and the now severed tongue being removed by the vulsellum from the mouth, the operation is completed.

If the floor of the mouth be affected, so that the loop round the tongue would pass over some diseased portion without in-

cluding it, this could generally be easily remedied by a preliminary incision beyond the diseased portion, so as to form a groove for the wire loop.—*London Lancet.—Canadian Journal of Medical Science.*

PHOSPHATES IN PULMONARY PHTHISIS.

The use of phosphates in pulmonary phthisis has been investigated by Dr. Stokvis* with the following conclusions:

(1.) The elimination of phosphoric acid by the kidneys in phthisis is not recognized in a diagnostic or pathological sense, because the total amount of phosphoric acid eliminated with the urine in twenty four hours is not increased either at the begining or at the end of phthisical cases. In cases of phthisis as compared with other pulmonary diseases phosphoric acid elimination is diminished, though in certain chronic cases of phthisis unassociated with fever or diarrhœa, the earthy phosphates were comparatively inlarger amount than the alkaline phosphates, yet even in these cases this amount in twenty-four hours was less than the average in healthy urine or in that from certain other diseases, as, for instance, that of phosphaturia, diabetes mellitus, and renal diseases. The elimination of phosphoric acid in phthisis does not show any constant deviation from the normal as compared with the amount of urea, the relative amount being usually diminished, and yet this relative amount may be slightly increased when compared with the chlorides eliminated. This latter increase is more marked in complications of fever and imperfect digestion, especially when associated with inanition, hence it is fair to suppose that the relative increase as compared with the chlorides is due to the deficiency of the latter. Comparisons of elimination of phosphoric and sulphuric acid shows first that the relative amounts are not very remarkable, and that when observed it is probably due to an increase in the amount of sulphates in the urine, which fact is not uncommon in prolonged fever and in emaciation. Therefore the variations in amount of phosphoric acid elimination met with in cases of pulmonary phthisis are specifically due both to a greater or less degree of animal temperature and to interference with the digestive functions and to dietetic disturbances or faulty nutrition. Hence it follows that any improvement which is noticed in the treatment of phthisis by the phosphates and hypophosphites should be explained by the fact that an extra supply of phosphoric acid is furnished to the organism to make up for the losses occasioned by the elimination of the phosphates by the kidneys.—*Boston Medical and Surgical Journal.*

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*Archives Gen. de Médécine, June, 1880.

TREATMENT OF ACUTE ARTICULAR RHEUMATISM.

Dr. Carpini (*Annali Universali di Med. e. Chir.*, 1881, Nos. 1 and 2), has reached the following conclusions:

1. Salicylate of soda is indicated in cases of acute polarthritic rheumatism, when the joint symptoms are very well marked.

2. Quinine is the best remedy and the most prompt in its effects, when it is presumed to be of malarial origin, or when it is complicated by malaria.

3. Benzoic acid or benzoate of soda is suitable for such cases as are complicated by nephritis.

4. Blisters are the surest treatment if the rheumatism is confined to one joint, or if the affected articulations are few in number.

The author gives the following as contra-indications to the use of salicylate of soda: 1. Grave affections of the heart. 2. Persistent gastric disturbances. 3. Renal complications; not that the salicylate produces nephritis, but it aggravates renal affections. Hence, before it is prescribed, the urine should be examined. Salicylate of soda should be given only with the greatest precautions to infants, to the aged, or to those enfeebled by long sickness.—*Lyon Medical.—St. Louis Clinical Record.*

SUPPURATIVE OTITIS.

Dr. Samuel Theobold,

In Translations of the American Otological Society.

For some months past I have been using very freely in the treatment of suppurative otitis—including in this term diffuse inflammation of the external auditory canal, chronic otorrhœa with more or less extensive destruction of the drum-head, and acute suppurative otitis media with perforation of the membrane—a power composed of equal parts of boracic acid and oxide of zinc. In most instances the results which I have obtained from it have been exceedingly gratifying; occasionally it has failed to do good, and then, in its stead, I have employed with advantage a mixture of boracic acid and alum; while in one or two cases the boracic acid has been omitted and the oxide of zinc, alone, used with better effect. Usually its application, which was made by means of an insufflator, was preceded by careful syringing, and very often the retention of the powder was secured by stopping the ear with a bit of borated cotton.

One great advantage which this remedy possesses is its very mild, non-irritating action. Alum, boracic acid alone, whether in solution or in substance, and even weak solutions of sulphate of zinc occasionally cause considerable irritation, but the boracic acid and oxide of zinc mixture is so

bland that I have not hesitated to make use of it even during the painful stage of otitis media, and, while I have often found that it favorably modified and lessened the duration of this stage, I do not think I have ever seen it cause any aggravation of the pain.—*Report of the American Otological Society.*

ON TREATMEMT DURING THE PERIOD OF THE AFTER-BIRTH

Kabierske, assistant-surgeon to the obstetric clinic in Strassburg, defends in the most determined manner (*Centralblatt für Gynæ̈kologie*, 1881), a purely expectant treatment of the after-birth. Not even friction of the uterus, or a mere application of the hand, is, according to him, permitted by him, unless other and dangerous symptoms, hemorrhage, etc., should necessitate assistance. It might requite a waiting for hours and even days, until the placenta is freed by the natural process, or, if it be already freed and lying in the vagina, until it be expelled. According to him, the placenta lying in the vagina, putrefying, and spreading an offensive smell, is by itself no sufficient indication for operative action, since all this is entirely without danger. Fear of hemorrhage, he declares, has as little foundation as that of puerperal fever, the occurrence of which is not due to the placenta remaining in the generative parts, and putrefying, but to the fingers of the examiner not being thoroughly disinfected. The principal danger produced by any active assistance lies in the membrana ovi not being completely loosened and removed; while an entire and absolute abstentive action ensures an extremely favorable course of the lying-in. Credé's manœuvre he delares to be particularly dangerous, because the loosening and expulsion of the after-birth are physiological processes which must be left to nature. Against this view of the matter, Weiss, assistant to the obstetric clinic in Copenhagen, has directed a polemical essay, proving by statistics gathered by the observation of births at his clinic from 1873 until 1881, that many dangers are avoided by a timely and gentle assistance rendered in a proper manner, while no new dangers are called forth by it. Up to September 1st, 1877, the expectant method was carried on in the Copenhagen clinic, but was abandoned on account of frequent hemorrhages occurring during the period of after-birth, and the method of expression was introduced, which brought about the most favorable results. Hemorrhages during the period of after-birth were reduced from 5.78 per cent. to 2.30 per cent.; the per centage of the cases in which manual loosening of the placenta became necessary fell from 1.36 to 0.64; hemorrhage during the childbed were reduced from 0.77 to 0.32 per cent., although the necessity for tearing off remnants of membranes and placenta became more frequent, so that the percentage rose from 1.78 to 2.30. In spite of this, the after-hemorrhages in childbed became less

frequent; and only in one case retention of a placentar cotyledon was proved to be the cause of a hemorrhage. Yet grave puerperal cases have since become exceptionable in the clinic. We believe Weiss' statistics to be of greater weight than Kabierske's doctrine of the harmlessness of a placenta putrefying in the uterus. Certainly the expulsion of the after-birth is a physiological process, as well as the expulsion of the child. But when this expulsion does not take place in the course of hours or of days—a fact which must be explained by weakness of labor in the period of after-birth, unless there be a deformity or convulsion—we cannot possibly understand why such a condition should be regarded as physiological; inefficient labor pains being universally considered pathological.—*British Medical Journal.*

TREATMENT OF GONORRHŒA.

Dr. A. W. Morris, of Kentucky, in *Medical Herald*, says: Early after I graduated, I was disappointed in the treatment of this disease, both by astringent injections and the internal administration of remedies; and, as I had a large number of cases coming to me, I made an effort to secure a treatment giving more satisfactory results. In my series of experiments, I purchased a "Bartholow's Catheter," an instrument with an olive bulb on the point, and holes in the shoulder of the bulb —the point not being pierced. The tube being the size of a No. 6 catheter, the bulb being much larger, preventing an outward flow of the injected fluid, and causing it to flow backward and outward. I attached this to a good "pump syringe," by rubber tubing, and the next case I treated gratuitously, for the privilege of using my new machine. After throwing in about a gallen of cold water, I took a small penis syringe, and gave an injection of sulphate of zinc, as thorough as possible, and told my patient to call again next day. I saw no more of him for a month, and then "blew him up" for not coming around and taking more of the treatment. He replied, that as it cured him, he thought there was no use, and never thought any more about it. Holding the theory of the limitation of the disease, as given by Bumstead, and other authorities, I had no faith in the result of this case, and determined to give it a further test. I reached the following result, astonishing as it may appear, nevertheless it is true: Out of 25 cases, 22 were entirely well 24 hours after the treatment. No discharge, and no treatment of any kind was given, other than washing out the urethra, and the sulphate of zinc injection first and once only given. One was well in three days, one in seven days, and the other, a drinking man, who kept up his whoring all the time, was cured in two weeks. After this, in fifteen cases, the result was not so satisfactory, but much more than the old treatment.—*Southern Medical Record.*

PREVENTION OF LACERATION OF THE PERINEUM.

At the meeting of the St. Louis Medical Society, May 7th, 1881, the proceedings of which appeared in the *St. Louis Medical and Surgical Journal* for August, Dr. G. Hurt read a paper on "Position in Relation to Injuries of the Perineum during Labor," in which he gives the history of several cases tending to prove that a sharply flexed and abducted position of the thighs, though convenient and necessary in some cases, is not conducive to the greatest degree of security to the maternal soft parts at the moment of the passage of the child's head through the vulva, nor to the speedy and safe delivery of the child.

In the autumn of 1877 the doctor attended a case in which the sscond stage of labor was somewhat tedious, and just as the head began to distend the perineum, the patient, as a matter of choice, took the left side position, with her thighs and knees sharply flexed. The fœtal head, which was unusually large, soon became impacted in the soft parts, uterine contraction became stronger and refused to intermit, the perineum appeared to have reached the point of its utmost distention short of laceration, being pushed down so that the fœtal occiput rose from under the pubes, and yet the head was so completely enveloped by the expanded perineum, that a rupture of the latter seemed inevitable. At this moment, however, the patient, perhaps involuntarily, extended her limb to a line nearly parallel with that of her body, and coincidently with this movement the fœtal head passed through the vulva without any perceptible injury to the parts.

The next case reported was that of a primipara, in which the fœtal head became so tightly impacted at the vulva as to cause considerable delay, though the uterus was contracting with great force, and laceration seemed inevitable. The patient was on her back, with her knees sharply flexed and abducted. She was requested to straighten her left leg, and as she did so, the vortex became more prominent and the forehead slid over the perineum without causing even so much as an abrasion at the fourchette.

In other similar cases, extending the thigh, when the passage of the child was impeded by a too rigid perineum, was followed by the same happy result. This seems so plain that is is surprising no one has thought of it before, for, as the doctor points out, the perineum is not only relaxed by the extension of the limbs, but the degree of its inclination is increased so as to impose less resistance to the passage of the fœtal head, and *vice versa*; in the ratio that the limbs are flexed and abducted, the perineum and contagious parts are put upon the stretch, and consequently its resistance and liability to rupture proportionately increased.—*Med. and Surg. Reporter.*

OCCLUSION OF THE UTERINE CANAL AFTER EMMET'S OPERATION.

Dr. Ely Van de Warker, *Obstetrical Gazette*, relates the case of a lady in whom he found the vaginal cervix elongated, hypertrophied, and bilaterally lacerated, with ectropion. She was operated on by Dr. Emmet for the repair of the laceration. Locally and generally her health improved after Emmet's operation, with one exception; this was increasing dysmenorrhœa. The symptoms of obstruction of the cervix gradually augmented as months passed, until the woman's health began to give way. The canal of the cervix could not be dilated, owing to the impossibility of finding the os externum. On examination, the vaginal portion presented a conical appearance, no os uteri could be seen, and the uterus was retroverted. Exploration of the cervix by a small probe showed a minute opening on the sloping lateral surface, about one-eighth of an inch from the extremity of the cervix. The probe passed in about half an inch, and was arrested. The canal was evidently tortuous, and surrounded by cicatricial tissue. The probe being used as a guide, it was followed up by a small knife; and when more room was thus gained to manipulate the probe, it made another advance, which was again followed up by the knife. In this manner, the os internum was with some difficulty passed. The canal thus cut out of the dense tissue composing the cervix, was further enlarged bilaterally. The canal was kept open by an intrauterine stem. The patient did well.—*London Medical Record.*

PARTURITION, RATIO OF DEATHS.

The following paragraph from Dr. Coghill's address, Fifty-ninth Annual Meeting of the British Medical Association, very forcibly illustrates the progress made in obstetrics:

Parturition may be physiological in design, but in general result the combined influences of civilized life have unquestionably rendered it largely pathological. As Dr. Edis well puts it: "In the present state of obstetric science, a certain number of deaths from divers causes are inevitable;" but "we must bear in mind we are not dealing with the data of some mysterious disease that baffles our art and bids defiance to our efforts, but with the records of what should be the performance of a mere physiological function." When we reflect for a moment on the number of women who are delivered annually in this country, on the significant proportion of them to whom that event is fatal; when we consider the delicate balance there is between the healthy and morbid aspects of the process, we cannot fail to be struck with the vast influence which even the apparently most insignificant precautions may exert over the result, and the urgent call there is for inquiry into the

causes of this enormous mortality, and the possible means of its diminution. If self-preservation is the first law of nature, surely our first duty is to inquire what is the extent of the mortality of child-bearing, and what are the means available for its reduction or prevention? The amount of puerperal mortality may be fairly regarded as the measure of progress or otherwise of obstetrics, quite as much as the balance to credit is of the success of a commercial undertaking. According to Merriman's well-known table—

For the 20 years ending	1680, 1 in	44	mothers delivered	died
" "	1700, 1 in	56	"	"
" "	1720, 1 in	69	"	"
" "	1740, 1 in	71	"	"
" "	1760, 1 in	77	"	"
" "	1780, 1 in	82	"	"
" "	1800, 1 in	100	"	"
" "	1820, 1 in	107	"	"

In 1879, according to the Registrar-General's return, it was only 1 in 353. The vital statistics furnished by the State are more valuable in relation to midwifery than to medicine or surgery. The number of registered births fairly represent the number of deliveries, and the maternal deaths the ratio of mortality. With respect to medical and surgical cases, we only learn from the returns how many die from a particular disease, or after a certain operation, but we do not learn the number of cases of which these are the results. These two departments of medicine, therefore, are incapable, approximately even, much less exactly, of estimating the success or failure of treatment.—*British Medical Journal.*

SURGERY.

New Treatment of Rectal Fistula.—H. A. Reeves suggests a treatment of rectal fistula which he has used with success in one case. Having divided the fistula in the usual manner, the sharp scoop was used to remove all pseudo-membranous tissue and granulations. Both surfaces of the wound being freshened, after the cessation of hemorrhage, silver sutures were passed, entering the skin about a quarter of an inch from the edge of the wound, passing well beneath the floor of the fistula, and coming out at the same distance on the farther side of the wound. The upper stitch ran through the coats of the rectum into the surrounding tissue. The bowels should be well opened by a purgative and enema before operating, and should be kept confined four or five days afterwards.—*Brit. Med. Jour.*, June 11, '81.—*St. Louis Courier of Medicine.*

THE MEDICINAL USE OF THE TOMATO.

Dr. T. K. Griffith, of Holyrood, Kansas, has found the tomato, eaten raw, or in the form of a fluid extract prepared

from the fruit without the use of heat, a very valuable remedy in the treatment of nurse's sore mouth and "canker." In the *Therapeutic Gazette*, for September, 1881, he states that in the summer of 1874, he was treating a case of nurse's sore mouth with chlorate of potassa, carbolic acid and glycerine, iron, quinine, etc. When the earliest ripe tomatoes of the season came into market, the patient saw them, and craved them as food. He directed that she be allowed some; she ate some, and continued to crave them, which craving he allowed her to satisfy. There was a marked improvement in the case from this time; the mouth healed, the appetite returned, and the patient gained strength. Since then he has employed the tomato in a large number of cases, and always with the same success.—*Medical and Surgical Reporter.*

A PATHOGNOMONIC SIGN OF EXOPHTHALMIC GOITRE.

Dr. Ch. Abadie, in a communication to the Société de Médecine de Paris (*La France Médicale*, vol. ii., 1881, p. 137) on a case of exophthalmic goitre, gives some very interesting points in the pathology of this affection. A pathognomonic sign, according to Dr. Abadie, is spasm of the elevator of the upper eyebrow. When the patient looks downward, the elevator palpebarum remains immovable, and the superior portion of the sclerotic is exposed. M. Abadie believes the disease to spring originally from disease of the sympathetic nerve.—*Philadelphia Medical Times.*

PRURITUS VULVÆ.

℞. Sodii hyposulphitis..... z iv
Glycerini ..... z ij
Aquæ destilat..... z vj
M. Sig.—As lotion.

Note—The *Homœopathic Courier* will please explain whether the "*z*" in the formula signifies an "unknown quantity," as does *x*, *y* and *z* in algebra.

ANTISEPTIC SURGERY.—VOLKMANN.

Two examples will suffice, compound fractures and major amputations. The mortality after compound fracture had, during the long labors of my predecessor as well as during my own, reached the sad height of forty per cent. When I

adopted the antiseptic treatment of wounds, my last twelve patients, with compound fracture of the leg, had died of pyæmia or septicæmia. From that time up to the present day I have treated, one after another, one hundred and thirty-five compound fractures, and not a single patient has succumed to either of those accidental wound diseases; one hundred and thirty-three were cured, two died, one of fatty embolism of the lungs, during the first few hours; and one, a drunkard, of delirium tremens.—*Chicago Medical Review.*

PROCEEDINGS OF THE SECTIONS OF MATERIA MEDICA AND PHARMACOLOGY.

The International Congress.

[From the *British Medical Journal.*]

The Action and Uses of Antipyretic Medicines Administered Internally upon Septicemia and allied conditions.

Prof. Binz (Bonn) read a paper on this subject, of which the following is an abstract:

1. In the present state of our knowledge there are two modes in which antipyretic remedies may be conceived to operate; first, by increasing the discharge of the pyrexial heat; secondly, by checking its production.

2. The quantity of heat discharged may be augmented by direct withdrawal (tepid water), or by facilitating the circulation through the skin (digitalis, cutaneous irritants).

3. The production of heat may be lessened by repeated cooling of the surface, and especially by the internal use of antizymotics.

4. Febrile diseases commonly owe their origin to the introduction and rapid development of substances akin to ferments. Several of these have been shown to resemble yeast in being low vegetable organisms. They enter the glands, where they undergo multiplication, increase the metabolic processes, generate products of decomposition which exert a paralyzing action on the nervous system, and raise the standard of temperature throughout the body.

5. Owing to impaired action of the heart in certain stages of the disorder, or to contraction of the cutaneous vessels, the skin becomes anemic and gives off less heat than usual. The internal temperature rises accordingly.

6. Quinine, our chief antipyretic, acts by directly combating the efficient cause of the disorder, and by checking the abnormal metabolism going on in the body. The nervous system takes no part or only a secondary part in this operation. In intermittent fevers quinine prevents the paroxysms by attacking their infective cause. The paroxysms are not the essence—the substantive element—of the disease; they are

only a symptom of it. The substantive element is the poison deposited in the colorless corpuscles of many organs, especially the spleen. There are fevers without paroxysms and paroxysms without fever. It is just those intermittent fevers which run their course without paroxysms that are the most malignant. The malarial poison rapidly causes disintegration of the tissues and the blood, and so paralyzes the nerve-centres.

7. The reduction of acute splenic tumors by quinine depends upon the adverse influence exerted by the alkaloid on the infective poison to which the morbid over-action of the spleen and its consequent enlargement are due. "*Cessante causâ cessat effectus.*" Even a healthy spleen may be reduced in size by large doses of quinine; the alkaloid vigorously checking the oxidation of its principal elements, the colorless corpuscles. Quinine has no direct influence on the vasomoter nerves.

8. Quinine attacks the malarial poison with especial energy; on this fact depends the so-called specific action of quinine in intermittent fevers. The same relation, but in a minor degree, subsists between quinine and the infective poison of enteric fever, between mercury and iodine and the poison of syphilis, between salicylic acid and the "irritant" in acute articular rheumatism.

9. An antipyretic which in one disease instantaneously arrests the fever may be wholly powerless in another. The difference depends on the fact that the various antizymotics act very unequally upon the individual *schizomycetes* and ferments; one will paralyze them rapidly, by another they will hardly be affected.

10. The past history of therapeutics and recent achievements in the domain of etiology and pharmacology entitle us to assume that by persistent scientific inquiry and practical observation we may succeed in discovering a specific antidote for every species of infective or septicemic malady.—*Louisville Medical News.*

ANTISEPTIC OVARIOTOMY.

MR. LAWSON TAIT, in the *British Medical Journal*, writes:

Your paragraph concerning the results of the operations of Professor Ask in the performance of ovariotomy with the Listerian method revives a controversy in which much interest has been taken, and in which I have had a considerable share. Those of your readers who have followed that discussion will easily remember that I was almost alone in the views I expressed, and the chief argument against me was derived from the practice of Dr. Keith. I should like to here remind those who may have read my remarks on this question, that I have never said that the Listerian details are either useless or hurt-

ful in general surgery, for upon that subject I have no experience; but I have said that they are both useless and hurtful in abdominal operations. For some months, I have been aware that Dr. Keith has been inclined to alter his views very materially upon this question, and I am now at liberty to say that, after having had two deaths after ovariotomy performed upon the Listerian plan, which deaths were clearly due to carbolic acid poisoning, Dr. Keith has discarded the practice. He has now had forty-six operations performed without the spray, and of these only one has resulted in death. I have already published a series of cases of results almost as good; but, since then, I have had a consecutive series of thirty-one cases of removal of ovarian tumors in which none of the Listerian details have been used, and all of my patients have recovered. We have here, therefore, seventy-seven completed operations for the removal of large ovarian tumors, occurring in the practice of two surgeons, both of whom use the intraperitoneal method for the pedicle; one using the cautery, and the other the ligature; and both have had a mortality which stands out in startling contrast to anything which has ever been secured by the use of the clamp. The facts that we have both found the same objection to the Listerian method, that we have both given it up, and that our results are what they are, seem to me almost to settle the question, as far as abdominal surgery is concerned.

Editorial Department.

We have received from our excellent friend, Dr. Toner, of Washington, copies of the proceedings at the meeting on the occasion of the fourth opening of the Training School for Nurses in that city. We must interpolate before expressing any opinions respecting this enterprise in Washington, or this kind of enterprise elsewhere, that we do not assert any claim to a monopoly in calling Dr. Toner "*our* excellent friend." He is everybody's excellent friend who is a friend to the advancement of medicine, or of any one of the great aims of philanthropy.

Dr. Toner has spent a portion of the present year abroad, and, while in England, had opportunity to meet Florence Nightingale, whose name, character and good deeds are as well known in America as in England. He gave at the meet-

ing referred to, an interesting account of his interview with Miss Nightingale, after which he proceeded as follows:

"And now, what can and ought I to say about our own school and its prospects? Those who have graduated, we are glad to be able to say, are finding in our midst constant and remunerative employment, and the society is in receipt of good reports from those who employ them and from the physicians whose patients they nurse. This is very gratifying to the school. From the inquiries made for them we are confident that twenty or thirty trained nurses would find employment in this city. As yet it is too early to say what is to be the character of the class this year. We trust that the avocation of the nurse in this country is beginning to attract to it ladies of education, as well as of social position, as it has done in England. The lectures are free to those approved and registered as having the proper qualifications, and who conform to the regulations of the school. We are quite confident that those who are suited physically, mentally and morally to the work, and are properly trained and devote themselves with fidelity to their duties, can acquire competence and reputation."

This brings us to mention a fact which is probably not as well known to the medical profession of this State as it ought to be. This is, that Dr. D. C. Holiday of this city has been striving for several years to organize a school for training nurses in New Orleans. It may be that some others have enlisted their names and influence on his side of this question, but we do not know this to be the case. On the contrary, we have heard that there is much opposition to the establishment of such an institution. Exactly where, or why this opposition has sprung up, we are not able to state explicitly. We also believe that it would do nothing in the way of effecting its removal to publish expressions implying a suspicion as to the seat and causes of the opposition. At all events, it is to be lamented that up to the present date no evidences of a finally successful result are to be seen.

There are few cities in the world where the skilful and methodical training of nurses is more needed. The blessings of thousands of rescued lives would, in process of time, accumu-

late around a well-conducted training school here, and sanctify its estimation by every philanthropist in the country. Here, we have ample opportunities to train as nurses persons acclimated to Yellow Fever, who would be ready to go to any part of the country where their services were required. The National Board of Health would, we have no doubt, exercise its co-ordinating influence in ascertaining where demands for trained nurses existed, and aid local boards in their efforts to supply these wants as far as it legally could.

We admit there are in this city many most excellent yellow fever nurses who have acquired their training by years of observation under good physicians. For the most part, this class of nurses refuse to leave the city, and if they do agree to go, they are apt to ask exorbitant compensation. Even if these objections are removed, their numbers are insufficient to supply the demand of real emergencies. Everyone living in the cities afflicted by yellow fever in 1878, knows how many unqualified and unworthy persons left this city and obtained employment as experienced and trustworthy nurses. Let us in future have a corps of nurses who will go forth qualified and reliable, and carrying as testimony the diplomas and endorsements of a school.

Every hospital should be supplied with trained nurses, drawing regular pay and responsible to the medical staff for proper attention to duties. Every medical person who has ever had charge of a ward in the Charity Hospital, knows what a crying evil the present system is of employing convalescent patients as nurses. Many of them know absolutely nothing of the duties of a nurse and are liable to become impatient, and even cruel towards the sick, in direct ratio with their ignorance. The injury and sacrifice of life due to the sins of omission and commission of ignorant and irresponsible nurses cannot be estimated and are all the more to be lamented because they are preventible. Every true physician *must* have *one* religion—which consists in an intense devotion to his patient's welfare and recovery. He *may* have another religion which is theistical and ecclesiastical. The two cannot be incompatible if the latter is genuine.

Let us endeavor to get the school for training nurses in operation. If we cannot succeed otherwise, let us enlist the sympathy and aid of charitable philanthropists in the whole country. The enterprise must not fail.

MEDICAL ASSOCIATION OF THE PARISH OF LINCOLN.

We are gratified to learn that the physicians of Lincoln parish met at Vienna, November 15th, and effected an organization under the above title with the following officers:

T. C. OSBORN, M.D., President.
J. T. MCDOWELL, M.D., Vice-President.
C. H. GRIFFIN, M.D., Secretary.
N. B. NULL, M.D., Treasurer.

Board of Censors:

M. B. POLLARD, M. D.
W. S. KENDALL, M.D.
N. C. SIMONTON, M.D.

PSEUDO-YELLOW FEVER IN NEW ORLEANS IN 1881.

In the October number of this Journal there was published a circular of Prof. Chaillé, then acting as the representative in New Orleans of the National Board of Health, wherein the physicians in New Orleans and its vicinity were requested to report to him whether any cases of hæmorrhagic malarial fever, or of other fevers simulating yellow fever, had or had not occurred in their practice during 1881, and if so, the details of such cases. About October 14th, this circular was mailed to about 270 physicians individually, and we very much regret to learn that as yet not one-fourth of Prof. Chaillé's professional colleagues, to whom his circular was addressed, have honored him with any reply whatever, although a postage stamp for the desired reply was enclosed in each circular, and although it was specially stated that replies in the negative were as important to the object in view as those in the affirmative.

It is believed that so few replies have been sent for two reasons, first because those who have had no such cases errone-

ously deem it unimportant to so report; and second because many have overlooked the matter in the interval between Oct. 14th, when the circular was issued, and Nov. 1st, the date when it was requested that the replies should be sent in.

The object in view is calculated to benefit this city as well as science, and deserves the encouragement of every intelligent physician. Therefore all physicians who received the circular are earnestly urged to give it the courteous attenIion it merits and to disprove the calumny not infrequently urged against the physicians of this city, that they lack the enlightment and capacity for organized effert indispensable to promote scientific enterprises. Unless every physician contributes the few moments required to furnish the desired informatien, it is manifest that any such enterprise as this, and for the common benefit, must necessarily fail.

NEW ENGLAND MEDICAL MONTHLY.

A new candidate for professional favor has thrown down the gauntlet and entered the arena of medical journalism. There is no lack of stamina, and every appearance of high development is manifest. We trust it will have plenty of backers and few "spongers."

Reviews and Book-Notices.

Antiseptic Surgery. The Principles and Modes of Application, and Results of the Lister Dressing. By Dr. Just Lucas-Championnière, Surgeon to the Hôpital Tenon, Member of the Société de Chirurgie, Editor of the Journal de Medicine et de Chirurgie Pratiques. Translated from the second and completely revised edition, with the special sanction of the author, and edited by Frederick Henry Gerrish, A. M., M. D., Surgeon to the Maine General Hospital, etc. Portland: Loring, Short and Harmon. 1881. 8 vo. Pp. 239.

This brochure from the pen of a noted French writer is full of interest to the surgeon, containing as it does a complete exposition of the Listerian system of antiseptic surgery. The first twelve chapters are devoted to a detailed explanation of

the principles of Listerism and the method of treatment. Then follow sections on special operations and dressings with records of cases, and arguments in favor of the antiseptic treatment.

The author is somewhat of an enthusiast, as witness the following broad statement in his introduction :

"I promise those who shall obey them (the words of Lister) the following things:

"The disappearance of wound accidents, even in the worst circumstances.

"A regularity in repair hitherto unknown.

"Surgery without suppuration.

"Union by first intention habitually and without danger.

"Such rapidity in healing as to surpass all anticipation.

"The possibility and safety of operations hitherto considered dangerous and even unjustifiable."

Although Listerism has taken quite a strong hold upon the profession and has demonstrated without a doubt the "possibility and safety of operations hitherto considered dangerous," still recent developments lead us to the inquiry, is it not after all simple cleanliness which has produced these results rather than the *antiseptics* used? At the recent meeting of the International Medical Congress, in the discussion upon Listerism, Prof. Keith, who has always been known as a warm advocate of Lister, has renounced the method, saying that he had eighty successive recoveries under Lister's method, and stopping there it would have been a wonderful showing. But out of the next twenty-five, seven died. One died of *acute septicæmia*; three of carbolic acid poisoning; one of renal hemorrhage. He said that of his successful cases many came too near dying, a large number had excessively high temperatures, and that for the past four months he had abandoned the antiseptic method altogether and relied upon perfect cleanliness, care in controling hemorrhage and through drainage. Under these precautions his cases were giving him much less trouble, and the results were much more satisfactory.

Prof. Lister, in responding, made the following remarkable statement, which is destined to create a great disturbance in

the surgical world. In speaking of ovariotomy he said that, "with the rapidity with which wounds of the peritoneum healed and the remarkable absorbing power of that membrane, he doubted very much whether, in the hands of a skillful, careful operator, it was not better to dispense with the antiseptic plan."

Still, although these remarks may apply to abdominal surgery, no one can doubt the efficacy of Listerism in surgical operations of other parts of the body, especially in those of the joints and the remarkable results which have been obtained.

To those pursuing the Listerian system, or who contemplate doing so, the present work will be of great assistance, as it enters minutely into all the details and gives comparative results of different operations. Besides carbolic acid a list of other antiseptics are given with manner of using them and the particular varieties of cases wherein each is applicable. The method of Lister does not depend solely, as some have thought, upon the use of carbolic acid, and if it is true that carbolic acid poisoning has followed its use, other antiseptics may be substituted, always with the precaution of carrying out the entire method in all its details.

In the chapter on sutures the author says, "catgut is good material for suture, but it is not free from objection. It swells too quickly and thus occludes the orifice made by its passage, and prevents the escape of liquid along the thread." For this reason other material, especially "*Le Orin de Florence*," is recommended.

Page 90, the author says, in relation to the rapidity of repair, "from the first essays of the method the observer is greatly impressed with the totally new progress of the reparative process," as compared to what we were accustomed to see formerly. This all will acknowledge, who have compared the new method with the old manner of treating wounds.

Chapter XXXI is devoted to a review of the objections to Listerism and their refutation, the arguments used by the author being thoroughly convincing to any doubters of the efficacy of the method.

On the whole, the work is a valuable one, and should be in the possession of every surgeon desiring to become thoroughly informed upon antiseptic surgery. S.

The Medical Record Visiting List for 1882. From Wm. Wood & Co. we have received a copy of this valuable, not to say indispensable, pocket record. Several editions are out, each differing from the other only in the number of patients each week, and with or without dates. The pages are arranged to accommodate from 30 to 60 patients each week. Valuable information on subjects, such as the metric system, doses of drugs common and rare, preparation of hypodermic solutions, disinfectants, the urine, poisons, emergencies, facts, Lister's antiseptic solutions, etc., add greatly to its value. The book is elegantly gotten up, the paper and binding unexceptionable.

Walsh's Physician's Handy Ledger. This is certainly the very best account book ever suggested for the use of medical practitioners. The blanks are so arranged that only a few minutes are required to post the charges of the busiest day or week. It can be obtained by remitting in P. O. order, or by registered letter, $3.50, to Ralph Walsh, M. D., 332 C. street, Northwest, Washington, D. C.

Indigestion, Biliousness and Gout in Its Protean Aspects. Part I: Indigestion and Biliousness. By J. Milner Fothergill, M. D., M. R. C. S., Lond.; Sen. Ass't Surgeon, London Hospital for Diseases of Chest, etc. 12 mo. Pp. 320. New York: Wm. Wood & Co. [Sold by Hawkins. Price in muslin, $2.25.]

The author writes from a physiological standpoint, and devotes the first five of the thirteen chapters to digestion and nutrition. Then follow three chapters on indigestion due to deranged functions of the alimentary canal. Chapter IX treats of the functions of the liver, the next two of its disturbances (biliousness and liver indigestion), and the following one of their treatment, medicinal and dietetic. The closing chapter has for subject The Failure of the Digestive Organs at the Present Time, for he maintains that indigestion is preëminently a disease of our modern civilized life.

We find the chapters on the functions of the liver, and their derangement as connected with indigestion, particularly interesting. In defining its functions, he quotes from Dr. Murchison as follows:

"1. The formation of glycogen, which contributes to the maintenance of animal heat, and to the nutrition of the blood and tissues, and the development of white blood corpuscles.

"2. The destructive metamorphosis of albuminoid matter, and the formation of urea and other nitrogenous products, which are subsequently eliminated by the kidneys, these chemical interchanges also contributing to the development of animal heat.

"3. The secretion of bile, the greater part of which is reabsorbed, assisting in the assimilation of fat and peptones, and probably in those chemical changes which go on in the liver and portal circulation; while part is excrementitious, and in passing along the bowel stimulates peristalsis and arrests decomposition."

Disturbance of the first function is obviously the cause of diabetes mellitus, and is not considered in this connection. Disturbance of the second function is dwelt upon at some length, and is divided into (1) biliousness proper, due to the excessive formation of bile-acids, and (2) lithiasis or lithaemia, as leading to indigestion, for gout is not under consideration in this volume.

The principal cause of this form of indigestion is attributed by the author to the use of an undue quantity of nitrogenous food, being an excess of what is needed for the repair of the tissues used up in the vital processes.

We have not space to enter into a full analysis or extended criticism of this work. Suffice it to say that the topics treated are of practical interest; that they are treated in the light of the latest knowledge on the subjects; that the language of the author is perspicuous and pleasant to read, though rather diffuse. Dr. Fothergill is one of the best known, and most favorably known, of living British medical authors. He has visited this country and made many personal friends. He is

also a contributor to our periodical medical literature. His book might stand well on its bare merits, but it has advantages from his personal popularity, and is sure to have a large number of American readers. S. S. H.

Walsh's Combined Call-Book and Tablet, Sixth Edition. Published by Ralph Walsh, M. D., 332 C. street, Washington, D. C., and sent by mail upon receipt of $1.50.

Most of our readers are familiar with this call-book. It is light, convenient and well arranged. It is unlike most other call-books in the fact that the pages are arranged to correspond with days of the week. The years and months are left to be filled in by the physician, consequently the new beginner, in his profession, can extend the use of the book from one year to another.

Text Book of Modern Midwifery. By Rodney Glisan, M. D., Emeritus Prof. Obstetrics and Dis. Women and Children, Med. Depart. Willamette Univ., Oregon. With 130 Illustrations. 8 vo. Pp. 639. Philadelphia: Presley Blakiston. 1881. [Sold by Hawkins. Price in muslin, $4; in sheep $5.]

This is the first American work on obstetrical medicine for a good many years, and the author believes that he is supplying a real want in offering it to his confrères. In the same view it is incumbent on American physicians to produce a new work on Theory and Practice of Medicine, for it must be admitted that these two branches of medicine, while of prime practical importance, have been rather neglected of late by our medical authors.

Prof. Glisan is less dogmatic and quotes less from his own experience than is customary for those habituated to public teaching. His aim evidently is to exhibit the present state of the science and art of midwifery as taught and accepted by the profession at large, and this plan is more instructive and profitable to readers than to be entertained with the personal exploits and peculiar notions of any individual, however eminent.

The literary character of the work is excellent, although the author hails from the newest extremity of the country; and

without any peculiarities or striking features, the book is full of merit and deserves a cordial reception from American students and practitioners. Dr. Robert P. Harris, of Philadelphia, who received the manuscirpt from the author and superintended its passage through the press, during the absence of the latter in Europe, deserves great credit for the fidelity and judgment with which he has fulfilled this duty.

S. S. H.

Chemical Analysis of the Urine, based in part on Casselman's Analyse des Harus. By Edgar F. Smith, Ph. D., Asa Packer, Prof. Chemistry, Muhlenburg, Col., and John Marshall, Demonstrator of Chemistry, Med. Depart., Univ, Pa., with illustrations, 12mo. Pp. 104. Presley Blakiston. 1881. [Sold by Hawkins. Price in muslin $1.00.]

The three authors of this little volume remind us of the two capitals of the State of Rhode Island. Hence we derive the following mathematical formulas. (1.) The civic importance of Providence and Newport is to the advantage of their being capital cities of a sovereign State, as the professional reputation of Doctors Smith, Packer and Marshall is to the success of their book. But the above being unknown quantities, we conveniently represent them by the last letters of the alphabet, u, v, x and y, and therefore write

$$(1). \quad u : v :: x : y; \text{ or}$$

$$(2). \quad \frac{u}{v} = \frac{x}{y}; \text{ and also}$$

$$(3). \quad uy = vx$$

If now it is desired to determine the reputation of Doctors S., P. and M. (represented by x), or the success of their book (represented by y), we can easily deduce them from formula (3), thus:

$$uy = vx; \quad x = \frac{uy}{v}, \quad \text{and} \quad y = \frac{vx}{u}$$

By substituting the values of u, v, x and y, we find that the reputation of Doctors Smith, Packer and Marshall equals the importance of Providence and Newport, multiplied by the success of their book and divided by the advantage of being capi-

tal cities of Rhode Island; also, that the success of their book equals the advantage of being capital cities of R. I., multiplied by the reputation of Doctors S., P. and M., and divided by the importance of Providence and Newport.

In thus obtaining the true values of x and y, we are certain that we have reached the *roots* of the whole matter, and trust that our readers will duly appreciate the excellence of this precise mathematical method of criticising scientific works.

S. S. H.

The Wilderness Cure. By Marc Cook, Author of "Camp Lou." 12 mo. Pp. 153. New York: Wm. Wood & Co. 1881. [Sold by Hawkins. Price, in muslin, 80 cents.]

The author was a consumptive invalid, cured by some months of camp life in the Adirondack region. He had published an article in *Harper's Magazine* for May, 1881, entitled: "Camp Lou." which called out numerous inquiries, and this volume is intended as a reply. It contains a history of his own case; a description of the region and the proper method of carrying out the plan of cure; an address on the St. Regis Country, by Prof. A. L. Loomis, M.D.; a chapter on the cost of the plan; and an appendix descriptive of the outfit recommended.

The author is a newspaper man, a graceful writer, and his book is quite entertaining, as well as instructive. S. S. H.

Landmarks, Medical and Surgical. By Luther Holden, Consulting Surgeon to St. Bartholomew's and the Foundling Hospital, etc.; assisted by James Shuter, M. A. Camb., F. R. C. S., Asst. Surg to Royal Free Hosp.; late Demonstrator of Physiology and Asst. Dem. of Anatomy at St. Bartholomey's Hospital. From the third English edition with additions, by Wm. W. Keen, M.D., Prof. Artistic Anatomy, Penn. Acad. Fine Arts; formerly Lecturer on Anatomy, Phila. Sch. Anat., etc. 12 mo. Pp. 148. Philadelphia: Henry C. Lea's Son & Co., 1881. [Sold by Hawkins. Price, in muslin, $1 00.]

This little volume is without illustrations, being intended to guide the student of regional anatomy in his manupilation of the living subject. Its size renders it much more convenient for use than the bulky systematic works, but its utility might

be increased by the addition of either a table of contents or an alphabetical index, both of which are wanting.

Transactions of the College of Physicians of Philadelphia. Third Series, Vol. 5. 8vo. Chap. XXII, Pp. 124. Philadelphia. 1881.

This volume contains the papers read before the College from August, 1879, to July, 1881. The first part consists of memoirs of some distinguished fellows, lately deceased, among whom may be mentioned Professor Geo. B. Wood, James Aitken Meigs and John Neill, and Doctors Isaac Hays and Isaac Ray.

The second part contains papers on various medical subjects. Two of these relate to the custom of foot-binding in China, by Dr. Robert P. Harris. The process is minutely described, with the aid of illustrations, and some prevalent errors on the subject are corrected.

A case of general hyperostosis was related by Dr. Jas. H. Hutchinson, of a young man 21 years old, in whom most of the joints underwent gradual anchylosis. There was no history of syphilis or of any hereditary disease.

Dr. Geo. Hamilton contributed a paper on Thoughts from Vivisection, with reference to its restriction by legislative action. Briefly, he depreciates vivisection and thinks it should be put under legal restrictions. But he has nothing to say about hunting animals to death for sport. S.S.H.

Books and Pamphlets Received.

Our Medical Literature. By John S. Billings, M.D., Surgeon U. S. Army.

Observations on the Origin, Character and Treatment of Oinomania. By T. L. Wright, M.D., Bellefontaine, Ohio. Reprint from the Alienist and Neurologist, St. Louis, October, 1881.

Atresia of the Vagina and Uterus. By A. F. Erich, M.D., Professor of Diseases of Women, College of Physicians and Surgeons, Baltimore; Surgeon in charge of the Maryland Women's Hospital, etc. Reprint from the Atlanta Medical Register, November, 1881.

The Galvanic Accumulator for Storing Dynamical Electricity for Cautery and Illuminating Purposes. By Louis Elsberg, A.M., M. D., Fellow of the New York Academy of Medicine, Member of the American Academy of Medicine, President of the New York Laryngological Society, etc., etc.

Historical Sketch of the Medical Societies of Baltimore, Md., from 1730 *to* 1880. By G. Lane Taneyhill, A. B., M. D.

Revised List of Members American Public Association.

Inoculation of Both Eyes for Complete Pannus with Gonorrhœal Pus; Recovery of Sight after Eleven Years of Blindness. By E. S. Peck, M. D., Aural Surgeon to the Metropolitan Throat Hospital, Visiting Surgeon to the Charity Hospital. Reprint from The Medical Record, July 2, 1881.

Buffalo Lithia Springs, Virginia.

Uterine Massage as a Means of Treating Certain Forms of Enlargement of the Womb. By A. Reeves Jackson, A. M., M. D., formerly Surgeon in chief of the Women's Hospital of the State of Illinois, etc., etc.

Contributions to the Study of the Toxicology of Cardiac Depressents. 1. *Carbolic Acid; A Summary of Fifty-Six Cases of Poisoning, with a Study of its Physiological Action.* By Edward T. Reichert, M.D., formerly Demonstrator of Experimental Therapeutics and Instructor in Experimental Physiology in the Post-Graduate Course in Medicine, in the University of Pennsylvania.

Annual Report of the Health Commissioner, City of St. Louis. For the fiscal year 1880–81.

The Wilderness Cure. By Marc Cook. 12 mo. Pp. 153. New York: Wm. Wood & Co. 1881.

Landmarks, Medical and Surgical. By Luther Holden, assisted by James Shuter, F. R. C. S. From the third English edition, with additions, by Wm. W. Keen, M.D. 12 mo., Pp. 148. Philadelphia: H. C. Lea's Son & Co. 1881.

Transactions of the College of Physicians of Philadelphia. Third Series, Vol. 5. 8vo. Chap. XXXIII, Pp. 124. Philadelphia. 1881.

Second Annual Report of the State Board of Health, Lunacy and Charity of Massachusetts, 1880. 8vo. Pp. 197.

Thirty-ninth Report to the Legislature of Massachusetts, relating to the Registry and Return of Births, Marriages and Deaths in the Commonwealth for the year ending December 31, 1880. 8vo. Pp. 121, Chap. LXXXII.

Meteorological Summary—October, 1881.
Station—New Orleans.

Date.	Daily Mean Barometer.	Daily Mean Temp'ture.	Daily Mean Humidity.	Prevailing Direction of Wind.	Daily Rain-fall.
1	30.089	78 7	84.7	East.	1.08
2	30.163	80.6	85.3	East.	.14
3	30.161	79.7	74.3	East.	.03
4	30.061	80.0	72.7	East.	. . .
5	29.994	81.1	69.0	N. E.	.....
6	30.089	79.9	77.0	S. E.	.....
7	30 167	79.9	75.3	East.	.02
8	30.180	77.5	75.0	S. E.	.....
9	30.156	75.9	84.0	S. E.	.04
10	30.118	78.0	76 3	N. E.	.....
11	30.149	77.7	79.7	East.	.....
12	30.221	78.0	79.0	S. E.	.09
13	30.278	77.4	77.7	S. E.	.....
14	30.184	76.7	74.3	East.	.....
15	30.151	76 1	74.3	S. E.	.....
16	30.143	77.3	84.3	East.	....
17	30.067	78.6	72.7	S. E.	.....
18	30.038	79.4	75.3	North	.....
19	29.990	77.2	74.3	North	.....
20	30.070	68.5	71.7	North	.....
21	30.115	70.9	79.0	East.	.....
22	30.081	74.0	89.3	East.	.34
23	29.980	75.7	87.3	S. E.	1.22
24	29.976	73.2	78.0	West.	.22
25	30.059	65.0	65.7	North	.....
26	30.040	66.4	62.0	East.	.....
27	29.906	72.3	76.0	S. E.	.02
28	29 855	70.7	87.0	S. E.	.19
29	29.902	73.9	90.3	South	.65
30	29 916	72.0	74.7	S. W.	.80
31	30.025	64.5	74.0	North	.....
Sums	....	....	....	.....	total
Means	30.075	75.2	77.1	East.	48.4

General Items.

Highest Barometer, 30.346, 13th.
Lowest Barometer, 29.820, 28th.
Monthly Range of Barometer, .526
Highest Temperature, 88.0, 5th.
Lowest Temperature, 57.5, 26th.
Greatest daily range of Temperature, 19.0, 21st.
Least daily range of Temperature, 7.2, 6th.
Mean of maximum Temperature, 81.1.
Mean of minimum Temperature, 69.2.
Mean Daily Range of Temperature,
Prevailing Direction of Wind, East.
Total No. of miles 5636.
Greatest Velocity of Wind, 30 miles S. E., 6th.
Number of Clear Days, 13.
Number of fair days, 12.
Number of Cloudy days, 1.
No. of days on which rain fell, 15.

COMPARATIVE TEMPERATURE.

1871	....	1877	70.2
1872	....	1878	70.6
1873	68.2	1879	72.4
1874	70.4	1880	68.0
1875	67.3	1881	..
1876	67.6		

COMPARATIVE PRECIPITATIONS.
(Inches and Hundredths.)

1871	....	1877	9.15
1872	....	1878	5.07
1873	1.89	1879	1.36
1874	....	1880	1.88
1875	2.09	1881	.....
1876	.24		

L. DUNNE,
Sergeant Signal Service, U. S. A.

Mortality in New Orleans from October 15th, 1881, to November 19th, 1881, inclusive.

Week Ending.	Yellow Fever.	Malarial Fevers.	Consumption.	Small-pox.	Pneumonia.	Total Mortality.
October 22	0	11	17	0	0	108
October 29	0	5	19	0	4	111
November 5	0	8	16	0	3	93
November 12	0	15	18	0	3	131
November 19	0	10	18	0	6	114
Total....	0	49	88	0	16	557

NEW ORLEANS
MEDICAL AND SURGICAL JOURNAL.

JANUARY, 1882.

ORIGINAL COMMUNICATIONS.

The Influence of Modern Scientific Medicine on the Prevention and Cure of Disease.

The Annual Oration Delivered before the New Orleans Medical and Surgical Association, December 10, 1881.

By ISAAC L. CRAWCOUR, M. D.

Mr. President and Members of the Association:

It is now about twenty years since Tyndall demonstrated that the atmospheric dust which we distinguish as motes in the sunbeam, consisted of organized materials, and that this dust contained the organisms which produced putrefaction, fermentation and a host of other changes. Reasoning from this, it was left to the genius of Pasteur and Lister to determine that these atmospheric organisms were the cause of the non-healing of wounds, of septic poisoning, of erysipelas, puerperal fever, etc., and that by preventing the attachment or absorbption of these germs, sepsis was obviated, wounds healed by first intention, and the anti-eptic treatment of wounds became inaugurated.

Long before this however, although it was not done in a scientific manner, the genius of Sir Kenelm Digby, a physician of the 17th century (1658), had discovered that if wounds were hermetically closed, they would heal rapidly and innoculously; hence his treatment by his sympathetic salve, with this the

instrument which caused the wound was anointed, while the dressings of the wound itself were left carefully undisturbed.

It is now placed beyond a doubt, that a large number of the diseases we call zymotic and perhaps all, are due to the presence of living organized beings (parasites), and that to the various species and metamorphoses of these, are due the various forms of the diseases which we recognize under so many different names.

The first step towards the elucidation of what we may term the germ theory of disease, was the discovery by Cagniard de la Tour, about 1736, that fermentation instead of being a purely chemical process, was due to the introduction into the fermentable liquids of a true vegetable parasite, the torula cerevisiæ. This was carefully examined by various naturalists, notably by Tyndall and Pasteur, and from their examinations we can now formulize certain propositions.

1. That no organic fluid undergoes *spontaneous* fermentation or decomposition, even in the presence of atmospheric air, such action being always caused by distinct and definite organic germs.

2. That different forms of fermentation are produced by different species of organic germs.

3. That these germs are constantly floating in the atmosphere, and therefore are liable to be self-sown in any fluid exposed to it.

4. That if these germs be intercepted by mechanical filtration, or if their vitality be destroyed by chemical agents, any organic fluid may be freely exposed to air without any change being produced.

5. That according to our present knowledge, no fermentation takes place without the presence of germs, chiefly bacteria, each kind, when placed in a suitable liquid, reproducing itself.

6. That these germs when dried may retain their vitality for unlimited periods, starting into renewed activity, when the requisite conditions for their growth are supplied, but that in this state they may be destroyed by many agents, such as chemical fluids, high temperature, etc., and thus their life and propagating power be destroyed.

Now what do we learn from this? We learn that the old axiom, "*omne vivum ex ovo*," is based upon a demonstrable truth. If we take a putrescible substance and place it in a flask, free from all organisms, which can be done by heat, or certain chemical liquids, and then hermetically seal it, no change even for an indefinite period will take place; the same result will occur if air is permitted to enter, provided this be filtered through a layer of cotton.

It is time now to examine the bearings of these discoveries upon disease.

In the year 1850 M. Davaine discovered that the blood of animals suffering from splenic fever contained minute rods (bacteria), and that the liquid containing these rods, injected into the blood or tissues of other animals, propagated the disease.

The subject has of late been more fully worked up by Dr. Koch, who in an exhaustive treatise on traumatic infectious disease has experimentally proved the propagation of that disease, and that even the blood of animals which have died of the disease, if dried and pulverized, may retain the infecting property for years.

Within the past year, Pasteur has found that so tenacious of life are these germs, that in places where cattle which have died of the disease have been buried, the germ has remained actively infecting for years, and that where the cattle have been deeply buried, the earth containing these germs has been brought to the surface by worms which had swallowed the soil, thus giving rise to fresh outbreaks of the disease. He found this in an instance in which a bullock had been buried in a pit six feet deep—some sheep which had been fed on this ground look the disease and died.

In another instance he separated the bacillus germs from the earth by washing, and multiplied them by cultivation; by in oculating animals with this, he again produced the disease.

He also found that by a series of cultivations the virus of the germ could be so attenuated that it was capable of producing the disease in a mild form, this mild form acting like vaccination, preventing the disease in the future. A crucial test of

this was made last May. 50 sheep were taken, of these 25 were inoculated with the attenuated virus. A fortnight after, all were inoculated with the strong virus; of the 25 not inoculated all died, the inoculated ones all remained free from the disease. Since this the number of cattle inoculated and protected amounts to thousands, and it is almost impossible for Pasteur to procure attenuated virus in sufficient quantity to satisfy the demand.

This bacillus anthracis not only proves fatal to animals but from them may be produced in man, forming the malignant pustule—it may remain for years in the hides and hairs of animals which have died of the disease. In the form of dust it is inspired into the lungs, producing the fatal wool sorter's disease, which has lately produced such havoc in Bradford in England.

Another proof of the vitality and long persistence of these germs is the fact, also recently demonstrated by Pasteur at the Academie de Medicine. Some sheep which had died of anthrax were buried in a certain spot; a year afterwards the earth over this spot was examined; it teemed with millions of germs. He allowed some anthracoid blood to fall on the ground. It germinated, and a year afterward the washings of the soil contained quantities of germs.

We may demonstrate from this the futility of quarantines. The germ once introduced into the soil may remain dormant for indefinite periods unless destroyed by oxidation or chemical agents. Under appropriate conditions of soil, atmosphere, humidity and electrical conditions they may suddenly spring into existence, and we may have repeated *ad nauseam* the fallacies of importation, and the necessity of more vigorous measures of embargo.

In 1845 the burial pits closed in London during the great plague of 1664 were opened. The men employed in this work were overpowered by the effluvium and many died. The graves were immediately closed and no further mischief occurred.

We owe to the researches of Professors Klebs and Thomaso Crudelli the proof that malarial poisoning depends on a speci-

fic germ. These gentlemen found that the organisms which produce malaria and which may be regarded as its true cause, belong to the order bacillus. They are found in the infective liquids obtained from the earth, from the air, and by cultivation in the bodies of infected animals. They are found in the soil of malarious regions, in the form of spores which have the power of independent motion and strongly refract light. They develop either within the body or in cultivating apparatuses, into long filaments which at first are homogeneous; later on these undergo transverse fission which converts them into a chain; in the interior of each link new spores develope.

The mode of action of these spores on the body is probably indirect; they may perhaps act on the nervous system by the changes they produce in the fluids of the body during their growth. It is probably in this way that quinine cures fever, for when swallowed, it is absorbed like the spores themselves, and, by preventing their multiplication, interferes with their growth and thus checks their tendency to do mischief. We must, in relation to this, bear in mind that as far back as 1845 Dr. John Mitchell, of Philadelphia, advocated the view that malaria resulted from the lower forms of vegetable life, cryptogams, etc., and in 1866 Dr. Salisbury published in the January number of the *American Journal of the Medical Sciences* corroborative and experimental evidence to prove the correctness of these views.

The crucial experiments of Crudelli and Klebs have, I think, established these beyond a doubt.

Leprosy and chyluria have also recently been discovered to depend upon a parasitic germ. The researches of Sir Joseph Fayer in India and Dr. Manson in China have brought to light the Filaria sanguinis hominis. Neisser in Germany has recently confirmed this, he having also found these minute organisms in leprosy. His observations have recently been corroborated by M. Cornil, of France, who examined a large number of specimens from the Leproserie of Granada. He finds the cutaneous tubercles to consist of an infiltration with large globular cells and lecocyles, while the walls of the blood vessels are greatly thickened.

The *British Medical Journal*, Oct. 22, 1881, says:

At a meeting of the Pathological Society of London, Dr. Stephen Mackenzie showed some very interesting specimens of this hæmatozoon in the freshly drawn blood; also specimens of the same parasite from the mosquito, and the chylous urine passed in this case. The patient, who was in attendance, was a bombardier, aged 26, born in India of European parents. He enjoyed good health in India, but, about a month after reaching England (six months ago), there was some incontinence of urine. A week later, the urine became milky, and, a short time afterwards, hæmaturia came on; this subsided in a week, and was again succeeded by chyluria. The urine was milky to the naked eye; the quantity passed was large, and it contained albumen and blood cells; the milkiness disappeared when it was shaken up with ether. Microscopically, a number of fine molecules, blood-cells, small coagula, and the filariæ were discovered. The urine passed by night contained more blood, and probably more filariæ. At first, the urine coagulated slightly, and the filariæ were contained chiefly in the blood-clots, but, after standing a short time, the clot broke up. By night, a large quantity of filariæ was found; and, as a rule, the filariæ over a period of two months, during which the blood had been examined every three hours, were far more plentiful, or only found, at night. They usually appeared about 9 P. M.; at about midnight, the maximum was reached; at 6 A. M. they had almost disappeared; and at 9 A. M. none could be found. The systematic search had been conscientiously carried out by Mr. Cotes, the house physician. At the suggestion of Dr. Vandyke Carter, experiments were made to see if this periodicity could be altered. The hours of the patient's meals were first changed, but this resulted in practically no alteration; by inverting his habits, however, making him stay up all night, the frequency of the presence of the filariæ was also inverted, *i. e.*, they were found in the blood in greatest numbers during the day. Sometimes as many as eight filariæ were found on one slide; in making the observations, the average of three slides was taken. It has been shown that the mosquito is an intermediate host. The filariæ measured from 1-75 to 1-120 inch in length, and 1-2000 to 1-3000 in breadth. The head was rounded, the tail pointed; there was an outer sheath, which could be well seen in stained specimens. When the blood was first drawn, the filariæ could be seen in active movement, and so remained for several days. Dr. Mackenzie exhibited some excellent micographs made by Dr. Bellfield (Chicago), showing the hæmatozoa under varying conditions. Dr. Cobbold observed that these filarial discoveries, made chiefly through the labors of Bancroft, Manson, Lewis, and of several Brazilian observers, enabled us to draw most important deductions. The parasite was first found in the urine; Dr. Cobbold had himself seen nu-

merous specimens of a filaria in urine, some years ago, in connection with Bilharzia hæmatobia. In 1872, the parasite was found in the blood by Lewis, who also saw them in various other tissues, even in a milky discharge from the eyes. Bancroft then discovered the sexually mature worm—three inches long—in a lymphatic abscess. Manson next discovered the intermediary host, in the mosquito; lastly, the same observer discovered the extraordinary fact of filarial periodicity; it was, he thought, a most remarkable fact that these hæmatozoa should swarm in the human being just at the time when the female mosquito visited the body of its victim. Dr. Manson, of Amoy, had satisfied himself that the proboscis of the mosquito was forced into the lumen of the cappillaries; and that, in these circumstances, the filariæ coiled their long flexible tails round the proboscis, and were thus pulled out wholesale when the latter was withdrawn. Dr. Mackenzie's observation, that the period of the appearance of the filaria could be reversed by altering the patient's habits, was a new and most important discovery. Dr. Cobbold concluded by paying a high compliment to the careful and thorough nature of Dr. Manson's work. Dr. George Harley observed that filariæ played an important part in the history of disease, especially in disorders among cattle. Dr. Evans of the Punjaub had found a filaria in the blood of horses which died during an epidemic. As to the periodicity, he thought it a remarkable fact that such a periodicity was to be noticed in many parasitic diseases; and it had recently been pointed out that, in the fermentation of rice, there were distinct periods during which the temperature of the fermenting mass was as much as sixty degrees higher than at other times. Dr. Vandyke Carter said that it must not be supposed that the periodicity of the filaria was altogether an immutable fact. The parent worm was lodged in some part of the body, in the lymphatic system somewhere; it discharged, it might be supposed on analogy, its young, at regular intervals, into the circulation. Further, there was a periodicity over a longer period; at certain times of the year, he had found the chyluria disappear altogether, to return again with the returning seasons. It was important to notice that these filariæ might exist in the blood without causing any inconvenience at all, as he had often had the opportunity of observing; it was only when the parent became lodged in some particular spot that they gave rise to symptoms; in the case of chyluria, the worm was no doubt fixed in some part of the lymphatics of the urinary tract. In elephantoid fever, he had found the filariæ only during the pyrexial periods. Mr. Walter Pye, bore testimony to the absolute identity between the filariæ shown by Dr. Mackenzie with those he had often examined with Dr. Manson in Amoy. He had always found that the coagulum at first formed in the chylous urine invariably broke down, as described by Dr. Mackenzie. He

could not exaggerate the care and minute attention which Dr. Manson gave to the study of these hæmatozoa Dr. Stephen Mackenzie, in reply, said that in another case of chyluria formerly under his care, where Dr. Lewis had found the filariæ in the blood in India, none could be found while the patient was in England, though search was made at all hours of the day and night.

Another disease in which peculiar germs have been found is diphtheria. The micro-organisms of this malady were found not only in the diphtheritic membrane, but also in the blood and various tissues and organs of those dying of the disease. Klebs introduced his method of fractional cultivation and successfully inoculated animals with the bacteria of diphtheria obtained in this manner. In these he was able to recognize the organisms in the blood and tissues after death.

Within the last few months, Professor Klebs has discovered a peculiar bacillus in enteric fever which he calls the bacillus typhosus. He says this occurs constantly in the intestinal infiltrations of enteric patients and also in the mesenteric glands, larynx, lungs, kidneys, piamater, etc. This bacillus typhosus forms at the height of its development, undivided threads, containing spores, but in the earlier stages appears as short rods containing terminally placed spores. This bacillus differs from the organisms of ordinary putrefaction, first, in its greater fineness and in its appearing as rods and spores; secondly, in its penetrating the tissues, which the coarser varieties never do. From experiments in which he injected sub-cutaneously into rabbits fluids containing the bacillus typhosus, Klebs considers himself justified in the conclusion that the bacillus typhosus, under favorable conditions, develops in the mucous membrane into a thread-like mycelium which can penetrate the whole mass of a typhoid infiltration and fill the blood vessels of the intestine.

Another disease in which peculiar organized bodies are found is relapsing fever.

In 1873 Obermeier discovered that the blood of patients suffering from relapsing fever invariably contained thin thread-like spiral bodies or fungi. These were constant during the stage of invasion and in the relapse.

Since Obermeier's discovery, Lebert and Dr. Weigert have examined the blood of all patients which came under their care, and they have come to the conclusion that these organisms are never absent during the periods of invasion and relapse, although they diminish greatly during defervescence. These spiral filaments are very slender, their motions are lively, twisting, rotative and rapidly progressive. These movements diminish as the blood begins to coagulate and at length cease altogether. That a parasite so clearly determined as this, abounding in relapsing fever and not found in any other disease, must be closely connected with the development and spread of the disease cannot be doubted. These filaments, capable of maintaining a torpid existence for a long time, may spread the disease from individual to individual, or through the atmosphere by means of fluids and solids. The parasite lives and flourishes in impure and stagnant water; and crowded and filthy neighborhoods exert a similar influence in inducing its growth and propagation.

In an essay on yellow fever, by Dr. Domingo Freire, which I received from Rio Janeiro a few months ago, he claims to have discovered the Bacterium, or parasite, which produces yellow fever. The Doctor examined the yellow and black vomits, pus, saliva, the epithelium of the tongue and the blood of yellow fever patients. In all these he observed peculiar microscopic organisms in large numbers, and which grew and increased with great rapidity. The greatest number was found in the vomit. The organisms were vegetable and belonged to the order of bacteria and cyptococci. Both originated from molecular granules which were seen under a power of 450 diametres as minute black points. These granules transformed themselves into short filaments, then into bacteria which appeared as short transparent rods having an undulatory motion and which increased by scission. Dr. Freire believes that these organisms are the cause of yellow fever and in order to destroy them he used the salicylate of sodium which seems to have the power of preventing the growth of all low organisms. He employed this salt exclusively in the treatment of the disease.

He found that these organisms when introduced into the blood grow with extraordinary rapidity, and believes that the pressure they exercise on the nervous centres will explain the pains in the limbs, the rachialgia and the pain in the head. They grow at the expense of the blood which they destroy. He says he has seen these vibrios attach themselves to the blood and adhering to the corpuscles like leeches. In giving the salicylate of sodium he administered it hypodermically. The quantity used varied from 3 to 15 grains dissolved in water and injected at various points once in 24 or 48 hours The salt must be perfectly neutral and in the proportion of one part of salt to four of water, and must always be freshly prepared.

In Rio Janeiro the mortality from yellow fever ranges from 30 to 50 per cent. By this treatment it fell to ten per cent. and in the practice of one physician to 7 per cent.

Now it may be argued that inasmuch as all those organisms present microscopically very nearly the same appearance, it is hardly possible that so many different malalies can be produced by them, but it must be borne in mind that, although in the present condition of microscopical power we cannot always discern differences, it does not follow that we have reached the limit of microscopic amplification. At present the highest power of the microscope cannot show anything smaller than the 1-500,000th of an inch, yet we know there must be organisms and parts of organs infinitely smaller than this. A drop of water is composed of myriads of globules, and Tyndall's researches have shown that the atmosphere is full of particles which can only be seen in the aggregate, the individual molecule being completely invisible. Again, we must remember that the human eye and ear are very limited in their scope. There are in existence sights we cannot see and sounds we cannot hear. No sound which contains more than 40,000 vibrations in a second can be heard, and light which exceeds 458 trillions of vibrations in a second cannot be seen. Can we say that these lights and these sounds do not exist? To us the hum of the mosquito is one continuous sound, but this is the result of infinite muscular movements each of which is separate and definite. In many instances we must judge by results. No

one doubts of the existence of hydrogen although we can neither see, smell nor taste it. The invisible heat rays cannot be seen, and in these and similar instances we judge by the results these agencies produce.

We must bear in mind that all the various forms of organic life are derived from cells absolutely identical, and all these cells are produced from a minute speck of protoplasm which is apparently unorganized.

It has also been recently discovered that species which are perfectly harmless can be rendered toxic by cultivation, and vice versa. Gravitz found that aspergillus and penicillium exist in two forms, morphologically alike but differing physiologically, one being inert when introduced into the organism the other highly poisonous. By systematic cultivation either may be transformed into the other in from 12 to 20 generations. Again, it is a matter of common observation that a substance which has no toxic properties when grown on one soil may acquire deadly properties by being grown on another. I am, therefore, justified in asking, may it not be possible that many diseases apparently different may be derived from one and the same germ, altered either by time, progressive development, climate or soil. This was proved by some experiments of Burdon Sanderson and Bergman, who succeeded in producing a particulate contagion out of an infusion of putrid muscle in one case and in the other out of a chemical solution of sugar, tartrate of ammonia and inorganic salts. Both observers found the first crop of bacteria nonvenomous, but after each succes sive crop the fluid gained in infective power, and thus a specific contagion was produced from a non-specific fluid.

One of the best evidences of the influence of cultivation and habitat in changing the type of individuals is found in the various metamorphoses of insects, notably in that of the bee. If the queen bee of the hive should accidentally die, an ordinary worker is taken, which, being placed in a particular cell, and fed with a peculiar food, gradually develops into a queen, an insect different totally in many particulars from the original worker out of which it was developed. In a similar way the cysticercus of the pig, when introduced into man, becomes a

tænia, and this with the same certainty that a seed planted in the ground will become a tree. Why may not many of the parasitic germs which produce a certain disease in one latitude be transformed into other varieties by differences of soil, climate and cultivation.

Another circumstance which deserves our deepest consideration is the fact recently discovered that the human body after death is capable of originating certain organic poisons, now known under the name of ptomains and which present many of the characteristics of the poisonous alkaloids. The importance of this discovery both in a medical and medico-legal point of view, is the fact, that in a corpse which had been submerged eighteen months in the river Seine the ptomaines presented all the characters of veratrine.

Sonnenshein & Zuelzer discovered in poisonous sausages and in the fluid in which an anatomical preparation had been macerated, a peculiar alkaloid resembling atropia in its physiological action, and among other products of decay a substance which produced telanic convulsions.

These ptomaines may be distinguished from what we term the true alkaloids by the fact that they reduce the ferricyanide of potassium to the state of ferro-cyanide, thus a ptomaine mixed with a persalt of iron and ferri-cyanide of potassium will produce Prussian blue, the reaction of the ferro-salt.

How do we know that these ptomaines may not be produced during life, thus producing many of the phenomena which characterise disease, more especially in those cases where no organic lesion is discoverable? Why may not the phenomena of tetanus be produced by the auto-generation in the body of a substance resembling strychnia, and the raving delirium of manymaladies by the production of a something resembling atropia? We must bear in mind that all these alkaloids contain enormous quantities of nitrogen, the most unstable of all combining elements, uniting and separating with the greatest facility and on the slightest provocation.

Many organic substances can now be made synthetically, many too which normally are found in the animal organism a

the result of muscular decomposition These may perhaps by alternate syntheses and analyses resolve themselves into new compounds, producing varying phenomena. Already chemistry makes synthetically lactic acid, urea, indigo, all of which are found in the human body; homatropia, cinnamic and benzoic acids, quinine and many others, and the list is being rapidly and constantly increased. Already Prof. Spica has obtained from the fluids taken during life from a patient with peritonitis no fewer than four ptomaines; allwere poisonous, one resembling in its effects curare, and Prof. Sonnenshein found similar products in the bodies of patients dying from continued fever.

In connection with this, Mr. Armand Gautier, of Paris, has recently discovered that human saliva contains a poisonous alkaloid; it is soluble in water, is a narcotic poison to birds, and is not destroyed by a heat of 212°. It gives the same reaction as the ptomaines and the venom of snakes, which latter has a most powerfully solvent action on all albuminous substances, in this respect exceeding pepsin.

In view of these facts, it is very unreasonable to argue that many diseases which at present can not be referred to the germ theory, may be of autoothonic growth and may be the results of peculiar changes impressed upon the organism. If the saliva of man can become poisonous, may not a slight increase in venomous power be the cause of hydrophobia in the dog, or may not the saliva of the dog produce rabies in man, and yet the dog present no symptom of the disease—a condition which has occurred in numerous instances.

I simply throw out these ideas as hints for younger men to take up. The phenomona are worthy of the closest investigation, and will fully reward him who will take the trouble to make a series of full and patient experiments.

I have endeavored in the preceding pages to tabulate to some extent the more recent discoveries which have taken place as to the causes which induce disease, and I have had the presumption to formulate some theories (vague and indefinite perhaps) of my own. I throw them out as hints to future workers and to the younger members of this Association, my-

self and many others having reached a period of life when original research becomes irksome and difficult, and it is for our juniors to work out as facts what we simply give as possible hypotheses.

The autogeneration of many diseases and their mutual convertibility into each other has for many years been a favorite theory of mine, and the more I see of disease and the more I consider the rapid and wonderful metamorphoses of organic matter, the more the possibility of such a condition grows upon me.

I thank you, gentlemen, for the patience with which you have listened to me and for the attention with which you have honored me, and only regret that I have not had time to make this discourse more worthy of the company and the occasion.

Alveolar Abscess.

By A. G. Friedrichs, M. D.

(Read before the Medical and Surgical Association, October 29.)

The limited time accorded me for preparation prevents the bestowal upon the subject in hand that attention and elaboration which it deserves. However, it shall be my endeavor to present it in such a manner as to elicit an interest in a malady so prevalent and yet so generally little understood.

Alveolar abscess is a collection of pus in a sac, found in the socket of a tooth at the extremity of the root. The time required for its formation ranges from three to fifteen days. Its history generally begins with a feeling of fullness and tension, succeeded by a dull, heavy, annoying pain in the parts affected. As the disease progresses, the pain increases; the tooth is loosened and elevated and so sore that the slightest touch is unbearable—in fact the whole attention of the patient seems to be directed to the avoidance of contact. The inflammation, first affecting the periosteum of the tooth, extends to the gums and surrounding parts. The gums around the affected tooth become dark red, swollen and painful. Considerable constitutional disturbance is exhibited in some cases. Elevation of

temperature with a hot and dry skin, with a bounding pulse; breath offensive and tongue thickly coated; in other words, an inflammatory fever. With the increasing inflamation of the periosteum of the root, an effusion of coagulable lymph takes place, which hardening attaches itself to the root around the apex and ultimately a sac is formed. Then suppuration takes place, and if there is no exit for the pus, either through the root canal and pulp cavity or along the side of the root to the surface of the gums, one side of the alveolus, especially in debilitated persons, undergoes a complete resorbsion from the proliferation of the connective tissue cells, and an exit is thus formed through the socket and gum for the escape of the pus. A direct lateral passage is not always effected through the gum and alveolus. It is not an infrequent occurrence for a purulent infiltration into the spongy osseous tissue surrounding the alveoli to take place, and the more abundant the tissue, the greater the liability to the occurrence of infiltration. The maxiliary periosteum being once perforated, the necrotic pus flows downward by its own gravity into the loose connective tissue, unless its course is obstructed, when it seeks an outlet in some other direction, which is guided by the local anatomical relations. The fistulous track opening either in the mouth or upon the cheek, or as it not unfrequently happens, attains a considerable length, terminating in a fistulous ulcer upon the external integument.

This disease allowed to continue and not arrested will continue for years, producing very serious complications and even jeopodizing life. Physicians do not generally recognize its pernicious effects and treat that with levity, which demands a thorough investigation of all the parts involved in the region of the oral cavity and which operative interference alone can remedy.

The causes for the production of alreola abscess may be stated as: Caries, which occasions the inflamation of the pulp, and through it by direct transmission of the irritation from the inflamed vessels and nerves to those of the periosteum of the root; the inhalation of phosphorous fumes; abuse of mercury; dead and dying pulps confined in the pulp chamber; imperfect

filling; filling upon exposed pulp; ligature around the necks of the teeth; foreign bodies that may be forced into the pouches formed by the gums, viz: bits of toothpicks, etc.; stumps of teeth; concussion of the jaw from a fall, blow or kick; improper occlusion where the pressure in mastification is exerted unevenly, and in fact any condition that could produce an inflammation of the root membrane. The rheumatic, gouty and scrofulous diatheses is also a predisposing cause.

Abscesses occuring upon the root of the upper incisors usually perforate the anterior wall of the alveoli and the fistulous tract opens upon the labial side of the gums, a little below the focus of suppuration. Sometimes the abscess takes an upward course and opens into the nasal cavity. Not unfrequently the pus sac extends downwards and backwards, perforating the hard palate, leaving a round hole of considerable size. It also happens that the same absess will spread out in all three directions perforating the nasal labial and palatial surfaces.

Dr. Bond describes a case of alveolar abscess which came under his observation thus:

"The patient was a lady about 30 years of age. She had been suffering for some twelve months with a continual discharge of pus from the velum palati. Becoming alarmed at the continuance of the discharge, she called in her family physician, who, after examining it closely to ascertain the place whence the discharge came, soon satisfied himself that it was from the socket of a diseased tooth. Passing his hands along the superior alveolar border, he discovered a protuberance about the size of a hazel-nut upon the back of each of the central incisor teeth. The extraction of the four named teeth was advised, and when removed were found to be considerably necrosed. The discharge immediately stopped. The pus, instead of passing out through the nasal plates of the superior maxilla, passed back over the roof of the mouth and escaped as described."

My father has now a patient under treatment where the whole anterior wall of the alveoli of an upper lateral incisor and gum have sloughed away, leaving a fistulous opening into which a pea could be easily inserted.

The upper canines are less frequently the seat of disease. When they become affected, it is generally an extension from the lateral incisors or bicuspids.

Prof. Sewell reports a case of fistulous opening at the inner canthus of the right eye of a child 10 years of age. There had been a constant purulent discharge from the opening for some months, and to all appearances resembled a lachrymal fistula. The sound was passed into the opening and it extended as far as the canine tooth, which was discolored. It was extracted, and recovery speedily ensued.

Mr. Fleischman relates a case of a fistula opening in the nasal cavity. A little girl of 5 years was troubled with a constant though not profuse discharge of semi-purulent mucous from the right nostril and appeared to be a sequel of a cold. The mucous membrane was healthy, and there were no indications of a morbid growth. "Having baffled all kinds of treatment, I suspected," says Mr. F., "there must be some undiscovered local irritation." Not being able to find anything wrong in the nasal passages, he looked to the condition of the teeth. Finding a right upper canine carious, extracted it. The discharge lessened on the following day and in a day or two disappeared altogether.

When the upper bi-cuspids and molars become affected the fistulæ, as a general rule, open anteriorly; but they likewise perforate the alveolar process, and once the bone is undermined the pus forces its way along the connective tissue sheaths of the muscles, and escape externally through the integument, or penetrate the parotid gland and produce a salivary fistula. Should the roots extend into the antrum the pus will discharge into that cavity, and when the teeth or roots are extracted they will leave a fistula of the antrum.

Mr. J. A. Salter relates the following grossly neglected case of inflammation of the root membrane of an upper molar. A female, aged 24, was attacked with a severe toothache, referred to the first upper molar on the right side—the pain being accompanied by an extensive swelling of the face and attended with intense suffering. The eye-ball became protruded, and she soon noticed she was unable to see with that eye. In a

short time after this the abscess pointed in the vicinity of the inner, and later near the outer canthus, and a large quantity of pus escaped. The openings then closed again, and the general symptoms remained the same. The latter condition continued for three weeks. On admission to the hospital, the patient presented a repulsive disfigurement of the face, with œdema of the lids, and livid skin. The first molar on the right side, together with other carious teeth, were removed, and the antrum could be reached through the partially absorbed alveoli of the first-named tooth. There was considerable necrosed bone, including a large portion of the inner and outer wall of the orbit which was seperated. Mobility of the iris was restored, but not vision.

Pollock relates a similar case in his practice, where there was an extensive inflammation of the whole maxillary region, involving also the organs of the orbit. The inflammation subsided, but sight was lost.

Mr. Smith, in a lecture on Alveolar Abscess, gives the following case: A few years ago, a middle-aged man asked him his opinion about a sore on his cheek, midway between his mouth and ear. A probe was introduced, and it was found that it came in contact with the fangs of the last upper tooth, and in ten days after its extraction he was entirely relieved.

C. Williams speaks of a case of alveolar abscess which occurred subsequent to the extraction of an upper molar and opened upon the inferior margin of the orbit just beneath the outer commisure of the eyelid. Pus made its way beneath the zygomatic process, along the temporal muscles and its escape being prevented by the temporal fascia continued through the spheno maxilary fissure into the outer and lower portion of the orbit. There was marked exopthalmia of the left eye combined with serous chemosis. The pus was evacuated by means of incisions in the temporal region. An improvement followed immediately.

Garretson states that in consultation with one of his confreres he saw a young lady of nineteen summers who had a fistula right in the centre of the hard palate which had annoyed her for two years. On examining the mouth the dentures were

so complete as to have escaped notice—all the teeth being perfect excepting a single molar, which tooth had a small filling of gold on its grinding surface. Six days after extraction the patient was dismissed cured.

The fistulous tracks due to suppurative inflammation of the periosteum of the roots of the lower teeth have no favored or special location to make their exits. They may open upon the chin, neck, in front of or behind, or in the ear itself, in the cervical region, upon the nap of the neck or the thorax. Sometimes the formation of these abscesses are productive of very injurious and alarming consequences, even at times resulting in death. I will relate a few cases in illustration.

A case was sent to me from the Touro Hospital by Dr. Loeber. The patient had suffered for 18 months, and from his own statement was thereby incapacitated from earning his livelihood for the previous six months. He had been in the hospital in Cincinnati, O.; had been examined by some of the faculty of the Cincinnati Medical College, but the extraction of the offending tooth was never suggested until Dr. Loeber saw him. The abscess had refilled several times, had been opened and had opened itself in the angle of the jaw, but these had closed and fistulous track had extended from the offending organ (which was an impacted lower wisdom tooth) to the first molar, where it was continually discharging. I extracted the tooth and afterwards removed a sequestrum fully a half inch long. I saw him several days afterwards when he appeared to be doing well. I have not seen him since.

Prof. Strasky, in a communication to Prof. Wedl, writes the following:

"Several years ago I was consulted by an elderly lady in regard to a set of false teeth. Presently, to my surprise, she began to arrange the dressing of a purulent ulcer upon the left side of the chest, opposite the arm-pit, in the region of the 4th or 5th rib. To my questions as to what ailed her, she replied that she had been under care of the most noted physicians in the city, who had treated this ulcer with all sorts of salves and plasters, but to no purpose, for the ulcer began as a small abscess, gradually increasing in size, and became more painful.

When I examined the mouth for the purpose of fitting the set of teeth, I found the left lower wisdom tooth deeply imbedded within the gums surrounding it; the crown was quite destroyed by caries; the gums around it were detached, sensitive, and upon pressure, pus oozed out from them. As I had previously conjectured that the ulcer upon the thorax was dependant upon an affection of the tooth,—I applied pressure from the angle of the jaw along the surface of the neck to the region of the ulcer, and became satisfied that pus escaped from two points of the ulcerated surface. The carious tooth was extracted and the ulcer healed in the course of a few weeks."

Dr. Harris relates the following case: A middle-aged lady had been suffering for four years with a fistula at the apex of the chin. During this period she had consulted some five or six different physicians, and had been operated upon twice for a supposed disease of the bone. Examining the mouth there was not a carious tooth, but upon striking them separately with a steel instrument, the left lateral lower incisor was painful.

Pagello had a case under treatment where the fistula had likewise opened upon the dimple of the chin. He injected an infusion of madder in the fistulous canal, and in a few days the incision above it became discolored. The offending member being removed, it speedily healed.

Dr. Bell relates a case where he was sent for in great haste to see a physician—a Dr. E., who resided some distance in the country. The Doctor was taken some two weeks previous with a tooth-ache in the left lower *dens sapientiæ*. A neighboring physician was called in; but he had diagnosed it neuralgia and made no effort to extract the tooth. The inflammation now extended rapidly to the fauces, tonsils and muscles of the neck, jaw and face. Obstructed diglutition and a high fever soon supervened. Blood letting, cathartics and fomentatives to the face gave no relief. Respiration was difficult, and the muscles of the jaw became so rigid and contracted that his mouth could not be opened. Such was the condition of the patient when Dr. B. saw him. The fever was then succeeded by alternate paroxysms of cold and heat. Efforts to sufficiently open his mouth

by forcible means proved ineffectual. While his jaws were thus partially separated, he attempted to swallow some warm tea. In the effort the abscess bursted and discharged nearly a whole tablespoon of pus through his mouth and it is supposed that nearly double that quantity went down into his stomach. This gave him immediate relief, but it was not until the next evening that the jaws could be forced open sufficiently to permit the extraction of the tooth. To the roots of this tooth, which were united, was a sac about the size of a large pea, filled with pus. Two weeks afterwards he had entirely recovered.

I, myself, came across a similar case but with this addition, the sac had also opened upon the cheek.

Lynseele described a case of menningo-encephalitis which resulted in death, caused by an abscess which formed upon the roots of a lower molar wisdom tooth, the crown of which had been broken off in an ineffectual attempt at extraction. The pus worked its way along the bone (which became in consequence denuded) upon the inner suface of the ramus of the jaw to the base of the cranium; it then entered the cranial cavity through the foranem ovale spinosum and rotundum, where it spread out upon the base of the brain, becoming the origin of the meningo-encephalitis.

A very curious result of alveolar abscess is the formation of osseous cysts on the sides of the jaw; the pus, instead of inducing absorption, is provided for by the expansion of the outer plate of the bone. There is a little or no sense of fluctuation or cracking on pressure; no appearance of inflammation in the surrounding soft parts. They usually form very rapidly—reach the size of a hickory nut in a few months. This rapid growth is specially diagnostic. Extraction of the tooth is the simplest remedy, but a hole might be bored through the cyst and treated by injections of iodine.

Abscesses associated with the temporary teeth are of special importance. The excitability and irritability of the young jaw, besides inflammatory affections generally run a more rapid course with children than with older people, particularly in an organ in which development takes place within small limits, with

comparative rapidity, may prove more than the parts can antagonize, resulting in an extensive disorganization, and the more extensive the infiltration the greater the danger that a larger portion of the jaw will become necrosed.

Children of a scrofulous or tuberculous diatheses are more liable to the occurrence of partial necrosis of the jaws, from the fact that in them the infiltration undergoes a speedy degeneration on account of the rapid proliferation of the elementary organs.

During the shedding of the temporary teeth, when children are attacked with any of the inflammatory fevers and are at the same time subject to the above mentioned diatheses, then are they most liable to periostites and necrosis of the jaw.

Salter, in an article on "Surgical Diseases connected with the Teeth," published in the 4th volume of Holmes' Surgery, speaks of two cases of necrosis of the jaw after variola; five after measles; fifteen after scarlet fever; and most of these cases occurred in children five years of age.

Should abscesses in the temporary teeth be associated with any of the exanthems, they should be immediately removed. Infantile abscess should never be allowed to run on; should they not be immediately responsive to medication, remove the offending tooth without delay.

We should also be on our guard and not make a too hasty diagnosis, as there have been several cases of aneurism of the superior palatine artery.

Tertiary syphilis always produces an inflammation of the palatal periosteum, and, if not combatted remedially, results in the loss of the palatal bones.

As regards the treatment of alveolar abscess, it should be preventative rather than curative, as it is seldom the case that the integrity of the parts are so well restored as to prevent a recurrence of the disease. The opening in the gum may close and the pus may cease secreting, but any derangement of the general system may induce an irritation of the alveolar dental

periosteum and occasion a recurrence of the disease. Prompt antiphlogistic treatment should be immediately resorted to; application of leeches to the gums, scarification of the surrounding parts and systemic depletion by means of saline cathartics. Should these fail, remove the tooth. Should the tooth, on the other hand, on account of its location or for other reasons, be valuable, and the patient be willing to submit, warm formentations should be applied to the gums; never, however, should these formentations and emolient poultices be applied externally, as they are rarely productive of any advantage and may do harm by promoting the discharge of matter through the cheek or lower part of the face. When this does occur, after the orifice is closed there remains a puckering of the skin which quite disfigures it. By warming a preserved fig and placing it upon the gum of the tooth affected will answer the purpose; excise the gum and bore through the alveolar wall to the seat of the disease, thus making an exit for the pus. In all cases the indications, both local and general, are to be appreciated and recognized. Remove whatever may be the cause—if it be a dead pulp, extract it; if it be pent-up gas in the pulp-chamber, bore a hole into it, and so on, and when every other expedient is exhausted then remove the tooth. Abscesses affecting the lower wisdom teeth, should they be at all persistent, the wisest and safest, treatment is extraction.

In reviewing the cases above cited, the very evidentfact reveals itself, that in every instance, where serious complications have arisen, they were invariably due to a failure to recognize correctly the cause of the disorder. The plea that they did not fall into reliable and otherwise enlightened hands, the report fully contradicts, and it is a melancholy reflection that the medical fraternity, in its eagerness to investigate and combat the greater evils, ignore the claims of the lesser ones, apparently forgetting that in them often are implanted the germs of disease which flourish, undermining the vital fabric, while they seek for other causes until death—a merciful visitor to the sufferer—relieves them of all further care.

Railroad Sanitation—Its Objects and Advantages.

(Read at the Savannah meeting of the American Public Health Association, 1881).

By S. S. Herrick, M. D.

A.—Its Objects.

The following are conceived to be appropriate objects for a railway sanitary system:

1. A surgical and medical service, designed for the relief of sufferers (passengers and employees) from the casualties of travel upon the lines, for affording medical attendance in ordinary diseases contracted by employees, and for superintending their personal hygiene.

2. Physical examination of those engaged in the movement of trains, with reference to defects of sight and hearing and diseases of the heart, lungs and great blood-vessels, as a prerequisite to their employment.

3. Inspection of the sanitary condition of passenger coaches, of grounds and buildings, and recommendation of improvements wherever needed. As occasion presents, counsel in the selection of sites and in the construction of works and buildings.

4. A meteorological service affiliated, if practicable, with the National Signal Service.

5. To guard against danger of infecting railroad coaches, stock and goods cars, by transportation of diseased persons or animals, or of infected personal baggage or merchandise; against danger of conveying contagion from one point to others, and against injury to stock *in transitu* from overcrowding, long confinement and deprivation of food and water.

6. To confer with national, state and local sanitary authorities, with the view of obviating or moderating restrictions on travel and traffic; and to represent the company in sanitary and quarantine consultations, wherever its interests may be affected.

B.—Its Advantages.

1. Relief to the victims of railway accidents is generally recognized by the managers as a measure of policy as well as justice, and many of the most important companies have arrangements for carrying out this purpose. It is hardly neces-

sary to say that the whole relief service of a company should be under the superintendence of a single medical head, for the purpose of securing uniformity and efficiency of action, and economy in cost.

There is good reason to believe that a system of medical attendance upon employés could be so organized and administered as to conduce materially to the advantage of both the men and the corporations employing them.* The merchant marine of the United States has a system, for many years in successful operation, which is of incalculable benefit to mariners and is self-supporting, from a tax of forty cents per month upon all who are entitled to its benefits. This is a model worthy of imitation.

It is undeniable that the efficiency of men in any organization is in direct relation to continuity of action. Interruptions by sickness are among the most common and the most serious disturbing causes. To reduce these to a minimum and to secure with the least possible delay the return of trained employés to their familiar duties, is an object of great importance. The certainty of having medical relief within reach at all times would operate powerfully in producing contentment and regular continuance in their occupations.

In large cities, established general hospitals would be available for this kind of relief, as well as for the surgical casualties before mentioned; but the individuals there treated for railroad companies should be under supervision of their own medical officers, to prevent abuse of privilege and secure the best attendance. At other points suitable infirmaries should be established and placed in charge of local practitioners, employed by special contract for specified duties. These would conveniently be located at the termini of roads and at the intermediate points where work-shops are situated and the crews of trains reside. No compulsory hospital fee need be imposed, for the advantages of the system would be ample inducement for its voluntary adoption by the men, and it would

*A newspaper paragraph recently announced the projected establishment of a hospital at Aurora, Ill., by the Chicago, Burlington and Quincy Railroad Company.

naturally be extended so as to include their families in its scope and give them attendance at home.

But we must not lose sight of prevention, which is proverbially of manifold value above the cure of disease. The single example of malaria, so prevalent throughout the greater part of our country, so mighty a destroyer of life and so potent a disturber of man's industries, affords a boundless scope for the exercise of personal prophylaxis under medical supervision. The crews of night trains are especially liable to malarial affections, which might be mostly prevented by suitable regulations, including the proper preventive remedies.

It is obvious indeed that precautionary measures, under medical superintendence, could advantageously be used to guard men against the whole list of preventable diseases. Besides, there would be great gain in early treatment of ordinary ailments, which would be encouraged by placing facilities within reach of all.

The medical adviser would also, as far as practicable, secure men, while on the route, against prolonged fasting and deprivation of sleep, against unnecessary exposure to cold and storm, and secure for them wholesome food and water.*

It might be supposed that the instinct of self-preservation on the part of men, aided by the good sense of managers, would clearly lead to suitable hygienic measures; but the same supposition applies to people of all classes and occupations, while sanitarians are convinced that at least half of the ailments of mankind in civilized life are strictly preventable. It is generally agreed that private individuals and corporations are more successful than government in the execution of important works with dispatch and economy; but the government shows more wisdom in caring for the lives and health of its servants, both in curing and in preventing disease.

*It is not unusual, during a busy season, for the crews of freight trains to be kept on duty for 36 hours or more, without opportunity for sleep. This is not only a wrong to the men, but it endangers trains very seriously. I have the recent testimony of an intelligent engineer, that he had lighted a cigarette to keep himself awake at his protracted task and woke to find his clothing on fire from the cigarette which dropped from his lips while he was overcome by sleep.

2. We have just seen that neither employés nor employers recognize the value of personal hygiene for the avoidance of preventable diseases; but it might rationally be supposed that the former would not willingly risk their lives, nor the latter the lives and property of their patrons, as well as their own property, on railroad trains with blind men in charge. Yet this risk is actually run, and we know not how often, on most of the railroads in this country. Observation has proved that about 4 per cent. of men are incapable of distinguishing between the colors used for signals*; and a still larger proportion cannot recognize objects far enough to stop a train in time to escape danger. Under certain circumstances these men are practically blind, and occasions come when disaster ensues.

It is hardly necessary to mention here that an act of Congress requires all pilots of steam vessels carrying the American flag at sea and those navigating the waters of the U. S., to pass an examination testing their color sense and visual acuteness; and that the legislatures of Connecticut and Massachusetts have made the same requirement of railroad engineers, firemen, conductors and signal men. It is probable that similar provisions will be enacted in other States at no distant day, unless railroad companies forestall action by voluntary adoption of an efficient system carried out by their own medical officers. Indeed there is good evidence that this will gradually or rapidly become an established fact upon the most important roads, since it has already gone into effect upon a number; for instance, the Penn. R. R., and others leading out of Philadelphia, the Ill. Central, etc.

The Board of R. R. Commissioners in Massachusetts reported, in 1880, that such examinations are practiced generally on the railroads of England, France, Germany, Italy and Sweden, although not required by law; while they are so required in Holland. It thus appears that the railroad companies in the most enlightened countries of Europe have rendered legislation on this subject unnecessary.

*It is known that color-blind men may distinguish between colored lights by their intensity; but with a light burning low, and in storm or mist, they must fail.

At the present time the most important question at issue is, whether these examinations may be made by laymen, officers of the companies, or whether they should be made exclusively by medical men or experts. The Massachusetts R. R. Commissioners hold that the former are competent, but this is controverted by the experts appointed by the Connecticut Board of Health to enforce the legislative act of that State. Thus Prof. W. H. Carmalt, M. D., of Yale College, one of the examiners for Connecticut, testifies that experience has taught him his former error in supposing that laymen might make the examinations. He found that the reports of railroad superintendents and others who had made examinations were often incorrect, the tests being applied either superficially or in ignorance of the subject: for instance, they failed to distinguish between true color-blindness (a fatal defect) and color-stupidity (simple ignorance of the names of colors). Besides, cataract, in any degree, is a fatal defect, but one which a layman is incompetent to detect in an early stage. In short, a medical examination is needed for the protection of the men as well as the public.

Again, men occupying positions vital to the safety of railroad trains might suddenly be stricken down at the post of duty through some organic defect of the heart, or aneurism of a large artery, or pulmonary hemorrhage, which would surely be anticipated by a careful medical examination, but not otherwise.

Deafness, too, would be a disqualification, but a layman should not be expected nor required to define the boundary between admission and rejection or to apply the tests.

It appears, from the testimony of Prof. Carmalt, that the principle of natural selection soon eliminates railroad engineers laboring under serious visual defects, for out of seven rejected by him for color-blindness he found only one who was over 32 years old. The average age was 26 ½ years. These, like their elder *confrères*, would be eventually condemned as incorrigibly unlucky, but perhaps at frightful cost of life and property.

Another important consideration is, that accidents traceable to such physical defects of employés as could be detected by medical examination would certainly place the company at fault and responsible for damages to person and property; while, on the other hand, the absence of such defects would go far in exoneration from such responsibility. Moreover, in case palpable physical defects be proved, claim for exemplary damages would be made, and probably allowed.

3. If it be admitted that the personal hygiene of railroad employés is a matter of any importance to the company, it follows that the advice of a sanitarian would be valuable in relation to passenger cars, to buildings and grounds, and in the selection of sites and the erection of works and buildings. It is not supposed that practical railroad managers regard disease as a special dispensation of providence, when they build without due regard to drainage, removal of excreta or proximity to marshes. These and other similar blunders simply indicate neglect to secure suitable sanitary advice, and not a spirit of fatalism; but the same managers are careful to have the services of competent mechanical engineers and builders. The time is happily past when sanitation can be stigmatized as a profane scheme to cheat divine providence; let us hope that managers of corporations may soon cease to count it a fruitless tax on their revenues. "Public health is public wealth" has some time been repeated for an axiom, and corporations aim at securing a share of the public wealth; can they therefore either justly or safely disregard the public health?

4. For some years the national government has sustained a meteorological service, for the benefit of the agricultural and commercial interests. These are the very interests which support railroads, and it is plainly an advantage to the companies to co operate with and extend this service, both to enable them to guard their own property from damage by storms and for the benefit of the agriculturists who give them business. The cost would be trivial, for the observations could be made and forwarded by telegraph operators, and it is not improbable that the necessary instruments would be furnished by the government. The affiliation of this branch of railroad sanitation with

the National Signal Service would be so manifestly advantageous to all concerned, that it could not fail of adoption.

5. Railroad companies are constantly liable to receive persons and animals affected with contagious diseases for transportation in their cars, and no one would assert that it is proper to admit them. It is too much to expect that the ordinary officers of a company could be depended on to recognize and ward off all danger of this kind. Some advantage might be derived from printed rules, prepared by a medical man, but instances would arise calling for a medical diagnosis; and then a physician's certificate should be obtained to settle the doubts of the station-agent or train-conductor before admitting a suspected person on the train. As animals are generally shipped only at a few important stations, it would be easy to have the herds inspected by an expert beforehand.*

It is beyond question that many animals are destroyed, and still more injured, during transportation by overcrowding and by confinement too long without food and water. Strict rules should be framed to govern this kind of traffic, and nothing short of special supervision can secure their enforcement. Safety requires that this supervision should be exercised from a sanitary standpoint, and so constantly that its influence may never be wanting.

6. The experience of the yellow fever epidemic of 1878 taught the managers of railroads running out of New Orleans particularly the usefulness of medical officers in their service during actual or threatened pestilence. The judicious efforts of sanitarians in 1879 prevented a general resort to the shotgun quarantines which characterized the year 1878. Had there been a sanitary organization in 1878 upon the railroads, it is certain that they would have been spared much pecuniary loss, and the people along their lines much needless alarm and deprivation of the comforts of life.

In the presence of danger from pestilence, people look to their physicians. The medical adviser of a railroad company

* Since the above was written, a Kentucky stockdealer has informed me that he suffered a loss of more than $8,000 a few years ago from glandered horses and mules, which he is satisfied were infected in railroad cars. This he was constrained to bear without recourse to the transportation companies, from difficulty of establishing proof and aversion to litigation.

can come to a rational and probably satisfactory understanding with his professional brethren; and, if the people are distrustful, he can bring other medical men to meet them whom they will trust.

Occasions arise when legislation, or discussion of questions in medical or other bodies, might affect the sanitary and material interests of railroads, and when their accredited medical representatives might be of great benefit. Their value would be most appreciated in their absence, as with life-preservers in shipwreck.

But whatever advantages may be claimed for railroad sanitation, either to the public or to the companies, the question of its adoption by any management will turn upon its probable financial success. It seems to be generally agreed that any system of relief, maintained by a railroad company, is better than to let the victims of accidents shift for themselves and look for reimbursement from the courts. To put the service directly under the general management would be like leaving the workshops or the operation of the road without separate supervision. The superintendence is an expense, but it is not presumed that men are the best judges of what they are to do at a particular time, though they may know how to do it.

As to physical defects, there can be little doubt that it will cost a company more to find them out by a series of accidents, than to pay an expert to discover them before the men are trusted with lives and property.

In fact, every feature of this service is designed to secure the company against pecuniary loss: 1, by reducing the cost of actual disasters to the lowest amount; 2, by adopting precautions to obviate disasters; 3, by preserving the health and securing the efficiency of employés; 4, by avoiding the stigma of "common carriers" of contagion and destroyers of live stock, with its incidental losses; 5, by obviating interruption of business through quarantine obstructions and expensive lawsuits for damages to person and property. It has therefore the essential nature of insurance, with the substitution of the element of *prevention* for that of *reimbursement.* What a gain

would it be to fire and marine insurance, if this substitution could be achieved by any system capable of formulation.

A few remarks upon the *personnel* of a railroad sanitary service might here be appropriate. Suppose 1,000 miles of single-track road to be under the same general management, one medical man should be capable of exercising sanitary superintendence over the whole. But it is to be understood that he must renounce private practice and every other occupation except this duty. Then there should be a district surgeon at every point where the crews of trains shift. The work-shops would naturally fall into this arrangement. District surgeons would attend the hospitals and be sent for in case of accidents within their own or adjoining districts. These surgeons might attend to private practice. Their compensation from the company would be according to a settled tariff for surgical cases. Hospital service and the medical attendance of employés and their families might be at a fixed salary.

Examinations for physical condition of employés would be made and carefully recorded by the chief surgeon, and he would also be the inspector of hospitals and all wounded persons. At every point where cattle in large numbers are shipped, there must be an inspector of stock (a physician or veterinarian), to see that no diseased animals are admitted and the rules enforced relative to overcrowding, etc.

In addition to the above, it might be expedient to make arrangements with local physicians at all important stations along the lines to render service, in case of accidents, at fixed rates of compensation.

I cannot doubt that such a sanitary organization would conduce to the common benefit of companies and employés: to the latter, by contributing to their health and comfort; to the former, by diminishing interruptions and derangements in their operations; while their mutual relations would become more harmonious and friendly, and danger of strikes and riots correspondingly diminished. In like manner its influence would be salutary, as affecting the relations of the company with the public. Notwithstanding the proverbial recklessness of the average American traveler touching his personal safety, there

is a large fraction who value security from preventable accidents and diseases, and would manifest preference for a management where this consideration is recognized. They are the most intelligent and influential portion of the public and the best patrons of transportation companies.

In the rivalry of numerous and competing routes, managers are wont to boast of the advantages which they offer in respect to economy, speed, comfort, and even safety. Liberal expenditures are made to promote speed and comfort, in the confident expectation that they will be returned in augmented business receipts. It is certain that much might be done for promoting safety in the manner herein indicated, and that the public might be invited to appreciate the offer through the usual advertising mediums. There is good reason to presume that many would be sensible to such an inducement and give preference to the safer pathway. Thus the premium on the insurance would be returned, and the saving of life and property would be clear gain.

Remarks on Leprosy as it Exists in Louisiana.

By G. B. UNDERHILL, M. D.

The specific constitutional malady known in our generation as leprosy may be reckoned to be almost as ancient as the human family. Records as to its first appearance among men are wanting. To enter any discussion as to its existence among the Jews before their captivity in Egypt, or to account for its appearance among the Israelites by transmission from other nations prior to that date, would only involve us in an argument of no practical interest or benefit. To say that leprosy is of remote antiquity, and to content ourselves with a brief *resumé* of its history through authentic channels, is all that we deem necessary to bring forward at present writing.

Among the Greeks, Hippocrates treats of a class of cutaneous affections termed λπραι, which he subdivides into several classes, all characterized by hypertrophy and discoloration of

the skin, accompanied by more or less black or white scales. His successors seem to have had no knowledge of the disease as he described it, but from the fragments of Greek literature extant upon the subject, we are warranted in supposing that the disease known as elephantiasis græcorum existed among the earliest Greeks, but to what extent we can form no estimate.

B. C. 95, elephantiasis, according to Celsus, was almost unknown in Italy, but as early as A. D. 2, we have authentic accounts of its prevalency in that country to a limited extent, and later on, A. D. 360, there is unquestionable evidence that southern Europe was teeming with the disease.

In the 6th century we notice the term lepra recurring in the literature of the day as the substitute for elephantiasis, and just about that time the hideous and disgusting appearance of its victims, together with the futility of all efforts directed towards its cure, resulted in the establishment of leper houses which, at a later date, were distributed throughout Europe in every town and hamlet.

At the time of the crusades, and for the two hundred years following, leprosy was at its maximum throughout Europe. The writers of the day ascribed its prevalency as due to the wide-spread want and destitution that prevailed during that period.

From the 12th to the 16th century we find leprosy extensively distributed throughout Italy, Greece, Spain, France, Norway and Sweeden, Denmark, Lyria, Arabia and North Africa—in fact, over the whole known world. It was known under various names and presented various appearances, but still we can but believe that it was identical with the elephantiasis græcorum of Lucretius. Leprosy began to decline in Europe from the beginning of the 16th century, but its decline in Europe was contemporary with its gradual and universal distribution among other countries. Its previous existence outside of Europe is rendered uncertain for want of any authentic records, and most of our information of its progress at this period is derived from Arabian literature.

At the present day leprosy prevails throughout the known world, occurring with the greatest severity in China, India, Central and South Africa, West India Islands, Sandwich Islands, Norway and Sweeden and Demark.

In our own country leprosy is confined to the Pacific slope and a few of the Southern States. Cases which have been under observation in the Northern cities are of no significance, being for the most part imported from Southern latitudes and foreign ports. The earliest reliable history of leprosy in the Southern States is that given by Romian in his Natural History of East and West Florida, A. D., 1776. In his graphic descriptions he clearly identifies the leprosy of that date with the disease which we have among us at present writing.

In 1785, we have the estabishment of a leper house in New Orleans during the administration of Miro. Since that time numerous cases, showing the continuance of the disease in our latitude, have been under observation, but on the whole we have reason to believe that it is on the decrease. Accounts as to the manner of its introduction into North America are too obscure to warrant any mention.

In the summing up of our conclusions as to the causation of leprosy, we will state, they have been arrived at by facts presented in cases uuder personal supervision; by histories of cases under the supervision of responsible and reliable parties, and from facts presented in the latest literature bearing upon the disease.

Investigation into the etiology of leprosy is far from satisfactory.

We shall consider it under two heads, viz:

1st. Its causation by propagation, involving—

a Marriage with the leprous—cohabitation;

b Hereditary transmission;

c Contagion.

2d. Its causation by production, involving—

a Climate, including temperature and soil, race and habits;

b Diet.

The separation of these two causes is essential. Where we may be brought in contact with cases presenting a comming-

ling of the two, we must determine to what extent the relation between them exists,

Causation by propagation. (a.) This cause may be briefly disposed of. We can cite no instance where marriage with the leprous has resulted in the acquirement of the disease by the previously untainted individual. Cohabitation with the leprous is generally followed by no baneful influence. Many examples of long continued married life, where one of the parties were unmistakably leprous have shown the disease not to have been communicated to the other. Intermarriage between the leprous will be included in the consideration of section b. (b.) No doubt many cases of leprosy existing with the parent have for obvious reasons been kept concealed. This fact, however, does not seriously interfere with our statistics, and we can safely state that 75 per cent. of the children of a leprous parent die either directly of the disease, or at their death present some of its characteristics or symptoms. Transmission from the mother is especially noteworthy and we consider its propagation from this source as almost unfailing. Females are more prone to hereditary influence than men, and exhibit symptoms of its acquirement at an earlier date, generally about the age of puberty. (c.) "The propagation of leprosy by contagion is almost universally denied by scientific medical men." Our limited observations in Louisiana and at the Charity Hospital, New Orleans, during the past five years requires our leaning towards the opinion of the majority of our medical superiors. We can present no case in our State or in our hospital which can be reliably traced to contagious influence, nor have we found any spread of the disease among the inmates of the hospital wards, where is present every hygienic, atmospheric and social condition favorable to denutrition and the spread of contagious disease. In certain foreign districts where propagation by marriage, intermarriage and hereditary transmission were made impossible, total isolation of leprous subjects was attended by no spread of the malady. When the laws requiring the isolation were repealed increase of the disease was the consequence, but at the same time the laws pre-

venting marriage and intermarriage were also repealed, and the experiment was productive of no positive result as to the contagiousness of the disease.

Causation by production—

a. Climate, temperature and soil can hardly be considered as productive causes. They may be regarded as exerting some predisposing influence to a small degree. The universality of the disease, appearing, as it does, in such divers and varying latitudes—(Finland, India, China, America)—allows our excluding them as a *de novo* factor in its production. However, it is a fact well worth observation that many places in which the malady exists are situated on the sea board, banks of rivers, and low, marshy, malarious districts. We also notice that the disease develops rapidly among subjects laboring under some depression brought about by profound malarial poisoning.

In reference to race and habits, it has always been noticed that leprosy is not a disease of the higher and refined orders of society. It is found mostly among the filthy and unclean, and to the casual observer seems to be one of the many companions of poverty and want. The supposed influence of race may be accounted for through its causation by hereditary transmission.

b. Diet.—Having had no opportunity for personal observation in this particular we can only sum up the conclusions of those who have given the matter close attention. There is no conclusive evidence to show that any special article of diet either excites or predisposes to leprosy. The fish theory won't hold, from the fact that this disease is met with in localities where not only is fish never eaten, but where the diet is mainly vegetable. That the disease is met with in fish-consuming communities is a circumstance to which no grave importance can be attached.

One peculiarity which has been thought to have some influence in the production of the disease is the absence in the diet of vegetables containing large amounts of potassium. Dr. Hjaltelen mentions the fact that leprosy was much diminished

in Iceland after the introduction of the potato in that country as an article of food.

Much thought and consideration has been given to the consumption of cereals grown on uncultivated lands as being a productive cause of leprosy. British and East Indian investigators have not as yet arrived at any positive conclusions in regard to the matter.

As to the etiology of the disease we therefore present the following conclusions:

1. That the disease is clearly of a specific character, generally due to hereditary transmission. That its hereditary character is not similar to that of syphilis, but more allied to those classes of diathetic disease, such as carcinoma, tubercle and the like.

2. Its propagation by contagion cannot be proved. Its non-contagious character is universally admitted.

3. That climate, soil and race cannot be regarded as positive elements in its causation.

4. That filth and uncleanness increase the liability to and accelerate the progress of the disease.

5. That absence in the diet of certain principles, such as nitrogen, oxygen and potassium, may be considered as negative causes of its production.

Symptoms and Course.—We propose to confine ourselves strictly to the symptoms of the disease as we find it in Louisiana. To attempt a classification in accordance with facts presented in all the literature of the disease, would plunge us into a chaos of confusion and be a source of no practical benefit. The malady in our State is of the same general type as it exists in other localities, yet it presents certain characteristics not coinciding altogether with the observations of investigators elsewhere.

One fact in reference to its course we will present here. The earlier the disease manifests itself the longer is its duration. Women are attacked earlier as a rule than men, and bear it longer and more obstinately.

The precursory symptoms vary in their character and duration. They may become manifest in an acute form and continue for a short period; then disappear for years and recur

with greater intensity, to merge gradually into the complete development of the disease. They may be present for only a brief period and be immediately followed by all its local and constitutional symptoms.

The precursory symptoms most generally presented are recurring chills and fevers following each other either closely or at long intervals. The patient complains of a feeling of languor, uneasiness and lassitude, and manifests a decided indisposition towards performing any work or exertion, mental or bodily. Continuous nausea and anorexia are prominent. The nervous symptoms are of depressing character, sometimes trivial and sometimes profound in their nature. The sexual desire at this period is lowered, and altogether we have a line of symptoms which would indicate the gradual approach of some serious disturbance of the organism.

Permanent Symptoms.—In examining a leprous subject for the first time, we notice four facts—discoloration, nodulation, anasthesia, and more or less complete impairment of the special senses. One set of symptoms affecting the protective investment, and one set of symptoms the nervous economy of the body. These symptoms, for sake of convenience, we shall divide into—

1. Tubercular Symptoms.
2. Nervous Symptoms.

Before proceeding, we will advance our belief that in Louisiana leprosy is a disease admitting of no varieties and rarely any grade as to intensity. In Louisiana the tubercular and anasthetic varieties of other countries do not exist separately. They constitute with us one well defined specific disease, presenting symptoms as above stated, so mingled and associated as to be incapable of separation.

Tubercular Symptoms.—The first symptoms usually noticed by leprous subjects is the appearance on the face, neck and extremities of circumscribed livid blotches or maculæ, slightly elevated above the surrounding surface, generally following some slight febrile movement or feeling of general malaise. These subside after a time, but re-appear in greater numbers

and extent, involving the whole surface of the parts aforementioned. These blotches lose their livid appearance, which is replaced by pigmentary stains of a dull bluish tint. This bluish appearance eventually turns into a peculiar reddish brown and the bronze color of the leper is permanently established.

Now commence a series of general complaints, the patient referring them to rheumatism, erysipelas, or some slight indisposition. There are peculiar pricking or tingling sensations in the hands and feet with intermittent numbness. Then follows diminution of common sensation in the parts affected. The hands, face, and feet become conjested and swollen. Nodular elevations are developed in the discolored patches before mentioned, occurring first either on the feet or hands. These nodules are imbedded in the substance of the cuticle becoming more and more elevated. They sometimes coalesce and form irregular nodular masses varying in size from that of a pea to a pigeon egg. The disease is now fairly under way.

These tubercles are flattened, hard and smooth; slightly movable and generally painless. When ulceration takes place the whole mass softens, its surface becomes excoriated, and the exudation of a white serous fluid follows. The process of repair is rapid and results in the formation of a hard, white cicatrix. While ulceration of these nodules is in progress the patient loses his anxious and depressed appearance. He becomes less morose and at times is even cheerful. His constitutional derangements have all subsided and he becomes communicative and more hopeful. When repair sets in all this ends, and he returns to his former condition. This ulceration of the tubercles on the extremities frequently affects the deeper structures and oftentimes moist gangrene supervenes, runs a rapid course, and as usual results either in the loss of life or limb.

These tubercles are deposited more especially in those situations where there is loose and flabby cellular tissue. Their continuous growth gives rise to characteristic deformities of the exposed portions of the body. The face takes on a leonine expression, being divided into alternate elevations and fissures.

The ear is enlarged in size, the lobule being particularly elongated and thickened. The fingers and toes become stiffened and deformed, the former being flexed, appearing like the claws of a cat.

The growth of these tubercles at first is attended by an increased functional activity of the sebaceous glands which renders the skin oily and shining. Then follows the atrophy of these glands with corresponding results. Cotemporary with this is the loss of the integumentary appendages; the toe nails become detached, the finger nails becoming bluish and rounding, giving the fingers a clubbed appearance. The eyebrows and eyelashes fall away and in rare instances the hair of the head is entirely lost. In all cases the latter is diminished in quantity.

Associated with the foregoing symptoms we have anasthesia of the parts upon which the tubercles appear, more especially along the course of the ulnar, anterior and posterior tibial nerves. These nerves are implicated in the thickening process and become cord-like and knotty. The extensor and flexor muscles of the hand and feet undergo atrophy, causing diminution of their functional power as before stated.

The mucus surfaces present no less important and serious changes, but these occur at a later period in the course of the disease. The mouth is the first to suffer, and with it the tongue, which becomes enlarged, thickened and marked by deep fissures. The entire sneiderian membrane next becomes involved. The nodules appearing on it are small but numerous, ulcerate rapidly, discharging an offensive viscid fluid during the process. In extreme cases we notice loss of the nasal bones and cartilages. In quick succession follows the invasion of the mucus surfaces of the fauces, pharynx and larynx. The tubercular progress and termination is similar here to that occurring in the skin, but somewhat quicker in its course and results. Olfaction and taste are progressively diminished. The voice becomes husky, but sometimes fine and whispering. As the larynx becomes involved we have increased difficulty in respiration until at length the obstruction becomes so great that

tracheotomy must be resorted to to prolong life. The propriety of performing this operation will not be discussed. The trachea and bronchial tubes next become affected, but here the deposition of tubercular deposit ceases. The lung structure invariably escapes, which is probably due to the fact that death intervenes before the disease can progress so far as the aveolar passages.

The conjunctivæ are always involved. They are congested and infiltrated, forming a thick ring around the cornea, which last gradually becomes opaque. The leprous deposition is thrown out, tubercles are developed, softening and ulceration follow, and the eye is destroyed. All the other serous membranes in the body are likewise affected with similar results. It is not out of place to mention here that, with the exception of the pancreas, the abdominal viscera become subject to the same tubercular deposit, and this deposit occurs not only on their surfaces but also in their substance. The intestinal canal suffers most. A specific diarrhœa ensues, which generally results in death. This fact is more noticeable in men than in women.

Post mortem observations have shown that sometimes the semiluna ganglia becomes softened and destroyed, and that the mesenteric glands and coats of the larger vessels are in a measure affected by the tubercular deposit. These observations, however, have not been sufficiently confirmed to warrant an assertion that this condition is constant in all leprous subjects, still we have no reason to argue that it should not be present.

Nervous Symptoms.—Disturbance of local nerve function is a symptom occurring at an early stage of the disease. The hands and feet are subject to peculiar sensations of warmth, burning and itching, accompanied by great tenderness and pain. These symptoms at first are generally confined to some particular point on the members aforementioned, along the course or terminations of the superficial branches of the nerves supplying the part. While these sensations become more extended in the direction of the nerve trunk, loss of sensation is felt at their

primary local seat, and thus we have gradual and progressive anæsthesia. In like manner we have the integument taking on changes which result finally in a permanent, flabby yet shrunken condition of the whole cutaneous surface. A similar process takes place in the muscular structures. They soften and atrophy. Their functions are interfered with in direct proportion to the amount of anæsthesia present. This anæsthesia and muscular atrophy is not confined to the exposed surfaces of the body, but extend throughout the organism to a greater or less extent. The anæsthesia, however, is more pronounced in the face and extremities. As the intensity of anæsthesia advances, the parched condition of the skin is associated with incomplete desquamation. The desquamation is followed by the formation of small bullae or vesicles, which soon become emptied and simply dry up. This drying up is usually the beginning of high febrile disorder, which only subsides on the beginning of the nodular ulceration. [We have noticed this fact in four different patients under personal observation.] We may here call attention to the fact that continuously after anæsthesia sets in the surface temperature is depressed as low as 70°, while the temperature in the axilla ranges from 97° to 104°. Under febrile conditions the temperature is inwardly of a remittent character, the maximum of intensity being in the evening. The regularity of this increased evening temperature is surprising, and we have found it constant in all cases under observation. Under ordinary conditions temperature has a tendency to rise during the decline of the day and early evening, but our observations have not been sufficiently regular to establish any fixed fact in this regard.

With the progress of the disease we have combined with the general anæsthetic condition, local manifestations of an acute character. In one of the already flexed fingers or toes, a sharp lacinating pain in sometimes felt, circumscribed inflammation sets in, necrosis of the phalanges occurs and loss of the particular member follows.

The process of repair in these cases is as remarkably rapid as that following the nodular ulceration. Reflection will at

once distinguish the line of difference between this result and that in which gangrene sometimes follows the destructive process involving the tissues after the suppuration of the nodules. The mucus membranes suffer corresponding changes, begetting loss of sensation and function, but to a less degree.

At that point where we begin to notice these changes in the mucus structures grave cerebral disturbances are generally manifested. The patient becomes flighty and a prey to strange fancies and illusions. General constitutional symptoms which heretofore have been only slight and intermittent now become serious and permanent. Performance of function becomes slowly and progressively suspended in all the vital organs and the inevitable result is a prompt sequence.

A brief summary of the symptoms of leprosy presents the following facts:

1st. The precursory symptoms are such as would point to the approach of any serious constitutional malady.

2d. That bronze discoloration and a flabby, shrunken condition of the skin is usually the first permanent symptom and generally associated with local anæsthesia on the extremities.

3d. That nodulation, the result of leprous tubercular deposit, occurs at a later stage of the disease, progresses slowly and involves all the tissues and viscera of the body, the lungs and pancreas excepted.

4th. That death is the termination of the disease in all cases. It results either from exhaustion, blood poisoning, asphyxia diarrhœa or dysentery. That death from exhaustion or blood poisoning is common to both sexes in any stage of the disease after nodulation sets in. That death from asphyxia is most common among women and occurs late in the career of the disease. That death from diarrhœa or dysentery is most common among men, occurring generally at a late date. That the progress of the disease is slow. Mild cases generally continue about twenty years. Severe cases terminate on an average after nine to twelve years.

Pathology—Morbid Anatomy.—Under this head we are forced to present facts established from other than personal observations. Elephantiasis is a disease which is chiefly characterized by the production and the infusion into the fibro-cellular tissues of a new granulation tissue. The seat of the deposit varies in accordance with the predominance of the nervous or tubercular symptoms. When nodulation has not as yet appeared the new tissue is semi-transparent and is deposited in and outside of the nerve tissue. When we have both symptoms combined and in a state of progression, we have the deposit not only in the nervous tissue, but also in the fibro-cellular tissue, presenting in this tissue more opaqueness than in the nervous tissue.

In advanced cases the new granulation deposit is present in the surfaces of and substance of all the internal organs except the pancreas, but where nodulation has not set in of course the deposit is wanting in the viscera. In one or two cases, as before stated, the solar plexas and semi luna ganglia have been observed to be infiltrated and softened. Whether or no this softening is due to post mortem changes, future investigations will have to determine. Observations on other portions of the sympathetic system have not been made.

The tubercular deposit, on the surfaces of the body, which is followed by the formation of nodules is situated in the corium. It lifts up the papillary layer, and extends to the subcutaneous connective tissues; this growth progressing presses upon and finally obliterates the hair follicles and sebaceous glands.

We are indebted to Drs. Vandyk Carter, Danielson and Boek for no little information touching the morbid anatomy of the disease where anæsesthia is the prominent symptom.

The two latter hold that the spinal cord first becomes indurated, its gray matter discolored yellowish and devoid of vessels. That its membranes are infiltrated with an albuminous deposit, a layer being found between the arachnoid and pia

mater. The sheaths of the nerves also present the same discoloration and induration.

Dr. Carter on the other hand claims that the lesions primarily affects the peripheral extremities of the nerves, and travels towards the cord but never reaches it. We thus see that between these prominent investigators the point of contention is not in the character of the lesion but simply in the primary seat of the disease.

From the character of the symptoms generally presented, we must agree with Dr. Carter.

The liver and kidneys are generally found in a state of fatty degeneration.

The muscles are atrophied and fibrous, not fatty. The blood contains albumen in excess, with decided diminution in the number of red corpuscles.

The bones in all cases suffer gradual molecular destruction.

To recur to the condition of the nerves, we will finally state that they are swollen, yellowish gray in color, semi-translucent, rounded and firm. The gelatinous albumenoidal deposit is situated in the funiculus, not in the connective tissue; is not continuous, but is deposited at intervals, thus giving rise to the firm, knotty appearance of the nerves. The nerves chiefly affected are the anterior and posterior tibial, musculo cutaneous branch of external popliteal, ulnar and radial. As to the cause and origin of this deposition in the nerve structure, we have nothing to say and everything to learn.

Treatment.—Leprosy is an incurable disease from its inception to its termination. The only method to be adopted is a general one, *i. e.*, to prevent its propagation. After the disease has manifested itself, our measures can best be directed only towards its palliation. We can strengthen and fortify the organism the better to bear its progressive onslaughts, but we can do no more.

New Orleans Medical and Surgical Association.

Eighth Annual Meeting of "New Orleans Medical and Surgical Association" held December 10th, 1881, Dr. Davidson in the chair and a quorum present.

On motion of Dr. Carson the minutes of preceding meeting were dispensed with. Dr. W. H. Watkins under "Reports of Committees," made his report as chairman of Committee on "Hall and Arrangements." He said that every thing belonging to the Association had been moved from the room at the corner of Camp and Natchez Alley to the one now occupied. The present room, for many reasons, was more desirable than the one just vacated. As chairman of "Arrangement Committee," he stated that everything had been done to make our annual meeting pleasant. At the adjournment of the Association all were expected to go to Marchal's restaurant where the annual supper awaited them. Dr. Watkins received the unanimous thanks of the Association for the able manner in which he had discharged the duties imposed on him. Dr. Levy, Secretary and Treasurer, then submitted his annual report, showing a balance in his hands of $108 15. The Association accepted Dr. Levy's report unanimously. The officers for ensuing term were next elected: Dr. Joseph Holt, President; Dr. S. T. Shepard, Vice-President; Dr. David Barrow, Secretary and Treasurer. These gentlemen thanked the Association for the honor conferred.

Dr. Crawcour, the "Annual Orator," now delivered his address: Subject—Modern Scientific Medicine, its Influence on the Prevention and Cure of Disease.

After thanking the doctor for his able address, on motion of Dr. Holliday, the appointment of "Standing Committees" was postponed until next meeting.

Roll being called, the meeting adjourned to Marchal's restaurant, where the annual supper was partaken of.

DAVID BARROW, M. D.,

Secretary and Treasurer.

Lincoln Parish Medical Association.

Medical Association of Lincoln parish met at 2 o'clock P. M., on Tuesday, December 6th, 1881. The Association was called to order by the President, Dr. T. C. Osborn.

The roll of members being called the following answered to their names: T. C. Osborn, President, J. T. McDowell, Vice-President, C. H. Griffin, Secretary, N. B. Null, Treasurer, and A. C. Simonton.

Minutes of last regular meeting read and adopted.

Report of Dr. T. C. Orborn on disseminated Cancer of the Liver was read. No discussion.

Ordered by the Association that the report of Dr. T. C. Osborn be furnished the New Orleans Medical and Surgical Journal for publication.

General discussion on the subject of Worms in the Human System was entered into by Drs. Simonton, McDowell and Null.

Reports at the next regular meeting as follows:

Dr. M. B. Pollard: On the Topography, including fauna and flora, with a diagram of the boundaries and townships of Lincoln Parish, La.

Dr. Griffin: On the Hydrography, including the mineral and saline springs of Lincoln Parish, La.

Dr. Simonton: On the Surface Geology, including the fossil, fauna and flora, and mineral resources of Lincoln Parish, La.

Dr. Null: On the Medical Botany of Lincoln Parish, La.

Dr. McDowell: On the Population, including the variety of races in Lincoln Parish, La.

Dr. Kendall: On the Climatology, including the barometrical, altitude and meteorological mean of Lincoln Parish, La.

Dr. Osborn: The President's Annual Message to the Medical Association of Lincoln Parish, La.

Association adjourned to meet on the first Tuesday in January next.

C. H. GRIFFIN,
Secretary M. A.

Current Medical Literature.

ON CAUSTIC AND ANTISEPTIC TREATMENT OF THE CONJUNCTIVAL INFLAMMATIONS, ESPECIALLY BLENORRHŒA NEONATORUM.

A. Graefe.

The question about the principles of treating the blenorrhoic ophthalmia has caused much discussion amongst ophthalmologists. The caustic treatment hitherto rendering excellent service stood in danger of being abandoned and of being substituted by an antiseptic treatment, one remedy rapidly superseding another. According to the author's opinion it is entirely unjustified to give up the caustic treatment of the succulent blennorrhœa recommended and methodically carried out by v. Graefe.

The antiseptic remedies have merely a paraphylactic value; their use is indicated when one eye is attacked by blenorrhœa and the other eye is threatened. In such cases the author usually irrigates the conjunctival sac of the eye which is threatened, two or three times a day with a solution of carbolic acid (1½–2 per cent.), both eye-lids being completely everted, and when the irrigation, which lasts for 1 to 2 minutes, is over, he applies cotton soaked in the same solution, fastened by a bandage, which remains till the next irrigation. [This may be very well theoretically, but practically it is very difficult if not impossible to keep a bandage in position on a new-born child's eye; there is, besides, an actual danger in having contagious matter from the diseased eye, or water from the compresses, contaminated with the discharge absorbed by the bandage and directly transferred to the healthy eye. It is accordingly to our opinion safer simply to point out to the attendant the contagious character of the disease and have the child well watched. Rep.] As long as contagion is possible this treatment is continued. In the lying in-hospital at Leipzig, Credé has introduced the method of applying a two per cent. solution of nitrate of silver to the conjunctiva of all new-born children, followed by applications of a two per cent. solution of salicylic acid for 24 hours. At Halle, Ohlshausen has the conjunctival sac irrigated by a two per cent. solution of carbolic acid, and he, as well as Credé, have found that blenorrhœa neonatorum has become strikingly rare since the introduction of this method. The author points out that all the new-born must be treated in this way as it not seldom occurs that they get blenorrhœa in cases where the mothers had no blenorrhœa from the sexual organs at all. Immediately after the confinement the eye-lids and the surroundings of the eye should be cleaned with cotton soaked in a solution of carbolic acid, and when the child has been

washed, the everted eye-lids should be well irrigated with a two per cent. solution of carbolic acid by means of a dropper. As the time of incubation for the blenorrhœa is 2 to 5 days, the child must be well watched during this time, and as soon as the first symptoms of the disease appears, recommence the irrigation.

Experience has shown that treatment with caustics is suitable in cases only where the secretion is purulent and where the succulence of the lining membrane allows us to expect a speedy discharge of the eschar; it is consequently not suitable neither in the diphtheritic inflammation, where the exudation coagulates nor in the first 2–3 days of the existence of the blenorrhœa. In the beginning the eschars adhere for too long a time even when using weak solutions. It is better during this period to make applications of ice water or small ice bags day and night, and every half an hour syringe the slightly-opened eye-lids with a solution of borax (4 pr. ct.) or of carbolic acid (1½–2 pr. ct.) The caustic treatment is commenced on the third or fourth day, and it is best to use in the beginning a solution of nitrate of silver of 1½ pr. ct. (gr. vii–℥ i); if in half an hour the eschar is detached a 2 pr. ct. solution may be used (gr. x–℥ i). As a general rule, the longer the inflammation has lasted, the stronger the solutions may be, and in cases which have been neglected for three or four weeks, we may use a 4 pr. ct. solution (gr. xx–℥ i) or cauterize with the mitigated crayon of nitrate of silver. Usually it will be sufficient to cauterize once a day, only in neglected cases, and in unusually obstinate cases it may be necessary to repeat the cauterization twice a day. If the lining membrane should bleed considerably, it should not be cauterized, neither if an eschar be yet adherent. In using the weaker solutions, it is sufficient to irrigate with water after the application, but it is necessary to neutralize with kitchen salt immediately after applying the stronger solutions or touching with the crayon. It is preferable to have both eye-lids everted at the same time, but if this manœuvre does not succeed (and most often it does not, being in itself quite often a difficult job to evert the eye-lids of a new born baby—Rep.) the eye-lids may be everted successively. After each cauterization, cold applications should be made for ½-2 hours. The treatment must be continued until the swelling decreases and the yellow discharge appears more liquid and greyish (transparent); consecutively weaker solutions may be used, but the treatment ought not to be discontinued too early, as otherwise a relapse may easily occur. As to the cornea, there is usually no danger before the 4th day, and after the 14th day all danger for the cornea may be considered over, if up till that time it has not been affected. [Although we do not know of any case of blenorrhœa, and especially blenorrh. neonatorum, which did not finally get well, when properly treated and put under treatment before irreparable damage had taken place, it

has often enough occurred to us to see the just recommended treatment with caustics fail, and that just under circumstances where caustic treatment was indicated by the succulent condition of the lining membrane and the abundance of the discharge; the stronger solutions of nitrate of silver, even the application of the mitigated crayon used steadily had apparently no influence whatsoever upon the disease; a change of treatment, using simply solutions of alum, or borax, or boracic acid, or a weak solution of sulphate of zinc applied frequently during the day would then give more satisfactory results and make the disease disappear. On the other hand, it has occurred to us to see the blenorrhœa continue to exist in spite of diligent washing and syringing with these weak solutions, when a few energetic applications with a stronger solution speedily would change matters. This disease is according to our experience often capricious and does not always yield to the treatment as well as we might anticipate.—Rep.]

As to the treatment of the much more seldom occurring diphteritic conjunctival inflammation, the author points out that the treatment has no great results to show. Cold applications, irrigations with solutions of carbolic and boracic acid, delicate removal of the secretions, splitting of canthus extern, are the means the author has most faith in; sometimes he also uses in unctions as recommended by v. Graefe. (Volkmann, Samm. klin. Vortr. No. 192—Schmidt's Jahr; Ugeskr. f. Laeger, Sept. 3, 1881).

NERVOUSNESS RESULTING FROM INTEMPERANCE.

We have found Celerina exceedingly valuable in the treatment of nervous headache, nervous exhaustion, and other associated ailments of women; but the cases to which we now desire to call attention, where the Celerina is of inestimable value, are those suffering from nervousness resulting from intemperance. Every practitioner of medicine meets with such cases. Men, and sometimes women, come to us trembling and apparently exhausted, all from the effects of intemperance. Such cases are approaching delirium tremens. Celerina is the most appropriate prescription we can give them. A few doses of bromide of potassium may be given, alternated with the Celerina, at first; but after this, for permanent effects, we depend upon the Celerina.—*American Medical Journal.*

MANUFACTURING PHARMACY IN THE GREAT WEST.

Eastern manufacturers of pharmaceutical and chemical products will not be able much longer to occupy the Western and Southwestern markets to the extent they have heretofore. Several Western firms are already making large quantities of

this class of preparations, and the news comes to us that the well known and enterprising firm of Richardson & Co., of St. Louis, are getting ready to manufacture a comprehensive line of pharmaceutical products. They are fitting up extensive and complete laboratories with the most approved machinery and apparatus, and quietly state that they do not intend to spare either money or labor to produce goods equal to any in the market. Professor Oscar Oldberg, formerly of Washington D. C., is going to have charge of their new works, and, with the manufacturing conducted under his personal supervision, the ambition of Richardson & Co. to compete successfully in all respects with the best Eastern manufacturers is likely to be fulfilled, for the energy and means of that firm leave no doubt that they will carry out what they undertake. As to the choice they have made in engaging the services of Professor Oldberg, we congratulate both parties. For a number of years he was the Medical Purveyor of the United States Marine Hospital Service; he is a member of the Committee of Revision of the United States Pharmacopæia, and also of the last International Pharmaceutical Congress, and is the author of the *Unofficial Pharmacopœia*, etc. He has, after a careful survey of the whole field, chosen the Great West as his future sphere of operations, where he will have ample opportunity to put his scientific training into practical use, and naturally enough he gravitated to the most energetic house in the trade. Messrs. Richardson & Co. hope to have some of their new goods on the market early in the new year, including fluid extracts, extracts, elixirs, etc., and a descriptive list of their preparations is promised as soon as practicable.—*St. Louis Medical Brief.*

PYÆMIA AND SEPTICÆMIA.

Symptoms.— These two diseases have a list of symptoms which closely resemble each other, although I believe that certain distinctions may be drawn which will help the practitioner to distinguish them during life. Of course, the etiology will often prove a most important factor in the diagnosis, and a prevailing epidemic of pyæmia in a hospital or the history of a positive exposure of the patient to this miasm would also be of the greatest significance. As has been shown in previous pages of this paper, the absence of a wound does not preclude the possibility of pyæmia, since the lungs may unquestionably act as a means of transmission of the pyæmic miasm; while the existence of a suppurative phlebitis does not necessarily depend upon an open wound,* although often associated with

* A case is reported by Tweedy where pyæmia followed a blow upon the thigh. Lee also reports a similar result from a contusion over the patella. Savory and Bristowe furthermore support this position, and thus sustain the embolic theory.

one. It must be also borne in mind that the two diseases may possibly co-exist, since there is nothing remarkable in a suppurative phlebitis being developed in connection with a general systemic infection from decomposing animal matter, nor is it beyond the bounds of posibility for the blood to be affected by two distinct conditions at the same time. We frequently see scarlatina and diphtheria co-exist, and yet no authors now claim that the two diseases are identical in their pathology or symptoms. It will help us in our study of the symptoms of these two diseases, to review first those of pyæmia, and subseqnently to mark such points of distinction as may be safely regarded as especially diagnostic of the condition designated as septicæmia.

Pyæmic patients are attacked with a more or less violent fit of shivering,* which may have been preceded by no premonitory symptoms, but which usually follows a diarrhœ, a hemorrhage, some form of diffuse inflammation, an erysipelas, a phlebitis, or some form of injury. There is a general trembling and chattering of the teeth, the limbs are usually brought close to the trunk, and the surface temperature apparently falls, but actually rises in some instances. It becomes difficult for the patient to converse during the chill, and the speech is short and interrupted. The countenance is of a leaden or yellowish color, resembling that of approaching jaundice, and indicates to the physiognomist a sense on the part of the patient of great impending danger. All of the features seem small and contracted. The pulse becomes soft, rapid, and small in volume. In a longer or shorter space of time, varying from ten to fifty minutes, the surface temperature becomes elvated above the normal point, varying from 102°–105°†—and a stage of tranquil perspiration follows the fever.

As the case advances, the fits of shivering recur; sometimes with perfect regularity, following the hour of the first chill, while, in other cases, the course of the chills is erratic. The same fever and sweat, as at the onset, follows each attack of the shivering to a greater or less degree; the wound (if present) gradually shows evidences of unhealthy action in the character of its granulations and discharges; the patient seems exhausted by fatigue and develops the "*coma vigil*," with occasional periods of delirium, or passes into a deep stupor; the respirations tend to become shorter and more frequent; the inspiratory efforts are labored; gradually the breath acquires a sweetish or purulent odor; the joints often become the seat of suppuration, and fluctuate; the skin grows yellow, as if jaundiced, and day by day this discoloration deepens; finally, the sufferer often cries out with painful cramps in the side, distress in the calves of the legs, or articular pains.

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* After operations, the symptoms of pyæmia may commence at any time from the second day to the third or fourth week.

† The temperature of pyæmia seldom exceeds 104°, and commonly presents distinct fluctuations.

Between the fourth and eighth day,* in a typical case, the evidences of the protracted struggle reveal themselves in the dull eye, the cornea of which has lost its lustre; the tremulus and rapid pulse; the development ot subsultus in the arms and legs; the loss of power of the bladder, which fails to empty itself; a peculiar weakness of the voice approximating true aphonia; a dry tongue, with the lips and teeth encrusted with sordes; and an extreme emaciation of the body. Certain vague types of paralysis are occasionally developed during the latter stages of this disease. The lungs often exhibit the physical signs of an existing bronchitis or pneumonia; and the vesticular murmur is distinctly heard as the air seems to be carried with dificulty to the alveoli. There is often pain about the head, and the patient, restless and irritable, fails to obtain accustomed sleep.

When any special portion of the body becomes the seat of local lesions, new symptoms usually arise which tend to point toward the part especially involved. If the nervous centres are implicated, delirum, rarely of a violent character, is often developed in connection with pain in the head, and the patient tends to grow heavy and drowsy, answering questions only when aroused, and then with indistinctness and some hesitation. Lesions of the thoracic organs are indicated by cough, dyspnœa, hurried respiration, plueritic and pericardial pains, and often by a sense of weight in the region of the heart. An increrse in the jaundiced condition of the skin and sclerotic, with hepatic tenderness point to the liver as the seat of probable changes, and this is furthermore indicated when the patient develops a diarrhœa with copious bilious evacuations, as well as by stools consisting of undigested food, with a noticeable absence of bile. Albuminuria, and the occasional presence of either pus or blood in the urine, strongly suggest some renal complication. It is not uncommon to notice the develpment of dusky patches of skin, pustular eruptions or formations of boils, if the integumentary structures are implicated. A sudden complaint of pain on the part of the patient will often call the attention of the attendant to a joint swollen and rapidly increasing in size, but it is possible for several joints to be found painlessly implicated.

These are the more important symptoms which may be detected in a typical case; but, although they are none of them uncommon, we seldom find them all present. It will he well, therefore, to lay great stress upon the fits of shivering, the sudden and marked exhaustion, the icteric coloring of the skin, the labored and treqeent respiration and the rapid emaciation, as of the greatest value in the diagnosis of existing pyæmia. Should the suppuration of joints and the development of ab-

* Patients have been known to linger for two or even three months.

scesses appear with the symptoms above named, the diagnosis is almost absolutely certain.*

Now it may be asked, how are you to discriminate between those symptoms and septicæmia? I admit that positive distinctions are not always possible, if the case is studied alone from the standpoint of its symptomatology; but there are some diagnostic points which can generally be relied upon when the method of origin of the disease appears obscure, and when the presence of purulent deposits is not to be detected by any method of examination.

It has been my experience, from the study of quite a large number of cases of septicæmia, some of which have resulted fatally, that the first or initial chill is often the only one, and that this is never the case in pyæmia. Furthermore, in those cases of septicæmia where more than one chill occurs, those rigors which follow the initial chill are more erratic in their occurrence than in pyæmia, and are not always the precursor to a marked rise in temperature and profuse sweating. The course of this disease is also characterized by a higher temperature (103°–107°) and a shorter duration than pyæmia, provided that the amount of decomposing animal material introduced into the blood is sufficient to produce death; but if the quantity introduced is very small, or the introduction very gradual, the patient may have a continued fever with a lower range of temperature, and eventually recover, provided that the poison be neutralized and the infecting material thoroughly removed. During the course of septicæmia poisoning, an effort is often made by nature to eliminate the poison by means of the intestinal tract; hence a diarrhœa of a profuse and watery character is sometimes met with in these cases.

As was stated in the morbid anatomy of this disease, the tendency to suppuration, which is so characteristic of pyæmia, is generally absent, and I have no hesitency in stating that I have never seen a metastatic abscess at the autopsy of what I would designate as uncomplicated septicæmia. When such abscesses are found, I would either be willing to exclude the septicæmic condition, provided the history of the case would permit me to do so, or I would regard the case as one complicated by pyæmia, if the history sustained the belief in previously existing septicæmia.

In summary, then, I would state that a marked chill followed by a decided increase of temperature and profuse sweating might, at the onset, suggest the existenee of either septicæmia or of pyæmia, but I should be inclined to decide in favor of the latter if the chill was very sharp. If this initial chill should be followed by another, accompanied by fever and

*Relapses in pyæmia seem to be a marked clinical feature; an apparent improvement often takes place and excites hopes of the recovery but the patient again sinks gradually with symptoms of a low febrile character.

sweating, and, in a few days or hours, the same should be regularly repeated, I should be inclined to regard the case as strongly pyæmic in character. This opinion would be made almost a positive certainty if the exhaustion of the patient was rapid, the emaciation great, the breathing labored, the breath sweetish in oder, the skin deeply jaundiced, and if pus appeared in any of the glands, joints, organs, or other tissues. I should regard the presence of an open wound as strongly suggestive of pyæmia, rather than of septicæmia, provided that the wound had been properly cleansed each day; since decomposing animal matter would then have a small chance for prolonged contact with the injured part—an essential element, in my opinion, in the development of septicæmia. If the case terminated very rapidly—provided the conditions justified the possibility of septicæmia—I should be inclined to doubt the existence of the pyæmic condition. If the temperature ran very high—say up to 107° or 108°—I should regard the case as one of rapid septicæmic poisoning; but I should then expect a proportionately short duration of the disease to confirm the diagnosis. Finally, I should always be guarded—in the light of the pathological results a suppurative phlebitis—in excluding pyæmia in favor of septicæmia, unless a most direct source for the absorption of decomposing animal material could be discovered.

TREATMENT.

The question of treatment of these closely allied affections must be decided, in almost every individual case, by special symptoms which are presented; but there are general laws of treatment which will apply to almost all of the cases met with, and which cannot be too strongly impressed upon the profession. While I have shown that in all cases of septicæmia or pyæmia an open wound need not necessarily be present, still no one can dispute the fact that in very many instances the treatment—which will, perhaps, do more to prevent the disease under discussion than to cure them when developed—must be, in part, of a purely local character.

Local Remedies.—In a large proportion of patients suffering from septicæmia, the seat of contact of the decomposing animal matter with living tissues can be reached, and the cause often removed in time to prevent a fatal result, even if the case be not seen in time to prevent the introdution of such poisonous matter into the blood. But it is not enough, in these cases, to simply remove the existing cause. All surfaces which have been exposed to poisonous absorption should be thoroughly cleansed, and all existing germs destroyed by the use of disinfectants. The prospect of destroying poisons of this character by local measures is much less in old abrasions or suppurating wounds than in those of recent date; and all the greater care should therefore be employed in the general management

of such sources of infection. I have frequently applied the actual cautery, fuming nitric acid, the solid stick of nitrate of silver, and other such agents, in order to destroy the tissue covering the entire surface of an old wound, and subsequently removed the sloughs by hot fomentations, rather than risk the danger of lurking germs of previously existing poison.

Among the different disinfectants* which have lately come into use, I have found few, if any, so effieient in destroying the germs of disease and decomposition, and so effectual in the quick removal of all odor as a solution of "Platt's chlorides" in water, in proportions varying from one to six to one to forty of water. It has, to my mind, a great advantage over the ordinary carbolic solutions in the entire absence of odor of its own, so that the presence of any offensive smell in the wound can be detected without being modified or disguised by that peculiar, and, to some, disagreeable odor of carbolic, and it seems to be equally efficacious as a disinfectant. But we must not rely too much on disinfectants, caustics, or other medicinal agents, since *frequent bathing* of the part, thus ensuing the complete removal of all foreign particles and accumulations of pus, as well as *perfect drainage* and *good ventilation*,† are essential aids to the successful prevention of systemic infection as well as to its cure when once established.

In the hospital ward, where the sick are crowded together, and in the private residence, where the escape of sewer gases often breeds disease, attention to the thorough disinfection of all the sinks, wash-bowls, privies, etc., as well as the complete closure of the overflow-pipes to basins, which are seldom if ever washed by a stream of water flowing through them, may prevent, and sometimes also arrest, pyæmic development. Much of the puerperal fever of the public hospitals can be traced, when an epidemic first appears, to the use of one sponge, syringe, wash basin, etc., throughout the ward. The decomposing blood-clots in the vagina of one are thus directly carried from bedside to bedside, and, by means of utensils used without the proper cleansing, the fault of the nurse or her lack of knowledge spreads a pestilence and sacrifices life.

We have spoken, thus far, only of open wounds or abrasions, and the methods by which either the absorption of decomposing matter in direct contact with the wound, or of the pyæmic miasm present in the wound, air, bed-clothes, etc., can be prevented; but we have not considered under the head of local measures the relief of those varied conditions where collections

*Aerial disinfection by nitrous acid, the various ethers, etc., seems destined soon to play an important part in the prevention of sceptic poisoning.

†I am inclined to believe that patients can be saved from pyæmia by being placed in tents with free access to the air better than by any other means. In private dwellings the removal of the windows will answer perhaps as well, since the patient can be protected from inclement weather and cold by the use of blankets, screens, etc.

of decomposing pus are long confined by the negligence on the part of the surgeon to establish evacuation, drainage and absolute purification of the cavity.* How cavities containing pus should be treated opens a large field for discussion, whether by incision and the insertion of drainage tubes, or by aspiration and compression. These questions can only be decided, in my opinion, by the circumstances which surround each individual case. As a rule, I believe that decomposition of any retained organic material does not progress until air is brought in some way in contact with the cavity which holds it; and I therefore think that, in those cases which admit of it, aspiration offers a better prospect of its complete evacuation without subsequent decomposition of the secreted pus than any form of drainage, no matter how perfectly the cavity is disinfected and cleansed. Still I know that many cases will not admit of its successful application, and, in such, I would advocate the most careful attention to perfect drainage and disinfection of the cavity. When long sinuous tracts exist through which pus is discharged from deep pockets, the early establishment of counter-openings and the insertion of drainage tubes, which shall perfectly empty all accumulations of burrowing pus, will tend to greatly lessen the danger of systemic infection.

General Remedies.—As soon as the presence of either of these diseases becomes known, it is the duty of the medical attendant (1) to allay nervous irritation by all means in his power; (2) to promote, if possible, the elimination of existing poison in the blood; and (3) to support the strength of the patient. It is well to always make inquiries as to the general condition and habits† of the patient before adopting any special line of general treatment, since principles which hold good for all must be variously modified by the symptoms of individual cases for their special benefit.

To aid in elimination, in the first place, the patient should be kept warm and the free action of the skin encouraged by the use of diaphoretics. Of all diaphoretics I prefer the hot-air bath, although the vapor bath is preferred by some patients as more agreeable. These processes of possible elimination of the poison may also be assisted by the judicious use of medicines destined to stimulate the secretions of the intestinal canal, liver and kidneys. Calomel and jalap should be administered early in every case, where the possibility of systemic infection seems to be suggested, and bicarbonate and bitartrate of potash often proves of value as a renal excitant. It is claimed by some authorities that the stage of collapse is

*The development of septicæmia and pyæmia is often due to the fault of the surgeon or the attending nurses. Too great care cannot be exercised in preventing systemic infection.

† The influence of low conditions of the system on the character of inflammation within veins, has already been discussed.

hastened by the use of diaphoretics and diuretics; but I have not found that such was the case, provided the employment of the drugs suggested was tempered with prudence. It cannot be disputed that reported cases of recovery can be adduced in support of the eliminative plan of treatment, but it is difficult to decide as to the actual value of this or any other line of treatment until the sources of scientific data are increased. In all cases, the cause of the systemic infection, if local, should be immediately removed.

It has been claimed by some observers that the internal administration of the sulphites and chlorides of soda and potash as an antidote to the poison has assisted in the recovery of the patient and the rapid elimination of the poison, but it is to be regretted that the experience of many of the most reliable authorities does not sustain their efficacy.

The intense *nervous depression* under which these patients so quickly fall, is best relieved by opium; and my own preference is for the use of small doses of Dover's powder, to be given at night, in addition to opium during the day, if the patient's system seem to demand it. If vomiting supervenes, the administration of dilute hydrocyanic acid, iced carbonic acid water, or even small doses of chloroform will often check it. If a diarrhœa occurs, unless it be so excessive as to exhaust the patient, it should be encouraged rather than checked, as it may be an effort on the part of nature to eliminate the cause of the disease. The judicious use of quinine may also relieve nervous depression by increasing the general vigor and controlling the temperature.

A *tumultuous action of the heart*, accompanied by a sense of great uneasiness in the præcordium, and some *dyspnœa*, should suggest the employment of digitalis as a heart tonic; this drug is especially agreeable in its results upon such cases, since it increases the action of the kidneys* at the same time, and thus helps to remove the cause of the disturbance to the circulation.

Not least in the order of importance, is the *necessity of supporting the patient* during the progress of the disease. From the very onset, measures of this kind are required in most cases, and stimulation as well as some form of tonic treatment will generally be demanded. The quantity of stimulants to be administered, as well as the time when their administration should be commenced, vary so much in individual cases and depend so much upon general principles of treatment, that it is hardly necessary to consider them in detail here; but I believe that the quantity given should be small and often repeated, and that the stimulants should, as a rule, be given with as light and nutritious food as will be borne by the

*The diuretic action of this drug is purely mechanical, since it acts upon the kidneys by increasing the *power of the heart.*

patient without exciting nausea or vomiting. In these cases, the pulse is not a valuable guide to the administration of alcohol, since the circulation is under the influence of a subtle poison, and gives constant evidence of its effects.

The *greater danger of relapses* in pyæmia naturally suggests that the period of apparent convalescence should be associated with every element of precaution to ensure renewed vigor. A change of scene, a cool, bracing atmosphere, free from all malarial influences, the internal administration of iron, and a continuance of stimulants in proper doses will all assist in bringing about complets recovery.

We have so far discussed the treatment of both pyæmia and septicæmia as varieties of systemic infection, but, as has been stated in previous portions of this lecture, the danger of pyæmia, when fully developed, is to form metastatic abscesses in organs, joints and other tissues. If the case be one of that type dependent upon a suppurative phlebitis, the patient must gave been in a bad general condition at the time that such suppurative inflammation was excited; hence all the more necessity for stimulants, tonics, etc., if we hope to arrest the process before emboli are formed. Great *physical depression* after any form of injury should put us on our guard as regards the possibility of this complication. No local treatment can prevent the formation of these secondary abscesses (although Hunter recommended pressure upon the vein inflamed above the seat of the morbid action) provided that emboli are once formed by the disintegration of the thrombus within the inflamed vein. It is this distressing statement that leads all of us to regard the question of prevention as one of paramount importance. The success of an operation often depends upon the skill of the surgeon in building up the constitution, changing the character of the secretions by the proper use of alteratives and tonics, regulation of the diet, and, if intemperance has existed, in so diminishing but not withdrawing alcohol as to promote a more healthy mode of life.

No surgical operation should ever be attempted without a thorough examination of the condition of the internal organs, where such a step is practicable. The urine should be searched for albumen, sugar and casts; the thoracic viscera examined for lurking disease; the abdomen explored for aneurismal or malignant growths, and the size of the various abdominal organs carefully mapped out by auscultatory percussion. Chever lays great stress upon the advisability of subjecting patients about to undergo a surgical operation to restrain in bed for some days before the operation, in order to prepare the patient to the change of life which the operation will demand until convalescence, and I believe that the suggestion is one well worthy of the serious consideration of surgeons.

Whether chloroform or other anæsthetics subject the patient to additional danger from pyæmia by their depressing in-

fluence, is still an open question. That they do lessen the reaction is unquestioned, but do they not also diminish the shock of the operation?

Finally, all precautionary measures as to the carrying of infection by the nurses or medical attendants should be most carefully guarded against. This danger is, of necessity, greater in the hospital ward than in the private dwelling, on account of the confined air and the frequent over-crowding, but it may still prove a source of great danger where least expected. Scrupulous attention to a frequent change of bedclothing, and the prompt destruction of all dressings after removal, will tend to lessen the possibility of this mode of propagation.—*Extract from Address of Ambrose L. Ranney, M. D.—Annals of Anatomy and Surgery.*

THROMBUS OF THE VULVA.

Thrombus of the vulva may occur in one or both labia, and is, perhaps, most frequently caused by the efforts of parturition; but it is liable to follow any external violence, and in persons affected with varicocele of the labia, is apt to even follow efforts at stool. Persons affected with either varicocele or hemorrhoids are especially prone to this affliction. Thrombus sometimes attains immense size, and in cases of parturition sometimes produces an obstruction; it has also been mistaken for a pelvic hematocele. After it has attained such size as to fill the whole vagina, which one, ever so small to begin with, may do by extending under the mucous membrane, and as the blood continues to accumulate, it gradually extends the membrane until it fills the whole cavity of the vagina, and has been known to extend even to the uterine mucous membrane itself. The treatment as recommended by some older writers was, when it became so large as to prove an obstruction to the vagina, to make a free incision, evacuating the blood and coagula, restraining hemorrhage by pressure, with or without stuffing the wound. This kind of treatment has often proved to be very dangerous, as it is not always easy to restrain the hemorrhage either by pressure or other means; while, if the patient happens to be exsanguinous or weak from illness or other causes, the amount of blood lost before the hemorrhage is controlled may be immediately or remotely fatal. Some one has recommended that the blood be drawn off with a hypodermic syringe or aspirator, and then inject persulphate of iron into the sac. I have never tried this plan, but should think perhaps it would be a good one where the thrombus is recent and small. The plan I have always pursued where the tumor was small, was to apply cooling lotions and a compress, and if after the lapse of a few days it did not entirely disappear, and after a clot had formed, and all danger of hemorrhage had disappeared, I open with a knife, let out the contents and again apply the com-

press, when they will usually entirely heal in three or four days. In case it is a large one, I treat it entirely different, for the reason that it is not practicable to apply a compress where the tumor occupies the whole or a large portion of the vagina. In such cases the best plan is to draw off either with a trocar, or, what is better still, an aspirator, the contents of the tumor, then pack the vagina firmly with cotton saturated with glycerine, being sure to pack it full enough to act as a compress; this is easy enough after the blood has been drawn off, but can not be done before. This is the treatment for a recent case. If the tumor has existed for some time, and the blood has become coagulated firmly, and it has entirely ceased enlarging, showing that hemorrhage is stopped in the sac, then there is no danger in treating it by free incisions, and that it is preëminently *the* thing to do before the coagulum degenerates into an abscess.—*Dr. O. E. Herrick in the Obstetric Gazette.*

RECTAL EXPLORATION AND DIAGNOSIS.

Dr. Charles B. Kelsey, New York (New York Medical Journal and Obstetrical Review for October, 1881), gives several valuable suggestions and the descriptions of some original methods in rectal exploration and diagnosis. After referring to the many errors which arise in this department of surgery from the lack of care and proper examination, he tells how to make a rectal examination which shall be at the same time thorough and as free from pain as possible. In his own practice he uses an artificial light of his own arrangement and a forehead mirror, which enable him at all times to illuminate the rectum thoroughly, while by the side of the examining table stands an instrument-case fitted with all necessary appliances. He insists strongly on the necessity of having a water-closet communication with the office, so that injections may be administered and the bowels moved at the time of the examination. In the matter of specula, he confines himself almost exclusively to Sims', finding this the best of all after the sphincter has been stretched, and not finding any that give a fair view of the parts until this has been done. He relies most upon the finger for a diagnosis, and claims that with it, after the necessary skill has been acquired, the slightest pathological changes may be detected. In the matter of bougies, he recommends a soft rubber instrument, similar to that of Wales, only more flexible. For detecting strictures high up in the rectum or in the sigmoid flexure little confidence is to be placed in a bougie of any sort, and he relies almost entirely upon manual examination either through the abdominal wall or by passing the hand into the rectal pouch. The latter method he holds to be free from danger, and certain in its results.—*Chicago Medical Review.*

SOME OF THE THERAPEUTICAL USES OF NITROGLYCERINE.

The speaker referred to the fact that the preparations of nitro-glycerine are very unreliable. It was important, therefore, that the physicians should know what preparation his patients obtained. He thought that the best preparation was that of Boericke & Tafel. The usual dose is one drop of a one per cent. solution given on a lump of sugar. This dose ought, as a rule, to produce a sensation of fullness in the head, or a headache when first taken.

The continuing dose must be employed: that is, the dose must be increased gradually, otherwise good results can hardly be expected. The speaker was in the habit of prescribing ℳj. t. i. d. for one month, then ℳij. for a month, then, perhaps, ℳiij., and so continuing, modifying according to symptoms.

In the angiospastic form of migraine, Dr. Hammond said that he had seen some very marked effects from nitro-glycerine. It would be contraindicated in the angio-paralytic form. The speaker referred to a case in which the angiospastic form existed on one side and the angio-paralytic form on the other. A very severe case of migraine was described. Previous remedies had done no good. One drop of the nitro-glycerine was given. Pain almost instantly ceased, and in fifteen minutes the patient was up. In five days later a subsequent attack came on, but it was similarly averted. Other attacks being thus stopped, the patient was put on the drug regularly. The dose was doubled, making it two drops t. i. d. for fifteen days. She then took three drops for a few days longer. After this the patient stopped taking the medicine altogether. For nine months she has had no attacks, and it seems probable that the case is relieved. The speaker had used it in fifteen or twenty other cases of migraine, and almost universally with good effects. In the few cases where no good was accomplished, he was inclined to think he had made a wrong diagnosis.

The drug had also been used in *epilepsy*. In the beginning of an epileptic attack there is, as is well known, a spasm of the arterioles; nitro-glycerine prevents this—makes it impossible indeed. It acts similarly to nitrite of amyl, but its effect is more continuous. The speaker had given it for a year, and had gradually increased the dose to thirteen drops in one case. He had sometimes given bromides with it, and they seemed to work very well together. In the status epilepticus, and some other forms of epilepsy, when bromides are not efficient, nitro-glycerine is very effective. The case of a child who had epileptic attacks every other day was related. The disease had lasted two or three years; bromides had done no good. Nitro-glycerine was given, and since then the patient has only had a few attacks. The dose was kept at one drop three times a day. Children can bear drop-doses very well.

The speaker had used nitro-glycerine in twenty or thirty cases, and he believed that in every case it had done some

good. In some cases it had stopped them permanently, or so it seemed.

In angina pectories, or cases which he believed to be such, the nitro-glycerine had been used. In two cases where the drug was given, the attacks did not continue so long as the medicine was taken.—*Dr. W. A. Hammond in the Medical Record.*

EXTERNAL USE OF JABORANDI IN MAMMARY INFLAMMATION.

By Dr. Harry B. Stehman, of Lancaster, Pa

Mrs. K., multipara, on the sixth day after confinement, had much pain in the left breast, which had become hard and swollen, with considerable fever, pain in head and back. In examining the breast, I discovered a large cicatrix, and on inquiry learned that in her second confinement she had suffered in a similar manner; that the inflammation went on to suppuration, and finally the breast was lanced. I prescribed a diaphoretic mixture, and locally used a poultice composed of two parts flaxseed meal and one part crushed jaborandi leaves. The leaves were infused in a quantity of hot water necessary to make the poultice of proper consistence, in order that the active properties of the jaborandi might be more thorougly mixed with the meal. These poultices were continued for forty-eight hours; at the end of the first twenty-four the breast was flaccid, the swelling reduced, and the pain had disappeared.

There was no milk drawn from the breast in the interim, and the most gratifying feature was the fact that the engorged breast was entirely relieved. At the end of the second day the treatment was discontinued, the milk flowed freely, and the mother nursed the child from this breast as well as the other. I have used this treatment in a number of similar cases since then, and have never seen it fail, if adopted before suppuration had set in.

I have used these poultices in the inflammatory stages of buboes, and succeeded in preventing suppuration. In mumps this treatment proved equally gratifying.—*(Lancaster Med. Soc. Trans.)—College and Clinical Record.*

CHLORAL HYDRATE IN LABOR.

A desirable agent in obstetric practice is one that is safe, blunts sensibly, increases uterine contractions and shortens labor. We have such in chloral. For the teasing, grinding pains which many women, especially if of a delicate, nervous organization, suffer in the first stage of labor, I have been in the habit, for the last few years, of giving chloral with the happiest results. It relieves the pain and gives rest without interfering with the progress of the labor. Opium given in the same class of cases will give relief, but while under its influence no progress is made. It is also an invaluable agent

in rigidity of the os. Cases have come under my observation of women in labor for hours without making but little progress, who, after taking a few doses of chloral, the parts begin to soften, the os to dilate rapidly, and labor brought to a speedy termination. So efficient and safe has chloral been in my hands that I do not think of attending a case of obstetrics without it. I give it in all stages of labor, and in sufficient doses to control pain. I generally carry a saturated solution, of which a drop represents a grain. For the first dose I give twenty drops or grains, well diluted, followed afterward by ten drop doses, repeated every half hour, or as often as to maintain the desired effect. Usually, it is not neceessary to give more than a drachm during the whole labor. If the drug produces nausea by the stomach it may be given by the rectum, either by enema or suppository. For an enema there is no combination better than Griffith's formula. The required quantity of the drug is mixed with a raw egg, thoroughly beaten, to which a little warm milk is added. This acts rapidly and produces no irritation. If a suppository is preferred, the required quantity can be added to equal parts of wax and cocoa-butter. Let no one condemn it without a thorough trial.—*California E. M. Medical Journal. Indiana Medical Journal.*

Editorial Department.

DARTMOUTH COLLEGE.

We have received information that Dr. Louis Elsberg, formerly Professor of Laryngology and Diseases of the Throat in the University of New York, has been elected to the same chair in Dartmouth College.

SMALL POX.

A few cases of this disease have occurred in this city. We are informed that as many as 13 have been officially reported to the Board of Health since Nov. 1. One patient presented himself to the Assistant House Surgeon of the Charity Hospital for admission with the eruption advanced at least as far as the fifth day. This man stated that he had left Havana five days before. Small-pox cases are not admitted to the wards of Charity Hospital, and the patient was promptly carried to the

Small-pox Hospital for treatment. But what opportunities have occurred to communicate the disease by contact of unprotected persons with this roving focus of infection cannot be known. Neither do we know by whose incompetence, or negligence, a man having the eruption of small-pox upon his person, was able to land in this country and enter a large commercial city. Sanitary officers who hold that small-pox is not a quarantinable disease, and who, in consequence of such opinions, fail to institute the most rigorous measures to prevent its transportation along lines of travel, are simply undeserving of official positions.

All this is written under the supposition that the sick immigrant told the truth, and we know no reason to doubt this.

Small-pox is a preventible disease, and although its appearance here is, at the present moment, a very small cloud, we should put forth timely and energetic exertions to prevent further spread, lest it should increase like the cloud of Ahab.

In addition to quarantine restrictions, isolation and judicious and thorough disinfection; legislative enactments should be obtained for compulsory vaccination. Boards of health should be invested with full power; first, to detain and confine small-pox patients, or fomites, until freed from danger of conveying infection; second, to isolate cases occurring in localities under their jurisdiction; third, to cleanse premises and appurtenances of persons attacked; fourth, to see that laws for compulsory vaccination are carried into effect, providing means and agents for the performance of this duty, and to report all cases of infraction or resistance to the enactments obtained.

In order to show what some other States of the Union are doing in this matter, and at the same time to furnish a model for other sanitarians and legislators, we copy in full the regulations and circular letters which have been issued by the State Board of Health of Illinois:

HOW TO PREVENT THE SPREAD OF SMALL POX.

OFFICE OF THE STATE BOARD OF HEALTH,
Springfield Ill., June, 1881.

Although there is no contagion more powerful or certain,

experience has taught that the spread of small-pox may be absolutely prevented by a strict observance of the following

RULES:

1. On the first report of the existence of a case in a region, systematic vaccination or revaccination of every member of the exposed communities in such region should at once be resorted to.

2. Whenever it is known that any person is sick with small-pox or varioloid, isolation of the individual should be promptly and rigidly enforced. Every one in the house should be vaccinated or revaccinated, no matter how recently this may have been done, nor how mild the disease may appear. In towns or cities where there are small-pox hospitals, it is better that the patient should be removed to such at once. Where there is no such provision, the infected house should be strictly quarantined, and, if necessary, the police authority must be invoked to secure proper restrictions. An improvised hospital will be an absolute necessity if the case occurs in a crowded family or tenement-house, where proper isolation cannot be secured. In such case, a barn, out house or other building may be made sufficiently comfortable for the patient, at small expense; or, if the weather be mild enough, a tent may be used. A flag or placard, bearing the words "SMALL-POX," should be prominently displayed upon the house, and not removed until permission is given by the health authorities. *Isolation is a matter of the utmost importance.*

3. The room selected for the sick should be large, easily ventilated, and as far from the living and sleeping rooms of other members of the family as is practicable to have it. All ornaments, carpets, drapery, and articles not absolutely needed, in the room, should be removed. A free circulation of air from without should be admitted, both by night and day—there is no better disinfectant than pure air. Care should, of course, be taken to keep the patient out of draughts.

4. All discharges from the nose and mouth of the patient should be received on rags and immediately burned, and the same precaution should be taken with the crusts as they fall off. Night vessels should be kept supplied with a pint or two of a solution of carbolic acid—one gill of crude carbolic acid to half a gallon of water, or of chloride of zinc—an ounce and a half of the chloride to half a gallon of water. The discharges from the kidneys and bowels, received in these vessels, should be buried at least one hundred feet from any well or spring. All spoons, dishes, &c., used or taken from the sick-room, should be put in boiling water at once. Cleanliness in everything should be scrupulously enforced.

5. Not more than two persons—one of them a skillful, professional nurse, if possible—should be employed in the sick-room, and their intercourse with other members of the family

and with the public must be as much restricted as possible. In the event that it becomes necessary for an attendant to go out of the house, a complete change of clothing should be made, using uch as has not been exposed to infection; the hands, face, and hair should be washed in water, to each half gallon of which has been added a tablespoonful, spirits of thymol*, or two tablespoonfuls of carbolic acid, half a gill of ten per cent. solution of permanganate of potassium. Following this, free exposure to the open air should be secured before approaching any one.

6. Physicians and other necessary visitors, before entering the sick-room, should put on an outer garment, closely buttoned up, and a handkerchief or wrap about the throat and neck. Such outer garment may be a linen duster or rubber overcoat; and this, together with the neck-wrap, should be taken off in the open air immediately after leaving the sick-room, and either be dipped in the disinfecting fluid hereafter described, or hung up out of doors until the next visit. Safety consists in exposing to the open air every article of clothing that has been in any way subject to the contagion. Whenever practicable the precautions above pescribed (*Rule* 5) for an attendant leaving the sick-room should be observed by the physician or visiting Doctors and clergymen may convey contagion as readily as the laity under similar conditions; they should, therefore, take the same precautions.

7. No inmate of the house, during the continuance of the disease, should venture into any public conveyance, or assemblage, or crowded building, such as a church or school; nor, after its termination, until permission is given by the attending physician. Letters should not be sent from the patient, and all mail matter from the house should first be subjected to a dry heat of 250-260 deg. F. Domestic animals, dogs, cats, &c., should not be allowed to enter the room of the patient, or, better still, should be excluded from the house.

8. After recovery has taken place the patient should be bathed daily, for three or four days, in a weak disinfectant—the thymol water above described, or a solution of chloride of zinc (two drachms of the salt to half a gallon of water). The head should be thoroughly shampooed during each bath, and the convalescent be then clothed in fresh clean garments that have been in no way exposed to the infected air. Some time must elapse—ten to fourteen days according to the severity of the case—before the danger of communicating the disease is past, and patients should be kept in the house at least two weeks after the crusts have all disappeared.

9. In the event of death, the clothing in which the body is attired should be sprinkled with strong carbolic acid, and the

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* *Spirits of thymol*, for this purpose, may be made by adding one ounce of thymol to three ounces of alcohol, 85 per cent. The disinfectant is free from the disagreeable odor of carbolic acid, and is qite as efficient.

body wrapped in a disinfectant cerecloth* and placed in an air-tight coffin, *which should remain in the sick-room until moved for burial.* No public funeral should be allowed either at the house or church, and no more persons should be allowed to go to the cemetery than are necessary to inter the body.

10. After recovery or death all articles worn by, or that have come in contact with, the patient, together with the room and all its contents, should be thoroughly disinfected by the burning of sulphur or the pouring of crude carbolic acid on chloride of lime. To do this, have all windows, fire-places, flues, key-holes, doors, and other openings securely closed by strips or sheets of paper pasted over them. Then place on the hearth or stove, or on bricks set in a wash-tub containing an inch or so of water, an iron vessel of live coals, upon which throw three or four pounds of sulphur; or place a number of plates of chloride of lime (say six feet apart) in different parts of the room, and pour on them crude carbolic acid. All articles in the room, and others of every description that have been exposed to infection, and are too valuable to be burned, yet cannot be washed nor subjected to dry heat, must be spread out on chairs or racks—mattresses or spring beds set up so as to have both surfaces exposed; window-shades and curtains laid out at full length, and every effort made to secure thorough exposure to the sulphur or chlorine fumes. The room should then be kept tightly closed for twenty-four hours. After this fumigation—which it will do no harm to repeat—the floor and woodwork should be washed with hot water, the walls and ceiling whitewashed, or, if papered, the paper should be removed. The articles which have been subjected to fumigation should be exposed for several days to sunshine and fresh air. If the carpet has unavoidably been allowed to remain on the floor during the illness, it should not be removed until after the fumigation, but must then be taken up, beaten and shaken in the open air, and allowed to remain out of doors for a week or more. If not too valuable, it should be destroyed; but, whenever practicable, it should be removed from the room at the beginning of the illness. After the above treatment has been thoroughly enforced, the doors and windows of the room should be kept open as much as possible for a week or two. Where houses are to some extent isolated, judgment can be used in exposing articles out of doors. The entire contents of the house should be subjected to the greatest care, and when there is any doubt as to the safety of an article *it should be destroyed.* The privy should be thoroughly disinfected, during the entire illness, with copperas solution—prepared by dissolving about sixty pounds of copperas (suspended in a basket) in

* This may be a sheet thoroughly soaked in the disinfecting fluid described in Rule II—only of double strength; that is, *eight* ounces sulphate of zinc and *four* ounces common salt to *one* gallon of water.

a barrel of water; three to five gallons of this solution, to which may be added a pint of crude carbolic acid, should be thrown into the vault every three or four days. Water-closets should be disinfected by pouring a quart or so of the solution into the receiver after each use.

11. Such articles of clothing, bedding, &c., as can be washed, should first be treated by dipping in the following disinfecting fluid: Sulphate of zinc, 24 ounces; carbolic acid, 4 ounces; or common salt, 12 ounces; water, 6 gallons.

A pail or tub of this fluid should be kept in the sick-room, and into this all clothing, blankets, sheets, towels, &c., used about the patient or in the room, should be dropped immediately after use, and before being removed from the room. They should then be immediately and thoroughly boiled. The ticking of beds and pillows used by the patient should be treated in the same manner; and the contents, if hair or feathers, should be thoroughly baked in an oven. If this cannot be done, they should be destroyed by fire, as should, in any event, all straw, husk, moss or "excelsior" filling. The clothing of nurses should be thoroughly fumigated and cleansed before it is taken from the house, and, better still, burned, if circumstances will admit.

12. If, from neglect or delay in enforcing precautionary measures, the disease shows a tendency to become epidemic, the public and private schools should be closed, church services suspended, and public assemblages of people, as at shows, circuses, theaters, fairs, or other gatherings, should be prohibited.

Finally, the above precautions, if faithfully carried out, may be confidently relied upon to prevent the spread of the disease, and the intelligent confidence thus secured will prevent panic and the inhuman treatment of the afflicted, which so often arises from ignorance and unreasoning fear.

A copy of this circular should be left in every house where there is a case of small-pox; and the local health authorities are charged with a strict enforcement of the rules. In view of the prevalence of the disease at the present time, and the recognized difficulty of a positive diagnosis in every case, any reasonable doubt should be resolved in favor of wise precaution. It is by no means necessary that a case should present all the typical symptoms in order to initiate a malignant epidemic—even a mild case, with little or no eruption, may do this. Local health authorities cannot too strongly insist upon this point. By order of the board.

JOHN H. RAUCH, *M. D.*,
Secretary.

ILLINOIS STATE BOARD OF HEALTH,
Springfield, November 12, 1881.

(Addressed to Presidents and General Managers of Railroads in Illinois.)

DEAR SIR: Attention having been attracted to the fact that, in several instances during the past year, the only cases of

small-pox in certain localities have been among railroad employés, the State Board of Health earnestly urge upon you the necessity for prompt vaccination, or revaccination, as the case may be, of the entire personnel of your road. Train officers and crews are especially liable to contract the disease from their necessary exposure to contact with passengers; and during the present heavy immigration movement the danger of infection is greatly increased.

The cordial co-operations in all measures looking to the protection of the public health and consequent avoidance of interruption to travel and traffic, which the board has, whenever occasion required, found you ready to accord, prompts the belief that you will adopt this recommendation forthwith and push its efficient enforcement.

Copies of the accompanying circular, "How to prevent the spread of small-pox," will be furnished you for distribution if desired.

By order of the board.

JOHN H. RAUCH, M. D.,
Secretary.

ILLINOIS STATE BOARD OF HEALTH,
Springfield, November 14, 1881.

President or General Manager ——— ——— *Railroad*:

DEAR SIR: At the last quarterly meeting of the Illinois State Board of Health, the inclosed preamble and resolution were unanimously adopted. Since that time the increasing spread of small-pox has emphasized the necessity for the action therein indicated.

It is admitted that railroad authorities do, in their own interest, exert such effort as to them may seem necessary and practicable to prevent avoidable sickness and loss of life. The question remains: Can such effort be made more efficient and less onerous by concert of action—by a well-considered code of sanitary rules and regulations—by the assistance of State and local health authorities?

In the present emergency the answer must undoubtedly be in the affirmative. There is abundant proof of the agency of railway communication in spreading small-pox; first, by the transportation of infected passengers, mainly immigrants, and their baggage, and, secondly, through unprotected railway employès. With the first, of course, the companies cannot deal unassisted, but the second evil is largely, if not entirely, under their control.

As an illustration of other evils which it is sought to remedy, may be cited the long through runs of passenger coaches with-

out change. From a sanitary standpoint, no car—whether immigrant, ordinary passenger, parlor or sleeping coach—should be occupied continuously more than a given number of hours, depending upon the character of the ar, its occupants, and the season of the year. At the end of, say twelve hours, in winter, a crowded immigrant car is often simply a hot-bed for the rapid propagation and diffusion of any contagious or infectious disease which may exist among its inmates. To a certain extent, differing mainly in degree, this is also true to the best-appointed first-class passenger car, parlor orsleeping car.

While this is true, the difficulty of inducing the traveling public to accept the change indicated is fully recognized; and yet sanitary authorities are agreed as to its importance on the score of health. Whether short runs are more or less desirable, on economic grounds, is a question for the railway expert to answer.

It is believed that a study of the information you can furnish on these and kindred points may be productive or benefit both to the railways and to the public.

Very respectfully,

JOHN H. RAUCH, M. D.,

Secretary.

Extracts from the minutes of the regular meeting of the Illinois State Board of Health, September 29–30, 1880:

Drs. Clark, McLean and Bateman, the committee to which had been referred a paper by the secretary on the subject of railroad sanitation, offered the following preamble and resolution, which were adopted:

"Whereas, it is believed that the health interests of the public may be promoted by the assistance of this board in certain measures connected with the sanitary administration of the railway service in Illinois, to which end an interchange of ideas and information is necessary: Therefore be it

"*Resolved*, That the secretary be instructed to communicate with the managing authorities of the various railroad lines in this State for the purpose of ascertaining the details of existing methods and agencies employed by such lines, (1), in the consertation of the health and lives of passengers of different classes; (2), in the prevention of the spread of contagious or infectious diseases; (3), in the hygienic and sanitary supervision of employés; and (4), in the care and policing of depots, offices, buildings and grounds, the information thus acquired to be made the basis of such action or recommendation by this board as the facts may demonstrate to be necessary or advisable in the direction of co-operation with railroad authorities and the sanitary education of the traveling public"

A HAPPY NEW YEAR.

We extend to our patrons the greeting and congratulations usual to the advent of a new year. It is an occasion when "auspicious Hope" smilingly points to a future where all that is visible bears the color of the rose. May our expectations be realized!

NECROLOGY.

DR. D. WARREN BRICKELL.

The many professional friends of this distinguished teacher will be pained to learn that he died in this city December 11th, 1881, after a lingering illness. In the February number of this journal will appear a biographical sketch from the pen of his friend and colleague, Dr. J. Dickson Bruns.

DIED.—November 25th 1881, at his home in Woodville, Miss., DR. DAVID HOLT, a native of Bedford Co., Va., in the 90th year of his age. He was a graduate of the University of Pennsylvania, Class of 1819. A biographical sketch of DR. HOLT will appear in the next number of the JOURNAL.

Reviews and Book-Notices.

Transactions of the Medical Association of the State of Missouri, at its 24th Annual Session, held at Mexico, May 17–19. 8vo. pp. 194.

The address of the President, Dr. J. M. Allen, was upon The Need for Thorough Medical Training and Teaching, and The Importance of Local Medical Organizations. No new ideas were presented on these familiar topics, but constant reiteration will eventually produce an effect, and we hope the advocates of reform will not rest until they carry their point by sheer dint of importunity.

Dr. W. P. King read a very sensible paper on Fever and the Cooling Bath. He merely claims that the dangerous conse-

quences of elevated temperature may be obviated by the means indicated, and not, as was wrongly supposed by some speakers who follow him, that the disease itself could thereby be removed. Used for this purpose and within proper limits, we quite agree that refrigeration by water applied externally and introduced into the intestinal canal may most efficiently counteract very dangerous processes and give nature time to operate safely in the elimination of disease-poisons and morbid products.

Dr. C. H. Hughes defines the proper distinction between Illusion, Hallucination and Delusion, about which physicians are apt to entertain rather vague notions, greatly to their discredit when they happen to fall into the hands of a sharp lawyer who has prepared himself on a selected set of questions by special cramming for the occasion. S. S. H.

Transactions of the Michigan State Medical Society, for the year 1881. 8vo. Pp. 110.

Prof. C. J. Lundy, M. D., contributes a short paper on The Cure of Acute Glaucoma by Sulphate of Eserine, relating a case in his own practice. While he does not undertake to say that this treatment is applicable to all, or even the majority of cases, he thinks the remedy worthy of trial, and, if successful, preferable to the usual operation of iridectomy, which leaves an opening like a key-hole in place of the pupil.

Dr. T. W. Reynolds recommends treatment of congenital club-foot to be commenced immediately after birth, by the use of appliances to correct the deformity before the joint acquires rigidity of growth.

The address of the president, Dr. Thomas, is chiefly upon the subject of suits for malpractice. The blame for the prevalence of these suits, alike annoying to the victims and dishonorable to the whole profession, he charges upon unworthy members who, out of envy or malice, allow themselves to be used for base purposes in prosecutions which are generally instituted for no better purpose than black-mail.

Dr. C. B. Burr, of the Insane Asylum at Pontiac, speaks highly of the efficacy of cocculus indicus in epilepsy, particularly in cases attended with maniacal excitement.

S. S. H.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland at its 83d Annual Session, held at Baltimore, April, 1881. 8vo. Pp. 398.

A few only of the papers can here be noticed:

In his address the President, Dr. H. P. C. Wilson, urges the formation of a complete Medical library, under the auspices of the State Medical Society; and to carry out this purpose, the organization of a "Library Building Company," the shares to be held by members of the Society. The object is certainly praiseworthy, and its achievement would be a source of honest pride for the medical profession of the State.

An interesting and practical address was that of Dr. William Goodell, on The Dangers and the Duty of the Hour. The dangers he conceives to be the faulty system of female education, the decay of home life and the unwillingness of our women to become mothers. He remarks, "I am old-fashioned enough to believe that the chief end of woman is to be married, to have a home of her own, and to give birth to healthy children; and that woman, as woman, has no right to do anything that will unfit her for this end." Some striking statistics are furnished, showing the increasing facilities afforded by legislation for obtaining divorces in the New England States particularly; and a moral is deduced from the decay of the Greek and Roman powers, contemporaneous with the loss of the early domestic virtues which characterized their periods of growth.

Dr. Richard Gundry, Superintendant of the Maryland Hospital for the insane, contributes an interesting paper on The Psychical Manifestations of Disease, or the effects of organic lesions on mental states and operations. The essay is illustrated by numerous historical examples.

An instructive paper is that of Dr. G. Liebmann, on Suicide. The following deductions form his *résumé* of the subject:

Suicide can be traced in the majority of cases to insanity.

Suicide is on the increase in a regular proportion.

It is more frequent in the male than in the female sex.

It occurs at all ages.

It is influenced by the seasons and by climates.

It is more frequent in prosperous and highly civilized than in barbarous races.

The above conclusions are in accord with the views of Prof. Henry Morselli, M. D., of the University of Turin, in a work on the same subject, which forms one of the latest volumes of the "International Scientific Series."

The last 140 pages give the proceedings of the celebration of the Medical and Chirurgical Faculty, in honor of the Sesquicentennial Anniversary of the founding of Baltimore. These were entirely of an historical character. S. S. H.

Transactions of the New Hampshire Medical Society, at its 91st Annual Session, held at Concord, June, 1881. 8vo. Pp. 168.

The address of the President, Dr. G. P. Conn, was upon State Medicine, in which he confined his remarks to the branch of Public Hygiene.

Dr. J. R. Kimball advocated Conservatism in the Practice of Medicine, in preference to pursuing novelties as a habit.

Dr. J. W. Jones condemned Nihilism in Medicine. He remarks: "The two forms of nihilism most popular at the present time are homœopathy and conservatism." His definition of the latter is, however, quite different from that of Dr. Kimball, for by it he means that skepticism of the value of remedies and that excessive expectant treatment so much affected at the present day, which are not properly conservative features in medical practice.

In respect to homœopathy, he alludes to the decline of the system in the land of its origin (Germany), and the open abandonment of two of its three distinctive tenets, namely, the doctrine of the potentization of drugs by division and trituration and the use of infinitessimal doses.

Dr. Jones has, in fact, a robust faith in the potency of drugs; and, like many country doctors, though a citizen of the largest town in his State, makes free use of veratrum viride. He might properly be styled a *stalwart* in medicine, and we suspect would rather glory in the distinction.

We have noticed very few of the papers in these several volumes, for the simple reason that we find the great mass of them wanting in originality and interest. In fact, they fall rather below the average standard of State Society Transactions. S. S. H.

Assassination and Insanity: Guiteau's Case examined and compared with analogous cases from the earlier to the present time. By Wm. R. Smith. 8vo. Pp. 102. Washington, D. C. 1881.

This consists of three papers, which were first published in the *Law-Central*, but, as the author remarks, "more with a view to entertain the reader than to instruct the Bar."

The other cases referred to, for the sake of illustration, are the murderous assaults on George III. (three in number), and Queen Victoria (five in number); the assaults on President Jackson; the assassination of President Lincoln; that of Cæsar; that of the Duke of Buckingham, in 1628; that of Premier Percival, 1811; that of Marat, in 1793; that of Holofernes, by Judith; that of Mr. Drummond, by M'Naughten, in 1843.

While Mr. Smith does not regard the assailants in all the above cases as insane, it is clear that he has this opinion of Guiteau, from his antecedents, his want of adequate motive and accomplices, his neglect of any plan for escape, and his subsequent conduct.

The analysis of the other cases used for illustration is instructive, though some are touched very briefly and imperfectly. The views of the writer are judicial in tone, not dogmatic, and should be credited to a fair motive.

The conviction or acquittal of Guiteau must turn upon the question of his sanity. While we doubt the propriety of our expressing a definite opinion upon this point at all, we have

no doubt that such expression would be premature before the termination of the trial. That the wretch is and has long been of unsound mind, we regard as beyond a reasonable doubt; but whether this unsoundness is such as to destroy accountability for his acts is another matter. S. S. H.

A Practical Treatise on Hernia. By Joseph H. Warren, M. D., Member of the American Medical Association, British Medical Association, Massachusetts Medical Association, formerly Surgeon and Medical Director U. S. A., etc., etc., etc. Second and revised edition, fully illustrated. Published by James R. Osgood & Co., Boston; and Sampson Low, Marston, Searle & Rivington, London. [Sold by Eyrich, 130 Canal street. Price, $5 00.]

In July, 1881, we published a notice of the first edition of this work. In this second edition the author has enlarged it considerably, and has added numerous engravings, some of which are exceedingly fine; in fact, the illustrations are all that could be desired for a thorough comprehension of the anatomy of this region and the disease under consideration. That portion of the work which refers to the Descriptive and Surgical Anatomy of Hernia is remarkably clear and comprehensive, and the chapters on the "Causation" and "Methods of Operating," are very complete. Much space is given to the author's method of operating, together with the history of the operation, the instruments necessary, and the solution employed. Since the first volume was published the increased number of cases successfully operated upon, furnish additional evidence of the value and efficiency of the method. Dr. Warren certainly deserves credit for having so clearly demonstrated; in the face of professional opposition, that the cure of Hernia by operative proceedure is possible. J. M. W.

Rocky Mountain Health Resorts. An analytical study of high altitudes in relation to the arrest of Chronic Pulmonary Disease. By Chas. Denison, A. M., M. D., Reporter to the International Medical Congress, Philadelphia, 1876, on "The influence of high altitudes upon the progress of Phthisis, etc., etc." Second edition: Published by Houghton, Mifflin & Co., Boston.

According to the author, the objects in presenting this book to the public are:

1st. To afford to the great majority of the medical profession who are not so located as to make it possible for them to study and personally observe remedial climatic influences, information on this subject; and

2d. To furnish a guide to the invalid in his selection of climatic relief.

In view of the unfortunate errors frequently committed by sufferers from this affection, either on the advice of their physicians, who have not themselves sufficiently studied the question, or who have on their own responsibility subjected themselves to a condition of atmosphere the very opposite of what was desired, a practical treatise, such as is furnished by the author of this volume, is especially necessary and correspondingly useful. J. M. W.

Books and Pamphlets Received.

Suppression of Urine, Clinical Descriptions and Analysis of Symptoms. By E. P. Fowler, M. D.

The Opium Habit and Alcoholism. A Treaties on the habits of Opium and its Compounds, etc., etc. By Dr. Fred. Heman Hubbard.

A New Gynæcological Table. By W. A. B. Sellman, M. D., Attending Physician to the Sharp Street Dispensary for the treatment of the Diseases of Women.

On the Poisonous Properties of Quinine. By William O. Baldwin, M. D., of Montgomery, Ala., with remarks by J. Marion Sims, M. D Reprint from the Medical Gazette, October 22d, 1881.

Reform in Medical Education; The Aim of the Academy: Annual Address delivered before the American Academy of Medicine at New York, September 20th, 1881. By Edward T. Caswell, A. M., M. D., President of the Academy.

Report of the Committee on Medical Tapography, Meteorology, Endemics and Epidemics, made to the Medical Society of the State of California, at the Annual Session, held at San Francisco, April, 1881. By M. M. Chipman, M. D., of San Francisco.

On Epidemics of Dengue Fever; their Diffusion and Etiology. By James Christie, A. M., M. D., Lecturer on Public Health, Anderson's College, Glasgow.

Resources of Oregon and Washington. By David & W. G. Steel, Publishers, Portland, Oregon.

Meteorological Summary—November, 1881.
Station—New Orleans.

Date.	Daily Mean Barometer	Daily Mean Temp'ture.	Daily Mean Humidity.	Prevailing Direction of Wind.	Daily Rain-fall.
1	30.045	67.2	72.3	N. E.	.....
2	29.951	67.8	75.3	S. E.	.23
3	30.129	56.3	55.0	N. W.	.....
4	30.144	56.5	57.0	N. E.	.....
5	30.085	61.6	82.7	East.	.07
6	29.869	59.5	91.0	N. E.	2.99
7	29.974	61.0	93.0	N. E.	.....
8	30.006	71.6	85.7	South	.....
9	30.123	72.8	83.3	S. E.	....
10	30.108	71.3	90 3	N. E.	.....
11	30.014	73.9	89.0	S. E.	.02
12	29.948	68.3	71.0	North	1.73
13	30.031	63.1	65.7	North	.....
14	30.240	62.8	57.7	N. E.	.....
15	30.342	61.4	50.0	N. E.	.....
16	30.268	64.3	81.3	East.	.....
17	30.175	70.6	86.7	S. E.	.....
18	30.055	72.2	81.7	S. E.	.....
19	30.166	60.9	76.3	North	.42
20	30.248	53.3	52.7	N. E.	.....
21	30.123	59.8	86.7	N. E.	.82
22	30.029	59.4	93.0	N. E.	.53
23	30.002	51.5	80.0	North	.32
24	30 345	41.9	46.7	N. W.	.....
25	30.442	41.8	49.3	N. E.	.....
26	30.393	49.5	59.7	N. E.	.....
27	30.340	54.7	60.0	N. E.	.....
28	30.242	56.9	64.3	East.	.....
29	30 134	58.8	83.3	S. E.	.....
30	30.076	65.6	93.7	S. E.	.05
Sums	....	....	....	.....	total
Means	30.130	61.2	73.8	N. E.	7.24

General Items.

Mean Barometer, 30.134.
Highest Barometer, 30.508, 25th.
Lowest Barometer, 29.762, 6th.
Monthly Range of Barometer, .846.
Mean Temperature, 61.2.
Highest Temperature, 80.0, 9th.
Lowest Temperature, 31.5, 25th.
Monthly range, 48.5.
Greatest daily range of Temperature, 20.5, 8th.
Least daily range of Temperature, 5.8, 7th.
Mean of maximum Temperature, 67.6.
Mean of minimum Temperature, 54.1.
Mean daily range of Temperature, 13.5.
Prevailing Direction of Wind, N. E.
Total No. of miles 5852.
Greatest Velocity of Wind, 30 miles N. E., 6th.
Number of Clear Days, 2.
Number of fair days, 9.
Number of Cloudy days, 10.
No. of days on which rain fell, 12.

COMPARATIVE TEMPERATURE.

1872	....	1877	58.3
1873	61.2	1878	51.2
1874	66.3	1879	64.9
1875	65.6	1880	56.4
1876	59.2	1881	61.2

COMPARATIVE PRECIPITATIONS.
(Inches and Hundredths.)

1872	....	1877	6.58
1873	5.95	1878	7.78
1874	1.12	1879	3.79
1875	6.79	1880	6.64
1876	4.35	1881	7.24

L. DUNNE,
Sergeant Signal Service, U. S. A.

Mortality in New Orleans from November 26th, 1881, to December 17th, 1881, inclusive.

Week Ending.	Yellow Fever.	Malarial Fevers.	Consumption.	Small-pox.	Pneumonia.	Total Mortality.
November 26	0	7	17	0	9	112
December 3	0	8	18	0	6	136
December 10	0	2	14	1	4	102
December 17	0	2	19	0	7	107
Total....	0	19	68	1	26	457

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ORIGINAL COMMUNICATIONS.

A Rational Explanation of Fever and its Phenomena.

By JOHN B. ELLIOTT, M. D.,

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Every one is familiar with the superficial phenomena of fever. To the most unskilled the thermometer reveals equally its presence and its intensity. In addition to this easy knowledge of its presence, we recognize that many diseases may be approximately diagnosed by their temperature record; we know the danger limit of heat in each one of them; we know means by which we can control the elevated temperature; while we also possess agents by which each other phenomenon of the febrile state can be modified. It would seem then that little remains to be advanced concerning it.

We might rest confidently in this conclusion if we could be satisfied only with a knowledge of the superficial. But when we ask, how are the phenomena of fever brought about? Why is fever a constant accompaniment of pathological conditions; and what makes it common to every general disease? we are driven to admit that what we really do know of fever is but a small portion of what there is to be known concerning it.

The most careless observer will learn, after slight experience, that fever is not the expression of a special disturbing agent,

but is rather the invariable expression of a thing disturbed. Whatever the cause may be, whether a disease poison, an injury, or a surgical operation, the universal effect upon the human organism is seen to be a complete unhinging of that power which controls the processes of combustion and assimilation, followed by a development of that group of phenomena known collectively as fever.

There is no lack of eminent authority to support the assertion that the "thing disturbed" is the nervous system. As the acknowledged agent in the control of all voluntary actions, it would need to be proved that the nervous system was not likewise the agent controlling the non-voluntary or organic processes of the human mechanism. As we have for voluntary nervous action a great and complicated cerebro-spinal system, so it is universally conceded that for the control of the non-voluntary actions we have certain automatic centres of the cerebro-spinal, together with the widely distributed centre of the ganglionic system.

We can scarcely then hesitate to assume that the disturbance of the controlling influence of the nervous system, is the immediate cause of the phenomena of the febrile state.

When we inquire yet further as to what portion of the nervous system this controlling power in physiological processes is to be assigned, we find still no discord in opinion. From the fact that all organic processes must necessarily be beyond the irregularities of voluntary action, this controlling function would naturally be assigned to those centres beyond the action of the will, and so we find that to the control of the automatic centres of the cerebro-spinal, together with the centres of the ganglionic system, physiologists in general agree in assigning the processes of secretion, waste and repair.

In regard to the special processes of tissue-building and tissue destruction, some writers maintain the existence of special trophic nerves, a theory against which, we may observe in passing, the negative argument has but little weight. The negative argument is based upon the fact that nutrition in the vegetable kingdom proceeds in their absence; and also upon the fact that certain tissues in the animal system exist without

demonstrable nervous supply. If we remember, however, what seems to be a physiological law, that special nervous control is only developed *pari passu* with complexity of structure and elevation of function, these facts cited lose their weight as arguments against the existence of a system of trophic nerves.

These questions, while of the greatest physiological importance, and are cited here only to show how completely the assignment of control in tissue metamorphosis has been granted to the nervous system, will not influence materially the point to which attention is invited in this paper. What is here designed is not a proof that any special part is played by a given portion of the nervous system, but the deeper question as to *how*, through disturbance of the nervous system, a normal temperature and a normal tissue repair may give place to an abnormal temperature and a cessation of tissue repair.

The most prominent characteristics of fever, namely, an elevated temperature and a cessation of tissue repair are invariably conjoined. The presence of the one means the presence of the other; the most pronounced manifestation of the one means also the most pronounced manifestation of the other. The slow emaciation of the tuberculous patient can as certainly be foretold from the slightly elevated temperature, as can the more rapid emaciation of the tyhoid patient from the more elevated temperature. But the question that presses for solution is: What is their connection? Which is primary? Which is secondary? Which is causal? Which is dependant? To answer this we must go to other domains than practical medicine.

The great truth that has given a new point of departure in every domain of physical inquiry, the establishment of the indestructibility of force and the strict quantitive correlation among the modes of force exhibited about us, has imparted as much certainty to the study of force as the establishment of the indestructibility of matter imparted to the study of material forms. We may now feel assured that when transformations of matter or force occur under our observation we are witnessing fixed and definite changes—changes that in their nature are

strictly quantitative. Furthermore, in the light of these truths we must recognize the fact that modern science demands from us an account not only of the qualitative, but also of the quantitative aspects of these transformations.

Again, besides the strictly quantitative nature of the transformations of one force into other modes of force, and of one kind of molecule into other kinds of molecules, we must draw attention in passing to the fact that in the human body the amount of matter transformed bears likewise a quantitative relation to the amount of force transformed. Evidences of increased material transformation are equally evidences of increased force transformation; and so we are made to realize the necessity of the law that clinical experience teaches us, namely, that increased excretion of CO_2 and CN_2H_4O are the invariable accompaniments of increased temperature.

We may sum up these prefatory considerations in the following statements, to none of which, it is believed, objection can be made:

1st. That Fever is an evidence of a disturbance of nervous function.

2d. That the most prominent characteristic of Fever is a violent alteration in the relations of tissue destruction and tissue repair.

3d. That from established physical laws we should still expect to find, through all the apparent disorder of this violent alteration, a strict quantitative relation existing in the transformations of force that are occurring.

Let us trace the normal force transformations that occur in the healthy body, and see if by these we may not clearly account for, and still discern the rule of law, in the violent alterations that characterize Fever.

The oxygen molecule inhaled in respiration is the easiest to follow. After entering the lung it passes into the blood, where it is taken up and lightly held by the Hæmoglobin of the red corpuscle. Thence it is carried to the periphery of the system, where it is given up to enter into permanent union in the processes of combustion. We mean by combustion trans-

formations of two kinds, which occur simultaneously: 1st. A transformation of the molecule of oxygen and a molecule encountered in the blood or tissues into other molecules, chiefly in this case CO_2 and H_2O, and 2d, the transformation of the chemical energy of the oxygen molecule into other modes of force.

From the fact that matter is indestructible we cannot conceive that anything occurs to the oxygen molecule and the molecule encountered save a change in form, a rearrangement of atoms; and since force is indestructible, we are equally unable to conceive that anything occurs to the chemical energy save a change in mode. There can be no loss of energy, there can only be transformation. This can be rendered plainer by regarding for a moment the transformations that occur in the simplest form of electric battery. A strip of zinc and a strip of copper, connected by a copper wire, and immersed in dilute sulphuric acid, constitutes the apparatus. The transformations that transpire are analogous to those occurring in the human body. The molecule of zinc forms with the sulphuric acid a molecule of zinc sulphate; a molecule of hydrogen is set free. These are the material transformations. But at the same instant the chemical energy of the zinc undergoes transformation, on the one hand into heat, and on the other hand into electricity, while it also restores chemical energy to the hydrogen set free. Since the energy restored to the free hydrogen is constant, then, if the amount of heat is increased the amount of electricity must diminish, and *vice versa*, for the sum of energy represented by the transformed results can never be greater than that which is liberated when the zinc goes into combination.

Returning to the oxygen molecule in the body we can understand that we must here, as in the battery, strictly account for the chemical energy which disappears. This we can do by remembering the forms of energy manifested in an active living body.

1st. We have heat, the normal body temperature of 98.5° F., which is always maintained. This must represent one portion of the chemical energy undergoing transformation.

2d. The work of lifting pabulum into tissue—tissue-building force, must represent another portion.

3d. The various kinds of work performed by the body must consume the remainder.

Of these, the first and second, represent in health constant quantities. They are going on steadily without intermission, The third must vary according as the body is at rest or in action. If the third is excessive it must be so at the expense of the other two, unless combustion is increased to meet it.

To illustrate this point clearly, two experiments performed upon my own person are here cited:

Two hours and a half after a meal, my temperature was determined while at rest, by a self-registering thermometer placed under the tongue. It registered 98° F. The thermometer was then removed and arranged with the register below normal, at 95°. Carrying the thermometer in my hand, a double-quick was begun and kept up for a quarter of a mile. At the end of this distance, the pace still being maintained, the thermometer was re-inserted under the tongue, and the double-quick was continued for a quarter of a mile further. At the end of that distance the double-quick was stopped, and the thermometer immediately observed. It registered 97.5° F. Remaining now at rest, the thermometer was replaced under the tongue and allowed to remain there for five minues; it registered 98° F. The register was again driven below normal, (to 95° F.), and the thermometer replaced under the tongue for three minutes longer; it then registered 98.5° F. This process was repeated a third time, and at the end of four minutes more the register marked 99¼° F.

The same experiment was repeated the next evening under identical conditions. The temperature before starting was 98.75° F. After double-quicking a quarter of a mile the thermometer was placed under the tongue and the pace maintained for a quarter of a mile further. At the end of the last quarter the temperature was 98.5° F. Remaining now at rest, the temperature in three minutes was 98.75° F. At the end of five minutes it was 99.5° F.; and at the end of ten minutes 99.75° F.

In the light of what has been said, these variations of temperature are easy of explanation. While at rest, the transformation of chemical energy into heat on the one hand, and into tissue-building force upon the other, went on normally; the heat being represented in the two experiments by the temperature at rest. As soon, however, as the double-quick was begun a new demand was made upon the chemical energy for transformation in a new direction, namely, work. The thermometer was not placed under the tongue until the double-quick had been kept up for a quarter of a mile, in order that the demand might be felt, and would then show itself by failure of the heat to attain the normal temperature observed while at rest. In each experiment the temperature recorded at the end of the double-quick was below that recorded at rest. The explanation of the steady rise of temperature immediately upon coming to rest is that the extra combustion called into play by the exercise had only one direction for transformation. As soon as the work ceased the extra energy had to appear as heat.

Let us apply these principles in explanation of the phenomena of fever. In a healthy person who is invaded by fever, we have first a state of nervous failure. The approach of this is heralded by some days of *malaise*. When finally the nervous system can no longer contend against the depressing cause, a sudden and marked nervous prostration ensues. This is the period of chill, during which the great mass of the blood gravitates, through capillary relaxation, to the great abdominal viscera. This condition of chill is a phenamenon as general almost as that of fever. It belongs to no specific disease, but is the common expression of nervous failure that generally precedes the subsequent febrile state. Even in this condition of chill, however, increased temperature is revealed by the thermometer. The same condition of nervous disturbance that will account for the increased temperature of the true fever state, is here already in existence; for we must truly regard even the sthenic febrile condition as still one of nervous depression,—a continuation of the state so suddenly announced by the chill.

The cause of this increased heat production seems, from what has been said, to be capable of explanation, as follows: In the healthy body at rest the transformation of chemical energy goes on under the control of the nervous centres in two principal directions. First, a certain amount of it is transformed into heat, by which the normal body temperature is maintained, and secondly, the remainder is transformed, as has been taught by LeConte, into that power which lifts pabulum into tissue. This tissue-building force represents a certain amount of work done, and for it we are compelled to seek some constant origin in the processes of force transformation that go on in the body. The transformation of chemical energy is the only such origin known to us.

If these almost self-evident propositions are granted, then the explanation of the phænomena of fever is simple. Thus, some agent, whether through the blood, or directly, disturbs the normal balance of the nervous system. Its most important, and probably its highest physical function, tissue-building, is arrested; combustion, nevertheless, goes on, but now that portion of chemical energy wont to be transformed into tissue-building force must seek another outlet, and take the lower form of transformation into heat. In other words, chemical energy, which under the control of the nervous system was, in health, being transformed in two directions, tissue-building force and heat, now, upon the failure of the nervous system is transformed only in one direction, heat.

But more than this must be supposed. During the febrile condition the tissues of the body not only cease in a measure to be renewed, but those already formed, seem to disintegrate more readily. With the destruction of that power in the nervous system which raises pabulum to tissue, there also seems to fail a power maintaining tissue integrity. The process of emaciation, as well as the great increase of albuminoid excreta observed during fever, demonstrate this.

Comparing the increased temperature of fever with the increased temperature occurring during rest immediately after violent exercise, as shown in the experiment above, the true nature of fever can be more readily comprehended. During

the exercise in health the nervous system was in normal working order, tissue-building went on without disturbance; the increased temperature from exercise was merely a surplus combustion called into action by work. As soon as the work ceased the surplus energy appeared as heat, and normal temperature was reached as soon as the extra heat had been radiated off.

In fever, however, the case is far more serious. The failure here is at the very seat of life. The nervous system can no longer control the processes of transformation, and they run riot. Normal temperature cannot now be arrived at by a mere radiation off of heat. It can only be regained by restoring the normal modes of force-transformation, and this can only come through a restoration of nervous equilibrium.

These considerations teach us that the increased heat succeeding exercise is a normal physiological necessity, while the increased heat of fever is an abnormal or pathological production. One is as much the result of healthy nervous action as the other is of diseased nervous action.

We must therefore define fever in terms of the nervous system. Fever must be defined as a pathological condition resulting from a failure of the nervous centre controlling tissue repair and tissue integrity, during which the transformation of chemical energy into tissue-building force ceases, and its transformation into heat ensues; and we must add, during which, through the same nervous failure, tissue already built becomes readily subject to combustion.

We are here brought face to face with the undecided question as to where combustion takes place; a question upon which, it is readily seen, the preceding views necessitate a definite opinion. From the purely physical grounds upon which all of the foregoing reasoning is based, there seems to be but one answer. If the transformation of chemical energy in the human body is the source of all physiological energy, then we are compelled to take the simplest solution, namely, at the place where energy is to be utilized there it is transformed, whether it be in the blood, or whether it be in the bioplasm of the ultimate cell.

All the secondary phenomena of fever naturally follow upon increased combustion. The first noticeable effect, after elevated temperature, is the increased excretion of urea and carbon dioxide. These are but the ashes of the combustion that is going on and must be present as its necessary result. When the chemical effects of this increased combustion are considered an easy explanation of many secondary phenomena may be reached. Increased combustion means the breaking up of complex molecules into simple molecules. More than this; since oxidation is equivalent to acidification, it means the production outside of the blood vessels, in the tissues, of acid molecules that can find their escape from the tissues only through the blood. This process can readily be explained if we remember the law of diffusion for liquids so long ago laid down by Graham, namely, that in the diffusion of liquids through wet membranes, the flow is always from acid to alkali. This law enables us to explain the diminished alkalinity of the blood in the febrile state, and to show that it is a direct result of the increased combustion that is going on. It also enables us to explain another of the phenomena of fever,—the dry skin and the diminished secretion from the glandular organs. In the light of this law, we see that all flow must be from the tissues to the blood vessels. Instead of the equal and normal flow from vessel to tissue and from tissue to vessel, we have the current into the vessels increased, while that out of the vessels is diminished. The result is, vessels more full of a blood whose alkalinity is diminished. The rapid action of the heart that always accompanies the febrile condition, can be most easily explained by the fact that through the abnormal state of the blood the nutrition of the heart is interfered with and its power lessened, a conclusion that the sphygmograph has amply warranted, and which accounts for a lessened blood pressure while the vessels are actually more full of blood than usual.

For the great thirst of fever there seems to be no better explanation than that usually essayed, namely, that during the increased combustion water is used in the processes of molecular change going on. In support of this we have the chemi-

cal facts: that the presence of water is necessary for chemical changes at low temperature, that in many chemical changes the water takes active part in the process, actually combining with the molecules formed, and requiring often a high temperature to drive it off.

But small space remains for the consideration of the treatment of the febrile state. Yet since the subject would be incomplete without it, a few words will be offered upon its rational treatment.

If we are right in the explanation above given of the true nature of fever, then the consideration of its treatment would fall naturally under the following divisions:

1st. Means by which normal nervous action may be restored.

2d. Means by which the consequences of the nervous failure may be arrested.

We may have two conditions operating to cause failure of nervous function:

1st. A cause which acts and immediately ceases as a cause, but the effects of which endure for a greater or less period.

2d. A cause which continues in action and whose removal is necessary to abate the condition.

These two classes will correspond, the one, to febrile conditions induced through sudden shocks to the nervous system, and the other, to febrile conditions induced by the ordinary disease poisons which act through the blood. The first includes a large portion of surgical cases; the second includes many surgical conditions and all purely medical diseases. In regard to agents at our disposal for at once simply and purely correcting the disturbed nervous function, giving rise to the first class of cases, we may say that we not only are devoid of them, but that we may never hope to procure them. Such nervous disturbance can be corrected only by time. It is a pathological state from which there is no return to health save through the slow processes of physiological repair. The treatment of the conditions arising from such disturbed nervous functions will be identical with the treatment of the same conditions of the second class.

In the second class it is seen that correction of the disturbed nervous function can only come through a removal of the cause. In this class it is generally agreed that a poison enters the blood and so alters its condition as to render it unfit for the supply of proper nourishment to the nervous centre. The nervous failure can never then be repaired until the poison in the blood is destroyed. The knowledge of agents for this purpose has never yet to any extent been investigated. It embraces that most hopeful of all fields for future medical progress, the discovery of agents that will destroy the poisons in the blood without injuring the individual. In the light of the rapid progress of microscopical discovery, it is not too much to hope that the time will come when we shall know the true cause of each particular disease, and shall be able to destroy the poison in the blood ere the poison shall produce its results. This great and important subject may be classed as the second division of Public Hygiene, as Prophylaxis in Person, being second in importance only to the first division, or Prophylaxis in Place.

Seeing then that it is in the first-class of cases, useless for us to hope for an immediate medicinal restoration of nervous function; and that in the second-class we are only upon the threshold of such knowledge, it is left for us only to touch upon the treatment of the results of nervous failure, as evidenced in the phenomena enumerated.

Increased Temperature.

Here it would seem simplest to divide our agents into two classes: those which simply abstract heat; and those which arrest the production of heat; but in practice no such division is possible. We seem to have no such agents as will act simply as abstractors of heat. No division can therefore be made.

If we possess any agent that would seem entitled to the claim of simply abstracting heat, it is *cold*. Yet a little thought will make it apparent that its power is much wider. When applied either as cold air, or cold water, it is, up to a certain point, a powerful stimulant to the nervous system. When applied in fever this power is shown, for after its appli-

cation, not only is the temperature lowered, but it remains lowered for some hours after the cold is withdrawn. This result can only be explained upon the hypothesis that, besides abstracting heat it has temporarily so stimulated the nervous centre, (the depsession of which has caused the increased combustion), as to enable it partially to reassert its functions. Cold, then, seems to be, and in the hands of European practitioners has been proved to be, one of the most valuable agents in our possession for the abatement of temperature in fever. The difficulty of managing its application, and the prejudice existing in this country concerning it, will probably compel us to give it a second place until greater accuracy has been obtained in regard to its mode and times of application, and its result.

In the cinchona alkaloids the profession in America has found the most reliable and manageable class of agents. The many indications met by this group must, especially in the South, keep it at the head of the agents used for lowering temperature in fever. The action of these alkaloids is two-fold,—they possess the power of destroying the malarial poison, whatever it may be, and by destroying the cause they arrest the fever. This action confines them entirely to their role as antidotes. Their power, however, is far wider. In fever, other than malarial, they have a most distinct power of reducing temperature, and this power seems to be exerted in two directions. Like cold, they appear temporarily to affect the centre controlling tissue transformation, and in their way to arrest somewhat the processes of combustion at their centre; while, secondly, by their presence in the blood they appear to inhibit directly the actual processes of combustion occuring there. For this purpose large doses are necessary, as experience has taught that a given amount of any one of these alkaloids, used as an antipyretic, has a much more marked effect when given in one or two large doses, than when distributed in many small doses throughout the twenty-four hours.

In regard to that other great class of remedies so much used in the febrile state for depressing temperature, no mention can be made. Their known physiological action would indicate

that they palliate the phenomena of fever rather than remove its cause. The so called Cardiac sedatives, are types of this class.

Concerning the diminished alkalinity of the blood that is found to be such a constant accompaniement of the febrile state there can be but one opinion and but one mode of treatment. That this condition should exist is but to be expected from the increased combustion, and the consequent flow of acid products into the blood-vessels from the surrounding tissues; and that it should disturb the normal exchange of fluids between vessels and tissues is to be looked for since this exchange is completely dependent upon the maintenance of the chemical perfection of the blood. This is one of the general phenomena of the febrile state that presses most strongly for treatment. It must be met in every case of fever, no matter what may be the cause of the fever or the name bestowed upon the disease expressing it. Its treatment is plain, and may be regarded as the chemical correction of an abnormal state. The free administration of alkalies is the patent means by which to correct a condition of diminished alkalinity. Among the alkaline salts, nevertheless, there is some choice. While they will all alkalinize the blood it is to be remembered that the ammonium salts are stimulant, the potassium salts depressant, while the sodium salts are neutral, as far as the effect of the base is concerned. We have, therefore, plain indications for the choice of the salt to be used in a given condition. In sthenic conditions the potassium salts are to be preferred, while in asthenic, the ammonium salts are indicated. In regard to the acid radical, the organic salts, citrates, acetates, tartrates, etc., are in most cases to be preferred to the inorganic. Whatsoever salt is used, however, the primary object is to restore the normal alkalinity of the blood, by which restoration the normal flow of fluid into and out of the vessels will be secured, and with it an approach to the healthy processes of secretion and excretion.

Space does not permit more than this general glance at the treatment of the important subject of this paper. It is hoped, nevertheless, that what has been offered in explanation of the

febrile state may stimulate the minds of others to renewed thought upon this most important phenomenon of disease, for upon a clear theory of its cause alone can a perfectly rational treatment be built up.

Obliteration of the Inferior Vena Cava.

Reported to the Orleans Parish Medical Society.

BY CHARLES TURPIN, D. M. P.

Miss K., aged 72, born in France, statue below the average, temperament sanguine, constitution strong, belongs to that energetic Breton race so remarkable for its degree of vitality.

Head erect, of a graceful carriage, she glides rather than walks, and goes up and down stairs without fatigue. Her complexion somewhat pallid, colors vividly when she speaks. Her face and brow are marked by few wrinkles. Her eyes, black, brilliant and searching, allow nothing to pass unnoticed. Her eye-lids are free from the œdema peculiar to old age. Her intellect is sound, her ideas are clear, her conversation is sprightly, select and easy, her understanding is quick and her memory is so retentive that she relates with facility the smallest particulars of her infancy. Were it not for the sadness which casts a peculiar shadow on her countenance, nothing in her appearance would indicate disease. These details may seem long, but they are necessary, as will appear later.

Her family history is interesting as regards etiology and hereditary predisposition. Her mother died of heart disease, and her father of cerebral apoplexy. One of two sisters died of pneumonia, the other of rheumatism. Her only brother died three years ago of pericarditis with effusion.

At nineteen years of age she entered a religious order, and for one year her health was excellent. At this time, after a forced march under a burning sun, she was attacked by fever, accompanied with cerebral complications and general anasarca. Menstruation was then suppressed for two years, and during six years she remained in good health.

Thirty-two years ago, after taking a bath, perhaps a little too warm, she was immediately seized with the same anasarca as previously. Since that time her two legs and feet have remained œdematous, and she has often had severe attacks of fever.

In 1880, she came to consult me about the purgatives necessary in her condition, but refused to undergo any treatments It was at that time that I saw the œdema of which I have spoken above, which was indeed considerable. On January 31st, 1881, her condition became worse. I found her lying on her right side, her legs a little flexed, and her face pale, cold, shrivelled up and expressing intense agony. Her alæ nasi and cheeks were congested, and parts of her face, especially the forehead and infra-mental region were œdematous. Her neck and the sub-occipital regions were also enlarged. Her eye-lids were closed, motionless, free from œdema; her upper lids, when raised, fell back slowly; the conjunctivæ were injected; the pupils were round, dilated and insensible to light, and the lips were closed and cyanosed. On the right side the depressions in the supra and infra clavicular regions were filled up by serous effusion, the œdema also extended over the right scapula forming a large tumor, and reached the lumbar region, which was distended into an enormous protuberance. The lower part of the thoracic and of the abdominal walls was so œdematous that a perfect level was formed, masking all muscular projections; and this level was tense and pitted on pressure. The legs and feet had returned to their normal size, the former œdema having entirely disappeared. On the external side of the legs superficial venous plexuses could be seen, contrasting strongly with the dead-white color of the skin. Upon examination of the superficial and deep veins no nodular enlargements could be discovered in their course. The arms and hands were puffed up, especially on the right side. The surface of the skin was pale, dry and cold. The examination of the tongue was impossible, on account of the approximation of the arches of the teeth. No nausea, nor vomiting occurred. The bowels had been constipated for several days. The

respirations were fifteen per minute, and, upon auscultation, the respiratory murmur was found dimished in intensity, and some sub-crepitant rales were heard. No murmur was obtained in the precordial region, and no purring thrill was perceptible to the hand. The heart's impulse was feeble, the sounds were diminished, and no abnormal bruit was present The pulse was 60, small, soft and compressible. Percussion was unsatisfactory on account of infiltration of the thoracic parietes. Sensation and motion in the limbs were preserved. She was in a state of coma-vigil, answered only by unintelligible monosyllables, and relapsed immediately into the same state of drowsiness. Such was the condition in which the patient remained for fifteen hours.

On the next day, February 1st, she was found in bed, in a semi-sitting posture, her face looked natural, the œdema had greatly diminished and the congestion of the cheek had disappeared without leaving any traces. Her eyes were wide open and bright; the lids perfectly movable; the redness of the conjunctivæ remained, but vision was normal, though there existed some photophobia and photopsia. Her tone of voice was natural, she spoke with facility, and her answers showed that she had perfectly recovered her mental faculties. She complained of pain behind the sternum and a small amount of dyspnœa, and now and then she was troubled with a dry cough accompanied with the difficult expectoration of a small amount of a whitish cotton-like matter. The subcrepitant rales had disappeared; the heart sounds were normal and louder than on the day previous. The pulse numbered 76, and was stronger and more resisting. The temperature was 98° F. The extremities were cold. There was perspiration, but this she said had been the case with her for a long time. As to the digestive apparatus, the lips were rosy; the gums and teeth devoid of coating: the tongue clean and freely movable, did not deviate to either side when protruded. Her enunciation was good. The taste was perverted, and anorexia was complete. She complained of dysphagia, due, as revealed by examination, to œdema of the walls of the pharynx. Finally she suffered neither from thirst, nausea, nor vomiting.

The epigastrium was tender, the belly projected forward, and was larger in the anterior-posterion than in the transverse diameter; this, however, was probably due to a large mass of fatty tissue deposited in the anterior wall of the abdomen. Percussion above the umbilicus gave a clear resonnance below, and latterally the note was dull. Fluctuation was obscure. The skin over the abdomen was white, œdematous, and traversed by a number of dilated veins, which occupied not only the anterior and lateral parts of the abdominal walls and the inguinal regions, but also ascended to the hollow of the axillæ and extended to the anterior part of the chest. These veins formed in their course numerous anastomoses, from which branches of different sizes arose. By compressing these veins, it was seen that the blood circulated from below upwards. A fact easily understood, for the blood traveled towards the superior Vena Cava. The stools were of a deep black color, and offensive. The urine was diminished in quantity and dark-colored, and deposited, when left to stand, crystals of uric acid.

In the afternoon of the same day, February 1st, the paroxysm recurred, at the same time as on the preceding day, accompanied with the same threatening symptoms; and from that time she was every day afflicted with a return of these attacks, which varied both as to the time of their occurrence and as to their duration. Special attention is called to the following facts, namely, that these exacerbations were unaccompanied by pyrexia, and that after a while they were followed by perspiration, which came slowly upon the upper part of the body alone, being altogether absent from the lower part.

About this time, Dr. Ferrier saw the patient in consultation with me, and was very much puzzled to localize the lesion, which caused so many serious symptoms. Up to the end of March, the paroxysms continued to diminish both in intensity and duration; on the 17th of April her improvement was well marked, and in May she resumed her former occupations.

Treatment: Sulphate of quinia, saline purgatives and calomel were first employed, but without success; drastics, and especially scammony in large doses gave better results. Diuretics increased the urinary secretions only temporarily. Ja-

borandi, though it gave rise to profuse sweating, did not affect the salivary secretion and did not fulfill our expectations.

Diagnosis: This case is so obscure that I am almost afraid to express myself positively as to its diagnosis. Before proceeding further it is important to state that the patient is altogether free from all signs of any constitutional disease, such as scrofula, tuberculosis, cancer, or chronic arthritis; and that the urine is clear, of a bright-yellow color, is small in quantity and deposits on standing crystals of uric acid, as stated before. Upon chemical examination, it is found free from albumen, sugar and excess of phosphates, therefore we will dismiss all other pathological significance it may possess as foreign to our subject.

It is impossible to attribute the œdema of the lower extremities to heart disease, as the strength, the number of pulsations, and the sounds of this organ are normal.

As to aneurisms of the thoracic aorta, its principal symptoms, (such as dyspnœa, pain in the precordial region, alterations in the voice, œdema of the neck, face and superior extremities, distinct repetition of the heart sounds at some abnormal part of the thorax, with bruit and pulsation) are all wanting.

Can it be an aneurism of the abdominal aorta compressing the inferior vena cava and the vena porta? This is, indeed, possible, for, in certain cases, the diagnosis of abdominal aneurism is extremely difficult. Nevertheless, from the absence of any tumor, of albuminuria, of neuralgic pains in the lumbar region, and of systolic pulsation, and also from the fact that the œdema of the limbs has altogether disappeared, we are justified in looking for another cause to account for this disease.

That the liver and spleen take no part in the production of this œdema is sufficiently demonstrated by their integrity, and the regularly performed functions of the former organ.

Chronic peritonitis can be discarded, because of the absence of its characteristic symptoms.

Disease of the lympatic glands of the mesentery can also be excluded, from the fact that such a disease would be incompatible with the patient's good health.

As to one other organic disease, which can give rise to a like œdema, we have ovarian tumors, which, however, could scarcely have attained such a size without giving some previous manifestation of their existence; such as fluctuation, which certainly would have led to an examination to discover whether any necessity for an operation existed or not; and, furthermore, in this patient, that grouping of symptoms so characteristic of ovarian tumors, and called by Spencer Wells the "facies ovariana," is altogether absent.

After excluding the above conditions, it remains for us to see whether the œdema could not be attributed to the obliteration of the superior or inferior vena cava, or portal vein.

Is the superior cava obliterated? If it were, the face, upper extremities and upper part of the trunk as low down as the umbilicus would be infiltrated with serum and cyanosed, and to these pathogramonic signs effusion in the pleural and pericardial sacs would be added; all of which, however, are absent in our case.

Are these symptoms due to obliteration of the Inferior Vena Cava? Allow me to quote Grisolle on the subject, as this will sufficiently well answer the question: "If," says this "author, "the Inferior Vena Cava be obliterated, the lower "extremities are traversed by varicose veins, infiltrated from "below upwards, as in cases of chronic cardiac disease. Later "on an effusion in the abdominal cavity may take place. But "this does not last long, from the facility with which the cir-"culation is re established by means of collateral and inter-"mediary branches anastomosing together."

In our case two compensatory circulations were established: 1st, a net-work of enormous veins, coming, some from the cutaneous veins, others from the epigastric, anastomose freely with the intercostal and mammary veins. 2d, another supplementary circulation is formed by the azygos vein, which,

anastomosing with the intercostal and lumbar veins and with the vertebral sinuses, becomes considerably dilated and allows a large amount of blood to pass through to the heart from the lower extremities.

Were the portal vein the seat of the obstruction, the symptoms would be almost identical with those just mentioned, with this difference, that the ascites would precede the œdema of the lower limbs rather than follow it, as it did in this case. Again, in obliteration of the vena porta, the supplementary circulation might help to make the differential diagnosis, as it varies from that in obstruction of the inferior Vena Cava in the following particulars: Enormously dilated veins are seen running from the xyphoid cartilage to the pubic bone, in a straight line, following the course of the epigastric and mammary veins; at the outer border of the rectus muscle net-works of small veins freely anastomosing would be observed; in all of these the blood runs from above downwards to flow into the femoral and iliac veins.

From the foregoing, and inasmuch as the heart and aorta are free from disease, and as the central organs offer only negative symptoms, we are induced to conclude in this case—

1*st.* That the œdema of the two lower extremities was the primary phenomenon of the disease.

2*d.* That the ascites and anasarca were secondary symptoms due to the obliteration of the inferior Vena Cava.

3*d.* That the course of the venous networks which appear on the integument, must be looked upon as the agents in establishing the collateral circulation of the Vena Cava.

4*th.* That the cerebral symptoms were due to compression of the convolutions of the brain from effusion into the cranium.

However strange may be this case, both as regards its duration and the intermittency of its symptoms, it must be admitted, for a final reason, to have been an occlusion of the Inferior Vena Cava, because of all venous occlusions, this is the only one compatible with a long life, while all others terminate fatally in periods of time more or less rapid.

A Post Mortem Inspection.

By T. C. Osborn, M. D., of Bonner, La.

Read before the Lincoln Parish Medical Society, at its regular meeting in December, 1881. Published by order of the Medical Association, Lincoln Parish, La.

Rose Sanders, negress, aged 50 years, after a lingering illness of six years' duration, died at my hospital on the morning of the 26th April, 1881, and, in the afternoon of the same day, I made a necroscopy with the following observations, namely:

Cadaver emaciated. Slight rigidity. Abdominal walls very thin. No unpleasant odor from the cavity when exposed. Half a gallon of brownish serum was sponged out, which disclosed an anemic condition of the tissues and viscera. All the organs were apparently normal except the liver. That viscus was slightly enlarged, and, with its tumid gall-bladder, the right lobe dragged as low as the iliac region. It was remarkably pale everywhere except the extreme end of the left lobe, which had a more natural color. The concave surface, and its edges had a darker tinge than the upper surface.

The gall-bladder was dull-white, free from external adhesions, greatly distended, measured seven inches in length, by three inches diameter through its fundus end, extended one and a half inches beyond the edge of the lobe, and, when separated, weighed two and a quarter pounds. To my hand it communicated the sensation of a round, smooth and solid body. An incision made through its length showed no thinning of its coats, which were destitute of blood, and an interior tightly packed with a mass of a whitish color, mottled with brownish spots towards the neck, and a little softer than fresh-cut cheese; and towards the fundus whiter, firmer, without mottling, and quite friable. This curious mass rolled out easily from its cyst without breaking, and weighed two pounds. There was no bile in the gall-bladder, and but one drop of atrabile when the ductus communis choledicus was severed from the duodenum. The liver alone weighed three and three-quarter pounds. Its convex surface had many circular spots upon it, of a dull-white color, and differing in dimensions, from one and a hal inches, to one line in diameter, slightly elevated, but not um

bilicated. They were the outcropping, I found, of a bed mass of the same formation in the interior of the liver, and they strongly resembled white-horn buttons fixed to the surface. These buttons were more abundant on the right lobe, the left lobe having a number also, but they were much smaller, and with greater intervals between them.

A transverse section, parallel with the left side of the gall bladder, disclosed in the interior of the liver a mass of heterologous formation identical with the contents of the gall bladder, only it was not friable, and had none of its mottling. Its color was white, and its consistence decidedly cheesy. There was no appearance of organization in it. Incisions made longitudinally exposed this mass in nearly all parts of the liver, broader and deeper near the end of the right lobe, and narrower and thinner towards the extremity of the left lobe, where it disappeared entirely, leaving the lobular structure intact, and of an almost healthy color. This heterologous deposit reminded me of a lake, with irregular and various sized promontories indenting it from one side only. The juttings of liver tissue were large or small according to the size of the buttons, but inversely, and many of them bevelled rapidly to points, which ultimately became extinct before reaching the opposite side.

The morbid bed-mass extended from within an inch of the end of the right lobe, to from two to three inches of the extremity of the left lobe. There were no signs of fatty liver, nor morbid adhesions on its circumference.

REMARKS:

My esteemed friend, Dr. M. B. Pollard, who is now with us, had this case in charge for a short time some two or three years ago, and saw it again in the early part of last April at my hospital; and we may feel reasonably certain that he will oblige the Society with its semeiography, whilst under his observation.

To me the case was singularly interesting and remarkable. I found it impossible to diagnose with any certainty the pathological condition of the liver, and was at a loss to understand

the solid consistence of the tumid gall bladder, which, with the right lobe, could be satisfactorily circumscribed with my hand, and even lifted up to its place under the ribs. The attenuated and flaccid walls of the abdomen, facilitated the recognition of the tumor; but, aside from the emaciation, there were no pathognomonic symptoms reflecting the least light upon the nature of the disease creating that dragging condition of the liver. The great distention of the gall bladder was, in my estimation, the probable cause of the displacement, and its solid feeling to my hand was further proof of the great weight it possessed in the premises. But the only conclusion I could come to was, that the bladder was probably filled with inspissated bile, which of itself, was amply sufficient to account for all or nearly all the symptoms presented in the case.

Unfortunately for me, the woman steadily persisted in asserting that the tumor was ovarian, and began growing from the right iliac region. It was her daily solicitation for its removal by an operation, even though she was constantly told that the operation would be immediate death, if performed under the most favorable circumstances, and especially so if done in the present prostrated condition of the system. This stubborn persistence of hers in declaring such a palpable untruth, made me reject as worthless her previous history of the symptoms, and caused me to accept only such as presented themselves to my own observation. I am aware of the sad fact that there are no pathognomonic symptoms which will enable us to differentiate chronic morbid conditions of the liver. But this fact only stimulated me to watch the progress of the case still more closely, so that I might be able, if possible, to arrive at some definite conclusion in relation to the nature of the malady, and to adopt upon that basis a rational course of treatment for the arrest of its formidable progress.

If this case, as presented to us by the post-mortem inspection, is not what *Frerichs* designates as "disseminated cancer of the liver," I am altogether lost in a fog of mystery as to its proper place on the nosological shelves. It is very true, and to be seriously regretted, that the liver and gall bladder were too soon put out of sight. But I did the best I was able un-

der the circumstances, as I had neither alcohol nor good whiskey enough to preserve it in until it could be sent to the Pathological Museum, at New Orleans, where, no doubt, its proper place in pathological anatomy would have been definitely settled. As the matter now stands, however much we may regret not having more light, you will have to accept my imperfect report of it, and discuss its character freely, irrespective of any prefaces or apologies which have been offered in your hearing.

The woman was hauled to my Hospital in the early part of last January, and from that date until the time of her death on the 26th of April I worked unflaggingly at the problem in the case, trying if possible to assort and arrange the semiological history to my satisfaction, hoping that something which might have been overlooked one day would be elicited the next; but, as you have seen, with little promise of success. The idea of her recovery had not deluded me for a moment, and the autopsy only set me wondering how it was possible for a person to linger so great a while under such a corroding and incurable malady.

She had a troublesome cough, without signs of pulmonary disease, occasional palpitation and dyspnœa, without indications of structural derangement of the heart, several attacks of epistaxis, variable appetite, feeble digestion, irregular action in the bowels and of the kidneys, all of which could only be accounted for by the presumption of extreme exhaustion of the organic nervous system and the consequent loss of balance in the circulation. There were fixed pain and great tenderness at the notch of the liver, and a persistent aching in the right shoulder, together with extreme emaciation, and a formidable tumor in the right side of the abdomen, and by these conditions alone the probable nature of the disease was indicated.

The icterode appearance of the sclerotic coats, and of the palate and fauces, merely manifested retention of biliary secretion, whilst at the same time there was certainly bile in the feces, and occasionally in the urine. Are you, then, any

longer surprised at the fog which enveloped me in the diagnosis snd treatment of the case?

It was late in the month of March before effusion in the legs and abdomen began to supervene, which of course added greatly to the distress of the patient, but it was easily kept at bay by the administration of tincture of jaborandi, and there was no dropsy found in the legs, and but little in the abdomen at the time of her death.

You have seen in the preceding pages of this report that I have not hesitated to confess my perplexity in diagnosing this case whilst living, and my surprise and wonder when the footprints were inspected after death. We are, indeed, curiously made, and still more curiously preserved in our afflictions. In this instance we find a body with all its organism in good order except the liver, which is, in a feeble manner, contributing as far as possible, *from its margins only*, to the vital processes of the system; whilst the centre of the viscus is, as it were, scooped, and in the places where were thousands of venules and arterioles, a multitude of lobules, lymphaties, biliary plexuses and peripheral nerves—a heavy deposit of heterologous formation lifeless in itself, and continually encroaching in its dimensions upon the remaining structure.

It is such mysteries as this which render us feeble and faint in our warfare against diseases, and it is such mysteries also that should stimulate us to renewed energy and emulation in heartily shouldering the duties of the hour, in cherishing increased deference for each other, and in encouraging a warmer and closer fraternity in the ranks of our profession.

Who will help us, if we do not help each other?

(It is to be regretted that a microscopical examination of the masses in question was not made. The case is unique, but the nearest approximation we can make to its solution is that the material was cholesterine.—*Eds.*)

Alveolar Abscess.

By C. EDMUND KELLS, Jr., D. D. S.

In the January number of this JOURNAL, there appears an article upon the above subject, comment upon which I feel constrained to make.

Considering before whom the paper was read, I take it for granted, the author's purpose was to call the attention of the medical profession to the many serious consequences which can result from alveolar abscess, and, also to direct its attention to certain prolific causes of complications, which oft-times utterly baffle its skill. And, furthermore, to advise the proper remedial measures for such cases.

In that portion of his paper devoted to the citation of cases, the writer does himself full justice, as all those reported, may be remembered to advantage by almost any practicing physician.

To his views upon the cause and to his mode of treatment, however, with all due consideration for himself, I take exception, and herein give my opinions.

Primarily, there are two classes of alveolar abscess—acute and chronic—each presenting radically different aspects, and requiring as widely differing treatment. These two classes may in turn be sub-divided into two other classes—true and false. A true alveolar abscess never occurs except upon the root or roots of a tooth whose pulp is devitalized. A false abscess may be found upon a "live" root, and is always caused by the presence of some foreign substance; salivary calculus, or some extraneous matter which has been forced beneath the gum, and there lodged. The treatment required for this is obvious—remove the cause and a cure quickly follows.

Of the sub-classes of the true abscess, let us first turn our attention to those of a chronic nature.

Cause—remains of a dead tooth pulp. I cite a typical case. There is no inflammation of the parts—the tooth may be a little longer than is normal (owing to a permanent thickening of the periosteum) but is not necessarily so, and is discolored to a greater or less degree. It is not sore to the touch; gives no

inconvenience, except that there is a slight but usually constant discharge of puss from some adjacent spot where a fistulous opening occurs. Cases present, where this opening closes at times, to reopen upon any slight attack of "cold" as it is termed. These chronic cases often baffle the most persistent treatment, but as that is very varied, and only to be followed by a dentist, it would prove of no interest to detail it in a paper of this character.

The acute true Alveolar Abscess, as I have remarked, is always caused by a dead pulp, and it is upon the treatment of this class that I beg leave to very widely differ from the doctor. I quote: "Prompt antiphologistic "treatment should be immediately resorted to; application of "*leeches to the gums* (italics mine), scarification of the surround- "ing parts and systemic depletion by means of saline cathar- "tics. Should these fail, remove the tooth." Follow those directions, and you will surely take his parting advice, viz., "Remove the tooth," and every time, at that! Further on he somewhat retrieves himself by his suggestions, but to the gentlemen he was addressing, vague directions should have been avoided, and instead, a direct line of treatment given. Again, a few lines before those quoted, this occurs: "As regards "treatment of Alveolar Abscess, it should be preventative "rather than curative, as it is seldom the case that the integ- "rity of the parts is so well restored as to prevent a recur- "rence of the disease." (Under his plan of treatment that, no doubt, is true.). There again do I differ from this conclusion. Very true is the adage "An ounce of prevention is worth a pound of cure," in this disease as in all others, but I do affirm that but a small percentage of failures will be met with in their treatment, excluding the third molars, and children's teeth when the roots are not fully formed; and where the disease is fully controlled, and the roots properly filled, in the great majority of cases, "the integrity" of the parts will be *so well* restored as to prevent a further recurrence of the malady.

The formation of the abscess is as follows: From the decomposition of the tooth-pulp gas is formed, and no exit being

found through the body of the tooth, pressure ensues at the apex of root (cause of pain), pus is then formed which burrows its way outwards.

Symptoms: Elongation and looseness of the tooth; pain upon pressure upon the same; inflammation of surrounding parts.

TREATMENT.—*1st stage, in which there is but slight inflammation.*

Make an opening through the crown of tooth into pulp-chamber; wash out with tepid water. Thus allowing free passage for any gases formed, the immediate trouble will be overcome. When soreness of the parts has entirely disappeared, the tooth can be further treated, roots filled when the proper time arrives.

2d stage, in which great inflammation of surrounding parts obtains.

If pus can be detected by the touch, lance freely and deeply in most dependent portion accessible of pus-chamber. If such is not the case, apply poultices (slippery elm we prefer), to gum over offending root. This should be used as hot as can be borne, changed as soon as cooled, and kept up until "a head" is formed, when recourse must be had to the lancet. The inflammation may be expected to subside rapidly, all tenderness of the parts soon to disappear, when the tooth can be properly treated, roots filled and but little fears entertained for the recurrence of the trouble. When this does recur the remedy lies in extraction.

As regards the third molars; unless specially needed owing to positions and usefulness—extract at once. And, under any circumstances, when they do not readily yield to treatment, the forceps must be resorted to.

Abscesses of the temporary teeth of children are very often met with, and as a rule, assume a chronic form—giving no trouble. The teeth may be safely allowed to remain in this condition for years, there being no cure except the extraction of the offending root.

Among the arts and sciences none has made greater progress, of late years, than that of dentistry, and in great meas-

ure is this due to the free and constant interchange of methods and ideas among its practitioners. Honest differences may exist, and honest criticism must follow. Having the highest personal regard for the author, I hope this paper will be accepted in the kindly spirit with which it is written.

New Orleans, January 16th, 1882.

CORRESPONDENCE.

Letters to Young Physicians.

By an OCTOGENARIAN.

LETTER I.

All men are capable of giving advice—some, good; others bad or indifferent. It has been said that all advice unasked is bad, to that extent that 'tis not taken. This may be true if the counsel be given in person—but advice in the abstract, or as we may call it *pure* advice, differs widely from applied advice. In this way we may admonish often on paper, and the fault be corrected, where our good words would have been unheeded if offered in person. We cannot pretend to universal wisdom. Some may—to those we say with Pope—"Go teach Eternal Wisdom how to rule. Then drop into thyself and be a fool." I am sure that many a young member of our profession will exclaim, on seeing this letter, "What! more advice! I've already had more than I can digest." If such is the case, my cerebro-dyspeptic young friend I am truly sorry for you; for almost every day I get worlds of advice, and though I must confess it sometimes falls upon me, yet I take it. The result of so much advice is, as you see, an overflowing, and hence I am giving a great deal of it away.

Letters have been written to young men on every subject under the sun well-nigh, and a good many in the heavens above and the earth beneath. But I am going to limit myself to young men of my own profession, so that there will be as few as possible to disregard the words of an old man who wishes to see every young medical man raise himself as near the top as possible, and so help to make medicine what she should

be—an exact science. Of course I cannot live to see the latter accomplished; happy am I that I have been permitted to be one of the chosen who should hold up a fragment or two of that science, so that others coming after me might place it properly in the grand structure.

These letters (like all letters before them) are different from any that have yet appeared in many particulars. They represent the ramblings of an old physician's mind upon the difficulties encountered by him when he first entered *the* noble profession; upon various little things untaught, as a rule, save by experience. Even now I take great interest in reading the letters of my once esteemed friend, Dr. Chas. Meigs, of Philadelphia, to his class of 185, though they are entirely different from what I propose to make these. It is not my purpose to write a text-book, but to talk with you as familiarly as though any one of you were sitting here with me asleep in your chair, while I was prosing away at you on medical ethics, or some kindred and inspiring subject.

Old people are especially prone to give advice to the young, and who should, if not they? Have they not the experience? Some one has said, "Advice is formulated experience." If that is so, some experiences are anything but profitable. Old people live more in the past than in the present; they are continually thinking of the difficulties which they had to encounter and overcome at that time, and fearing lest their young friends should fall into their errors, they talk to them and advise them, just as in a new country the trees are blazed between one inhabited point and another to point the true road to wayfarers, and prevent their being lost in the vast forests which stretch away in every direction. Now it seems that just in proportion as old men like to advise, the young are prone to disregard their counsel, and take their own way. They say that old and young people use different spectacles—see things differently—forget that they were once young.

I grant you all these things, and especially the latter, and all that I can answer is, may you learn wisdom by experience, but never, or seldom as possible, by sad experience. Now that you have my peroration and prologue all in one, let me com-

mence by hoping that your *Diploma* was given by an institution of high standing and strict requirements. I look with disfavor on the mushroom medical colleges springing up all over our lands. Hardly a small city of 25,000 inhabitants but must needs have its one, and in many cases two colleges, or diploma machines, as we may more properly call them. They are scarcely anything more than places for lazy men. A young man wants to practice medicine, but does not care to exert his worthless and much-indulged self enough to win a diploma from a college where the requirements are strict. So he enters one of these diploma mills, is run through in the appointed time for so much. Out of a class, say of 190 men, 187 will pass at the first off and the other three will very probably get "a second showing," and receive a license to go out and murder—yes—that's the word—murder, for not only do they go out to physic human beings, knowing nothing of medicine, but ignorant of the first principles of anatomy and physiology, and they do all of this wilfully, and it shows how degraded the human heart can become, for they know that they will not be found out, or at least think so. Would one of them dare build a house, knowing no more of architecture and house-building than about medicine? And yet, which the more important? One would scarcely hesitate to answer. And not only are they guilty, but the professors in the college from which they GRADUATE are their co-murderers. Do they not blush when they affix their names to such DIPLOMAS, or have they so often subscribed to that lie as to be beyond the blush which indicates that shame still has a habitation in that breast?

These pseudo-doctors are easily recognized, for it seems that in direct proportion to their profuse and dense ignorance are they assuming and self-important. They can be confounded with no animal on the face of the earth—except perhaps a government official with $400 per annum, or the clerk of a small hotel.

If, then, your title of M. D. arises from one of those Diplomas that disgraces not only yourself but the innocent and unoffending sheep upon whose back it grew, burn it up, and go where the prize is only awarded to him who merits it—to some

place facultied by men, not with a village or county reputation merely, but who are known throughout the length and breadth of this land. And there are not a few members of our faculties whose European reputation is as great as that in their native country. I tell you, young gentlemen, nothing hampers a young physician's rising in an intelligent community so much as coming from a bad college, or one of little reputation.

One of the surest tests of the worth of a College is its annual number of rejections from graduation.

For example, let us take the University of Virginia, and I take that, because she attempts to rival none, nor has she a rival in the land, so far as high standard and excellency of scholarship and thoroughness of instruction are concerned. Even when I was just entering the profession, I may say, she was beginning to take a stand among the institutions of the land, and she has risen rapidly since that time.

Had our Southern neighbors no other boast, they might well be proud of that University.

Let us see what per cent. of each class is graduated there. I have accurate data for two years only. In 1878-79, there were 53 men in the medical class—48 of these applied for graduation and 21 alone were successful. In 1879-80 there were 46 in the class—31 applied, and 10 only graduated. Proud, noble ten. I had almost as soon be one of those ten, as a survivor of the six hundred at Balaklava. Can we wonder at the small classes there? But the men of that Faculty prefer a small class to a large one, where the pen which titles a fool tells a lie at every stroke. Do not understand me as giving this as the standard for all of the colleges. But I would more gladly see this extreme than the other.

Supposing then that you have all fairly won your Diploma in a tough examination; you have only begun the battle. And let me tell you my young friends, with the majority it is going to be a long, tiresome, heartwearying battle. Often will you wish that you had staid at home, and been the farmer in the family; or taken the good place in the office down town. But don't remit your efforts while you think of this, or else some more enterprising young Æsculapius, will step into your place.

"Keep pegging away." If your office is not crowded with patients during the first five years, you have all the more time for study. And study *hard*; just as though seven professors were waiting to hear you give an account of that book.

There is a great art, gentlemen, in fishing for patients, and though Walton said nothing about it, I assure you it is quite as hard to *land* a nice patient as a large trout. In the first place you must be polite, dignified and gentlemanly, especially with women. In case your predecessor has had a "falling" out with the patient, do not allude to it, and refrain from conversing on that subject. Above all, never abuse him. Nothing will so surely cause the patient to soon despise you and get rid of you. On the other hand, rather give the appearance of taking the part of the physician.

If your patient be a woman, whether the highest or the lowliest in the land, never, under any circumstances, tell an indecent *joke*, make a vulgar allusion, or say anything which would cause her to blush. Some doctors seem to think that they stand excellently with their patients if they cause them to laugh. But allow me to say, gentlemen, it depends on what you say and do to make them laugh; and let me tell you that if you ever lose a woman's *respect*, as far as that woman is concerned, and the persons whom she can influence, you are literally no better than a dead dog. No one is so low or fallen but that their respect may be of advantage to you. Especially be careful in examining a woman—respect their naturally delicate feelings. I have often heard women, even in the low walks of life, say that they could forgive anything from a doctor except coarseness. And be assured that once offended in this manner they are done with you for ever. I will again have occasion to speak to you on this subject, so that I will leave it for the present.

Confidence—self-confidence—is a trait lacked by a great many of our young physicians, and unfortunately, it seems, in the very young men whose attainments are best; for those who know little or nothing seem to shrink at nothing, but to possess that confidence which would amputate a head for a compound fracture of the skull. To no one does the maxim

"Know thyself" apply better than to the physician. He should measure himself in all points, repair all weak places in his armor, for he knows not at what hour or minute some unexpected attack may be made at this very place. But when the attack comes meet it boldly, or else send the patient away to some one else; do not appear wavering or uncertain about it, or the patient will very naturally conclude that you don't know your business.

Never undertake a gynæcological case till you have thoroughly studied the subject, and mastered it. You may with perfect propriety refuse to undertake a case of this kind, on the ground that you have not made a study of it. But then lose no time in studying the subject, unless you determine to refuse them altogether. This you can do if you practice medicine in a town of some size, but not very beneficially to yourself if you are in a small place or in the country. For in the latter places the common impression with regard to physicians is, that they know and can do everything. Especially is this the case in thinly settled districts and among the regions of the South. They cannot see that a disease of the eyes, ears, or larynx can present any peculiar difficulties, and often have I heard a dusky Sambo laugh and say—"Dr. H., he can do anything—can take a man's liver out, and wash it, and put it back." Such ignorance is not at all uncommon, and often extends to the educated classes. So that while a country doctor's office is an *omnium gatherum* of backaches, and earaches, and heart-disease, and uterine troubles, and sore eyes, the city physician can elect any specialty that pleases him, and no one thinks the less of him; on the contrary, he is rather commended for it. In this connection let me say a word about giving medicine, when you undertake a case of which you are not certain, In the first place, never give a *grain* without a definite purpose in view. I once heard an old physician say—"I have often regretted giving medicine, but *never* have refrained from giving it." This, perhaps, is what every physician of two years' experience, would say. Now suppose that you have a case which so closely simulates two or three diseases in the beginning, that you are unable to determine at the first flush, which of them it really

is—yet the treatment is different. In this, as in all cases, treat *symptoms*. Don't go through life with the idea that a particular medicine is "good for" a particular disease. This is the reason that students make such absurd answers on examinations. They get the treatment by the disease, and never think of the symptomatic treatment; being as liable in this way to prescribe tartar emetic for a weak heart as anything else. Don't even entertain the idea in that form, that quinine is "good for" chills,—but know that quinine is an antiperiodic—and why? Because it is destructive to the bacillus malaria, or whatever else you mind to term them, which develop periodically in the blood and cause the paroxysm. Further than this we can't go at present.

Thus you see, one of the essentials to successful practice of medicine is a thorough knowledge of the action of drugs. Without this you are as much at sea as the man who should attempt to sail a ship and not know a main-sheet from a rat-line, and had no idea what effect would be produced by pulling on certain ropes. The best way to study materia medica is by the effect of a drug on each organ if possible. In this way you become impressed by the idea that a particular symptom due to a definite and particular cause can be controlled by the exhibition of a particular drug. In giving medicine, 'tis far better to give a drug, if possible, which shall fulfill two or three indications than to give two, three or half a dozen remedies at once. The simpler the prescription the better for the patient. Another important thing to remember is, what medicines are, and are not, compatible. This is of the highest importance, for not only will the drugs be perfectly negatived, but in many instances dangerous and poisonous compounds will be formed. I once knew a physician to order a prescription for a woman who invariably vomited a black fluid soon after taking her medicine. On investigation, the medical gentleman was found to have ordered large doses of quinine to be taken with brandy!—thus converting the patient's stomach into an ink manufactory. Sometimes a physician will give several large doses of calomel during a course of mur. tinct iron, and wonder that the patients are made quite sick thereby

apparently forgetting that the acid of the iron acting on the calomel produces corrosive sublimate.

The young physician of to-day has, we may almost say, an infinite advantage over those who learned the art in my day. The student of to-day has no idea what difficulties had to be encountered by the student of 1824. Medicine did not make very many rapid strides between that day and about 1850–1855. Since then its strides have been absolutely gigantic.

Then a doctor's stock consisted of little more than his bottle of calomel and phlebotomy knife, for whenever a man got ill, he was first bled and then given a dose of calomel, or perhaps, to keep from being called routine doctors, they sometimes gave the calomel first and bled afterwards. Anesthesia was unknown, and he was a bold man who had his leg amputated for such apparent trifles as cause them to part with that member nowadays.

It was proposed a little prior to that time to make severe pressure on the nerves of a limb before amputating in order to diminish the sensibility. Some of the theories and ideas in vogue then, are very laughable now. A book was published in Edinburgh, about 1790, by Dr. Balfour on the influence of the moon in fevers, which had an immense sale as late as 1830. I am sorry that I did not procure a copy as a curiosity, for I cannot find it now.

The first lectures of Sir Thomas Watson, were published about 1835, and were very highly thought of. He speaks of malaria and decayed vegetable matter as very different things —of malaria as not being able to cross water—that is, it lost its noxious properties by passing over water. But it is useless to recount these old theories; though they are all interesting, those of Aristotle more so perhaps than any others.

It has been said, and with a great deal of truth I think, that the late Civil War advanced the Sciences of Medicine and Surgery almost a century, if not quite. Since 1866, no steps in medicine, great as have been many, have been sufficient to excite much surprise, and things are come to that, that I hardly think there would be more than a passing surprise, if some enterprising young surgeon should report a successful case

of cepholatomy. One is almost tempted to say, in this day of beautiful surgical instruments and elegant pharmacy, with its innumerable fluid extracts, its pleasing tinctures, and well tasting syrups, together with the legion of sugar coated pills and splendid plasters, not to speak of the innumerable company of quack medicines and nostrums, that if a man dies it is his own fault. But I expect that if the truth were known, it is more of the doctor's fault than his own.

In order to keep up with the rapid progress of medicine at this day it is necessary to read and study continuously. Not only review carefully and critically your text-books, but get new ones, as you are able, and especially remember the importance of reading medical journals. It is only by taking and studying some good medical journal that you can hope to keep up with your fellows. Don't take half a dozen good-for-nothing dollar weeklies that teach you nothing, and are filled up with correspondence by badly educated men, asking for information which they should have obtained during their first course at a medical college. But take one, two, or three—more, if you are able—ably-edited journals, with good original articles, good translations from foreign exchanges, and gleanings from home journals. Be sure, however, that you don't get mixed up with any journal that fills its pages with carpings at other periodicals and prominent men in the profession. A young physician has to be extremely careful how he first conducts himself, for it is at this time that we older men in the profession watch closely to detect, if possible, anything irregular, and if we do you may be sure your road is a hard one after that.

I have know old men in the profession, and know some now, who have not seen a medical journal of any standing for ten years or more. This seems incredible, but 'tis so, nor have they a book later than about 1856. And truth to tell, they don't know of any advance that has been made since that time, would you believe it, gentlemen. I have seen in the past year, practioners upwards of 50 years of age, who had never used a hypodermic syringe. And yet they go on calling themselves and being called Doctors, and having no more right to the title

than that long-eared sire of half-a-dozen mules grazing out on yonder meadow.

I conclude this letter with David Crockett's admonition and motto—"Be sure you are right—then go ahead."

Current Medical Literature.

TRANSLATIONS.

"SPONTANEOUS" SPLENIC FEVER.

In the latter years much interest has been taken in the origination of the "spontaneous" splenic fever, and two investigators, Pasteur and Toussaint, prompted by the French Government, have been occupied with this question, and have both arrived at the same conclusion, independently of each other, and by entirely different means.

Pasteur presumed, in his researches that the bacilli in all probability got into the system through the fodder, and in order to test the correctness of this opinion, he made some sheep eat fodder over which he had poured a liquid containing bacillusrods and spores in abundance. Although the sheep consumed an immense quantity of vital spores in this manner, hardly a decease occurred amongst them; only once in a while one of the animals would die in 4 to 10 days after having taken a meal containing bacilli, showing all the symptoms of appopletic splenitis. Judging from these experiments it had to be supposed that the lining membrane of the digestive canal, as a general rule, was impermeable to the spores of the anthrax-bacilli, and that a direct inocculation was necessary to create splenic fever from the digestive canal as well as from the skin. In order to test the correctnesss of this hypothesis, and in order to imitate as much as possible the inoculation which might be supposed to occur in nature's laboratory, Pasteur mixed the fodder not only with bacilli and spores in large quantity, but also with thistles, chaff of barley, and similar pricking substances, which might be supposed to perforate the mucous membrane during mastication. Amongst the sheep fed in this manner fatal cases of splenic fever occurred comparatively often. Pasteur concludes from this that spontaneous splenic fever usually is introduced through the fodder, when it contains spores of bacillus anthracis, and when there exist wounds already, or by the mastication are produced scratches of the lining membrane of the oral cavity and pharynx.

Toussaint arrived at the same conclusion by an entirely different way. Experimenting on rabbits, he had noticed that the lymphatic glands nearest the place of inoculation, were swollen and teemed with bacilli, a few hours already after the inoculation, and a long time before it was possible to demonstrate bacilli in the blood. Having found out that this was so in sheep also, he concluded that it might be possible, by closely examining all the lymphatic glands in sheep having died from spontaneous splenitis, to discover the way by which the bacilli had entered the system. During a sojourn at Beance (where splenic fever usually kills 4–5 p. ct., and at times as much as 10–12 p. ct. of all the sheep), Toussaint examined 12 sheep and 2 cows in the year 1878. He skinned the animals and examined carefully the lymphatic glands, taking them up in a certain order. By doing so, he noticed that the glands in all cases naturally were devided in two classes: 1° glands, which in all respects have a normal appearance; and 2° glands, which are swollen, of a dark red color, often showing an ecchymosed surface on the cut, and surrounded by a yellowish or pink-colored, sometimes hemorrhagic, intercellular œdema. Examining microscopically the first class of glands (of a natural appearance), some bacilli are found in the blood-vessels, but the lymphatic follicles and interstices do not contain any, and have a quite normal appearance. It is, on the other hand, noticed that the morbid and swollen glands are so much crammed with bacilli, that their normal structure cannot be seen, being entirely covered by the innumerable closely packed bacilli. It was furthermore demonstrated that in both cows and in 11* of the 12 sheep, the above mentioned pathological conditions were found only in some certain glandular groups, viz: in such ones being supplied by their lymphatic vessels from the oral cavity and pharynx. All other lymphatic glands of the body presented a natural appearance. Greater harmony than this between Pasteur's experiments and Toussaint's anatomical investigations cannot be desired. It being ascertained that the spontaneous splenic fever in most cases is brought upon the animals through the fodder, the next question is: how does virus (spores of anthrax bacilli) come to be on the fodder of the animals? Having experimented largely in the laboratory as well as in the country, Pasteur thinks himself able to answer the question in this manner: When a corpse infected with splenic fever is buried, the great majority of the bacilli it contains, is destroyed during the process of putrefaction, but a part of them may, during the burying, drop out into the surrounding earth where they may germinate and produce

*In the twelfth sheep, the above mentioned pathologic conditions were found only in a lymphatic gland in the right hough; virus had consequently in this case entered the system from an exceptional point, somewhere on the skin or the foot.

spores. From the deeper layers of the soil these spores may be transported to the surface by earth-worms, giving the grazing animals an opportunity to come in contact with them.

Without entering further into the details of these important observations, we shall merely point out that it is in this way easy to explain why animals suffering from epizootic are particularly predisposed to splenic fever. It had been noticed for a long time that dry and warm weather was favorable to the development of splenic fever, and we may now, to some extent, explain how it is that these meteorological conditions may favor the spread of the disease: in the first place certain parts of the fodder are in hot and dry air, harder and sharper than when the weather is moist; in the second place the mineral particles of dust do easily cause slight injuries of the mucous membrane of the mouth, and finally the lining membrane is, during a drouth, more apt to crack than under ordinary circumstances. (Tidsskrift for Veterinærer, Ugeskr. f. Læger).

THE MOSQUITO HYPOTHETICALLY CONSIDERED AS AN AGENT IN THE TRANSMISSION OF YELLOW FEVER POISON,

By Dr. Charles Finlay,

Member of the Academy of Sciences of Havana, Member of the Clinical Society of Brussels, etc., etc.

(An extract from the Annals of the Royal Academy of Sciences of Havana.)

Translated by Rudolph Matas, M. D.

Mr. President and Gentlemen—Some years have now elapsed since I had the honor to communicate to you in this Academy the result of my alkalimetric experiments, through which, I believe, I have definitely demonstrated the excessive alcalinity which characterizes the atmosphere of Havana. Some of the gentlemen now present will doubtless remember also the conjectural relations which, at that time, I thought could be established between this atmospheric reaction and the development of yellow fever in this city. But much work has been done since; many and more exact data has been gathered, and the etiology of yellow fever has been more methodically studied than in previous years.

Through the knowledge which has been increasingly acquired since that time, I have had reason to become convinced of the untenable nature of any theory which may attribute the origin or propagation of yellow fever to atmospheric, miasmatic or meteorological influences, or of its equally weak character, if it appeals to filth or neglected hygienic principles. I have thus been obliged to abandon my primitive beliefs, and in making this announcement here, I desire to justify, to a certain extent, this change in my opinions, by submitting to the appreciative criticism of my distinguished colleagues a new series of experimental studies, which I have undertaken, with the view of ascertaining the mode by which the yellow fever poison may be propagated.

I must state, however, that the subject of this paper has no relation whatsoever with the nature or form in which the morbigenus factor in yellow fever exists; in this regard I will limit my opinions to the following statement: that I admit the existence of a material transportable cause, which may be either an amorphous virus, an animal or vegetable germ, bacterium, etc., etc., but which consists in all cases of a tangible something, which has to be communicated from the sick to the healthy in order that the disease may be propagated. What I propose studying is the medium or agent by which the pathogenic material of yellow fever is carried from the bodies of the infected to be implanted in the bodies of the non-infected.

The necessity of admitting the intervention of an element foreign to the disease, in order that this may be transmitted, follows as a result of numerous observations, formulated in the early part of this century, by Rush and Humboldt, and confirmed by latter-day experience. Thus, yellow fever sometimes traverses the ocean, and is propagated in very distant cities, whose meteorological conditions are widely different from those of the focus in which the infection originated; while at other times the same disease does not transgress the boundaries of a very limited epidemic zone, notwithstanding the fact that the meteorology and topography of neighboring localities reveal no differences which would explain so different a behavior of the same disease in two apparently similar places. Admitting the necessary presence of an agent of transmission whose behavior would explain the above anomalies, it is evident that the conditions now recognized as affecting the propagation of the yellow fever poison would also be applicable to this agent. In searching for the agent it was not probable that it would be found in the microzoa or zoophytes, for these minute forms of animated nature are little, if at all, influenced by the meteorological variations which most frequently affect the development of yellow fever. In order to meet the exigencies of this question it was found necessary to ascend as high up in the animal scale as the insect class, and keeping in mind, at the same time, that yellow fever is characterized clinically, and according to most recent labors, histologically, by vascular lesions and physico-chemical alterations of the blood, it seems natural that this agent could be found in that class of insects which, by penetrating into the interior of the blood vessels, could suck up the blood together with any infecting particles contained therein, and carry the same from the diseased to the healthy. Finally, on account of various reasons which it would be idle to relate, I asked myself if it was not the mosquito that transmitted the yellow fever poison.

Such, gentlemen, was the hypothesis which led to the series of experimental studies that I will now proceed to relate to you:

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Let us begin by recalling, in a few words, the geographical distribution of the mosquito. In a general way it may be stated that the mosquito is found everywhere, excepting in elevated localities. In fact, the dipterous insect which now occupies us, the genus culex, which many believe the special plague of tropical regions, exists, on the contrary, in all latitudes. In the polar regions, the Laps, in common with the inhabitants of the inter-tropical regions of America, cannot eat or sleep in their huts without submerging themselves in a dense atmosphere of smoke, in order that they may escape the tormenting persecutions of this insect. In the open air the inhabitants of these (Polar) countries are equally harrassed by the mosquito which introduces itself into the mouth and nares at every inspiration; these people, in spite of their cuticles, already hardened by the cold of their eternal winter, barely manage to preserve themselves, by covering their exposed surfaces with veils saturated with fœtid greases, and by anointing their bodies with lard or rancid oils. In Canada, England, France, Spain, in all Europe, Siberia, China, the United States, and all North as well as Central and South America, the atmosphere is infested with swarms of mosquitoes. In Central Africa a German traveler, Dr. Schweinfurst, was tormented by a species of mosquito with spotted legs, whose description might very appropriately be applied to the culex mosquito of Cuba, and also to that species observed in Batavia by Dr. Arnold, who, according to Kirby, regarded it as a species not yet described, and which resembled the *Culex annulatus*, only that it had no spots on its legs.

It is a noticeable feature in the geographical distribution of the mosquito, that this insect manifests a marked favoritism for continents rather than islands, confirming in this manner, Humboldt's observation that mosquitoes are more prevalent on the banks of great rivers than on the islands situated within them, and that the harrassing presence of these insects is less perceptible in the middle of a stream than upon its banks. It may be owing to this fact, that the early historians of the discovery of America make no special reference to the presence of the mosquito in the West Indian Islands, during the first voyage of Columbus. I have found no direct allusion to this insect before the year 1538, when it is mentioned, by an ancient chronicler, in an excursion undertaken by Hernando de Soto, whose men, in crossing a river near Port aux Princes, were stung so severely by the mosquitoes, that they had large blotches of blood upon their backs. It is doubtless to this same relative insular immunity, that we owe the following fact related by an American traveler to the entomologist, Osten Sacken, (quoted by Dr. Taschenberg, Brehm. IX., page 446): About the year 1823, mosquitoes were not known in the Hawaian Islands; but between 1828 and 1830, an abandoned ship from Mexico, stranded upon one of them. It was soon observed by the natives, that

a swarm of insects which sucked blood and were unknown to them, had made its appearance upon and about the vessel. This drew the attention of the inhabitants to the spot, many of whom, impelled by curiosity, would board the vessel in the evenings, in order that they might be stung by these extraordinary insects. The mosquitoes, however, very soon spread themselves over the island, and in a short time became, as everywhere else, a veritable plague.

Although it is true that the mosquito exists in all latitudes, it is true also that the insect is not found in equal abundance in all localities. Humboldt and Bonpland, in their travels through equinoxial America, remark "that the tormenting presence of mosquitoes and gnats is not so generally felt in the torrid zone as is usually believed. On those plateaux, elevated 400 fathoms above the sea-level, and in the very dry and arid plains which are so distant from the great rivers, as the plains of Cumanà and Calabozo, for instance, there are perceptibly no more mosquitoes than in the most inhabited parts of Europe." The influence of drought and distance from rivers or other water supplies, observed by these travelers, is easily understood, when we consider that the larva and nymph of the mosquito are aquatic, and that for its successful propagation the adult insect has to deposit its ova on the surface of the water. In regard to the diminished number of mosquitoes, observed in elevated regions, I believe this to be attributable to the rarer atmospheres of such localities which would offer a serious obstacle to the flight of the mosquito, particularly after gorging itself with blood, a difficulty particularly experienced by the Culex Mosquito, the wings of which are so small that after its sanguinary performance, they hardly serve to lift the insect, even in an ordinary atmosphere. In such cases it is easy to understand that the mosquito would instinctively avoid such localities. We are also told by these travellers that the good missionary, Bernardo Zea, constructed for himself an elevated habitation upon a platform on the trunks of palm trees, where they (the travellers) ascended at night to dry the plants which they had gathered during the day, and where they also wrote their diaries. "The missionary had rightly observed," they say, "that insects most abound in the lower atmospheric strata, at about 12 or 15 feet from the ground. Further on in their narrative these observers add: pari passu, as we approach the Andean plateau, these insects disappear, and we are permitted to respire a purer air * * * at a height of two hundred fathoms, mosquitoes and gnats are not to be feared."

Chronologically considered, the mosquito is one of the most anciently known insects. Aristotle and Pliny alluded to its bill which serves to perforate the skin and suck up the blood. The Greek historian, Pausanias (quoted by Taschenberg) mentions the city of Nyas in Asia Minor. The harbor communications of this city with the sea were cut off, and in con

sequence a lake of fresh water was formed, from which such a plague of mosquitoes arose that the inhabitants were compelled to flee the city and emigrate to Miletus. Again, we read in the decades of Herrera, that Juan de Grijalva, when he discovered the coasts of New Spain in 1518, had to disembark at the island now known as the Island of San Juan de Ulua where "the men were obliged to build their huts upon the highest sand hills of the island, in order that they might escape the importunities of the mosquitoes." He was obliged to leave this place at the end of seven days, "not being able to withstand the mosquitoes," and Bernal Diaz del Castillo had to seek refuge in the temples of the Indians, "fleeing from the persecutions of the mosquitoes." Finally, in 1519, almost at the site of the modern city of Vera Cruz, "the long-legged mosquitoes," says Herrera, "and the small species which are much more troublesome, harrassed and fatigued the troops of Cortes."

I have had occasion to observe two species of mosquitoes in Havana since the month of December, two years ago, when I began the study of these insects. The typical representative of one species is a large yellow-collored, long and thin-legged insect, without any distinct spots. I believe this insect to be the descendant of the identical mosquito which tormented Cortes and his men in 1519 on the sand bank of San Juan de Ulua,—in other words, the C. cubensis described in La Sagra's work. Its body, measured from the base of the bill or proboscis to the anal extremity, is about 5 to 7 millimeters in length. This species is only active at night time, after 9 or 12, when it begins to practice its molesting evolutions, which it continues till daybreak. To this species belong most of the mosquitoes that I have found imprisoned within mosquito bars, where they usually remain part of the day, while they digest the blood they have sucked. The other species is the Culex mosquito, which our distinguished Cuban naturalist, Don Felipe Poey, brought to Paris in the years 1817 or 1820, where it was classified by M. Robineau Devoidy. I have observed two varieties of this species: one large, well-shaped and vigorous, of a dark greyish color, measuring a little less longitudinally than the long-legged or cubensis species; and the other, smaller in size, measuring from 4 to 4½ millimeters in length. I have not busied myself in searching for the differential characters between the two varieties of the same species, as I found the difference in their sizes sufficiently distinctive for my present purpose.

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The male of both species (C. cubensis and C. mosquito) is easily recognized by his plumy antennæ, which present the appearance of monstaches, and by the trifid appearance of his proboscis. This appearance of the insect's bill is due to the palpi, which seem to be almost as long as the bill itself. They

separate from the proboscis at its lower two-thirds, just before reaching the terminal extremity, contrasting in this manner quite notably with the smooth and even bill of the female, whose palpi do not seem to extend further than one-sixth of its length.

The two species of mosquitoes do not leave their resting places at the same time: the C. cubensis is active at night, and the C. mosquito at day time. Desirous of ascertaining the reason for this respective appropriation of day and night by the different species, and suspecting that the long-legged insect, in spite of its greater dimensions and more robust aspect, was, possibly, not organized to resist the heat of our tropical sun, whilst the C. mosquito with its stronger integument endured it better, I instituted the following experiments: On June 9th, 12 M., I exposed to the direct rays of the sun the two thermometers of my sicrometer; at the end of half an hour, the dry instrument measured 42°, 25, and the damp thermometer 31,75: The apparatus was then replaced by a glass tube, in which a long-legged mosquito (C. cubensis) was incarcerated, the insect had been captured 5 days previously, but was yet quite lively and active. Five minutes after exposure the mosquito was dead.

It is known, that it is only the female mosquito that stings and sucks blood, whilst the male is only nourished with vegetable juices, principally with those of a sweet character; but, so far, I have not seen mentioned by observers who have written upon this subject, the additional fact that the female will not sting unless previously fecundated by the male. This at least, would appear to follow from these experiments:

A female of the C. mosquito species, captured at the moment of emerging from the nymph state, and imprisoned for 2 or 3 days, could not be made to sting. Many times have I repeated this experiment, and always my results have proved of a negative character.

The females imprisoned during the act of fecundation upon separating from the male, sting at once, and fill up with blood.

Finally, almost all the females captured after they have satiated themselves with blood, lay eggs at the end of a few days; while the fecundated insects that are not able to satisfy their blood-thirst, through lack of opportunity, etc., die without ovulating,

It is, therefore, not that she may be nourished that the female mosquito eagerly searches for living blood, and in fact, it cannot be conceived how a body so minute as the mosquito, would require to sustain it, so enormous a quantity of as rich a food as pure blood. This reflection, leads me to the belief that the ingested blood is destined to other ends, related most propably to the genesis of the mosquito. I am inclined, besides, to the opinion, that the influence of the blood is due to its temperature; for if we conceive that for the satisfactory maturation of the ovules contained within the ovaries of the

female mosquito, a temperature of 37° C. is required, this temperature, considering our meteorological condition, could hardly be secured with greater ease and certainty than by the means employed by the mosquito; and again, may not the blood of a pyretic patient, with a temperature of 39° or 40°, still more easily accomplish the ends which the mosquito is striving to attain, by increasing the activity of the ovulating period? We would also understand, how, in this way, the long-legged mosquito and other large species of the mosquito, would absorb, at one time, all the blood needed to mature with its heat, the 200 or 350 eggs which it lays at a single sitting; and again, how the smaller species (C. mosquito, etc.) have to sting and fill up several times, so that they may begin to lay eggs—this species not completing its period of ovulation before 2 or 3 sittings have been successfully accomplished.

Once a female mosquito has gorged itself with blood it requires 2 or 3 days, according to the species considered, to digest it; during this period, and hidden usually from indiscreet inspection, the insect passes hours in performing a curious operation, which Reaumur never could satisfactorily explain to himself, because he had occasion to observe it only while the insect was at liberty. When the mosquito is imprisoned within a glass tube it is easy to ascertain that this performance consists of movements which tend to lubricate the body with a viscid secretion which the mosquito collects from its anal extremity with its hind legs, and with which it besmears its entire body: each leg separately at first; the abdomen, wings, thorax, head and even its proboscis. As our distinguished fellow-academician, facile princeps among Cuban naturalists, D. Felipe Poey, has suggested to me, this manœuvre may tend to render the female mosquito impermeable when she is ready to lay her eggs upon the surface of the water. It is also observable during the digestion of the injected blood that the mosquito discharges a quantity of sanguinolent particles which have the property of dissolving with extraordinary facility in water, even when they have been kept hard and dry for many months. This is due, doubtless, to the combination of the blood with the saliva which the insect drops into its sting, a procedure, designed, according to general opinion, to increase the fluidity of the blood at the time it is sucked from the sting. As a general rule, after sucking up all the blood which corresponds to an uninterrupted sting, the mosquito never pricks the skin again, and, on the contrary, rather avoids it (probably, because the heat of the skin is then disagreeable to it), until it has digested all the absorbed blood.

I will not repeat Reaumur's classical description of the method by which the mosquitto of Europe constructs the elegant egg vessel which it floats upon the surface of the water. The same operation seems to be performed by the mosquito in

Cuba. But as I have observed that the female mosquitoes, after launching their egg vessel, usually die upon the water, I have come to the conclusion that their bodies which Reaumur considered as the cadavera of so many drowned mosquitoes as they emerged from the nymph state are, in realty, the bodies of the mother insect, which permits itself to die by the side of its ova, that it may contribute to the future alimentation of the larvæ.

To conceive, sting and ovulate are the three successive events which constitute the unvarying and unavoidable cycle within which the life of the mosquito may be said to revolve. The first of these functions, conception or fecundation, it is probable, takes place only once, as in most insects; a single impregnation of the seminal sac through the semen of the male, being usually sufficient to fecundate all the ova that in the future may pass through a corresponding part of the oviducts. In the Cuban bee, D. Felipe Poey has already told us, that a single impregnation of the female bee by the male is amply sufficient to fecundate all the thousands of ova that are to be laid during the 2 or 3 years life of this hymenopterous insect. In the females of the C. cubensis, there is no need of examining the prolonged fecundating power of the male sperm, as all the ova are discharged at one sitting; this does not obtain, however, with the females of the C. mosquito species. They lay their eggs irregularly, or in layers of nine or fifteen eggs each, sometimes upon the water, at other times upon surrounding objects contiguous to the water, so that any slight rise in the water level may serve to bathe them. Whatever be the value of the hypothesis which I have propounded, in order to explain the necessity which impells the C. mosquito to sting several times and to fill itself with living blood, so that it may successfully hatch its eggs, it is a fact that the females of this species are always ready to sting again once they have digested the blood sucked up in a preceding sting. In the case of the female insect captured in the month of January of the present year (1881), it was observed that she stung 12 times, and that she spawned 3 times during the 31 days that she lived, death taking place in the United States, where the temperature was, at the time, below 0° C.

* * * * * * * *

It is evident that from the standpoint from which I am now considering the mosquito, that the species C. mosquito is admirably adapted to transmit from one individual to another any disease which might be communicated through the agency of the blood, particularly when we consider the numerous opportunities which it has of drawing blood from different sources, and also of infecting different individuals, thereby increasing the probabilities that its sting may combine the necessary conditions for the successful transmission of the infecting agent. On the other hand, as the C. cubensis may

absorb on account of its larger size, a larger quantity of blood than the preceding species, and thereby retain upon its lancets a larger quantity of infecting material, it is apt to produce a more serious inoculation, particularly if this is effected a few moments after an interrupted sting. Through this mosquito we might, therefore, observe an infection of much graver character, but also of rarer occurrence.

It is impossible, however, to understand or properly appreciate the extraordinary facilities which the sting of the mosquito offers for the inoculation of any contagious particles which the blood may contain, without previously understanding the peculiar conformation and structure of the apparatus which the female mosquito employs to perforate the skin and suck up the blood of its victims. That part of the bill or proboscis of the mosquito, which is seen in normal conditions, is only the sheath, an envelope formed by the transformation of the lower lip; it springs from a pedicle implanted at the base of the head, beneath other oral structures; it is cleft in its superior portion throughout its whole length, until it reaches a terminal tubercle, which I consider analogous to the labial palpi of other insects, and from which the points of other organs are seen to emerge. The sheath of the C. mosquito, to which species I have limited my observations, measures about two and a half milimeters in length; a French line, according to Reaumur, would have measured the length of the bill of the species he investigated. Whatever be the manner in which our mosquito sometimes introduces its lancets to a point ver near their insertions, it is easy to understand that it will reach with ease any capillary situated within a fifth of a centimeter from the cutaneous superficies. Within the sheath two tortuous tubes exist, which appear to lie loosely upon the floor of the cavity of the proboscis; the two tubes are united to a common trunk which occupies the cavity of the pedicle of the sheath. I believe it is through these tubes that the mosquito drops the acrid and irritating saliva, which produces the pruritus and pain of the sting,—a procedure designed, according to most observers, to increase the fluidity of the blood which is sucked up through the siphon. Five organs are to be found within the sheath: the principal structure, single in number, represents the superior labium; it is of a horny consistence, and is prolonged in the form of a deeply grooved spur, perforated in its inferior portion throughout its whole length, till it reaches a terminal point somewhat like a tooth-pick, which has been cut from a long and narrow quill. This piece is tough and rigid, and throughout its external surface presents a figured appearance, as if a net were applied upon it, with its meshes brought out in relief, forming, thereby, innumerable small parallelograms, the most acute angles of which are directed towards the longitudinal axis of the organ. It is possible that, within the numerous spaces enclosed within the

meshes, many particles of the sucked blood may be gathered and remain entangled. The other four pieces consist of two pairs of flexible lancets corresponding to the mandibulæ and maxillæ, implanted upon the root of the two maxillary palpi, which may be seen upon each side of the proboscis. The structure of these two classes of lancets is entirely distinct; the mandibular lancet is a curved piece with a tendency to maintain a curved form; its external surface is convex and presents throughout its whole extent a series of transverse and longitudinal crests; the external surface is also of a greenish color. The borders of the longitudinal fissure are armed with very sharply edged teeth; the point of the lancet is curved and convex, and also presents teeth upon its free borders up to its very terminal point. These teeth must be endowed with a very considerable degree of strength and sharpness, if we are to judge from their appearance.

The maxillary lancets, the origin of which is to be found lower down beneath the preceding, have the form of a riband with its edges curled inwardly; the free edges of the band, thus bent, are armed with a row of very fine and large teeth. This lancet, as a whole, bears a remarkable resemblance to the long and narrow leaves of some plants: the broad point, its double edge, and the central longitudinal ridge or raphe are strikingly similar. All these pieces are so nicely adjusted and moulded to fit the spur of the inferior labium that, upon removing the sheath, before dissociating the lancets, it would appear improbable that the rounded proboscis with its apparently single sharp point could be the result of a combination of the five pieces which I have just described.

* * * * * * * * *

It is well known that, although mosquitoes never disappear altogether from Havana, there are certain seasons in the year in which they seem to be much more plentiful than at other times. Their number, it appears to me, augments progressively from April or May to August, from which time they steadily diminish till February or March, when they reach their minimum number. But there is a point in the natural history of the mosquito which is intimately related to the present study of this insect, and which it is highly important we should remember, in view of the numerous applications which it admits or in the explanation of the etiology of certain obscure yellow fever epidemics in localities apparently free from such pestilential visitations, and without any appreciable source of importation. I refer to the hibernation of the mosquito, a phenomenon which is not observed in our climate, at least in all its phases, but which constitutes, according to most authorities, the regular mode by which the species is propagated in cold climates. Dr. Taschenberg says, in regard to this particular: "the females, fecundated in the last generation, hibernate in all kinds of hiding places, principally in the

cellars of houses, from which they escape in the following spring to multiply their species."

Concerning the conditions which favor mosquito genesis, I will mention heat, moisture, the presence of stagnant waters, low and dark localities, absence of winds and the summer season, but, in connection with this part of our study, it will not be amiss to quote Humboldt's observation: "The number of mosquitoes is not always regulated by determined meteorological or topographical conditions."

I have already spoken of the difficulty experienced by the mosquito in attempting an ascending flight, on account of the relatively small size of its wings, a difficulty specially observable immediately after it has gorged itself with blood. For the same reason the mosquito is not able to fly far from the site of its last sting, maintain itself suspended in the air for any considerable length of time, or transport itself for any great distance without stopping. But these facts do not militate against the possibility that the mosquito may, after it has stung, be transported hidden in the clothes, hat, valise, trunk, etc., of a traveler by whom it may be carried great distances, the insect carrying and possibly inoculating at its first opportunity the infecting germ which it may carry encrusted upon its lancets.

Finally we must keep in mind the preferences which the mosquito manifests towards certain races and individuals, noting in this particular the partial immunity enjoyed by the African and the especially active persecution of the recently arrived members of Northern races in the tropical regions of America. This favoritism evinced by the mosquito may depend upon the varying thickness of skin and upon the conditions which affect the cutaneous circulation, as these circumstances influence the facility with which the female mosquito may procure the blood which she needs to complete the cycle of her existence.

After this lengthy but necessary explanation of the habits of our Cuban mosquitoes, especially of the small Culex mosquito, we ask ourselves, supposing yellow fever to be an affection contagious through the blood, by what means could the mosquito transmit the disease? The most natural reply to this query would be that the infecting material might be transmitted through the agency of the blood which the insect might suck up from the vessels of a yellow fever patient, in quantities varying from 5 to 7 or 8 milimeters, which, if the mosquito were to die before digesting, would remain for a considerable length of time, in excellent condition to transmit its morbiginous properties. It is also quite possible, that the blood in form of excrement, which the mosquito deposits in drinking and other waters, could easily carry the virulent agent through this medium, and if the maladys is so communicable, it could thereby easily be transmitted. But Ffirth's experiments, and the consideration of other facts, which in my opinion are in-

volved in the pathology of yellow fever, do not permit me to dwell longer on these two modes of disease propagation. I will now explain to you my reasons. When the United States yellow fever commission took its departure from our midst, about two years ago, and left in our possession a valuable collection of the microphotographs from the preparations made by our corresponding member, Dr. Sternberg, what more especially elicited my attention was the fact demonstrated in these photographs, that the red blood corpuscles were discharged entire in the hemorrhages of yellow fever. And, as these hemorrhages take place, at times, without any apparent rupture of the blood vessels, we came necessarily to the conclusion that this symptom (hemorrhage), being the most salient clinical feature of the malady in question, surely pointed to the vascular endothelium as the site of its principal lesion. Now, thinking over the peculiar facts presented to us by yellow fever, viz: That it is a transmissible disease, that it usually attacks but once in the life of an individual, and that it always presents in its manifestations a regular order of events, as in the case of the eruptive fevers, I came to frame an hypothesis in which the disease was considered as an eruptive fever, the eruption taking place in the vascular endothelium. Thus, the first period of the disease would connide with the fever of invasion; the second stage of defervescence, with the eruptive stadium, and the last period with that of desquamation. If this (last stage) should be effected in favorable conditions, the patients will only present the indications of an exaggerated filtration of some of the blood elements through the new endothelium; if desquamation takes place under unfavorable systemic auspices, the new and weak endothelium will prove an insufficient barrier to the escape of the morphological blood elements, passive hemorrhages will follow, and the patient will be placed in imminent danger. Finally, in comparing this disease to small-pox or vaccinia, it occurred to me that, in order that the disease might be inoculated, the inoculable material would have to be searched for in the blood vessels of the yellow fever patient, whence it could be carried to the interior of a healthy individual's bloodvessels, who would be in a favorable condition for the reception of the infecting material. All the requisite conditions for the successful transportation of the inoculating virus, are admirably combined in the mosquito, the sting of which it would be almost impossible for us to imitate with the comparatively rude and coarse instruments which could be manufactured by our most dexterous artizans.

According to this view, three conditions are therefore necessary in order that the yellow fever poison may be propagated: 1st, a yellow fever patient in whose capillaries the mosquito may bury its lancets, and impregnate them with the virulent particles at the proper period of the disease; 2nd, prolongation

of the mosquito's life from the time of the original sting, from which the inoculable material was obtained, to the moment in which it is applied to the selected subject; 3d, coincidence of inoculable sting with favorable subject.

The first of these conditions has never been wanting in Havana, at least since Dr. Ambrosio G. del Valle has published his valuable mortuary statistics. In regard to the 2d and 3d, it is evident that the probabilities of their verification depend upon the abundance of the mosquitoes and upon the number of individuals susceptible to inoculation that are to be found in a given locality. I believe that, in Havana, the three conditions above mentioned have always coincided in the years of most marked yellow fever mortality.

Such is my theory, gentlemen, and, doubtless, in listening to my argument, you have also remarked the singular corroboration which the historical, geographical, ethnological and meteorological coincidences have lent to my belief, through the data concerning the mosquito and the still more familiar facts of yellow fever history; I may also state that it is strengthened, furthermore, by the aid derived from it in the explanation of facts and occurrences, so far inexplicable in the light of the prevailing doctrines. Yellow fever was not known in the white race until after the discovery of America, and, according to Humboldt, it is a traditional belief, in Vera Cruz, that the disease has existed there since the Mexican shores were first visited by the Spanish Conquerors. We also notice that the Spaniards, in their earliest explorations, observed the presence of the mosquito, and that it was there also, on the sandy plains of San Juan de Uloa, that they were more especially harrassed by this insect. The races, also, which are most exposed to the influence of the yellow fever poison, are also most subject to attacks from the mosquitoes. The meteorological conditions which are most favorable to the development of yellow fever, are also those which favor the birth and propagation of the mosquito. In support of this assertion I might cite to you several partial epidemics, in which, as vouchsafed by competent physicians, the mosquitoes seemed to have been much more numerous than in former epochs; in fact, it is specified in one instance, that the mosquitoes were of a different species from those usualy presented in the locality, on account of a peculiarly spotted appearance of the insects. In regard to topography, Humboldt, who has already told us the range of elevation which the mosquito can attain, has also informed us of the maximum altitude reached by the yellow fever poison. Finally, in the very notorious case of the U. S. steamship "Plymouth," on board of which two cases of yellow fever developed whilst on the open sea, after the thorough disinfection and congelation of the vessel during the previous winter, and after four months had elapsed since the occurrence of the last case of yellow fever of preceeding month of November, is per-

fectly explained by the hibernation of those mosquitoes, which may have stung the previous cases of yellow fever, and which, by returning to a tropical climate, were roused from their tropid state, stung again and gave rise to the two last apparently spontaneous cases of the disease.

With this basis to work upon, I determined to submit my theory to an experimental test, and after obtaining the consent of the interested parties, I proceeded as follows:

On the 28th of June, one year ago, I carried an imprisoned mosquito to the Garcini infirmary where I permitted it to sting and fill itself with blood from the arm of a yellow fever patient, D. Camilo Anca, who at that time was laboring under a thoroughly characteristic attack of the disease. He was then in the fifth day of the illness, which proved fatal to him two days after. Having selected F. B., one of twenty unacclimated, now under my observation, for experimental purposes, I caused him to be stung by this mosquito two days after the insect had stung the yellow fever patient. Keeping in mind that the period of incubation of yellow fever, as has been ascertained by the observation of a few special cases, varies from one to fifteen days, I closely watched F. B. On the 9th day he began to feel unwell, and on the fourteenth he entered the hospital with a benign attack of yellow fever, well characterized, however, by icterus and the presence of albumen in the urine which persisted from the 3d to the 9th day of illness.

On the 16th of July I caused a mosquito to sting another patient with yellow fever—D. Domingo Rodriguez, who was lying in the same Garcini Infirmary in the third or fourth day of a serious attack of the disease. On the 20th I permitted myself to be stung by the same mosquito, and finally, on the 22d, I caused it to sting A. L. C., another one of the twenty unacclimated individuals subjected to my observation. At the end of five days he entered the hospital with fever, cephalalgia, pain in the loins, and flushed countenance. For three days these symptoms persisted, the patient passing into complete convalesence without icterus or albumineria. This case was diagnosticated by the attending physician—Abortive yellow fever.

On July 29th I caused another mosquito to sting D. L. R., who was lying seriously ill on the third day of a yellow fever attack at the Garcini Infirmary. On the 31st T. F. was exposed to the sting of the same mosquito. On August 5th, 2, A. M., this patient was taken sick with all the symptoms of a light attack of yellow fever; he was somewhat jaundiced, but I do not believe that his urine ever contained any albumen. This case was also diagnosticated by the attending physician—Abortive yellow fever.

Finally, on July 31st, I exposed to the sting of another mosquito the same yellow fever patient, D. L. R., who was lying as already stated at Garini's, in the 5th day of his illness, from

which he died on the following day. On August 2d the same mosquito stung D. G. B., another individual, under my observation. Up to this moment the last inoculation does not seem to have inconvenienced this patient. Twelve days have only elapsed, however, and it is possible that he may yet be within the limits of the period of incubation.*

I must state that the cases I have just reported are the only instances in which I have attempted to inoculate the yellow fever poison directly through the mosquito, and that since June 22d (within the term of seven weeks) no cases of confirmed or abortive yellow fever have occurred in any of the 20 unacclimated persons whose conditions I have closely watched, outside of the three first instances already mentioned.

These experiments are certainly favorable to my theory, but I do not wish to incur the danger of considering as conclusively settled; a fact which is not proven, no matter how great the probabilities of its truth are in my favor. I appreciate only too well, the necessity of an irrefutable demonstration before a theory, so essentially different from all the prevailing ideas, can be generally accepted. But, whilst the data which are yet wanting are being gathered, permit me to submit to your consideration the following conclusions, in which you will find included the more essential points of what I have just attempted to demonstrate:

CONCLUSIONS.

1st. It is now a well attested fact that the Culex mosquito stings, as a rule, several times in the course of its existence, not only when its first sting has been accidentally interrupted, but also, where it has been able to satisfy its cravings; only that in the latter case, a lapse of two or more days interval between its stings is necessary.

2d. Besides the natural facilities for the retention of the particles contained in the liquids which the mosquito injects, which are revealed to us by the anatomy of this insect, the possibility cannot be denied that the mosquito may impregnate its lancet with a virus contained in a diseased blood, which the insect may inoculate into the persons successively exposed to its sting.

3d. The direct experiments made to determine if the mosquito could really transmit yellow fever in the manner indicated have been limited to the above five experimental attempts

*This patient, G. B. presented himself Aug. 17, complaining that for the last six days he had been suffering with Cephalalgia, Anorexia, and general malaise. On the 24th I found him with some fever (pulse 100; temp. 38.02) and with a history of higher fever on the preceding evening and on the same morning. The fever, however, was of a very ephemeral character, as the patient did not have to give up his occupation or require any immediate treatment. The fever ceased, but the headache continued a few days after.

Another person, I. C., one of the twenty unaclimated who have submitted themselves to my observation, was stung on Aug. 15, by a mosquito, which had two days previously satiated itself with blood from a patient at the Military Hospital, in the fifth day of a yellow fever attack. This inoculation so far (Sept. 1st.) has given rise to no apparent result. I was verbally informed that on the 24th and 25th (Aug.) that the had been unwell, but not to such an extent as to reqnire his suspension from active service.

at inoculation, with a single sting in each separate instance; these attempts have been succeeded by the following results:

One case of benign yellow fever, characterized by icterus and albuminous urine; two cases, diagnosticated by the attending physicians, aborted yellow fever; and two light ephemeral fevers, without any definite character. From this we infer, that a single sting from the mosquito is insufficient to reproduce the grave forms of yellow fever, and that our final judgment in regard to the efficacy of mosquito inocolations must be postponed until we are corroborated by experimental evidence in absolutely decisive conditions, *i. e.* outside of the epidemic yellow fever regions.

4th. If the inoculation of yellow fever through the mosquito should finally be proved an incontrovertible fact, and that this mode of transmission of the disease is the usual and most common manner in which the yellow fever poison is transmitted; then the various conditions which affect the life and developement of this insect would explain the anomalies (so obscure and difficult of explanation otherwise) which have been observed in the history of the distribution of yellow fever, and we would have in our hands the means of avoiding or limiting, on one side, the extension of the disease, whilst on the other, *we would preserve through benign prophylactic inoculations*, those individuals who would be exposed to the risks of contracting this formidable malady.

My only wish, in presenting this communication, is that note be taken of my observations, and that the truth of my suspicions and conceptions be left to the decisive evidence furnished by direct experimentation. This does not signify, however, that I am at all desirous of evading the discussion of the views which I have just enunciated; on the contrary, it will be with great pleasure that I will listen to any remarks or objections which my distinguished colleagues may deem proper to make.

Havana, Aug. 11*th*, 1881.

Editorial Department.

"AUDI ALTERAM PARTEM."

The following correspondence is published in order that the medical profession may be correctly informed regarding the facts in controversy. The assertions quoted from the President of the State Board of Health, in the letter addressed to

him, seem to have been official declarations. They were given to the daily papers and widely published in the city and country. We sincerely regret that we have not been informed of any action withdrawing or correcting these erroneous statements. Neither has notification been made of such intention in the future, nor, indeed, any notice given us of the reception of the communications. With these explanations, the facts are given to our readers. S. M. B.

[Copy.]

NEW ORLEANS, La., Dec. 23, 1881.

Prof, Joseph Jones, President State Board of Health of Louisiana—

SIR: In a report of the proceedings of the Board of Health of the State of Louisiana, at its meeting held December 8th, 1881, as published in the New Orleans Picayune of December 9th, the following statements are made:

"In his communication to Mr. Marks, Dr. Jones referred to the sixth annual report of the National Board of Health, and that on page 162 was a statement that during the quarter ending September 30th, 1880, $1490 were appropriated by the National Board of Health to the Louisiana State Board of Health, and the quarter ending December 31, 1880, $411 90 were appropriated or expended, making a total of $1,901 90."

"Dr. Jones writes that he has no knowledge of any such appropriation."

Again: in the *Times-Democrat* of December 10th, in a communication addressed to Hon. R. N. Ogden, the following language appears over your signature:

"These important results have been accomplished by the careful and judicious use of the resources derived from the execution of the quarantine and sanitary laws of the State, and the Board of Health of the State of Louisiana has not received 'one farthing' from the National Board of Health or any other organization.

"The service of the National Board of Health has been solely one of inspection and detection for the purpose of furnishing information to the central authority in Washington, and to the States of Tennessee and Mississippi."

For the purpose of correcting your memory in respect to the facts of the case, the president of the National Board of Health authorizes me to transmit the inclosed copies of communications written by yourself, and also the list of payments which were made by the National Board in carrying into effect the agreement at that time entered into.

I hope it will not be considered out of place to reiterate the declaration that the National Board of Health has at all times been ready to comply with Section 3 of the law approved June 2d, 1879, requiring it to "co-operate with, and aid as far

as it lawfully may, State and municipal boards of health in the execution and enforcement of the rules and regulations of such boards to prevent the introduction of contagious diseases into the United States from foreign countries, and into one State from another, etc."

In all cases in which State or municipal boards have made formal and proper application for aid, it has been promptly furnished, if the exigencies set forth justified such action.

Copies of these communications have been sent to Hon. R. N. Ogden and to His Excellency, Gov. McEnery.

Respectfully, etc.,
S. M. BEMISS,
M. N. B. H.

NATIONAL BOARD OF HEALTH,
Washington, D. C., December, 15, 1881,

Dr. James L. Cabell, President, N. B. of H., Univ. of Va.:

My dear Dr.—I transmit for your information the enclosed copies of letters and an abstract from the vouchers in this office, duplicates of which are on file in the Treasury Department, concerning the amount of pecuniary aid rendered the S. B. of H. of Louisiana, mentioned in the Annual Report for 1881.

I am, Doctor, very respectfully and truly,
T. J. TURNER,
Secretary N. B of H.

[Copy.]

NEW ORLEANS, June 4, 1880.

Professor Samuel M. Bemiss, M. D., Member National Board of Health, New Orleans, La.:

Sir:—I have the honor to place in the hands of the member of the National Board of Health the accompanying report of the committee appointed by the president of the State Board of Health, to examine "the rules and regulations for the conduct of the Mississippi River Inspection Service; rules and regulations of railway travel and traffic in regions exposed to, or infected by, yellow fever; and rules and regulations to be enforced when yellow fever exists at or in the vicinity of any port or place on the Mississippi River, as suggested or advised by the National Board of Health."

The said report was unanimously adopted by the Board of Health of the State of Louisiana, at the regular meeting on the evening of June 3d, 1880.

The attention of the member of the National Board of Health, residing in New Orleans, is directed to the request on behalf of the State Board of Health that the *president of the Louisiana State Board of Health appoint inspectors immediately as recommended in the above rules and regulations.*

In accordance with the preceding resolutions and report the President of the Board of Health of the State of Louisiana appoints the following inspectors:

F. L. TANEY, M. D.,
P. B. MCCUTCHEON, M. D.,
F. W. PARHAM, M. D.,
Y. R. LEMONNIER, M. D.,
L. F. SALOMAN, M. D.,
J. M. WATKINS, M. D.,
W. P. BREWER, M. D.,
R. C. WHITE, M. D.,
THOS. DABNEY, M. D.,
WM. RYAN, M. D.,
S. D. KENNEDY, M. D.,
H. A. VEAZIE, M. D.,
B. F. TAYLOR, M. D.,
E. S. DREW, M. D.,
W. S. OLEPHANT, M. D.

I am not informed whether the greater proportion of the above physicians will accept, and hence have appointed the above number, subject, of course, to the limitation of the National Board of Health.

In order to render the service effective, Inspectors should be assigned to each of the railroads connected with this city; to the river front; to the Old and New Basins; Algiers; Morgan City; Port Eads; Pilot Town; Morgan and Texas Rail Road from Morgan City to Texas Line; Terminus of Morgan and Texas R. R. at Texas Line; Mouth of Red River; and if practicable to the Fruit Islands in the Gulf of Mexico; and to one or more of the Mexican and West Indian Ports.

The following distribution of the Inspectors might meet the present needs of the service:

Jackson R. R., Dr. Taney; Mobile R. R., Dr. Brewer; Morgan R. R., Dr. Le Monnier; River Front (Steamboats, &c.), Drs. McCutcheon, Parham, Watkins and Salomon; Morgan City, Dr. Taylor; Morgan and Texas R. R. from Morgan City to Texas Line, Dr. White; Terminus of Rail Road, Dr. Kennedy; Shreveport, Dr. Dabney; Port Eads and Pilot Town, Dr. Drew and Dr. Oliphant; Old and New Basins, Dr. Veazie.

I will confer with the member of the National Board of Health, with reference to these appointments and all other details, at the office of the Board of Health of the State of Louisiana, this day, or upon any other day, between the hours of 12 M. and 2 P. M.

Respectfully your obedient Servant,
JOSEPH JONES, M. D.,
President Board of Health, State of Louisiana.

[Copy.]

NEW ORLEANS, June 5th, 1880.

Prof. James L. Cabell, M. D., Pres't N. B. of H., University of Virginia, Charlottesville, Va.:

Sir:—I have the honor to forward to the President of the

National Board of Health, report of committee appointed by President of the State Board of Louisiana, on rules and regulations of the National Board of Health. For the information of the President of the National Board of Health, I also forward copy of my letter to Professor Samuel M. Bemiss, member of National Board of Health. Not being informed as to the number of inspectors, which will be approved by the National Board of Health, I name those physicians which I believe to be available.

As President of the Board of Health of the State of Louisiana, I respectfully request a prompt and full answer from the President of the National Board of Health.

Respectfully, your obedient servant,

JOSEPH JONES, M. D.,

President Board of Health, State of Louisiana.

Payments made to Inspectors appointed by Dr. Jos. Jones.

DATE OF SERVICE.	NAME OF INSPECTOR.	DUTIES.	NO. OF VOUCHER.	WHEN PAID.	AMOUNT	BY WHOM AC'T WAS APPROVED.
1880.				1880.		
June 7-30	J, W. Watkins.	R. R. Inspec'r	1950	July 8.	$ 120 0	Dr. S. M. Bemiss.
Jnly 1-31	do.	do.	1962	Aug. 10.	150 00	do.
Aug. 1-31	do.	do.	179	Sept. 6.	150 00	do.
Sept. 1-15	do.	do.	270	Sept. 18.	75 00	do.
June 7-30	S. D. Kennedy.	do.	1951	July 8.	120 00	do.
July 1-31	do.	do.	1963	Aug. 10.	150 00	do.
Aug. 1-31	do.	do.	186	Sept. 7.	150 00	do.
Sept. 1-30	do.	do.	352	Oct. 7.	150 00	do.
	do.	do.	353	Oct. 7	8 90	do.
June 7-30	L. F. Salomon.	do.	1952	July 8.	120 00	do.
July 1-31	do.	do.	111	Aug. 17,	150 00	do.
Aug. 1-31	do.	do.	158	Aug. 31.	150 00	do.
Sept. 1-15	do.	do.	265	Sept. 17.	75 00	do.
July 17-29	G. W. Dermeyer.	do. vice Kennedy transf'd.	64	Aug. 10.	65 00	do.
Aug. 1-31	do.	do.	178	Sept. 6.	150 00	do.
Sept. 1-15	do.	do.	264	" 17.	75 00	do.
Aug. 1-31	P. B. McCutcheon.	St. Bt. Insp'r.	187	" 7.	150 00	do.
Sept. 1-30	do.	do.	350	Oct. 7.	150 00	do.
	do.	do.	351	" 7.	3 80	do.
Oct. 1-15	do.	do.	411	" 22.	75 00	do.
Oct. 16-20	do.	do.	451	" 26.	24 20	do.
This statement includes the payments made to Watkins, Kennedy and Salomon during June, 1880, $120 00 each.....					$2,261 90 360 00	
Which being deducted from footing agrees with amount received, which runs from July 1, 1880, to June 30, 1881.					$1,901 90	

The matter of training nurses by systematized methods of instruction is likely to become more and more an important subject for medical consideration and action. We publish for the information of our readers the circular issued by the Board of Administrators of the Charity Hospital. We respectfully ask for communications expressing opinions, or criticisms, in regard to the plans developed in the circular.

In the meantime, while alluding to this subject, we wish to make some atonement for our omission in a former editorial to mention the annual oration made by Dr. W. P. Brewer, of this city, in 1880, before the Medical and Surgical Association.

In this address, Dr. Brewer uses the following language: "Permit me to digress for a moment in order to call your attention to a matter of the utmost importance to us, and that is, the establishment of a 'Training School for Nurses.' There is no single member of our profession who is not at times in need of an intelligent and thoroughly trained nurse in whose care a patient can be placed. We all recognize the fact that oftentimes, through ignorant nurses, we lose patients who, had they been carefully and intelligently attended, might have been saved. Now, knowing this, and feeling the necessity for a remedy, it behooves us to unite as one man, and use our utmost endeavors to carry out such a plan as may have the desired effect."

NEW ORLEANS CHARITY HOSPITAL TRAINING SCHOOL FOR NURSES.

The administrators of the New Orleans Charity Hospital have made arrangements for giving a two years' course of training to women desirous of becoming professional nurses.

Those wishing to receive such a course of instruction must apply to the House Surgeon of the Charity Hospital, New Orleans.

The most desirable age for candidates is from twenty-five to thirty-five years; they must be in sound health, and must present, on application, a certificate from two responsible persons (one a physician), as to their good character and good health. Upon the recommendation of the House Surgeon of the hospital, and the approval of the administrators, they will be received for one month on probation; during this month they are boarded and lodged at the hospital, but receive no compensation.

The superintendent of nurses has charge of the Training School, under the authority of the House Surgeon and of the Board of Administrators, and the nurses are subject to the rules of the hospital. Their fitness for work, and the propriety of retaining or dismissing them at the end of the month of trial, is determined by the authorities in charge of the school, under the direction of administrators, and the same authorities can, in like manner, discharge them at any time, in case of misconduct or inefficiency. They reside in the hospital and serve as assistant nurses in its wards.

All nurses are required to be sober, honest, truthful, trustworthy, punctual, quiet, orderly, cleanly, neat, patient, kind and cheerful.

Course of Training.

Those fulfilling the conditions of the probatory month are accepted as pupils. They must sign a written agreement to remain at the school for two years, and to conform to the rules.

The instruction includes :

1. The dressing of blisters, burns, sores and wounds, and applying of fomentations, poultices and minor dressings.
2. The applying of leeches, and subsequent treatment.
3. The administering of enemas.
4. The applying of friction to the body and extremities, in the best method.
5. The managing of helpless patients in bed, in moving, changing clothing, giving baths, keeping patients warm or cool, preventing and dressing bed sores, managing position, etc., and in feeding.
6. The making of bandages and rollers, etc., and bandaging.
7. The making of beds and changing sheets, etc., with patients in beds.
8. The cooking, preparing and serving of food and delicacies for the sick.

They are also given some instruction in the best practical methods of supplying fresh air, warming and ventilating sick-rooms in a proper manner, and are taught to take proper care of rooms and wards; in keeping all utensils perfectly clean and disinfected, etc.; to observe the sick accurately in regard to the state of the secretions, expectorations, pulse, breathing, skin, temperature, eruptions, sleep, appetite, effect of diet or of stimulants and medicine, and the managing of convalescents.

The instruction is given mainly by the superintendent of the training school, and by the head nurses. Lectures, recitations and demonstrations, also take place at stated periods; examinations, chiefly upon practical points, will take place from time to time.

The pupils are employed as assistant nurses in the wards of the hospital, and are paid ten dollars ($10) per month during the first year, and fourteen dollars ($14) per month during the second year for their clothing and personal expenses. This sum is no wise intended as wages, it being considered that their education during this time is full equivalent for their services.

They are required to wear at all times, while on duty in the wards, dresses of material that can be washed, simply made, and such caps, cuffs and aprons as may be prescribed.

When the full term of two years is completed, the nurses, thus trained, receive (after final examinations) diplomas certifying to the regular course of training, their knowledge of nursing, and their ability.

The right is reserved to terminate the connection of any nurse or pupil with the school for any reason which may be deemed sufficient.

A blank form will be furnished to applicants to be filled in with answers to the following questions, in the candidates own handwriting, and sent to the House Surgeon of the Charity Hospital, New Orleans, Louisiana.

QUESTIONS TO BE ANSWERED BY CANDIDATE IN HER OWN HAND WRITING.

1. Name in full, and present address of candidate?
2. Are you a single woman or widow?
3. Your present occupation or employment?
4. Age last birthday, and date and place of birth?
5. Height? Weight?
6. Where educated?
7. Are you strong and healthy? Have you always been so?
8. Are your sight and hearing perfect?
9. Have you any physical defects?
10. If a widow, have you children? How many? Their ages? How are they provided for?
11. Have you any tendency to pulmonary complaint?
12. Where (if any) was your last situation? How long were you in it?
13. The names in full and addresses of two persons to be referred to. State how long each has known you. If previously employed, one of these must be last employer.

I declare the above statement to be correct.

(Signed) .....

Date ..... *Candidate.*

This application must be accompanied by a certificate from two responsible persons (one a physician), a to your good character and good health.

Dr. JOHN H. PIKE, *Secretary and Treasurer.*

June 1st, 1881.

Obituary.

DANIEL WARREN BRICKELL

was born in Columbia, S. C. on the ninth of October, 1824. His ancestors, of German origin on one side and of mixed Huguenot and Irish blood on the other, were among the earliest settlers in the State. His maternal grandfather, Daniel Faust, was the founder of the first newspaper ever published in Columbia; a paper that enjoyed a large public reputation, and which became the official organ when that town was made the capital of South Carolina.

At the age of four he had the misfortune to lose his mother; a loss that the judicious care of his paternal grandmother went far to repair. This remarkable woman, a Miss White, descended from the Blakes, who occupied a prominent place in the Colonial and subsequent history of the State, was peculiarly qualified for the task to which she devoted her life—the rear-

ing of her grand-children, whom untimely bereavement had committed to her tutelage. A rigid disciplinarian, a woman of the highest character, of large attainments and great tact, she assumed the direction of their studies, and was herself eminently qualified to conduct them. Under her kind but firm management the boy was early taught the elements of English, and the rudiments of Latin literature; nor at any time in his pupilage did he fail to find in his devoted relative a teacher equal to the task of stimulating his zeal for knowledge and making, as far as possible, its way smooth.

But he learned at the same time something higher and better than all the literature of all the ages, ancient or modern. He learned from lips that he loved, and from an example that he revered, to speak the truth and fear not. He saw before him, daily, the beautiful lesson of a life whose one ideal was duty, and his infant feet were early taught to tread the path from which his manlier course never deviated for a single instant—the path of rigid honesty, of unfaltering purpose, of scrupulous, almost fanatical, integrity. For more than half a century, boy and man, he illustrated in a pure and lofty life the exalted teachings of her to whom he always referred with singular tenderness and pride.

That he was thus fortunate in his domestic relations was a peculiarly happy accident, as his scholastic training must have been otherwise seriously disturbed, and perhaps arrested, by the frequent migrations of his father who, like many a planter, followed the tide of emigration towards the richer lands of the West.

Until his ninth year he lived in Winnsboro, South Carolina, and caught a glimpse—scarcely more—of school-boy life at the celebrated academy of Mr. Hudson. Thence he removed to the vicinity of Franklin, Tennessee, and rambled in many a happy holiday over that dark and bloody ground where in later years the best manhood of his race and the last hopes of his people went down in Hood's famous and fatal fight.

Four years passed, and again he followed with his father the pressure towards the more fertile fields of Mississippi. Meanwhile his grandfather's death had made his grandmother the permanent guest of his father's home, and the pioneer life of settlers in a comparatively wild region, scarcely interrupted for a day the steady preparation for that professional life towards which his tastes and talents equally urged him. In 1844, or a little later perhaps, he went to New Haven to complete the preparatory studies necessary for entering Yale College; but before this step had been finally taken, he had determined on medicine as a career, and entered himself as a student, in the winter of 1855, at the medical department of the University of Pennsylvania, under the private tutorship of Gerhard, with whom his application, capacity, and devotion, made him, then and always, a favorite pupil and friend.

Receiving his diploma in the spring of 1847, the young doctor devoted himself assiduously to a course of special studies, including the department of Gynæcology, in which he afterwards became an acknowledged master; and when satisfied of his proficiency, seeking the larger views which foreign travel would give, he applied, in the winter of the same year, for admission to the United States Navy. Of a list of forty applicants before the examining board he passed second. There was, however, but one vacancy for foreign service, and having been assigned, contrary to his hopes, to duty at the Navy Yard of Pensacola, he resigned his commission of assistant surgeon, and began the practice of medicine in New Orleans in 1848.

The same year he married Miss Susan Connor, of Natchez, Mississippi, and removed to his wife's home, where he continued to practice his profession. An episode as a planter on the Yazoo River, two years later, and the loss of his wife, who left him one child, a daughter, filled up the brief space between his first and second settlement in New Orleans, where thence forward his life was passed.

His consuming energy and large acquirements and high talents soon took him out of the common crowd, and marked him as a man sure of a career. From his success as a teacher of private classes in the Charity Hospital, of which he was one of the attending physicians, it was but a step to the professorial chair which he held so long and filled with such eminent succes. In common with the late Drs. Fenner, Choppin, Peniston, Picton, Axon, and others he organized the New Orleans School of Medicine—an institution which, at the breaking out of the war, fully divided patronage with the older medical department of the university, and attracted to its chairs such distinguished men as the senior and younger Flint, Henry F. Campbell, of Georgia, and Peticolas, of Richmond.

In addition to his labors in this field, as clinical teacher of the Diseases of Females and Lecturer on Obstetrics, he was the associate editor of the New Orleans Medical News and Hospital Gazette, and later the editor-in-chief of the Southern Journal of Medicine; and until his waning strength and the increasing exactions of his large practice drove him into a narrow economy of his forces he achieved a wide reputation as a vigorous, acute, and successful journalist.

The fall of New Orleans, in the Spring of 1862, found him engaged, with his usual ardour, as a member of the Committee of Safety, in whatever could promote the defense of the city. On its surrender, he immediately entered the service of the Confederacy and served her with his best energies of heart and brain, in the field and in hospital, until the close of the war.

The last gun had hardly been fired when he returned to New Orleans, gathered up the fragments of his broken fortunes, rescued with much labor, and some hazard, and at considerable cost from the obscene birds who were fattening on the

spoils of their exiled townsmen, and set his house in order for the desperate struggle which lay before him. The same winter his cherished friend and colleague, Dr. Fenner, and himself reopened the Medical College, which they had founded in happier days, and with the aid of most of their old and some new collaborators soon re-established the well-won reputation of the institution. Upon the lamented death of Fenner, in the year following, Dr. Brickell was chosen Dean, and conducted the affairs of the college with the heartiest support and good will of the Faculty, and to the cordial approbation of its classes.

It was a signal and unprejudiced testimony to the high reputation he had won in this field that he should have, in 1873, been elected, without any solicitation on his part and scarcely with his knowledge, to the Chair of Obstetrics in the Belleview Hospital College, of New York. He was loth to leave his home. New interests and new ties are not easily made in middle life; but his friends urged his acceptance—if only on probation—of the high honor that had been done him, in the hope that the change of climate might reinvigorate his now evidently declining strength. And so in the winter of that year he delivered a course of lectures in New York to the best acceptance of the faculty and students of Belleview; but for reasons purely private, and which in no way concern the tenor of this brief sketch, he, after due deliberation, decided not to retain the chair, and resigned its honors and emoluments to return to the home of his first adoption, and lasting love. Rejoining his old colleagues, Drs. Choppin, Beard and Bruns, who had jointly established, in 1868, the Orleans Infirmary, he devoted himself thenceforward, though with steadily waning powers, to the practice of his art, and to the management of the arduous and complicated business affairs which were entrusted to his hands.

The death of a distinguished and devoted brother, and, soon after, of the faithful and beloved wife, Miss Welham, whom he had married just before the late war, broke the high spirit which had long sustained the feeble frame, and, even to those whom love had blinded, it was evident, in the spring of 1881, that life for him was nearly measured. The usual recourse of travel was resorted to as a last hope—but in vain. In October, after a summer spent in Canada and the far North, he came back to New Orleans almost spent, lingered on in patient, unrepining pain, and weariness and prostration of mind and body beyond words to tell, and on the morning of the 11th of December, all his record made up, every trust discharged, his last account balanced, with unfeigned gladness and with a reasonable hope, he gave up, with hardly a pang, "in a moment, in the twinkling of an eye," the long struggle, and passed to his eternal rest:

> "A fiery soul, which, working out its way,
> Fretted the pigmy body to decay,
> And o'er informed its tenement of clay."

"Between the extremes of admiration and of malice," says Dryden, "it is hard to judge rightly of the living. Friendship and hatred alike blind us in deciding upon the merits of our contemporaries; we are either bribed by interest, or prejudiced by malice." Harder still the task to do justice to the affectionate remembrances which whisper the o'er-fraught heart, as we stand by the newly-heaped grave of a beloved friend, and yet speak of him in that measured phrase which the truth he prized beyond all things earthly demands.

And to those who knew him best, it would be difficult to exaggerate the moral value of those rare qualities which made Dr. Brickell, in every phase of his multiform character, so valuable a member of society. For his was one of those profound natures which are not to be estimated at a glance, whose most precious worth is a hidden jewel to the general public. In whatever he undertook, he might always be relied on to give of his best without counting the cost. And whenever truth, justice or mercy needed a champion, his blade always flashed in the forefront of the fight. No danger dismayed, and no defeat could discomfit him. He rose superior to every overthrow, and against all odds fought stubbornly on to the close.

He was a wise, cautious and conservative physician. Thoroughly grounded in the principles of his science, his practice was equally removed from the rashness of the empiric and the timidity of skepticism. A nice observer, with delicate senses, acute perceptions, and a judgment of rare balance, his generalizations were seldom faulty, and experience and study had furnished him with an abundance of resources in all the most critical exigencies of his calling. In the treatment of malarial diseases—a Protean herd—the subtlety of his diagnosis and the precision of his treatment were specially noteworthy, and we have often been called on to admire his rare tact, judgment and skill in handling the most formidable of all our epidemic fevers, the dreaded scourge of the South—Yellow Fever.

In the lying-in room it has not been our fortune to meet his superior. The sudden and startling dangers which there so frequently appal even the stoutest, never quickened his pulse a beat. His judgment was swift and perfect, and his procedure instant, and admirably adapted to whatever accident confronted him.

As a surgeon he was bold, dexterous and relf-reliant. For years he advocated urgently the propriety, in penetrating wounds of the abdomen, of immediate laparotomy, the removal of foreign bodies, the closure of wounds of the intestines and vessels, and, the thorough cleansing of the cavity, as in ovariotomy. He had no opportunity of demonstrating his views, but we believe them to be founded on sound surgical principles and certain some day to prevail over the cowardly and fa-

tal abstention still practiced. He operated successfully for ovarian tumors, performed cæsarian section brilliantly and with the best results, in one case beyond all reasonable hope, and in plastic operations for uterine and vaginal lesions counted numberless triumphs. In the most important question of pelvic abscess he was notably ahead of his contemporaries, both as respects diagnosis and the wisdom of early surgical interference, and again and again justified in practice the broad axioms he laid down on this still too obscure subject.

As a lecturer, in his own department, Dr. Brickell was clear, cogent and terse. His method was perfectly simple, his language well chosen and vigorous, his style compact. He was fluent without redundency, and enforced his views without sameness or tediousness, by every variety of illustration. From the first he insisted on the paramount importance of clinical teaching and used the lecture-room only to explain and expound those principles which he specially enforced and illustrated at the bedside. Hence he was invariably and remarkably successful as a teacher, as hundreds of practitioners over the Southwest will cordially testify.

In his relations with his medical brethren he was always, as to all men, eminently courteous, just and generous, and in all good words or work that would advance the interest or promote the honor and dignity of his profession, he was second to none. How earnestly he labored for, how freely he contributed to, with what self-abnegation he advanced the prosperity of all the organizations of which he was a member, is known only to those who were admitted to his intimacy; but the fruit which others have so freely gathered, in this field, was of trees that he had planted and matured and nursed, often without recognition, and seldom with any recompense. Happily here, as ever, the good he did will live after him; whatever evil the selfishness or indirectness of others may have wrought, he had long forgotten and forgiven, and wished that it might be "interred with his bones."

Eminent and valuable as his professional station and worth were, it was as a man and as a citizen, a free member of a democratic commonwealth, that Dr. Brickell's character and worth were most signally conspicuous. His idea of the duties and rights of a citizen seemed to have been caught from the best days of the Roman republic. In civic ardor and virtue it is no exaggeration to say that he had no superior in this community. He gave to it, and to his state, of his time and talents and means without stint. He lived as though always upon guard, unsleeping, alert, vigilant to detect and prompt to challenge every conspirer against her peace and dignity.

An ardent opponent of secession, which he regarded as unwise, impolitic, and fraught with gravest dangers, no sooner had the wordy war ended in blows than he sprang into the ranks without thought of consequence. It is needless to add

that he stayed there to the bitter end. When the still more baleful period of "reconstruction" began, he was never wanting in voice or deed to warn or aid or to defend his people. On the memorable 14th of September, and on the triumphant 7th of January, he was among the first to enter and of the last to leave the field. When the self seeking and corruption of placemen and demagogues threatened the integrity and very life of the community, his was the most constant, solemn and earnest cry raised against the wickedness he saw in high places. No pomp or power or wealth or station dismayed him. Wise men doubted and the good despaired, but he never abated one jot of heart or hope. Were it a losing or a winning fight, no misgiving ever entered his mind as to his proper place and his paramount duty. That he must do if he died for it. Stricken down again and again, he rose as often, sword in hand, and with his face to the foe. Traitor or alien, "malice domestic or foreign levy," it mattered naught to him if any one were the enemy of what he believed to be the cause of truth, justice or right. That his foes were they of his own household, only made his hate the fiercer and his blows more trenchant; and if, as a reformer, he seemed to those who live in the plausible and the smooth to have failed, it was because, like abler champions than he, who have also seemed for a time to have failed, he had fallen upon evil men and evil days, and that the hosts of darkness were for an hour stronger than the children of light.

But he did not fail. He would have scorned the thought that success or failure can be measured by worldly standards. He fought the good fight without any looking forward to the crown. He spoke the truth as he saw and felt it, because of a mighty impulse that could not be denied. In his domestic relations, as son, as brother, as husband, father, friend, a tenderer, purer, more unselfish soul never breathed. In all the storms and tempests of life, amid the rudest buffetings of fate or fortune, he stood "four square to all the winds that blew." He gave all the days of his manhood to the unselfish service of his fellow man. He kept the whiteness of his soul unstained and the heroic temper of his courage unshaken through all the fierce conflict of civil war, and the fiercer, fouler, deadlier conflicts that followed. And those who knew him best and longest, know, with a proud and glad assurance that, turning every page of his life, from his cradle to his grave,

"Whatever record leap to light,
He never shall be shamed."

Dr. ANTHONY FORSTER AXSON

was born in Charleston, S. C., about the year 1816. His father, Samuel Edward Axson, himself a native, represented a family of long-standing and of honorable repute in that city. He

was a man of noble and generous impulses; the proof of which is found in the fact, that his private fortune was sacrificed in the vain effort to save the credit of his more unfortunate kindred. This disaster so crushed his proud and sensitive nature, that he died in early life; leaving a widow and two infant sons, with only a scant patrimony saved from the general wreck.

The mother of Dr. Axson was Sarah A. Palmer, eldest daughter of the venerable Job Palmer, surviving to the ninety-ninth year of his age, the recognized patriarch of the City of Charleston. She was a lady of strong character and of deep piety, fitted alike by nature and by grace to discharge the office of a mother to her fatherless boys. To preserve their slender patrimony intact, she addressed herself to a life of privation and toil, and succeeded in securing to them both a classical education. Her faithfulness received a full reward in the distinguished career of both her sons. The elder of the two still survives in the person of the Rev. I. S. K. Axson, D. D., pastor of the Independent Presbyterian Church in the city of Savannah, Ga., of whom it is no extravagance to allege that he ranks amongst the most honored and the most beloved of the Presbyterian clergy of the South.

The youngest son, the subject of this brief memoir, could not have been more than two years of age when deprived of a father's care. He soon displayed a brightness of intellect and an aptitude for learning, which justified the effort to secure for him every educational advantage. He was accordingly sent, after passing through the schools of his native city, to the Academy at the Rice Creek Springs, not far from Columbia, in the centre of the State; which, under the presidency of the Rev. Rufus Bailey, enjoyed a wide and deserved popularity. His advance in knowledge was retarded, during the whole period of youth, by a chronic affection of the eyes, by which he was, at times, shut up for months in a dark chamber; and it is to the praise of his genius and courage that, under this heavy disadvantage, he should have laid so deep and so broad the foundation of a true scholarship. It is not known to the writer whether he ever received a College diploma. If so, it must have been from the Charleston College; which, though enjoying only a local reputation and patronage, has nevertheless educated some of the first minds in the State.

Selecting medicine as his profession, he entered the office of Dr. Henry R. Frost, an eminent practitioner of Charleston, and received his degree as Doctor of Medicine from the Medical College of the State of South Carolina, on the 15th of March, 1837. The death of his mother occurring about this time, the ties which bound him to his native State were weak-

ened. With his portion of the small paternal legacy, he directed his steps to the Southwest in quest of his fortune. Pausing awhile at Montgomery, Ala., and regarding it too preoccupied to warrant a settlement, he pushed leisurely forward on his tour of inspection, until he found himself in Texas, at Velasco, at the mouth of the Brazos river, the guest of the Hon. Barnard E. Bee, who, like himself, was a native South Carolinian. He appears to have settled finally at Matagorda, where, on the 20th day of May, 1845, he was united in marriage with Miss Laura Lewis, the daughter of Col. Ira R. Lewis, a prominent and influential citizen of that State.

This event appears to have determined his removal to the city of New Orleans, as affording a broader and more inviting field of professional labor and advancement. For this purpose he must have made a tentative stay in this city as early as 1844. It is certain that upon his marriage, he removed to it, in the latter part of 1845 or in the early part of 1846. The wisdom of the change was soon approved by the patronage which he secured, and by the rank which he achieved amongst the members of his own profession; who, then as now, would be the ornament of their class in any city of the land. As early as 1853 he was one of five physicians appointed by the City Council to investigate the fearful epidemic of yellow fever of that year; and the paper from his pen upon the subject of its origin and diffusion received favorable notice in foreign Medical Journals. In 1856, upon the organization of the New Orleans School of Medicine, he was chosen one of the original professors, in the chair of Physiology; which, however, he held but a single year, preferring to devote himself wholly to his professional practice. He was President of the Board of Health from 1856–1860, during which occurred the yellow fever epidemic of 1858. Indeed, "his Professional Career in New Orleans," to quote the statement of another, "embraced the great epidemics of Typhus, Typhoid and Yellow fever and of Asiatic Cholera, which characterized the years of 1847, 1848, 1849, 1850, 1853, 1854, 1855, 1858, 1866, 1867 and 1878." It is proper to add that he "served for six months as Surgeon in the Mexican War, in one of the four regiments called to the aid of Gen. Zachary Taylor immediately after his victories of Palo Alto and Resaca de la Palma." With this interruption, his entire professional life since 1846 has been spent in the city of New Orleans.

Satisfactorily as he discharged these various public trusts, the role in which he most delighted and excelled was that of family practice. His dignified yet easy deportment, the calm assurance of his professional knowledge, the extent of his resources which did not disdain to include the simplest of home remedies, the patient assiduity of his visits, the conservative prudence which could rely upon the power of nature herself in throwing off disease, the tenderness of his sympathy and his

generous forbearance with the infirmities of sickness, together with the charms of his conversation, presented a combination of professional and personal qualities that endeared him to all the homes into which he was accustomed to enter.

The death of his wife, who had served him with almost adoring fondness, broke up his home in 1876—and from the gloom of this sorrow he never emerged. From this time his more intimate friends marked the incipient and increasing stages of physical decay. During the last year of his life this became painfully obvious to himself, and he frequently announced his anticipation of death. In the month of September, 1881, the disease which had been slowly maturing rapidly developed itself in a painful affection of the bowels; and on the night of the 11th September his sufferings were terminated by that sleep which is never again disturbed.

Dr. Axson would have been a man of note in any community. He possessed a mind vigorous and clear; his habits were those of a serious and thoughtful student; his reading was copious in all directions, and his memory was singularly retentive. He was not only abreast of the literature of his profession, but he was well informed upon all subjects in science, philosophy, literature and art. He was a superb talker—a talent which was discovered in his early youth, and cultivated in after years to such an extent that sentences dropped from his lips like pearls. In general society he was reserved and almost silent; but in the intimacy of private friendship, his conversation was a perpetual charm, and we know not which most to admire, the fullness of his thought or the richness of his diction. He formed few close friendships, but in these he was tenacious and constant. He was modest and retiring, almost to a fault. Had he not withdrawn himself with strong aversion from positions which would render him conspicuous, he might have acquired larger fame; but he could never have been a worthier man, or better beloved by those who knew him well.

Reviews and Book-Notices.

System of Surgery—Theoretical and Practical; in Treatises by various Authors. Edited by T. Holmes, M. A., Cantab., etc. First American from Second English Edition. Thoroughly revised and much enlarged by John H. Packard, A. M., M. D., etc., etc., Philadelphia. Henry C. Lea's Son & Co. 1881.

The second volume of this comprehensive and most valuable work has been placed on our table.

The first paper is by Dr. James Dixon upon Diseases of the Eye, and comprises 171 pages, profusely illustrated. Then follow papers upon Diseases of the Ear, Nose and Tongue, comprising 108 pages. The remainder of the volume is devoted to treatises upon Diseases of the Circulatory System, Digestive Tract, and Genito-Urinary Organs. The work is printed upon good paper; with clean and excellent type, and is profusely and beautifully illustrated. The scientific and practical merits of this volume are not less to be commended.

The work may be ordered from Armand Hawkins, Medical Bookseller, 196½ Canal street, New Orleans.

Lectures on the Diagnosis and Treatment of Diseases of the Chest, Throat and Nasal Cavities, by E. Fletcher Ingalls, A. M., M. D., lecturer of Diseases of the Chest and Physical Diagnosis and on Laryngology in the Post-Graduate course, Rush Medical College, etc., with one hundred and thirty-five illustrations. New York: William Wood & Company. 1881.

This book is an abstract of the author's lectures upon the subjects named in its title. We have no doubt it has enough of merit to justify us in recommending it as a valuable aid to the practitioner who stands in need of some competent authority for immediate reference. It is an octavo volume of over four hundred pages, published in the usual excellent style of the firm whose names grace its title. Orders may be sent to Armand Hawkins, Medical Bookseller, 196½ Canal street, New Orleans. Price $4.00.

The Student's Manual of Venereal Diseases; being a concise description of those affections and of their treatment. By Berkeley Hill, Prof. Clin. Surg., Univ. Col., London, and Arthur Cooper, late House Surgeon to the Lock Hospital. Second Edition. 8 vo. Pp. 62. N. York: Wm. Wood & Co., 1881. [Sold by Hawkins. Price (pamphlet form) 10 cents.]

This is an epitome of a larger work by Mr. Hill, and will be found especially convenient by students of medicine.

In this work a distinction is made between infecting and non-infecting sores, the latter not being regarded as syphilitic: in other words, the authors are *dualists,* as regards venereal

sores. They do not regard syphilis as a disease of American origin, carried to Europe by the followers of Columbus, but one of great antiquity in the Old World, though proof of its existence in remote ages is less clear than of the existence of other venereal diseases. The yaws of the W. Indies and the sibbens of Scotland are both regarded by these authors as forms of syphilis, though this theory is rejected by many writers of note.

In some debateable point of inherited syphilis their opinions are less positive. Thus, they are undecided whether the mother of a child born syphilitic may escape infection, and are even doubtful whether the mother may be infected through the fœtus.

The medical public are not to expect that dime editions will soon be customary in medical publications. This work has been published for 25 cents a copy by another house of less pretensions, and other 25 cent ventures would probably call out 10 cent rivals. The public would enjoy the game, but it would be too good to last. S. S. H.

Suppression of Urine: Clinical Descriptions and Analysis of Symptoms. By E. P. Fowler, M. D. 93 Clinical cases, with illustrations, tables and diagrams. Presented to the N. Y. Med. Chir. Soc., Dec. 14, 1880. 8vo. Pp. 86. New York: Wm. Wood & Co. 1881. [Sold by Hawkins. Price in muslin $1 50]

The subject was studied numerically, and the paper consists mostly of tables illustrating the salient points. Nearly half of the volume is occupied by a single table, exhibiting the following particulars: Duration of case; age and sex; by whom and where reported; cause; symptoms, including history; result; autopsy. Other tables follow, to show the relation of certain symptoms to the day of anuria when they commenced; to result of cases; to duration of anuria. These symptoms were vomiting (35 cases in 93); muscular twitchings (13 cases in 93); general convulsions (6 cases in 93); contraction of pupils (8 cases in 93); insomnia (18 cases in 93); coma (10 cases in 93); ammoniacal and urinous odor (7 cases in 93). There are also tables showing range of pulse and temperature, occurrence of

uremia and ages of the subjects; and still others, giving a *resumé* of the cases in various relations.

The essay, on the whole, is quite instructive and particularly useful to medical teachers and writers. S. S. H.

Lectures on Electricity (Dynamic and Franklinic) in its relations to Medicine and Surgery. By A. D. Rockwell, A. M., M. D., Electro-Therapeutist to the N. Y. State Women's Hosp., etc. 8vo. Pp. 122. New York: Wm. Wood & Co. 1881. [Sold by Hawkins. Price in muslin, $1 25.]

The first edition of this little work was published about two years previous to this, and received notice at our hands in the July number of 1879. The previous edition having been exhausted and a new one being demanded, the author has enlarged the volume by the addition of a new lecture on Franklinism (frictional electricity), which is now undergoing revival as a therapeutic agent. Other additions are descriptions of the "galvanic accumulator," for storing electricity for surgical uses, and the "induction balance," for locating the position of bullets in the body. It will be remembered that the latter apparatus was used for the purpose of locating the bullet in the body of President Garfield, but the results were not brilliantly successful. It may be expected, however, that further practice will give it greater precision.

The present edition deserves renewed commendation for its merits and will doubtless sustain the reputation of the work.

S. S. H.

The Opium Habit and Alcoholism. A treatise on the Habit of Opium and its Compounds—Alcohol; Chloral-hydrate; Chloroform; Bromide Potassium; and Cannabis Indica; including their Therapeutic Indications, with suggestions for treating various painful complications. By Dr. Fred. Heman Hubbard. 12 mo. Pp. 259. New York: A. S. Barnes & Co. [Price in muslin, $2 00.]

In the introduction the author remarks upon the increased prevalence of the opium habit since the introduction of the hypodermic syringe; and he deprecates the general indifference of the medical profession to the habit and its treatment, in consequence of which the victims are impelled to seek relief from charlatans.

The first two chapters are devoted to the peculiarities of the opium habit. The following twenty chapters, or about 140 pages, are occupied with an account of cases, including treatment. The plan is to withdraw the opium gradually, and at the same time counteract the depression incident thereto by a combination of tonics and stimulants, supplemented by cannabis indica. In one case, for instance, he prescribes the mixtures, as follows:

℞. Morphiæ	ʒxij;
Alcohol	℥v;
Glycerinæ	℥vi;
Gum. Acaciæ	ʒvij;
Aquæ puræ	℥xxxv. M. S. 2 teaspoonfuls after meals.
Extract Cannabis Ind.	ʒx;
Alcohol	℥x;
Tinct. Zingiber	℥x;
Tinct. Gentian. Comp.	℥xij;
Glycerinæ	℥v. M.

S. Replace what is taken from the former by an equal quantity of the latter.

This plan implies the consent of the patient to the treatment, but the cure involves far less suffering and danger than abrupt withdrawal. As the crisis of the cure approaches, he generally dispenses with the second remedy for a few days, allowing the patient to continue the first in undiminished doses. Phosphoric acid is highly recommended as a general and a nerve tonic.

With regard to the hypodermic use of morphine, the author supposes that the effect is not greater than when taken by the mouth. The difference consists in a more rapid absorption and quicker effect. He does not recognize the necessary consequence, that an equal effect limited in action to half the time must produce an impression twice as profound while it lasts.

The principle of treatment for dipsomania is similar. The depression consequent on abrupt withdrawal of the alcohol is counteracted by a combination of fluid extracts of cinchona and coca-leaves with tinctures of ginger and capsicum. This treatment is associated with evacuants, and he recommends a com-

bination of leptandrin, hydrastin, podophyllin, hyoscyamus and nux vomica.

The author has little confidence in the asylum treatment of inebriates, chiefly because the management consists in seclusion rather than employment of mind and body; so that the individual is very sure to relapse on returning to society and his familiar companions.

The chloral habit, in the author's opinion, requires the immediate and total withdrawal of the drug, as its effects are pernicious upon the constitution of the blood, and because a diminished dose causes as distressing insomnia as none at all. For the consequent depression, he finds no effectual remedy but good musk, which operates with the same efficacy as cinchona in breaking off the alcohol habit and cannabis indica in discontinuing opium.

On the whole, we regard this little work as both valuable and convenient to the practitioner. A serious defect is the omission of both table of contents and index. The proof-reading might have been better, and thereby prevented faulty orthography. S. S. H.

Books and Pamphlets Received.

Bacillus Anthrancis. By Geo. M. Sternberg, Surgeon U. S. Army. Reprint from the American Monthly Microscopical Journal, August, 1881.

Atlantic City as a Winter Health Resort. By Boardman Reed, M. D.

Non-resident and Post-graduate Courses of Study of the Illinois Wesleyn University, Bloomington, Ills.

Anæsthetics Medico-Legally Considered. By J. G. Johnson, M. D., Brooklyn, N. Y. Read before the Medico-Legal Society of New York, December 7th, 1881.

Consumption and Tuberculosis. Their treatment by the Hypophosphites. By J. A. McArthur, M. D.

Ninety-Ninth Annual Catalogue of the Medical School (Boston) of Harvard University, 1881–82. Reprint from the Catalogue of the University.

Eczema and Its Management. By L. Duncan Buckley, A. M., M. D., of N. Y.

Through the kindness of Mr. Eyrich, proprietor of the Book House, No. 130 Canal st., New Orleans, La., we have received the above work for notice, and take great pleasure in making this brief review of a most valuable work on a subject so important to the medical profession.

Chapter I.—Treats most elaborately of the Nosology of this disease, and will be highly instructive to all persuing this study.

Chapter II.—Pertains to the analysis of 2500 cases in the practice of the author, and one of the marked conclusions of this relation study is, that it forms one-third of all Dermatological Diseases.

Chapter III.—Treats of the symptomatology in a most lucid and exhaustive manner.

Chapter IV.—Is devoted to the forms and synonyms, which is a great improvement on many of the text-books on this subject.

Chapter V.—Is directed to the Diagnosis and Prognosis, which is comprehensive and plain.

Chapter VI.—This treats of the local or constitutional nature of this disease, the author taking the constitutional side of the question, claiming that the constitutional character of this disease is *sui genuis.*

Chapter VII.—Is devoted to causation, being subdivided into Predisposing and Exciting, both of which are comprehensively and ably discussed, the meaning of each term used being definitely defined.

Chapter VIII.—Commences the treatment. This, like the preceding chapter, is also subdivided into constitutional and local; the former consists in restoring vital force; the latter in topical remedies.

Chapter IX.—Treats of Infantile Eczema.

Chapter X.—Treats of the special management of Eczema of the Face and Scalp.

Chapter XI.—Is confined to the management of this disease on the Arms and Hands.

Chapter XII.—Is a continuation of local management, as also the XIII and XIV chapters.

Chapter XV.—Treats of the Diet and Hygene in an exhaustive manner and is highly instructive.

Chapter XVI.—Is devoted to the Therapy of this Disease in a formulary style, which is most convenient and applicable to the active practitioner.

Finally, this work of 344 pages is fully up to the most advanced ideas on this disease, reference most complete, and the print just what all readable books should be, large, bold, clear-cut type. The execution of this work is all that could be desired.

Popular Science Monthly, for December, 1881. Comes to us laden with many of the most advanced ideas, on many of the leading scientific subjects of the day.

Chapter I.—Treats of the deterioration of the American Oyster Beds, which will be very instructive to all interested in this subject.

Chapter II.—Is devoted to physical education, by one of the most recent writers (Felix L. Oswald) on this subject. It discusses the many fallacies connected with every-day life in a plain and practical way.

Chapter III.—Huxley, T. H., on the rise and progress of paleontology, needs no recommendation beyond the author's name on his special study.

Chapter IV.—This is devoted to the studies of Vortex Rings, and is most ingeniously illustrated.

Chapter V.—Is devoted to the equality and inequality of sex, by G. Delauney. From his observations relatively, the maximum difference is to be found in the highest stages of evolution, and the minimum in the lowest order of evolution, in favor of the male whenever a marked test is applied.

Chapter VI.—Is a review of a half century of science, by *Sir John Lubbock.* To mention this author's production is sufficient to any one interested in the advancement of science.

Chapter VII.—Is by Henry Morselli, M. D., on the study of suicides from a secular stand-point, and is quite interesting—to specialists on this subject.

Chapter VIII.—Is a discourse on Disease-Germs, by that noted physiologist, Wm. B. Carpenter, bringing this matter up to date, and will be highly instructive to all interested in this field of study.

Chapter IX.—Is a sketch of M. Paul Broca, of France, one of the most noted physiologists of this age. He, it was, who located speech in man in the 3d left frontal convolution of the brain. This sketch, though short, is full of emulatory ideas, and should be read by all earnest workers in that direction, and more especially by new beginners.

Finally, on scientific subjects, this monthly is the one *par excellence.*

Meteorological Summary—December.
Station—New Orleans.

Date.	Daily Mean Barometer.	Daily Mean Temp'ture.	Daily Mean Humidity.	Prevailing Direction of Wind.	Daily Rain-fall.	General Items.
1	30.200	64 3	78.7	North	.....	Mean Barometer, ———.
2	30.225	61.8	78.0	N. W.	.....	Highest Barometer, 30.432, 16th.
3	30.173	67.8	81.7	East.	.....	Lowest Barometer, 29.900, 8th.
4	30.162	64.2	83.7	N. W.	.....	Monthly Range of Barometer, .532.
5	30.270	58.3	65.7	N. E.	.....	Mean Temperature, ——.
6	30.172	60.6	70.7	North	.....	Highest Temperature, 77.0, 13th.
7	30.069	63.7	82.3	South	.07	Lowest Temperature, 40.3, 16th.
8	29.946	64.3	84.7	S. E.	.09	Monthly range, ——-
9	30.075	62.1	90 3	N. E.	.09	Greatest daily range of Temperature, 20.0, 31st.
10	30.241	58.4	68.0	East.	.....	
11	30.226	62.8	72.3	South	.....	Least daily range of Temperature, 6.5, —.
12	30.169	65.0	89.7	South	*	
13	30.025	71.4	84.0	S. E.	*	Mean of maximum Temperature, 65.5.
14	30.139	59.1	79.7	N. W.	.19	Mean of minimum Temperature, 52.7.
15	30.402	48.4	40.7	North	.....	Mean daily range of Temperature, 12.8.
16	30.422	48.4	55.7	N. E.	.....	Prevailing Direction of Wind, N. W.
17	30.350	54.3	68.3	N. E.	.....	Total No. of miles 5946.
18	30.282	58.1	83.3	N. E.	.....	Greatest Velocity of Wind, 28 miles N. W., —.
19	30.141	63.5	95.3	East.	.73	
20	30 045	67.2	86.7	East.	.72	Number of Clear Days, 7.
21	30.034	59.4	86.3	North	.30	Number of fair days, 16.
22	30.117	53.3	49.3	N. W.	.....	Number of Cloudy days, 8.
23	30.261	48.7	57.3	N. W.	.....	No. of days on which rain fell, 12.
24	30.203	49.5	75.0	N. E.	.....	
25	29.963	52.6	93.0	N. E.	1.28	
26	29.958	57.3	66.0	West.	.....	
27	30 053	57.5	72.0	South	.....	
28	29.947	65.2	83.0	S. W.	1.02	
29	30.201	57.3	44.3	N. W.	.....	
30	30.248	53.5	33.0	N. W.	.....	
31	30.042	57.3	64.9	East.	.....	
Sums	....	....	....	.....	total	
Means	30.154	59.2	73.2	N. W.	6.62	

COMPARATIVE TEMPERATURE.

1872.....	....	1877.....	55.5
1873.....	56.6	1878.....	51.2
1874.....	48.8	1879.....	59.8
1875.....	61.5	1880.....	53.0
1876.....	48.8	1881.....	....

COMPARATIVE PRECIPITATIONS.
(Inches and Hundredths.)

1872.....	....	1877.....	4.96
1873.....	....	1878.....	8.69
1874.....	3.27	1879.....	2.90
1875.....	5.15	1880.....	6.45
1876.....	9.57	1881.....	....

L. DUNNE,
Sergeant Signal Service, U. S. A.

* Too small to measure.

Mortality in New Orleans from December 17th, 1881, to January 14th, 1882, inclusive.

Week Ending.	Yellow Fever.	Malarial Fevers.	Consumption.	Small-pox.	Pneumonia.	Total Mortality.
December 24	0	9	19	1	15	119
December 31	0	4	8	1	7	95
January 7	0	6	17	1	5	130
January 14	0	4	12	0	8	96
Total....	0	23	56	3	35	440

NEW ORLEANS
MEDICAL AND SURGICAL JOURNAL.

MARCH, 1882.

ORIGINAL COMMUNICATIONS.

Introductory Address of the President, C. B. White, M. D.,

AT THE

NINTH ANNUAL MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION, SAVANNAH, GA., NOV. 29, 1881.

Members of the American Public Health Association, I welcome you to its ninth annual meeting.

On the 12th of September, 1872, twelve gentlemen met at Long Branch, elected to membership other three present by invitation, and held the first meeting, that of organization of this association.

To one then present, it is pleasant to note that its members number seven hundred, and that aided by a fortunate combination of circumstances, nearly four hundred members were in attendance at the meeting at New Orleans. Of those present at that meeting of organization, which we now see was so important and opportune, two are dead—Carl Pfeifer, Esq., Civil Engineer and Architect, and Dr. John M. Woodworth, late Surgeon General of the United States Marine Hospital Service. Had they done no other worthy work, their prescience, and interest, and practical part in forming this association, would be monumental.

It is my official and sad duty to announce the death during the past year of Dr. George S. Blackie, Nashville, Tenn.; Dr.

Greensville Dowell, Galveston, Texas; Dr. W. C. W. Glazier, United States Marine Hospital Service; Dr. E. Lloyd Howard, Baltimore, Md.; Dr. L. S. Joynes, Richmond, Va.; Dr. Chas. H. Smith, Richmond, Va.; Dr. E. M. Wight, Chattanooga, Tenn.

The time allotted to this address is much too short to justly set forth the many and valuable services of these dead associates. I therefore recommend to the association the creation of a committee, which, before we separate, may place before us the leading events of their lives, and prepare a memorial for the volume of the year's transactions, which shall fully illustrate their services and virtues.

Physicists tell us that the warmth, light and life of our earth, depend on rapidly recurring, incessantly repeated oscillations, propagated through space by the mysterious, inconceivably great energies of the sun. Every brief undulatory wave of force has its value, duly performs its work, surpassed by neither successor or predecessor.

Every generation of man has its own work, labor impossible to be done by one antecedent, or a following one. Neither has the work of the one going before, or of that coming after, greater importance. The generation or the man that does the best possible, has done as well as those before him have done, or as successors can do. The curse of the world is its idlers awaiting opportunity.

The man who does the thing next him that requires doing has no need to wait for occasions—he makes opportunity.

Endeavor to benefit by the consolations of philosophy as we may, all thoughtful persons can but greatly lament the loss of men of fine intellectual powers, matured by labor, experience and time, dying at such period of life, that to benefit mankind there might be justly expected ten or twenty years of clearest thought, of well-directed, practical work of the best quality, of wise and wide influence.

These, our associates, have ceased to labor, some of them while comparatively young, feeling that they had learned a little, only enough to begin to study to advantage, and were eagerly looking forward to more rapidly gained increments of

knowledge and to riper and more abundant accomplishments in the future. As with them so with others; the plow may be stopped afield, in the furrow. For some of us the time is assuredly short. Let us take our lesson of self-sacrifice and industry and honesty of purpose, from these our dead, and turn to the living, to our duties and opportunities, from the contemplation of what they worthily did to what there is for us to do.

Early in the year a circular of inquiry was sent to the members of the Advisory and Executive Committee, and to former Presidents of the association, requesting them to name those topics of sanitary science which seemed to them worthy of especial consideration at the Savannah meeting. In the replies forty different subjects were so characterized. Of those mentioned by more than one person, were five; disinfectants recommended, by two; the parasites, or diseases of food animals, by three; house hygiene, by three; vital statistics, nomenclature, registration, etc., by three; hygiene of the school and scholar, by four.

The most peculiar replies from our "sanitary philosophers" were these:

"The time of the association could be best occupied in correcting the false theories announced at former meetings." Another suggests for discussion "whether there be such a thing as sanitary science."

We may construe the lesson of these numerous and so varied answers to be, that those interested in the science of hygiene are pushing its advance along a well-extended front, that much of our work is done on the principle of a man's doing what he finds to do "over against his house."

That some theories have been adventurously thrown out, much as some railways have been advanced on cribwork laid upon the long-grassed sod of Louisiana's "trembling prairies," across which travellers get by audacity, velocity and luck, but which the steady, slow-going, scarcely noticed construction trains of a later date will fill in, be it with solid material or accumulated fact, till the shaking roadway and the swift, but fortunate transit, becomes the established, the sure, the safe.

Others of theories advanced to serve as highways of science, are, I greatly fear, as the Slough of Despond, wherein Christian was so woefully bemired, in which Bunyan tells us had been swallowed up at least twenty-thousand cart loads, yea! millions of wholesome instructions, but it remained still a slough.

The idea that there is no such thing as sanitary science, even though jocosely suggested, or as an occasion of wit in others, to create discussion, would not be surprising if seriously meant.

Almost the whole of the enormous outgrowth of modern discovery and classified knowledge belongs to the present century, and it may be said of hygiene as of the doctrine of evolution, that it has barely come of age. Sanitary science is a dependence and consequence of general scientific research and progress.

Observers have long existed. We have had men prescient, far in advance of the generations, sanitarians, vital statisticians laboring to lay the sure foundations of preventive medicine.

But a glance to-day at the condition of even the records of mortality throughout the United States shows a lack almost disheartening of accurate statistics. A few cities and towns, with perhaps two or three States, have a fully recorded mortality.

The registration of diseases, even of those contagious, is, with possibly a few exceptions, only a well meaning and well deserving attempt.

It will only occupy a few moments of your time to illustrate by example the material furnished to men of science from which to draw conclusions.

A surgeon of a regiment lately assigned to an army corps, at the close of the month sent in the customary monthly report. As all feeble men had been removed from the regiments preparatory to an active campaign, and the corps lay in a healthy location at a healthy season of the year, the number of the sick and the diseases from which they suffered, attracted the attention of the Medical Director. The next report presented the same peculiar features. The surgeon was sent

for and explained: "I keep no daily record, so at the end of month I sit down and think how many have been sick, and then, running my eye along the list of diseases, I pick them out in equal numbers, so as to make an interesting and variegated report."

To-day our most honest, philosophical minds, those whose opportunities for forming correct judgment have been longest and best, are in doubt whether yellow fever be a disease always imported, or from former importation now become endemic, or occasionally imported and sometimes surviving mild winters, or be an indigene, in some way bred from malaria or evoked from filth, or be always home-bred and in-bred, a glandular disease perhaps, developed by general bad environments. Such contrariety of opinion could assuredly have been merged into the unanimity of knowledge had there been twenty years of observations, conducted with scientific accuracy and completeness.

Scientific methods and the scientific quality of mind are foreign to many of those who are interested students, and even writers on hygiene. The scientific order of mind can be bred as we develop certain qualities in our domestic animals. As scientific studies are made more familiar to scholars, and scientific modes of thought and teaching are applied in the education of the young, and increasingly regulate the habit of thought of later years, so generation upon generation will become better suited by hereditary, innate quality of intellect to seek and obtain truth by exact methods. As we are almost at the beginning of the knowledge of proper methods, so we are only at the beginning of the proper use of them, and can hopefully look forward to the appearance of steadily increasing numbers of those vastly better furnished intellectually to apply and use them, than is the present generation. In the immediate future of all science, progress promises to be "progression," perhaps even "geometrical."

Many statements assumed to be facts, numerous hasty generalizations based upon incomplete, unfair, or imperfectly recorded observations, theories eagerly thrust forward by illy constituted or badly trained minds, or truths perverted or

misused to fill a pocket or build a "balloon frame" reputation, appear in the scientific columns of newspapers, or occasionally find place in journals devoted to genuine research and to the discussion of well founded working theories. Soon refuted by the logic of events, or the later theory of another pseudo scientist, or cut through by the merciless edge of fact in the hand of one of the elect of truth, theories and theorists disappear together.

The resonant, glittering, but empty brass, no longer blinds the eye or stuns the ear. Unfortunately, others similarly plausible or impudent, follow in so numerous and extended procession as to cause those not well founded in underlying principles to say: "Is there such a thing as sanitary science?" The old perplexity cries out afresh: "What is truth?"

Brief consideration of certain qualities of mind necessary to the perfect man of science, instead of causing discouragement at slow progress, will rather cause surprise at the advance made.

To avoid self deception is the most difficult of problems. Like the perfected balance of the chemist and physicist, shut out from all perturbing influences, affected by and accurately recording the most minute accretion, the perfectly ordered scientific mind, free even of personal equation, would perceive, and yield to, and appreciate the smallest increment of fact, no matter to which end of the beam it lay. In apparent antithesis, such a mind would be, not merely receptive, but hospitable to foreign or novel ideas.

Far from neutral, it would be eager for knowledge, penetrated with a very hunger for truth. Therefore we may happily be encouraged, seeing that whilst man is imperfect, and his capacities limited and immature, so much has been accomplished by a sincere desire of truth, and an earnest purpose to lessen the miseries, and increase the enjoyments of mankind.

In periodicals and papers, and from the lecture stand, we hear of filth and "filth diseases." We are told that "to be clean is next to being Godly," for as the one insures the salvation of the soul so the other saves the body. Every outbreak of disease is announced as due to neglect of some form of

washing. Next, a scientific commission reports that the workmen and their families, employed and living for years at some "knackery" in the midst of decaying and corrupted animal matters, breathing an atmosphere loaded with animal particles, and of a stench unbearable to those not made tolerant by long exposure to it, nevertheless enjoy good and continuous health.

All medical men have observed children born and brought up in unwholesome localities, with eminently unsavory surroundings, scarcely washed between birth and marriage, yet unmistakably in possession of firm health.

I have in mind a man whose domicil is in a swampy location, and whose premises as a whole have been a standing nuisance for thirty years, offensive to the nostrils and eyes of neighbors, and for whose exceeding bad condition he has been subjected to repeated suits by the health authorities. This man lives in mud and manure, not over cleanly, and frequently drunken, his only water supply an aboveground uncovered wooden cistern, on whose margins chickens roost, having one sanitary virtue—but that one the greatest of them all—he is a good eater! Despite unfavorable environments and habits he has high health, quickly recovers from accidents, and unless untimely slain by one of them, bids fair at some future "All Saints Day" to visit the graves of the sanitary inspectors and officers who have successively assaulted him.

The existence of such facts, or the announcement of such statements as facts, surprise and confound most readers.

The experienced and fully informed mind reflects that observations may not have been sufficiently extensive, or not sufficiently extended as to time; that as vital questions involve many factors, some may have been overlooked, or not duly considered; that an important element may be recognizable by consequences which appear at a remote date; that the results of evil practices may be found nearer the end of life, as an early, decrepit old age, instead of an old age, vigorous and late; or that children born of those living in such unfortunate circumstances, thence inherit a feebler organization and low viability.

The sanitarian of broad views looks at the healthy child, with dirt begrimed skin, but underneath the filth the mind's eye sees a texture secretive, exhalent, extrusive, the exact opposite of an absorbent surface, throwing off poisons from the interior, and practically impassable to poisons from without.

The sanitarian perceives the air none too savory, his microscopic examination of similar atmospheres has revealed spores, bacteriæ, particles of animal matter, alive and dead, but he bethinks himself of the arrangements for entangling and returning much of this matter before it reaches the ultimate air cells, and especially of that wonderful lining tissue of the lung, which with chemical precision passes in oxygen and lets out carbonic acid and vapor of water, yet with such certainty retaining the blood upon its other side that one may see a thousand cases of that dread destroyer of texture and blood, yellow fever, and see but a single case of hemorrhage from the lungs, and even that in one already a consumptive.

Such reflections naturally suggest the widely diverse nature and methods of the hygiene of the individual and race hygiene.

In the shipwreck we see a single person outlasting all others of the company, defying flaming sun and winter's rigor, the pang of hunger and the anguish of thirst; or in the disastrous retreat, those who outlive frost, famine or fever. If a deadly epidemic rage, we see those who altogether resist it, or if attacked recover, despite lack of professional care, violation of the most ordinary rules of prudence and with every circumstance inimical to recovery. Or we see the subject of some wasting, generally fatal, disease, or the victim of street conflict, or steamboat disaster, or railway accident, groaning "with the groans of a deadly wounded man," yet seemingly finding it impossible to die, and to the amazement of the profession and onlookers, outlasting all malign prophecies, recovering health, and again doing his part of the world's work.

This limitless endurance, this clenched tenacity of life and enormous viability, are at once the evidence and the result of race hygiene.

Nature, by the process of selection, mercilessly weeds out the feeble.

Careful as she would seem in securing abounding numbers of the race, as a whole, she takes no thought of the individual. Nature, too, would seem to exercise small judgment in her severity. The tables of the world's death rates show that in cities more than one-half, and in the country that nearly one-half born into the world die on or before completing the fifth year of their existence. Physicians remember infants of exceeding feebleness or suffering from long and wasting sickness, retaining life even, contrary to all expectation, yet now developed into robust young men, or healthy, strong and comely women.

The hygiene of the individual only, would here, if applied, immensely and immediately increase this death rate, so shocking to the human mind.

It is impossible to believe that one-half of the human race is born non-viable. If it were true, most appropriately this multitude of slain innocents might join in the tombstone soliloquy of the infant buried in the London cemetery, dead at one day old, "If so soon I am done for, I wonder what I was begun for."

These much enduring, disease and death-resisting specimens of the human family, before spoken of, show what a succession of fortunately environed generations can develop. The surroundings of these persons may have been altogether highly favorable, but it is the continuance of them through a series of generations which has furnished the result. As education may do much for a man, but what he was in the beginning, before he received education, what the product of the generations was, is the main and true reason of what the man becomes. So hygiene of the individual, like his education, has a certain and large value to him, but the "Sanitary Philosopher," while appreciating this and earnestly working for the best hygiene of the present, loves even more to look upon the great result to the human race of the hygiene of the individual maintained during a series of generations. His prophetic eye is filled with pleasant visions of the race in possession of higher health, longer life and greater intelligence, a better aptitude for scientific and literary pursuits, and every avocation of life.

The happy circle of his view shows man with bad passions in control, his pleasures purer, more numerous, more exquisite and less exhausting.

How fortunate for both the present and future age, did parents appreciate the worth of correct sanitary practices, and wisely think and do for both themselves, their children and their children's children. Grateful and graphic is the simple old world picture of a city prosperous and healthy: "There shall yet old men and old women dwell in Jerusalem, and every man with his staff in his hand for very age. And the streets of the city shall be full of boys and girls playing in the streets thereof."

Were the laws of hygiene exactly known, certain isolated individuals, by careful and continuous obedience, might expect to obtain the largest benefits in the way of life, and health and enjoyment, that their own careful effort, and the constitutions and practices of their ancestors permitted, and also to transmit to posterity a still further improved heredity; but, alas! the epidemic diseases forcibly intrude themselves, bearing and peremptorily enforcing the lesson that no man liveth unto himself, that personal hygiene is not simple but complex; the interests of the unit and of the sum total of the community, are found to be one; the would-be selfish human monad can neither live or perish to himself, and State medicine is at once a natural outgrowth of human relations and a necessity.

There is nowhere just or general appreciation of the importance which attaches to the position of the representative of State medicine, Health Officer or Board of Health. To properly exercise their functions, as for a single example, to deal effectually with epidemic diseases, includes the knowledge of the nature, cause, habitat and habits of such sicknesses if known, and methods of repression available. They must precisely be informed of what is and what is not known, must have broad views, executive ability and fearlessness of the highest personal and moral order.

The exceptional quality of such labor deserves equally exceptional pay.

To the contrary, I know of but one locality in the United States, where those responsible for the public health are paid in such measure as railroad companies, banks, or great mercantile corporations, recompense work of similar high value.

The excuse for a contrary procedure sometimes is, that the work does not require all "the doctor's" time, that there is not much to do, and frequently "the doctor," miscalled sanitarian, thinks so too. To keep well informed in advancing hygiene, without doing any original scientific work, will occupy the time of any man who is practically engaged even a part of the time.

The man is often the best employed, and most overworked sanitarian, who is doing nothing at the moment for the citizens under his care, but who is eagerly widening the too narrow limits of his knowledge, accumulations of which are even better than the domestic "saving up" of articles of no apparent value, for a piece of information seldom waits seven years to come of use.

The man who thinks there is little to do or learn is of that opinion, because he does not know the extent of his ignorance.

The truth is, sanitarians go a warfare at their own charges.

Physicians, whose livelihood is directly and solely derived from the treatment of the sick, have in all time been incessant in discourse and labor for the prevention of sicknesses.

The sanitary work of the world has been done, and to-day is being done, for love of knowledge and love of man.

Sanitary science has reached the point that further great advance, its most gainful researches, can be secured only by the expert, who gives all his time to study and practice, and brings to his work intelligence, knowledge and training. I cannot refrain from a moment's mention of a single important service to be expected from this class of practical thinkers. In this country the mass of those interested in, and even of the actual workers in science, are, so to speak, amateurs. We may call them the irregular troops, the volunteers, the free lances of science, possessing an abundance of zeal, with an equally abounding insufficiency of knowledge. To this great number our expert force will be of incalculable value, in the words of

Mr. Vernon Harcourt, "the lawgiver and proper founder of the British Association for the Advancement of Science," "giving a stronger impulse and a more systematic direction to scientific inquiry; in pointing out the lines of direction in which the researches of science should move; in indicating particulars which most immediately demand investigation; in stating problems to be solved and data to be fixed."

This class of service, difficult to obtain, now and in the future grown to be essential, must be furnished by the State.

But were this complete arrangement for the hygienic care of the man as an individual and a citizen secured, each State, sovereign though she be, is yet one of a fairly large family. Diseases prevailing in one may threaten another member of the family, and the precautions needful overpass boundary lines and require a higher power, unsectional and impartial, to arrange, adjudicate and regulate. This higher health authority, of necessity national, can well receive, arrange, record and publish the vital statistics of the whole country, make researches not within the scope of State power and interest, receive information of the presence, increase or decline of disease throughout the country, or even ultimately forecast the state of the public health and issue its bulletins of instruction, of warning or of comfort.

The rapid transit of civilization having brought the nations into vicinage, intimacy of intercourse requires international sanitation and national sanitary commissioners.

To maintain what small advantages sanitary science has secured, to obtain the benefits which will accrue from the practical working of the sanitary scheme so curtly sketched, is the important matter pressing on us and all sanitarians. One important help to the result will be the establishment of a professional chair and lecture on hygiene in every medical school, attendance upon lectures, and final examination upon that study, being made necessary to graduation. The desired result must, however, be mainly attained in one way—educate the people.

We want immediate benefits, therefore we must do that thing so difficult to effect—educate adults. Legislators and Governors must learn.

The press must continuously, pointedly and indefatigably set the truth before its readers. There must be sanitary circulars and sanitary conventions and sanitary fairs.

The clergy must preach to the texts, "Know ye not that your bodies are the members of Christ?" and to a following scripture, "What! know ye not that your body is the temple of the Holy Ghost?" They must instruct their congregations in the way of keeping that temple meet for the presence and indwelling of a gracious spirit; they must call aloud for such a life as shall secure that the temples of the future be better and more beautifully builded, and denounce with righteous indignation those who injure, or who shorten the life of that most wonderful existence, the human being, the result of God's ages, the flower of evolution.

Above all, take care for the children!

First, secure the writing, publication and adoption of text books largely illustrated, suited to different ages. Next, after a specified time allow no one to teach school, unless so familiar with the fundamental principles of physiology and hygiene, that children learn not only while the book is in the hand, but constantly receive information from an intelligent instructor, with whom maxims of health and pertinent illustrations are as ready for speech, as those of morality and philosophy. In such a system of instruction, errors in physical conduct or idea will be pointed out for amendment, as mistakes in grammar, pronunciation, and behavior are corrected.

Introduce hygiene early in course, that what may be then learned serve as a foundation for continued improvement, as a crystal begun gains constant accretions from the mother liquor.

The scientifically taught mind, like a coral growth with every polype mouth open, eager to appropriate from the surrounding sea, will be always learning, be it from teacher, book, associate or wide open-eyed observations. Before finishing the usual round of studies, a higher grade of book and study should be traversed to take advantage of mental growth and maturity.

Whatever else be left undone or untaught, sharply, deeply and abidingly impress upon the mind of the young that at every period of existence how to be healthy is the most important study of every human creature.

The result will be a generation wise in its own interests; its women will do well that largest part of the development of the race and of the hygiene of the home which is their lot and privilege in life; it will furnish its own experts, whose scientific purposes were kindled and fanned by education, its legislators will be well informed, and therefore favorable to public health interests, and will no longer wish or dare to give to politicians, or necessitous and undeserving friends and relatives all the money needed to preserve the health or save the lives of the people.

Could I to-night lift the roofs of houses and hospitals, and show an uninformed and indifferent public, those now lying sick and dying of preventable disease, or pass before it the graves of the tens of thousands of those killed by avoidable diseases within the year just past, or accumulate the figures and demonstrate the loss of time and loss of wages and expenses of sickness and death, summing, too, the physical sufferings and anxieties of mind unnecessarily endured, or assemble before this ignorant public the exceeding great multitude of little children—the innocents cruelly slain without cause—and their mourning relatives and friends, the community would rise as one, demand and secure a far-reaching and permanent change. Surely, "the people perish for lack of knowledge."

There exist those who maintain that the world is already too crowded, that if sanitary science keeps alive those who now unnecessarily die, the present struggle for existence, ending in the survival of the fittest, will continually become more fierce, and the bitter results of the battle of life, the unavoidable sufferings of those who go down, and are trodden out of existence, will much more than counterbalance all the blessings which perfected science, carried to completed ends, can create.

Answer enough for this age is to point as illustration, to Louisiana's millions of acres, of deep, black soil, only awaiting

sanitary engineering to support a dense, healthful and prosperous population.

The extraordinary progress lately made by men of science gives sure foundation to the belief that in a future not far remote, the struggle for existence will not be so much man's hand to hand contest with his fellow for life and comfort, but will be rather man's contest with the forces of nature, man the victor, with increasing rapidity turning to his own service energies now wasting themselves about him, more amply supplying necessities, steadily augmenting comforts, and relatively diminishing labor and exhaustion. No longer man against man, but all men brethren, made rich from nature's treasuries.

Hodgkin's Disease.

By W. H. WATKINS, M. D.

(Read before the New Orleans Medical and Surgical Association, October 22d, 1881.)

Mr. President and Gentlemen.—It is my intention to occupy a limited portion of your time this evening with a few remarks upon a disease not new, but fortunately rare in this country. A disease the etiology of which is obscure, but whose pathological lesions are well marked.

The most correct term to be applied to the affection appears to my mind to be lymphadanosis; but the number of synonyms is apparently only confined by the number of pathological inquirers who have sought its investigation. Thus Wilks called it anæmia lymphatica; Cohnheim, pseudo leukemia; Trousseau, adinie; Rauvier, lymphadénie; Mursick, lymphatic cachexia. It is also honored by the name of Hodgkin, who first published a systematic account of the malady in 1832.

Malpighi was the first to mention the general enlargement of the lymphatic glands associated with nodules on the spleen. But special attention was not called to these symptoms as characterizing an affection *sui generis* until Hodgkin wrote his monograph. The discovery of leucocythemia by Bennett and Virchow, in 1848, gave additional interest to the affection

which presented so many symptoms in common with it, but it was not until 1856 that Wilks reported a number of cases, and referred especially to the characteristics so prominently brought forward by Hodgkin. Since then Virchow, (1864), Wilks, (1865), Wunderlich, (1866), Billroth, Burdon, Sanderson, and others, have bestowed considerable study upon the subject, and their published reports have added much to our knowledge.

Of the causes of the disease there is no doubt that heredity plays a very unimportant part. Gowers, in his exhaustive treatise, relates but few cases where the parents were unhealthy, and only one case where the father suffered with the disease, which seemed to have been transmitted to the children. The absence of transmission of the disease renders it exceedingly improbable, but investigation may prove that phthisis and scrofula may be predisposing causes. Should this be the case, however, how can we account for the frequency of consumption and the rarity of Hodgkin's disease?

Careful examination fails to throw much light upon the etiology of this disease. With many, the affection comes on without previous bad health, and no morbid influences can be traced to antecedent cachexia.

The disease is three times more frequent with males than females. Of our hundred cases mentioned by Gowers, 75 were males, The preponderance being far greater with males than in leucocythemia.

The disease occurs at all ages, but is more frequent in childhood, early young, adult, and old age than in middle life. Between the ages of 30 and 50 years, but twelve cases out of one hundred occurred. From the frequency of glandular enlargements in children, it might be expected to be especially common in early life, but this does not appear to be the case when consideration is taken of the large number of children living.

An interesting question is the character of the tissue causing the enlargement of the glands. Large, firm and translucent it might be expected that the microscope would show such change of tissue, such new formation in the lymphatic glands as would be incompatable with their normal action, but this is

not the case, careful examination only shows an abundance of cells scarcely distinguishable from the normal secreting bodies with more or less of fibrous tissue in the larger glands; the presence of these encroach on the cortical substance of the glands as to destroy it.

Wilks writes: "What then is the nature of the disease, and first, what is the change in the lymphatic glands? If it be of the kind Hodgkin surmised, we have before us a case of hypertrophy of the lymphatic system and a disease analogous to what we meet with in the spleen. A most remarkable disorder! in which an interruption to the healthy action of the body is induced by the excessive function of one set of organs. Just as the balance of functions is lost by an excess of splenic action in the case of hypertrophy of the spleen, so here it is lost by excessive lymphatic action.

Again: "On the contrary, does the new cell formation interfere with the function of the gland, and is the latter therefore destroyed instead of being increased? Instead of the life of a patient ceasing from an excess of functions of a set of organs, is it not rather through their diminution or cessation of action?"

Lymphadanosis is an affection characterized by diffused enlargement of the lymphatic glands, associated commonly with enlargement of the spleen, and accompanied by progressive anæmia. As said before, the enlargement of the glands depends upon a growth of adenoid tissue, having a tendency to take on fibrous transformation. The spleen suffers a similar alteration; in it the seat of deposit is in the malpighian corpuscles which correspond to the lymph glands.

The nature of the changes in the liver, which consist of small whitish islands, according to Cornil and Ranvier, "must be attributed to a hyperplasia of the connective tissue." The deposits in this organ vary in size from a pin's head to a small pea. Their distinctness depends on their color and the tint of the hepatic tissue.

The thymus gland is frequently involved. More rarely the kidneys, pancreas, testicles, ovaries, alimentary glands and super renal capsules.

In regard to the location of the glandular enlargements the several groups of glands are affected in the following order: (1) Cervical; (2) Axillary; (3) Inguinal; (4) Retroperitoneal; (5) Bronchial; (6) Mediastinal; (7) Mesenteric.

The size of the enlargements may vary from a pigeon's or hen's egg, and frequently reach the size of the fœtal head. Gowers reports one case where a single group of glands weighed ten pounds. At first a group of glands although aggregating large size, are separate and freely movable one on another; but after a time they seem to unite and form a conglomerate mass; in some cases glands in one location are freely movable, while at other portions of the body they are fixed and represent a single mass.

The disease has by some been divided into two varieties, determined by the character of the enlargements. In some the formations are characterized by a hard, fibrous condition, in others the proportion of cell formation is excessive, and the hypertrophied glands feel soft. It is probably true that in the latter condition there is more frequently an increase of white corpuscles in the blood, but the exceptions to this rule are so numerous that some authors are justified in the assertion that the difference in consistency is only a difference in the stage of the disease. The more natural arrangement of the varieties is to determine this by the presence of enlarged glands in one portion of the body, and the general affection characterized by the dissemination of the growths throughout the body, associated with enlargement of the spleen.

One essential pathological condition remains to be spoken of —the blood: This fluid is altered, but differently from that which characterizes leucocythemia. The anæmia being such a marked symptom it would naturally be expected that like pernicious anæmia, the white corpuscles of the blood would be increased. This is rarely the case. The white corpuscles are seldom numerically greater than normal. They are smaller in size, however. The red corpuscles are diminished in both quantity and quality.

The two characteristic elements in lymphadanosis are the glandular enlargement and the condition of the blood. These

conditions are soon markedly manifest. The secondary symptoms are due to the pressure of the glands on adjacent organs or tissues. The earliest symptoms are the enlargement of the superficial glands. In two-fifths of the cases the first glands whose enlargement was noted were the cervical, and in most of these cases those situated in the posterior triangle were the first involved. When the deeper glands became involved, marked symptoms are produced as pressure is exercised upon the trachia and pulmonary substance, or by pressure the efficiency of the digestive organs is interfered with. As the enlargement of the glands is such that almost every function is more or less involved in different cases, it is not necessary for me to specify the lesions produced by pressure. The enlarged glands usually increase until the last, but frequently there is a diminution, an arrest of growth before death. In some cases the enlargement of the glands is uniform and general throughout the body. In others the enlargement is for a long time confined to one group of glands which, strange to say, may remain of moderate size, until late in the disease, when other glands will rapidly enlarge and exceed the ones originally affected in size.

The only nervous symptoms are those clearly attributable to anæmia, or pain caused by pressure. Delerium, coma, and convulsions have been frequently witnessed at the close of the affection. No pathological condition in the brain, has been discovered.

The skin presents a condition quite analogous to that observed in lencocythemia, and the waxy aspect reminds one of a victim of Bright's disease. During the latter stages, anasarca, and frequently ascitis, are present.

In many cases, probably two-thirds have fever as a prominent symptom, and in but exceptional cases is it absent throughout the disease. The fevers may assume three distinct forms—the continued, the intermittent, and a condition where there are periods of normal temperature between the febrile phenomena.

The duration of the disease varies, but in a collection of fifty cases, made by Gowers, thirty-three cases terminated in less

than two years, and but one case lasted over five years. The average duration was nineteen months.

The chief diseases from which it is necessary to differentiate lymphadanosis, are 1st, local glandular lymphomata; 2d, leucocythmia; 3d, scrofulous enlargement of glands, and 4th, cancer.

The prognosis is most grave, but there seems to be chances of greater prolongation of life while the glands retain a condition of softness, in contradiction to the hard fibrous variety.

In regard to treatment the fact that at first the symptoms pointed to a local affection many surgeons were induced to remove the enlarged glands, thus hoping to arrest its progress—and when a single group of glands have been affected, this has seemed to afford relief or to retard the progress of the disease. It is but right, however, for me to state that those cases which seemed to be relieved by extirpation, might have been nothing more than the group from which I especially call attention to make a differential diagnosis, viz: local glandular lymphomata.

The medical treatmant has not been satisfactory. The iodides and iodine have been largely used without success. Iron, arsenic and chloride of gold have given no relief. Cod liver oil has not seemed to improve the condition; and of all remedies, phosphorous apparently occupies the most prominent place. Combined, or administered at the same time with cod liver oil, alternating with iron and quinine, seems to be the most rational treatment.

It has been my fortune to meet with but one case of this disease and I will give the symptoms; reporting subsequently one of the cases recorded by Hodgkin.

L. C., a native of Oaxaca, Mexico, aged 6 years and 9 months, was taken sick December, 1880, with a paroxysm of fever supposed to be malarial; soon after, the glands of the posterior triangle of the right side of the neck commenced to enlarge, and his parents noticed that he rapidly lost color and became exceedingly pale. He also experienced trouble with his digestive functions, and on examination, his spleen was found enlarged. He had paroxysms of fever every ten or

twelve days, and it was noticed that the glands of the neck and the spleen diminished in size when he was free from fever, but only to take on active engorgement when the fever appeared again.

I was called to see him on March 1st, 1881. He was then suffering from a paroxysm of fever. The glands of the posterior triangle of the neck were enlarged to the size of an orange. The spleen filled the whole left side of the abdomen, nearly to the illiac fossa. There was considerable cough, but of a paroxysmal nature—no expectoration. On percussion, there was no dullness perceptible, but auscultation revealed lessened respiration throughout the left lung. At the throat, just back of the sternum, there was marked fullness, as though the thymus gland was enlarged, and the paroxysmal cough denoted pressure on the bronchi by enlarged bronchial glands. The axillary glands on the right side were moderately enlarged and tender, as well as the inguinal glands. The liver was not enlarged. The blood was very thin and watery, but I had no means of measuring the number of the red blood corpuscles. I was unable to get more than two or three white corpuscles under the field of the microscope at a time. The paroxysms of fever recurred with shorter intervals of normal temperature. It gradually assumed a remittent or continuous type. Anasarca and moderate acetes supervened, and death occurred June 3d by asthenia, hastened by a colliquative diarrhœa, which was present during the last week of his illness.

Accompanying his fevers there was usually dysenteric symptoms and sometimes vomiting. During the exacerbation of fever the glands enlarged and appeared hard and firm, when free from fever, different glands in the same location could be traced. Usually the outbreak of fever was accompanied by rheumatic pains, and the shoulder and wrist joints were affected. No post mortem was allowed.

The first two cases recorded by Hodgkin as related by Wilks, were as follows:

Case 1. The first case which he proceeds to describe is that of a boy aged nine years, who died of dropsy and peritonitis.

The absorbent glands were in many places generally enlarged. In the mesentery some were as large as pigeon's eggs, and there was a continuous chain of these enlarged and indurated glands along the aorta and the illiac vessels. The bronchial glands were also enlarged. There were a few tubercles in the lungs. The spleen was large and contained numerous tubercles. The substance of the liver was generally natural, but contained a few tubercles—somewhat larger than peas—white, semi-cartilaginous, and of an even surface.

Case 2d. Dr. Hodgkin's second case is that of a boy, who was admitted into the hospital, with enlarged glands in the neck, and with enlarged spleen. He died of general anasarca. On post mòrtem examination, the glands in the neck were found to have assumed the form of large, smooth, ovoid masses, connected together by loose cellular tissue of a light color and firm cartilaginous structure, and showing no appearance of softening or supuration. The bronchial and mediatinal glands were similarly affected. The mesenteric glands were in the same state as the glands in the neck, the lungs were healthy, and liver healthy. The spleen was four times its natural size and its structure thickly sprinkled with tubercles.

Professional Secrets, Medical Expert Testimony and Laws Bearing Thereon.

By W. P. Brewer, M. D.

(Paper read before the New Orleans Medical and Surgical Association, Feb. 4, 1882.

At a meeting of the New Orleans Medical and Surgical Association, some time ago, the questions arose:

1st. What are the privileges of medical men before courts of justice regarding professional secrets?

2d. Can they be called upon to give to corporations or others, viz: Life Insurance Associations, etc., their medical knowledge regarding a patient or deceased person without adequate compensation therefor?

3d. What is expert testimony?

4th. What are the laws, if any, especially of this State, bearing on the above points?

A committee was appointed to investigate in relation thereto and report on the same. Their report proved very unsatisfactory, owing to the fact that said subjects were so little thought of by our law-makers that they have passed but few, if any enactments regarding the same; and yet the matter is one of grave consideration and importance, both to the practitioner of medicine and to the public at large, and one not easy of solution.

For a better comprehension and determination of the within subjects it will be necessary to take up each under its proper heading, and thoroughly discuss the same by drawing deductions from reference to the special laws bearing upon it.

At this point it will be well to state that this paper cannot, under any circumstances, be considered full or exclusively original, but merely a synopsis for the purpose of bringing before the profession, as professional men, their *status and rights* under certain circumstances, when brought before the legal tribunals of the land.

What, if any, are the privileges of medical men before courts of justice with regard to disclosing professional secrets?

In attempting a discussion of this subject, it will at first be necessary to come to a correct understanding as to what are strictly professional secrets, and how far, with a proper regard to the demands of society, law and justice, a physician will be justified in withholding his knowledge from the public gaze. Even with our profession, in many instances, I believe the line has never been strictly drawn. According to my own idea all secrets and information obtained, that are necessary to a proper investigation from a medical point of view, for the purpose of forming a correct diagnosis and treatment of the patient, should be accounted professional secrets, and ought not to be divulged unless absolutely necessary for the vindication of justice, prevention of crime, or the maintenance of character of a person improperly lying under a suspicion. Under all ordinary circumstances, however, a correct-minded medical man will keep inviolate and sacred all knowledge ac-

quired by him in his professional intercourse with his patients, either regarding themselves or their families, the same not being his property, but the property of others intrusted to his honor and safe keeping. In an examination of the *laws of evidence*, to which I will refer as I proceed further, I find that great latitude is given to the discrimination of judges as to how far they can rule to compel witnesses to testify, and also find that different judges, have in many cases ruled differently, some giving greater latitude than others. In fact much depends upon the shrewdness of the attorneys employed on either side of the case as to how far the medical man may be compelled to testify.

As to the obligation of medical men keeping inviolate medical secrets when called upon to testify, various writers on Medical Jurisprudence differ widely, so widely in fact, that at this juncture it will be well to quote *in extenso*. For example, Mr. Fonblanc says, "That when the ends of justice absolutely require the disclosure, there is no doubt that the medical witness is not only bound but compellable to give evidence, ever bearing in mind that the examination should not be carried further than may be relevant to the point in question; of this the Court will judge, and protect the witness." *Med. Juris.* 160.

Belloq however differs in opinion very materially from Fonblanc and says: "The tribunals neither ought nor have the power to exact from a physician the revelation of a secret confided to him in consideration of his office; at all events he may and ought to refuse. Religion, probity, nay, the rights of society make this law, still more are we bonnd to secrecy when not compelled to disclose. Upon this point, casuists and *juris consults* are of one opinion." Belloq, *cours de Med. leg* 17.

In the celebrated case of the *Dutchess of Kingston*, we find it decided. "That in a Court of Jnstice medical men are bound to divulge those secrets when required to do so." Lord Mansfield said on that occasion, "If a medical man was voluntarily to reveal these secrets, to be sure he would be guilty of a breach of honor and of great indiscretion; but to give that

information which by the law of the land he is bound to do, will never be imputed to him as any indiscretion whatever."

While we see so wide a difference in the views taken by different writers on this subject, physicians as a class have never given up the idea that they ought to enjoy the same privileges and immunities enjoyed by lawyers, and I will now quote from Dr. John Gordon Smith: "A precedent in law is a mighty authority; and I am quite satisfied that a point which has been so often and so uniformly ruled, will never be ruled otherwise in the Court of Westminster Hall. I am also well aware that to law and rules of court we must yield, or the administration of justice would be impeded. But although satisfied on these points, I am not contented that we should be placed beyond the pale of those to whose private and confidential dealing with their fellow-citizens such respect is shown. I will not go at large into this question, my design being merely to draw the notice of my brethren to the circumstance and put them on their guard as far as possible; yet will I say, that circumstances may occur in which a man of delicate and honorable mind, being the depository of certain things communicated to him, either under the seal of professional or private confidence, would endure much ere he would reveal. It will at once strike the manly mind that in regard to females, we might be called upon to reveal that which the promulgation of would to them be worse than death itself."—*Smith's Analysis of Medicine*, p. 93.

In *Guy's Med. Juris*, p. 16, we find that Dr. Chas. A. Lee takes the high ground that it is the moral right and duty of medical men, to refuse to disclose in courts of justice secrets intrusted to them in professional intercourse on the ground that such secrets would never be imparted to us did society believe any power could or ought to wring them from us. As he says, "If private confidence is to be thus broken up by every imaginary necessity, where is the end to the mischievous consequences that would arise, especially at this day, when every trial is published to the world through the medium of the public prints? The lawyer is shielded from the obligation of revealing the secrets of his client, on the ground that it is necessary he should be acquainted with the real facts of the

case for the purpose of conducting the defense, and because life and property is at stake. But we ask, if character and reputation are not often of equal value, and whether either of the former could be enjoyed without the possession of the latter"?—*Guy's Medical Juris.*, 16.

However, we find that as a general rule of law, secrets, and information imparted to or gleaned by a physician from his patients, are not deemed privileged communications; but many of the States of this Union have, in their wisdom and looking to the protection of the physician and his patient, passed *statutes*, relative thereto, and prohibit physicians from disclosing matters which have come within their knowledge from their patients, strictly in a professional way.

By the revised *statutes* of New York, Vol. 2, p. 400, *f* 73, and of Missouri (Revised Code of 1835, p. 623, *f* 17), "No person duly authorized to practice physic or surgery shall be *allowed* to disclose any information which he may have acquired in attending any patient in a professional character, and which information was necessary to enable him to prescribe for such patient as a physician, or to do any act for him as a surgeon." But, though the *statute* is thus express, yet it seems that the party himself may waive the privilege, in which case the facts may be discussed. Johnson vs. Johnson, 14th Wendell, 637. See also Edington vs. Ins. Co., 5th Hum (N. Y.), 1; Kendall vs. Grey, 2 Hilt (N. Y.), 300; People vs. Stout, 3d Parker, C. R., 670; 67 N. Y., 185; 69 N. Y., 256.

A consultation as to the means of procuring an abortion in another is not privileged.

Hewitt vs. Prince, 21st Wendell, 79.

1st. Greenleaf on Evidence, section 237.

Under the above *statutes*, however, this privilege only applies to matters strictly professional. 15 Hum (N. Y.), 74; Collins vs. Mack, 31 Ark. 684.

However, taken in any view, even the statutes of New York and other States do not confer upon a physician this privilege of not divulging consultations for criminal purposes. Hewitt vs. Prince, 2 Wendell, 79.

"Whether under the Roman common law a physician is privileged as to matters confidentially imparted to him by a

patient has been much and ably discussed; and the tendency is to assert the *inviolability* of such secrets." See a summary of the question in Weiskes' Rechts Lexicon, XV, 359 f. f.; 1st Wharton Law of Evidence, 2d edition, entitled "Confidential Communications."

In Louisiana, however, there seems to have been no *statute* passed whereby a physician could assert the inviolability of professional secrets. Such a state of things is indeed deplorable and much to be lamented, and it would be certainly a wise measure if some steps were taken by this Association to procure at the hands of our law makers the passage of a *statute* similar to that of New York and Missouri looking to the *inviolability* of secrets imparted to a physician confidentially and in a professional character.

Second. I will undertake to discuss briefly the second part of the question to be considered, viz: can physicians be called upon to give to corporations or others, viz: Life Insurance Associations, etc., their medical knowledge regarding a patient without adequate compensation therefor? In order to properly discuss this question it is necessary to arrive at a correct understanding of the manner and circumstances under which the physician is called upon to impart such knowledge. For instance if he be summoned before a Court of Justice to give his testimony, not in the light of an expert but merely as a witness for the vindication of justice, or the reperation of a wrong, most assuredly is he not any more than any other person entitled to compensation, for were it otherwise lawyers, bankers, insurance agents, merchants and others would be justified in claiming the same privileges; but if the physician is called upon to give his testimony regarding a certain case, person, or disease in the light of an *expert* the case would be very different.

Now what is meant by *expert* testimony, and what, if any, especially of this State, are the laws bearing on this point?

"The word expert is derived from the Latin *expertus*, which means skilled by experience. They are such persons as are selected by the court or parties in a cause, on account of their

knowledge or skill, to examine, estimate and ascertain things and make a report of their opinions." Merlin's Report.

Witnesses who are admitted to testify from a peculiar knowledge of some art or science, a knowledge of which is requisite or of value in settling the point at issue. In such cases it would certainly seem to me to be nothing more than just and equitable that a physician when called upon in the light of an *expert* should be fully compensated, the same as any other kind of *expert*, and I believe that such has been the uniform ruling of the courts of justice in this State as in all others of this Union. Of course, my brethren must bear in mind the Scripture passage, "Ask, and ye shall receive."

Alveolar Abscess—A Reply.

By A. G. Friedrichs, M. D.

"Confine thy tongue, lest it confine thee."

An article upon the above subject, read by me before the New Orleans Medical and Surgical Society, and published in the January number of this Journal, I am sorry to see, has "constrained" an ambitious D. D. S. "to make certain comments." I hope the constriction has not done nor ever will do him any harm.

I do not dispute the fact that "honest differences may exist," but I do deplore the fact that honest differences are not always fortified by honest knowledge of the subjects in hand. Had this criticism appeared in a Dental Journal, I would not have honored it with a notice, as in such a case it would have been brought before those familiar with the subject, and judged according to its merits.

My critic has construed my intentions rightly in taking for granted that, "considering before whom the paper was read, the purpose of the author was to call the attention of the medical profession," etc. I would, on my part, suggest that he should have been equally considerate, and further take for granted that my auditors were men of sufficient intelligence to discriminate between an acute or chronic abscess,

whether it be true or false, in no matter what part of the human economy this (quadrupedal) infirmity may occur.

To explain this "quadrupedal phenomenon," I will quote: "Primarily there are two classes of alveolar abscess, acute and chronic, which in turn may be susceptible of subdivision, namely, the true and the false." In all my researches I am unable to find a single authority who sustains such a theory. I therefore conclude it must be a product of his own genius. "Speech is the gift of all; thought of few."

All medical men agree that an acute abscess becomes chronic when the local irritation is allowed to remain and by its permanence produces the continuance of the disease. The fallacy of the subdivision into the true and the false is so conspicuous as to need no discussion at all. It is certainly apparent to all reasoning minds that an abscess cannot be an abscess unless it is one.

We will take the next objection in hand: "The cause of alveolar abscess—the remains of a dead tooth-pulp." As this being the sole cause, I beg to differ. Abscesses have occurred on the roots of teeth whose crowns, many years before, had entirely disappeared, either by caries or other causes. Where are the remains of a dead tooth-pulp in cases of this character? I could cite other instances, even where the formation of an abscess could not be attributed to any local cause. *Ab uno disce omnes.*

I will now proceed to investigate what my critic alleges to be the principal objection to my paper—antiphlogistic treatment. A perusal of his own paper will show that he condemns himself out of his own mouth—that he has disagreed simply to agree. My critic has not brought forth one single idea in the treatment, worthy of a reproduction, which was not already contained in my article. After contending in one part that antiphlogistic treatment would certainly occasion the loss of the tooth, further on, in his treatment of what he terms the second stage of the disease, (the first, however, is absurd, it being only the beginning of the second, and therefore the same thing), he says: "If pus can be detected by the touch, lance

freely and deeply in the most dependent portion accessible of pus chamber. If such is not the case, apply poultices," etc.

I call the medical profession to witness whether this is not antiphlogistic treatment.

The application of leeches to the gums has received especial condemnation—been honored by italics, leading to the inference that the practice has been abandoned or was never entertained by enlightened practitioners. Show me a medical man of the day who has the temerity to proclaim that the application of leeches to an acute local inflammation is productive of harm. That he is not sustained by *all* the dentists is sufficiently evidenced by the fact that not more than one year ago his own father had a leech applied to his gums to relieve incipient inflammation of the root membrane, and at that time testified that it had given him immediate relief.

I think I have disposed of all points in question. I suspect he did not read my article carefully, but, if he did, I will have the charity to consider that he did not understand what was therein written.

In conclusion, I agree with my friend that, "Among the arts and sciences, none has made greater progress than that of dentistry." I will go farther, and say that it has indeed progressed to such an extent that its votaries who desire eminence in the grand future which is before it, must possess themselves of more thorough knowledge than is imparted in the curriculum of the ordinary Dental College of the present day.

Traumatic Tetanus, Treated by Sulphate of Eserine—Recovery.

THOS. LAYTON, M. D.

On Monday, January 2d, 1882, I was called, at 11 A. M., to see John Gross, aged eleven years, residing at No. 67 Laurel street.

Over three weeks previously, he had run a small splinter into the sole of his left foot, near the ball of the big toe. He

picked the splinter out with a pen knife, and the insignificant wound healed quickly. The child went about, as usual, with and without shoes, and it was only on Friday, December 30th, that he began to complain of stiffness and pain about the jaws. His parents did not at once appreciate the gravity of these symptoms, but the next morning, (Saturday) as he had trouble in opening his mouth and moved his head with difficulty, they took him to see their regular physician, who was at the time confined to his residence, by a spell of illness. This gentleman, according to their statement, diagnosed the nature of the case, urged them to take the child home immediately and call upon another physician. This was not done, however, until forty-eight hours later, when I first visited the patient. I found the boy in great distress, which was increased by the least motion; there was considerable opisthotonos; the countenance had a fixed, grimaced look; canine laugh; it was not possible to separate the jaws more than half an inch; the patient was perspiring; the intercostal muscles were only moderately involved, whilst those of the upper extremities were not affected; there was frequent painful spasmodic contraction of the muscles of the anterior wall of the abdomen and of those of the lower limbs. Pulse, 108; temperature, 102°. Free purgation had been practiced by the parents. I prescribed chloral hydrate, bromide of potassium and tincture of belladonna combined. At my evening visit there was no perceptible change. Jan. 3d, A. M., Pulse, 100; temperature, 101¾°, trismus perhaps more marked; as the child swallowed, with tolerable ease, the importance of beef tea and milk, etc., which had already been recommended yesterday, was again pointed out. (It may be as well to state here, once for all, that throughout the case, the patient was generously nourished.)

P. M. Pulse 112; temperature 102½°; condition apparently worse; the tincture of cannabis indica was substituted for the treatment mentioned above.

January 4th, A. M. Same pulse and temperature as last night. P. M., all the symptoms aggravated; temperature

102¾°; pulse 116. At about 9 o'clock to night began to administer the following prescription:

℞ Sulphate of Eserine, ..gr. ½.
Pure Glycerine,.....f. 3ij.
Syrup of Orange flower, f. 3xiv.
Water.....f. ʒij ℳ.

S. teaspoonful (1-64 grain or one milligramme of Eserine) every hour. I should say here that I was advised by Mr. Lascar, the obliging Chemist of Messrs. I. L. Lyons & Co., to use the solution in Glycerine, Eserine being so easily decomposed otherwise. Even the short exposure to the air of the salt, during the time required for preparing a dose, is sufficient to cause an increase in weight of the Eserine so exposed. Mr. Lascar has remarked that Glycerine prevents the decomposition of the solution.

January 5th, A. M., temperature 101½°; pulse 96; patient resting more easily. In order to avoid tedious details I will state that the dose of 1-64 grain of Eserine was continued *every hour* until the night of January 10th without giving the least cause for alarm; the temperature was 99° on the morning of January 6th; *there was never the slightest contraction of the pupil*, but at my morning visits on January 6th and 7th *the pupil was dilated*, as if atropine were being used. There was never noticed an increase in the secretion of tears and saliva, and owing to constipation, which was present, it was several times necessary to purge the patient. The tetanic symptoms began to subside gradually; on January 9th, in the evening, I found that the temperature had gone up to 102¼°, and the pulse to 104; I could not account for this rise, which was of short duration and due perhaps to over-feeding.

From January 10th, in the evening, the doses of Eserine were given at intervals of an hour and a half; later the time was increased to two hours: the remedy was continued until January 17th, when the child had taken, in all, 3 *grains* of Eserine; the prescription was then discontinued, the only remaining trace of the attack being some rigidity of the jaws, which had entirely disappeared by January 30th.

Remarks.—Mr. Lascar kindly furnished me with the following note: "Some years ago Dr. Minor, of New York, had a very interesting case of tetanus to treat. The patient was a strong, robust man, who, whilst hunting on Long Island, was shot in the shoulder. He was brought to New York, and Dr. Minor came to request me to procure a reliable, solid extract of Calabar bean. I examined a good many samples, including one which was made in the laboratory of the house with which I was connected. I selected an extract which was unquestionably the finest I ever met with, and during a period of about a fortnight, I personally dispensed, I think, over ten drachms for Dr. Minor's patient, who is in splendid health at the present time.

Extract of Calabar bean, derived from physostigma venenosum, contains an active principle, according to Fraser (1863), which is a poison directly paralyzing the spinal cord. This active principle was shown by Poehl to be composed of two alkaloids, eserine and calabarine. His researches agreed with those of Harnack; it was demonstrated that eserine is soluble in ether, while calabarine is insoluble; further, that metatungstic acid precipitates calabarine and not eserine. The physiological action of calabarine resembles so greatly that of strychnia as to be nearly identical. The two alkaloids are found in various proportions in different samples of Calabar bean, and it is for this reason that reports of experiments are conflicting. Rossbach asserts that Calabar bean is not a paralyzing but a tetanic poison; Nothnagel affirms that its paralyzing effects are secondary, depending upon exhaustion of nerves and muscles due to previous violent convulsions. It has been claimed by others that the extract excited the spinal marrow and paralyzed the peripheral nerves. Rossbach obtained no paralyzing effect upon the peripheral nerves with pure eserine. Harnack, of Strasburg, examined a great many samples of Calabar extract, several of which scarcely contained any eserine at all. Eserine proper, the alkaloid which, through its action in contracting the pupil, has been so extensively employed in ophthalmic practice, must prove far superior to the extract of Calabar bean in the treatment of teta-

nus, owing to the elimination of calabarine. Eserine, as prepared by Duquesnel and by Merk or Gehe & Co., is highly hygroscopic, and, according to Duquesnel, it decomposes readily into *rubeserin*, especially if an alkali be present. The dose of the sulphate of eserine, *internally*, is variously stated at from *half a milligramme* to *one milligramme* (grain 1-64), and, owing to its hygroscopic qualities, its use in the shape of granules or disks may be open to objection. Having experimented with solutions of both sulphate and bromate of eserine, with regard to their stability, I have found that an addition of glycerine is better calculated to prevent deterioration than either alcohol or salicylic acid.

In addition to the above, the following condensed extracts from a recent work may not be uninteresting*: "Calabar Bean.—The efficient element of Calabar bean is the alkaloid called eserine or physostigmine, which is present only in the cotyledons of the seeds. Physostigmine has been discovered to possess one property, which is entirely opposed to the action of the bean itself. It paralyzes, instead of stimulating, the terminals of the vagus. It is said to form crystalline crusts or even glittering rhombic scales; it is colorless, tasteless, alkaline in reaction, easily soluble in alcohol, ether, benzol and chloroform; not very soluble in water. If heated for a long time at 212° F., it alters to a reddish color, and its solutions in acid are now red. The most curious and characteristic action of Calabar bean is one that renders it of extensively useful application in ophthalmic medicine and surgery; this is contraction of the pupil and of the ciliary muscle. Perhaps the best summary that has been given of the action of the Calabar bean on the heart and spinal nervous system is that of Roeber:

1st. The chief action of the bean consists of a depression and final annihilation of the excitability of the ganglionic elements of the spinal cord; and its operation especially affects the groups of cells in the anterior horns of the gray matter which conduct impulses from the brain to the periphery,

*Materia Medica and Therapeutics. By Charles D. F. Phillips, M. D.; F. R. C. S. E.

and then also attacks the elements of the gray matter in the posterior horns which transmit sensations of pain to the brain.

2d. By this functional lesion of the gray matter a complete loss of the motor and reflex activity of the spinal cord is produced, likewise a loss of sensibility to pain; while the sense of touch and the so-called muscular sense are retained till the death of the animal.

3d. Besides this action on the cord, Calabar bean possesses a special power over the movements of the heart, which in small doses it merely retards, but in large doses completely arrests.

4th. The interference with respiration, which is especially produced by small doses, is either the consequence of a sudden interference with the heart's action, or is produced by a destruction of the motor power of the respiratory muscles from paralysis of the spinal cord.

5th. The poison increases the secretion of tears and saliva.

6th. The increase of defecation observed in poisoning with Calabar bean is the result of a tetanus of the stomach and intestines, the cause of which is not yet fully determined.

7th. The motor and sensory nerves are not affected at the commencement or in the development of the affections of the cord; at a later stage, there follows a paralysis or hastened death of the intra-muscular termini of these nerves.

8th. The fibrillary muscular twitchings occurring soon after the administration of the poison, which are especially striking in mammalia, may be explained by a local irritation of them, caused by paralysis of the motor nervi-termini.

9th. The pupils are strongly contracted both in the external and in the internal use of large doses of Calabar bean extract; but as to the cause of this it will be necessary to institute more exact inquiries.

But the most interesting properties are those, perhaps, which place physostigma in opposition to belladonna, or, more accurately speaking, to atropia, as shown by Dr. Fraser. His researches commenced in 1868, but he had in some degree been anticipated as early as 1864, when Kleinwachter narrated a case of belladonna poisoning which had been successfully treat-

ed by physostigma. In Paris, also, a case of tetanus had been much ameliorated by the internal administration of the powdered kernel of physostigma—enough, it was believed, to cause death, followed up by the subcutaneous injection of a small quantity of atropia.

In tetanus the results obtained with calabar bean by some observers have been so remarkable as to excite great hopes for the future treatment of that terrible disease; but there are very conflicting statements. Dr. Fraser has borne energetic testimony to its value, and Dr. Eben Watson has collected a considerable number of cases of its use, and shows that the majority recovered. Moreover, he gave enormous doses of the alcoholic extract; one patient, who recovered took (in forty-three days) 1026 *grains*, and as much as seventy-two *grains* in one particular twenty-four hours. He believes that the dangers of poisoning are to be avoided if care be taken to adapt each dose to the necessities of the moment, and to support and stimulate the patient freely. Mr. McNamara, of Calcutta, has also had excellent results in many cases. On the other hand, some observers have tried the remedy in isolated cases of tetanus, with no good effect. In strychnia-tetanus, there is a case of recovery under calabar bean recorded by Dr. Keyworth.

Pure physostigmine is seldom used, being difficult to prepare; but Veé recommends a solution of 1 in 2,000 or 1 in 1,000 of the sulphate of physostigmine for local use, one or two drops to be applied; for internal use, about 1-64 to 1-73 grains for a dose; for subcutaneous injection, about one-half of the latter quantities."

In the history of the little boy which is related above, attention is called to the following points:

1st. The child took a *full adult dose* of the sulphate of eserine every hour for several days, and not only were there at no time symptoms of poisoning, but the beneficial action of the remedy was apparently manifest.

2d. There was never the least *contraction* of the pupils—on two occasiods, as mentioned in the observation, the pupils were

dilated, at all other times they responded to light in a normal manner.

3d. It was not noticed that the sulphate of eserine increased either the secretion of tears and saliva, or defecation; with regard to the last, an occasional purgative had to be employed during the progress of the case.

Since the foregoing was written, I accidentally came across a report of two cases of traumatic tetanus treated with the Calabar bean by Dr. Eben Watson, which were published in the London Lancet of March 2d, 1867, and reproduced in the New Orleans Journal of Medicine for August, 1867. The article states "that the medicine was not followed by any beneficial effects, and the only fact established seems to have been the tolerance which tetanic patients have of this powerful agent. In one of these two cases, it was found that the remedy had only a very slight action on the pupil, when taken internally; this excited surprise, owing to the speedy and great contraction of the pupil which the bean produces when applied locally to the eye. Except when a very large dose was taken, the pupil was never contracted to a point. On the contrary, the contraction was very slight and short-lived under ordinary doses of the drug, and one of the earliest symptoms of tolerance of it shown by the patient was the cessation of even this temporary effect upon the pupil. Besides, it was noticed that after the effect of the bean had passed away, the pupil was found to be unnaturally dilated, as if from a sort of reaction of the fibres in an opposite direction."

Comparative Vital Movement of the White and Colored Races in the United States.

By S. S. HERRICK, M. D.

[Reprinted by permission from the proceedings of the Savannah meeting of the American Public Health Association—1881.]

The relative vital movement of different races in a mixed population is a matter of interest to the sanitarian as well as the ethnologist. The white and colored races, living side by side in this country, and in some of the Southern States in nearly equal numbers, afford an example for study, though the

problem is rendered complicated and indefinite by their partial admixture. The number of communities in which accurate records of deaths classified by races are kept is confined to a few of the cities and towns, and the record of births is still more limited; but enough is known to form a few tables that may be instructive.

Table A is designed to show the mortality for all ages, that for the first five years of life, that from some of the leading death-causes, and the births where attainable; also the ratio of the same per 1000 of population by races.

It will be observed that the ratio of mortality for all ages is invariably much greater among the colored than among the white, and that the disparity is still more marked under 5 years of age. The same disparity is found in most of the diseases exhibited in the tables. In less than half the cities malarial fevers cause a smaller mortality among colored than white people, but the explanation would be neglect of hygiene and medical treatment rather than greater liability to malarial influences. It has been thought that the negro race enjoys, to a great degree, immunity from paludal miasms, but this is evidently a mistake, at least in this country.

There is good evidence that the African race is less liable to cancerous diseases than the European, and the same is true of delirium tremens in still more marked degree, though this cannot be attributed to more temperate habits. Suicide, too, is almost unknown among the darker race.

Pulmonary consumption and acute lung diseases are so much more destructive to life among the African race that we must ascribe to that people a greater liabilty to those diseases. The same may be said of convulsions. Trismus nascentium being almost uniformly fatal, it clearly has a preference for colored people; and besides is much more common in Southern cities than in Northern.

As to diarrhœal and puerperal diseases, it is probable that the advantage of the white population is due to better medical attention and superior comforts of life.

Still births are uniformly and largely in excess among colored people; but this may be, at least partially, accounted

TABLE A—*Comparative Vital Movement of Races.—Percentages of Population, Census of* 1880.

Name of City and Year.	Population, 1880.		Total mortality.		Under Five years.		Malarial Fevers.		Pulmonary consumption.		Acute Lung Diseases.		Diarrhœal Diseases.		Heart Diseases.		Cancerous Diseases.		Puerperal Diseases.		Convulsions.		Trismus Nascentium.		Still Births,		Births.	
	W.	C.	W.	C.	W.	C.	W.	C.	W.	C.	W.	C.																
Boston, 1880	356,535	6,000	7,239	196																								
" Ratio per 1000			20.37	32.66																								
Philadelphia, 1879	815,182	31,798	14,545	928			41	1	2,299	182	1,235	99	1,292	42	624	57	353	9	87	4	577	49	15	.....			18,036	463
" Ratio per 1000.			17.84	29.			.05	.031	2.82	5.69	1.51	3.09	1.58	1.31	.765	1.8	.433	.281	.106	.125	.61	1.53	.018	.0			22.13	14.47
District of Columbia, 1880.	120,000	60,000	2.085	2.121	782	1,177	35	33	334	412	216	309	214	245	81	56	50	21	18	20	36	106	13	38	119	236	2,297	1798
" Ratio per 1000.			17.34	35 35	6.51	19.61	.29	.55	2 78	6.86	1.8	5.15	2.08	4.33	.675	.933	.416	.35	.15	.333	.3	1 76	.108	.633	.991	3.93	19.14	29.96
Richmond, Va., 1880.	35,756	28,047	741	1,009	301	487	7	6	105	183	38	65	97	99	41	44	14	5	7	8	21	56	9	14	7	17		
" Ratio per 1000.			20.72	36.03	8.41	17.4	.195	.214	2.93	6.53	1.06	2.32	2.71	3.53	1.14	1.57	.39	.178	.195	.285	.585	2.0	.321	.5	.195	.607		
Charleston, S. C., 1879	22 713	27,287	517	1,075	154	452	8	9	80	157	32	65	55	77	14	24	8	6	3	4	13	41	11	79	4	23	460	886
" Ratio per 1000.			22 77	39 37	6.78	16.55	.35	.33	3.52	5.75	1.41	2.38	2.42	2.82	.616	.88	.35	.22	.10	.146	.572	1.5	.48	2.89	.176	.842	20.26	32.45
Charleston, S. C., 1880	.... ..	.....	500	1,121	139	516	13	17	53	199	42	103	45	63	13	22	12	8	4	8	12	54	10	100				
" Ratio per 1000.			22.02	41.06	6.12	18.9	.572	.623	2.33	7.29	1.85	3.77	2.0	2.3	.572	.806	.528	.293	.176	.293	.528	1.97	.44	3.66				
Savannah, Ga., 1879	15,007	15,674	416	686	185	343	32	29	53	117	30	80	36	69	13	12	2	2	1	13	17	72	12	21	11	75		
" Ratio per 1000.			27.73	43.68	12.33	21.84	2.13	1.84	3 53	7.45	2	5.09	2.4	4.4	.866	.764	.133	.127	.066	.828	1.13	4.58	.762	1.33	.733	4.77		
Atlanta, Ga., 1880	21,086	16,335	288	391	113	174	2	3	41	59	23	57	50	64			6	6	1	5			1	3	31	50		
" Ratio per 1000.			13.71	23.98	5.38	10.67	.095	.184	1.95	3.62	1.1	3.5	2.38	3.92			.286	.368	.048	.307			.048	1.84	1.48	3.06		
St. Louis, Mo., 1880	328,232	22,290	5,854	781	2,587	350	214	27	651	135	599	118	575	74			123	6									7,019	506
" Ratio per 1000.			17.84	35.02	7.88	15.69	.652	1.25	1 98	6.05	1.82	5.29	1.75	3.31			.375	.027									21.39	22.69
New Orleans, La., 1879	.....	.....	3,267	1,855	992	611	151	58	472	352	187	170	400	158	132	115	70	29	20	20	83	54	79	84	221	. 158		
" Ratio per 1000.			20.5	32.09	6.26	10 57	.953	1.0	2.98	6.09	1 11	2.94	2.52	2.73	.833	1.98	.44	.50	.126	.346	.524	.934	.498	1.45	1.39	2.73		
New Orleans, 1880	158,379	57,761	3,637	1,986	1,258	750	234	102	517	346	215	192	352	184	135	102	102	27	36	9	102	75	118	90	193	157		
" Ratio per 1000.			22.96	34.36	7.94	12.97	1.47	1.76	3.26	5.98	1.35	3.32	2.22	3.18	.852	1.76	.644	.467	.227	.155	.644	1.3	.744	1.55	1.21	2.71		
Memphis, Tenn., 1880	18,622	14,971	391	496	110	220	17	21	46	68	21	45	31	48			6	8	2	4			2	5				
" Ratio per 1000.			21.02	33.06	5.91	14.66	.91	1.4	2.47	4.53	1.13	3.0	1.66	3.2			.32	.53	.107	.266			.107	.333				
Nashville, Tenn., 1880	27,004	16,457	484	447			7	5	68	63	30	38	55	33	22	18	7	2	2	2	8	12	26	47				
" Ratio per 1880			17.8	27.09			.26	.30	2.52	3.82	1.11	2.3	2.03	2.0	815	1.09	.26	.12	.074	.121	.296	.727	.963	2.85				
Louisville, Ky., 1879	102,842	20,290	2 191	1,028			53	16	290	240	271	146	152	55	96	42	17	2	30	10	126	96					6,394	1553
" Ratio per 1000.			21.27	48.95			.51	.76	2.81	11.4	2.63	6.95	1.47	2.52	93	2.0	.165	.095	.29	.48	1.22	4.57					62.07	73.95
Providence, R. I., 1880	101,211	3,646	1,984	96																					111	10	2,536	91
" Ratio per 1000			19.6	26 3																					1.09	2.74	25.06	24.93

for by the better attention which white women enjoy during parturition.

Table B shows the ratio of mortality from the diseases specified to the total mortality, and the two races are thus compared. Here we find that the colored race enjoys an advantage in malarial fevers and cancerous diseases, and generally in diarrhœal diseases, while it is at disadvantage in all the others.

TABLE B.—*Comparative Vital Movement of Races.—Percentages of Mortality to Total Mortality of each Race.*

Cities and Year.	Malarial Fevers.		Pulmonary Consumption.		Acute Lung Diseases.		Diarrhœal Diseases.		Heart Diseases.		Cancerous Diseases.		Puerperal Diseases.		Convulsions.		Trismus Nascentium.	
	W.	C.	W.	C.	W.	C.	W.	C.	W.	C.	W.	C.	W.	C.	W.	C.	W.	C.
Philadelphia, 1879	.0028	.001	.158	.196	.085	.106	.088	.045	.043	.061	.024	.009	.006	.004	.039	.053	.001	....
D. C., July '79–80	.017	.015	.16	.19	.103	.146	.102	.115	.04	.026	.024	.01	.009	.01	.017	.05	.006	.018
Richmond, 1880	.009	.006	.14	.18	.051	.064	.13	.098	.055	.043	.019	.005	.009	.008	.028	.055	.012	.014
Charleston, 1879	.015	.008	.155	.146	.061	.060	.106	.071	.027	.023	.015	.006	.006	.004	.025	.04	.021	.077
Charleston, 1880	.025	.016	.102	.194	.081	.10	.089	.061	.025	.021	.022	.008	.007	.008	.022	.052	.019	.10
Savannah, 1879	.077	.042	.127	.17	.072	.117	.086	.10	.031	.027	.05	.004	.002	.019	.040	.162	.029	.03
Atlanta, 1880	.007	.008	.142	.15	.08	.145	.173	.163	....	....	.021	.016	.003	.013	....	....	.003	.009
New Orleans, 1879	.046	.031	.144	.19	.057	.091	.122	.085	.04	.062	.021	.015	.006	.01	.025	.029	.024	.045
New Orleans, 1880	.064	.051	.142	.174	.059	.096	.096	.092	.037	.051	.028	.023	.01	.004	.028	.038	.032	.045
Memphis, 1880	.043	.041	.117	.137	.053	.09	.079	.096	....	....	.015	.016	.005	.008	....	....	.005	.01
Nashville, 1880	.014	.011	.14	.14	.052	.085	.113	.074	.045	.04	.014	.004	.004	.004	.016	.024	.054	.105
Louisville, 1879	.024	.015	.132	.233	.124	.142	.069	.053	.044	.04	.008	.002	.014	.01	.012	.093	....	....
St. Louis, 1880	.036	.034	.111	.172	.102	.151	.098	.095	....	....	.021	.007	....	....	....	....	....	....

It has long been known that the rate of mortality among the African race in this country is much greater than among the European, especially in the periods of infancy and early childhood; and it was generally supposed, until the census of 1880 corrected the mistake, that the former would gradually be extinguished in a state of freedom. This idea was probably due in great degree to the known fact that the rate of increase among the free colored people formerly was only about one half that of the slaves, while the former were more intelligent and better able, apparently, to take care of themselves.

In the September (1881) number of the *Popular Science Monthly* is an interesting article on the increase of the colored population in the United States, by J. Stahl Patterson, showing the relative gain per cent. of the white and colored populations in our country for each decade since 1790.

DECADE.	White gain per cent.	Colored gain per cent.
1790–1800	35.8	32.3
1800–1810	36.	37.5
1810–1820	34 1	28 6
1820–1830	34.	31·5
1830–1840	34.7	23.4
1840–1850	37.7	26.6
1850–1860	37.7	22,1
1860–1870	24.8	9 9
1870–1880	29 2	34.8

Two important points are here to be noted: (1) that the foreign immigration since 1808 has been almost exclusively white, and (2) that the great preponderance has been to the States where the colored race is least numerous. The white population of the 16 Southern States and District of Columbia increased from 9,466,355 in 1870 to 12,577,215 in 1880, which indicates a gain of 32.9 per cent. During the same period the white population of the 22 Northern States increased from 23,864,272 to 30,257,557, showing a gain of 26.8 per cent. Between 1870 and 1880 immigration added to the white population of the North 2,160,000, and to that of the South 192,000. Eliminating this element of increase, we find the percentage of gain in the native white population to be 17.7 in the Northern States and 30.8 in the Southern. But Mr. Patterson makes allowance

for children born in this country to those same immigrants during the last decade, by which he reduces the gain of the native whites of the Northern States to 15.7 per cent., and that of the Southern States to 30.4 per cent., or nearly double the former.

The inference from the foregoing figures is, that the increase of the colored is more rapid than that of the white population throughout the country; and, as the colored mortality is markedly higher than the white, that the birth-rate of the African race must be greatly above that of the European.

The exaggerated mortality of the colored race is most apparent during the period of lactation, and the natural consequence of this is a diminished interval between successive pregnancies. The greater prevalence of still-births has the same tendency.

But an important allowance must be made, which is overlooked by Mr. Patterson in his calculations. This grows out of a partial but constant amalgamation of the two races, the gain from which accrues almost entirely to the colored population. It is impossible to estimate this allowance with any degree of accuracy, for statistics are lacking, but it is probable that the gain in the Southern States from issue of parents both white is scarcely less than than that from issue of parents both colored.

Another fallacy in Mr. Patterson's estimate has reference to movement of the white population in the United States. His opinion is that the removal from South to North is about equal to that in the opposite direction, but this must be a great mistake. For many years the South has received a considerable immigration from the Northern States, the majority of the settlers being males, as is usual in migrations. Thus the legitimate union at the South of Northern males with Southern females has served to compensate for the illicit cohabitations of white males with colored females, and this gain to the native white population of the South answers for a corresponding infertility in that of the North, where there is an excess of native females.

It is obvious that the fruitfulness of the native population of New England has suffered greatly by a long-continued drain of its most vigorous sons and daughters. How far this natural decrease of the birth-rate has been supplemented by systematic measures of prevention I shall not attempt to conjecture. Such practices surely lead to the extermination of their contrivers by the operation of the law of "natural selection and survival of the fittest." We need not, therefore, apprehend that any part of our country will be depopulated, unless it should become unfit for human habitation, while the teeming humanity of the old world continues to send to our shores the most vigorous and prolific portion of its surplus.

The revelation of the last census clearly corrects the preconceived and general belief in the destined disappearance of the African race from this country in "the struggle for existence." Apparently this race is increasing more rapidly than its white compatriots, and, as the latter is reinforced by immigration, writers like the one already mentioned might suppose that the darker race is destined eventually to populate mainly the more Southern States of the Union. But, when we consider that the mulattoes and quadroons are all reckoned as colored, it is evident that a considerable part of its gain should be subtracted, so that the ratio of increase among the whites of the South might not be less than that of the blacks.

If the rapid increase of the darker race proves anything, it proves that there is plenty of room yet for that class of people — in other words, a great demand for the products of their industry in the markets of the world. It is not probable that the demand for the four great staples of the South (cotton, sugar, tobacco and rice) will soon be surcharged, but it is likely to be fully answered within 50 years, with the present increase of production. If by that time our darker countrymen have not learned other occupations, their increase will surely be repressed by the stern law of nature.

Whatever may be the capacity of the race for development in a state of peace, it is apparent, from the great check on their increase between 1860 and 1870 by the operations of the

civil war, that any serious disturbance of their industrial pursuits, like a prolonged foreign war or political convulsions at home, would produce such distress as profoundly to disturb their vital movements. The same event would follow an over-production of the staples grown by their labor, owing to their habitual improvidence.

Thus far they have experienced no serious rivalry, and therefore no check to their natural increase; for foreign immigrants have always shown a disinclination to come into close contact and competition with the dark-skinned race, and the repugnance is not likely soon to disappear. This fact is undoubtedly favorable to the numerical increase of the race, though it is equally clear that it tends at the same time to delay its intellectual improvement, by deterring individuals from pursuing other and higher industries.

In any event, there is little danger that either race will severely encroach on the ground of the other in our time, and no danger that the colored population of any part of the country will be in the way of the whites, unless they should so far advance intellectually and morally as to win a commanding position by sheer force of merit. In such a struggle for supremacy, if the white race should fail at last to maintain its present standing, the philosopher of the future will decide that it has been tried in the balance and been found wanting.

Our Yellow Fever, Sugar and Cotton Crops.

By STANFORD E. CHAILLE, M. D,

(Prof. Physiology and Pathological Anatomy, Medl. Dept. Univ. La.)

Although yellow fever has greatly injured the past and threatens the future prosperity of New Orleans, yet, this community has, on no other practical subject, nursed so many inherited prejudices, and entertained so many unfounded and contradictory beliefs, the results of superficial observation and

of hasty generalizations. In as much as the success of sanitary measures to protect this city from yellow fever depends chiefly on the approval and support of the public, and in as much as its effectual support depends on both the correctness and the unamity of public opinion, it becomes a duty to aid in eradicating any popular errors, especially those which tend, not only to lead astray those seeking the truth, but also to inspire false confidence at one time and to excite idle alarm at another. One curious instance of the numerous errors, entertained by even the best balanced and most highly cultivated minds, was, some three years ago, presented in my presence by the late President Garfield, who gave expression to the fallacious belief that yellow fever never prevailed, at the same time, on both the Atlantic and the Gulf coast of the United States. Another instance will now be considered.

In an editorial published, January 10th, 1882, in that able and influential daily newspaper, the N. O. Times-Democrat, the following statement is made: "It has always been a noticeable fact that the best years agriculturally were the worst in point of comfort and health, just as the yield of sugar has been highest during epidemic visitations." This statement deserves the greater consideration for the reason that it expresses a belief which has been long entertained and often expressed in this community; and especially in so far as concerns the simultaneous occurrence of yellow fever epidemics and of exceptionally good crops of sugar. Are these views unfounded, and therefore mischievous? The facts pertinent to this question are recorded, for the 60 years, 1822–1881, in the statistical table appended, and some of the lessons taught by this record will now be stated.

1. DEATH BY DISEASES GENERALLY, AND THE CROPS.

It is alleged that "it has *always* been a noticeable fact that the best years agriculturally were the worst in point of comfort and health." Leaving the vauge and comparatively inconsequent question of "comfort" aside, and granting that some of our best years agriculturally have been the worst in point of health,

the following facts do, none the less, prove that the above statement is erroneous, since it fails to express, as it professes to do, a general truth: The year 1834 yielded an exceptionally fine sugar crop, and yet it was comparatively a very healthy year, the seven healthy years, 1842, '44, '57, '68, '69, '75 and '76 yielded crops, of both sugar and cotton, which were either exceptionally large or above the average; and the exceptionally healthy year, 1880, yielded the largest crops of both sugar and cotton produced since the war. Farther, 1860, '74, and '77, though free from epidemics, were decidedly unhealthy years, and yet, either the sugar or the cotton crops, or both, were decidedly bad or below the average. Thus, while good crops and ill-health may occur at the same time, so may good crops and good health, and so also may poor crops and ill-health.

2. YELLOW FEVER EPIDEMICS AND THE CROPS OF SUGAR.

During the past 60 years, New Orleans was ravaged by thirteen violent epidemics, viz: in 1822, '29, '33, '37, '39, '41, '47, '53, '54, '55, '58, '67, and '78. In only six of these years was the sugar crop unusually good; while in five of them, viz: 1822, '33, '37. '41 and '55, the sugar crop was only moderate, and in the remaining two years, viz: 1829 and '67, said crop was very poor. Farther, the crops of sugar were exceptionally good in the six healthy, non-epidemic years, 1828, '34, '42, '44, '61 and 80. Hence, while good crops of sugar may occur simultaneously with yellow fever epidemics, so may good sugar crops occur without such epidemics, and so also may poor crops occur with epidemics. Therefore, the statement, that "this yield of sugar has been highest during epidemic visitations" of yellow fever, expresses only a somewhat frequent accident, and certainly not a general truth.

3. YELLOW FEVER EPIDEMICS AND COTTON CROPS.

Ten of the preceding thirteen violent epidemics occurred since 1835, the date of the earliest cotton statistics I have procured. Of these ten years, only four, viz: 1837, '39, '47 and '55 were exceptionally good years for the cotton crop, three of them,

1853, '54 and '58, were only moderately good, and the remaining three years, 1841, '67 and '78, were decidedly bad years for the cotton crop. Farther, the crops of cotton were exceptionally good in the seven healthy, non-epidemic years, 1842, '52, '59 '70, '75, '79, and '80. Thus, with cotton as with sugar, while yellow fever epidemics did several times occur simultaneously with good crops, yet epidemics also occurred with bad crops, and excellent crops occurred without epidemics.

4. CHOLERA EPIDEMICS, AND THE SUGAR AND COTTON CROPS.

Cholera visited New Orleans first and most severely in 1832–'33, yet, the sugar crops of these years were much exceeded by the succeeding healthy year, 1834. Cholera prevailed a second time during the 8 years, 1848–1855, and with special severity in 1849, yet the sugar crops of 1853 and the cotton crop of 1859, years of comparative abatement of the disease, were exceptionally large. Cholera prevailed a third time in 1866, '67, yet all subsequent years have yielded much larger crops of both sugar and cotton. The fourth visit of cholera in 1873 was of too little consequence to reqnire any consideration in this connection.

5. RICE CROP OF LOUISIANA.

To previous facts, derived from the table, it may be added that the rice crop of the unhealthy, epidemic year, 1867, has been much exceeded in all subsequent years, and that the crop of the disastrous year, 1878, was exceeded in the healthy year 1876, and was greatly surpassed in 1881, when much the largest crop, (viz: 266, 658 barrels of 230 lbs. each,) ever made in Louisiana was gathered. As is well known, 1881 was a very healthy year and particularly distinguished by the absence of even a single case of yellow fever.

Comparing our mortality, whether by diseases generally or by yellow fever, or by cholera, with our crops, whether of sugar, or of cotton, or of rice, other data in the table might be added to those now presented to prove that their relationship has been misrepresented. Manifestly the truth is, that while an

unusual mortality by any one or more of said three causes may occur simultaneously with exceptionally good crops of any one or more of said three products, yet, that we may have not only good health with good crops, but also ill-health with bad crops.

Even if the statistical data for a limited series of years did not happen to lead to these conclusions, they would be justified by a consideration of the causes for the six things specified. For, while all six have some causes in common, they also have other causes peculiar to each and very inapt always to occur simultaneously, as would be necessary to produce results different from those above demonstrated. For instance, yellow fever originates from one kind of germ, sugar from quite another, and an epidemic requires abundant unacclimated material which the sugar crop does not require; and as long as these and other such different causes characterize each, the two cannot always co-exist. If all causes peculiar to each happen to co-exist, and if the causes common to both should at the same time occur, then, and then only, would both an epidemic and a good sugar crop result. Now, prolonged warmth and moisture are common causes, which promote the growth not only of yellow fever and of sugar, but also of plants generally, hence it is not singular that all these should not infrequently grow vigorously in seasons of prolonged warmth and moisture. In such a conclusion there is nothing either novel or surprising, and, in the words of Guiteau, that audacious and insolent villian, whether sane or insane, "that's all there is about it."

TABLE.—*Comparing the Number of Deaths in New Orleans with its Receipts of Sugar and Cotton, for the* 60 *years*, 1822–1881.

YEARS.	DEATHS BY			RECEIPTS.	
	All Diseases.	Yellow Fever.	Cholera.	Sugar, No. Hds.	Cotton, No. Bales.
1822	2734	808		30,000	
3	1662	1		30,000	
4	1748	108		32,000	
5	2177	49		30,000	
6	1248	5		45,000	
7	1057	109		71,000	
8	1490	130		88,000	
9	2520	900		48,000	
1830	2022	117		75,000	
1	1926	2		75,000	
2	8099	400	4340	70,000	
3	4976	1000	1000	75,000	
4	3687	95		100,000	
5	3873	284		30,000	495,443
6	2734	5		70,000	605,813
7	4807	1300		65,000	742,726
8	2606	17		70,000	578,514
9	3934	800		115,000	954,415
1840	2977	3		87,000	822,870
1	4549	1325		90,000	740,155
2	3375	211		140,000	1,089.042
3	4050	487		100,000	910,854
4	4620	148		200,000	979,238
5	2783	2		186,000	805,375
6	4220	160		140,000	740,550
7	9043	2804		240,000	1,213,805
8	8026	872	924	220,000	1,152.382
9	9862	769	3176	247,923	781,886
1850	8086	109	1015	211,201	933,369
1	7275	17	688	236,547	1,373,404
2	8693	456	1319	321,934	1,580,875
3	15787	7849	607	449,324	1,346,925
4	10564	2425	950	340,635	1,232,644
5	10096	2670	833	231,427	1,661,433
6	5689	81		73,296	1,435,000
7	5581	200		279,697	1,576,409
8	11721	4855		362,296	1,669,274
9	6847	92		221,840	2,139,425
1860	7341	15		228,753	1,751,599
1	5772	0		459,410	War
2	6278	2		no data	War
3	7178	2		76,801	War

no data

TABLE—*Continued.*

4	8498	6		10,387	war
5	7016	1		18,070	711,629
6	7944	192	1294	41,000	702,131
7	10096	3107	581	37,647	579,231
8	5343	5	129	84,256	794,205
9	6001	3		87,090	1,142,097
1870	7391	587		144,881	1,446,490
1	6059	54		128,461	957,538
2	6122	39		108,520	1,240,384
3	7505	226	142 to 300	89,498	1,221,698
4	6798	11		116,867	993,482
5	6117	61		144,146	1,424,003
6	6257	42		169,331	1,190,386
7	6708	1		127,753	1,391,519
8	10318	4046		213,221	1,187,365
9	5122	19		169,972	1,504,654
1880	5623	2		218,314	1,606,184
1881	6406	0		125,000	1,350,000

* The figures given of the sugar and cotton crop of 1881 are the estimates made in January, 1882,

NOTES ON THE TABLE.

The following explanations will give greater value, among statisticians, to the above table, which begins at the earliest date, for which the sugar statistics could be procured.

The mortality stastistics have been derived from official reports. They are less reliable prior to than since 1845. Discrepancies between different official reports are frequent, and have been due, among other causes, to the two followlng: 1st. Prior to 1846, the statistics of Lafayette, (not annexed to New Orleans, as its 4th. District until 1852) were sometimes inclnded in, and sometimes excluded from the statistics of New Orleans; 2d. the still-births have also been sometimes included and at others excluded, but only since 1871 have these deaths been excluded in the Annual Reports of the Board of Health, and therefore this anthority has been followed in the above table. The Cholera statistics are imperfect, because whenever this disease occurs cases are reported under the four heads, "Asiatic Cholera," "Cholera," Cholera Morbus," and "Cholera Infantum," and it is impossible to determine how many of these cases, especially of the two last, were true Asiatic Cholera. As stastistics of population are indispensable to the interpretation of mortality statistics, the following will be given, viz: population of New Orleans in 1820, 27,176; 1840, 102,193; 1860, 168,675; 1670, 191,418; 1880, 216,143.

The sugar statistics refer to the crops of Louisiana alone and were derived from p. xxiv. of Bouchereau's Annual for 1880—1881, and from Mr Bouchereau personally. The cotton as well as the sugar crop is assigned in the table to the year of its production; however the crops of any given year, say 1870, are not finally reported until August 31st., of the following year, say 1871, hence some designate the crop, produced solely in 1870, as the crop of 1870–1871, or even the crop of 1871. Until 1849 a hogshead of sugar was estimated to weigh 1000 lbs. but the weight has since gradually increased, until it is now estimated at 1250 lbs.

The cotton statistics, for the years 1835–1855, were derived from the New Orleans Democrat of September 1st. 1881; and for the years 1855–1880, from the report of the U. S. Bureau of Statistics. The bale of cotton has, like the hogshead of sugar, increased in

weight from say 440 lbs. to about 490 lbs. The cotton statistics report the number of bales annually received in New Orleans from all the States, and not, as with sugar, the crop produced solely by Louisiana. In recent years the cotton produced by Louisiana has been about one-third of the total amount received in New Orleans. From 1835—1860, New Orleans received about one-half of the total cotton crop of the United States, however the amount varied in different years from 36 to 79 per cent. Since 1865, the receipts at New Orleans have averaged only a little more than one-fourth of the total crop, the variations being from 24 to 39 per cent.

Current Medical Literature.

TRANSLATIONS.

THE NERVOUS PATHOGENY OF ADDISON'S DISEASE.

A part of the paper read at the last International Congress of London, by Prof. Semmola, of Naples.

Translated from Giornale Internazionale Delle Scienze Mediche.

By Dr. John Dell 'Orto.

Six years ago I had the honor to read before the International Congress of Bruxelles a paper in which I expressed the theory that Addison's disease is a disease of the nervous ganglionic centres, and that the anatomical alterations of the suprarenal capsules were not to be considered as the starting point of the illness, but only as representing the last struggle of trophic disorder caused by the nervous filaments, which preside over the function of nutrition in those organs.

The arguments which I offered at that time (1875) were only of a therapeutical order. I am able to-day to show to your honorable body these two photographs of the microscopical alterations of some points of the ganglionic centres, and of the dorsal section of the spine, that I found in one of my cases. It is, as you see, a case of mixomatous transformation of the tissue of the celiac ganglion, and leucæmic infiltration of the spine toward the central canal.

In another case I observed also a fatty degeneration of some points of plexus solaris.

But, what is very remarkable in the case, of which you see the photographs, the microscopical analysis of the sequarenal capsules gave negative results; those organs were completely normal.

The conclusion to be drawn from these facts is, that Addison's disease consists of a deep trouble of renal nutrition caused by disorders in the functions of the sympathetic nerves and of the several nervous centres of organic life (celiac ganglion, etc.).

It commences by a functional exhaustion of the abdominal ganglion, which soon deranges the functions of digestion and nutrition; then slowly follows a histological alteration in the tissue of those very centres, and this pathological condition finally brings anatomical alterations in the suprarenal capsules and other organs.

It only suffices to follow the characteristic development of the symptoms of this disease in their relation to the different functions of the nervous ganglionic centres, to understand that the disorders of the stomach, the cachectic and asthenic condition of the patient, the falling of temperature, etc., are nothing but the manifestations of a slow morbid process which commences by disturbing the work of digestion, and ends in weakening the organic oxidations and the nutritive metamorphosis; that is, in exhausting the functions of vegetative life, which are under the control of the sympathetic nerve and its accessories. It seems to me that in this disease chemical observation plainly teaches us the pathological demonstration of the physiological functions of the ganglionic system.

* * * * * * * * *

The *melanodermis*, or the morbid pigmentation of the skin, which is one of the symptoms of Addison's disease, is also to be attributed to the same nervous cause. There is every reason to believe that the sympathetic nerve and the ganglionic centres must have the same trophic influence in the formation of pigment as they have in all the chemical proceedings of nutrition. The well known fact of a moral cause of a deep sorrow having produced a rapid change in the hair and skin, is a sufficient evidence in favor of this theory.

Finally the encouraging result which I obtain by my treatment with electricity is another point of practical value confirming these views.

In the case of six years ago the constant current between the neck and epigastrium was applied during three months. The patient, who at the commencement was so weak as to be unable to sit up in bed, at the end of that time could take a morning ride of two hours on horseback without feeling fatigued. With the return of strength the digestion improved, the temperature became normal and the coloration of the skin almost disappeared.

SULPHO-TARTRATE OF QUININE WITH LIQUORICE AND COFFEE.

From the Independente of Turin.

Translated by Dr. John Dell 'Orto.

By combining the sulphate of quinine with tartaric acid and liquorice root and roast coffee, Carlo Pavesi, a distinguished Italian chemist, obtains a preparation which disguises a great deal the bitter taste of quinine.

The method that he uses is very simple and easy to be prepared, even in the most modest laboratory.

The following is the formula:

Sulphate of quinine	1 p.
Tartaric acid	1 p.
Liquorice root in powder	5 p.
Roasted coffee in powder	25 p.
Water, q. s.	

"In a convenient percolator," says Mr. Pavesi, "the powdered liquorice and coffee are placed; over them very warm water (enough to have these substances exhausted) is poured. The liquid, which passes through the percolator, is evaporated to the consistence of syrup, then the sulphate of quinine well mixed and dissolved with the tartaric acid is added and the whole mass is further evaporated to dryness, but by a slow process, in order to preserve the aroma of the coffee and the other extractive principles.

"The salt thus obtained is the sulpho-tartrate of quinine, a brown powder of a coffee-looking color, very soluble in water, slightly bitter but rather agreeable to the taste. Treated with the common reagents the sulphate of quinine is found unaltered, because the coffee, when roasted, loses its tannic principle, which is considered as being the cause of decomposing the sulphate of quinine.

"*A syrup of sulpho-tartrate of quinine* can be obtained by dissolving fifty parts of the brown liquor from the percolator with one part of sulphate of quinine and one part of the tartaric acid, and then evaporating to the consistence of syrup.

"This syrup is convenient for children. Each twenty-three grains contains a half gram of sulphate of quinine and a half gram of tartaric acid."

SALUTARY INFLUENCE OF VACCINATION—A CASE OF DR. GOVANTES, OF HAVANA.

Translated from Cronica Medico-Quirurgica, of Havana.

By Dr. John Dell 'Orto.

A mulatto girl was inoculated with good vaccine lymph on the 2d day of January, 1881. She was living in the same house where a child was sick with small-pox. Two days after vaccination the girl had high fever, headache, backache, epistaxis and vomiting. Her attending physician made the diagnosis of small-pox. In fact, three days afterwards confluent variola appeared, but in the four points where the vaccine virus was inoculated four characteristic, healthy-looking vaccinal pustules were noted.

Cases like this often occur in epidemics of small-pox: hence the fallacious opinion that during such a time no vaccination ought to be done.

This is a great mistake.

Convinced as I am that vaccination, when performed with all the precautions that such a simple operation requires, cannot transmit any contagious disease on the seventh day of the inoculation, I drew from those pustules two tubes of lymph and inoculated with it a boy ten years old. On the 17th of January I found four pustules, full of pure, genuine vaccinal matter, with which I could vaccinate successfully several other children without communicating the small-pox. This simple observation is a strong and sufficient argument against the pretentious assertions of Verde de l'Ile and his partisan detractors of vaccination.

[The translator takes the liberty to endorse the views of Dr. Govantes; he cannot, however, entirely agree with him on one point, that is, when he absolutely says that humanized vaccine does not transmit any contagious disease. There are facts in medical literature which prove that syphilis can be transmitted by vaccination from arm to arm. I am a believer in animal vaccination. Whenever I vaccinate healthy children and I am satisfied that their parents are perfectly healthy and strong, I do not hesitate to vaccinate from them other people; but under no circumstances would I make any use of vaccine lymph coming from sickly children, or from children whose parents are known to be affected with syphilitic taint.—J. D.]

REMOVAL OF A CYST OF THE PANCREAS, WEIGHING TWENTY AND ONE-HALF POUNDS.

Dr. N. Bozeman presented a specimen accompanied by the following history: It was interesting with reference to three particulars; first, as having been removed from the pancreas of a living woman; second, as having been mistaken for an ovarian cyst; and third, as being the first operation of the kind upon record. The patient was the wife of a prominent physician of Texas, forty-one years of age, tall and robust, weighing nearly two hundred pounds, and perfectly healthy up to seven years ago, except occasional attacks of dyspepsia. Seven years ago she had, for the first time, pain in the right iliac region, extending down the right thigh and occasionally attended with numbness. Five years ago the abdomen began to enlarge, slowly at first, but gradually increased in size upon the left side, with a corresponding flatness upon the right side. The point at which the enlargement was first noticed was higher than would naturally be expected for an ovarian cyst. At that time no special importance was attached to the enlargement of the abdomen, either by herself or husband. It progressed in the ordinary way up to six or seven months ago, when it suddenly began to grow rapidly, and finally the entire abdomen was distended symmetrically. At the same time the patient began to lose flesh. The case was diagnosticated as one of ovarian cyst by Professor Richardson, of New Orleans, who

advised the patient to consult Dr. Bozeman. On November 19, 1881, the patient having entered the Woman's Hospital, Dr. Bozeman examined her and diagnosticated ovarian cyst. She was also examined by his colleagues, Drs. Thomas and Emmet, both of whom confirmed his diagnosis. An operation was decided upon, and it was performed on the second day of December, under Listerism. Nothing unusual presented itself in the early stage of the operation. When the tumor was reached, through an incision below the umbilicus, its appearance was nearly that presented by an ordinary unilocular ovarian cyst, except, perhaps, it had a little deeper pearlish color. It was tapped, and two and one-half gallons of fluid were removed. After the greater part of the fluid was drawn off, about two-thirds of the cyst was drawn through the abdominal opening, and then, for the first time, Dr. Bozeman suspected that it was not ovarian. He then passed his hand into the peritoneal cavity and found the uterus and both ovaries, and also determined that the cyst had an origin somewhere in the upper part of the abdomen. The abdominal incision was extended upward two inches above the umbilicus. The stomach was then found crowded against the diaphragm, and the bowels were deep in the abdominal cavity below the cyst. The cyst had an extensive attachment, apparently to the transverse mesocolon. After some manipulation he finally reached the pancreas, where he discovered a large vein, subsequently determined to be the splenic, which was very tortuous, and offered considerable obstruction to the operation, owing to its close relationship to the pedicle. Finally he traced the cyst down until he reached the tail of the pancreas which was turned up on the side of the cyst, and firmly adherent to it to the extent of two inches. He then proceeded to separate the extremity of the pancreas from the cyst by dissection, and, when completely separated, the pancreas spread out and presented its natural appearance.

The attachment of the cyst was at the junction of the outer with the inner two-thirds of the organ, and it had a pedicle three-fourths of an inch in length and about three-fourths of an inch in diameter. The veins of the pedicle were very large. Having fairly reached the pedicle, he transfixed it with a needle, ligated it in the usual way, and cut it off. The result was that he cut out the bottom of the cyst, as shown in the specimen. The portion of the cyst, however, which remained attached to the pedicle was subsequently completely removed by dissection. The artery which supplied the growth was doubtless a branch of the splenic, and it had attained a very large size—as large as the bronchial. The loss of blood was small, and not a single bleeding vessel required a ligature. The fluid which the cyst contained was of a light brownish color, its specific gravity was 1020, and it had an acid reaction, in that respect differing from the fluid removed from the ordi-

nary ovarian cyst, which is alkaline. The girth of the patient before the operation was forty-one inches, and both oblique measurements, from the anterior superior spinous processes of the ilia to the umbilicus, were the same—nine inches. The tumor, with the fluid, weighed twenty and one-half pounds.

The specimen was also interesting in another respect, namely: With reference to the point of attachment, which was almost precisely in the position occupied by the bullet in the late case of our deceased President. The patient underwent special preparation for the operation. She took salicin, fifteen grains three times a day for two weeks. On the morning of the day on which the operation was performed she received fifteen grains of quinine with one of opium, and when she went upon the table she was thoroughly cinchonized. The patient rallied from the anæsthetic and from the operation without any shock whatever. After the operation she took by the rectum, at intervals of six hours, ten grains of quinine with two ounces of beef-juice, half a drachm of liquor opii comp., and two drachms of brandy. On the third day the temperature reached its highest point, 101.5° F., but the pulse never rose above 98. Subsequently the pulse fell to 80, and the quantity of quinine was gradually lessened, but on the eighth day after stopping the quinine the temperature rose to 102.8° F. The quinine was again resumed, ten grains every six hours, and the temperature, in the course of thirty-six hours, fell to 99.5° F., and subsequently the patient had progressed in the most satisfactory manner, and there was every prospect of a complete recovery.*—*Medical Record, July* 14, 1882.

THE USE OF THE CATHETER BEFORE FORCEPS DELIVERY.

Dr. More argues against the routine practice of using *the catether before forceps delivery.* It is only in cases of protracted labor, cases that seldom occur nowadays, that distention of the bladder is likely to exist, for the renal secretion is diminished for the time being, the capacity of the bladder is lessened, and the inclination to urinate, and thus partly empty the bladder, is almost invariably a prominent symptom of labor. The paper concludes with the following *resume:* 1. Distention of the bladder, as a complication of ordinary labor, is very rare. 2. Clinical evidence would seem to indicate that it is rare even in tedious labors. 3. When present, it is generally as a symptom of greatly protracted labor. 4. The more frequent and early use of the forceps, by eliminating this complication, does away with the necessity of preliminary catheterism. 5. Distention of the bladder is easily enough recognized without resorting to the disagreeable operation of catheterism. 6. The catheter should not be used empirically,

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*Dr. Bozeman now adds that the patient was discharged cured, January 9, 1882, the thirty-eighth day after the operation.

but intelligently, i. e., according to the nature of the individual case, and only where there is accumulation of urine. 7. The operation, being difficult without an amount of exposure repugnant to the patient, becomes a bar to the legitimate and early use of the forceps. 8. The early use of the forceps should not be unnecessarily handicapped by disagreeable and questionable details. The conditions in which the author would consider it necessary to attend specially (by cathether) to the state of the bladder are as follows: 1. The fact of the patient's not having passed water for some time. 2. The existence of a supra-pubic tumor other than the fœtus. 3. Extreme pain during contraction, of a character disproportionate to the expulsive efforts. 4. The sudden cessation of the uterine pains. 5. Protracted labor with or without impaction of the head. 6. The presence of vaginal cystocele. After delivery the following conditions would call for special vigilance: 1. The patient's not having passed water for at least ten or twelve hours after labor. 2. Her inability to do so. 3. The uterine tumor being too high in the abdomen. 4. Pain over the pubes not due to after-pains.—*N. Y. Med. Jour.*

TREATMENT OF CHRONIC PROSTATIC ENLARGEMENT.

Mr. Thos. Smith, Surgeon to St. Bartholomew's Hospital, in a recent lecture published in the London *Medical Times and Gazette*, gives the following advice on the above subject:

Your assistance will rarely be sought in the earl stages of this disease; but should you be consulted by an elderly patient suffering from undue frequency or difficulty in micturition, it will always be prudent to make a digital examination through the rectum, to ascertain the condition of the prostate. The examination is best made with the patient lying down on his back. Your finger-nail being filled with soap and the finger well oiled or greased, it should be introduced very slowly, so as not to excite spasm of the sphincter.

Should you judge that the urinary difficulty is caused by prostatic enlargement, the occasional passage of a full-sized instrument will often relieve the inconvenience, and, if steadily persevered in at regular intervals, will generally secure the patient against all the more serious consequences of the disease.

In cases where the difficulty in micturition has gone on to produce an inability to empty the bladder completely, it is of primary importance that at least once in the twenty-four hours the urine should be all drawn off; but in carrying out this plan it is necessary to excercise caution, lest by suddenly emptying a greatly distended bladder you should produce a complete paralysis of the organ, with a loss of the power of voluntary micturition and cystitis.

As a general rule, if there be not more than one pint of retained urine in the bladder—that is, urine the patient is unable

to pass for himself, it may be safely drawn off at once. But if there be more than this of residual urine (and there may be several pints), you should draw it off by installments, taking away a little more each day, until the bladder is completely emptied.

This complete evacuation of the bladder, when once accomplished, should be repeated each day, by means of an instrument, and for the purpose an india-rubber catheter, bulbous-ended or a Coude catheter, should, if possible, be used.

By these means, in early stage of the disease, the patient will generally regain the power of normal micturition, or at all events, if this result be not attained, he will be secure from the worst consequences of the disease.

The treatment may be carried on by the patient himself if you will be at the pains to teach him how to pass an instrument—nowadays a comparatively simple process, owing to the great improvement in catheters; for you should know that since the introduction of the various forms of soft catheters now in use, the instrumental treatment of prostatic enlargement has lost more than half its terrors and much of its danger.

The large silver prostatic catheter—at one time almost the only instrument used in these cases—is truly a formidable weapon with its long shaft and wide-sweeping curve. It was constructed to ride over the prostate, but in the hands even of experienced surgeons it frequently failed in the performance of its normal functions and rode under the gland, or through its substance. Used with a strong and steady hand it rarely failed to draw off water. As an instance of its power in this respect, I may mention a case within my knowledge where a prostatic catheter in the hands of an energetic surgeon drew off some gallons of water, which, however, a post mortem examination disclosed to have come from the peritoneal cavity.

I will suppose now that you are called upon to treat a patient with retention of urine dependent upon enlarged prostate. The difficulty will usually have come on at night time; the patient will, as a rule, be advanced in years; and the prostate can be felt in the rectum unduly prominent. In such a case let me advise you first to try a flexible red rubber catheter, of full size; it will often find its way round a corner and through a urethra which would be impervious to a more rigid instrument. This failing, you should try to pass the same catheter with a stout wire stylet reaching two-thirds of the way down the instrument; this gives you more power to push the catheter onwards, and leaves the end flexible, to accommodate itself to the distorted urethra.

Next in order you may try the Coude catheter; then, if necessary, the bulbous French instrument, a gum elastic, without and with the stylet. and lastly, others failing, a silver instrument.

Whatever instrument you may use, let it be full size; it will go in as easily as a smaller one, and is less likely to damage your patient. Keep the point of the instrument on the upper wall of the urethra; and, above all things, use no force.

After drawing off the water in a case of retention, the patient will, for a time at least, require the regular use of the catheter until he recover his power of voluntary micturition; and should there have been great difficulty in introducing the catheter, I should advise you to tie it in for the first twenty-four hours.

In the subsequent treatment of these cases of prostratic retention, in addition to other troubles, you will often have to contend against an increasing frequency in micturition. The frequent desire to pass water must be resisted as much as possible by the patient, or it will grow upon him. The bladder must be completely emptied, and, if need be, washed out, at regular intervals, and the patient exhorted not only to resist by a strong effort of the will the solicitations of his bladder, but to avoid all sights and association that are likely to suggest to him the necessity of micturition. With this object in view, you should counsel your patient to keep his catheter and chamber-utensil out of sight; as soon as possible to leave his bed-room during the day; and to occupy his mind by any pursuit which may draw his thoughts away from his urinary necessities.—*Ohio Medical Journal.*

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EXPLOSIVE MIXTURES.

Medical men but rarely pretend to be good chemists, for it would require longer devotion to chemistry than the average medical student can afford; thus can it be marveled at when we see formulas and prescriptions that, if dispensed according to the wishes of the prescriber, would result in an incompatible combination and often explosive compounds! Thinking it not ill-placed to perhaps refresh the memory of the profession regarding such mixtures, especially explosive mixtures. we have selected some examples and formulas that when combined in certain proportions become dangerous and in many instances have ended seriously; they are examples that have been experimented with, some intentionally, while others were prescribed by a badly informed physician and dispensed by a very incumpetent druggist.

1. Chlorate of potash, powdered galls, tannic acid. M. Ft. pulvis.—To be used for a gargle. The powders should be mixed separately with water and not rubbed altogether.

2. Chlorate of potash and pulv. catechu.—This combination is intended as a dentifrice. It however should not be dispensed alone. If other combinations are made, the danger is averted.

3. Chlorate of potash, hypophosphite of soda and water.—If the salts are rubbed together, they will explode, but if dissolved separately in the water and mixed, no harm results.

4. Chlorate of potash, tannic acid, glycerin and water.

If the tannin, chlorate of potash and glycerin are rubbed together an explosion ensues, but if the acid is first dissolved in the glycerin and the chlorate of potash in the water and mixed, no harm follows.

5. Chlorate of potash, Tr. ferri chlor. and glycerin, half an ounce of each.

This combination, so often used, when put together in the above proportions, is very liable to explode, especially if warmed.

6. Soda chlor. 2 dr.: antimon, sulph. aurat. 20 gr.

This combination, if even gently triturated, is liable to inflame with a crackling noise.

7. Lac. sulphuris 3 gr., antimon. sulph. aurat. ½ gr., zinci valer, 2 gr., potass. chlor. 2 gr. M. Ft. Pulvis. Make 10 alike.

Potash permanganate, when associated with any readily oxidizable substance such as glycerin, explodes.

8. Chromic acid 10 gr., glycerin 1 dr.

This mixture is liable to explode, unless the glycerin is added to the acid drop by drop.

Iodine and ammonia form a very powerful explosive agent when combined, unless some water is introduced into the mixture, which seems to retard the development of nitrogen iodide, upon which the explosive properties depend.

9. Iodine 3ss., linim, camph. co., linim. saponis aaʒii. M, F. Linim.

This combination exploded once in the hands of a pharmacist from the iodine and the ammonia in the liniment camp. co. coming in contact.

10. Acidi nitrici: acidi muriatici; Tr. nucis vom., aa 3ij. M.

This prescription was once ordered by a physician, and exploded after several hours.

11. Acid. nitro-mur., ʒj, Tr. cardamomi ʒss M.

Also this combination was the result once of a serious injury. —*Pacific Medical Journal.*

THE BATH TREATMENT IN SCARLET FEVER.

Dr. D. Manson Fraser (Practitioner, July, 1881), in order to test the effects of baths in scarlet fever, subjected twenty-one patients to this treatment, in the Metropolitan Fever Hospital, Homerton. He began in November, 1880, and continued it until the end of the year, the epidemic being on the decline. The baths used he roughly divides into three classes:—(1) warm baths, temperature between 90° and 80° F.; (2) Ziemssen baths, those gradually cooled during immersion of the patient; and (3) cold baths, of a temperature of from 70° to 60° F. The duration in all cases was five or ten minutes. Stimulants were occasionally administered to prevent collapse. As to the indications, while not depending altogether on the

degree of fever, Dr. Fraser always administered the bath if this was excessive, 103°–104° in rectum, or if there was a persistent temperature of 102°–103°, with consequent nervous disturbance. The author thinks we can prevent the nervous prostration, which is sure to follow protracted fever, by the timely administration of baths. He also recognizes the fact that we may have the nervous excitement without the antecedent or concomitant high fever, or vice versa, and considers baths adapted to such a condition. Where members of the same family have suffered severely, it is a good plan to begin early with the baths, before grave symptoms develop.

The contra-indications are feeble circulation, and where great fear and excitement attend the immersion.

The effects of the bath are classified under the heads of (1) effects on temperature, (2) effects on the nervous system, (3) effects on the circulation, (4) on respiration, (5) on skin, etc., (6) effects on sequelæ.

The temperature invariably fell after the bath. After a warm bath the fall equalled 3° or 4° F,, but it regained its former height in an hour. After a cold bath the thermometer often showed a decline of 7°, and the previous temperature did not return until from three to six hours.

After baths which were cooled during the immersion of the patient, the fall was 4° or more, and if the duration was short, the former temperature rapidly re-established itself. But if the immersion was prolonged after cooling, making virtually a cold bath, the effect was more pronounced and lasting. Yet here the fall was not equal to that in the bath which was cold at the beginning, showing, apparently, that in the latter case the nervous shock plays a part.

The nervous system was always calmed. In all but one case, delirium, restlessness, and insomnia ceased. The circulation appeared to be depressed during immersion, but afterwards resumed its former character. As regards respiration, there was no marked effect upon its frequency. The treatment did, however, in many cases allay cough. In no instance did it originate pulmonary mischief.

The effects on the skin, etc., were variable. In some cases the eruption was increased, has Trousseau has said. Desquamation was not modified. Thirst, as noted by Currie, was diminished, but diarrhea was not apparently influenced.

The most common sequelæ of scarlet fever are adenitis of the neck, otorrhea, and albuminuria.

Four patients had albuminuria (about one-fifth); Trousseau says one-third have this sequelæ.

Ten, or about fifty per cent of all the cases, suffered from a sequelæ, which fact Dr. Fraser regards as favorable, considering the severity of the attacks, and says that the percentage is not larger than occurs after other methods of treatment.

The mortality was two per cent. For the whole year, 1880, the mortality in scarlet fever at Homerton was eleven per cent.

The baths were all given during the acute stages of the fever, and varied in frequency from one to six in twenty-four hours.—*American Journal of Obstetrics.*

SUDDEN DEATH DURING FORCED DEPRESSION OF THE TONGUE.

A woman, sixty years old, suffering from tinnitus aurium and partial deafness, applied to Dr. Moure, who ascertained the existence of catarrh and obstruction of both eustachian tubes. Wishing to examine the pharynx, he directed the patient to open her mouth; the tongue being in the way, he introduced a depressor. No sooner had he depressed the tongue than the patient drew a hissing inspiration, and commenced suffocating. Believing he had to deal with a spasm of the glottis, the Doctor had recourse to artificial respiration, but asphyxia increased, râles set in. Tracheotomy was then practiced, but asphyxia continued, spumous blood was discharged through the cannula and by the mouth, and the patient expired.

The Doctor believed that the spasm of the glottis occasioned by a forced depression of the tongue would not of itself have been sufficient to cause death in a strong and healthy person, but, in the present instance, the patient being under some emotion, an old cardiac affection had probably been awakened and a rapidly fatal congestion, or apoplexy of the lungs had followed. This opinion was to some extent borne out by the fact that the patient showed marks of scarified cups under the left breast.

In commenting on the above case, the editor of *Paris Medical* (No. 46) observes that it accords with what he has long ago published on asphyxia caused by enforced immobility of the tongue. If a patient's mouth be immoderately opened by means of a gag, the tongue can no longer move, deglutition of saliva becomes impossible, and the larynx is immobilized. Under these conditions, rapidly fatal asphyxia can be produced. An instance of it has been observed. Satisfactory evidence may be obtained from the following experiment:—Let the tongue be immobilized by placing a finger upon it, the mouth being opened or closed; or, let the jaws be kept wide open by a bit of wood inserted between the teeth, and the result will be a respiratory anguish which, if prolonged, would lead to asphyxia.—*Ibid.*

POISONING BY ACONITE.

The coroner's hearing in the case of Dr. Lamson, the son of the American clergyman at Florence, who is accused of having poisoned his brother-in-law at Wimbledon, with aconite, is still

in progress. Some very elaborate experiments are being conducted by Drs. Stephenson and Dupré. A case of poisoning similar to this had not taken place for a long period, the time being given by some persons at over 100 years. It is natural, therefore, that the symptoms presented should be new, and in order to form an accurate judgment of them, it is intended to experiment with aconite upon the bodies of animals.

A later despatch from London, says the coroner's jury in the case of the young student, Percy M. John, who died at the Blenheim House School from the effects of poison, as ascertained by medical investigation, has found a verdict of wilful murder against Dr. George H. Lamson, brother-in-law of the deceased. Dr. Lamson is the son of the American chaplain at Florence, Italy. It was brought out in the course of the present case, that the deceased student was entitled to the sum of £3500, which, on his death, reverted to his sister, the wife of the prisoner. Just previous to Percy's death, the prisoner was in want of money and had pledged his watch and surgical instruments. He pretended to go and see the young student, and said that the youth was very sick and could not live long. He administered some medicine to him which, it was ascertained, was aconite in the form of a capsule. This caused Percy's death. The day the young man died, Dr. Lamson left for Paris.—*Medical and Surgical Reporter.*

THE TREATMENT OF HYDROCELE AND SEROUS CYSTS IN GENERAL BY THE INJECTION OF CARBOLIC ACID.

The employment of carbolic acid for the purpose of obliterating the cavity of a hydrocele of the vaginal tunic of the testicle by Dr. R. J. Levis, of Philadelphia, has previously been referred to in the Journal, and has been mentioned by him repeatedly in his clinical lectures during the last ten years; until the last meeting of the Pennsylvania State Medical Society, however, he had not formally brought it before the notice of the profession. After more than nine years' exclusive practice of this method in the treatment of hydrocele in hospital and private practice he still endorses it fully and recommends its general adoption.

The object of treatment sought after is the obliteration of the serous sac by plastic inflammation, and still to avoid suppuration caused by the seaton or the more irritant injections. The suppurative process being condemned, while the ordinary fluids used for injection are too uncertain in their results, Dr. Levis was led to try pure carbolic acid to secure adhesion of the walls. The process is entirely painless. The details of his method and its results are best given in Dr. Levis's own words. It is seen that whereas he formerly used the pure cabolic acid he now prefers a permanent solution.

"For the purpose crystallized carbolic acid is maintained in a liquefied state by a five or ten per centum addition of either water or glycerine, the quantity of the diluent to be added varying with the quality of the article and with the temperature of the apartment; but it is an object to reduce the crystals to a fluid state with no more dilution than may be necessary. Liquefaction could readily be effected by the application of a moderate amount of heat, but reduction of heat might produce solidification of it in the canula.

"After the usual tapping of the sac I inject the liquefied crystals of carbolic acid with a syringe having a nozzle sufficiently slender and long enough to reach entirely through the canula. The object of having this special form of instrument is to ensure the placing of the injecting material entirely within the cavity of the cyst, without any reflow which would irritate the surface of the skin of the scrotum or of the fingers of the operator, and without the possibility of injecting it into the connective tissue between the skin and the tunica vaginalis. This form of syringe is supplied by the leading surgical instrument makers.

"The quantity injected varies in accordance with the size of the tumor, from thirty to sixty grains. Thirty grains of undiluted carbolic acid is the smallest amount that I have used, and the largest quantity a drachm and a half.

"As soon as the carbolic acid is lodged within the sac the scrotum is freely manupulated by the fingers of the operator, so as to diffuse it over the lining walls of the hydrocele. A sense of warmth is produced, which is quickly followed by a decided numbness, and the patient is at once able to walk about and to attend to his ordinary duties without inconvenience. I have not been in the habit of enforcing rest on the patient until after the lapse of twenty-four hours or a longer time, when intra-scrotal inflammation renders quietude agreeable and imperative.

"I have never, after this procedure, been able to detect any general toxic effects from the absorption of carbolic acid. Such systemic manifestations as general depression and the characteristic evidence of the brown discoloration of the urine I have looked for, with negative results. I believe that the action of strong carbolic acid on surfaces secreting albuminous fluids is to seal them, and, as it were, to so shut them off from the system that absorption cannot readily take place. This sealing of an absording surface involves a surgical principle in antiseptic treatment which is applicable in very many instances in which denuded or ulcerating surfaces are exposed to septic infection. I state it as an important surgical resource that, in certain compound fractures and destructively lacerated wounds, where septic exposure is inevitable, the danger from absorption may be averted by producing the ocluding influence of strong carbolic acid.

"Within my own experience no failure to radically cure hydrocele, in the manner I present, has to my knowledge occurred. I have never failed to produce with carbolic acid the proper amount of inflammation within the walls of the sac, but have been informed that such failures have occurred in other hands, yet do not know the particulars of the treatment and results in those cases. In no case of hydrocele or other simple serous cyst have I seen inordinate inflammation or suppuration follow injection. In a case of cyst within a disorganized testicle, which was probably sarcomatous, treated with the injection of carbolic acid, high inflammation and suppuration occurred. In three instances of hydrocele of the tunica vaginalis testis, in which the previous injection of the tincture of iodine had failed, carbolic acid made a permanent cure."—*Boston Medical and Surgical Journal.*

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NASCENT IODIDE OF SILVER IN CONJUNCTIVITIS.

Dr. Sédan (Recuel d'Ophthalmologie, May, 1881,) has recently instituted a series of observations, with this remedy, in Algeria, where chronic conjunctivitis is very frequent, and found it decidedly efficacious, both as a prophylactic and in the cure of acute and chronic cases. Two solutions are requisite for the manufacture of the nascent iodide. One of these is a solution of the iodide of potassium, three grammes and thirty-two centigrammes in ten grammes of distilled water. The other solution is composed of nitrate of silver, three grammes and fifty-six centigrammes in ten grammes of distilled water. Both solutions are preserved in bottles made of colored glass. The nascent iodide of silver is prepared by dipping separate glass rods into either solution, withdrawing a drop of each and subsequently mingling them on a piece of porcelain. The resulting precipitate is placed upon the everted lower lid and thence allowed to diffuse over the entire conjunctiva. The iodide thus prepared dissolves very slowly in the ocular fluids, and produces protracted pain, which may be obviated by the employment of glycerine as the menstrum. The border of the lids should be anointed with vaseline to prevent them from becoming adherent. Dr. Sédan has had constant, rapid, perfect, and permanent results in more than three hundred cases from the treatment in question. He states that a single application will often cure simple cases, while in ninety-two out of one hundred cases, selected at random, less than four applications were found necessary to effect a cure.—*Chicago Medical Review.*

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KIDNEY DISEASE IN PREGNANCY.

Dr. A. H. Shinn (*Phil. Med. Times*, p. 747, Aug., 1881), recommends *benzoate of calcium* as an efficient aid in controll-

ing the albuminuria of pregnancy, as well as a valuable remedy in Bright's disease from other sources. Dr. Shinn has produced a very beautiful crystalline salt of the calcium benzoate, consisting of exquisite translucent, colorless, acicular crystals, soluble in about the proportion of twenty grains to the fluid ounce of water; and, of this, the dose he has adopted is, in marked cases, ten grains dissolved in a tablespoonful of fluid, consisting of water with enough orange syrup to flavor it, to be administered every two or three hours during the day.—*Medical and Surgical Reporter.*

"NAVEL-ILL" IN CHILDREN.

It is well known to obstetric practitioners that there is met with sometimes in new-born children an affection of the naval which appears to lead to pyemia (Medical Times and Gazette). A recent paper by Dr. Max Runge, Berlin, contains an interesting account of a large number of cases. In the Strasburg Lying-in Charity Hospital during the summer of 1876 five cases of naval affection occurred out of 120 deliveries. There were no cases of puerperal fever. In the summer of 1879 an epidemic of puerperal fever appeared, many women dying; but there was no disease among the children. From March to June, 1880, the health of the mothers was exceedingly good; but twenty-six infants suffered from naval affection, sixteen of whom died. Dr. Runge has altogether seen forty-five cases, in twenty-four of which a careful post-mortem examination was made. In every one of the cases he found inflammation of the umbilical arteries, the umbilical vein being healthy. In eight cases this was the only morbid condition present. In one there was syphilitic disease in lungs, supra-renal capsules, and epiphysal cartilages. Twice cerebral hemorrhages were present, in one accompanied with gangrene of the scalp from pressure with forceps, and in one with gonorrheal opthalmia. In fourteen cases there were morbid changes present which were undoubtedly connected with the umbilical affection. In five pneumonia or pleurisy were the only affection which occurred. In four others they existed along with other changes; and in one (the syphylitic one above mentioned) there was peritonitis. In two there was jaundice, in two erysipelas, in three hypertrophy of the spleen, and in one infarctions of micrococci in that organ. Dr. Runge draws the following conclusions from his cases: Inflammation of the umbilical arteries is not in all cases a local disease tending to recovery. It may, *per se*, cause death, and it may lead to pyemia. In the cases in which pyemia occurred (except the one with gangrene of the scalp) there was no channel except the umbilicus through which the infective poison could have entered the circulation. He believes that the process begins

in the connective tissue around the arteries and then extends to the vessel itself, producing thrombosis and the changes subsequently seen. The precise time at which the morbid process began could not be ascertained. None of the children died during the first three days, three died on the fourth day, eleven between the fifth and eighth days, and ten on or after the ninth day.

He then considers the etiology of the disease. It has been supposed that the infection was derived from disease in the mother. This is negatived in Dr. Runge's cases by the fact that, with the exception of one that died from eclampsia, one that had cystitis, and another in whom there was metritis, all the mothers were well.

The diagnosis is exceedingly obscure. In many of Dr. Runge's cases its existence was not suspected during life. That pus can be squeezed from the umbilicus has been stated to be a sign of this disease; but our author finds that this is seldom the case with arteritis, and that it occurs in other conditions, so that this is not to be relied on. It has been said that jaundice occurs with umbilical phlebitis, but not with arteritis. This is shown by Dr. Runge's cases to be erroneous. From the uncertainty of the diagnosis it follows that the prognosis is equally obscure. The death-rate of umbilical disease in the cases observed by our author was about forty-five per cent.

Assuming that the disease under consideration arises from septic infection, and that the septic infection gains access to the system through the umbilicus, the most obvious source of such infection is the dead bit of the cord between the abdominal-wall and the ligature. To prevent the disease, therefore, it would seem to be first necessary to insure an aseptic condition of this structure. Dr. Runge has therefore carried out a careful experimental investigation into different methods of dealing with the remnant of the cord after its ligature. He compared the behavior of different bits of cord under the following conditions: (1) simply exposed to the air; (2) inclosed in a glass case so that evaporation of moisture was prevented, (3) wrapped in a rag soaked in carbolic oil; (4) wrapped in a dry rag. He found that numbers 1 and 4, which were simply kept dry, quickly mummified without smell; number 2, in which evaporation was prevented, soon stank; number 3 did not get fetid, but did not shrivel up. From these experiments the best way of dealing with the bit of cord is obvious.

A most important point remains to be mentioned, viz., that with the prevalence of this naval affection there were a remarkable number of cases of purulent ophthalmia. What the connection is—whether the eyes were infected from the umbilicus or *vice versa*—our author is unable to express an opinion.

Another point of interest is that a striking number of the children who died were premature. This, in fact, seems the chief element in prognosis; for the children at term who were attacked mostly survived.

For the prevention and cure of this malady the chief point seems to be: 1. To keep the bit of cord which remains attached as dry as possible; 2. The greatest care in washing and dressing the child, so that there shall be no possibility of contact between contagious pus or the maternal discharges and the eyes or umblicus of the child. As an application to the umbilicus Dr. Runge recommends a powder composed of salicylic acid and starch.—*Louisville Medical News.*

MALARIA IN PREGNANCY.

Dr. Goth (Schmidt's Jahrbücher, July 26, 1881), claims that pregnant women are affected by malaria in the same ratio as other individuals. The malaria tends to induce abortion or premature labor, the danger being the greater the farther pregnancy is advanced. This occurred in forty one and three-tenths per cent. of the case under his charge in the Clausenburg and Maternity. Some differences are noticeable, according as the fœti are stillborn or living. In the former event the uterine contractions are brought on by the fœtus acting as a foreign body, there being three factors which contribute to destroy its vitality; elevation of the mother's temperature, especially when it attains a height of 41.5° C. or more, long-continued anæmia of the mother, and the immediate influence of the malaria. When a living child has been born, the premature uterine contractions have been excited by the febrile paroxisms. Such infants are usually much below the normal weight, and their vitality is doubtful during the first few months after birth. As regards the parturition, Goth finds that the first stage lasts almost twice as long in women suffering from malaria. The course of intermittents is not interrupted, during, or by parturition, except that the paroxisms sometimes tend to occur at shorter intervals. During the puerperal period women are particularly liable to contract malaria. Whether this predisposition is due to the state of the genital tract, or to the general condition cannot yet be decided. The paroxisms at this time are often atypical. In mild cases mothers may nurse, but in severe attacks the infants should be weaned.—*Chicago Medical Review.*

TONGUES AND GIZZARDS.

A recent English writer says: The common snail sets forth to ravage our gardens equipped with 150 rows of stout serrated teeth. The whole palate contains about 21,000 teeth, while a full-grown slug has over 26,000 of these silicious spikes.

The whelk has a ribbon-like tongue, contained in a probosis, with which it bores holes in the shells of the mollusks which form its food. The tongue has strong, saw-like teeth on the edges, with rows of finer ones between. In some mollusks the tongue resembles a tassellated pavement, with a tooth in the centre of each lozenge-shaped compartment. But although the palatial system of the snails forms a most powerful and efficient apparatus for triturating their food, it more closely resembles the gizzard of birds than the teeth of quadrupeds, and it is in the class of fishes that we find the first examples of true teeth, set in a boney socket and ranged at the opening of the alimentary canal. At what time the fashion of wearing teeth came in we have no means of ascertaining. If, however, the Darwinian theory be correct, at some enormously remote period of time some lucky animal developed the new weapon by a series of fortunate variations, and its possession gave to him and his posterity such a "pull" over their competitors that they were able to set the fashion, which has lasted to the present day.—*Journal of Chemistry.*

ROSSBACH: PAPAYOTINE, A GOOD SOLVENT FOR DIPHTHERITIC AND CROUP MEMBRANE.

J. W. Rossbach reports the results of some experiments which he has made with papayotine with regard to its solvent power upon croup membranes. Pure papayotine is amorphous, clear white, without smell and almost without taste, soluble in twenty parts of water, and indifferent toward normal membrane. Normal lung-tissue in a five-per-cent solution of papayotine remains unchanged for several days, while muscle, on the other hand, becomes very rapidly completely disintegrated. In the same solution, croup membranes disintegrated, even after one hour, into very fine particles, and after six hours were completely dissolved. A two-per-cent solution worked much more slowly, a one-per-cent solution not at all. Experiments within the succus caricæ papayæ gave much poorer results. Rossbacn reports some of his experients upon children with diphteritic croup, who vere treated with the less active succus papayæ, but he does not regard the experiments as decisive.—*Berlin klin. W.*, 10, 1881.

LISTERINE.

L. Ch. Boisliniere, M. D., L. L. D., Professor of Obstetrics and Diseases of Women, St. Louis Medical College, and President St. Louis Obstetrical Society, says this of the new antiseptic: "I have given a fair trial to listerine. The more I use it, the better I am pleased with it as an antiseptic and deodorizer. As a dressing for *uterine cancer*, I found that the fetor had been thoroughly corrected, and, after the removal of

this morbid growth, a marked benefit could be ascribed to listerine, as it appeared to promote healthy granulations. In offensive leucorrhœa and cervical or vaginal discharges, it removes all disagreeable smells. For vaginal douches and injections after parturition, I now use exclusively listerine. Besides being a reliable antiseptic, its very agreeable odor should give it the preference over all other articles of this class."—*Va. Medical Monthly.*

A NEW CLINICAL TELEPHONE.

A foreign exchange informs us that Prof. Sabatucci has contrived a medical hydro-telephone from which he predicts great results in clinical medicine. It is constructed as follows: Two leaden cylinders (five centimeters in diameter and half a centimeter thick) are each closed with two very fine iron laminæ. To the anterior part of each is fitted a wooden mouth piece, like that of a Bell telephone, connected to a caoutchouc tube, through which one may hear at a distance. The posterior part has a very sensitive electro-magnet communicating with a microphone and battery. One tube is applied to each ear. Words or sounds produced before the microphone and heard but faintly, are rendered intense and distinct by introducing liquid into the cylinders. The less dense the liquid the better.

Two sounds may be compared, and their intensity exactly measured, by varying the quantity of the liquids and noting the effects through the tubes.

TREATMENT OF EXCESSIVE SWEATING OF THE FEET.

Kaposi gives in his book, Hebra's method of cure for this disagreeable affection. In consists in the use of Hebra's ointment, which is made of one part of litherage to four parts of olive oil, which are to be gently heated and mixed.

The ointment spread on cloth is then applied to the feet. The application is to be renewed once a day for 10—12 days, at the end of which time the epidermis will have been macerated and removed in sheets, after which new epidermis will form to take the place of the removed, and the hyperidrosis will be cured. For some time after it is well to powder the feet well in order to prevent a return of the troubie.—*Cin. Lancet and Clinic.*

ALBUMEN WATER.

Dr. J. M. Keating suggests the use of "albumen water" when milk cannot be obtained, or is contra-indicated. The whites of one or more eggs are dissolved in a pint of water, and then sweetened with glycerine and flavored with orange flower water, or to suit the taste of the patient; this is given *ad*

libitum, and given cold. He has seen this preparation retained when milk and beef tea were not tolerated. It had once saved a patient's life in a slow case of typhoid dysentery, and in a case that came under his care lately it was the only thing that was tolerated by a child of two years for almost two weeks. It is largely used in France; but no mention of it is to be found in any report of the treatment of typhoid fever in any of our journals or text-books.—*Med. Times.*

READY METHOD OF PREPARING FOMENTATIONS.

TAKE your flannel, folded to the required thickness and size, dampened quite perceptibly with water, but not enough to drip, and place it between the folds of a large newspaper, having the edges of the paper lap well over the cloth, so as to give no vent to the steam. Thus prepared, lay it on the heated surface of the stove or register, and in a moment steam is generated from the under surface, and has permeated the whole cloth sufficiently to heat it to the required temperature. This method is often very convenient and efficient where there is no opportunity to heat much water at a time.—*Michigan Medical News.*

PHYSICIANS AND POPULATION.

The *Practicien* gives the following table as showing the proportion between physicians and population in the countries named:

Austria 610, England 600, France 291, Germany 321, Italy 610, Switzerland 706, and the United States 1624 per million.

EDITORIAL DEPARTMENT.

THAT TRAINING SCHOOL FOR NURSES AGAIN.

We regret to see that discussions connected with this humane project seem to be assuming a politico-religious character. We have determined that this fact shall not drive us from the field, or affect our advocacy of the good cause, in any other manner than in the exercise of proper care to preserve our JOURNAL equally from the influence of pool-politics and sectional-religions.

We unhesitatingly assure our readers, that the proposed founders of the Training School did not precipitate these questions upon the public. No measures of change in so far as the Sisters were concerned, were ever discussed by the friends of the School, either in public or private, in so far as our knowledge

extends. It is then true that in our state of outside ignorance, we are altogether unable to account for that extraordinary sensitiveness which some persons exhibit when the subject is broached.

To treat the whole thing as an attack, either open, or covert, upon the Sisters of Charity in the Hospital is an absolute perversion of the case. It has never been considered among the duties devolved upon the Sisters that they should nurse the sick. It is notorious that the nursing in the Charity Hospital has generally, if not always, been done by the convalescent patients of the hospital.

It certainly seems unfortunate that every attempt at improvement our people make, should be damned from its inception, either by faint hearts who cry "it will never succeed here," or by the shivering timidity of some over-sensitive religious persons.

We suppose that it is well known to the medical profession that similar jars have affected other communities where great hospitals have been established. The solution of these troubles has, in the most enlightened parts of the civilized world, uniformly been the same. This has been the apportionment of the wards in accordance with the divisions of population in respect to religious opinions, or modes of worship. Thus some of the great hospitals of Europe have Catholic wards, Protestant wards and Hebrew wards. All these denominations live in Louisiana, pay taxes, and may, if these discussions continue, demand their quota of space proportioned to their numbers as citizens.

PERSONAL.

The many friends of Dr. E. S. Lewis will regret to learn that during a surgical operation reeently performed by him, he became so infected with septic matter as to cause inflammatory trouble, and blood poisoning to such an extent, as to compel him, temporarily, to vacate the professorial chair in the Medical department of the University of Louisiana, he so worthily occupied. His colleagues and the students feel his loss greatly.

During the illness of Professor Lewis, Dr. Joseph Holt, formerly Professor of Obstetrics and Diseases of Women, in the Charity Hospital Medical College, will assume his duties. Dr. Holt's qualifications as a teacher have been ably demonstrated in the past, and we have no doubt that, although thrown before the medical class in the midst of a painfully interrupted course, he will be equal to the emergency, and will deliver a series of lectures creditable to himself, and of intrinsic value to his hearers.

The latest news from Dr. Lewis is encouraging, and we have every reason to believe that, aside from extreme weakness incident to such an attack as he has experienced, he will soon be himself again. W. H. W.

Obituary.

Dr. DAVID HOLT.

Died, on the 25th of November, at his home, Woodville, Miss., Dr. David Holt, in the 90th year of his age. He was the fourth son of Dr. William and Lucy Saunders Holt.

Born on the 12th of May, 1792, in Bedford county, Virginia, near the town of Liberty, and within sight of the Peaks of Otter, he removed with his parents in early boyhood to Georgia His was an energetic and useful life, and he early gave evidence of that earnestness of purpose which characterized his whole career. In the war of 1812 he lent his aid in the defence of his country, and served on the Indian frontier amid many hardships and great exposure. He was stationed at Fort Mitchell, on the Chattahoochee river, near the site of the present city of Columbus.

He began the study of medicine under his father, who was also an eminent physician. He afterwards graduated in medicine in the University of Pennsylvania, at Philadelphia in the year 1819. The same year. after a short stay with his parents in Elberton, Georgia, he made his way to New Orleans, riding horseback through the Indian Nation. This was a year of an

epidemic of yellow fever. Fresh from the medical schools the young physician braved all the dangers of such an epidemic with a courage unsurpassed by his elders, and was eminently successful in his practice. Indeed, by his thorough examination into the workings of that disease he contributed much to its successful treatment. He removed in 1820 from New Orleans to Pinckneyville; Wilkinson County, Miss., and thence in 1823 to Woodville.

On the 21st of July, 1825, he was married to Miss Juliet White. The ceremony was solemnized by the Rev. James A. Fox, who was the first Rector of St. Paul's, Woodville.

For more than half a century Dr. Holt was an active and devoted member of the Presbyterian Church. He showed himself a firm and faithful friend of the Church of his choice.—Often, as an elder in the same, in the absence of the appointed minister, he led the congregation in worship and expounded to them the Word of God.

He acted as though he had made the vow of Joshua his own. "As for me and my house we will serve the Lord." As priest over his own household he habitually offered the daily morning and evening sacrifice of prayer and praise at his fireside altar, His religion was of the heart—quiet, deep, true, unaffected showing forth itself in the love and reverence for God, in his tender affection for wife and children, and in a spirit of charity that suffered long and was kind to all men. As long as he ministered in the capacity of physician he went with the Word of God in his month to comfort the sick and the dying, and with his purse open to relieve the wants of suffering humanity.

When we remember his long and useful life, and call to mind the many whom he assisted and relieved, we feel that he did not live in vain, but was an instrument of much good in the hands of Providence.

Surely if every just and upright deed, every kind and generous action, every "word spoken in season," live forever, the "records" of this good man's life have sent on a mighty tidal wave to swell the choral harmonies of eternity.

Temperance and purity brought their reward—health and long life.—When at last overtaken by the infirmities of old

age, a happy peace and joyous calm seemed to take possession of him; he was patient, contented, cheerful. He chafed not beneath the gradual decay of the outward man. He seemed to look forward to death without fear. Like the true Christian he appeared ready to start forth on his journey to the "better land." He had felt the weakness of childhood, he had known the strength of manhood, and he was spared to see the infirmities of old age. But apparently with him old age had all the peaceful serenity of an autumn evening. Amid all the toil and trials of life God was his "shield and his exceeding great reward." Accordingly when he entered the valley of the shadow of death he feared no evil, for God was with him, and underneath "the everlasting arms." When the time of dissolution at last arrived spiritual and physical separated without a struggle. Death came as softly as comes sleep to the infant. Gently his ripened spirit passed away, to be with Christ forever, "having fought the good fight, having kept the faith." "Them that sleep in Jesus will God bring with Him." The loved ones whom he leaves to battle on a while, cherishing the faithful memory of his holy life, will not sorrow as those without hope, but "pressing towards the mark of the high calling of God in Christ Jesus" will continually pray, "Let me die the death of the righteous, and let my end be like his."

"Blessed are the dead which die in the Lord."

Reviews and Book-Notices.

A Pocket-book of Physical Diagnosis, for the Student and Physician.—By Dr. Edward F. Bruen, Demonstrator of Clin. Med. and Lecturer on Pathology of the Urine, Univ. Pa.; Lecturer on Pathology, Woman's Med. College of Philadelphia, etc. With Wood Engravings. 16 mo. Pp. 256. Philadelphia: Presley Blakiston. 1881. [Sold by Hawkins. Price, in muslin, $2.00.]

The author has been for some years engaged in teaching physical diagnosis to private classes, and this book contains the substance of his instruction. It will be found a trust-

worthy guide, and very convenient to the student and young practitioner.

The Physician's Clinical Record for Hospital or Private Practice; with Memoranda for Examining Patients, Temperature, Charts, etc. 16 mo. Philadelphia: D. G. Brinton. 1881. [From Eyrich's, 130 Canal street.] Sold by Hawkins.

The introductory pages contain some directions for the examination of patients, and for examining the urine, together with symptoms of poisoning, acute and chronic. Then follow blank forms for recording the most important observations in cases under treatment, amounting to about one hundred. Each case is to be recorded on two opposite pages, with room sufficient for two weeks' treatment. At the top of the left-hand page are spaces for name and address, age and color. Below, the page is ruled vertically, and the intervening spaces give room for date, pulse, respiration and temperature; a broad space being left for other symptoms—such as urine, bowels, &c. The right-hand page shows the disease at the top. Below the line for each day is left undivided, and is used for record of treatment and remarks.

A dozen temperature-charts follow, and the volume closes with an index for names. The names must refer to the cases by dates, for the pages are not numbered.

The book is of convenient size for the pocket, so that the observations can be taken down at the bed-side. The value of such records of important cases can not be overrated, both for self-instruction and for preparation of clinical reports for publication; and the publishers are to be commended for producing so convenient a volume. S. S. H.

The Diagnosis and Treatment of the Diseases of the Eye. By Henry W. Williams, A. M., M. D., Prof. Ophthalmology, Harv. Univ.; Ophthal. Surg. to City Hosp. of Boston, etc. 8vo. Pp. 864. Boston: Houghton, Mifflin & Co. 1881. [From J. C. Eyrich, 132 Canal Street.] Sold by Hawkins.

This work is an expansion of a smaller one by the same author, which passed through several editions with increasing favor. The object aimed at was to produce a "practical guide, servicable to the general practitioner and to students."

The first chapter describes the proper method of examining the eye; the second treats of the remedial means to be used; the remaining 26 are devoted to the various affections of this organ. There are 38 wood-cuts and 8 colored lithographic plates, besides specimens of the usual test types and lines in general use.

On the whole, the treatise will be found convenient and answerable to the needs of those for whom it was prepared. The mechanical execution of the book is excellent. S. S. H.

A Manual of Ophthalmic Practice. By Henry S. Schell, M. D., Surgeon to Wills Hospital and Ophthalmic and Aural Surgeon to the Children's Hospital. With 53 illustrations. 12mo. Pp. 263. Philadelphia: D. G. Brinton. 1881. [From J. C. Eyrich.] Sold by Hawkins.

In this work the anatomy and physiology of the eye are considered collectively in the first chapter, while in the one just noticed they are noted in connection with the parts treated. On the other hand, the methods of examination in this volume are scattered as occasion requires their use. The illustrations, though more numerous, are less artistic than in the other. The book was made for those who want a treatise at once compendious and cheap, and will serve this purpose well.

S. S. H.

A Manual of Organic Materia Medica—Being a Guide to Materia Medica of the Vegetable and Animal Kingdoms, for the Use of Students, Druggists, Pharmacists and Physicians. By John M. Maisch, Phar. D., Prof. Materia Medica and Botany, Philadelphia College of Pharmacy. With many illustrations on wood. 12 mo. Pp. 459. Philadelphia: Henry C. Lea's Son & Co. 1882. [Sold by Hawkins.]

This work was prepared as a text-book for students attending his lectures, the author having experienced the want of one adapted to his course of instruction. It will also be found useful by druggists and physicians who dispense their own medicines, in giving them descriptions of drugs; and for this purpose its portability renders it more convenient than the bulky dispensatory. The illustrations, 194 in number, greatly

facilitate the study and recognition of drugs, and will aid in the detection of imitations and adulterations. S. S. H.

Illustrations of Dissections in a series of Original Colored Plates the Size of Life, Representing the Dissection of the Human Body. By George V. Ellis, Prof. Anatomy, University Col., London, and G. H. Ford, Esq. Vol. 1, sec. edition, 8 vo. Pp. 233. New York: Wm. Wood & Co. 1882. [Sold by Hawkins, 196½ Canal street.]

This is the January number of the 1882 series, being a continuation of the Library of Standard Medical Authors. The drawings were made from nature by Mr. Ford, from Prof. Ellis's dissections. The colored lithographs of this edition are *fac similes* of the drawings, reduced on a uniform scale, so as to come within the compass of the page. The illustrations of this volume comprise 12 plates relating to the upper extremity, and 16 relating to the head and neck. The accompanying text is descriptive of the anatomical regions displayed, and the whole is subservient to the surgery of the important parts selected for study. The following volume will exhibit views of the abdominal parietes, the pelvis and the lower extremity.

The production of a volume of this size, so beautifully illustrated, at the price of $1.25, is a marvel. The publishers must sell a large edition, in order to get their money back; but it is fair to presume that they understand their business. S. S. H.

Diseases of Women: including their Pathology, Causation, Symptoms, Diagnosis and Treatment. A Manual for Students and Practitioners. By Arthur W. Edis, M. D., London, F. R. C. P., F. R. C. S., Asst. Obstet. Phy. to Middlesex Hosp., late Phy. to British Lying-in Hosp., etc. With 148 illustrations. 8vo. Pp. 576. Philadelphia: Henry C. Lea's Son & Co. 1882. [Sold by Hawkins. Price in sheep, $3.00.]

Within the moderate limits of this volume the author has succeeded in compassing the most important part of what belongs to gynæcology, and the reader may be sure that the latest positive acquisitions are included, without being obscured or abridged by retention of obsolete matter. It is, therefore, a solid book, but, considering its limits, remarkably full on uterine displacements and abdominal tumors.

A noticeable and commendable feature in this work is the author's recognition of the labors and contributions of American gynæcologists, particularly Hodge, Thomas, Sims, Emmet, Peaslee and Battey. We need not be surprised to find Dr. Edis in some respects a little peculiar, for authors are human. He has not the usual dread of stem pessaries, but this is probably due to unusual care in their use, as minute directions indicate. His confidence in conium and cannabis indica may be owing to remarkable luck in finding active and uniform parcels of these drugs. Bichloride of methylene is preferred as an anæsthetic to ether, chloroform or any other agent. In ovariotomy he adheres to Listerism, not religiously, but as a measure of prudence, justified by the ratio of recoveries under this system.

On the whole we think quite favorably of this newest candidate for choice of authority in gynæcology. The general practitioner would do well to select this work and trust it. The specialist will add it to his collection and rely on his own judgment after consulting all. The rapid progress of gynæcology as a science and an art at the present time is a valid excuse for the appearance of a new author in the field, and a proof that it is neither perfect nor likely to become stationary. S. S. H.

Books and Pamphlets Received.

A Manual of Ophthalmic Practice. By Henry S. Schell, M. D., etc. 12 mo. Pp. 263. Philadelphia: D. G. Brinton. 1881.

The Diagnosis and Treatment of the Diseases of the Eye. By Henry W. Williams, A. M., M. D., etc. 8 vol. Pp. 454. Boston: Houghton, Mifflin & Co. 1881.

The Prevention of Syphilis. By J. William White, M. D., Lecturer on Venereal Diseases in the University of Pennsylvania, Chief of the Venereal Out-patient Department of the University Hospital, Surgeon to the Philadelphia Hospital, etc., etc. Reprint from the Philadelphia Medical Times, January 1881.

Chronic Club Foot successfully treated without Tenotomy, by continuous extension ang stretching. By James S. Green, M. D. Reprint from the New York Medical Journal and Obstetrical Review, November, 1881.

The Maritime Sanitary Service of the United States and the relations of National and State Authorities. By Stephen Smith, A. M., M. D., New York.

Soluble Compressed Pellets. A New form of Remedies for Hypodermic use, and applicable to Ophthalmic and general medication. By H. Augustus Wilson, M. D. Reprint from transactions of the American Medical Association, 1881.

Opening and Drainage of Cavities in the Lungs. By Christian Fenger, M. D., & J. H. Hollister, M. D., Chicago, Ills.

Total Extirpation of the Uterus through the Vagina. By Christian Fenger, M. D., Chicago, Ills.

A Contribution to the Pathological Anatomy of Leprosy (Lepra Arabum). By H. D. Schmidt, M. D., New Orleans. Reprint from the Archives of Medicine, December, 1881.

The Digestion and Assimulation of Fat in the Human Body. By H. C. Bartlett, Ph. D., F. C. S., London, England.

The Fourth Annual Report of the Presbyterian Eye and Ear Charity Hospital. Baltimore, Md., for the year ending December, 1, 1881.

Obstetric and Gynecological Literature, 1876–1880. By James R. Chadwick, M. D., Boston, Mass. Reprint from the Boston Medical & Surgical Journal, September, 1881.

Eleventh Annual Reyort of the Directors of the Maine General Hospital for 1881.

Contributions to Orthopædic Surgery. By Charles F. Stillman, M. D., of New York. A new system of surgical mechanics. Reprint from Transactions of American Medical Association for 1881.

Eighth Annual Report of the Superintendent of the Cincinnati Sanitarium for the year ending Nov. 30th, 1881.

Marriage and Parentage and the Sanitary and Physiological Laws for the Production of Children of Finer Health and Greater Ability. By a Physician and Sanitarian.

A Treatise on Human Physiology. Designed for the use of Students and Practitioners of Medicine. By John C. Dalton, M. D., Professor of Physiology and Hygiene in the College of Physicians and Surgeons, New York, etc., etc.

Meteorological Summary—January.
Station—New Orleans.

Date.	Daily Mean Barometer	Daily Mean Temp'ture.	Daily Mean Humidity.	Prevailing Direction of Wind.	Daily Rain-fall.
1	30.144	49 0	40.3	North	....
2	30.202	48.9	64.7	East.	.....
3	30.218	59.1	67.7	S. E.	.....
4	30.256	63.1	74.7	S. E.	.....
5	30.285	65.4	76.0	East.	.....
6	30.192	67.2	83.7	S. E.	....
7	30.080	67.3	83.3	S E	.....
8	30.041	68.6	91 0	S. E.	.24
9	30.081	71.0	87.3	South	.79
10	30.081	71.2	82.3	S. W.	.....
11	30.155	63.1	88.0	N W.	.20
12	30.077	69.1	83.7	S. W.	.03
13	30.041	70.3	86.3	South	.27
14	30.114	66.4	90.7	S. W.	1.46
15	30.077	70.8	84.7	South	.....
16	30.062	72.6	81.0	South	.....
17	30.156	56.7	84.3	North	.29
18	30.040	62 8	82.7	N. W.	.05
19	30.192	54.6	74.0	North	.....
20	30 074	64.5	89.7	East.	.....
21	30.114	65.8	90.0	N. W.	.68
22	30.423	51.4	47.7	North	.....
23	30.354	47.5	51.0	N. E.	.....
24	30.122	55.9	86.0	East.	.14
25	30.040	66.8	84.0	S. E.	.02
26	30 137	69.3	84.0	S. W.	.....
27	30.168	71.1	84.7	South	.....
28	30.116	70.4	79.0	S. W.	.....
29	30.189	55.2	62.0	N. E.	.....
30	29.921	52.8	79.7	East.	.28
31	29.982	48.0	66.3	N. W.	.09
Sums	.....	.....	.....	.....	total
Means	30.133	62.4	77.8	S. E.	6.62

General Items.

Mean Barometer, ——.
Highest Barometer, 30.497, 22d.
Lowest Barometer, 29.775, 30th.
Monthly Range of Barometer, .722.
Mean Temperature, ——.
Highest Temperature, 77.2, 13th.
Lowest Temperature, 41.5, 2d.
Monthly range, ——
Greatest daily range of Temperature, 24.0, 18th.
Least daily range of Temperature, 4.6, 14th.
Mean of maximum Temperature, 69.5.
Mean of minimum Temperature, 55.9.
Mean daily range of Temperature, 13.6.
Prevailing Direction of Wind, S. E.
Total No. of miles 6640.
Greatest Velocity of Wind, 24 miles S. W., 13th.
Number of Clear Days, 5.
Number of fair days, 16.
Number of Cloudy days, 10.
No. of days on which rain fell, 13.

COMPARATIVE TEMPERATURE.

1872	....	1877	53.7
1873	49.5	1878	51.0
1874	56.0	1879	53.1
1875	54.2	1880	63.2
1876	60.3	1881	50 4

COMPARATIVE PRECIPITATIONS.
(Inches and Hundredths.)

1872	....	1877	4.43
1873	....	1878	5.30
1874	5.06	1879	5.36
1875	1.68	1880	2.34
1876	8.44	1881	1.02

L. DUNNE,
Sergeant Signal Service, U. S. A.

Mortality in New Orleans from January 21st, 1882, to February 18th, 1882, inclusive.

Week Ending.	Yellow Fever.	Malarial Fevers.	Consumption.	Small-pox.	Pneumonia.	Total Mortality.
January 21	0	8	17	1	3	99
January 28	0	3	19	4	9	107
February 4	0	5	25	0	2	98
February 11	0	5	19	2	1	88
February 18		5	28	4	6	116
Total....	0	26	108	11	21	508

NEW ORLEANS
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APRIL, 1882.

ORIGINAL COMMUNICATIONS.

Importance of Introducing the Study of Hygiene into the Public and Other Schools.

Address on the 48th Commencement Day of the Medical Department, University Louisiana, March 29th, 1882.*

BY STANFORD E. CHAILLÉ, M. D.,
Professor of Physiology and Pathological Anatomy in the Medical Department of the University of Louisiana.

The familiar proverb, "an ounce of prevention is worth a pound of cure," is, though unquestionably sound in theory, wofully disregarded in practice; as is inadequately but forcibly illustrated by the fact that the people demand, and therefore the Medical Colleges now supply doctors, not to prevent, but specially and almost exclusively to cure disease. Practice will never conform to the theory, until the people are taught that the knowledge of the means to prevent disease and premature death, that is the science of Hygiene, is now far in advance of its application; and, that this science, unlike many others, can never be effectually applied by a few skilled experts, unless it is appreciated, and is also, in considerable degree, practised by the people. For this reason, sanitarians unite in urging that Hygiene, and therefore Physiology, since the former depends on the latter, should be taught in all schools; for this reason, the New Orleans Auxiliary Sanitary Association and the Louisiana State Medical Society have petitioned our Legis-

*A similar address was delivered February 18th, 1882, to the teachers in the public schools of New Orleans.

lature to enact the Massachusetts law,* which requires the study of Hygiene in the public schools; and, for this reason, efforts have been made to have this study introduced, without awaiting a compulsory law, into the public schools of New Orleans.

This question involves the welfare not only of ourselves but also of our descendants. Every voice, even the feeblest in this audience, can aid its solution, and there are distinguished citizens here present, whose united influence would probably suffice promptly to secure a favorable decision, from both the Legislature of this State and the school authorities of this city. Having long earnestly advocated the study of Hygiene in all schools, and having taken part in the efforts made to secure this, I shall attempt to convert this audience to my own belief, and, for this purpose, shall now submit to its judgment some of the considerations which serve to justify the faith within me.

In the first place, it is worth considering, why this faith should require justification? Why those who are intelligent and educated on other subjects, should continue to be so ignorant and prejudiced on this, that arguments are still needed in behalf of a cause which is self-evident to all who have given it study? Some allusions to the history of the progress of civilization may serve to explain this prevailing ignorance and prejudice, which cause so much needless suffering, disease and death, that all of us, even those the most fortunate, are forced to "grunt and sweat under a weary life."

Scornful as we now are of a savage, it is none the less true, that "we all are descended from ancestors who were pagans, robbers, murderers, man-stealers," and enslavers and brutalizers of woman. These, our savage forefathers, by steps, like an in-

* This law, enacted in 1850, is as follows:

"SECTION 1. Physiology and Hygiene shall hereafter be taught in all the public schools of the State, in all cases in which the School Board shall deem it expedient.

SEC. 2. All school teachers shall hereafter be examined in their knowledge of the elementary principles of Physiology and Hygiene, and in their ability to give instruction in the same.

"SEC 3. This act shall take effect on and after the ——— day of ———, 18—."

fant's efforts to walk, exceedingly slow and hesitating, often halting, at times even stumbling backwards, did, none the less, through successive generations, stagger forwards, until their offspring, ourselves, reached our present stage of civilization. So gradual was the transition, that a nation is fortunate which can mark its progress by successive generations instead of by centuries. So protracted was the ignorant illiteracy of barbarism that the fingers of one hand would probably suffice to count all those in this audience whose great-great-grandparents could even read and write. So incomplete is the stage of civilization reached by us, that there can be seen, on every hand, the evidences of senseless customs, hurtful habits, and narrow modes of thought, which we plainly owe to inheritance from many generations of barbarous ancestors. Comparing present civilization with its future, man has, indeed, good reason to be dissatisfied; but, comparing it with the past, our condition, despite its many evils, is most enviable. However, many still continue so ignorant of this, that they are fearless of ridicule when croaking their silly regrets for "*the good old times.*"

Let us halt a moment to inquire at what period were "the times" better for civilized man than to-day? Was it when the æsthetic Greeks provided their most attractive women with no higher occupations than were to be found either in harems or in the temples of Aphrodite? Was it when all outside barbarians, including our own ancestors, were either enslaved by the imperial seven-hilled city, or were "butchered to make a Roman holiday"? Was it when Christ heard *the voice of the people* crying, "Crucify Him! Crucify Him!" Was it when the fanatic Crusaders, who never used a bath-tub nor ever owned a clean shirt, uselessly strewed every pathway from Christendom to Jerusalem with their blood and their bones? Was it during the many centuries, when our European ancestors suffered frequent famines, clothed themselves in skins, slept on filthy straw, suffocated themselves in hovels alive with vermin but destitute both of chimneys and of glass-windows, sold their wives at public auction, and were swept away in such multitudes by Plague, The Sweating-Sick-

ness, Jail Fever, Scurvy and Small Pox, that their number, often decreasing, could at no time much increase? Was it during the centuries immediately preceeding the nineteenth, when governments were administered, not for the greatest good of the greatest number, but for the special good of kings and nobles; when those accused of crime were treated as guilty until they proved their innocence; when torture and the inquisition were the right hands of human justice and of the so-called Christian Church; when the insane were cursed as "possessed by the devil" and were treated accordingly; and when witless and helpless men, women and children were, by thousands, persecuted, drowned, burned alive, as witches, who deserved the compassion of none, since they were supposed to be condemned by God?

Surely, the "good old times" did not exist for the human race at any of these periods, nor, indeed, at any time. Whosoever maintains the contrary can still put it to the test and even now experience some of the very same "good old times" enjoyed by his ancestors, either by visiting savage Alaska, where women and children are, as witches, still tied to trees and left to starve or are hacked to death with knives*; or by visiting barbarous Russia, where Jehovah's persecuted children now moan out the same agonizing cries, which were once to be heard in every Christian land. Many, who believe that they themselves have seen the times grow worse, have been misled by the fact, that there have always existed evils, which, concealed from or unobserved by youth, are disclosed to experience so gradually that increasing knowledge is readily mistaken for an increasing growth of these evils. In truth, those alone, and these are many, who have lost youth, health, hope and good fortune can claim to have experienced the vaunted "good old times," which, however, existed only at the time when they enjoyed these blessings, and then for themselves alone, not for mankind.

Civilized men men have undoubtedly made progress, and those of this generation greatly err, who, in their veneration

*Reported in N. O. Times-Democrat of Feb. 16th, 1882.

for ancient, therefore younger generations, forget that we ourselves belong to the oldest, therefore the most experienced, and therefore, in spite of all our monstrous follies, the wisest generation which has yet lived on earth. But, when we consider how very slowly every acquisition of knowledge has hitherto been first gained, then popularized, there should be neither wonder nor despair because any new step in the progress of civilization is attended with vexatious delay. We ought not to be surprised that Hygiene is still so ill-appreciated by the people, when we recall the many centuries it required—to invent first figures, then letters, and at last the printing press; to establish, as popular political principles, freedom of religious belief, liberty of speech and of the press, general suffrage and universal education; to discover, then popularize the facts, that the earth was round, that in its annual course it encircled the sun, that fossils were neither "delusions of the devil" nor mere sports of nature, but, letter-types by which the Creator has recorded His handiwork in constructing our globe, that elastic gases could be made more useful laborers and transporters than the most robust human slaves and the fleetest Arabian steeds, and that the dreadful thunderbolt of awful Jove could be drawn from his mighty hand by feeble man and forced to write, to speak, and even to light a street lamp.

Still less should be the surprise that the knowledge of Hygiene is being so slowly popularized, when it is remembered that Physiology is its parent, and that the very elements of this are modern acquisitions. The circulation of the blood was fully established only two centuries ago, the significance of respiration only one century, that of digestion within the past sixty years and that of the nervous system within the same period. Even fifty years ago, so little was known of Physiology, that few even of the medical colleges had a separate chair to teach it, yet, within this period, it has made more progress than during all preceeding ages, so that, surpassing now every other branch of medicine in variety, extent and usefulness, it has become the foundation of our knowledge, not only of curative but also of

preventive medicine, and not only of man's body but also of his mind.

Although the science of preventing disease developed rapidly as the offspring of Physiology, and in the train of another modern science, Vital Statistics, yet, as recently as 1849, not a medical college in England, the country now in the van of sanitary progress, provided its students a separate course of lectures on Hygiene. However, as early as 1850, Massachusetts enacted a law requiring the study of Hygiene in its public schools, whereby this State has surpassed all others in the practical appreciation of sanitary science; and now all enlightened educators are giving this subject attention, the press has been aroused to its claims, and municipalities, States and nations are at last slowly lending their ears to its demands. In fact, all civilized nations now give evidence that they are on the eve of inaugurating the most hopeful contest they have ever engaged in, a contest for superiority in national health as well as in wealth and arms. What have been the causes initiating this reformation, which is destined to play a mighty part in the progress of civilization?

Notwithstanding this century's unprecedented progress in curative medicine, every forward step has served to prove, more and more conclusively, that man's persistent hope, that an elixir vitae or a panacea to cure disease would yet be discovered, was a delusion. But, while destroying this hope, Science, in its revelation of nature's laws, has increased the assurance that though disease can never be cured except to very limited extent, it can even now be prevented to almost unlimited extent. The evidence has become conclusive that even in the countries, now the healthiest, at least one-third of the annual sickness and deaths could be prevented; that the average duration of life, now varying in civilized countries from thirty-five to forty-five years, could probably be doubled; and, therefore, that the health, the happiness, and the general average of human wisdom could be enormously increased. Before discussing the means by which man could secure these benefits, it will be well briefly to consider their potent significance.

Sickness and premature death cause an immense proportion of all the mental as well as bodily suffering inflicted on man, it, radiating from the immediate sufferer as a centre, agonizes the hearts of all to whom the victim is dear, and often condemns these to poverty, ignorance and dire temptation. Farther, the loss by sickness of every day's labor and the loss by death of every self-supporter diminish the prosperity of the whole community, impose heavy taxes on the public treasury, and divert the profits of labor from their proper destination, the advancement of mankind, to the repair of needless human wrecks.

Still farther, even morality is undermined; for, no one, who will examine the evidence now collected, can deny that disease and crime are at least foster-brothers, sucking from the same breast. Fearing, in this matter, that you may suspect me of the narrow-minded prejudice too characteristic of specialists, I cite from numerous similar references the two following: Sir James Paget says, "deprive men of fresh air and pure water, of the light of Heaven, and of sufficient food and rest, and as surely as their bodies will become dwarfish and pallid and diseased, so surely will their minds degenerate in intellectual and *moral* power." The Rev. Charles Kingsley, the English poet, philanthropist and eloquent divine, teaching from the fullness of a great heart and broadly-cultured mind, declared that, from insanitary evils there "arise, year by year, an amount not merely of disease, but of folly, temper, laziness, intemperance, madness, and let me tell you *crime*—the sum of which will never be known till that great day when men shall be called to account for the deeds done in the body, whether these be good or evil." In view of such lessons, it is surprising and deplorable that moralists generally show so little appreciation of the following pregnant truth as taught, by many besides Spencer, Agassiz and Kingsley. The great philosopher says "all breaches of the laws of health are physical *sins.*" The great Christian scientist declared that "philosophers and theologians have yet to learn that a physical fact is *as sacred* as is a moral principle." And, the great preacher exclaimed, "Ah! the waste of health

and strength in the young: the waste, too, of anxiety and misery in those who love and tend them. How much of it might be saved by a little rational education in those laws of nature, which are the *will of God* about the welfare of our bodies, and which, therefore, we are *as much bound* to know and to obey, as we are bound to know and obey the spiritual laws whereon depends the welfare of our souls." Reverent thanks to the dead Kingsley for this noble lesson, so much needed from so devout a source!

Although the evils inflicted by preventable disease and death have been only outlined, it is necessary now to consider the means by which these evils might be remedied. While any individual can, by acquiring sanitary knowledge, protect himself in some measure, yet the unfortunate truth is daily taught that the greatest insanitary evils arise from the ignorance and negligence of one's neighbors and of the community at large. However full one's knowledge may be of the means to prevent disease, he must remain comparitively powerless as long as his neighbors limit his application of these means, by injuring those supplies which are common to all, and by discouraging those general customs and habits on which depends the maintenance of health. Pure air above all else, then, an abundant and uncontaminated water-supply, unadulterated and properly prepared food, and wholesome social customs and habits are indispensable to health, and yet, all these depend, especially in city life, much more on the community than on one's self. Hence, the knowledge of a few can never suffice to protect even themselves, much less to protect the community from the evils due to its own ignorance and negligence.

Therefore, the great sanitary problem is, how can the community be enlightened, how can the people be taught duly to appreciate that sanitary knowledge on which their health, wealth and general prosperity so greatly depend? All, who are well informed, agree, that while no knowledge would confer benefits so great, yet, that there is no subject of equal importance, in respect to which, such general and profound ignorance prevails. The educated acquire an elementary knowledge at

least, of all other important practical subjects, but, so far as Hygiene is concerned, not only are the uneducated ignorant, prejudiced and superstitious; but, as every physician can testify, many even of the most famous preachers, lawyers, editors and statesmen, often prove, with complacent assurance, how very foolish on this subject may be even those who, on other ordinary subjects, are wise. Respecting this deplorable general ignorance, Prof. T. G. Richardson, M. D., has well said: "We daily see lamentable proofs of the fact, not only in the personal habits, vices and surroundings of the poor, but also in the dissipations, dress and dwellings of the rich; not only in ill-ventilated factories, mines, jails and poorhouses, but in churches, hotels, hospitals, asylums and schoolhouses; not only in the filthy streets and sewers of cities, but in the malarious swamps and stagnant ponds of the country." In fact, the social tree is so blighted, from flower to root, by the mildew of unconscious and self-satisfied ignorance, that the general public stolidly stands, either as hinderers of sanitary improvements, or as blocks of utter ignorance in the way of those reforms most necessary for the common welfare.

By what means can this ignorance be enlightened? All those most eminent as students of educational problems now unite with sanitarians in insisting that the knowledge of Hygiene should be popularized; that it should be taught sufficiently to convince men that health and disease are, to large extent, in their own hands; that, among other means, to this end, there is one which is indispensable; and that this one is the teaching of Hygiene in all schools, and especially in the public schools. What value should be attached to this opinion?

So far as the value which should be attached to the fact that the doctors, proverbially prone to disagree, are united on this subject, I quote from the Rev. Charles Kingsley as follows: "It may seem jest, but is solemn earnest, that if the medical men of this [London] or any other city were, what the world now calls, "alive to their own interests," that is, to the mere making of money, instead of being what medical men are, the

most generous, disinterested and high-minded class in these realms, then they would oppose, by all means in their power, the delivery of lectures on natural philosophy [including sanitary science] to women. For, if women act upon what they learn in these lectures—and, having women's hearts, they will act upon it—there ought to follow a decrease of sickness and an increase of health, especially among children, a thrift of life and a thrift of expense, which would very seriously affect the income of medical men." Surely it is an impressive fact, that the profession, whose livelihood depends on sickness, should be not only the most prominent in advocating means to prevent it, but also unanimous as to what one, at least, of these means should be. This prominence and unanimity cannot be explained by self-interest, nor by other reason than that, doctors, of all other men, pursue the occupation and prosecute the study which enable them best to estimate, both the enormity of the evils and the practicability of the means to rectify them. None the less, fearing the charge of professional prejudice, I have preferred to cite freely, on this subject, the views of eminent non-medical authorities.

Among a number of these, specially distinguished for the breadth and depth of their culture, there may be mentioned, Mills, Kingsley and Spencer, in England, and in our country the Hon. Jno. Eaton, U. S. Commissioner of Education, the Hon. A. D. White, President of Cornell University, and the presidents of others of our most famous universities.

Of all these, none have spoken with greater force and brevity than Spencer. He urges that, in determining the relative value of the numerous departments of knowledge, and therefore the relative preference which should, in a proper system of education, be given them—the first place should be assigned to that knowledge which prepares for direct self-preservation, that is to Hygiene; the second to that which prepares for indirect self-preservation, that is to self-sustetenance; third, for parenthood; fourth, for citizenship; and last, for the miscellaneous refinements of life. He insists that "the first requisite to success in life is to be a good animal," (as is illustrated by the physical superiority of every

assembly of distinguished men); and that, although nature does much to teach us direct self-preservation—for instance, to avoid heat, cold, hunger, thirst, and mechanical bodily dangers—yet, that nature fails to teach so much which is essential to the self-preservation of the civilized man, that the teachings of art must be added to those of nature to enable him to avoid the many evils which he ignorantly inflicts, not only on himself, but worse still on his descendants. Contending that "a knowledge of the laws of life is more important than any other knowledge whatever," Spencer urges the following weighty arguments:

"Knowledge which subserves direct self-preservation by preventing loss of health is of primary importance. We do not contend that possession of such knowledge would, by any means, wholly remedy the evil. For, it is clear, that in our present phase of civilization, men's necessities often compel them to transgress; and, it is further clear, that, even in the absence of such compulsion, their inclinations would frequently lead them, spite of their knowledge, to sacrifice future good to present gratification. But we do contend, that the right knowledge impressed in the right way, would effect much; and we further contend that *as the laws of health must be recognized before they can be fully conformed to, the imparting of such knowledge must precede a more rational living*—come when that may. We infer that as vigorous health and its accompanying high spirits are larger elements of happiness than any other things whatever, the teaching how to maintain them is a teaching that yields in moment to no other whatever. And therefore, we assert that such a course of Physiology as is needful for the comprehension of its general truths, and their bearings on general conduct, is an all-essential part of a rational education. Strange that the assertion should need making! Stranger still that it should need defending! Yet are there not a few by whom such a proposition will be received with something approaching to derision. Men who would blush if caught saying Iphi*gén*ia instead of Iphig*ní*a, or would resent as an insult any imputation of ignorance respecting the fabled labors of a fabled demi-god, show not the slightest shame in confess-

ing that they do not know where the Eustachian tubes are, what are the actions of the Spinal Cord, what is the normal rate of pulsation, or how the lungs are inflated. While anxious that their sons should be well up in the superstitions of two thousand years ago, they care not that they should be taught anything about the structure and functions of their own bodies,—nay, would even disapprove of such instruction. So overwhelming is the influence of established routine! So terribly, in our education, does the ornamental over-ride the useful!" To the same purport, Kingsley declared that, "the art of keeping one's self alive and well," "will, in some *more civilized* age and country, be held a necessary element in the school course of every child, just as necessary as reading, writing and arithmetic."

These views are so well founded, that no example can be instanced which would illustrate more strikingly the defects of our present civilization. What can be more absurd, than that, while children are taught various facts concerning distant and comparatively inconsequent rivers, lakes, islands, mountains, stars and planets, the workings of steam engines, of printing, sewing and other machines, they are, none the less, taught nothing of the the various organs of their own bodies and of the workings of that living machine which is to run them or is to be run by them every instant, from birth to death? The day will surely come when this fact will be cited in proof of our semi-civilization, just as we now ridicule our ancestors for attaching to witchcraft, magic, astrology and the "divine right" of kings greater importance than to the simplest laws of nature now familiar to all, and to the most manifest rights of all men now universally recognized. Having acquired, during the two past generations, knowledge invaluable to mankind, how long shall we neglect to utilize it, holding fast to our inherited deficiency, like the ancestor-worshipping Chinese, chiefly because transmitted to us by ignorant forefathers?

If it be concluded that Hygiene is entitled to the pre-eminent position claimed for it, and that it ought to be taught in all schools, especially in our public schools which are a growth largely of the present century, then the fact that this claim

has hitherto been ignored in our system of education, deserves no consideration, except as an evidence of an imperfectly developed civilization; and, every effort should be directed to the ways and means by which this claim can be satisfied. Evidently objections must be met and difficulties be overcome.

Among these, it is urged that teachers generally are reluctant to take up new subjects of study; but, any such reluctance, among teachers in public schools, would certainly yield to an order of the school authorities. Therefore, the chief difficulty in this matter is, to induce these authorities, some of whom, says the United States Commissioner of Education, "hold their places in comparative ignorance of the principles either of education or of sanitation," to issue such an order. The only mode of overcoming this difficulty, which stands at the very threshold of the subject, is, on the one hand, to enlighten these officers, and, on the other, to influence them through public opinion. Should the present address, which attempts to do both, succeed in arousing even an effort to introduce the study of Hygiene into our schools, this would excite discussion, which is the mother of progress, and good would ensue.

Another objection is that the purpose of a public school education is better accomplished by the studies now ordinarily prosecuted, than would be the case if the study of Hygiene were added thereto. To this the conclusive reply is, that school education has only two special purposes, viz: to impart useful knowledge and to discipline the mind; that no knowledge is more useful than that which teaches the preservation of health; and that the study of Physiology and Hygiene tends to cultivate not only memory—a mental faculty now overtaxed and overestimated—but also observation and judgment, higher faculties which our present system of education too much neglects.

An additional objection is that a knowledge of Physiology and Hygiene is too difficult for children to acquire. However, the testimony, from all of the many private and public schools into which this study has now been introduced, is unanimous, that any intelligent child, who can read and write, can not only

be easily taught, but also be easily led to take an interest in this study; a far greater interest, indeed, than in grammar, arithmetic, and geography.

The gravest difficulty by far is to find competent teachers. These should be something more than mere memorizing machines and should have some practical knowledge and a lively appreciation of the value of the dry facts summarized in a text book. Personal experience justifies me in asserting that, when intelligent children fail in this study, their failure is due to the ignorance or stupidity, not of the scholars, but of their teachers. The chief question then is, how are teachers to be taught, and, more to my present purpose, how are the teachers in the public schools of New Orleans to be taught?

The denser the population of a place, the more imperative is it, that its inhabitants should be sufficiently enlightened to appreciate and practice the laws of health; and, now, there is, in the United States, no city which could not, through its physicians, provide the teachers in its public schools with the instruction necessary to render them competent teachers of the elements of Hygiene. If Boards of School Directors could only be stimulated to enforce this study, then it would be at once introduced into the Normal Schools, as it should be above all others, and the pupils, therein preparing to become teachers, would gradually supply the demand created by such action of these Boards. In the meantime, the medical profession would be found to be sufficiently unselfish to provide ungrudgingly those now employed as public teachers all needful instruction. As an instance, the teachers in the public schools of New Orleans have already been offered such instruction, without charge, by the Professors, both of Physiology and of Hygiene in the Medical Department of the University of Louisiana, whose faculty would, without doubt, furnish them with all requisite facilities. Thus, so far as this city is concerned, the grave difficulty of finding competent teachers of the elements of Hygiene can be so readily overcome, that this study could be successfully inaugurated in our public schools before the close of the present year; and, it is confidently believed, that the only thing now necessary for New Orleans to take

this much needed forward step is the favorable action of its Board of School Directors.

In such event, one great public benefit would at once result, for, both abroad and at home, many besides myself would be inspired with a far greater and an abiding confidence in the future health and destiny of this city. Eventually there would result other and greater benefits, some of which will be alluded to.

One generation of children, instructed in Hygiene, would greatly increase the number of persons who would distrust—the authority of the obiquitous woman, who, often more lucky than wise, bullies opposition with the boast that she "has borne and raised many a child herself;" and, the authority of the numerous simpletons who "have seen a case just like it" or who have "read about a sure cure," very likely in some religious newspaper. Doctors would be condemned to listen—to less nonsense about the virtues of such things as, saffron- tea, buck-eyes, wedding rings for stys and willow sticks for warts; and to less folly, about such things as night air and draughts, the "hardening of children," the fatality of one of thirteen at table, and about that very prevalent but usually imaginary malady, "biliousness." Some men might continue, inoffensively to the sanitarian, effeminately to part their hair in the middle, but a less number would be found to defend habits, detrimental to all and fatal to many, by silly twaddle about, for instance, the virtues of tobacco as a nerve-soother, a tooth-preserver and a disinfectant; and about the virtues of whisky to warm the cold, to cool the hot, and to console the tippler for every conceivable ailment; even those too self-indulgent to refrain would at least learn to teach their children, that tobacco was best to impair digestion, and whisky best to make a healthy man a sickly beast. Some women might continue, inoffensively to the sanitarian, to imitate lower animals, destitute of the god-like brow which distinguishes man from brute, by "banging" their hair, but, a larger number would eschew those corn manufactories, high-heeled boots, those lung-crampers, tight corsets, and

those skin befeulers, poisonous lotions, powders and paints; and a larger number would realize that no amount of accomplishments can compensate a wife and mother for ignorance of the methods to provide healthy and appetizing food.

A single generation, instructed in Hygiene would greatly increase the number of sensible parents, who, heeding less the foolish counsel of ignorant nurses, of prejudiced grand-mothers, and of silly and officious neighbors, would cease to take part, as so many parents now do, in killing their own children, to such extent, that one-fourth of all the babies born in New Orleans are hurried to the grave during the first year of life. Such parents would better enforce that domestic sanitation, and that home education of children, without which, there can be no fundamental and lasting reform in Hygiene. And, such parents would at least get on the right road to learn, and to teach their children, what actions are physically detrimental, and that all such actions should be shunned as sins, in as much as, whatever injures health impairs the discharge of all duties.

Other important benefits would also be conferred. The number of citizens, deeply impressed with the danger to themselves, would become so large, that they would no longer suffer any one to be deterred, as is now often the case, by the threats of ignorant or selfish neighbors, from complaining of the foulest and most unhealthy nuisances. Such citizens would see to it, that sanitary ordinances were not simply enacted but also executed. A sounder public opinion, due to such citizens, would force all doctors promptly to report to the sanitary authorities, as many doctors, to the great injury of the public, now do not, every case of communicable disease. Sanitarians would be provided with a constituency which could appreciate and would heed their judicious warnings. The high officials, authorized thereto, would no longer venture, as they now sometimes do, to appoint, as sanitary officers charged with the arduous and responsible duty of guarding the public health, men, (medical as well as non-medical) who know nothing about the prevention of disease; who, in fact, are destitute of every claim, except that due to personal

friendship or to political partisanship; and, who neither deserve nor receive that public confidence without which sanitary officers are apt to cause more harm than good. Such appointments would no longer receive the tacit approval of an ignorant and indifferent public. Competent officers would no longer be forced to plead before such a public, that it ought not to hold them responsible for evils, which it gives them neither power nor means to correct. In addition, New Orleans would at last cease to show a balance, so unfavorable between its death-rate and its birth-rate, that its increase of population depends on its immigrants from the healthier air of the country; as is also the case with most other large cities, their inhabitants, like ours, still continuing too ignorant to secure themselves the most important requisite to health, pure air.

Not only would all these benefits be more fully secured with each succeeding generation, but the day would at last dawn here, as it has dawned in England, where any citizen struck down by preventable disease, due to another's ignorance or negligence, can recover heavy damages. Eventually, all would understand, that disease and premature death are not due to the vindictiveness of God, but are unavoidable penalties for the violation of nature's immutable sanitary laws, which, the Creator, who regulates all things with the wondrous order which is "Heaven's first law," should not be expected to set aside, however piteously implored by those who have neglected to learn and to obey these laws. All would also eventually understand, that the continued propagation of the many children, now born loaded with the curse of a bad organization, is the inevitable consequence of marriages physically unjustifiable; that the vigilance and the labor of every citizen are required to avoid epidemics; and that when these do occur, their continuance and repetition could be prevented better, by hanging every city administrator and every health officer responsible for the public welfare, than by pious proclamations.

In fine, I only echo the voice of the ablest and most distinguished men, who have devoted their lives to sanitary science, when I claim that, while this science is still in its

infancy, yet, if the principles now established, could, by methods now available, be practically applied to the conduct of every day life, the advantage to mankind would be inestimable; ill-health and disease would be greatly diminished, life would be much prolonged, capacity for both work and pleasure would be greatly increased, contentment and cheerfulness would become more general, mental powers would be enlarged, moral qualities would be improved, and vice and crime would be less frequent and terrible.

These blessings are in store for our descendants, as surely as that man is a progressive animal, learning every day better to control the forces of nature, to which he has so long been, and in a measure still is, an ignorant, superstitious and miserable victim; and thereby learning better to adjust himself to the unalterable conditions of his existence. How many generations may be required to secure these blessings, it would be rash to predict; for, though some may deem my anticipations those of a visionary enthusiast, I do, none the less, fully recognize that while 'in the slow course of things changes almost immeasurable in amount are possible, yet that only small amounts of such changes are possible within short periods'; and that, while the wise should see 'how comparatively little can be done, they should yet find it worth while to do that little.'

Whether you, who have listened to my plea in behalf of sanitary progress, can contribute to it is thus answered by Parkes, who, until his recent death, was England's most eminent Professor of Hygiene: "There is no one who may not even now assist in this work, by attending to his own health, by inculcating good advice on those he can influence, and, if he possesses the power, by aiding State and municipal sanitary improvements. Such a work seems to me wholly good; a work free from the error and frailty that clings to so much that we do; a work unselfish, devoid of wish of personal gain, and instinct with the love of man. At an humble distance, it is, indeed, copying His actions whose quick compassion led Him to heal all manner of ills."

However, none can aid the cause I have specially advocated, none can hasten the advent of that happier and nobler future I have ventured to anticipate, more than the teachers in public schools. Whether these are to become active workers in sanitation depends on that public opinion to which all present can contribute. You can thus help to reinforce the thin ranks of that little band of active sanitarians, who, Prof. T. G. Richardson declares, are enlisted in "the great crusade now preparing for the recovery of that which, to this people, is far more holy than any earthly Jerusalem," and who, the pious Kingsley declared, were now the world's mightiest "champions in the battle against dirt and drunkenness, disease and death."

Review of Small-Pox in New Orleans: 1869-1876; With the Operations of the Board of Health in Relation to the Same.

BY C. B. WHITE, M. D.,

Sanitary Director, Auxiliary Sanitary Association, formerly President Board of Health.

[Read before the Sanitary Association.]

A few weeks since a series of articles on preventible diseases appeared in one of our dailies. The one devoted to the consideration of small-pox, contained propositions which require great modification or complete re-statement to bring them into accord with truth.

This is one of the propositions:

"The great increase of small-pox during and after our American civil war, embracing a period extending from 1864 to 1877 inclusive, is a note-worthy and startling fact, especially when it is conjoined with the fact that during the greater portion of this period the City of New Orleans was subjected to an expensive system of disinfection and sanitary inspection."

Also this statement:

"During a period of ten years, 1867 to 1876 inclusive, during which the carbolic acid disinfection was employed upon a grand scale, 2448 deaths were occasioned by small-pox."

I now offer facts:

From November 13th, 1869, to April, 1875, the only disinfectants used by the Board of Health to destroy the poison of small-pox were free chlorine and sulphurous acid gases.

Not one quart of carbolic acid was used for disinfecting in small-pox cases during this whole period. The Board of Health profited by the experience of others.

In San Francisco, Cal., in 1869, an extensive and malignant epidemic of small-pox prevailed. The health officer of San Francisco made a series of scientific experiments with carbolic acid, attempting to destroy the poison of small-pox. The result proved that, as a disinfectant against small-pox, carbolic acid was valueless.

Carbolic acid, therefore, was used only in conjunction with copperas or chloride of iron and zinc to disinfect and deodorize vaults and gutters.

In an extended history of Ireland, once written, appeared a chapter duly numbered, and headed "Snakes in Ireland." The chapter consisted of this sentence, "There are no snakes in Ireland."

So to write the history of carbolic acid in disinfection in small-pox from 1869 to 1875, it need only be said, no carbolic acid used. Nothing remarkably "noteworthy" or "startling" in this "carbolic acid disinfection on a grand scale."

I will not reply to various other insinuations and mistatements at the moment, but state some facts in the interest of the truth of history.

The Board of Health, Oct. 6th, 19th and 28th, 1869, made official communication to the Common Council asking for the passage of an ordinance giving it power and money to prevent the spread of small-pox, predicted in these communications.

In that of Oct. 6th, although but two deaths by small-pox had taken place in the preceding three months, the Board of Health used this language: "*If power be not granted to enforce the needed sanitary measures, the responsibility for the prevalence of this loathsome and terrible disease will rest with your honorable body.*" The Council did nothing.

Through the personal influence of some of the members of the Board, vaccine and material for fumigation was procured. The Board secured the vaccination of 2,633 persons, of whom

1,121 were school children; but could do nothing else, and the result was a preventible epidemic of small-pox, costing 649 lives.

In December of the same year the Common Council still farther demonstrated its incapacity and malevolence, by abolishing the position of health officer, corresponding to that now known as sanitary inspector, and the Board was therefore left with no one to enforce ordinances or even to vaccinate.

In its annual report to the Legislature, seven and one-third pages were devoted to small-pox and vaccination. In this report, the Common Council having thus signally failed in its duty, the Board of Health presented to the Legislature the *projet* of a law, giving to the Board authority to pass and enforce sanitary laws for the city of New Orleans.

The annual report in 1870 devoted four pages to its remarks and recommendations on the subject of small-pox in New Orleans and throughout Louisiana, presenting the *projet* of a bill "to provide gratuitous vaccination throughout the State and prevent the ravages of small-pox."

Sanitary Inspectors devoted seven pages of their reports to small-pox and vaccination.

In May of this year the Board adopted a health ordinance. One of the sections on contagious diseases compelled all children purposing to attend school, to exhibit a certificate of satisfactory protection from small-pox, as a prerequisite of admission to school privileges.

In eight months 1,186 school children were vaccinated by the Sanitary Inspectors, beside those securing admission to school and immunity from disease at the hand of the family physician. A large amount of pure and fresh vaccine virus was furnished to the physicians of the city.

The annual report of 1871 devoted six pages to consideration of small-pox and methods of its control or destruction. Two thousand one hundred and ten school children were vaccinated during the year; 500 and more portions of pure and energetic virus furnished to medical applicants. The defenceless condition of the inhabitants of the State was again brought to attention of the General Assembly and definite legislation proposed and recommended.

In 1872 twenty-three of the first cases of small-pox introducing the disease came from eight different points: Europe, New York, St. Louis, etc. On the 25th of November the Board of Health addressed an official communication to the Common Council, recommending the purchase of vaccine virus, and the employment of such a number of physicians as could visit every house in from ten to fifteen days, and urge and perform vaccination. It brought to notice that the cost of this would doubtless be less than the cost of maintaining the sick at the City Hospital. The city, as usual, did nothing.

In its annual report 5¾ pages are devoted to the matter of small-pox, and the Board again recommends urgently the passage of an act to provide for gratuitous vaccination throughout the State, to prevent the ravages of the small-pox. The same annual report also says: "The Board of Health is of opinion that vaccination should be compulsory; * * * * that the community have a right to enforce vaccination as the only method of protecting itself from this disease."

Again: "Public, gratuitous, enforced vaccination should be the law of Louisiana."

In 1873 the Attorney of the Board prepared a "*projet*" of a law for its reorganization, carefully including all points suggested by the experience of similar organizations and its own, and permitting the Board to make vaccination compulsory in the parish of Orleans. For weeks great labor was bestowed to secure its passage. This excellent law was defeated in the Senate by the efforts of Mr. Barber, who professed to look upon the law as a violation of the rights of his lately enfranchised fellow-citizens.

The next year, after the death or non-election of Mr. Barber, the same law passed both houses; but, by the sharp practice of V. O. King, who was opposed to compulsory vaccination, it was reconsidered with but a bare quorum present, and laid upon the table, although previously passed by a large majority. "Par nobile fratum."

In 1873 ten pages, and in 1874 fifteen and three-fourth pages of the annual report were devoted to small-pox and its management and prevention.

Protracted, harassing and mortifying experience proved to the board, that prompt and satisfactory control of small-pox was impossible, unless violations of health ordinances, like violations of sanitary regulations, were made misdemeanors; the offenders being brought into Court, and without delay adjudged to acquittal, fine or imprisonment. This could be effected only by State legislation.

Red or yellow cards or flags, were put out to serve as warnings, when possible, isolation or removal effected; gratuitous vaccination maintained, the clergy corresponded with and called upon, and, in some instances, the minister, after dwelling on the importance of vaccination, announced that at the close of service the officer of the Board of Health would be found at a room off the vestibule, prepared to vaccinate all applicants.

In 1874, of 605 deaths by small-pox, 105 were certified to by coroners, and only thus were made known to the Board. Add to these, those who got well without medical attendance, and those who were not reported by their medical attendants, and it will be at once perceived how secretly and widely disease was spread, and how extreme the difficulty of destroying it. Amongst others, two prominent physicians, since members of the Board of Health, were sued and fines recovered, in the attempt to secure the prompt report of contagious diseases. An effectual method proved to be, shadowing physicians and ascertaining those who were sick in an infected district.

Every sanitary inspector declares that fumigation by chlorine is absolutely destructive of small-pox poison; that the great preventive measure is vaccination; for its control, removal or isolation, immediate vaccination of all in its vicinity, and thorough treatment of clothes, premises, etc., by chlorine gas.

In 1874 Dr. Devron, Sanitary Inspector of Third District, proposed to establish and carry on a vaccine virus establishment, in connection with his service as Sanitary Inspector. This was seriously considered by the Board of Health, but in-

terviews with gentlemen, who had had ample experience in the propagation of bovine virus, caused it to promptly and entirely abandon the plan, as the virus cannot with certainty be maintained energetic, or even kept alive, in a climate so warm and moist as this.

In 1875 and the first months of 1876, the same general management of this disease was maintained. The report has seventeen pages on the topic under discussion, and speaks of a series of "able articles in the *N. Orleans Times*" and the wonderful stimulation it had upon vaccination.

The *N. O. Republican*, in its life-time, had many valuable articles on small-pox. Mr. Weber introduced in the legislature, at the instance of the Board, bills to give power to the Board to prosecute criminally violations of health ordinances. To secure their passage, much pains-taking personal labor was given by the members and officers of the Board of Health.

During all these years the attempt to secure suitable legislation, and by all known means limit the spread of small-pox, were ceaselessly maintained.

The following table is submitted as showing much more readily to the eye the course of the series of epidemics, beginning in the latter portion of the year, as small-pox reaches its minimum immediately after the high heat of summer:

DEATHS FROM SMALL-POX,

Year commencing and ending in month of September.

	69–70	70–71	71–72	72–73	73–74	74–75	75–76	76–77
Sept.....	1	3			7	6	4	3
Oct.....	5			1	8	2	4	8
Nov	32	1			26	10	1	24
Dec.....	88	1		11	52	15	7	72
Jan.....	69			64	87	32	8	126
Feb	56	2	2	83	82	44	25	191
March ...	121		5	79	88	94	22	260
April .. .	122		5	67	94	62	25	157
May.....	78		4	71	79	26	11	105
June	59		1	35	73	30	13	137
July.....	14			11	41	24	15	56
August ...	4			2	10	14	6	22
Total ...	649	7	17	424	647	359	141	1161

To momentarily examine the table, is to perceive the epidemic of 1869 and 1870, occurring while the Board had neither men or money or ordinances, and immediately upon the destruction of the Board of 1869 to 1876, by Gov. Kellogg, in spite of all the protection gained by attacks of varioloid, small-pox and numerous vaccinations, the prevalence of the most destructive epidemic of small-pox which has afflicted New Orleans, costing the lives of eleven hundred and sixty-one persons.

This paper of President Jones says: "It is also evident from the preceding statistics that small-pox was independant in its spread by (of?) of all so-called measures of thorough disinfection practiced by the Board of Health."

Again he states: "The dimunition and disappearance of the disease were, therefore, clearly not referable to disinfection or any other sanitary measures instituted by the Board of Health.

Again: "During the same period (1872 to 1877 inclusive) yellow fever caused less than one-sixth of the number of deaths; and yet, the whole force of the sanitary legislation, and the acts of the Board of Health, as well as the public attention, as reflected through the secular press, have been devoted to the subject of yellow fever."

In the presence of facts, such baseless expressions as have been quoted need no consideration. The question comes to the Association, what can and should be done?

1st. There exists the simple, sure, safe and cheap preventive, compulsory vaccination.

Assuming that public sentiment is not educated to this point, we have,

2. Gratuitous vaccination. This is perfect, as far as it goes, but mainly reaches those who would attend to themselves, and are likewise able to bear the expense. One good thing can be done: Provide the Board of Health with funds to purchase vaccine and employ physicians; and by dividing the city into small districts, the value of vaccination could be explained to each family and those willing be vaccinated. If the State Board is unwilling to receive funds and assistance from the

National Board of Health, this Association can tender its aid and easily organize and carry into effect such a service of vaccination. At present there is no pressure, but it may be well thought of.

3d. Next in value, provision of one or more small-pox hospitals, with most complete outfit of rooms, beddings, furniture, etc.; the highest medical skill and the best nurses in ample number; attention while sick and attendance and food during convalescence, more than equivalent to the comforts of an average home—a place which a man sick of small-pox, but clearly in his senses, would seek, that he might avoid the risk of contagion to his family.

4th. Removal to hospital of all sick of small-pox who have no home, or where complete isolation is not practicable, or if the person sick of small-pox have never been vaccinated.

I offer for your consideration the proposition, that the unvaccinated man who gets small-pox has no rights which a vaccinated community is bound to respect. He should be compelled to submit to all regulations which the law makes to protect the community. If, from stupidity, thoughtlessness or obstinacy, he has not been vaccinated, he justly pays the penalty for his neglect by having small-pox, by becoming the object of that fearful disgust and dread properly felt by the community, and by being compelled to submit to the operation of those stringent rules he and similar characters have made necessary.

5th. Failure to report contagious diseases within 24 hours is now a misdemeanor, and coroners' reports of mortality are now made direct to the Board of Health, so that the concealment of cases cannot be practiced, as in former years. If the law be rigidly enforced, and reported cases result in their prompt removal, or in isolation or vaccination of neighbors, and finally thorough "fumigation" with chlorine at the hands of experienced and faithful men follow, New Orleans, with the aid of hot weather, may hope to avoid the ravages of a severe epidemic.

The unusually high temperature of the last few months, and the general, prompt and intelligent action of State and local

Boards of Health throughout the North and West, have prevented the deluge of infection which was reasonably expected. But if the poison be preserved to 1883, and reach the vast masses of unprotected population along the Mississippi river, we shall surely have a destructive prevalence of the disease in the State at large, and shall have the disease and its contagion brought to the city from so numerous points, and so large a number of local foci be thereby created, that its limitation will require every energy of the Board of Health.

Compulsory vaccination is the only sure preventive of small-pox.

Coto Bark.

By F. LASCAR, Ph. D., New Orleans.

Having had occasion lately twice to dispense preparations of Coto bark, ordered by two different practitioners of New Orleans, and understanding from both gentlemen that the drug had proven a failure in their hands, I take the liberty to make known to your honorable body some facts in connection with this highly valuable drug.

Let me before I go further, state that the preparation used was a fluid extract, and came into my hands from a well-known Philadelphia establishment. Having had considerable experience with Coto bark during the past four years, and having myself prepared the alkaloid contained in the true bark, I declared my doubts when I filled the prescriptions, that the fluid extract on hand was made from the true bark. The taste and odor differed widely from the barks I had handled previously, and I wrote to New York to a highly responsible party, who I positively did know had some of the true Coto bark on hand. I send to your honorable body some of the fluid extract dispensed in the two mentioned cases, and some prepared by me carefully from the specimen received from New York, also some of the powdered drug, and which I positively declare to be the genuine article.

Coto bark was to my knowledge first used in Japan, by an acquaintance of mine, a Russian physician, by the name of

Dct. Goertz, with whom I conferred on the subject. It proved highly valuable in his hands in Asiatic cholera, cholera infantum, and chronic diarrhœa, and I have filled his prescriptions in New York, where he employed Coto with marked success in cholera infantum.

The drug was furthermore extensively tested in cholera infantum at the Demilt Dispensary, New York. Dct. Parsons records in the Medical Record one hundred and seventy cases of cholera infantum out of one hundred and eighty cured by Coto, which were treated by him at the Demilt Dispensary during two months, and I can refer to at least a dozen physicians of New York city, who have used the true bark with decided success.

The drug was used with decided success by Dct. Burkart, and by Dct. Rieker at the Ludwigs Hospital, in Stuttgard, but as they objected to its pungent taste, they employed the alkaloid Cotoin, contained in the true Coto bark. Eleven cases of gastric catarrh were treated, one-tenth of a grain being given hourly. Some of the cases treated were of old standing; and some very severe attacks of cholera morbus, where previously employed opium, tannin or lead acetate had failed, were also treated. Cotoin produced speedy relief, generally in a few hours, and complete recovery in from twelve hours to six days. (Buch. u. Repertoir fur Pharmacy, 1876, page 520.)

Dct. J. Burney Yeo, of London, has found it with hardly an exception a specific in uncontrollable diarrhœa, where opium, bismuth, tannin, ipecacuanha, had failed. It arrested the intestinal flux, and relieved the pain and irritation in a remarkable short time. He employed the fluid extract in five minim doses, mixed with mucilage acaciæ and syrup, and always found the drug act inferior when mixed with mixture creta or other substances; a fact which I frequently have heard other practitioners express also. I have known Coto bark to be prescribed in diarrhœa of a phthisis patient together with pulv. creta compound put up in capsules, with little effect, while compressed Coto pills afterwards acted like a charm.

The valuable therapeutics of Coto Bark are also recorded by Dr. Frank, of Cannes, in the *Practitioner*, especially in regard to the diarrhœa of phthisis.

True Coto bark comes from the interior of the State of Bolivia into the market; it is gotten from quina coto, and reaches us packed in cerones of about 100 lbs. weight. It resembles in appearance very much red Peruvian bark; it is of the same color, is brittle, of pungent aromatic odor and of a sharp, peppery taste.

The true bark contains an active principle which is not an alkaloid, and which has been called cotoin. It has been manufactured by Jobst in Germany; and in the United States I was the first who had occasion to prepare it on a larger scale. The spurious bark with which the market has been flooded by unscrupulous dealers does not contain cotoin, but paracotoine, and is almost inert.

Cotoin forms pale yellow prisms, insoluble in petroleum ether, but soluble in alcohol, chloroform, carbon bisulphide and to some degree in hot water, from which it is again precipitating while cooling. It is soluble in alkalies and precipitated again by excess of hydrochloric acid as cotoine. Reaction with nitric acid is blood-red, and by adding water, a reddish brown resinoid is formed. Chloride of iron produces a red brown color, and which changes later to a dark brown.

The paracotoine contained in the spurious bark resembles cotoine in appearance, but is of a paler yellow color, and does not crystalize as easy as cotoine; it *does not give any reaction with chloride of iron*, and is also of far less acrid taste than true cotoine. It has been employed hypodermically at the Vienna Clinics, but with what results I am not at present able to state.

Besides cotoine the true Coto bark contains Dicotoine, which resembles cotoine much, and which by heating with liquor potassa is converted into cotoine. The dose of cotoine is from one-fourth to one grain, and has been found of specific value in chronic intestinal catarrh.

Jobst also found in true Coto bark Piperonylic acid. The bark of Quina Coto is also strongly aromatic and astringent,

and the fluid extract should, owing to its sharp, peppery taste and the contents of oleoresin, always be given either in capsules, or with mucilage and syrup as a velisculum. For chemical notes on cotoine, and for a full history of Coto bark, I refer to J. Jobst's valuable paper on this drug.

There is no doubt that Coto bark is one of the few newer remedies which, like Jaborandi, will prove a valuable addition to our modern Materia Medica, especially in our climate, and the medical profession will soon find in Coto bark and cotoine valuable therapeutical agents, and take them up, even after having been previously disgusted with the Paracoto bark and its paracotoine.

Alveolar Abscess.—An Answer.

By C. Edmond Kells, Jr., D. D. S.

"A reply" (an attack would have been a more appropriate title) in the last issue of the Journal leaves me no alternative but to answer in my defense, much as I dislike a controversy of the kind.

The opinions expressed in my criticism are very generally held by dental practitioners; are taught in at least one of the leading dental schools, and have been fully verified in my own practice.

The idea of a disease being divided into two or more stages, each requiring different treatment, is not so "absurd" as the writer states it to be, as all our readers know.

The main point in his original article, viz.: "It is seldom the case that the integrity of the parts is so well restored as to prevent a recurrence of the disease," and his advice to apply *leeches to an abscess*, I again pronounce bad practice, and call upon the dental profession to substantiate my assertion. I did not say leeching would be productive of harm, for I know the contrary, but surely, to advise a remedy because it will do no "harm" is hardly considered good practice.

Much "honest knowledge" is certainly not displayed in his use, as an illustration, of my father's case of "*incipient inflammation of the root membrane*" cured by *leeching*, when the sub-

ject under consideration is *Alveolar Abscess* and not *pericementitis*.

If, as he suggests in a spirit of charity, I did not understand his article, it must be because he has "used his words to conceal his thoughts" and, perhaps, writing in the same manner, somewhere in the undiscoverable depths of this "reply" lies hidden that spirit of courtesy usually considered essential to discussions of this kind. At least we have one point in common, for we agree upon the status of *our* chosen profession, and if in the course of time he ever desires to become an "*ambitious D. D. S.*" and to labor hard both for the advancement of the profession and to place himself among its leaders —*if* such a thing should occur—let us hope he will act upon his own suggestion and avail himself of the opportunities afforded by one of the *very best* dental schools of the country, where we all know everything pertaining to the specialty can be learned far more thoroughly than in any other place—such an institution having especial advantages over the "*ordinary dental college of the present day.*"

Current Medical Literature.

TRANSLATIONS.

A FEW CONSIDERATIONS UPON A SUSPICIOUS EPIDEMIC AMONG CUBAN CHILDREN AT SAGUA LA GRANDE, CUBA—A HÆMATEMESIC FEVER, DESCRIBED BY DR. A. W. REYES AS "FIEBRE DE BORRAS,"* OR "THE YELLOW FEVER OF CREOLES."

Translated and Abridged from Dr. Reyes' original Memoire, with introductory and other remarks,

By Rudolph Matas, M. D., New Orleans.

Are natives of yellow fever regions really exempt from yellow fever attacks? If this query had been addressed to the

* Note.—The word "borras" means, literally, in Spanish, sediment, dregs or lees, such as coffee grounds (borra de café, Spanish); but is used by the laity and by medical writers as synonymous with the altered sedimentary blood ejecta, characteristic of yellow fever and other diseases associated with gastro-intestinal hemorrhages, in which the blood discharged presents the peculiar sedimentary character observed in the disorder just mentioned.—*Translator.*

profession about thirty years ago it doubtless would have been answered in the negative. But the gradually accumulating experience of recent epidemics, and the searching inquiry of unprejudiced modern investigators have greatly fortified the claims of old dissenters and sorely tested the strength of the ancient belief. In truth, we might safely state that professional opinions have undergone a revulsion so complete that the established dogma of past years has now become the exceptional creed, and that, outside of a very few reputed but isolated voices, the general outcry of the medical mind, in this city, at least, is that the Creole population is not free from malignant yellow fever visitations.

In Cuba it is yet the orthodox belief among the leading professional men that yellow fever immunity is acquired at birth by native Cubans or, at least, by Creole children born in the habitually infected portions of the island, through simple climatic agencies, and that yellow fever in a native Cuban is an impossibility. The close inquiries of the chairman of the United States Yellow Fever Commission, in 1879, revealed that the prevailing opinion was "entirely too absolute," and and that Cubans "of every age, sex and race were liable to yellow fever, and that only those who had the disease, or had constantly resided in infected districts, enjoyed immunity." * That an apparent immunity is enjoyed by the native residents in the infected districts of Cuba, from the evil influence of the yellow fever poison no one will pretend to doubt. But how this immunity is acquired, and that it is more apparent than real, is a double question of a decidedly debatable character. As a substantial argument in favor of the advocacy of the doctrine of Creole vulnerability, and also as an indirect basis to further discussions on the causes of the apparent immunity of Creoles, a question which naturally follows as a corollary to the first doctrine, Dr. Reyes' observations are full of importance and interest, and merit the close attention of those who are at all interested in the obscure problem of yellow fever pathology. In Cuba the doctrine herein presented will doubtless recussitate a great deal of discussion, as it is diametrically opposed to the views of the vast majority of practitioners; in Cuba, as with us, however, even deeply-rooted views are apt to change, as facts are indisputable and will dominate in the presence of even legendary traditions. Dr. Reyes has not been, however, the sole advocate of Creole liability to yellow fever. If we only refer to Dr. Chaillé's admirable article on acclimatization, we will find a number of able observers who acknowledged their inability to differentiate between certain fevers which, in Cuba have been designated under various appellations, and yellow fever, also, the names of others who have recorded their obser-

* Vide article on acclimatization, by Dr. Stanford E. Chaillé. Final Report Havana Yellow Fever Commission.

vations of yellow fever cases among Cubans; but, unfortunately, as a general rule, their writings have not attracted sufficient attention because of the limitation of their assertion to opinions without adequate clinical demonstrations. Dr. Reyes, fully appreciating the futility of discussing a subject without a solid basis, determined to investigate for himself, the state of evidence in regard to this question; he tells us, however, in the introduction to his memoire, that his attention had not been drawn toward this subject, until the energetic efforts made to seek the truth, in regard to the so-called Cuban immunity, by the chairman of the Havana Commission, forcibly roused him and most of his Cuban confreres, to the necessity of an active investigation of the state of the question, which, through the unfortunate apathy of the profession, had been left unsolved, or at most, limited to purely personal opinions. An epidemic of a hæmatemesic fever, of a most deadly character among the children of Sagua La Grande, soon offered a favorable opportunity to Dr. Reyes for the prosecution of this important investigation; as a result of his attentive study, Dr. Reyes believes that this fever which he has designated "fiebre de borras," (equivalent to hæmatemesic fever), is nothing more nor less than yellow fever. It is worthy of mention, that prior to his special study, Dr. Reyes, as he tells us further on, was an avowed advocate with the majority of Cuban practitioners in the doctrine of Creole immunity, but since his later observations, confesses his allegiance to the creed of Creole vulnerability.

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Before proceeding with the description of the disease in question, Dr. Reyes dwells briefly upon the history of this fiebre de borras, as he calls it, and which, henceforth, we will translate as hæmatemesic or gastrorrhagic fever of creoles; he begins: "In the chapter entitled acclimitization or immunity of creoles from yellow fever, Dr. Standford E. Chaillé*, in the final report of the Havana Commission, informs us that Blair asserted, as early as 1851, in his description of the yellow fever epidemic in Guiana, that the first cases of the disease developed in children of early age. According to Dr. Chaillé, he and Warren Stone, were the first to accept the doctrine that the creoles of New Orleans were liable to yellow fever, and, further on, he says, that there are now no physicians in New Orleans having experience and distinction, except Drs. Charles Faget and Armand Mercier, who uphold the old view; but, unfortunately, in all this, nothing but opinions are cited, and no complete detailed observations, with pulse and temperature records, are presented to us. The first real observations we have read, and which coincide in every particular with the clinical histories included in this pamphlet, are those which O.

*Spanish version by Reyes, in Garda Medica, Havana.

St. Vel cites as pernicious fevers in pp. 83 and 84 of his treatise on intertropical diseases. According to St. Vel, this hæmatemesic fever of creoles (fiebre de borras), is then a member of the pernicious malarial fever group."

Rufz de Lavison, since 1833 and 1844, asserted that the black vomit was the idential affection which at certain epochs attacked the children of the martinique.

Ballot has well described this disorder in one of his reports, but does not believe in its identity with yellow fever. Ballot believed the two affections to be different, because this gastrorrhagic fever of the natives attacked only a small portion of the population; it afflicted the children from 2 to 9 years of age; and finally, on account of "a clinical difference of great importance, because albumen, which is found so abundantly in the urine, during the second stage of yellow fever, was not found once, in all the patients attacked by this fever."

In 1870, Lota published a study upon this disease in the archives of naval medicine; we have not been able to procure this paper, in which its author vigorously sustains the identity of this hæmatamesic fever with yellow fever.

Finally, Beranger Feraud, in his treatice on bilious inflammatory fever, in alluding to the disease in question, adopts a classification, based upon some of Lota's observations; he distinguishes four forms of this fever, three of which are completely identical to the lighter forms of his (Feraud's) bilious inflammatory fever, which in turn, is, in his opinion, nothing more than a lighter form of yellow fever. But when he speaks of the genuine hæmatemesic fever (fiebre de borras), of those, grave instances of this disease which run such a rapid course, as we will furtheron illustrate, he stops embarrased and confused, and says: "After this, a fourth degree of fiebre mauvaise (meaning fiebre de borras) remains, a form of the disease in which we have seen the black vomit and found albumen in the urine. To that disease shall we assimulate it? I confess that I am very much perplexed, and that if I had the courage to break through the vacillations which many strange considerations impose upon me, I would conclude by accepting the identity of this fourth degree and yellow fever." We must now ask ourselves: if he concludes unhesitatingly with the lighter forms of the disease, why should he not do the same with the more intense grades in which the analogy would still be greater?

In Cuba, this fiebre mauuaise, as Feraud calls it, has also been observed, in various towns and at different epochs; in some years the infantile mortality has been very great, and the disease has been classified as typhus; but we are not acquainted with or are aware of the existence of any published complete clinical observations of the disease. In Dr. Chaillé's report, nothiug but contradictory opinions in regard to

this fever are presented to us, as unfortunately, nothing but opinions could be gathered at the time the report was made.

In Cuba the majority of physicians reject energetically, but without proofs, as Dr. Chaillé says, the identity of this fever and the black vomit. It is necessary, therefore, that thorough observations above all things be taken, in order that the discussion may rest upon a solid basis. We bring them forward although few and defective; others will complete the work."

THE EPIDEMIC.

Dr. Reyes then proceeds to discuss the conditions in which the epidemic developed at Sagua Le Grande: Towards the latter part of May, 1881, when the heat was intense and the city was laboring under the full presence of its most insanitary disadvantages, the black vomit made its appearance in the military quarters and civil population of Sagua Almost all cases of the disease that occurred in the months of May, June and July were indiscriminately fatal in character; the malarial fevers of dangerous type then also began to afflict the population; a good deal of diptheria prevailed; and the "bilious constitution" blended its peculiar hue with all the prevailing diseases, in a manner which attracted general attention among the city practitioners; many cases of paludal fevers were there found associated with jaundice. The epidemic of yellow fever began to abate in its intensity towards the latter part of June; instances of the disease were not heard of so frequently, though the disease still persisted in its prevalence, and the cases that occurred were yet of a grave character. Towards the middle of June, the following event took place which we will record as our first observation. A little child, J. L. aet. 8 months, white, in excellent condition, both previous to and at the time of the attack, living at a great distance from the military hospital, was taken ill with a slight indisposition for some days, but its ailment appeared to be so trifling, that though the infant seemed to have fever, it was not treated very actively. A few remedies including quinine frictions we administered, but not with great fidelity or diligence. One day, however, the mother did not find her child in its accustomed state, and becoming alarmed, sent for her physician. It appears that the doctor found high fever, for he prescribed some doses of quinine in powder: when they were brought, just as the first dose was about to be administered, the child was seized with a profuse spell of vomiting in which characteristic black liquid was abundantly ejected, after which the child shortly died.

Four or six days after this event had taken place, another child, P. R., aet. 7, white, of good constitution, and perfectly well a few days previously, died after a fever of four or five days duration, after vomiting black, coffee ground ejecta.

A few days after this case had occurred, the little girl, M. B. fell sick; I did not see her until the third day of her illness, when I examined her with her father, Dr. B., who had already injected hypodermically one grain of quinia bisulphate. I continued to call frequently during the day with other confréres until her death. I will here present her history as kindly taken by her father, Dr. Bonet, who opines that the disease was bilious remittent fever:

GRAVE BILIOUS FEVER:

Observation taken by Dr. JAMES BONET.

(Regarded as yellow fever by Reyes).

"The little girl, M. B., aet. 9 years, white, of a good constitution and enjoying excellent health, felt somewhat indisposed in the evening of June 27th, 1881. Towards night she was taken with fever, without chills or vomiting; shortly after she was attacked with a violent cephalalgia, which caused her to cry at repeated intervals with pain, and which did not better under the influence of foot-baths, compresses of vinegar to the forehead or by the administration of potassium bromide internally. A purgative of citrate of magnesia was administered. She passed a very restless night.

June 28th. In the morning the thermometer registered 103° Fah., which kept on during the whole day; pulse 110–120 per minute; full and resisting; respirations deep and quiet, almost natural in number; tongue broad and coated. Epigastric tenderness, and pain in pressure over hepatic region. Three abundant evacuations of a greenish color, thick and charged with intestinal mucosities. The urine appears normal; the skin is dry and hot; the lips heightened in color, the eyes injected and watery; probably due to the cephalalgia which causes her to shed tears with frequency. At night a tranquil delirium supervenes; but she sleeps by spells. Every hour a mixture containing potassium bromide, aconite and spiritus mindereri, is administered.

June 29th. The same temperature, pulse and respirations. In the morning she begins to vomit the liquids which are administered and which she craves with avidity; at noon, or before the termination of 48 hours since the beginning of the illness, she begins to eject the first black vomit, which is repeated at intervals until 7 P. M. When the vomited mattersare examined microscopically, they appear to contain bile, and altered red blood globules, mixed with an abundance of gastric mucus. Since she began to throw up the vomit she complained less of her head; but she is much more prostrated. The edges of the tongue are reddened and the thirst is intensified. The epigastric tenderness is more accentuated, the liver is found enlarged, but soft to the touch. The urine is secreted in normal quantities, and is of a heightened color; its analysis reveals no abnormality. As night advances the restlessness and de-

lirium increase. Fearing that this is a case of hæmorrhagic remittent fever, so grave and frequent amongst us, we injected a gram of quinine bisulphate disolved in 12 grams of distilled water. Cold acidulated drinks are administered at short intervals to correct the emesis. Cold milk as nourishment. A saline laxative is also administered, but the stomach will not tolerate it.

June 30th. Thermometer registers 102° in the morning and 104° at noon and at present. The pulse reaches 130 and continues strong, full and resisting. The respiration continues the same. The sclerotic, the skin of the forehead, neck and throat assume a marked icteroid tinge.

The gums are congested and bleed easily. At 11 A. M. she has another spell of hæmatemesis and the skin is momentarily moistened. The other symptoms continue the same. She will not take more medicine, and rejects all remedies when forcibly administered. Cold aromatic applications to the skin resorted to and purgative enamata administered. Fifty centigrams quinia Bisulphate also injected hypodermically, simply as an apyretic, and not with any hope of specifically combatting the malady.

July 1st. Temperature lowered to 103°, and kept up allday. The pulse lowered also to 120 without losing any of its other qualities. The respiration continues the same. The jaundice has now extended all over the body. She seems to be more tranquil and at times really enjoys rest; but now she scarcely recognizes her parents, whom she calls continually with all manner of tender expressions. Her cerebrum requires a great stimulus, such as pain, in order to appreciate its surroundings. At noon a slight epistaxis, which is arrested spontaneously, occurs. The tongue continues humid, but clearer and redder. The diarrhœal passages induced by the enemata are of a pale color, which reveal the absence of bile in them. The urine contains some albumen, but it also contains some altered red globules.

At the site of previous hypodermic injections a dark violet hue observable, which indicates the occurrence of sanguineous extravasation in the areolar tissue. Patient will not take medicine, and same treatment continued.

July 2d. In the morning the index of the thermometer points to 102°, and the pulse to 120, always full and resisting; but towards noon the forehead is found covered with perspiration, and the temperature is observed to rise to 105°. The pulse beats 130 times, and the respiration is accelerated. The gums bleed frequently, and the restlessness of previous days ensues, and she speaks only when asking for water or when requiring assistance to evacuate her bowels. Thirty centigrams of quinine injection (hypodermically) and cold lotions to the skin continued. The same drinks and enameta administered.

July 3d. Thermometer registers 101° in the morning; but it increases to 103° in the evening, after a chilling of the extremities. The gums continue to bleed and the teeth covered with sordes. The pulse, respiration and other signs continue the same. Same treatment.

July 4th. Has passed the night in a state of the most cruel restlessness; has not had one real moment of repose. In the morning the mercury is at 101° Fah.; the pulse less strong and resisting, beats 140 times per minute. The respiration is softly carried on, but more accelerated, Breathes at the rate of thirty inspirations per minute. The skin continues dry, the tongue less humid, the gums continue to bleed at intervals. Anti-spasmodic enemeta administered, which tranquilize her. Purgatives suspended. Towards evening extremities cool down so rapidly that it becomes necessary to apply artificial heat; the temperature rises to 105° and the pulse develops in proportion. Twenty centigrammes quinia bisulphate injected (hypodermically) and temperate baths are resorted to. The urine had been retained in part, but in the baths was expelled. No more albumen. The diarrhœa continues.

July 5th (eighth and last day of illness) passed less restless night than the last, but has slept little. Frequently complains of pains in the abdomen. Seems to be a little more conscious of surroundings than yesterday. The abdomen retracted; the volume of the liver neither enlarged or diminished; no alteration in the spleen; the bladder contains some urine. Temperature at 101° in the morning, pulse at 130 and quite weak; the respiration deep, but softly carried on; the tongue redder and dry; the gums cease to bleed. has several thick diarrhæal passages, of a *tarry color*, which are regarded as characteristic of bilious fever; they are composed of bile mixed with an ab undance of disorganized red blood corpsules and mucosities of the intestinal canal stained black. After a diarrhæal spell, she becomes strongly agitated; the delirium becomes more pronounced and not a single word of what she says is understood, excepting when she calls for water or for her mother. After 4 P. M. the pulse becomes progressively weak and frequent; the muscular strength is retained; stimulants used by enema and subcutaneously without benefit. At 6 P. M. coldness of the extremities sets in and rapidly invades the trunk; in spite of all our efforts she ceases to exist tranquily and without even a convulsive tremor at a quarter to 8 P. M.

A BRIEF SYNOPTIC STATEMENT OF PULSE AND TEMPERATURE OBSERVATIONS,

Extracted from Report of Four Cases of "Fiebre de Borras," included in Dr. Reyes' Memoire.

Observation 2, (taken by Dr. Bonet).

Child, A. G., male, aet. 9 years, white, taken ill August 18th, 1881.

August 18th, Morning—Temp. 102° F., soon after temperature reached 103; pulse 120.
August 18th, Evening—Temp. 103°; pulse 120.
Particular symptoms: Great cephalalgia and injected eyes.
August 19th, Morning—103½° F.; pulse 120.
August 19th, Evening—102° F.; pulse not stated precisely; about the same.
Symptoms: Some oppression about epigastrium and cephalalgia; 60 centigrams quinia bisulphate administered.
August 20th, Morning—103° F.; pulse 110. 80 centigrams quinia bisulphate.
August 20th, Evening—103° F.; pulse 130.
Symptoms: Vomits bilious matters in the evening, delirium all night.
August 21st, Morning—103½°; pulse 120.
August 21st, Evening—103½; pulse 120.
Symptoms: Vomiting spells repeated; slight icteroid tinge about conjunctivæ and neck.
August 22d, Morning—103½° F.; pulse 120.
August 22e, Evening—104° F.; pulse weaker (number of pulsations not stated precisely).
Symptoms: *Black vomit* in the morning; (bloody composition microscopically determined) consciousness lost; great prostration; gums bleed in the evening; jaundice spreads over whole body; urine retained, had to be drawn with catheter.
August 23d, Morning—102° F.; pulse very rapid, almost imperceptible. Death at 8 A. M., (5th day of illness).
Note.—No albumen found in the urine throughout the career of this case.

Observation 3, (by Dr. A. W. Reyes).

Rita Maria G .., white, aet. 4 years, taken ill with vomiting and fever August 7th, 1881.
August 8th, Morning—Temp. 40° Cent.; pulse 120.
August 8th, Evening—Temp. 40° Cent.; pulse 120.
August 9th, Morning—Temp. 40° Cent.; pulse 120.
August 9th, Evening—Temp. 40.1°.
20 centigrams quinia every hour and a half by enema, partially rejected towards night-time.
August 10th, Morning—39.9° Cent.; pulse 120.
August 10th, Noon—40.1° Cent.; pulse 120.
August 10th, Evening—39.9° Cent.; pulse 120.
Symptoms: *Jaundice* in sclerotics and neck well marked, vomited quinia, cephalalgia and delirium; black vomit with ejected matters, food, etc.
Injected 0.40 centigrams quinia bisulphate subcutaneously.
August 11th, M.—Tem., 40.1° C.; at 2 A. M., 38.8; at 5.30 A. M., pulse softer, same number of pulsations (120).
August 11th, Noon—Temp., 40° C., pulse 120.
August 11th, Evening—Temp., 40° C., pulse 120.

Sympt.: Jaundice increased, great injection of conjunctivæ and congestion of gums; great restlessness and delirium; urinary retention. 0.30 centigrams quinia bisulphate injected hypodermically, with 20 centigrams quinia by mouth, in morning; same repeated at night-time.

August 12th, Morning—Temp., 40.6°; pulse not stated. Patient dies at 2.30 A. M. Death preceded by abundant black vomit and melanhæmic stools.

Observation 3. (Dr. Reyes).

Guillermo C....., male, aet. 4 years, white. Fell sick August 19th.

August 20th, Morning, Temp., 29.8° C., pulse 132.

August 20th, Evening, 39.8° C., pulse 132.

August 21st, Morning, same temp., same pulse.

August 21st, Evening, same temp., same pulse.

Symptoms: Great injection of the conjunctivæ; lips tumified; gums very congested; dull soporific state since first day.

Aug. 22d, Morning, Temp., 39.8°, pulse 123.

Aug. 22d, Evening. Temp., 39.8°, pulse 123.

Symptoms: Gastric intolerance, vomiting injesta; bilious diarrhœa, no jaundice or albuminaria.

August 23d, Morning, Temp., 38.9°, pulse 120.

August 23d, Evening, Temp., 38.8°, pulse 108.

Symptoms: Great gastric irritability. All medicines and foods administered per rectum.

August 24th, Morning, Temp., 38.1°, pulse 108.

August 24th, Evening, same throughout.

August 25th, Morning, Temp., 33.20° to 38.30°, pulse 98–100.

August 25th, Evening, same throughout.

August 26th, Morning, Temp., 37,60° to 37.90°, pulse 98–100.

August 26th, Evening, temperature same, pulse same.

August 27th, Morning, Temp., 37.30° to 38.90°, pulse 92 to 108.

August 27, Evening, temp. same, pulse same.

August 28th, Morning, Temp., 37.20° to 39.10, pulse 96 to 106.

August 28th, Evening, same.

August 29th, Temp., 37° to 37,50°, pulse normal.

Symptoms: Gums bleed—purple spots over body. Finally patient recovers completely.

SYMPTOMS, COURSE AND DURATION OF THE DISEASE, ETC.

We will not dwell too long upon the narration of cases, the histories above given, we believe, will suffice to exemplify the general character of hoematemesic fever, as observed by Dr. Reyes. We will now consider generally the clinical history

of the disease in the following summary, extracted from Dr. R's account of the same:

"The disease runs a rapid and violent course; it rushes quickly through to a termination; the majority of patients die in four or five days, without undergoing any appreciable oscillations in the course of their malady. The variations in the pulse and temperature are insignificant; these two indices are always threateningly sustained; the cephalalgia, epiphora and contusive pains in the extremities, when they are present, may attain a distressing intensity; the congestion of the mucous membranes, as well as of the skin, are matters of general occurrence; the lips and gums are tumefied and of a high colored cherry redness; the tongue is broad, humid, coated and red at the tip and edges; the stomach becomes intolerent and characteristic bloody vomiting begins early; we have not observed spontaneous diarrhæas; nervous irritability is increased, the respiration assumes a peculiarly suspirious and interrupted character; sometimes it becomes panting, which, when observed, is a sign of the worst prognostic interpretation. The secretions, though apparently less active, are not suppressed, their expulsion is effected more languidly; they are retained, but not abolished. The urine, as a general rule presents a normal aspect, it is not very much charged with deposits. The quantity of albumen found in this condition is not so great as in most instances of yellow fever of equal intensity. The bilious secretion is increased and in our observations we have always found the liver somewhat voluminous, painful and soft to pressure. We have noticed no abnormality in connection with the spleen.

The icterus is visible from the third or fourth day; it is more or less intense in the sclerotics and skin; "the meningitic spot" is much more rapidly and intensely marked than in yellow fever. The impress of the fingers is not so well marked as in yellow fever; there is a tendency to hemorrhage; the gums bleed, but I have never observed a profuse hemorrhage.

DIFFERENTIAL DIAGNOSIS.

"What affection is this which attacks with such violence the creole element of our population, even in those places where yellow fever prevails endemically, a disease, which at times it precedes. at others accompanies; and, again, appears to arise independantly, as in those years in which it has been a most important cause of death without any relative increase in the yellow fever mortality of our Island?

"O. St. Vel, in the 1868 edition of his work on tropical diseases, regards it as a perni ious fever, and in pp. 83, 84 and 85 cites two observations exactly comparable to our own in their violence and malignancy; both patients dying without appreciating any benefits from anteperiodic medication (quinia etc).

It is difficult for us to understand this fever to be a pernicious fever, such as those described by Colin, Bacelli, Bastainelli and others, notwithstanding the slight differences which separate them. Colin, in his well-known work on malarial fevers, adopting Torti's classification, as that which has, so far, stood the test of all the observations taken in the malarial regions of the globe, devides these pernicious fevers into two different classes: 1st. "The comitantes," characterized by a single grave symptom (our algid, comatose, choleraic, sweating, etc); 2d, "The solitariæ," in which the malignancy of the disease depends upon the tendency to hyperpyretic paroxysms or prolonged spells of the fever, (our psuedo-continued and ordinary pernicious fevers). We cannot place our observations in the first category, because in these, not a single peculiarly extraordinary symptom was observed; the gravity of the condition was dependant upon the general state, and not upon any special symptom. Neither can we enter our cases as instances of the second division of Torti's classification, because there is no pernicious malarial paroxysm that lasts (without remission) five or eight days, as did occur in the case of the little girl M. B.; if we were to believe in such continued unremitting paroxysms, then yellow fever would also be a pernicious (malarial) fever.

Could we even suppose this to be a hepatitis? Could the augmented volmue of the liver, its sensibility to pressure, and the peculiar softness of its feel, which we have constantly observed in our cases, could they be ascribed to a hepatic inflammation? Such a supposition should not detain us for one instant; the rapid course of the disease is too strongly contradictory to what we know of hepatitis, besides all the symptoms pertain too much to a general infective disease, involving the whole organism, than to any disorder of local origin.

Many, or rather the majority of writers, place the disease we have observed among the bilious fevers and include it in this group because its differential elements have been wanting; these authors, in doing so, however, have fallen into error, and have incurred the reproach cast by Feraud, in speaking of the bilious inflammatory fever of the Antilles; according to this eminent author, the designation "bilious fever," is nothing more than the "caput mortuum" of the pyretology of warm climates; under this common title all that which is incomprehensible, doubtful or unknown is flung together into one heterogenous heap and styled bilious fever.

M. Feraud, in attempting to clear the ground, if I am permitted to use such an expression, has made an effort to classify and distinguish each one of the morbid conditions which could possibly be included under the designation of bilious remittent fever, and has divided these affections as follows:

A.—"Embarras gastrique febrile" of warm malarial climates, which is nothing more, properly speaking, than the first result of malarial intoxication in these countries.

B.—Slight bilious phenomena, complicated with ordinary paludal fever in warm regions.

C.—Grave bilious phenomena, which complicate seriously malarial attacks, and may give rise, at times, to

D.—Melanuric bilious fever;

E.—Hæmaturic bilious fever;

F.—Relapsing fever (?);

G.—Bilious typhoid fever (so-called);

H.—Febrile hepatitis of warm climates.

I.—The fever more especially known as bilious remittent, in its different light or grave aspects, such as intermittent, remittent, continued, etc., etc.

J.—The fever known as the bilious inflammatory fever of the Antilles (Feraud's lighter form of yellow fever).

I have transcribed the entire classification so that, by exposing the actual state of the same, you may not be surprised at my omitting all the morbid species above mentioned, in order that I may better dwell upon that particular morbid state which more especially interests our differential diagnosis; the conditions mentioned are all sufficiently qualified by their specific characters and necessitate no further mention.

Now, as the majority of writers who have described the hæmatemesic fever of Creoles, (Fiebre de borras) have included it in the class of bilious remittent fevers, as we observe has been done by our confrere, Dr. Bonet, in the first two cases herein narrated, we will briefly summarize the chief characters of this pyrexia, such as have been described by Feraud, as the most competent of the recent investigators who have studied this morbid entity. Bilious remittent fever, according to Feraud, does not generally attack others than those who have resided for some time in the colonies (alluding to Martinique, etc.,) and who have been more or less frequently afflicted with attacks of malarial fever of variable intensity.

The attacks are usually rebellious, though they always respond favorably to the influence of quinine. If we carefully question a patient with bilious remittent fever, we will always elicit evidence in favor of malarial intoxication. As a general rule, we find the attack has been preceded by open paroxysms of intermittent fever, in which the three stages of chill, fever and sweat, and the periodicity of the attacks have been marked with great regularity. From the beginning the urine presents a purely febrile appearance, or it contains bile; it has no albumen, unless there is a tendency to melanuria. Remittent fever has a clinical career of easy recognition on account of its exacerbations and remissions in temperature which follow upon each other in quick, but appreciable succession. These paroxysms last frequently for 6, 8, 10 or 12 days; they disappear to

reappear, frequently, soon after, to persist for some further length of time. Only in those cases where an intermittent malarial attack takes place during an epidemic of inflammatory fever, no sordic accumulations are observed upon the gums. Neither do we ever observe scrotal erythema.

When jaundice makes its appearance, the liver is most frequently found in a hyperæmic condition, enlarged and tender to pressure. Quinine is a sovereign remedy in the immense majority of cases of this disease. It can be absorbed, in some instances, in very heavy doses without producing the phenomena of saturation. It prevents the recurrence of paroxysms and produces a general improvement of a favorable character.

Such are, gentlemen, the principal characters of bilious remittent fever. The hæmatemesic fever of creoles, ("fiebre de borras"), does not resemble this malady, neither through its antecedents, its course, its characteristic vomit, or in its duration; and, moreover, observations have plainly demonstrated, to us, that its career is not in the least modified by quinine, and that the administration of this agent, at other times so potent, is, at least, useless, when it is not positively harmful.

That this hæmatemesic fever is very closely related, if not completely identical, to the bilious inflammatory fever described by Feraud, is clearly demonstrated by the history of the little boy Guillermo C., whose case, if not so serious as that of the other patients, presents the same symptoms; this observation indicates that the affection presents lighter and graver forms without on that account losing its identity. How are the three morbid entities, black vomit, this hæmatemesic fever of creoles (fiebre de borras), and the bilious inflammatory fever of the Antilles, are they three separate and distinct disorders, or are they one single disease, the characters of which are somewhat variable according to etiological, topographical conditions, etc.? It is difficult, if not impossible, for us, to give today a conclusive answer to this question: nothing bears a closer resemblance to yellow fever than bilious inflammatory fever, and there is nothing which bears so great a similitude to both these pathological states than this hæmatemesic fever of creole children. The general ensemble of the symptoms presents a similarity of surprising nearness; the differences, in turn, when they exist, are not so great or constant that they preclude the belief that the three conditions may be but modifications of a single, common, morbid entity. Thus, in the symptymatology of the hæmatemesic fever (fiebre de borras), we dwell upon the elavation of the temperature and pulse; upon the scarcity or want of albumen in the urine, the absence of suppression of the renal functions (anuria), at least, in an appreciable manner, the difficulty with which the "meningitic spot" makes its appearance; the absence of restlessness, notwithstanding the contusive pains in the extremeties, all this, in fine, does not constitute an absolute differential character.—

For, although it is true, there is no remission, as in the second stage of yellow fever; the remission, in the latter disease, may be wanting, and is not absolutely essential to the clinical history of this disease, as we are told by Jaccoud, (Appendix, p. 197) in speaking of the second stage of yellow fever: "It is important that we should add," says the eminent professor, "that the remission on the third or fourth day, though frequent, may be wanting, so that a general aleviation in the patients' condition may be regarded as the most constant and positive criterion in the beginning of the second period of the attack." The scarcity or want of albumen in the urine is worthier of our attention; but, even as to the diagnostic value of this sign, there are some doubts, for if we appeal to Lotta's observations, as quoted by Ferand, we will find that albumen in the urine is not a very rare event, even in cases of medium intensity; it appears to us, however, that Lotta has found too much albumen, for we are already acquainted with the opinion of Ballot, an eminent observer, upon whom Ferand places great reliance, and who roundly denies the existence of any albumen of patients afflicted with this disease. It is a fact worthy of attention that, in cases so rapidly fatal as those which came under our observation, albumen was not found in greater abundance. These cases may all be recorded as instances of the fulminating form of yellow fever described by Jaccoud. It is to be regretted that Jaccoud omitted to point out the relation which exists between the gravity of these cases and the presence of albumen in the urine; if we recall the case of the little girl, M. B., who died in the beginning of the 9th day of her illness, we will find that her urine contained some albumen. In commenting upon this particular feature, we will also point to the fact that most all our patients died on the 4th or 5th day of the disease in a manner strikingly similar to the fulminating form of yellow fever just mentioned. In black vomit, according to Jaccoud, the liver is as a rule enlarged. In regard to the vomited matters, we will state that their aspect does not at all differ from the same ejecta of yellow fever patients, as analyzed by M. Porte, (quoted in extenso by Ferand) —they are constituted like the vomit and diarrhœas of yellow fever, of blood, bile, and products of the digestive tract.

But, no matter how small these differences may be, or how much the imagination may attenuate them, will they cease to exist? Evidently, no. The question at issue is whether these differences are so characteristic that they will oblige us to accept the existence of another morbid entity entirely distinct from yellow fever? If the bilious inflammatory fever, so closely studied by Feraud, is confounded with yellow fever to such a degree that we are forced to accept the identity of both morbid states, if we are obliged to believe with, at least equal, if not greater, motive, that this gastrorrhagic fever of creoles (fiebre de borras) and yellow fever are identical states, because

the characteristic vomiting, rare and scanty in inflammatory bilious fever, constitutes a primordial character of the hæmatamesic fever, so much so, that we have permitted ourselves to give it, provisionally, a name indicative of this great feature.

In almost all our patients we have observed that the icterus began more or less early, and with greater or less intensity, and that in every instance it has undergone a pronounced post-mortem augmentation. Males have been more frequently attacked than females; in all cases the children were robust, healthy and of very good constitution; among the deceased one male infant 8 months old was recorded.

In Isabela, a port pertaining to the Sagua Jurisdiction, about 3 miles distant from this city by rail, two fatal cases of this disease were observed during the epidemic; I have not busied myself with them becausee I did not see them. The insalubrity of Isabela is equal to, if not greater than, that of Sagua. All these facts concur perfectly with what we know of yellow fever. So that, although in the beginning of our professional career we believed, and even made public our belief, in accordance with the data then in our possession, i. e., that both affections were distinct and separate, to-day we are obliged to retract our former opinion, to acknowledge the unity of the two conditions, and to recognize them merely as modifications or forms of one single morbid entity—yellow fever.

THE CASE OF GUITEAU, ASSASSIN OF THE PRESIDENT OF THE UNITED STATES.

By Charles F. Folsom, M. D.

Charles Julius Guiteau was born September 8, 1841. His paternal grandfather was a physician highly respected and of intense religious feeling. His father, a man of character and intellect, of uncommon business capacity, was a religious fanatic devoted to free-love socialistic teaching during the last thirty years of his life; he died at the age of seventy of some disease of several months' duration and attended with emaciation and delirium. By some of his family, and some of those who saw him in his relations to his delusions, this father was considered at least partially insane, but the more general opinion apparently was that he was only eccentric. Eighteen years ago he visited the Central Hospital of the insane at Jacksonville, Illinois, to take a patient there, and he remained several days. His delusions in regard to his own intimate relations with the Diety, his attempts to cure the insane by the laying on of hands, supposing himself to be divinely commissioned to effect cures in that way, and his general demeanor, led Dr. McFarland, the medical superintendent of the asylum,

to at that time consider him insane. One paternal uncle of the assassin died insane in an asylum, a second was a drunkard and finally imbecile; of one paternal aunt, who died of "consumption," and who had an insane daughter, her husband having also been insane, it was testified and denied that she was morbidly in dread of her family's going to the poorhouse; another paternal aunt, with regard to whose mental condition the testimony was contradictory, but of whom there was some evidence of insanity, had an insane son, committed to an insane asylum. Guiteau's paternal grandmother died of consumption. His mother, at the time of his birth, had been confined to her bed for some time with a disease attended with marked cerebral symptoms, for which her head had been shaved, and her two children born in later life died at the ages respectively of two years and twenty months. His only sister, after her evidence in court, had an attack of *petit mal*, to which her physician said she was subject; and he also said that she had earlier in life puerperal mania. Guiteau's only brother testified—

"My religious theory is that there are two forces in the universe—one under Satan or the devil, and one under God or Jesus Christ; my father held to the view that there were living in the world those who were seized of the devil or Satan, and of Christ or God; he believed that these two forces were at war, one with the other, and that at present and since the fall of man Satan had, to a very great extent, dominion on the earth to possess himself of all those who were not absolute believers in the Lord Jesus Christ as Savior, and who had not been saved from the power of sin by a complete union with the Lord and Savior Jesus Carist; that all evil, all disease, all deformity, all infirmity was the result of sin or the admission of those who had a free will that they were under the dominion of Satan or the evil spirit, or of evil nature. That was my father's theological view, it was my brother's, it is mine."

Guiteau's only half-sister, aged about twenty-six, has exophthalmic goitre, and of his only half-brother, about twenty-three years old, no testimony is given.

Guiteau was a willful and bright child, unable for a long time to pronounce certain words ("quail" he called "pail," and "come," "ped"), and, after the death of his mother when he was seven years old, he was left without parental care, his father having been absorbed in his business as cashier of a bank, and in the religious vagaries of the Oneida Community, a society based upon the absence of the marriage tie, upon communism in ownership of property, and a certain fanatical belief in inspiration from God as the basis of their methods of living—perhaps rather as a cover for their impure relations of the sexes. His father treated him with harshness and with neglect.

Guiteau had no serious injury or accident other than a severe blow over the upper and posterior portion of the left side of the frontal bone, corresponding to which there remains a scar. Guiteau was indisposed to manual labor, but fond of books, and especially of reading the New York *Tribune*, from which he gained a great admiration of self-made men, whose successful lives he meant to imitate. The evidence is too meagre to show whether or not, up to the a ge of eighteen, he differed materially in intellect from other ambitious boys. He once struck his father in anger. Soon after that time, however, he gave up his studies and plans of a liberal education, and became so absorbed in religious fanaticism as to neglect his work, and to attract the attention of his friends, who began to have fears for his sanity. His letters then changed from being simple and natural to the religious and exhorting style. It is stated that he became addicted to evil practices too common among boys, and that from other bad habits he contracted the mild form of venereal disease, so that when he gave up his collegiate studies at the age of nineteen to enter the free-love community at Oneida, it was maintained that he did so not entirely from religious motives, or in respect to his father's oft-repeated wish that he should do so, but partly at least from the licentiousness or the inordinate force of the sexual function so common in the congenital form of mental degeneration. While with the community he was a nervous, quick-tempered man; if anything was said to disturb him, he would get angry and would gesticulate wildly and talk in a mysterious manner; he would sit for hours in a corner saying nothing to anybody; at other times he would be cheerful. He availed himself of the opportunity to study in the library, but showed an extraordinary self-will, vanity, restlessness of restraint, indisposition to industrial habits, and finally such boundless personal aspiration that he left Oneida. He was disgusted with his low position and menial employment, and with the coldness of the women of the community towards him. He had been there five years, during which time he had given up regular study and imbibed communistic ideas. He even claimed inspiration (as he now claims to have had when he joined the society) when, a few weeks after, he attempted, in a farcical imitation of a distinghished journalist, to establish a great daily paper called the *Theocratic Press*, which was to take the place of all the churches and provide to the whole United States religious instruction daily. At that time he was living in an attic on crackers and lemonade, without knowledge of the world, friends or capacity, and with only nine hundred dollars in money. In a letter to his father, dated April 10, 1865, he spoke of this project as follows:

"I came to New York in obedience to what I believed to be the call of God. With the Bible for my text book and the

Holy Gost for my schoolmaster, I can pursue my studies without interference from human dictation.

"And here it is proper to state that the Energies of my life are now, and have been for months, *pledged to God*, to do all that lies within me to extend the Sovereignty of Jesus Christ by placing at his disposal a powerful daily paper. I am persuaded that Theocratic presses are destined, in due time to to supersede to a great extent pulpit oratory. There are hundreds of Thousands of ministers in the world, but not a single daily Theocratic Press. It appears that there is a splendid chance for some one to do a big thing for *God*, for humanity and for himself. At no time since the creation of the world have mankind been prepared for such an innovation. Instead of spending an hour or two (as they now do) *once* in 7 days in *religious thought*, we should present them a Theocratic daily each morning at their breakfast table, and thus introducing *God into the practical affairs of life.* The grand object of the paper would be to infuse into the public mind *true* ideas of God, of Christ and of the Spiritual World, and to establish a *true* Standard of righteousness by inculcating the doctrine that the fear of the Lord is the beginning of wisdom.

"Do you say that the Establishment of a great daily paper is a stupendous work and only to be accomplished by extraordinary talents and Energy. Of course it is, and when I consider the vast amount of work to be pone and my own insignificant attainments, my hearts sinks within me; 'but *when* I am *weak*,' says Paul; '*then* I am *strong*;' I say boldly that I claim *inspiration.*"

"I claim that I am in the employ of *Jesus Christ & Co.*, the very ablest and strongest firm in the Universe, and that what I can do is only limited by their power and purpose. I have very little confidence in the flesh; but a vast deal in the power and purpose of *God*; and I know that he will give me the requisite energy and ability to do my work *well.* The favor of God is vastly more important (in my view), in the pursuit of an object than anything else.

"Whoever Edits such a paper as I intend to establish will doubtless occupy the position of Target General to the Press, Pulpit, & Bench of the civilized world; and if God intends *me* for that place I *fear not;* for I know that He will be 'a wall of fire round about me;' and keep me from all harm.

"To compete with the Devil you must use the *Same* agencies in propagating *truth* that he does in propagating *error*, and thereby supplant *evil* by *good.* I am therefore bold enough to confess that I should support the paper as other dailies are; i. e, by subscription, advertisements & the free contribution of the friends of the cause.

"Perhaps the same munificence that has sustained the American Bible Society, erected magnificent Churches and

kept tens of thousands of ministers in luxury, would if it could be *controlled* sustain a national chain of Daily Theoretic Presses."

His failure was a matter of course—indeed, his attempt hardly even assumed the form of definite work, and about six months after he left the community he was eager to return, full of promises of a life of obedience to the leader, and disappointed with his utter inability to earn a livelihood by his own efforts. He had become convinced that the communists' idea of life was the correct one, that it was destined to supplant all religions, and that he was to be at the head of it. After another year there he left again, clandestinely. His threat to sue the Community for fifteen hundred dollars a year for his services while with them was followed by strong denunciatory language of their free-love life, but the suit was abandoned from want of success, fear of the result of his attack, or diversion of attention to something else. It is stated upon good authority, but not in evidence, that the intention was to claim insanity from masturbation in Guiteau if the suit was pressed.

From 1866 to 1871 Guiteau's life was rather an unsettled one. After a brief stay and second failure in New York, he spent most of his time in Chicago studying law and trying to practice, attending religious meetings assiduously. He never had more than a small knowledge of the law, and his business consisting chiefly in collecting bad bills, which he often neglected to pay to the owners. He married an estimable lady, whom he met at the Christian Association in 1869, lived with her four years, committed adultery with a prostitute, and appeared as his own witness to secure a divorce in 1874. Inasmuch as he acknowledges having had both syphillis and gonorrhœa, it is inferred that his life was more licentious than he admits.

After an unsuccessful trip to San Francisco, Guiteau appeared again in New York, where he failed as signally in practicing law as in Chicago. He hung about some of the offices during the political campaign of 1872, and although he had no capacity even for work of a low order, and actually did nothing of use, he expected a foreign mission in case Mr. Greeley should be elected. This idea he at once abandoned upon learning the result of the election. In 1874 one of his irregular practices was commented upon sarcastically in the *New York Herald*, as a result of which he sued that paper for one hundred thousand dollars. He soon abandoned the suit, but has at least appeared to think, up to the present time, that he might secure a compromise to bring him in ten thousand dollars. In the same year he was thrown into jail for habitually defrauding people of their dues. After his release he showed himself sharp, persistent and shrewd, as well as unscrupulous, in doing for a while rather a disreputable busi-

ness in securing release of prisoners from jail through technicalities and errors in committal. That resource soon failed him. He was also once sent to jail in Chicago for retaining money not belonging to him.

In 1875 he conceived the idea of reviving a bankrupt Chicago paper, *The Interocean* (an attempt which, later, in sensible form, proved successful), and of becoming a great editor, having previously tried to thrust his worthless services upon the editors of two leading New York papers to get experience. He tried to hire a large building for the purpose, selected an engine and two large presses, and attempted to arrange with a telegraph company in such a way as to reproduce the *New York Herald* word for word in Chicago every morning. Without experience, knowledge, money, or capacity, he offered one stranger to make him president of the United States if he would contribute two hundred thousand dollars to the project, and another to secure for him the governorship of Illinois if he would give fifty thousand dollars—all this in apparent earnest. The project was dropped in a few weeks.

After failure in that direction he drifted around to the house of his sister, in July, 1875. Soon after arriving there he went to work in the hayfield with her sons. The weather being very hot he returned to the house after a short time complaining of the heat, seeming much exhausted, and lay down on a sofa. After he had rested awhile his sister asked him to cut some wood, and he went out for that purpose. In a few minutes she had occasion to pass where he was at work, and without provocation he raised the axe to strike her. She avoided him and ran into the house. She then set the hired man to watch him, with strict orders to keep near enough to prevent him from doing injury to any one until her husband's return from Chicago. In the meantime the family physician was consulted and examined Guiteau. The physician reported to his sister that he was undoubtedly insane, and his father had already pronounced him so. He then suddenly disappeared, taking with him his Bible, which he constantly read.

In 1876 Guiteau was again vainly trying to do some law work in an office in Chicago, where the Moody and Sankey meetings were held, and he was a constant attendant. He was appointed one of the ushers. He became filled with zeal and soon began to look forward to doing the work of a great evangelist. He gave his entire time to religious study and devotions. In the following January he commenced his career as a lecturer.

He had written some very weak and trashy lectures about the Apostle Paul and the second coming of Christ, largely plagiarized from a book by the leader of the Oneida Community. He maintained that he was a great evangelist and went about from town to town, without money to pay his railroad fares or board bills, exhorting people to come to Christ and

adopt his views of the Second Advent, now selling tracts, now preaching to empty houses, ridiculed, despised, turned out of hotels, driven off from trains, hardly knowing one day what he was to eat or where he should sleep the next, never seeking the haunts of criminals, always assuming great piety and seeming to fancy that in his wanderings he was really like Christ and the Apostle Paul, but yet without real moral principle.

He avoided the theatre, card playing, tobacco, and alchohol in all forms, seeming to genuinely despise all such habits, and to consider them wicked. He was low, mean, ill-tempered when aroused, but often mild in his demeanor, ready to borrow money, never intending to pay, and thoroughly unscrupulous about giving other people their dues or even their own money if he happened to have it. It was in evidence that he burnished up a sham-gold watch and tried to sell it as gold. He did not steal, and his life does not suggest the real criminal so much as the nuisance or fraud.

In 1879 he published in Boston, where he then was, a book of his lectures called Truth, A Companion to the Bible, "That many souls may find the Savior." For this he never paid, and he failed to sell the few copies which he managed to get into his possession. There is very little in it to strike one's attention. It might, or it might not, have been the work of an insane man, certainly not that of a wholly sound mind. He speaks constantly of Christ as "that wonderful creature," says that "Heaven is a thousand times better than this sin-cursed earth." A specimen of his argument is as follows: "The theatres are sending many to hell. Do you think it harmful to go to the theatre?" "Yes, decidedly. What would you think of the dear Savior, elbowing his way into a theatre to see a woman's leg? The drama tends down, not up. Many a man has been ruined by frequenting theatres. If I had my way, I would close every theatre in the land." "I do not like to say anything against the pulpit, as it represents many pious and able men; but I must speak the truth without fear or favor." . . . "Man is a moral agent. He can go to the right or left. He can choose good or evil. He can go to church or to a saloon, and end in heaven or hell."

While in Boston he kept attending religious meetings, frequented the rooms of the Young Men's Christian Union and made a few ridiculous failures in trying to lecture, announcing himself with the title of honorable, lawyer, and theologian, in one case putting himself in the handbills as the Little Giant from the West. He once said that he had challenged Colonel Ingersoll to debate but did not think that Ingersoll had courage enough to meet him. There were about fifty persons present at the lecture; the lecturer brought in a manuscript; he commenced by reading some half dozen lines and then skipping some half dozed pages he went on without any

connection whatever; at the end of half an hour he evidently became disgusted and left the platform in a great hurry, as if angered at something. He then gave up theology because "it did not pay," as he said in a letter, written two weeks before the murder, and took up politics.

During the early summer of 1880 Guiteau spent a number of weeks in the library of the State House in Boston. He was quiet and orderly, studying law and the statutes of the several States. He had several untidy habits and was finally informed that the room was not a loafing place, when he ceased coming to it. In September of the same year he acted as solicitor to one of the insurance companies in New York and brought in six applications, living most of the time, as before, by not paying his bills. With regard to that point, it appeared that he paid when he had the means of so doing, but seemed entirely oblivious of his duty to earn money. He sometimes said that he was a servant of the Lord and like Christ he paid no bills. When he tried to borrow money he did so in a way to show that, so far at least, he had the methods of a very shrewd rogue.

He wrote a sharp and very weak, but not otherwise noticeable, speech of no merit at all, in favor of General Grant as President, which he changed under the title of "Garfield *vs.* Hancock" after the nomination of Mr. Garfield, to whose election he appeared to really think that he had largely contributed, although he had done nothing but hang about the political headquarters and occasionally get a word from some prominent man. His speech he began to deliver only once to a small audience, but did not finish it, and yet after the election he wrote Mr. Garfield, to whom he was of course unknown, that

"We have cleaned them out just as I expected. Thank God! Very Respectfully, CHARLES GUITEAU.

He early hoped to receive an important appointment, and November 11, 1880, wrote to the Secretary of State as follows:—

HON. WILLIAM M. EVARTS:—

DEAR SIR,—I wish to ask you a question. If President Garfield appoints Mr. A to a foreign mission does that supersede President Hayes' commission for the same appointment? Do not all foreign Ministers appointed by President Hayes retire on March 4th next? Please answer me at Fifth Avenue Hotel at your earliest convenience. I am solid for General Garfield, and may get an important appointment from him next spring. Yours very truly,

CHARLES GUITEAU.

During October and January he had written to President Garfield, calling attention to his services in the campaign, and

soliciting an appointment on the ground that he and a wealthy lady, whom he said he meant to marry, would well represent the United States. On the 8th of March he addressed a letter to the President, calling attention to his desire to be appointed to the Paris Consulate. On the 11th of March he wrote Mr. Blaine the following letter:—

March 11, 1881.

"SENATOR BLAINE:—

"In October and January last I wrote General Garfield touching the Austrian Mission, and I think he has filed my application and is favorably inclined. Since then I have concluded to apply for the Consul General at Paris instead of the Austrian Mission, as I prefer Paris to Vienna. I spoke to the General about it and he said your indorsement would help it, as it was in your department. I think I have a just claim to your help on the strenth of this speech (his speech was inclosed), which was sent to our leading editors and orators in August. It was about the first shot on the rebel war claim idea, and it was the idea that elected General Garfield.

Mr. Walker, the present Consul at Paris was appointed through Mr. Evarts, and I presume he has no expectation of being retained. I will talk with you about this as soon as I can get a chance. There is nothing against me. I claim to be a gentleman and a Christian. Yours, very respectfully,

CHARLES GUITEAU."

He followed up this communication by persistent personal appeals, and by writing notes and letters, urging in various ways his claims for the position. Wearied of his importunity the Secretary of State on Saturday, the 14th of May, according to the prisoner's statement in writing, said to him, "Never speak to me again on the Paris Consulship as long as you live." On the following morning he wrote to the President, informing him of Mr. Blaine's statement and saying he was satisfied that Mr. Blaine was endeavoring to run the State Department in the interests of his own candidacy for the Presidency in 1884, and appealing to the President direct for an immediate order for his appointment. During this time he continued to visit the Executive Mansion, and urged and insisted on an opportunity to see the President. Finally, it became necessary, in order to avoid his presumptuous intrusion, to prohibit his entrance into the White House. On the 23d of May he wrote President Garfield a letter as follows:—

(Private.)

"GENERAL GARFIELD:—I have been trying to be your friend. I do not know whether you appreciate it or not, but I am moved to call your attention to the remarkable letter from Mr. Blaine, which I have just noticed. According to Mr. Farwell, of Chicago, Blaine is a vindictive politician and an evil genius, and you will have no peace till you get rid of him.

This letter shows that Mr. Blaine is a wicked man, and you ought to demand his immediate resignation; otherwise you and the Republican party will come to grief. I will see you in the morning if I can, and talk with you.

Very respectfully,

May 23. CHARLES GUITEAU."

And yet on the 21st of March he wrote to Secretary Blaine—

"I am very glad personally that the President selected you for his Premier. . . . You are the man above all others for the place."

There was a period during this time when there existed dissensions in the party in power, and there were frequemt utterances of bitterness by partisans on both sides.

Without money or friends or influence of any kind, not paying his board bills, a man of utterly no consequence (and never treated as if he were), a wanderer, without a home, penniless, a man who had never really succeeded in anything in his life or gained the lasting respect of anybody, convinced that society was rotten and unjust, he wrote letter after letter to the White House, without being at all discouraged that no attention was paid to them. Indeed, he became a perfect nuisance in his persistent hanging about the State department, and yet he wrote to the President familiar letters of advice, to which, of course, no attention was paid. A few of them are quoted:—

(Private.) March 8, 1881.

GENERAL GARFIELD,—I called to see you this A. M., but you were engaged. In October and January last I sent you a note from New York touching the Austrian Mission. Mr. Kasson, of Iowa, I understand, wishes to remain at Vienna till fall. He is a good fellow, I should not wish to disturd him in any event. What do you think of me for Consul General for Paris? I think I prefer Paris to Vienna, and, if agreeable to you, should be satisfied with the Consulship at Paris. The inclosed speech was sent to our leading orators and editors in August. Soon thereafter they opened on the Rebel war claim idea, and it was this idea that resulted in your election.

Mr. Walker, of New York, the present Consul at Paris, was appointed through Mr Evarts, and I presume he has no expectation of being retained. Senators Blaine, Logan and Conkling are friendly to me, and I presume my appointment will be promptly confirmed. There is nothing against me. I claim to be a gentleman and a Christian. C. G."

(Private.)

"GENERAL GARFIELD,—I understand from Colonel Hooker, of the National Committee, that I am to have a consulship. I

hope it is the consulship at Paris, as that is the only one I care to take, now that Mr. Phelps has the Austrian mission. I think I have a right to press my claim for the consulship at Paris. I think General Logan and Secretary Blaine are favorable to this, and I wish you would send in my name for the consulship at Paris. Mr. Walker, the present consul, I do not think has any claim on you for the office, as the men that did the business last fall are the ones to be remembered. Senator Logan has my papers, and he said he would see you about this. Very respectfully,

March 26. CHARLES GUITEAU."

(Private.)

"GENERAL GARFIELD,—From your looks yesterday I judge you did not quite understand what I meant by saying 'I have not called for two or three weeks.' I intended to express my sympathy for you on account of the pressure that has been on you since you came into office. I think Mr. Blaine intends giving me the Paris consulship, with your and General Logan's approbation, and I am waiting for the break in the Senate. I have practiced law in New York and Chicago, and presume I am well qualified for it. I have been here since March 5, and expect to remain some little time, or until I get my commission. Very respectruly,

April 5. CHAS. GUITEAU."

(Private.)

"GENERAL GARFIELD,—I wish to say this about Mr. Robertson's nomination. Would it not be well to withdraw it on the ground that Mr. Conkling has worked himself to a white heat of opposition? It might be done quietly and gracefully, on the ground that since the nomination many merchants and others in New York had petitioned for the retention of General Merritt. It strikes me that it would be true policy to do this, as Mr. Conkling is so determined to defeat Mr. Robertson, and the chances are he may do it. It is doing great harm all around. I am very sorry you have got Conkling down on you. Had it not been for General Grant and Senator Conkling we should have lost New York. The loss of New York would have elected Hancock. Mr. Conkling feels you ought to have consulted him about the appointments in his own State, and that is the reason he is so set against Mr. Robertson; and many people think he is right. It seems to me that the only way to get out of this difficulty is to withdraw Mr. Robertson, on the ground that since his nomination the leading merchants have expressed themselves as well satisfied with General Merritt, who certainly is not a "Conkling man." I am on friendly terms with Senator Conkling and the rest of our Senators, but I write this on my own account and in the spirit of a peacemaker.

I have taken the liberty of making this suggestion to Mr. Blaine, and wish you and he would give it due attention.

Very respectfully,

April 29. CHAS. GUITEAU."

(Private.)

"GENERAL GARFIELD,—I am sorry you and Senator Conkling are apart, but I stand by you on the ground that his friends Morton, James, Pearson and the rest of them have been well provided for, and Mr. Conkling ought to have been satisfied. Very respectfully,

May 7. CHAS. GUITEAU."

(Private.)

"TO GENERAL GARFIELD,—I have got a new idea about '84. If you work your position for all its worth you will be nominated and elected in '84. Your opponents will probably be General Grant and Mr. Blaine. General Grant will never be so strong again as he was just after his trip around the world. Too many people are dead set against a third term and I don't think he can be nominated much less elected again. Two national conventions have slaughtered Mr. Blaine on account of his railroad record and connections.

The Republican party are afraid to run him. This leaves the way open for you. Run the Presidency on your own account. Strike out right and left. The American people like pluck, and in '84 we will put you in again. C. G.

WHITE HOUSE, May 10.

P. S.—I will see you about the Paris Consulship to-morrow, unless you happen to send in my name to-day.

(Private.)

"GENERAL GARFIELD,—Until Saturday I supposed Mr. Blaine was my friend in the matter of the Paris Consulship, but from his tone Saturday I judge he is trying to run the State Department in the interest of the Blaine element in '84. You are under small obligations to Mr. Blaine. He almost defeated your election by the loss of Maine. Had it not been for Hancock's blunder on the tariff, and the decided efforts of the stalwarts, you certainly would have been defeated after the loss of Maine. You recalled Mr. Noyes for Mr. Morton, and I wish you would recall Mr. Walker for me. I am in with Mr. Morton and General Arthur and I will get them to go on my bond. General Logan and Senator Harrison and the rest of my friends will see that it is promptly confirmed. 'Never speak to me again,' said Mr. Blaine, Saturday, 'on the Paris consulship as long as you live.' Heretofore he has been my friend, but now his eye is on a 'Blaine man' for the position that will help him in '84. Two national conventions have slaughtered Mr. Blaine, and he ought to see that there is no chance for him in '84. I want to get in my work for you in '84.

I am sorry Mrs. Garfield is sick, and hope she will recover soon. CHAS. GUITEAU.

May 16.

(Private.)

"GENERAL GARFIELD.—I hope Mrs. Garfield is better. Monday I sent you a note about the Paris Consulship; Tuesday one about '84. The idea about '84 flashed through me like an inspiration, and I believe it will come true. Your nomination was a providence, and your election a still greater providence. Had Hancock kept his mouth shut on the tariff he would have been elected probably, notwithstanding Grant and Conkling and the treachery of Kelly. Business men were afraid to trust a man in the White House who did not know "A" about the tarift, and this killed Hancock. You are fairly elected, and now make the best of it. With two terms in the White House and a trip around the globe you can go into history by the side of General Grant. May I tell Mr. Blaine to prepare the order for my appointment to the Paris consulship, vice George Walker, recalled. C. G.

WHITE HOUSE, May 13, 1881.

From the time of his arrival in Washington and until he had lost the expectation of favors to be received, and made up his mind to kill the President—a period of nearly three months—he was an earnest, so-called, Garfield man. He announced to the President his devotion and fealty to him. He desired constantly to impress upon the President that he was for him as against every one else. May 7th he had announced to the President that in the contest going on he stood by him.

Six weeks before the murder Guiteau conceived the "idea of removing the President." It flashed across his mind one night when he was lying weary on his bed. He says that the idea was revolting to him, and that he struggled and prayed to get rid of it, or to be assured whether it was a suggestion from the devil or an inspiration from the Deity. In the meanwhile he wrote the letter of May 23d, just quoted. He maintained that on the first of June he learned that he was acting under "Divine pressure" or "inspiration," words that he had previously used in regard to other and ordinary acts of life.

On the eighth day of June he borrowed from an acquaintance fifteen dollars, representing that he was out of money and desired the amount to pay his board bill. After procuring this loan he at once visited a store for the purpose of purchasing a weapon. He asked for a weapon of the largest calibre—one that would do the most effective work—and was shown and purchased a weapon carrying a bullet of the largest size. He carried it twenty-four days, and often dogged the footsteps of the President. On the morning of the 18th of June he ascertained from publications in the newspapers that the President would go to Long Branch, and he determined to kill him at

the depot. He went there fully prepared for that purpose and was deterred from its accomplishment. Returning to his room he wrote :

WASHINGTON, Saturday Evening, June 18, 1881.

I intended to remove the President this morning at the depot as he took the cars for Long Branch, but Mrs. Garfield looked so thin and clung so tenderly to the President's arm that my heart failed me to part them, and I decided to take him alone. It will be no worse for Mrs. Garfield to part with her husband this way than by a natural death. He is liable to go at any time, any way. C. G.

He had attended the President's church, standing in the aisle for the last half hour of the service to see the position of the President's seat, and then viewed it from the outside to learn how he could shoot him from a window behind his back. He lurked in an alley, watched in the park, and sought opportunities for the murder nearly three weeks, several times giving up his intention of shooting Mr. Garfield for reasons apparently of mere practicability. I doubt whether a murder has ever been committed more deliberately and with more careful preparation for every possible event, a statement which may also be made of a recent murder of an attendant in a Massachusetts asylum by an insane patient who has thus far escaped detection.

Early on the morning of July 2d last he made preparations for the murder. Breakfasting (for which he did not pay) at the Riggs House (a first-class hotel) he took the weapon that he had previously obtained, and going to the foot of Seventeenth street, away from residences and beyond observation, he planted a stick in the soft mud on the river bank where the tide had gone out and deliberately practiced his aim and tested his weapon. He intended that there should be no failure in the accomplishment of the crime for which he had been preparing. Returning he took with him a small bundle of papers and went to the Baltimore and Potomac railroad depot at half-past eight o'clock A. M., an hour before the arrival of the President. After reaching the depot he went to the news-stand and left certain papers, with a letter addressed to Byron Andrews, a correspondent of the Chicago *Inter-ocean*, and a package addressed to Mr. Preston, of the *New York Herald*, and then went into the closet, carefully examined his weapon, placed it in his pocket, returned and went outside to the pavement, had his boots blacked, and then, to avoid the vengeance of the community, which he feared, engaged a carriage to take him two miles to the Congressional Cemetery, close to the jail, which he had previously examined and in which he hoped to be protected. Standing back of Mr. Garfield, he fired two shots at him with entire steadiness of aim. He then turned to leave the railway station, walking calmly to the street door.

Upon being seized, after the noise of the reports, he made some not very violent remonstrance and then said he wished to send General Sherman a letter, which proved to be a demand for his protection by the army. The evidence showed that he looked desperately in earnest but behaved with composure. He also had prepared an address to the American people claiming that he had acted for the good of the country, to make Arthur President, and to save us from another civil war. His pockets contained a large number of newspaper cuttings containing violent denunciations of the President. Just after the murder he said:

"My getting or not the Parish Consulship had nothing whatever to do with my shooting the President; I shot him purely as a political necessity under Divine pressure: and it was only by nerving myself to the utmost that I shot him anyway. If he should recover and I should meet him again, I would not shoot him; and now I leave the result with the Almighty. In case the President had said that I could not have the Paris Consulship, I intended to go to New York or Chicago and open a law office and let politics go. I shot the President without malice or murderous intent. I deny any legal liability in this case.....I had none but the best of feelings, personally, toward the President.... I put away all sentiment and did my duty to God and to the American people." About the 16th of June he wrote, in an address to the American people, "In the President's madness he has wrecked the once grand old Republican party and for that he dies; this is not murder, it is a political necessity." "I conceived the idea of removing the President four weeks ago. I conceived the idea myself and kept it to myself." He had said that Garfield's nomination, election, and removal were acts of God, and also "My idea is that I shall be nominated and elected as Lincoln and Garfield were—that is, by the act of God." He explained his act of murder thus:

"If Garfield was out of the way, thought I one night in bed, everything would go well. Things seemed to be going from bad to worse under his leadership and I foresaw another desolating war as the result of it. For two weeks I prayed over the possibility of the President's removal. The more I prayed about it and the more I looked at the political situation the more I saw the necessity of his removal. Finally, after two weeks of earnest prayer, I decided that the Deity had called me to do it and I commenced preparation for it. This was about the first of June. From that day to this I have never had the slightest doubt as to the Divinity of the act or the necessity for it."

After reaching the jail he had the best night's rest for many weeks. I think there can be no doubt that he fully expected to be supported by the political opponents of Mr. Garfield, and when he learned their abhorrence of his crime, he said: "What

does it mean? I would have staked my life that they would defend me." He believed, I think, that he was to become a great patriot, visit Europe, be *fêted* everywhere, receive the praise of everybody, sell a revised edition of his worthless little book on the Second Coming of Christ, reach the Presidency of the United States, and die rich, happy, contented, and famous. The evidence was contradictory as to his having once said that he should imitate the assassin of President Lincoln.

When brought into court Guiteau had with him a prepared address which he was not allowed to deliver. The opening part is as follows:

"If the Court please. I desire to address your honor at the threshhold of this case. I am in the presence of this honorable court charged with maliciously and wickedly murdering one James A. Garfield. Nothing can be more absurd, because General Garfield died from malpractice. The syllogism to prove it is this: Three weeks after he was shot, his physicians held a careful examination and officially decided that he would recover. Two months after this announcement he died. Therefore, according to his own physicians, he was not fatally shot. The doctors who mistreated him ought to bear the odium of his death, and not his assailant. They ought to be indicted for murdering James A. Garfield, and not me. But I have been indicted, and must stand my trial for the alleged homicide. General Garfield was President of the United States, and I am one of the men that made him President. His nomination was an accident; his election the result of the greatest activity on the part of the stalwarts, and his removal a special providence. General Garfield was a good man but a weak politician. Being President, he was in a position to do a vast harm to the republic, and he was doing it by the unwise use of patronage, and the Lord and I took the responsibility of removing him. I certainly never should have sought to remove him on my own account. Why should I shoot him? He never harmed me. From him I expected an important office. I considered him my political and personal friend; but my duty to the Lord and the American people overcame my personal feeling, and I sought to remove him. Not being a marksman he was not fatally shot, but incompetent physicians finished the work, and they and not me are responsible for his death. Nothing but the political situation last spring justified General Garfield's removal. The break in the Republican party last spring was widening week by week, and I foresaw a civil war. My inspiration was to remove the late President at once, and thereby close the breach before it got so wide that nothing but another heart-rending and desolating war could close it. The last war cost the nation a million of men and a billion of money. The Lord wanted me to prevent a repetition of this desolation, and inspired me to execute his will. Why did he

inspire me in preference to some one else? Because I had the brains and nerve probably to do the work. The Lord does not employ incompetent persons to serve him. He uses the best material he can find. No doubt there were thousands of Republicans that felt as I did about General Garfield's wrecking the Republican party last spring, and had they the conception, the nerve, the brains, and the opportunity they would have removed him. I, of all the world, was the only man who had the conception. On the trial of my case I propose to summon some of the leading politicians of the Republican and Democratic parties, also the leading New York and Washington editors, to show the political situation and the perils which surrounded the Republicans last spring. I propose to go into this branch of my defense extensively. Another reason the Lord inspired me to remove the President in preference to some one else is because he wished to circulate my theological work, The Truth. This book was written to save souls and not for money, and the Lord in circulating the book is after souls. By it he preaches the gospel and prepares the world for their judgment, which to some people, and with reason, is not far distant. I have been delayed in getting out a new edition of this book, which will include a graphic narrative of my life, but I expect that it will be issued shortly. More than one hundred witnesses have been summoned by the prosecution. Two-thirds of them I know nothing about, and the Court, I presume, will decide that they are irrelevant. The issue here is, 'Who fired that shot; the Deity or me?'"

He appealed to prominent lawyers for help in conducting his case and to the American people for money, on the ground that his cause was as worthy as that of the widow whose husband he had murdered, and for whom there had been a liberal subscription. He angrily protested against the lawyer assigned him by the court, reviled the other counsel, his brother-in-law, and insulted the prosecution to the last degree,

I examined Guiteau in jail a week before the trial. I did not find any positive physical evidence of brain disease. The asymmetry of the head, shown in the photograph, the slightly exaggerated arching of the palate and protrusion of the upper incisor teeth were worth noticing. In connection with other symptoms, and especially with the strong hereditary predisposition to degenerate disease, they were of some slight value as corroborative evidence of insanity. His mental state seemed to me clearly one of weakness, due, possibly, to some very early, if not congenital, form of insanity, or to the dementia produced by disease, mild if chronic, organic if acute, possibly what some alienists would call the insane temperament or partial (moral) imbecility. There was no incoherence, but the want of connection in thought was very striking. The weakness of Judgment, reason and reflection was as striking as the quickness of perception and, in matters inter-

esting him, readiness of memory. When in the least opposed his excitement was simply maniacal, but on indifferent subjects he conversed calmly and amiably. He insisted that he was not insane, and never had been so. His whole line of defense was to be, in his mind, that the doctors and not he killed the President, and that the political situation justified the assassination,—a point which he meant to establish by the testimony of the leading politicians and newspaper editors of both parties; and yet beyond the mere suggestion he had no definite plan, and was diverted from one subject to another like a child or a general paralytic. He did not know that I was a physician; he seemed to pay very little attention to me at first, and went on talking with his counsel as if I were not there. He appeared to me to consider himself a great man, the friend and equal of the first, the maker of a President, the saver of his country, an evangelist who meant to save the world by a worthless book, a politician whose miserable little speech, which he delivered only once to a couple of dozen negroes, did much to elect Mr. Garfield, and insured him the right to one of the highest offices of the land, a low, syphilitic lover who was to marry a wealthy and cultivated lady (to him unknown) simply by the asking, a hero who was going to Europe to be *fêted* as was General Grant, and to live a long life, rich and happy. I certainly had never before seen such a grotesque contrast between lofty delusion and low reality except in cases of general paralysis of the insane.

My opinion, given after thinking over the interview for a few days, and which I said that I might modify after further knowledge of the case, was as follows:—

(1.) When Guiteau shot the President it was under the influence of a delusion consistent with previous manifestations of insanity.

(2.) His shooting the President was, to a certain extent, the logical result of bad training, character somewhat unscrupulous, enormous self-conceit, self-will, disappointment in not getting office, cowardice, extreme political partisanship, delusions or deceit regarding religion, desperation of poverty, expectation of personal gain, love of notoriety, and hope of praise from the "stalwarts."

(3.) There is a strong hereditary predisposition to insanity in this case.

(4.) He supposed that he should escape punishment.

(5.) Certainty of punishment would have restrained him from the act.

(6.) He could and did on several occasions exercise self-control regarding his delusions about shooting the President,—perhaps knowing that he should have other chances.

(7.) He knew that his act was wrong in general, but believed that the good to his political party and to the country counterbalanced the wrong, and made the deed heroic. How

far he acted under the delusion that God directed his deed I am not sure, with my present evidence.

(8.) Crime and insanity are so mixed up in his case, that I should want more evidence before deciding what my views would be as to his punishment.

(9.) His punishment might deter others of his class from similar deeds, but his hanging under circumstances involving publicity as to details would probably incite insane persons of another type to murder.

(10.) My present *impression* is that he should not be hanged, provided he can be sent to an asylum for the criminal insane, a prison, or a jail for life.

One of the senators from Illinois testified that about the 12th or 15th of March Guiteau called on him in Washington. He said:—

"He was rather peculiarly clad for the season, there being snow on the street at the time; he had on his feet a pair of sandals or rubbers, or something of that kind; he had no stockings; he wore a light pair of pantaloons and a common, ordinary coat; a day or two afterward he came again to my room uninvited; he still insisted on my signing his recommendation, reiterating the same statement as before, of his having a promise of the place if I would recommend him; I again declined. I had in the mean time, out of curiosity, read his speech; he was a little more excited at the second interview than at the first; the second was a very short interview, for I tried to dispose of the matter as quickly as possible. I thought there was some derangement of his mental organization, but to what extent I could not say; when I went down to breakfast that morning, I saw him at the table as a boarder; I called the landlady, and asked her if she knew that gentleman; she mentioned his name, and said he had told her he was a constituent of mine. I said, 'I do not think that he is a proper person to have in your boarding-house;' she asked why; I said, 'I think he is a little off in his head,' or some language of that kind; she asked me what I meant, and I said I thought he was kind of crazy, and that she had better not have him in her boarding-house."

Guiteau's conduct in court, where I observed him for eleven days, was consistent with what I had seen in the jail; angry denunciation of his counsel for not adopting his theory of the defense, such boundless egotism and overweening conceit that he constantly even told untruths to make himself appear a man of brains, rapid changes from maniacal excitement to silly satisfaction, enormous self-will and determination without definite plan, a wavering, weak mind full of suggestions but without resource or ability to follow up his ideas, quick perception, acute memory, intense self-satisfaction, ruffianly brutality and lewdness, a rather exceptional degree of acuteness, and withal an evident wish and apparent expectation of being

acquitted. The trial was manifestly the great pleasure of his life. When he had an opportunity to declaim to the court from his "Oration on Paul the Apostle" he was evidently lost to everything else in beaming satisfaction and joy. At last, he was the centre of observation and he reveled in it to the utmost, irrepressible, voluble, coarse, vulgar, and yet always speaking of himself as "high-toned," allowing that he had been thought "cranky" all his life, one moment grinning with pleasure, the next convulsed with passion, and constantly injuring his own cause by calling his best witnesses liars, his brother a defaulter, and his counsel a jackass. He certainly was, as he said, "dead in earnest." His cross-examination showed an amount of readiness in reply, quick wit, and "dead earnestness," that I certainly had never seen before. If he had been shamming, it does not seem to me possible that he could have avoided tripping up not only once but often.

He assumed various theories of his own insanity at the time of the murder (Divine pressure, inspiration, Abrahamic insanity, transitory mania), and cited cases of persons who had escaped punishment on that defense,—a subject with which his law studies had made him more or less familiar. He insulted the negroes one day and apologized the next, there being one negro on the jury; and he constantly appeared to be trying various pettifogging devices to help his cause. He persistently denied facts to his disadvantage in his earlier shameful life, wandered off into advice to the Government to suppress Mormonism, or to President Arthur to discharge this officer and that, and was once so excited as to strike one of the officers of the court for simply hurrying him to his van.

When he heard that the jury had convicted him, he took the matter most calmly at first and then screamed out, "Vengeance is mine," saith the Lord, "I will repay! Beware, ye Americans, how you treat me, lest his wrath be kindled and you go down in blood and desolation." Having read of a severe railroad accident, he said that he would rather be hanged than die such a suffering death as that. When told that some one had offered $1000 for his body to dissect, he coolly said, "Perhaps some one will give $2000." While awaiting his sentence Guiteau was thoroughly unmoved, and corrected in a paper the error in statement that he was selling his autographs for $9 per hundred instead of per dozen. After Judge Cox had pronounced sentence of death he broke out, "May God have mercy on *your* soul! you need it more than I do. I am God's man. The act I did was commanded by him; and He will take care of it and of me. Nothing good has come of it. God Almighty will curse you all, from the judge down to the humblest juror. I am going to glory, but you will go below. The devil is waiting for you; and for that miserable scoundrel (the prosecuting attorney) he is preparing a permanent job below. I may not have to go for some time. I may be President yet.

But, if I am hanged the nation will roll in blood." He then became calm. At the jail he insisted that he was to have a new trial and perhaps still become President. He was vaccinated at his own request to escape infection through letters sent to him.

In attempting to describe Guiteau's mental state at the time of the assassination, one is at once met with many difficulties. He had led such a vagabond life that his few friends knew little about him and the community at large was so clamorous for him to be hanged that it was impossible to get anything like full evidence. He was tried, too, four months and a half after the murder. The prisoner, although "dead in earnest" in his delusions, was still a special pleader for his own neck's safety, and was either extremely forgetful in some matters or, what seems to me more probable, exceedingly untruthful. It was therefore quite impossible to get at the whole truth, or to satisfactorily sift the contradictory testimony that was offered.

With regard to his "inspiration," it evidently was an afterthought to his conception of the murder, and, as on former occasions of his life, it was the expression of the deep conviction of a weak-brained man that the Deity approved his plans. His "pressure" to kill the President, too, was perhaps not unlike the "constant pressure to write," for which he wrote his father, November 11th, 1867, that he had the preposterous notion of joining the editorial staff of the New York *Independent*. His idea of special Divine protection, that the Lord interposed to save his life, when he jumped off a railroad train to avoid arrest for non-payment of fare, when there was a collission of steamers with him on one, when he shot the President in the crowd, when he was fired at on the way from the court-house to the jail and also in the jail, is, whether genuine or not, perhaps not inconsistent with bodily fear, and, like his inspiration and Divine pressure, was intensified by reason of his mental condition. He seemed to me to honestly consider himself "a servant of the Lord." He said in his lecture entitled "*Some Reasons why many Persons are going down to Perdition, including a Reply to Attacks on the Bible*," that he "knew Moody ten years ago when he was the laughing stock of Chicago. His zeal was so great for the Master that he used to go up to strangers and say 'Do you love the Lord?' 'Are you for Jesus?'" Guiteau used similar phrases in a similar way. How far that and his vagabond evangelist work were imitations of Moody, with hopes of his success, I cannot say.

The question exists in my mind whether there have not been in Guiteau's life several attacks similar to subacute mania, each in turn leaving him more demented: *first*, when he excited the fears of his friends, at the age of eighteen, by giving up his studies and becoming absorbed in a deep religious excitement; *second*, when he attempted the theocratic press; *third*, in the Greeley campaign; *fourth*, when engaged in his

suit with the New York *Herald*; *fifth*, during the *Inter-Ocean* project; *sixth*, when he raised an ax against his sister; *seventh*, at the time of his wanderings as an evangelist; *eight*, when he expected the Austrian mission or the Paris consulship, and ending with the assassination or soon after. It was coincident with these periods of excitement—for they certainly differed from the quiet state in which he often was for months at a time—that he persecuted women with absurd plans of marriage.

The evidence, although not entirely satisfactory, seems to me to point to such attacks of mild mania resulting in considerable dementia, or to periods of maniacal excitement so common in the congenital or degenerative types of insanity or partial imbecility. In the latter case maniacal outbursts are apt to be mistaken for wickedness, because they are often, if not generally, associated with a directness of cause and effect similar to that observed in people who are simply bad.

If Guiteau has chronic subacute mania of a recurrent or paroxysmal type, it seems to me that his mental condition at the time of the trial indicated responsibility. At the time of the murder he had the extraordinary delusion that the political opponents of General Garfield, and finally the country, would approve of his act and make him a hero. How far he was incoherent, if at all, in ideas at that time, and to what extent he was suffering from maniacal excitement, are facts which, unfortunately, have not been observed by competent persons and will never be known. It may be said that nearly every great crime is committed under the influence of some delusion, as in the case of Orsini, for instance, who tried to kill Louis Napoleon because he thought that his subtle influence was prejudicing the English nation against Italy. That is to a certain extent true, and each man has his own view of the difference between an insane delusion and a false belief consistent with sanity. It is simply a matter of degree.

If Guiteau's type of insanity is congenital or developed by the blow on his head, or at puberty or through masturbation, there is certainly enough in his family history to make such a result quite possible. This form of insanity, although comparitively rare and often confounded with depravity, is recognized by the leading authorities on mental disease as primary and secondary moral insanity, affective insanity, impulsive insanity, *folie raisonnante, moralisches Irresein, Impulsives Irresein, primäare Verrücktheit, psychische Entartung, originäre Verschrobenheit, moralische Verkümmerung.* The legal responsibility in all these cases is a very obscure matter. The medical expert has simply to state the condition of moral perversion and mental unsteadiness, and the imperative nature of the conceptions of such minds, together with such a degree of intellectual capacity that it would not strike the ordinary observer as being defective or diseased, and society must deal with them as it choses.

The best qualified of Guiteau's acquaintances to give an opinion states that his manner has entirely changed since last Spring, that he has become more irritable, more emotional, much more exalted, and a very much more rapid talker; that he seems in expression and in act an entirely different man. He sees a new expression in the eyes, but is not sure whether the prominence of the right eyeball and slight deviation of the axis of one eye are natural or not. It was testified that before the murder his condition was one of great exaltation. There might be some ataxia or only the unsteadiness of legs arising from confinement. Upon striking the patellar tendon, the foot of each leg jerks quickly, describing an arc of about twelve inches. The tongue is flabby, and local fibrillar twitchings are observed, first in one part of it, then in another. In rapid speech the articulation seems without conspicuous fault, which is certainly not the case when words are spoken slowly. The handwriting had not apparently become unsteady. These symptoms, associated with such expansive ideas and mental instability, are suggestive of an early stage of general paralysis of the insane, but do not prove it to my mind. I am by no means sure that it is not like the case reported by Christian a year ago, in the *Annales Medico-Psychologiques*, of an imbecile who had an attack of maniacal excitement at the age of thirty-one and general paralysis at about fifty, or one of those where, as Morel says, the incubation period of general paralysis of the insane is the whole previous lifetime. Guiteau ate enormously, slept well, and was badly nourished.

I have tried to select from the immense mass of evidence facts which state the whole case as impartially as possible. Dr. Godding, the medical superintendent of the Government Hospital at Washington, says:—

"In a case of as grave importance as this I would not express an opinion until I was in full relation with all the facts in the case. A man's impression is very different from his opinion. An expert's opinion should only be declared after a careful consideration of all the facts produced in evidence and a careful study of the prisoner."..."There is a very grave difference between medical insanity and legal irresponsibility, and on that difference this case hinges." ... "I am sorry to see the experts classed on one side or the other. I hope the golden age is not far distant when the medical expert—all experts in fact—will simply appear as friends of the court."

Guiteau has been observed chiefly while on trial for his life and at a decided disadvantage. Even if he were shamming, as I think he was to a certain extent, that fact is as characteristic of the insane as of the sane. His whole conduct illustrates the annoyances which medical officers and attendants in insane asylums are daily compelled to bear. He seems to me to belong to that class of insane criminals who do least harm to society, after their crime, by being secluded for life in a criminal

lunatic asylum, without trial, if that is practicable in our country. As the case stands, he has impressed the criminal classes and the country at large as being an unscrupulous, dangerous villain, with a badly arranged mind, feigning insanity to save his neck. The verdict of the jury has met with almost universal approval, and many of the insane in asylums, who feel that their own safety depends upon the maintenance of a high standard of responsibility there, agree with the jury. Others think otherwise: the Pocasset murderer, for instance, says that the protection of society would be just as much influenced by one's walking out and stepping on an ant as by hanging Guiteau.

EARTH-WORMS AND THE SPREAD OF DISEASE.

In the February, 1882, number of the *St. Louis Courier of Medicine*, an anonymous writer makes a rather startling deduction from the last scientific contribution of the great English naturalist and philosopher, Darwin. Having repeated the estimate of Darwin, that more than 50,000 of these worms to the acre inhabit cultivated soil, and that not less than ten tons of earth annually pass through their bodies, much of which is taken from the depth of several feet, and deposited on the surface of the ground, he concludes that these creatures must act as the carriers of contagion from the bodies of human beings perished of infectious diseases. This is his melancholy language: "While picturing the ghastly carnival, as generation after generation fall at last to him a prey, we should be made to see the same loathsome thing laboring in darkness and in stealth, sucking from the grave the fatal poison to open it out again into the upper air, charging the breath of life with contagion, that fresh multitudes may perish and its banquets be unstinted."

To avert this danger he recommends "cremation as the proper method of disposing of the bodies of the dead of acutely infectious diseases."

INFLUENCE OF LOCOMOTIVES, ETC., ON MALARIA.

Dr. W. S. King, U. S. A., in the *Philadelphia Medical Times*, of February 11, under the above novel title, announces an important fact, for which he accounts on grounds not devoid of plausibility. The fact is the immunity from malaria of that portion of West Philadelphia near the New York and Pennsylvania depot, though the locality is low and bordering on the Schuylkill river. His theory is that the atmosphere is so much disturbed by the motion of the numerous trains, and the rarefaction caused by the heated locomotives, that the miasmatic emanations are rapidly dissipated and so attenuated as to be

harmless. He suggests also that the heat may be sufficient to destroy the miasmatic germs.

[Without denying altogether the influences suggested by Dr King, we would observe that constant experience has shown paludal miasmata to gradually disappear from cultivated grounds, and especially so from localities densely populated and occupied by human habitations].

MALARIAL FEVER TREATED WITH TINCTURE OF IODINE.

In the *Maryland Medical Journal* of February 15th Dr. Robert B. Morison extols the efficacy of iodine as an antimiasmatic remedy. He asserts that "the tincture of iodine equals, if it does not surpass, cinchonidia in its action in acute malaria;" and supposes that it actually destroys the malarial poison, from its known destructive effect upon vegetable and animal life.

During the year 1881 this remedy was extensively used at the dispensary of the Maryland University, but only in acute malarial attacks, as former experience had exhibited its failure in chronic malarial affections. The ordinary dose was 15 minims of the tincture in a half-ounce emulsion of sugar and gum arabic, taken in a half-tumbler of water 15 minutes before eating three times a day. 250 cases were thus treated, of which 100 were again heard from. Of the latter number 34 were cured, 2 were not cured, and 14 were rebellious to both iodine and cinchonidia reinforced by arsenic. As to the 150 cases not heard from, he concludes that most of them must have recovered promptly, or they would have returned.

A most important advantage of the iodine treatment is its economy, the cost being about one-seventh of medication by the mixture of cinchonidia and arsenic; while the difference between it and quinine would be considerably greater. The dose is found to be a pleasant one, in only one case followed by nausea and never by iodism or albuminuria. It was given to pregnant and nursing women, in diarrhœa and in constipation, and in such cases no contra-indication was discovered.

He observes, in conclusion, that this treatment is an established fact at the dispensary, and at the city jail; and has been extended into private practice within his knowledge.

[We have only to add that Dr. Morison claims no originality in this mode of treatment, and only adds strong confirmation to well-known experience. It seems, however, to be his hobby, and there is reason to suppose that he can ride it with more satisfaction than the average practitioner.]

THE WORKING ZONE OF ANÆSTHETICS.

The *Medical and Surgical Reporter* of Feb. 8th states some conclusions arrived at by M. Paul Bert, French Minister of Public Instruction, and communicated to the Paris Academy

of Sciences. His experiments were made upon dogs, mice and sparrows, confined in chambers with the air impregnated with various proportions of anæsthetic vapors. A certain proportion is found just sufficient to produce insensibility, and another higher proportion to destroy life. The interval between these two he calls the "working zone." With chloroform, ether, amylene, ethyl bromide and ethyl chloride, he found the fatal dose just double the anæsthetic dose. A mixture about midway between the two operates quickly and safely.

Owing to the impossibility of observing any precision in the mixture of the anæsthetic vapor and the air, by the usual method of administration on a sponge or napkin, M. Bert recommends the use of a close mask, communicating by a flexible tube with a reservoir containing the proper mixture.

CURABILITY OF INEBRIETY.

In the (N. Y.) *Medical Record* of February 18th, Dr. J. D. Crothers contributes a paper of considerable length on the above subject, in which he refers to a great variety of modes of treatment, including pledges, resolutions, religious and social influences, prayer, faith, disgusting the patient by mixing spirits with all his food and drink, the water cure, mineral waters, the cinchona cure, and other specifics (so-called). He concludes that the ratio of permanent recoveries under these various plans varies from 2 to 5 per cent., which certainly is not flattering.

In contrast with such discouraging results, he presents some more accurate observations on the asylum treatment. Dr. Joseph Parrish, now of Burlington, N. J., as the conclusion from a long experience in asylums, states that from 38 to 40 per cent. of his cases permanently recovered. Dr. Albert Day, of Boston, has had 18 years' experience, and claims over 40 per cent. of cures in more than 2000 cases, which were kept under treatment from 6 to 12 months. In 100 cases under his care for one year, 48 remained temperate 6 years afterwards. Circular letters addressed to the friends of patients discharged from the New York Inebriate Asylum, received answer that 61 per cent. of more than 1400 remained cured after 5 years. Ten inebriate asylums in Great Britain, four in Germany and two in Australia, all confirm the favorable results obtained in this country.

The two principal difficulties in the way of asylum treatment have been inability to retain patients against their will long enough for effectual cure, and the hopeless condition of a large proportion of the cases applying for treatment. Connecticut is the only State of the Union where patients can be legally kept for a year or more, and elsewhere South Australia is the only country in the world with similar legal provisions.

Other difficulties named are "general incapacity of managers and want of public sympathy and support."

The writer sums up with the following conclusions:

(1) Inebriety is emphatically curable by means as varied and complex as the causes. The wider and more practical these means, the greater the results.

(2) The teaching of all experience and science point to the value of physical means in a hospital especially adapted to this purpose, where may be gathered all the remedies that can act on body and mind.

(3) The subject of inebriety and its cure is a medical one, and can not be solved from a moral stand-point by clergymen and reformers, but must be studied by physicians; then its curabiltity can be determined beyond the field of speculation."

Editorial Department.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF LOUISIANA.

ANNUAL COMMENCEMENT EXERCISES.

On the 29th of March the Forty-Eighth Annual Commencement Exercises of the Medical Department of the University of Louisiana were held at the Grand Opera House, New Orleans.

The floral decorations were in exquisite taste and reflected credit upon the committee of arrangements.

The audience which completely filled the theatre presented a scene of loveliness scarcely ever equalled on a similar occasion.

At the signal of the baton of the leader the orchestra struck up an overture, and Prof. T. G. Richardson, M. D., the Dean of the Faculty, leading the Hon. Randell Hunt, LL. D., the President of the University of Louisiana, marched up the middle aisle, followed by the other members of the Faculty and representatives of the medical profession, the bar, the clergy, the State and city governments, and other prominent gentlemen, and all ascended to the stage, where President Hunt and Bishop Gallaher were assigned to seats of honor. The graduates also marched in and took seats in the circle.

Bishop John N. Gallaher was introduced, and at his request the audience arose while he offered an appropriate prayer.

Prof. Richardson read the list of graduates, and President Hunt conferred degrees upon the following graduates:

DOCTORS IN MEDICINE.

Edwin H. Alexander, of Arkansas;
J. Robert Anderson, of North Carolina;
Paul E. Archinard, of Louisiana;
Jasper J. Bland, of Mississippi;
Alembert W. Boren, of Texas;
William J. Blewett, of Texas;
Domingo Bornio, of Louisiana;
Octave G. Browne, of Louisiana;
Joseph E. Burk, of Texas;
James W. Burt, of Texas;
Nathaniel Cass, of Texas;
Samuel Cunningham, of Texas;
Alphonse L. M. Deseay, of Louisiana;
William L. Egan, of Louisiana;
Jacob E. Fitch, of Canada;
Emmet C. Flanagan, of Texas;
William A. French, of Texas;
David F. Gaston, of Alabama;
William F. Gibson, of Texas;
Percy M. Girard, of Louisiana;
Andrew J. Gray, of Texas;
Elijah H. Hale, of Texas;
William C. Harrison, of Louisiana;
Charles W. Hodge, of Louisiana;
Charles Howell, of Louisiana;
Brice M. Hughes, of Tennessee;
John F. Hunter, of Mississippi;
Robert G. Jackson, of Louisiana;
Edward H. Jones, of Texas;
Edward W. Jones, of Louisiana;
Robert B. Longmire, of Texas;
James R. Lyon, of Texas;
James J. McCane, of Alabama;
M. Armand McHenry, of Arkansas;
John W. McLeod, of Mississippi;
Augustus McShane, of Louisiana;
Jacob M. Malter, of Louisiana;
Marquis H. Maness, of Texas;
Joseph R. Nelson, of Tennessee;
Jasper D. Phillips, of Texas;
Asa W. Pope, of Texas;
Laurens T. Postell, of Louisiana;
Charles T. Race, of Texas;

Mentor V. Richard, of Louisiana;
William T. Richmond, of Louisiana;
Thomas J. Sauls, of Texas;
Sidney O. Smith, of Mississippi;
Robert H. Tilford, of Louisiana;
Frederick R. Tolson, of Louisiana;
Edgar H. Walker, of Texas;
Bascom B. Warren, of Louisiana;
Robert E. Whitehead, of Texas;
Alston J. Whitfield, of Mississippi;
William T. Williams, of Louisiana;
John E. Wilson, of Texas;
Sprague Winchester, of Mississippi.

GRADUATES IN PHARMACY.

Philip Bergé, of Louisiana;
Peter M. Capdan, of Louisiana;
Leon Diez, of Louisiana;
John Guell, of Louisiana;
John J. Leche, of Louisiana;
Henry C. Price, of Mississippi;
Max Samson, of Louisiana;
Charles L. Seeman, of Louisiana.

Mr. Hunt congratulated the young men upon the distinction they had earned, and portrayed to them the importance and dignity of the profession of which they had been declared fit to become members.

Prof. Richardson then distributed the diplomas and called Dr. Brice M. Hughes, of Tennessee, the valedictorian, to a chair near President Hunt.

Prof. Stanford E. Chaillé, M. D., chosen to deliver the annual address, selected for his subject, the importance of introducing the study of hygiene into the public and other schools.

Dr. Brice M. Hughes, the valedictorian, closed the exercises by an appropriate and affectionate address, which was received with applause by his fellow-graduates and the audience.

LOUISIANA STATE MEDICAL SOCIETY.

Owing to the ubiquitous floods which have caused such desolation in the most importnat territory of the State; the officers of the Louisiana State Medical Society have deemed it proper to defer indefinitely the meeting which was to have been held on the 29th of March. Circulars containing this information

have been issued, and we feel assured that the action postponing the meeting is wisest and best. We trust that the time of meeting has only been delayed for a short period, and that in the near future a meeting will be called which will be represented by every parish, and that its power as a State organization will be made known by the combined influence of the medical men throughout Louisiana.

THE CULTURE OF BOVINE VIRUS IN LOUISIANA.

The scarcity of vaccine virus of reliable quality, has stimulated the officers of the Louisiana State University, located at Baton Rouge, to make an effort to cultivate vaccina. At the farm of Dr. J. W, Dupree in E. Baton Rouge parish, the propagation of bovine virus has recently been attempted, and we learn that success has attended the effort. We hear through three of the Sanitary Inspectors of the city of New Orleans, that virus from this vaccine farm has been used by them and proved reliable, presenting when introdnced into the human system, a course perfectly typical.

It will be remembered by many of our readers that a few years since Dr. J.De Zayas, a Cuban physician, attempted the cultivation of vaccine in New Orleans. He procured, as original matter, that known as "Beangency Stock," but although successful in cultivating vaccina from heifer to heifer, its transfer to the human being was, as a rule, unattended by the usual phenomena. We know, however, that the vaccine farm was abandoned, and, if we mistake not, remember to have heard Dr. Zayas affirm that climatic influence, and not lack of pecuniary support was the cause of its discontinuance.

We desire to see the virus from E. Baton Rouge parish tested effectually, and hope the results will be such as to warrant a state appropriation for the support of a vaccine farm.

PERSONAL.

Dr. John H. Pope, of Marshall, Texas, visited our sanctum during the month, and we regret to state that his health is such as to compel him to relinquish his practice, to seek in

Mexico a climate that may invigorate and restore him to the ranks of working doctors once more.

Dr. Alfred W. Perry, former Professor in the New Orleans School of Medicine, but at present practicing his profession in San Francisco, is on a visit to New Orleans, and is a living evidence of the preservative influences of that genial climate. One newspaper of our city reported that he was accompanied by his wife and *twelve* children, but we are glad to state that it was an unfortunate typo who went the "ten better."

Dr. W. J. Smith, of Bastrop, Morehouse Parish, Louisiana, called on us, having visited New Orleans as a delegate to the State Medical Society. Owing to the irregular mails through the overflowed district he had not received the circular announcing the indefinite postponement of the meeting. He reports the Morehouse Parish Medical Society as wide-awake and actively working, and announces the officers for the present year as follows:

Dr. W. T. Baird, President.
Dr. J. D. Hammond, Vice-President.
Dr. G. G. Buford, Secretary.
Dr. W. E. Pugh, Treasurer.

We will publish in our next issue a paper from one of its members, and hope to hear from Morehouse regularly after this.

The Plaquemine Parish Medical Society sent a full delegation to the State Medical Society. Drs. Fox, Wilkinson, Hays and Finney were on hand.

ORLEANS PARISH MEDICAL SOCIETY.

The annual meeting of this organization was held on Monday evening, March 27th. There was a full attendance. The annual oration was delivered by Dr. M. R. Richard.

The election of officers, to serve for the year, resulted in the following gentlemen being chosen:

Dr. C. J. Bickham, President;
Dr. J. P. Davidson, First Vice President;
Dr. J. S. Copes, Second Vice President;
Dr. C. C. Turpin, Third Vice President;
Dr. P. B. McCutchon, Secretary and Treasurer;
Dr. Thomas Layton, Annual Orator.

On motion of Dr. S. E. Chaillé, Dr. M. R. Richard was elected to represent the Association at the meeting of the Alabama State Medical Society.

NECROLOGY.

Died at his residence, No. 256 Prytania street, March 28th, Dr. Benjamin Stillé, a native of Philadelphia, Penn., aged 67 years. A biographical sketch of Dr. Stillé will appear in the next number of the Journal.

Reviews and Book-Notices.

Fistula, Hæmorrhoids, Painful Ulcer, Stricture, Prolapsus and other Diseases of the Rectum, their Diagnosis and Treatment. By William Allingham, Fellow of the Royal College of Surgeons of England, etc., etc. Fourth Edition. Philadelphia: Presley Blakiston. 1882. New Orleans: Armand Hawkins, Medical Bookseller, 196½ Canal street. 8 Vo., pp. 328. Price $3.00.

As the work of a conciencious writer, every page of this book bears evidence, and if occasionally, the author may be deemed guilty of egotism, it must be admitted that his great experience and opportunities for study warrant him in giving, without stint, his opinions.

In operating on fistula, he gives preference to the knife, except in some rare cases where the internal opening is high, when he uses the elastic ligature. When this affection is complicated by phthisis, he says: "Those gentlemen who object to operating in any case upon a phthisical patient, give different and rather contradictory reasons for their objections. Some say, do not operate, for the wound will not heal, and the *increased* discharge will be detrimental; others, the *healing* of the fistula will be injurious to the patient, as the discharge prevents or retards the progress of the chest affection. I have this remark to make here; that when a fistula has kindly healed, I never knew a phthisical patient to be directly the

worse for it, *i. e.*, I have never seen the chest affection aggravated or suddenly get worse on the *closing* up of the wound. I think the idea that the discharge retards the progress of the lung disease, is rather a remnant of the old doctrine of issues, seatons, and derivatives, than a positive fact."

His chapters on external and internal hæmorrhoids are complete in what is known in regard to etiology and pathology. In the latter class of the disease he condemns the use of injections of carbolic acid, also the cautery; thinks that crushing the tumors should not be accepted until more extended observation and improved instruments bear evidence of greater success; and is convinced that the ligature possesses advantages over every known treatment.

The plan advised for plugging the retum in cases of hemorrhage is very simple and efficacious.

Such subjects as Prolapsus, Pruritus, Fissures, Ulceration, Cancer and Rodent Ulcer of the Rectum are very agreeably treated of, and as a work on a much neglected part of the human economy is cordially recommended.

A Treatise on the Diseases of Infancy and Childhood. By J. Lewis Smith, M. D., Clinical Professor of Diseases of Children in Bellevue Hospital Medical College; Physician to the New York Foundling Asylum, etc. Fifth edition, thoroughly revised—with illustrations. R. 8vo., pp. 826. Half Morocco. Price, $6.00. Philadelphia: H. C. Lea & Son, 1881. New Orleans: Armand Hawkins, 196½ Canal street; Eyrich, 130 Canal street.

This admirable work has been fully reviewed in a former number of this JOURNAL, but the new edition, so carefully revised and with such valuable additions, deserves more than a passing notice. The excellent arrangement of the work into sections facilitates the student in methodically studying some of the most abstruse subjects the practitioner has to deal with. To correctly interpret the morbific lesions of little beings devoid of speech and so susceptible to the influences of the moment, requires more than the usual elaboration given to similar diseases in adults, and the care of the author in the work

before us justifies the assertion that Dr. Smith is an earnest, patient exemplifier of these especial subjects. We cordially recommend it.

Books and Pamphlets Received.

Gunshot Wound of the Abdomen—Fecal Fistula—Spontaneous Closure. Recovery with remarks on treatment, includigg a further consideration of the action and applications of quinine. By A. Sibley Campbell, M. D., Augusta, Ga. Reprint from the Medical Transactions of Georgia.

Observations on the part the Obsterical Forceps plays in the Induction and Prevention of Perineal Lacerations. By Thos. A. Ashby, M. D., lecturer on obsterics in the Summer Course University of Maryland. Reprint from Maryland Medical Journal for February, 1882.

The Study of Trance, Muscle-Reading and Allied Nervous Phenomena in Europe and America, with a Letter on the Moral Character of Trance Subjects and a Defence of Dr. Charcot. By George M. Beard, A. M., M. D., Fellow of the New York Academy of Medicine, etc., etc.

Catalogue of Medical, Dental, Pharmaceutical and Scientific Publications. Published by E. Blakiston, Son & Co., Philadelphia.

Questions submitted to the Graduating Classes of the Medical College of Ohio from 1871–72 *to the present time.*

The Trance State in Inebriety—its Medico-Legal Relations. By T. D. Crothers, M. D., with an introduction on the nature and character of the trance state, by George M. Beard, M. D., New York city.

An Ephemeris of Materia Medica, Pharmacy, Therapeutics and Collateral Information, March, 1882. By Edward R. Squibb, M. D., Edward H. Squibb, M. D., Charles F. Squibb, M. D.

Transactions of the Twenty-Eighth Annual Meeting of the Medical Society of the State of North Carolina, May 31, 1881.

Chinical Observations on the use of Quinquinia in Malarious Diseases.

Infant Feeding and Infant Foods. The anniversary address delivered before the State Medical Society of New Nork, February 8th, 1882, by Abraham Jacobi, M. D. Reprint from the Medical News, February 18th, 1882.

Meteorological Summary—February.
Station—New Orleans.

Date.	Daily Mean Barometer.	Daily Mean Temp'ture.	Daily Mean Humidity.	Prevailing Direction of Wind.	Daily Rain-fall.	General Items.
1	30.162	48 2	72.7	East.	.....	Mean Barometer, ———.
2	30.082	55.4	87.7	East.	.35	Highest Barometer, 30.438, 24th.
3	29.777	58.7	87.7	East.	.39	Lowest Barometer, 29.612, 3d.
4	30.069	55.5	60.0	N. W.	.....	Monthly Range of Barometer, 0.826.
5	30.293	56.2	62.7	S. W.	.....	Mean Temperature, ——.
6	30.299	57.1	67.3	East.	....	Highest Temperature, 79.0, 20th.
7	30.163	63.3	79.7	S. E.	.04	Lowest Temperature, 39.0, 1st.
8	29.947	65.2	86 0	S. E.	.20	Monthly range, ——
9	30.074	58.7	63.7	N· W.	.....	Greatest daily range of Temperature,
10	30.260	58.0	63.7	East.	.....	20.5, 6th.
11	30.291	62.7	72.7	S. E.	.....	Least daily range of Temperature,
12	30.248	68.0	77.3	S. E.	.....	8.0, 25th.
13	30.190	67.5	84.0	N. W.	.09	Mean of maximum Temperature, 69.5.
14	30.210	68.0	87.0	South	.06	Mean of minimum Temperature, 55.4.
15	30.211	69.7	87.0	South	.....	Mean daily range of Temperature, 14.1.
16	30.139	71.9	82.3	S. W.	.....	Prevailing Direction of Wind, S. E.
17	30.201	71.5	76.3	S. W.	.....	Total No. of miles 5662.
18	30.196	70.2	79.0	S. E.	.....	Greatest Velocity of Wind, 26 miles
19	30.187	71.0	78.7	S. E.	.....	W. and N. W.
20	29 976	72.6	76.0	South	.....	Number of Clear Days, 8.
21	30.170	60.3	51.0	N. W.	.02	Number of fair days, 14.
22	30.274	55.1	50.3	North	.....	Number of Cloudy days, 6.
23	30.309	56.6	46.3	N. E.	.....	No. of days on which rain fell, 11.
24	30.364	56.1	48.0	East.	* ..	
25	30.284	55.6	85.3	East.	.75	
26	30 107	62.0	94.3	S. E.	1.19	
27	29.916	67.2	85.0	S. E.	.....	
28	29.716	68.8	76.0	West.	.95	
Sums	.... .	..	....	.....	total	
Means	30.147	62.5	73.8	S. E.	.144	

COMPARATIVE TEMPERATURE.

1872.....	....	1877.....	55.9
1873.....	60.5	1878.....	55.5
1874.....	59.1	1879.....	55.8
1875.....	55.9	1880.....	60.4
1876.....	59.0	1881.....	56.3

COMPARATIVE PRECIPITATIONS.
(Inches and Hundredths.)

1872.....	....	1877.....	.98
1873.....	1.93	1878.....	3.50
1874.....	3.68	1879.....	2.13
1875.....	13.85	1880.....	4.62
1876.....	8.20	1881.....	5.80

* Inappreciable.

L. DUNNE,
Sergeant Signal Service, U. S. A.

Mortality in New Orleans from February 25th, 1882, to March 18th, 1882, inclusive.

Week Ending.	Yellow Fever.	Malarial Fevers.	Consumption.	Small-pox.	Pneumonia.	Total Mortality.
February 25	0	1	16	2	3	101
March 4	0	3	19	3	4	106
March 11	0	2	14	6	10	96
March 18	0	1	19	24	4	114
Total....	0	7	68	35	21	417

NEW ORLEANS
MEDICAL AND SURGICAL JOURNAL.

MAY, 1882.

ORIGINAL COMMUNICATIONS.

Thrombosis and Embolism.

By A. PETTIT, M. D.

(Read before the N. O. Medical and Surgical Association.)

Mr. President and Gentlemen:

I call your attention, this evening, to the subject of Thrombosis and Embolism; it is a subject comparatively new in medicine, and one of great interest to the profession; it has claimed the earnest consideration of some of our most scientific men, who, by their close clinical observation, careful pathological investigation, and physiological experiments, in connection therewith, have thrown much light on many phenomena of disease which a few years ago were but imperfectly, if at all, understood.

The subject, though not very extensive, is one of many tangents: As I propose simply to open its discussion, I shall confine myself to a brief summary of its leading points, and will then resign it to your consideration and farther development.

The terms, Thrombosis and Embolism, were introduced by Virchow; the former signifies a coagulation of the blood in its vessels during life; the latter, the transferrence of clots or other bodies, solid, semi-solid, or gaseous from one part of the vascular system, in the direction of the circulation and by means of it, to another part, which by reason of its diminished

capacity, does not admit their passage. Thrombosis may occur in any part of the vascular system, and is due to one or other of the following causes: The most common cause is inflammation, as phlebitis or arterites, which is said to be due to an altered relation between the blood and the vascular walls; the explanation seems to me evasive, other causes are, unnatural contact of the blood with diseased surfaces, as in cardiac valvular disease, and in atheromatous and cretaceous transformation of the vascular walls; sluggishness of circulation, whether due to obstruction from the pressure of a tumor, the presence of an embolon, or obstruction in the capillaries as in hepatic cirrhosis or pulmonary emphysema; said sluggishness may also be due to weakened heart's action as in phthisis, cardiac dilation without hypertrophy, marasmic affections and in death's agony; thrombosis is also said to be sometimes due to certain cachexiæ, as that of cancer, syphilis and anæmia, but in such instances it most probably depends upon or results from inflammation.

Embolia, according to their size, find lodgment in large or small branches of the vascular tree; those derived from the systemic veins and right heart usually find lodgment in the distribution of the pulmonary artery. Those derived from the left heart, large arteries and pulmonary veins usually find lodgment in the distribution of the systemic arteries. Those derived from the portal vein find lodgment in the hepatic distribution of the same. They may consist of fragments of thrombolia or of detritus resulting from the breaking down of the same; of granules or vegetations derived from the endocardium or large blood vessels as the result of inflammation, rheumatic or otherwise; of debris derived from the erosion or crumbling of vascular walls affected with cretaceous degeneration; they may consist of clots from an aneurism, of aggregations of pigment granules as occurs in the melanaemic dyscrasia associated with intense malarial cachexia, or of cohering pus-corpuscles as in the so-called metastatic affections; or of aggregations of bacteria derived from suppurating or gangrenous tissue in communication with the air; or lastly, they may consist of air introduced by the hypodermic syringe, transfusion apparatus, or otherwise.

When the obstructed vessel is superficial certain local indications occur, such as pain, tenderness and enlargement of the vessel from distension and thickening. When a vein is obstructed its distal end becomes more or less varicose, and the tissues from which it derives its blood become congested and œdematous; a most *important* event in connection with venous thrombosis is that there occurs a reflux of blood from the trunk vein which results in an extension of the clot, not only up to but into the trunk vein; it is from the laminated bulbous extremity of this clot which bulges into the trunk vein that embolia of venous origin are most often derived.

The phenomena attending obstruction of arteries from embolia are somewhat more complex and interesting. An embolon seldom causes, at first, complete obstruction; for awhile a small quantity of blood is forced through irregular channels between it and the vascular walls, but this soon coagulates and completes the obstruction; in this way the embolon is enveloped in a laminated coagulum and this coagulum is extended backwards, centrally to the nearest anastomatic branch. On the distal side of the obstruction the vascular area supplied by the obstructed artery is for a moment pale and shrunken, but almost immediately becomes dark, tumid and blood-shot. These latter phenomena are due to paralysis of the vaso-motor nerves from innutrition, in consequence of which there is dilatation, or rather distension of the distal end of the artery from reflux of blood from capillaries and veins, especially where, as in the internal organs, the veins have no valves. In consequence of these latter phenomena hæmorrhages commonly occur. Further changes in this infarcted area depend on the vascularity of the part. If the collateral circulation is good, the stagnation soon ceases; the effused blood is absorbed, and normal nutrition established; but if compensatory circulation is bad, degenerative changes will occur in proportion to want of vascularity. Perhaps fatty degeneration and discoloration, followed by deposit of earthy matter, or absorption and shrinkage of the parts; or vascularity being less favorable, softening, disintegration and breaking down into pus, or vascularity being most unfavor-

able gangrene may result. These phenomena have been observed and demonstrated by the physiological experiments of several eminent pathologists who injected tobacco seed and other substances into the aorta of dogs, and, the abdomen being laid open, observed the effects of embolic obstruction in the arteries of the spleen, kidneys and mesentery. Embolism is most apt to occur at points of division of arteries, as at those points there is a sudden diminution of their calibre, which, as well as a division of the current, causes a disturbance in the flow.

The yellow cone or wedge-shaped fibrinous blocks so often observed in the abdominal viscera, particularly in the spleen and kidneys, have been shown to be due to embolic infarcti. They are most apt to occur where the collateral circulation is bad. That such infarcti are seldom, if ever, observed in the liver is explained by its great vascularity and, particularly, by the fact that its vascular supply is derived from two separate sources. As a general thing, single abscess of the liver has no connection with embolism, but multiple abscesses of this organ are said to always result from pyæmic embolia in connection with dysentery or some ulcerative process of the gastro-intestinal tract. Earthy matter is frequently deposited in thrombic or embolic masses, as phlebolithes. Should embolic infarcti degenerate into pus or become gangrenous, inflammation will be set up in its neighborhood; pneumonia, peritonitis, enteritis and other inflammatory troubles are not unfrequently thus produced. The attending symptoms and gravity of these vascular obstructions depend on their location and the suddenness of their formation. They may occur in any of the organs or in the extremities. When affecting the spleen, kidneys or heart (coronary arteries) they often cause the so-called yellow wedge-shaped fibrinous blocks, abscess, or small multiple abscesses. Rupture of the heart is not unfrequently the result of abscess or degeneration of tissue in consequence of embolic infarcti affecting the coronary arteries. Inflammation and abscess of the lungs is a common result of embolia in the pulmonary artery derived ftom the systemic veins. Sudden death in puerperal cases and otherwise favor

able cases of pneumonia also frequently occurs from the same cause: the *fatal* symptoms occurring suddenly is not conclusive of embolism, for a thrombus may form slowly, causing very trifling symptoms, when the least shifting of the clot will cause complete occlusion and all the symptoms of embolism. Embolism of the gastric artery or its branches is the most common cause of ulceration of the stomach: if the branch be of large size, the infarction will be deep, and the infarcted area being deprived of a constant renewal of its alkaline blood, is acted upon and digested by the gastric juice, and ulceration or perhaps perforation may result as a consequence. Hæmorrhagic infarction due to intense congestion from other causes, such as obstructed portal circulation, suppression of menstruation or hemorrhoidal flux, might have a similar result. Both the shape and locality of these ulcers often point to an arterial origin.

The duodenal ulcer, which so frequently occurs in connection with severe burns, may sometimes result from pyæmic embolism and subsequent action of the gastric juice; *but* as simple congestion, without ulceration, of other portions of the alimentary canal is often found in connection with these cases, it is *most* probable that the hemorrhagic infarction preceding the duodenal ulcer, associated with burns, is generally of congestive origin.

Embolism of cerebral arteries, perhaps, *seems* more common because its symptoms are more obvious. A sudden fit of some kind, epileptic or syncopal, ending in hemiplegia with or without aphasia, is the usual mode of attack; there may or may not be loss of consciousness. Cerebral embolia are usually derived from left heart or the first part of the aortic arch, but may sometimes come from the pulmonary vein; the middle cerebral arteries—by some authorities the right, by others the left—are the ones most subject to embolism. The neighborhood of the striate body is the locality most commonly affected, and white softening the most common result. The oculist has opportunities to observe the phenomena of embolism in the retinal arteries. I have seen a number of cases of unilateral convulsions in children resulting in hemiplegia from which

they more or less rapidly, but often imperfectly, recovered, and have believed these cases to frequently result from embolism. In my experience true convulsions in the very young—say within three months—is very fatal; may it not be that the very young are peculiarly predisposed to endocardial inflammation, which *escapes* our *observation* because we seldom look for it.

Dr. Kirkes and Dr. Hulings Jackson, have with much show of reason, attributed chorea to embolism of the capillaries supplying the sensori-motor ganglia of the corpus striatum, the obstruction being only sufficient to render their centers unstable, producing impairment rather than abolition of function. The delirium of fevers has been attributed to an altered state of the white blood corpuscles, in consequence of which they cohere and by aggregation form temporary capillary embolia, and occuring in the cerebral convolutions produce more or less temporary impairment of function: Cases of temporary insanity may have a similar origin. I have before alluded to the melanærnie dyscrasia often attending intense malarial cachexia. These pigment granules, resulting from a transformation of the hæmatine of necrosed blood corpuscles, are deposited as embolia in those localities where the capillaries are smallest, as in the brain, kidneys and serious membranes; it is believed that many of the gravest symptoms in pernicious malarial fevers may be due to this process of embolism. Vascular obstructions from thrombosis or embolism occurring in the kidneys often give rise to no appreciable symptoms; but sometimes there is diminished secretion with albumenuria and hæmaturia. When a large embolon obstructs the renal artery, a sudden acute pain is felt in the region of the kidney, and this pain is radiated in the direction of the ureter towards the bladder and thigh: I have seen such a case.

Vascular obstruction in the extremities is usually from thrombosis and proceeds generally from inflammation. When it occurs in an artery and results from embolism an acute sudden pain is felt at point of obstruction, pulsation ceases in the artery on the distal side of the obstruction, and the vascular

area of the artery becomes numb, pale and cold. If the artery be large and collateral circulation unfavorable, gangrene, dry or moist, may ensue. Sometimes similar arteries in opposite limbs are simultaneously affected. As embolia are most apt to be arrested at points of division of arteries, they occur most frequently, in the upper extremities, in the axillary space or at the elbow; in the lower extremities at the bifurcation of the common femoral or popliteal; it sometimes occurs at bifurcation of aorta. Gangrene of the extremities in young persons is generally due to embolism. When occurring in the old is as often and perhaps most frequent from thrombosis. The individuals most liable to vascular obstructions of this nature are those who are or have been subject to endocardial inflammation from rheumatism or other cause; those past the meridian of life or of dissipated habits, when more or less vascular degeneration occurs; those affected with the various cachexia, cancer, syphilis, gout, anæmia, etc., particularly those affected with albuminuria from contracted kidney and hypertrophy of the left heart—for an hypertrophied ventricle produces atheromatous degeneration of arteries from over action; lastly those having dysentery, pneumonia and the esoential fevers; also the puerperal state.

Hitherto we have been considering vascular obstructions from thrombosis and embolism almost purely in relation to their mechanical relations and effects; but there occurs in very many cases a *complication* vastly more important in its effects on the economy. This brings us to the consideration of infection: what is infection, septicæmia or blood poisoning? In splenic fever many cases of puerperal fever, scarlet fever, dyphtheria, dypththeritic dysentery, erysipelas, small-pox and in malignant or ulcerative endocarditis, we have embolic obstructions resulting in, or at least attended with, the most violent forms of inflammation tending to most rapid suppuration and gangrene. In these affections pathologists find on the valves of the heart ulcerations and coagula containing masses of bacteria, and in the smaller arteries, arterioles or capillaries embolia of aggregated bacteria. Where do these bacteria come from? Do they come from without, through

some solution of continuity of tissue, or *may* they enter the tissues from without through the absorbent or capillaries, or can they originate in the disintegration and chemical alteration of clots or exudated matter, or having come by any means or from any source, do they constitute the matries morbi or special irritant of infection, or is that special irritant an inappreciable chemical one? These questions have not yet, to my mind, been clearly elucidated, but remain *sub-judice.*

The symptoms of thrombosis and embolism are often vague and indefinite, and our diagnosis of them too frequently problematical, until tested and assured by the scalpel of the morbid anatomist. As a general thing, knowledge in medicine is valuable only in proportion as it serves to guide and direct us to successful treatment. Judging by this rule our knowledge of thrombosis and embolism might be considered as of very little value, but it is otherwise; for to know that such phenomena occur, to know from what causes they arise and to what results they lead is of great advantage to ourselves and value to our patients; of advantage to ourselves because it gives us the assurance and confidence of walking in the light instead of groping in darkness; of value to our patients in saving them from expensive, useless and perhaps injurious treatment.

I have nothing to offer or suggest in the way of treatment beyond rest and expectancy.

Illustrative Cases.

Case 1st.—Was called early one morning, about three years ago, to see a German lady eighty years of age. Found her lying on the kitchen floor complaining of agonizing pain in right hip. She had risen at her usual hour and was in her usual good health. On coming down-stairs and entering the kitchen she suddenly, without stumbling or other mishap, fell to the floor and was attacked with her present pain. I endeavored to make an examination, but as every motion greatly increased her suffering I had to desist; not liking to give her chloroform in order to make a satisfactory examination, I jumped to the conclusion that she had fallen from unknown cause, perhaps

giddiness, and fractured the neck of the femur; had her removed to bed and leg placed on double inclined plane. Her pains continued so severe I had to keep her more or less under the influence of opiates for some time. About the third day I discovered a dark gangrenous spot two inches in diameter on the gluteal region, but so situated that it could not be ascribed to pressure. After a tedious illness the slough separated from the bone, granulation and cicatrization occurred, and the old lady got up and walked; she is still living, and walks almost as well as ever. Diagnosis, embolism of the gluteal artery.

Case 2nd.—Was called during the night to see a colored girl about twenty years of age; on entering her room I beheld a scene familiar to all who have done much practice for this race. The girl lay extended on the bed, two women stationed at her head and two at her feet to restrain her actions; she was talking vociferously in a hystero-religious vein. As her friends seemed extremely anxious regarding her, I at once and unhesitatingly pronounced the case simple hysteria devoid of any danger; on examination, however, I discovered high fever, hemiplegia and great disturbance of heart's action. After withdrawal of my premature favorable prognosis I elicited the following history: She had for some time been under the treatment of a neighboring practitioner for rheumatism, but of late, her means being exhausted, had been visiting Charity Hospital for advice and medicine. Present attack of fever, mental excitement and hemiplegia had come on suddenly that night; she died within twelve hours;—diagnosis, embolism from present or past endocarditis.

Case 3d.—A colored man, about thirty years of age, presented himself at my office January 5th, 1882, and gave the following history of himself: About the first of last September, had a slight attack sun-stroke, from which he quickly recovered. He had felt no consequent ill effects from the attack.

On the night of January 1st, had an attack of painful unilateral convulsions of the left side; the attack was attended with violent pain on top of the head and buzzing in the ears, and left him with a weakness of the whole left side. At

present time, January 5th, 1882, there is considerable weakness of the left side, causing him to walk with difficulty by the aid of a stick; feet are slightly swollen, and there is a systolic cardiac murmur. On night of January 7th, two days after his visit to my office, and seven days after his first attack, I was called to see him at his lodging. On the preceding day he had felt better, walked better, and went to bed, feeling much encouraged as to his final recovery; was waked up during the night by an attack similar to, but more severe than the first; found him lying on the right side, bathed in a profuse, warm perspiration, head drawn to the right and the left side engaged in a severe, continuous clonic convulsion. His conciousness was undisturbed, and he constantly uttered expressions of excruciating pain, which he referred to muscular spasms.

A very few inspirations of chloroform gave him complete relief from both spasms and pain, and he now uttered the strongest possible expressions of gratitude to God, chloroform, and, lastly, the Doctor. In about twenty minutes the convulsions and pain returned, but a similarly small quantity of chloroform again afforded relief, which remained permanent in consequence of having administered by the mouth a dose of chloral hydrate and potossium bromide, the left arm, however, was now completely paralyzed.

January 8th—Left arm partially recovered—temp. 101° F., pulse 80—tongue good—pupils normal, some headache but no heart murmur. No heart murmur was discovered after his first visit to my office.

January 9th—Temp. 99° F., pulse 80 and slight headache.

January 11th—Temp. 99.5° F., no headache.

January 14th—Slight headache, but otherwise improved.

January 17th—Some headache; has had a light attack of spasms and discovered complete blindness in left eye.

January 20th—Slow improvement.

January 23rd—Continued improvement; examined urine and found no albumen.

February 27th—Patient has just returned from the country, walks without a stick and sees well from both eyes.

Diagnosis—Embolism from endocarditis.—Treatment consisted of continued administration of bromide and iodide of potassium, with occasional doses of chloral hydrate and bromide of potassium, usual attention being paid to the emunctories.

I obtained the following interesting notes from Dr. W. H. Watkins, and as the case occured in connection with yellow fever, it is well worthy of attention.

Daniel Gavne, aged 22 years, was admitted into the Charity Hospital Sept. 11th, 1867. He had been attacked that morning with yellow fever. The symptoms were severe and the prostration great. The course of the disease was favorable. On the 16th, he had profuse epistaxis, controlled only by plugging the posterior nares. The clots were very soft. About this time bloody boils appeared on the arms and legs, of which one only was opened. This was situated on the right arm and healed favorably.

On September 23, he complained of precordial pain and oppression; on the 24th, there was augmented pain, hurried breathing and rapid pulse. On the 26th, moist rales were heard over both lungs posteriorly, and slight ascites was present. On the 27th, he had a severe chill followed by fever. He had severe paroxysms of coughing and expectorated viscid mucus.

On October 8th, he had another severe chill, his cough was easier; bowels, before acting regularly, now became constipated, and so remained until the 13th, when profuse diarrhœa came on accompanied by another chill. The diarrhœa was checked onOct. 15th, the kidneys acted well, no albumen; fluid in abdomen reduced.

The diarrhœa returned on the 22d of October, and was not checked until the 30th, when a severe chill occurred (this was the fourth chill). About this time his right arm, pectoral region and right side of chest became œdematous. Decubitus was on the right side, but change of position to the left side did not affect the local swelling. Pulse was very feeble and rapid, there was great dyspnœa, surface of the body livid, every evidence of deficient æration of the blood present. The abnormal

respiratory sounds and feeble action of the heart precluded satisfactory auscultation of that organ. Its action was tumultuous and abnormal sounds were heard.

On November the 5th, he had the fifth chill, accompanied by an extremely severe paroxysm of coughing; sputa very tenacious and yellowish. Auscultation gave evidence of greater lesions on the left than on the right side. On November the 7th, the diarrhœa was again arrested; the cough was more easy. The right jugular vein was found hard and corded. The right side of the face was more puffy than the left, the œdema generally had diminished. The superficial veins from shoulder to chest were hard and enlarged.

Such was the general condition as it continued until death put an end to the scene at 7, A. M., November 17th, 1867.

Autopsy.

The pleural cavaties contained a quantity of serum and lymph due to extensive inflammation. Both lungs were found agglutinated by means of coagulated fibrin to the thoracic wall, and were detached with some difficulty. There was congestion of both lungs and obstruction in some of the larger branches of the pulmonary artery. On the surface of lower lobe of left lung could be distinguished a hemorrhagic infarctus, the size of which indicated occlusion of a vessel of considerable calibre. Its contents consisted of coagulated blood which had commenced softening. Throughout the substance of both lungs were innumerable metastatic abscesses of variable size. None, however, contained more than three or four drops of pus, which appeared laudable.

The pericardium was also extensively inflamed, its cavity filled with turbid, bloody serum, and its surface near the apex was attached to the heart by means of organized lymph. The heart was pale and yellowish and apparently of normal size. It exhibited no sign of valvular disease. It was free from clots. Between the pericardium and surface of the diaphragm was found an abscess of considerable size, containing about half an ounce of pus.

The superficial as well as deep veins of arm below the elbow were pervious and appeared healthy, but the brachial, subclavian, external jugular and cephalic of right side were occluded, being filled with coagulated blood and pus. The brain appeared much softened throughout its entire extent, not more so, however, in one portion than another. There was an extravasation of blood beneath the arachnoid membrane on the right side and a limited effusion of bloody serum in both lateral ventricles. The kidneys were congested, and on section exhibited numerous multiple abscesses. The liver was congested; appearance otherwise healthy.

Chyluria.

By JOHN DELL' ORTO, M. D.

(Read before the New Orleans Medical and Surgical Association, on March 18th, 1882.)

Early in the morning of the 3d day of February, 1880, I was requested to see Mrs. B., who was very uneasy about her complaint, because she *had been discharging matter from her bladder* for several days. A glassful of urine evacuated on the previous night was shown to me. It was very thick, and white as milk. After having carefully examined her, and satisfied myself of the absence of any alarming symptoms, I took the urine with me, and promised to return next day.

Doctor Joseph Jones kindly examined that urine. The specific gravity was 1022, and it contained albumen (proportions not given); under the microscope some blood corpuscles and floating fatty granules were found. The white color of the urine was then due to the presence of fat, or chyle:—it was consequently a case of chylous urine.

Chylous urine! This was the first time that such a case came under my notice. So it goes, gentlemen, with this profession of ours; we never get old enough! The old aphorism with which our father Hippocrates commenced his book, "*ars longa, vita brevis*," is always true and to the point, more especially with regard to the art of medicine; we never get old in the profession, we are always young, because there is always something

new to see, to observe, to study, to learn, many a time from our own younger *confrères.*

Chyluria, as albuminuria, as glyeosuria, is a symptom of some diseased condition of the organism, which does not reside, according to my opinion, in the kidneys. I mean that the fat in chyluria, as the albumen in Bright's disease, as the sugar in diabetes mellitus, is not secreted in the kidneys; but it is the last manifestation of some morbid process commencing somewhere else, and gradually causing, through mysterious phases of metamorphosis, its passage in the urine.

How does this happen? Which is the organ primarily affected in this disease? What is the etiology? What will the treatment be? These questions were passing through my mind, when I retired to my room that evening. You may imagine how earnestly I consulted the books and medical reviews of my library! I must confess that I was soon disappointed; nothing could I find that gave satisfactory answers to the above questions!

The following lines, however, of Dr. Geo. B. Fowler, of New York, from his pamphlet on "*Chemical and Microscopical Analysis of the Urine in Health and Disease,*" are worthy to be quoted, as they seem to express the actual state of our knowledge upon the matter.

"Chylous urine has ever been one of the more interesting, "and at the same time puzzling conditions with which we have "to deal. In appearance it is milky, and on standing collects in "creamy layer of the surface. There is always more or less "blood, fibrine, and albumen present. Sometimes it coagulates "spontaneously, when passed, and very closely resembles "*blanc mangé.* Cases are related where it coagulated in the "bladder, and completely blocked up the urethra, from which "it was extracted in long flakes. It is a rare affection, and "only a few cases are reported. Writers disagree widely con-"cerning its pathology and symptoms; but without going "over the history at length, the following are the main points "regarding this peculiar disease."

"It is most common in warm climates; makes its appear-"ance suddenly, and as suddenly ceases, to re-appear again "after months, and even years. Sometimes it coagulates spon-

" taneously like lymph, and again does not undergo this change.
" The milkiness is more marked after meals. The old authors
" considered the kidneys and the assimilative functions of the
" system to be at fault and diseased. But casts have been search-
" ed for in vain, and several post-mortem examinations of individ-
" uals who were affected with this disease have failed to afford
" evidence of alteration in any organ; so that now it begins to
" be stated that the chyle and lymph are discharged directly
" into the urinary passage from the lymphatic vessels them-
" selves, and Roberts especially advances this opinion, hav-
" ing noticed in patients voiding chylous urine appearances
" which indicated disease of the lymphatics."

This is very good, but it does not elucidate the precise mechanism of chyluria, nor suggest any indications for a rational treatment.

Next day (4th February), I returned to my patient to see whether at her bed-side I could be more fortunate in making the diagnosis. The lady informs me that a year before she had the same complaint—the late Doctor Rancé was her attending physician; after six months under his treatment the urine became normal and continued so until a few days ago.

She is 47 years old; her constitution is sanguine and good. She was born in Spain, and has been living in the city twenty-five years. Has been a healthy and rather stout woman all her life. Menstruat on commenced at 15 and ceased at 44, in 1877. About that time her husband fell sick—it was a severe attack of illness which lasted eighteen months and compelled her to devote all her time to continually nursing him day and night. The consequence of this overwork was loss of appetite and flesh. Her husband's death left her without means; hard work, poor wages and poor living were the result. It was then that the milkiness appeared for the first time in her urine. This second attack of chyluria was preceded, like the first, by pains in the loins, in the stomach, and in the præcordia, together with anorexia and insomnia. She is also subject to neuralgio-rheumatic pains; occasionally she has attacks of light intermittent fever. She complains of a troublesome *pru-*

ritus vulvæ (mind, gentlemen, this symptom is also observed in diabetes mellitus); some days blood is mixed with the urine.

The functions of the heart and lungs are regular. I could find nothing abnormal in the liver, stomach or spleen; the pulse and temperature are normal; the quantity of urine voided in the 24 hours is almost natural.

From these symptoms and antecedents it was easy to conjecture, that the main factors in the causation of this disease must have been (beside malarial complication) a deep defect of nutrition, and a disordered innervation caused by overwork and mental anxiety—probably interfering with that osmotic circulation, so well described by Dr. Parkes and Prof. Chas. Murchison, of London, continually taking place between the blood and all the fluid contents of the alimentary canal, such as saliva, gastric juice, pancreatic juice, bile, and intestinal mucus, that daily pour out in such enormous quantity. The effect of this circulation is supposed to assist in the assimilation of the nutritive materials derived from the food, to help the absorption of fat, peptones, etc., in fact to aid all the metamorphoses required for the repair of tissue.*

Based upon this diagnosis, my plan of treatment was directed chiefly to improving nutrition, and giving tone to the blood vessels and to the nervous ganglionary system.

The following indications were consequently fulfilled:

1st. To get rid of the malarial complication, as soon as possible, by the prompt administration of sulphate of quinine, which I prescribed in two-grain doses to be taken every 2 hours during the first two days.

2d. To change diet; recommending more nutritious food to be taken with more regularity.

3d. To aid digestion by the long-continued use of the tincture of muriate of iron, combined with general tepid bathings and outdoor exercise.

4th. To relieve the nervousness and insomnia with chloral hydrate taken at night in ten or twenty grain doses.

5th. To quiet the *pruritus vulvæ* with a concentrated solution of boracic acid.

*London *Lancet*, June, 1874.

Under such a treatment continued during four months, the patient rapidly improved, so that at the commencement of June her urine had become completely normal.

On the 15th of September, 1881, she had an attack of intermittent fever, of which she recovered in one week—urine remaining normal.

On the 2d of January, 1882, I met her in the street, when she notified me that, since the end of October last, the milkiness had reappeared. She was this time in better circumstances than before.

I told her to save the urine voided during the next twenty-four hours. Next day I went to her house to get that urine for examination, and found that it had suddenly returned clear and normal—very puzzling indeed! Such is the history of my case of chyluria.

Did I succeed in resolving the problems which I put down at the commencement of my paper? I believe not—the opinion which I expressed about its etiology is a mere speculation, that does not explain yet the mechanism. Nevertheless the subject seemed to me so interesting, that I thought it worthy to be brought this evening before the Association. The disease is so seldom met in common practice and in our latitudes, that I think expedient that every case should be put on record.

II.

As far as I know, the cases of chyluria reported in the medical literature are very few. I suppose that a brief review of some of them may not be out of place in this second part of my lecture.

In the Schmidt's Jarsbücher of 1863 several cases are related, but their analysis is not known.*

Beale, in his *Traité de l'Urine*, and Golding Bird, in his book, *De l'Urine et des dépôts urinaires*, speak of analyses made by them of urines belonging to individuals who were living in tropical countries.†

* Quoted by Icilio Guarneschi in the Giornale dell' Academia di Medicina di Torino, April, 1881.
† Loco citato.

Eggell, in 1870, made an analyses of chylous urine, and found in every 390 cc. about two grams, (6.87 per thousand) of fatty matter, in which he demonstrated the presence of neutral fats, of *cholesterin and leucitin.**

Bourhardat saw the chylous urine of a Brazilian, which had a specific gravity of 1021, and contained 13 per cent of fat.

Vogel observed a case in Wildungen, in which the fat had the appearance of very fine granules, and the urine agitated with ether became clear. Whenever this patient abstained from nourishment and drank a great quantity of water, the milkiness immediately disappeared.†

The *London Medical Record* of January 13th, 1875, speaks of a case of intermittent chyluria related by Oehme in the *Deutsches Archiv für Clinische Medicin:* "The patient, who suffered from cancer of the pylorus, exhibited, besides the symptoms due to his gastric affection, the peculiarity that, from midnight to five or six A. M., he passed an extremely white milky urine, which was in fact chyle, containing fat and albuminous matter. This character of nocturnal secretion was first observed at the end of the year 1872, and ceased seven weeks before his death, in August, 1874.

Doctor G. B. Fowler had an opportunity to examine a specimen of chylous urine, which came and disappeared at intermittent times: "About ten weeks before, he says, the "patient had attempted to pass his urine five times within "an hour; this necessitated great straining, and he was sud- "denly alarmed by a severe pain, and a discharge of blood "and milky urine. He stated that the milky fluid sometimes "was perfectly free from any urine. He was able to know "this from the fact, that the uriniferous odor was entirely "absent, and moreover the bladder had just been emptied "only a few minutes before.

The latest journals of Europe bring us the relation of three new cases, to which I will now call more especially your attention, on account of being very interesting for their novelty and instructive to future experimenters. At the meeting of

* Loco citato.

† Julio Guarneschi, loco citato.

the Academy of Medicine of Turin, held on the 18th of March, 1881,* Professor Concato of that university reported that, during the month of September, 1880, he was consulted by a lady, twenty-four years old, an inhabitant of the mountains of Piedmont, who had been affected with chyluria since May, 1879, while she was on the sixth month of her second pregnancy. The woman never had any serious illness; she looked however a little slim, and rather badly nourished. She stated that, when she first noticed the milkiness in her urine, she was laboring under a great grief, and that during a long time she had been living on pure vegetable diet, as she had a peculiar disgust for any kind of meat. The following is the analysis of the urine, which was accurately made by Icilio Guarnescni, professor of chemistry, and reported at the same meeting:

"That urine† had the appearance of milk, and was extremely "thick—by slowly pouring the fluid part of it into a glass, co- "agula of a yellow looking color could be seen floating. "Reaction slightly alkaline. Specific gravity 1.1071 at the "temperature of 15° Centigrade.

"The microscopical examination showed the presence of "fibrine and blood globules—but no globules of fatty matter. "With heat it coagulated freely. When heated with potash "it immediately developed odor of *trimethylamin*, probably due "to the decomposition of the *leucin* and colin. * . * "A quart of this urine shaken up with ether and then evapor- "ated, furnished a residue of fatty matter which weighed 10 "grams 69 c. c., and had the appearance of a solid crystalline "mass impregnated with liquid fat; under the microscope "crystals of the so-called stearine by Wobin could be seen.

"This fatty matter was next treated with ether, which dis- "solved *cholesterin*, *leucin* and some liquid fat mixed with "solid ones. This solution was afterwaads treated with alco- "hol, which dissolved the *cholesterin* and *leucin*, and left the "liquid fat undissolved (oleine)." * * *

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* Giornale dell 'Accademia di Medicina di Torino, Aprile, 1881.

† The same journal, page 251.

Professor Concato does not speak in his report of any special treatment recommended by him. Considering, however, that the strict vegetable diet so long used by the patient might have something to do with the causation of this disease, he advised her a complete change of nourishment to a pure animal food. To this advice the woman faithfully submitted, but with no result; the urine has continued chylous, although the lady has greatly improved in her constitution, and enjoys good health.*

The conclusion drawn by the Professor is, that this kind of chyluria, which he calls constitutional, must be due to some defect in the assimilative functions of the organism quite different from that which causes obesity. While in the latter everything is converted into fat and stored up in the organism, in chyluria the fat does not fix itself in the body, but it passes through the blood into the urine, and perhaps in some other humours and liquids.

The second case also originated in Italy, and was under the care of Dr. G. Cattani, of Milan.†

The antecedent medical history of this case is very different from that of Dr. Concato and mine; while in these two the etiology may be traced to moral troubles and poor nutrition, in the former quite the opposite happened.

The patient is a retired soldier of the Italian army, a son of Northern Italy, 50 years old, a generous liver, a free drinker, greatly addicted to the pleasures of Venus. In the winter of 1876–77 he had an attack of bronchitis, with symptoms of functional derangement of the heart; he soon recovered, but during convalescence the urine became milky and lasted five months. No physician was consulted.

From 1877 until April, 1880, he enjoyed good health, though always indulging in his intemperate habits. As a consequence of such a life of excitement he was then seized by a second attack of broncho-pneumonia, soon followed by chyluria. Dr.

* In the last number of the Journal of Academy of Medicine of Turin (Jan. and Feb., 1882) it is reported that the urine of this lady had finally become completely normal

† This case was reported by Prof. Concato at the same meeting of the Academy of Medicine of Turin.—Giornale dell'Accademia di Medicina di Torino, Aprile, 1881.

Cattani was sent for and found that the disease was complicated with endocarditis, and insufficiency of the *valvulæ sigmoideæ* of the aorta. With proper treatment the acute troubles of the heart and lungs were soon relieved. With regard to chyluria, large doses of gallic acid (six grams a day) were administered, and at the end of one month the urine was restored to its natural condition.

Dr. Cattani seems to attribute the rapid disappearance of the milkiness in his patient to gallic acid. For my part, I doubt that gallic acid is of any use in this disease. I am rather inclined to the opinion of Prof. Concato, who attributes this satisfactory result to the prompt and energetic treatment of the diseased condition of the circulation, of which this chyluria may be a symptomatic or secondary affair.

The last case comes from England. It is the case of hæmatochyluria, reported by Dr. Stephen Mackenzie at the meeting of the Pathological Society of London, on October 8th, 1881. I will not occupy your time in reading the details of this case. You know them already, as a full account was given by our friend, Dr. Crawcour, in his beautiful address delivered last December on the night of our anniversary.

I will merely mention the following two mere striking points:

1st. The appearance of chyluria in a young man, born in India, one month after his arrival in London.

2d. The discovery under the microscope of the *filaria sanguinis hominis*, both in the blood and urine of the patient.

The most remarkable feature in connection with this second point is the periodicity in the time of appearance of the hæmatoxoon in the blood, following the same rule of the life-history of this worm in China, as it was observed in the patients of leprosy—that is, its absence from the blood during the daytime, and its appearance during the night.

Now, the question arises here, was the *filaria sanguinis hominis* in this case a mere accident, existing in the blood of the patient, before he went to England, and consequently be-

fore the appearance of chyluria? or is the parasite to be considered as the cause of the chyluria; or as the effect?

I will not venture to answer this question, inasmuch as Dr. Mackenzie himself did not want to speculate on the matter; he very wisely contented himself in exposing the facts which he had observed. These facts are very valuable indeed, as they may throw a new light upon the pathology of this obscure disease, and open a wide field for further study and investigation.

The Topical Use of Iodoform.

By L. F. Salomon, M. D.

[Read before the New Orleans Medical and Surgical Association, April 8th, 1882.]

In presenting to you this evening a paper upon the topical use of iodoform, it is not my purpose to enter into generalizations and theories of its mode of action, but simply to confine myself to a few practical points derived from my own experience in a variety of cases in which the drug has proven beneficial in my hands; its application in certain conditions being followed by satisfactory and more rapid results than by any other mode of treatment.

Fully cognizant of the fact that, like most new remedies, iodoform has had placed to its credit claims which are in many respects unwarranted, I do not vaunt it as a panacea in all cases requiring topical treatment, but will venture the assertion that as an application in a large variety of cases in which there is a solution of continuity of soft parts it far surpasses all other known remedies and has a wide range of usefulness, being a powerful antiseptic as well as acting as an alterative to diseased surfaces.

With these few preliminary remarks I shall now proceed to the consideration of some of the conditions in which it is applicable.

Venerial Sores.—For the past three years my only form of treatment of this class of ulcer has been the application of iodoform in powder, dusted over the diseased surface twice or three

times daily, and the results have uniformly been most gratifying. In all such cases without a single exception, and I have treated quite a number, the cure has been remarkably rapid and I have seen the "soft" sore heal within three weeks, and the hard or true Hunterian chancre, which usually runs a course of from six to eight weeks, or even longer, I have seen completely cicatrized in four weeks, and sometimes less, under this treatment.

It is not an uncommon occurrence to see venereal ulcers take on a phagedenic aspect. In such cases iodoform is equally efficacious, and in my opinion is the only treatment to be pursued. I can best illustrate its effects by the following case which was the worst of its kind it has ever been my misfortune to see.

L. A., age 26, unmarried, called upon me at my office stating that, about ten days before, he had noticed the appearance of a venereal sore upon the *glans penis* just behind the corona. Three days before I saw him paraphimosis had occurred, and the prepruce had remained behind the swollen glans, notwithstanding all his efforts to replace it.

You can imagine, better than I can describe, the then existing condition. Sloughing had commenced, and it required but a slight clip with the scissors to divide the constriction and reveal an extensive phagedenic surface extending around and denuding the cavernous bodies to such an extent, that they were so separated as to allow a view of the urethra below; a portion of the glands on one side had sloughed away, and there was a fistulous opening in the dorsal side of the urethra; constituting upon the whole a most unpromising case.

No other treatment was instituted beyond the removal of the necrosed tissue and the local application of iodoform, and in three weeks entire cicatrization had taken place, leaving him with but half his original glans penis, and a small opening in the dorsum of the penis communicating with the urethra, through which the urine flowed upon micturition. This latter condition was only cured by the actual cautery.

As a dressing in suppurative buboes, iodoform has no equal, producing as it does rapid granulation after the evacuation of

the contained pus. Although recommended in solution in collodian as sorbefacient to be painted on inflamed inguinal glands for the purpose of preventing suppuration, I must confess that I have not found it answer my expectations.

Rodent Ulcer.—T. W., negro, age 35, presented himself to me on October 11th, 1881, with the following history: About one year previously had noticed a discharge of mucous from the nose which he thought at first to be nothing more than an ordinary catarrh, which continued some weeks, when the discharged became purulent and after a period became exceedingly offensive. Ulceration of the mucus membrane of the nasal passages set in and gradual destruction of tissues took place and was progressing very rapidly. Examination revealed complete destruction of the septum and ulceration of the entire nasal cavity as far as could be seen with the speculum. There was partial necrosis of the vomer and ulceration of the wings and tip of the nose; the lip was also denuded of cuticle where the acrid discharge had come in contact with it. The whole ulcerating surface presented a dirty, grayish appearance and there was a profuse, purulent and very offensive, discharge such as manifests itself where there is necrotic bone.

There was no history of either syphilis or scrofula. The man otherwise was robust and apparently in good health. Had been treated by several physicians in his neighborhood without result.

Treatment was begun by applying thoroughly to the whole diseased surface an ointment composed of one scruple of iodoform to one of cosmoline.

The change in two days was remarkable. The discharge had notably decreased and was no longer offensive, and the whole diseased surface was granulating. The application was continued three weeks, and the mucous membrane of the nose presented a natural appearance. There remained, however, a slight discharge which examination showed to proceed from the vomer, which was in a state of necrosis. I removed the necrosed portion of bone and applied to the spot the iodoform in powder, and he was sent home completely cured Nov. 12th. The immediate change in the appearance of the diseased

surface, and the rapidity with which recovery took place were remarkable and more than I expected when the treatment was instituted.

Other conditions have presented themselves in which I have used iodoform with the most satisfactory results, and not wishing to detain you I shall merely mention them, without entering into details of cases.

In fissure of the osuteri, which frequently happens, especially after first labors, no application is so useful as iodoform. True, many of these cases get well without any treatment, but we are sometimes called upon to treat cases in which, owing to existing conditions, spontaneous union does not take place and the fissure remains, giving rise to much annoyance.

Until I used iodoform I had experieneed much trouble in the treatment of a few cases of this nature which came under my observation, but since I have been using the drug, I have seen two cases which got well in ten days under its use.

In erosions of the os or vaginal portion of the cervix, whether due to endo-cervicitis or not, iodoform is the best application. I admit that this condition is frequently maintained by endo-cervical disease, and that by curing the disease the erosions will disappear; but iodoform acts admirably in chronic cervicitis, and doubtless by its influence on this disease hastens the healing of the erosious.

In treating such conditions, I generally apply a tampon of absorbent cotton saturated with a solution of iodoform in glycerine.

I was recently called upon to treat a case of gonorrhœa in a female which was completely cured in six days by the use of hollow suppositories containing iodoform.

As a sorbefacient and anodyne in epididymitis and orchitis, this remedy meets the indications admirably. Under its use the enlarged gland rapidly returns to its normal size.

In syphilitic ulceration of mucous membranes I have used iodoform with the most happy results.

While discussing this remedy we are reminded of the fact that its odor makes its use very objectionable, and frequently causes us to hesitate in using it on that account. Patients al-

ways object to its disagreeable, pungent, all-pervading odor, and many have been the devices for rendering it inodorous.

I have as yet failed to find anything which will completely deodorize it. Tannic acid in the proportion of one grain to four of iodoform will partially destroy the odor, but the best agent is, coumarin, the alkaloid of the Tonqua bean, a sample of which I here show you. This alkaloid is almost, but not completely a deodorizer. The mixture which I now show you is deodorized, but inasmuch as the alkaloid is more volatile than the iodoform a slight odor of the latter can be detected after exposure to the air for some length of time. One grain of coumarin will deodorize forty grains of iodoform.

However, this deodorizer may act when the drug is applied externally, when used as an intravaginal application nothing will prevent emanation of the odor, for it is very rapidly absorbed, and while most of it is given off by the urine a small portion is exhaled by the skin and lungs and of course is very soon perceptible. Therefore, when used otherwise than externally no advantage is gained by deodorizing the drug with compounds which possibly may exercise a deleterious influence upon its efficacy.

It has not been my purpose to elaborate upon the discussion now going on in medical journals upon the uses and dangers of iodoform, but simply to throw out a few hints which will lead you to test the drug in the classes of cases indicated above, trusting that you will find it as useful in your hands as it has proved in mine.

Quinine as a Factor in the Diagnosis of an Obscure Form of Disease.

By Thomas Layton, M. D.

On Sunday, March 19th, 1882, at 9, P. M., I was hastily sent for by a family residing in the upper and rear portion of the Fourth District of this city. On reaching the house, I learned the following history: I had been summoned to meet

another physician in consultation by a well-to-do grocer, who, among other children, had two splendid boys, aged respectively about two and four years. The children were well cared for and attentively watched; the neighbors were friendly, and admitting that the little fellows may have enjoyed some latitude with regard to playing in the street, it is certain, owing to their tender age, that they cannot have strayed far from home. On Wednesday night, March 15th, the two children went to bed in their usual good health, and enjoyed sound sleep until the next morning (March 16th, Thursday,) at about five o'clock, when their mother was awakened by the older boy, who complained of being chilly, (his surface, as I am informed, was blue and cold), and who began to vomit and purge; the vomited matter being a slimy, colorless liquid, and the stools serous and abundant. (In fact, later, when I asked the mother if the passages resembled rice water, she answered that they did). After trying ineffectually various domestic remedies, the regular physician of the family was sent for. On exhibiting the remedies which he prescribed, the child became better; the next day (Friday, 17th March), although not entirely recovered, he was, however, well enough to play about the yard and partake of some pigeon broth, and even, I believe, to eat a small quantity of the pigeon itself. Now, during all this time, the younger boy was in perfect health; but on Saturday morning (at about the same hour at which his older brother had fallen sick, two days previously,) this younger child too awakened, and began to vomit and purge, and his surface *too* was cold to the touch. The older boy had still not entirely recovered. The physician saw the smaller one without delay, and from that time on until I was called in the next night at 9 o'clock, he administered to both children, at intervals, powders composed of calomel, rhubarb and digitalis. These, with mustard applications to the epigastrium, stimulating frictions, and copious and repeated enemas given to the larger boy, who during Saturday again began to grow worse, constituted the treatment until I saw the children.

No quinine had been used, and no record of temperature or pulse had been kept. The older boy, in vomiting, had on one

occasion thrown up a part of the core of an apple, and two, or three, or more, apple seeds, which induced the Doctor to suspect intestinal obstruction, to combat which he had used large and frequent enemas, as he informed me himself. When I saw the children for the first time, both were lying in the same bed; the surface of the older was cool, that of the younger cold and clammy; his eyes were somewhat sunken and surrounded by a dark zone—both were extremely restless, so much so, that I was unable to succeed in getting the temperature of either. The older boy was purging principally, his stomach being relatively quiet; the younger was vomiting by mouthfuls every few moments, and did not seem to be purging. What he vomited in my presence, and what was spread out on a towel and the bedclothes around him was black vomit, as characteristic as might be desired. It was evident that the little fellow was dying. I was told that the older boy (who up to that time had had in all eighteen or twenty stools) was passing downwards matter similar to that which was being thrown up by the younger, and in support of this, I was shown a vessel which had been used by the former, and in which, mixed with urine, I saw what, by gaslight, looked to me like a dark, grey discharge—certainly it did not contain blood.

The following line of conduct was agreed upon in consultation: A powder containing $\frac{1}{4}$ grain of calomel *alone* to be given each child every three hours—a blister to be applied over the epigastrium of each—free and frequent inunctions, with a salve containing quinine, to be used in the customary locations, and an enema containing 5 grains of quinine to be given each child every three hours—champagne with ice to be taken in small quantities by the mouth.

The younger boy grew worse steadily; the parents endeavored to exhibit two of the quinine injections, which were not retained. The child continued to throw up black, and died the next morning (Monday, March 20th), at five o'clock, forty-eight hours after the incipiency of the attack.

I saw the older boy in consultation at 8:30 A. M. The patient had taken three enemas, which were well retained, although there had been with each, a small amount of waste,

which could not be determined. The blister had drawn satisfactorily; the child had not vomited during the night; at early dawn he had thrown up one mouthful of a clear, colorless liquid, and this was repeated in our presence. Pulse feeble, 120; I induced the child to keep the thermometer in his mouth for very nearly five minutes; it then read 99°. I should add the skin was cool. The enemas of quinine were ordered to be repeated every three hours, one drop of Battley's liquor opii to be added to each; the calomel and quinine frictions to be continued. That evening at half-past four o'clock the child had strong fever—skin, red and hot—pulse 120. I tried, but in vain, to take the temperature. No vomiting, the mind perfectly clear. Sometime during the evening the fever had subsided. By or before the next morning the child had taken and retained seven more enemas, making thus a total (with the three mentioned above) of 50 grains quinine—by far the larger portion of which went into the bowel and remained there.

The next morning (March 21st) the little fellow's skin was decidedly cool again; but he was vicious and he would have nothing to do with the thermometer, his pulse was however 80 and feeble. We were told, that he had had a cold spell some hours before our visit; owing to this apparent tendency to a return of congestion, it was agreed to give him 15 grains more of quinine, in 3 enemas during the day. These were also retained, some allowance of course being made for waste—thus making in all 65 grains of quinine which were taken by the bowel in less than 48 hours. That evening, the child might be considered fairly out of danger, and after a few uneventful incidents he recovered rapidly.

REMARKS.—The sudden nature and nearly simultaneous occurrence of these attacks of sickness in the same family, the death of one of the brothers, and the imminent peril to which the other was exposed, naturally excited great consternation in the home circle, and much comment in the neighborhood, and this comment finally made its way into one of the daily papers. Indeed the current of popular opinion ran in the direction of suspected poisoning, and as might be expected, the advocates

of the potency of voudouism were out in full strength. Looking at the two cases dispassionately, I came to the deliberate conclusion that they were due to malignant malarial poisoning; that they were instances of what is commonly named malarial *congestive* or *pernicious fever*. I am aware that it is not usual to have these malignant types of malaria at this season of the year, but I know that I am seeing malarial fevers all the year round, in the rear of the city, in districts more or less resembling that in which this particular family dwell. I foresee too the objection which may be made, as to the singularity of the fact, that both these little boys were stricken down in the same mysterious manner and at the same time. This is certainly difficult to explain; but if the cases were not due to malaria, what was their cause? The diagnosis of intestinal obstruction can be set aside, for there was neither abdominal tenderness nor tympanitis, nor signs of peritonitis nor stercoraceous vomiting.

It was, of course, suggested that the children were poisoned; but by whom and by what? The family were out of the question—no one except our two patients was sick in the house. The father affirmed positively that in his grocery store he never kept rat poison or *rough on rats*—he was entirely unacquainted with oxalic acid, which I am told, is also known as salts of lemon. It was not concentrated lye, there were no burns about the mouth. The supposition would naturally come up that the children might have been poisoned by outsiders, designedly, or that they might accidentally have swallowed something injurious; but, again, what? It was not lead, nor copper, nor antimony; it might have been arsenic, for the symptoms to a certain degree resembled those of arsenic poisoning, but the recollection that if the older child, who was not taken sick until Thursday morning, *after spending a very good night*, had taken arsenic at all, it must have been some time during Wednesday, and that with him the facts as set forth show an interesting periodicity, I think the idea of arsenic poisoning can be abandoned. I might pass other poisons in review, those taken from the vegetable kingdom for instance, but as the trouble was so evidently due neither to morphine,

nor strychnine, nor atropine, nor digitaline, etc., I believe it is unnecessary to push this line of argument any further. Therefore, I do not think it presumptuous to say, that it seems to me, by exclusion, the diagnosis is narrowed down to that of malarial trouble, and I believe this view is sustained by the effects of quinine here; the younger child was practically moribund, he took no quinine, he died—the older boy received quinine by the bowel, he recovered.

I should add that the family physician gave a burial certificate of congestive fever. He asked for an autopsy, which was refused.

Why Chloroform is not Contra-Indicated in Labor with Co-Existing Cardiac Disease.

By JOHN L. OWEN, M. D.,

[Read before the Medical Association of Morehouse Parish, and published by request of that Association.

Mr. President and Gentlemen:

I shall endeavor to be brief, not because the subject lacks interest or importance, nor because brevity is the soul of wit; but I wish to give you ample time to discuss both this paper and the subject before the Association to-day, *i. e.*, Compound Fractures.

My subject was suggested by Dr. Buford at our last meeting, and as we are all interested in how remedies act, why they seem not to do the same thing, nor cause the same effect at all times; I propose to answer to the best of my ability our Secretary's question, "Why chloroform may be administered with perfect safety to a woman in labor, even when contra-indicated by organic disease of the heart, when the same remedy exhibited to the same patient at any other time proves fatal?"

I find nothing satisfying in my books on Obstetrics or Therapeutics. So whatever be the faults of this paper it has the one merit, originality. For, so far as I can find, no one has taken the following view of the subject.

You will, I think, all agree that chloroform kills in two ways. First—Through the heart, when given in overwhelming quantities, by paralyzing it. Second—When given slowly and long continued by anaemia of the brain and the resulting interference with respiration.

This seems to be its action as set forth by our best authors from Pereira to Riley, so we may accept books thus far, not because one or two say so, but that this is the opinion of all who have studied and written upon the subject, and in a multitude of counsel there is wisdom.

I wish to establish here the one point. Chloroform affects the cerebral and spinal nerves, not the sympathetic system; you have all, doubtless, often seen alvine evacuations and micturition taking place, under profound chloroformic intoxication, and further, Mr. President, both anatomy and physiology will prove the point well taken.

The heart and lungs each receive part of their motive power from the pneumogastic nerves. These great nerves arise from a collection of gray matter—the pneumogastric ganglion—situated in the posterior and middle portion of the seat of animal life, the medulla oblogata. This part of the brain bears the shock of all anesthetics. Chloroform more especially spends its force here, hence its tremendous control over sensibility.

The sympathetic system also sends nerve filaments to the heart and lungs, the superior, middle and inferior cardiac nerves supplying the former, the latter supplied by the thoracic ganglia.

The pneumogastric is a mixed nerve, conveying both sensation and motion; when I say sensation I wish you to understand a *peculiar* sensation, a sensation differing im the heart and lungs.

Both derive a certain sensation as well as a certain amount of power from these nerves; but both derive most of their motion from the sympathetic system. In the heart the pnuemogastrics control the time of the contractions; they are the check nerves, checking the sympathetic and giving more time, and consequently more blood flows. At the same time they

add thereto their own power; they transmit to the cardiac ganglion and brain the peculiar sense of irritiation produced by and dependent upon the presence of blood in the heart.

In the lungs we have the same system of nerves, with much the same functions; power from both, rhythm and sensation from the pneumogastrics alone, a sensation differing from that produced by any other irritiation, which, for want of a better name, we call want of breath, dependent not only upon the want of air, but upon the lack of blood, too.

Now, sir, chloroform expending its force upon the origin of the pneumogastrics, destroys or dulls their sensibility. They no longer perform their functions; the brain is no longer warned of blood in the heart, and what do we find results? The sympathetic system takes control; increased motion supervenes; a quick, weak pulse, irregular and hurried, with shallow respiration—all these evils added to an already overburdened heart which fails from the lack of healthful irritation transmitted to the brain. This is the case in valvular diseases and fatty degeneration of the heart, without accompanying child-birth.

But in child birth we have another factor brought into play: while the heart fails for want of time and power under the use of chloroform, it fails for want of irritation and subsequent transmission of motion through the pneumogastic nerves. Now, if we increase the blood pressure, shall we not also increase the irritation and fill up at the same time the depleted brain? I am sure, gentlemen, such will be the result. It is this increased column of blood and subsequent increased pressure which tides us over the danger line in the cases under consideration. It will rouse the enfeebled heart, fill the brain with arterial blood, power and motion are increased, to meet the increased demand. Let us see if we can supply this increased blood pressure.

The non-gravid uterus is a small body, some two inches long by one or one and a half wide, but when distended by the product of conception at the end of the ninth month it measures twelve inches in length with a transverse diameter of nine or ten. Its former small arteries, the Uterine, Spermatic

and Ovarian are enlarged and taxed to their utmost to supply the blood demanded by the gravid womb. Its veins are enormous cavities, reservoirs of blood, as it were. Its nerve supply comes from the spinal and symathetic system. The blood passes back to the heart through the Uterine plexus, thence to the internal illiac veins which empty into the inferior vena cava. As to position, you all know its situation, and how at the end of the ninth month of gestation it settles deeper into the pelvic cavity pressing upon the blood vessels of the inferior extremities, interfering with their circulation, depriving them of their needed supply of blood, and producing the œdema of the legs and feet so often seen. But I would have you notice, it does not press upon its own veins, nature has looked out for that, and placed them above its arteries behind and protected by the spinal ridge. All above is clear and wide open to the aortic valve; no sign of an obstruction.

Our patient is now in labor. What effect do we get anatomically? The uterine fibres contract; the blood is forced out, and into the heart; the hard womb and head of the child dam it up in the arteries; the blood is cut off from the lower extremities; where can it go? Into the arteries above the obstruction. From the veins above into the right heart which pumps it into the lungs, thence on to the left ventricle through pulmonary vein and left auricle, everything is full. The semi-lunar valve is defective; let it be. The ventricle must contract; the blood must go forward, and from the increased pressure in the left auricle and pulmonary vein, it will fill before regurgitation can take place. There is no vacancy behind; it must go to the head and superior extremities.

Let us give chloroform, for this woman suffers; there is no name for it but agony; but, you object; this woman has organic disease of the heart; again, I say, give chloroform; it will not do her one iota of harm, but will ease her sufferings, the sight of which is driving her friends wild and demoralizing the physician; give her ease, for, gentlemen, *pain kills.*

Give chloroform; you need not fear. The brain is full of arterial blood; the womb supplies the increased hydrostatic pressure and increase the irritation.

The lungs will supply oxygenated blood ; the heart will send it into its own arteries and to that dormant and dulled brain, rousing the medulla and tiding us over the danger; it has never failed us yet.

To recapitulate: Given a certain amount of blood, which produces a certain amount of irritation ; increase the amount of blood you increase the irritation and subsequent nerve nerve power generated.

The uterine contractions supply that increased blood pressure, which results in increased nerve power.

Dull the sensibility of the brain and nerves with chloroform, we destroy pain. We may dull the sensation in heart and lungs, but reflex action comes to our aid. The heart contracts ; the lungs expand ; the brain is full of arterial blood ; it is no longer anaemic; life is sustained.

Use chloroform ; use it as an experienced swordsman does his weapon—boldly, but with caution. Use chloroform ; it aids us in our task—a task filled with unforeseen and, therefore, unguarded dangers. Use chloroform ; it conquers pain, smooths woman's way in her hour of trial, and does away with that curse pronounced against her so long ago : "In sorrow shall thou bring forth children !"

National Board of Health Defended.

By STANFORD E. CHAILLÉ, M. D.

His Excellency S. D. MCENERY, Governor of Louisiana—

SIR : The Annual Report of the Board of Health of the State of Louisiana for 1881, addressed to and recently submitted "through your Excellency to the General Assembly of Louisiana," contains, in regard to the National Board of Health, statements so inaccurate, partial and misleading, that it becomes my distasteful duty, as the representative and chief executive agent in New Orleans of said Board, respectfully to call attention to some of said statements.

The President of the State Board, referring to the appointment in 1881 of an inspector of the National Board at the Mississippi River Quarantine Station, reports and italicizes on page 403 as follows:

"When the agent and executive officer of the National Board, Dr. Chaillé, approached me on this subject, I simply stated that the gentlemen named, Drs. Carrington and Patton, were not *personally objectionable.* I did not enter into the legal aspects of the case, which were fully unfolded in the Report of the Board of Health for 1880. Neither was the fact discussed that *both these gentlemen were quarantine officers in* 1878, *when the President of the Board, Dr. Samuel Choppin, affirmed that yellow fever was imported through the Mississippi quarantine into New Orleans and the Mississippi Valley.*

"If the occurrences of 1878 destroyed the confidence of the Valley in the efficacy of the quarantine system of Louisiana, it is surely remarkable that the National Board should select for its inspectors the very men in charge of the Mississippi Quarantine Station at the time of the introduction of pestilence."

Three points in this quotation deserve notice.

1. Neither to the President of the State Board, nor to other person did I, at any time, ever mention, even as a possible appointment, Dr. Carrington, (whom I esteem), because, among other reasons, he, as Resident Physician at the Mississippi River Quarantine Station, had been relieved by Governor Wiltz, from whom the National Board was then soliciting the privilege of stationing one of its inspectors at said station. Seeking diligently to find unobjectionable and trustworthy men, *with practical experience in the disinfection of vessels*, who would accept the post, I succeeded in finding only three such men, viz: Drs. P. B. McCutchon, Wm. Martin, and G. F. Patton, whose names and no others were submitted by me, first to the President of the State Board, and subsequently to Dr. J. F. Finney, the Resident Physician, at the Mississippi River Quarantine Station, appointed by Governor Wiltz.

2. The President of the State Board reports, "I simply stated that the two gentlemen named, Drs. Carrington and Patton, were not *personally objectionable.*" In fact, he stated to me, as to Drs. McCutchon, Martin and Patton, that all three were *good men*, but that he *preferred* Dr. Patton; and a few

days thereafter, May 8th, Dr. Finney expressed himself to the same effect. Both interviews justified my inference, that no one was preferred to Dr. Patton and he was appointed, though previously unknown to me except very favorably by reputation.

3. The two last sentences of the first quotation imply, that Dr. Carrington and his assistant Dr. Patton were responsible for the epidemic of 1878. However, on p. 71, third paragraph, the President of the State Board maintains a very different conclusion, for, he declares that "the Legislature of 1876, upon the advice of the Chamber of Commerce, the Board of Health and certain leading physicians, abolished the minimum period of quarantine detention, and *as a necessary result* we had the terrible epidemic of 1878." On p. 115 this conclusion is reiterated and on p. 118 it is strengthened by the following paragraph:

"In view of the preceding facts it is but reasonable to conclude that, if a definite period of detention for vessels from infected ports had been enforced by the Board of Health at the Mississippi River Quarantine Station, during the months of May, June and July [1878], cases of yellow fever would not have passed the Quarantine Station unobserved."

These views appear fully to vindicate Dr. Carrington, and still more conclusively his appointee and his mere subordinate, Dr. Patton.

Three other issues deserve notice:

4. On pp. 416-419 certain charges *solicited* by the President of the State Board, on September 6th, and made on September 13th against Inspector Patton, are published in full. None the less, the Annual Report contains no word of allusion to the fact that the State Board was in possession of an official letter from the representative of the National Board, setting forth in detail, and in his opinion proving, that said charges "committed great injustice by inference, omissions and forgetfulness." Farther, the annual report maintains absolute silence in regard to the fact that, in reference to the gravest of these charges, the State Board refused, on September 15th, by a vote of five to three, to censure Inspector Patton.

No comment seems needful to aid just men duly to appreciate the significance of the official publication of grave charges against a young and estimable officer and gentleman, without one word of the recorded defense, and of the favorable adjudication of said charges, so far as adjudicated at all.

Copies of the official documents just referred to by me, but unreferred to in the Annual Report, will be found on pp. 21-23, of Supplement No. 15, of the National Board of Health Bulletin, a copy of which is herewith forwarded to your Excellency. (See also Appendix I and II.)

5. On pp. 405–7 and 411–14 the facts (and the resulting indignation of the State Board) are recorded, that the national inspector at the Mississippi River Quarantine Station reported to the Supervising Inspector to the effect, that vessels at Rio, destined to New Orleans with coffee, should be notified by the U. S. Consul of the expenses they would incur, because of said quarantine, and that such dangerous vessels should be thus warned against coming to New Orleans. There is no record, however, of the counterbalancing facts, that Gov. Wiltz and members of the State Board were promptly assured that said report was not approved by the National Board and would not be made public, nor would anything be said or done by said Board needlessly to alarm or injure the commerce of New Orleans; further, it is not recorded that information of said report was first given to the public on September 30th by the State Board, and that, promptly on October 5th, this report was, with equal publicity, explained and its objectionable feature repudiated, as can be seen on p. 23 of Supplement No. 15. (See also Appendix II.)

6. On pp. 403-4-5-7, etc., the service, which I have the honor to control, is denounced in such terms as, that "its functions" have been "degraded into those of a detective service," that it is an "inquisitorial system of espionage and detection," etc.; farther, members of the State Board have not hesitated to speak of the officers of said service as "spies and detectives." Such language is applicable to those only who conceal their purpose and their means to accomplish it. No such concealment has been practiced in my service, nor has anything ever been

done except in compliance with official instructions from the National Board, and especially with those two, which are published, the one on pp. 13, 14 of Supplement No. 15, and the other on pp. 407-8 and republished on pp. 414—5 of the Annual Report. (See also Appendix III and IV). Copies of these and of all other official orders and reports were duly communicated to the State Board, no remonstrance against these instructions was made to me, and I openly assured the State Board that no worthy means to execute them would be neglected. All the officers who served under me had been nominated in 1880 or approved of in 1881 by the President of the State Board, and the facts, that they represented in Louisiana the other States and that they enjoy in this State enviable reputations as citizens and gentlemen, should serve to protect them and their service from offensive official denunciations. These are the more indefensible in view of the following facts:

The establishment of the service, thus denounced, was first requested in Dec. 1880 by the Sanitary Council of the Mississippi Valley. If the proceedings of the State Board on Feb. 10th, 1881, as published in the daily Picayune of Feb. 11th, are to be credited, this request aroused great indignation. One member declared that it was an "insult to the State Board," and that "it would be better for every member to resign than longer to submit to such indignities and insults from whatever source." Another member, the President, announced that "rather than submit to a spy he would resign," and the report justifies the inference, that these views were entertained by all the members, at that date, except two, who subsequently did in fact resign, but for a very different cause. The request thus forcibly denounced was, none the less, at last, on April 19th, acceded to by the State Board, for reasons needless here to detail; and, moreover, it was re-endorsed in full on May 19th, being not only unanimously but also "*unhesitatingly accepted*," according to p. 396 of the Annual Report for 1881. In as much as no such resignations have since occurred, it is a charitable inference that the inspectors of the National Board have not proved to be, even in the opinion of those who threatened to

resign but have not yet resigned, spies and detectives in the proper sense of these words.

In conclusion, I beg leave to state, that the inspectors of the National Board were among the most reputable citizens of New Orleans, bound to it by every tie of affection and interest; that they were animated by no purpose, except the protection of this and other communities from yellow fever on the one hand and from needless interference with commerce on the other; that, in facilitating this purpose, they acted upon the conviction that, for this city, honesty was the best policy respecting yellow fever as well as everything else, and that the prompt report not only of the truth, but of *the whole truth*, in respect to *suspected* as well as real cases of yellow fever, would best promote the confidence of our neighbors and so prevent panics; that, to this end, it was a duty to use every open and honorable means not only to detect the presence or absence of yellow fever, but also to investigate the strength and weakness of our defenses against its introduction; that the National Board, whose compulsory duty it is to aid and co-operate, to the extent of the power and means given by Congress, with all State Boards, but not with the Louisiana State Board to the exclusion of others, was entitled to all information acquired; and that, by thus serving the National Board, it would be enabled best to aid and co-operate with the Lousiana State Board in protecting the health and commerce of the Mississippi Valley as well as of this city.

That the National Board,' with the quarantine and other powers conferred by the Act of June 2d, 1879, can and would prove, in times of peril or panic, of inestimable service to this and other States, is the profound conviction of the undersigned, as a citizen of Louisiana. That such a Board is a necessary step in the progressive development of the civilization of this country is the overwhelming opinion of sanitarians, who, however, for the most part, rightly leave the discussion of the political questions involved to those experts in politics who have the grave duty imposed on them of enacting the laws. Although a national quarantine

is now opposed by the President of the Louisiana State Board of Health, as shown on pp. VI. to IX. of the Annual Report for 1881, it was apparently advocated by him before he became trammeled by the financial and other responsibilities imposed on his official position. While only a member of the State Board, his sworn evidence, before the Yellow Fever Congressional Committees, is reported by the daily newspapers of New Orleans to have been, on January 3d, 1879, as follows :

The *Times* of January 4th reported: "I think that *a national quarantine system*, carefully and honestly administered, would be efficient in preserving the safety of ports on the Gulf coast." "If this city was guarded with an efficient system of quarantine, and that of neighboring cities, say Mobile and Galveston, was lax and careless, there could be no protection unless this city was quarantined against those places." "I favor a quarantine system which, at certain times, will shut off intercourse between South America and all ports of the Antilles. If the harbor at Ship Island is land-locked, it would be *very beneficial* to have a quarantine station at that point."

The *Picayune* reported: "I think *a national system of quarantine*, extending from New York to Galveston and honestly conducted, would, in a majority of cases, prevent the introduction in those [intervening ?] cities."

The *Democrat* reported: "I think that a station at Ship Island would be *a good measure*, provided all the bayous and inlets were guarded."

A mere sanitarian, who, however, fought four years for State-rights as he supposed and did not succeed as he knows, is excusable for being politically puzzled, when he finds an officer of this State, who, though an advocate in 1879 of a national quarantine, opposes it in 1882 as a violation now of State-rights, and at the very time when the central government is being urged to give Louisiana more bread and hundreds of miles of levees.

Trusting that the facts and views, now submitted to the consideration of your Excellency and of the members of the General Assembly, may promote a better understanding of the issues, which I deeply deplore have been forced upon me, I remain, with very sincere respect,

Your obedient servant and fellow-citizen,

STANFORD E. CHAILLÉ,

Supervising Inspector, N. B. H.

NEW ORLEANS, LA., April 14, 1882.

APPENDIX.

I.

Exoneration of Inspector Patton by the State Board.

This communication was not forwarded to nor received by the Supervising Inspector until October, 3d, 1881.

"*Extract from the minutes of the Board of Health, State of Louisiana, at its meeting of September* 15, 1881.

A communication from Dr. Chaillé, Supervising Inspector of the National Board of Health, was read, accompanied by a copy of one from Dr. Patton, Inspector of the National Board at the Mississippi quarantine. Dr. Patton asserted that his alleged guests at the station are members of his family, residing there by permission of the resident physician, and fully acclimated. He has to visit Buras two or three times a week, as it is the nearest post-office.

The President held that Dr. Patton had violated the law.

The Board was censured last year on account of communication between the Station and Buras.

The President stated that, after the charges of Captain Calloway, of steamship Historian, had been made before the Board, he had called upon the Governor, his excellency, Louis A. Wiltz, and inquired whether any permission had been granted to the Supervising Inspector of the National Board of Health stationed at New Orleans, or the Inspector of the National Board of Health stationed at the Mississippi Quarantine, to introduce any parties, either as guests or as the crew of a steam launch, upon and within the grounds of the Mississippi Quarantine Station. The Governor stated that he had not granted such permission. After obtaining this information, he had addressed a letter to Dr. Finney, quarantine physician at Mississippi Station, making inquiry into the question involved; up to the present date no reply has been received from Dr. Finney; but, when received, it will be laid before the Board at the regular meeting.

In reply to an inquiry addressed by Dr. Jamison, whether the Inspector of the National Board of Health had violated the laws of the State, the President said that by Sec. 6 of "An act to establish quarantine for the protection of the State," approved March, 1855, Sec. 1 of "An act supplementary to an act," approved March 18, 1858, and Sec. 6 of "An act to establish quarantine for the protection of the State, to create a Board of Health, and to define its powers and duties," approved March 16, 1870, and Sec. 7 of "Act 80, to recognize and render more efficient the Board of Health of the State of Louisiana," approved April 20, 1877, the Board of Health was placed absolutely and unconditionally by the General Assembly of the State of Louisiana in charge of the Mississippi Quarantine Station, and of all others within the limits of the State; and no one, whether an inspector or supervising inspector or member of the National Board of Health, had the right to introduce people under any pretext whatever within the quarantine stations of the State without the permit of the Board of Health, and in accordance with the rules and regulations of the Board of Health governing quarantine stations. (See codified acts of legislature and rules and regulations of Board of Health, pp. 51 and 52.)

Dr. Formento and Mr. Brewster found no violation of law on the part of Dr. Patton.

Dr. Jamison thought Dr. Patton's sense of propriety ought to guide him there.

Mr. Booth introduced a resolution on the subject, which was rejected by the following vote:

Ayes.—Jamison, Marks, Booth.

Noes.—Formento, Beard, Hernandez, Lanaux, Brewster.

A true copy.

S. S. HERRICK,
Secretary Board of Health."

II.

OFFICIAL DEFENSE OF DR. PATTON, INSPECTOR N. B. H.

"NATIONAL BOARD OF HEALTH,
New Orleans, October 5, 1881.

Prof. JOSEPH JONES, M. D.,

President Louisiana State Board of Health:

DEAR SIR: Since Dr. G. F. Pattou has been retired from the service of the National Board, and since I esteem him as a most trustworthy and capable officer, my sense of justice prompts me to defend one who was my subordinate from the accusations of Dr. Finney, quarantine physician, dated September 13, published on September 30, in the report of the proceedings on the 29th of the State Board, and prompted by a letter of inquiry on the 6th from yourself.

Dr. Finney's charges commit great injustice by inference, omissions and forgetfulness. No less than ten charges are made or referred to, and with each of these will be given its explanation.

1. It is charged that Inspector Patton did not restrict himself to the "terms of the proposition of the National Board of Health to the State Board," to "the bounds of his duty," and to "the (superficial) object of his appointment." The terms of the proposition accepted by Governor Wiltz were, that an inspector of the National Board of Health should "be stationed at the Mississippi quarantine" for "purposes of observation and inquiry," and, as a matter of course to report the results thereof. In my estimation, Dr. Finney entirely fails in his subsequent charges, now to be stated, to establish any foundation for this first general accusation; and even if it were well founded, Inspector Patton simply obeyed orders to observe, inquire and report upon everything concerning the Louisiana quarantine, whether commendable or otherwise, for which orders the National Board of Health was alone responsible.

2. Inspector Patton suggested as a remedy for the quarantine expenses incurred by vessels from Rio "that all vessels from Rio be advised by a U. S. Consul at that port not to trade with New Orleans from May to November of each year." True, but Dr. Finney omits two important facts: First, that Inspector Patton stated in the same report how this warning should be given, namely, by timely official notice to vessels at Rio and destined to New Orleans, of two simple facts, viz., of the duration of quarantine detention and of the consequent unavoidable expenses. So far as concerns this latter proposition, to which the former was subordinate, Inspector Patton advocated an unquestionably sound policy, calculated to benefit commerce, viz., that all foreign ports should be given timely official notice of the quarantine restrictions existing at all ports of the United States. Second, the first proposition, that is, the suggested "warning" was not approved by myself nor by any of Inspector Patton's superiors, information thereof was restricted to the National and the State Board: it never did inflict and never could have inflicted the least injury on New Orleans, and would have remained an unregarded still-birth if Dr. Finney had not preferred to honor it with a public funeral. Farther, Inspector Patton did not, as Dr. Finney alleges, "take upon himself the responsibility of advising vessels from Rio" anything whatever; he really did no more than make a fruitless suggestion to the National Board of Health which certainly is not a vessel.

3. Inspector Patton objected to the expense of trucking cargoes of coffee to the warehouse. For what purpose? Not as is implied, because this measure is not the best one now practicable, but in connection with his advocacy of a system, for the future, of sanitary barges, as a substitute for the present warehouse system; the former system being calculated, in his opinion, to prove better both for public health and commerce.

4. Inspector Patton reported one suspicious case of fever at the station (and never but one which occurred on the bark St. Olaf and not on the Historian as falsely reported to the Board by Captain Calloway), and

neglected not only to consult the State officers, but also to report the case to the State Board. As to this negligence Inspector Patton frankly admitted it, and accepted censure with characteristic manliness. But this negligence, though at the time unknown to me, was promptly rectified so far as concerned the State Board by me, for I sent a copy of the telegram forthwith to the President of said Board. Not only this I sent the information, in obedience to my instructions, both to the Secretary and to the Superintendent of the Mississippi River service of the National Board of Health. Yet the panic, which it had been charged would result from such a course, did not ensue as is well known; on the contrary this course strengthened the confidence already felt in other States, that should real danger to them arise prompt information would be given.

5. Inspector Patton is charged with having "on various other occasions sent reports of the contents or purports of which I have no knowledge." Neither I nor Inspector Patton were ever ordered or requested to send reports to Dr. Finney, but copies of all official reports sent by Inspector Patton, and which concerned the sanitary officers of Louisiana, were sent by me to the State Board.

6. Inspector Patton's two steam-launch employés resided outside of and immediately "adjacent to the quarantine grounds." Dr. Finney knows that this was unavoidable; that his own employés have the same daily communication with outside adjacent houses, and that Inspector Patton's employés were specially ordered to board no vessel without Dr. Finney's permission.

7. "Inspector Patton occasionally visited the inhabitants on the opposite bank of the river," *i. e.*, the Buras post-office. Yes, with the consent (no yellow fever being present) and generally in company with a State quarantine officer. In this I simply explain without defending, since I believe that other post-office arrangements should be made.

8. Inspector Patton entertained his wife and her two young sisters as guests, "with whose permission I do not know," says Dr. Finney. But Inspector Patton remembers well that his wife's two young sisters had the permission of Dr. Finney, whose manly courage I have too much faith in to believe that he will deny, in view of Dr. Patton's positive assertion, that his own memory was probably at fault. In any case Dr. Finney has supreme authority at his quarantine station and if in this or other matter Inspector Patton acted illegally or improperly, why did Dr Finney permit him to persistin his illegallity or impropriety, such as entertaining his wife twelve days in July, and her two sisters from July 18th to September 17th, without a word of objection?

9. Inspector Patton has never had yellow fever. True he has been curiously deprived of this blessing. But he has been repeatedly exposed during four different years, and among these to the unsparing epidemic of 1878; further, he was a State quarantine officer from 1877 to 1880, and no objection was found to the misfortune that yellow fever has refused to attack him until the ex-State officer became an officer of the National Board of Health.

10. Finally, of Inspector Patton's three guests, Dr. Finney says: "I believe none have had yellow fever excepting one." The truth is that two of the three have had undoubted cases of yellow fever, and the third, 17 years of age, has been a resident of New Orleans from early childhood, had a mild fever (not known to have been yellow fever) in 1867, and passed harmlessly through the epidemic of 1878. Further, Inspector Patton enjoyed no more privilege in this matter of guests than has always been accorded heretofore to the wives, &c., of custom-house and other officers temporarily stationed at the quarantine.

Dr. Finney omits another very important fact, namely, that prior to my appointment of Inspector Patton, both he and the President of the State Board expressed to me their perfect satisfaction with, and their decided preference for, him. Carefully considering the charges now made against him, I find those which are well founded comparatively trivial and recalling the numerous opportunities he has had for serious derelictions which he did not commit, I cordially thank Dr. Jones and Dr. Finney that

the candidate recommended by them has been found by me worthy of their indorsement.

Dr. Finney's letter, with its attending facts (such as that his charges were not made when their causes were committed and when they might have been corrected, and that their publication was delayed to the day of Inspector Patton's relief from duty), prompt the belief that objections to Inspector Patton are altogether secondary to the far greater objection that there should in future be at the quarantine station any inspector whomsoever of the National Board of Health. However, above the minor issues which have been raised, issues readily adjustable since the National Board commands all officers to obey State authority, the questions of chief consequence to the public remain untouched, viz: Whether the presence of the Inspector of the National Board of Health at the quarantine has tended to increase or decrease the vigilance which is the safeguard of our public health, and the confidence of those neighbors upon whom depends so largely the freedom of our commercial intercourse?

In conclusion, the National Board is likely to rejoice now at all such evidences as Dr. Finney presents of excessive quarantine vigilance and precaution, and to rejoice still more in future should proof be given that those who preach practice themselves and force all others, the officers of the National Board of Health included, to practice what is preached. By which remark it is not my intention to question the fact that much credit is due to the State Board and to Dr. Finney for an improved and comparatively efficient, even if not as yet a perfect, quarantine. Further, Dr. Finney, as also his assistant, Dr. Wilkinson, deserve cordial thanks for their courtesy and favors to the officer of the National Board of Health, and for their invariably harmonious co-operation with him in their daily work of disinfecting suspected vessels. For them personally no feeling other than kindly is entertained.

I trust my belief will be concurred in, that justice requires that the same publicity should be given this letter as was given by the State Board to Dr. Finney's.

Yours, very respectfully, STANFORD E. CHAILLÉ,
Supervising Inspector, N. B. H."

III.

INSTRUCTIONS OF NATIONAL BOARD OF HEALTH TO THE SUPERVISING INSPECTOR N. B. H., AT NEW ORLEANS.

"NATIONAL BOARD OF HEALTH,
Washington, D. C., April 28, 1881.

DR. S. E. CHAILLÉ,

Supervising Inspector National Board of Health, New Orleans, La.:

Sir—I am directed by the executive committee of the National Board of Health to forward the following instructions for your guidance during the coming summer. The objects which the National Board of Health desires to secure through you are: First, to obtain the earliest possible information of the existence of yellow fever in New Orleans or its vicinity; second, to secure free commercial intercourse between New Orleans and other points so long as such intercourse is unattended with danger; third, when by reason of the existence of yellow fever in Louisiana, intercourse must be carried on with other States under certain restrictions, to so arrange matters that these restrictions shall cause no more interference with commerce than is absolutely necessary; and fourth, in case of the appearance of yellow fever in New Orleans to co-operate in every way to limit the spread of the disease and to stamp it out if possible.

I inclose herewith, for your information, copies of certain municipal and State ordinances recently enacted (Appendix A), from which you will see that it is only upon your certificates, or upon the certicate of inspectors duly authorized by you, that boats from New Orleans will be allowed to land at the places in question, during the coming summer. Your duties,

therefore, have great importance, and involve a heavy responsibility, both in preventing danger to surrounding communities on the one hand and to prevent unnecessary interference with the commerce of New Orleans on the other.

The possibility of your being able to obtain the second object, by giving the certificates required by the above mentioned and similar ordinances, will depend to a great extent upon the possibility of your obtaining from the health authorities and physicians of New Orleans and the river parishes below New Orleans, such co-operation and information as will justify you in taking the responsibility of certifying, on behalf of the National Board of Health, that New Orleans is free from yellow fever, or that if this disease is present it is so located and of such a character that the city is not "dangerously infected" thereby. In making or authorizing to be made in behalf of the National Board of Health statements that New Orleans and its vicinity are free from yellow fever, you will consider yourself justified in so doing only so long as you are satisfied that you are in receipt of prompt and reliable information as to the condition of affairs at the Mississippi River Quarantine Station and its vicinity, and also to the health of the city itself, as shown by the certificates of death and the absence of reports of doubtful or suspicious cases. The National Board of Health has received a communication from the Louisiana Board of Health offering to the inspector of this Board a commodious room adjacent to and communicating with the rooms and offices of the State Board at the State Capitol, and also requesting said inspector to be present as auditor and spectator at the meetings of the State Board. A copy of this resolution (B) and the reply thereto (C) is inclosed for your information. In order that you may obtain the information referred to, two things seem to be essential. The first is that you shall receive regular daily reports from an inspector of this board, to be placed at the Mississippi River Quarantine Station, whose duty it shall be to accompany the quarantine officer in his inspection of all vessels arriving at the station, and who shall, in the event of any difference of opinion between himself and the quarantine officer as to the actual sanitary condition of such vessels, and as to the treatment which it requires, forward at once to you a report upon the case, furnishing at the same time a copy of this report to the President of the Louisiana State Board of Health.

Second—That all reports of deaths and the original returns made by the attending physician, of doubtful and suspicious cases, made to the Louisiana State Board or to any member thereof, shall be communicated to you at once whether they may have been formally presented to a meeting of the State Board and entered on its files or not, and that if any of these cases shall appear to you to be of a sufficiently doubtful or suspicious character to demand it, you will, upon notifying the proper officer of the State Board, be permitted to investigate the case in connection with such person or persons as may be appointed to accompany you by the State Board.

You will co-operate with and endeavor to secure the co-operation of the Louisiana State Board and the other sanitary and medical organizations of the city in securing information as to the presence of cases of yellow fever or of doubtful or suspicious cases of this disease. In doubtful cases, where difference of opinion may arise as to the character of the disease, you will be guided by the rules for this purpose which have been drawn up and approved by the Medical and Surgical Association of New Orleans, a copy of which is herewith appended, marked D. Should a case of yellow fever, or a case which appears to you doubtful or suspicious, occur either in New Orleans or vicinity, you will not announce it, except to the resident member of the Board, the President of the State Board of Health, the Superintendent of River Inspection and the Secretary of the National Board of Health, and will leave to the Secretary of the National Board of Health the responsibility of announcing it; but in case you are called on for information in this regard by the health authorities of other States and municipalities you will furnish such information to the best of your ability, subject, however, to the approval of the resident member of the

National Board of Health. You will furnish the information above directed as to the presence of cases of yellow fever, whether you are able to secure the co-operation of the local Board or not, and you will understand that this applies to suspicious cases as well as to cases the nature of which is clearly established by diagnosis to be yellow fever. It must be constantly borne in mind that the occurrence of a case, or even of two or three cases, of yellow fever in the city of New Orleans is not in itself a sufficient cause for cessation of commercial intercourse with that place or to cause it to be proper to declare New Orleans to be a "dangerously infected" city; and while it is proposed to keep the health authorities of surrounding States and cities as promptly and fully informed as possible as to the actual sanitary condition of New Orleans as regards the existence of yellow fever there, the National Board desires to use its best influence to prevent any undue restrictions upon the travel or traffic from that city until it becomes evident that danger would result from their continuance. The action to be taken by the National Board of Health, in the event of the occurrence of a case of yellow fever in New Orleans, must depend greatly upon the precise point in the city where such case appears, its relations to the commercial portions of the city, its tendency to spread, etc. You will be careful to keep this office fully advised, and when necessary by telegraph, of all these facts with relation to the earlier cases, and also as to what steps are being taken to secure isolation, systematic disinfection, etc. In case yellow fever appears in the City of New Orleans during the summer, it is the desire of the National Board to co-operate in every way with the health authorities of the city, to restrict the spread of the disease and to stamp it out if possible, and to this end it will be prepared to pay for such services and materials as are necessary for this purpose. It will, therefore, become your duty, as its representative and chief executive agent in New Orleans, to decide what measures are necessary and proper for the purpose indicated, and to see that they are applied as promptly and as energetically as possible.

Detailed instructions as to the method of procuring funds and as to the supervising of accounts to be incurred, etc, will be furnished from this office

You will please make arrangements to commence a system of inspection of steamboats bound up the river upon the first of May, the methods of inspection and the general form of certificates to be given being those employed in the inspection of last year, subject to such changes as may be approved hereafter; for this purpose you are authorized to employ, subject to the approval of the executive committee, two inspectors at a rate of compensation not to exceed $150 per month, which shall include all allowances and expenses, and in case you deem them necessary, two sanitary policemen at a compensation not to exceed $50 per month.

It does not at present seem necessary to undertake any system of complete railroad inspections, the only precaution in this direction which is desirable being the examination of freights as was done last year.

You will please furnish at once the names of gentlemen whom you would recommend as suitable for inspectors of steamboats, etc., and also for the position of Inspector at the Mississippi Quarantine Station. In making these selections, please bear in mind that the gentlemen who are to perform these duties, if they are to succeed, must have tact as well as knowledge, firmness and unquestionable honesty. They will have no authority whatever to interfere in any way except by giving their advice.

It is considered highly desirable by the National Board of Health, that infected ships should be as far as possible excluded from the Mississippi river, and that you should endeavor to secure the co-operation of the Louisiana State Board of Health towards obtaining this result by having said Board pass an ordinance similar to a resolution passed by the Sanitary Council of the Mississippi Valley, at its late meeting, to the effect that, "all vessels from ports in which yellow fever is prevailing, or from ports where contagious or infectious diseases are reported to exist shall be inspected at Eadsport, and if any such be found to be infected, or to furnish reasonable ground for suspicion of infection, such vessel shall not be

allowed to pass Eadsport northwise, except upon presentation of a certicate from the Inspector of the National Board of Health at the Ship Island Quarantine Station, setting forth that the vessel has been subjected to proper treatment and is free from liability of conveying contagion."

You will furnish to this office a weekly report of the ordinary operations of your department, inclosing in it the reports of your subordinates, and, in case of an emergency, you will keep this office fully advised of the situation, using the telegraph freely, if necessary, for this purpose.

Finally, it is especially desired that you will keep Dr. S. M. Bemiss, resident member of the Board in New Orleans, fully advised, at all times, of the information which you may receive and the operations of your office. You will submit to him all reports which you may make, obtaining his opinion thereon, and counsel freely and fully with him with regard to all your operations. While the Board will hold you, and not Dr. Bemiss, responsible for the management of its business in New Orleans during the coming summer, and does not desire to occupy his time with its work, unless, under exceptional circumstances, it desires, nevertheless, to have the benefit of his knowledge and counsel in all matters pertaining to sanitary work in New Orleans or its vicinity.

I am doctor, very respectfully, etc.,

T. J. TURNER,

Secretary National Board of Health."

IV.

Copy of Instructions of the National Board of Health in 1881.

To the Inspector of National Board of Health at the Mississippi River Quarantine Station:

"1. Weekly reports must be made of all vessels, arriving at or departing from the Quarantine Station. The blank forms supplied you by the National Board of Health should be filled with the information called for under the various headings, as carefully and fully as possible. In every instance that information of importance is obtained, not classed under the headings tabulated, it should be transmitted in a separate communication.

2. All cases of doubtful diagnosis must be reported by telegraph or otherwise to the Supervising Inspector at New Orleans, as early as possible after coming under observation.

3. Cases diagnosed undoubted yellow fever must be reported at the earliest moment in similar manner.

4. If differences exist in regard to diagnosis, your own opinion, with reason therefor, must be fully reported.

5. All possible vigilance must be exercised in obtaining information regarding the entire management of the quarantine station at which you are stationed. The proper and faithful discharge of the duties of their offices by the officers in charge must be carefully reported and also every instance of neglect or maladministration which is likely to involve danger of communicating disease. One of the most important matters to be noted is the manner in which the quarantine grounds and surroundings are guarded and policed, with the view of securing isolation of infection. Ships detained in quarantine should be as carefully isolated as the buildings on shore.

6. Prevalence of cases of fatal or doubtful sickness in the vicinity of the quarantine station must be promptly reported.

7. Too great importance cannot be attached to your duties. The more prompt and accurate you are in reporting every fact connected with the administration of quarantine at the Mississippi Quarantine Station, the more important the work and influence of the National Board of Health become in the protection of the population of the Mississippi Valley against sickness on the one hand and needless quarantine on the other.

8. It is expected that you will cultivate the most friendly relations with the medical officers in charge of the quarantine station and hold yourself at all times ready to aid in the discharge of their duties by such advice and co-operation as may be proper.

9. You will make reports weekly or oftener, if instructed, to the Supervising Inspector at New Orleans, copies of which will be transmitted to the President of the Louisiana Sate Board of Health. Your reports must always be based upon your own observations and investigations.

In addition, you are especially instructed that *you have no authority whatever to interfere in any way with the State officer except by giving advice*; and that it is your duty to accompany the State quarantine officer in his inspection of all vessels arriving at the station, and—in the event of any difference of opinion between yourself and said quarantine officer, as to the actual sanitary condition of such vessels and as to the treatment required,—to forward at once to the Supervising Inspector a report upon the case, furnishing at the same time a copy of said report to the President of the Louisiana State Board of Health."

New Orleans Medical and Surgical Association.

PROCEEDINGS OF MEETING No. 300.

NEW ORLEANS, April 1st, 1882.

A quorum being present, the Association was called to order; Dr. Joseph Holt, President, in the chair.

On motion, the reading of the minutes of preceding meeting was dispensed with.

Dr. J. E. Duffel, the newly elected member, was formally introduced by the President.

The Executive Committee of the Auxiliary Sanitary Association, coming in by invitation of the Conference Committee of this Association, were welcomed and requested to take part in the proceedings of the meeting.

The report of the Conference Committee was read as a whole by Dr. D. C. Holliday, Chairman. Dr. Bemiss moved that the propositions of the report be discussed and voted on *seriatim*. The motion was seconded and carried.

Mr. Fenner, of the Executive Committee of the Auxiliary Sanitary Association, said he desired that the vote of his Association be separately taken, and that the votes be polled. A motion to that effect was agreed to by both bodies.

Dr. Logan next, duly seconded, moved that, after the discussion, *seriatim*, by the two Associations conjointly of the propositions

submitted, each proposition be first acted on by the Medical and Surgical Association, and then be presented to the Sanitary Association. The motion was carried.

The Conference Committee, through Dr. Holliday, reported that it had met and considered the propositions referred to it with the following results:—

"The first question was:

Shall such action be taken to more thoroughly protect the citizens of New Orleans from small-pox by vaccination, and what plan shall be instituted to bring about the proper result?

Answer. We believe that this can only be brought about by careful and systematic house-to house inspection by the sanitary inspectors of the Board of Health and the offering of gratuitous vaccination. Should this not be accepted, the name of the physician usually attending the family should be obtained, the circumstances of the refusal should be referred to him, with the request that he urge upon those unprotected in the family the importance of vaccination, and report the result of his efforts to the Board of Health.

Should the sanitary inspectors of the Louisiana State Board of Health not be sufficiently numerous to accomplish this work in a limited time, we recommend that said Board of Health request the National Board of Health to co-operate with it and afford such pecuniary assistance as will furnish the supply of vaccine and defray the expenses of extra sanitary inspectors."

Dr. Salomon, seconded, moved adoption.

Dr. Carson objected to latter recommendation of the report, because he thought the Board of Health should first be consulted, whether they desired such assistance from the National Board of Health.

Dr. Devron, of the Sanitary Association, made some remarks to show that there could be no question as to the inability of the Board of Health to pay inspectors.

Dr. Holt said the City Council appropriated a specific amount of money for the payment of so many inspectors, and no provision was made to pay any others; therefore, the Board could not provide for the expense of extra inspectors. Dr. Carson said that, while agreeing with Dr. Holt in the

statements made, he thought the Board ought to be consulted.

Dr. Davidson said he favored the passage of a law making vaccination compulsory.

The motion was finally put, the Association adopting the recommendation of the report, Dr. Carson voting in the negative.

General Bussey, of the Sanitary Association, was invited to a seat on the platform.

The motion, as adopted, was put to the Executive Committee of the Sanitary Association and unanimously endorsed.

Dr. Holliday announced that the next subject for consideration was the prevalence of small-pox in New Orleans. The report read as follows :

"Feeling satisfied that the present mode of dealing with small-pox is faulty to a degree, and a constant menace to public health, we would report :

1. That the Small-pox Hospital is not under the jurisdiction or control of the State Board of Health, or any other sanitary organization in the city or State.

2. That it is a private industry, where small-pox patients are farmed out at fixed prices *per diem per capita*, and is conducted in a disgraceful manner.

3. That the ambulances conveying small pox patients in various stages of the disease are used to convey persons sick with other disease to the Charity Hospital without previous cleansing or disinfection.

4. We recommend that the State Board of Health be requested to declare the present Small-pox Hospital a nuisance, requiring immediate abatement.

5. We recommend that in place of said Small-pox Hospital cheap temporary hospitals be erected at appropriate localities.

In support of these statements and recommendations the committee refers to the report of the special committee, composed of Drs. Holliday and Armstrong, appointed by the New Orleans Medical and Surgical Association, and presented at the meeting of the association held March 25, 1882.

[The report referred to stated that the condition of the Small-pox Hospital was wretched; that patients therein received little attention in the way of either medical treatment or nursing, and that some immediate action was imperatively demanded.]

It was moved and seconded that the section of the report be adopted. A motion to change the word "*industry*" to *enterprise* was lost.

Dr. Chaillé said he thought the propriety of erecting *two* or more small-pox hospitals in the city, instead of the *one* now existing, might be questioned, since thereby so many centres of infection would be afforded. Two or more structures in one locality he would think preferable. The wisdom of the suggestion was apparent. The motion was put and unanimously carried by the Medical and Surgical Association, and indorsed without dissent by the Sanitary Association.

The third section of the report read as follows.

"The necessities of municipal sanitation were then discussed and the following propositions were submitted and their adoption recommended:

"In addition to a State Board of Health, we deem it best for the interests of sanitation that, in each parish throughout the State separate health organizations be instituted, and in addition to these, municipal health boards be formed in every town and city. We think this especially important in regard to the city of New Orleans, and strongly recommend that due attention will be given to this matter in the formation of a new charter for the city of New Orleans, and would suggest that a special committee be formed, or this committee be empowered to bring the necessity of such a health organization before the members of the Legislature now having the question of the city charter under consideration."

The recommendation was, without discussion, on motion duly seconded, unanimously adopted by both bodies.

The fourth proposition of the report recommended the endorsement of the "*Harris Bill*," relating to the reorganization of the National Board of Health.

Mr. Edw. Fenner, of the Auxiliary Sanitary Association, said the shipping interest decidedly objected to the latter part of Sec. 5 of that bill, authorizing the imposition by the National Board of Health of certain charges on shipping.

Dr. S. E. Chaillé entered into an explanation of the proposed bill, comparing it section by section with the existing law, enacted June 2, 1879.

The bill, as offered in the Senate on Jan. 31, 1882, did make some changes in the old law of 1879, but the Senate committee had subsequently eliminated certain objectionable features, so that now the proposed bill practically differed from the law of 1879, only in the fact that it provided for the *execution* of the provisions of the act. Sections 1, 3, 4. 5, 7, 8 and 9, were the same as the corresponding sections of the law of June 2, 1879; Sec. 2 gave the National Board of Health the appointment of a medical officer in the foreign port, in case the President did not detail the proper officer.

Sec. 10 was added to abolish the *limitation of the act to four years* and to do away with the necessity of promulgating the act for ten days in the foreign port. Sec. 6 remained as before.

Mr. C. A. Whitney asked, would Section 6 enforce the collection of charges on shipping?

Dr. Chaillè answered that it would not, since the section made no change in the law of 1879.

The recommendation of the committee was again read. Dr. Salomon moved to amend by inserting the words, "the bill as presented by Senator Harris and amended by the Senate Committee." Dr. Chaillé thought it would be better to say "the bill, etc. with the amendments calculated to execute the provisions of this act."

Dr. Devron thought the resolution adopted by the association should be made more explicit by being followed by the bill, recommended for endorsement.

Mr. Fenner favored the suggestion of Dr. Devron.

The following resolution was finally framed and accepted as a substitute for the recommendation of the Conference Committee:

"Being convinced that the passage by Congress of the bill, introduced by Senator Harris, in relation to the National Board of Health, will tend to prevent the introduction of infectious diseases, causeless panic and unnecessary local quarantine measures in case of outbreaks of infectious diseases; and,

"WHEREAS, The said bill simply re-enacts the law of June 1, 1879, and adds nothing thereto except clauses found necessary by experience to enforce the provisions of the said bill, therefore,

"*Be it resolved*, That the New Orleans Medical and Surgical Association endorses the said bill and recommends its re-enactment by Congress, as amended by the Senate Committee, March 22d, 1882," which bill reads as follows:

47TH CONGRESS, 1ST SESSION—S. 1049.

In the Senate of the United States, January 31, 1882.

Mr. Harris asked and, by unanimous consent, obtained leave to bring in the following bill; which was read twice and referred to the Select Committee to Investigate and Report the best Means of Preventing the Introduction and Spread of Epidemic diseases.

A BILL—To amend an act entitled "An act to prevent the introduction of contagious or infectious diseases into the United States."

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it shall be unlawful for any merchant ship or vessel from any foreign port to enter any port of the United States except in accordance with the provisions of this act, and all rules and regulations of State and municipal health authorities made in pursuance of this act; and any such vessel which shall enter, or attempt to enter, a port of the United States in violation thereof shall forfeit to the United States a sum, to be awarded in the discretion of the court, not exceeding one thousand dollars, which shall be a lien upon said vessel, to be recovered by proceedings in the proper district court of the United States. And in all such proceedings the United States district attorney for such district shall appear on behalf of the United States; and all such proceedings shall be conducted in accordance with the rules and laws governing cases of seizure of vessels for violation of the revenue laws of the United States.

SEC. 2. That all vessels *clearing for any port or place in the United States* shall be required to obtain from the consul, vice-consul, or other consular officer of the United States at the port of departure, or from the medical officer where such officer has been detailed by the President *or appointed* for that purpose, a bill of health, in duplicate, *in the form prescribed by*

the National Board of Health, setting forth the sanitary history of said vessel, and that it has in all respects complied with the rules and regulations in such cases prescribed for securing the best sanitary condition of the said vessel, its cargo, passengers, and crew; and said consular or medical officer is required, before granting such duplicate bill of health, to be satisfied the matters and things therein stated are true; and for his services in that behalf he shall be entitled to demand and receive such fees as shall by lawful regulation be allowed, to be accounted for as is required in other cases.

The President, *in his discretion*, is authorized to detail a medical officer to serve in the office of the consul at any foreign port for the purpose of making the inspection and giving the bills of health hereinbefore mentioned; but if the President shall find it inconvenient to make such detail, and shall so inform the National Board of Health, said Board of Health is hereby authorized to appoint such medical officer; but if so appointed his salary shall be paid out of the appropriations subject to the control of said board: *Provided*, That any vessel sailing from any such port without such bill of health, entering any port of the United States, shall forfeit to the United States the sum of five hundred dollars, which shall be a lien on the same, to be recovered by proceedings in the proper district court of the United States. And in all such proceedings the United States district attorney for such district shall appear on behalf of the United States; and all such proceedings shall be conducted in accordance with the rules and laws governing cases of seizure of vessels for violation of the revenue laws of the United States.

SEC. 3. That the National Board of Health shall co-operate with, and, so far as it lawfully may, aid State and municipal Boards of Health in the execution and enforcement of the rules and regulations of such boards, and in the execution and enforcement of the rules and reglations prepared by the National Board of Health, to prevent the introduction of contagious or infectious diseases into the United States from foreign countries, and into one State from another; and at such ports and places within the United States as have no quarantine regulations under State or municipal authority, where such regulations are, in the opinion of the National Board of Health, necessary to prevent the introduction of contagious or infectious diseases into the United States from foreign countries, or into one State from another, and at such ports and places within the United States where quarantine regulations exist under the authority of the State or municipality which, in the opinion of the National Board of Health, are not sufficient to prevent the introduction of such diseases into the United States, or into one State from another, the National Board of Health shall report the facts to the President of the United States, who shall, if in his judgment it is necessary and proper, order said Board of

Health to make such additional rules and regulations as are necessary to prevent the introduction of such diseases into the United States from foreign countries, or into one State from another, which, when so made and approved by the President, shall be promulgated by the National Board of Health and enforced by the sanitary authorities of the States and municipalities, where the State *or* municipal health authorities will undertake to execute and enforce them; but if the State or municipal authorities shall fail or refuse to enforce said rules and regulations, the President may detail an officer or appoint a proper person for that purpose. The Board of Health shall make such rules and regulations as are authorized by the laws of the United States and necessary to be observed by vessels at the port of departure and on the voyage, where such vessels sail from any foreign port or place at which contagious or infectious disease exists to any port or place in the United States, to secure the best sanitary condition of such vessel, her cargo, passengers, and crew; and when said rules and regulations have been approved by the President they shall be published and communicated to and enforced by the consular officers of the United States: *Provided, That none of the penalties herein imposed shall attach to any vessel, or owner or officer thereof, until a copy of this act, with the rules and regulations made in pursuance thereof, has been posted up in the office of the consul or other consular officer of the United States for ten days, in the port from which said vessel sailed, and the certificate of such consul or consular officer over his official signature shall be competent evidence of such posting in any court of the United States; And provided further, That the Board of Health shall have power, when they may deem it necessary, with the consent and approval of the Secretary of the Treasury, as a means of preventing the importation of contagious or infectious diseases into the United States, or into one State from another, to erect quarantine buildings, and to acquire on behalf of the United States titles to real estate for that purpose, or to rent houses, if there be any suitable, at such ports and places as hereinbefore mentioned.*

SEC. 4. That it shall be the duty of the National Board of Health to obtain information of the sanitary condition of foreign ports and places from which contagious and infectious diseases are or may be imported into the United States, and to this end the consular officers of the United States at such ports and places as shall be designated by the National Board of Health shall make to said Board of Health weekly reports of the sanitary condition of the ports and places at which they are respectively stationed, according to such forms as said Board of Health may prescribe; and the Board of Health shall also obtain, through all sources accessible, including State and municipal sanitary authorities throughout the United States, weekly reports of the sanitary condition of ports and

places within the United States, and shall prepare, publish, and transmit to the medical officers of the Marine Hospital Service, to collectors of customs, and to State and municipal health officers and authorities weekly abstracts of the consular sanitary reports and other pertinent information received by said Board, and shall also, as far as it may be able, by means of the voluntary co operation of State and municipal authorities, of public associations and private persons, procure information relating to the climatic and other conditions affecting the public health, and shall make an annual report of its operations to Congress, with such recommendations as it may deem important to the public interests; and said report, if ordered to be printed by Congress, shall be done under the direction of the board; and that all mail-matter of whatever class relative to the National Board of Health and its duties, and addressed to its Secretary and indorsed "Official business, National Board of Health," shall be transported free of postage; and if any person shall make use of any such indorsement to avoid the payment of postage on his private letter, package, or other matter in the mail, the person so offending shall be guilty of a misdemeanor, and be subject to a fine of three hundred dollars, to be prosecuted in any court of competent jurisdiction. That the necessary printing of the National Board of Health be done at the Government Printing Office, upon the requisition of the Secretary of the Board, in the same manner and subject to the same provisions as other public printing for the several departments of the government.

SEC. 5. That the National Board of Health shall, from time to time, issue to the consular officers of the United States, and to the medical officers serving at any foriegn port, and otherwise make publicly known, the rules and regulations made by it, and approved by the President, to be used and complied with by vessels in foreign ports for securing the best sanitary condition of such vessels, their cargoes, passengers and crews, before their departure for any port in the United States, and in the course of the voyage, and all such other rules and regulations as shall be observed in the inspection of the same, on the arrival thereof at any quarantine station at the port of destination, and for the disinfection and isolation of the same, and the treatment of cargo and persons on board, so as to prevent the introduction of cholera, yellow fever, or other contagious or infectious diseases; and it shall not be lawful for any vessel to enter said port to discharge its cargo, or land its passengers, except upon a certificate of the health officer at such quarantine station certifying that said rules and regulations have in all respects been observed and complied with, as well on his part as on the part of said vessel and its master in respect to the same and to its cargo, passengers and the crew; and the master of every such vessel shall produce and deliver to the collector of customs at said port of entry, together with the

other papers of the vessels, the said *bills of Health* required to be obtained at the port of departure, and the certificate herein required to be obtained from the health officer at the port of entry, *and that the bills of health herein prescribed shall be considered as part of the ship's papers, and when duly certified to by the proper consular or other officer of the United States, over official signature and seal, shall be accepted as evidence of the statements therein contained in any court of the United States.*

SEC. 6. That to pay the necessary expenses of placing vessels in proper sanitary condition to be incurred under the provisions of this act, the Secretary of the Treasury be, and he hereby is, authorized and required to make the necessary rules and regulations fixing the amount of fees to be paid by vessels for such service, and the manner of collecting the same.

SEC. 7. That the President is authorized, when requested by the National Board of Health, and when the same can be done without prejudice to the public service, to detail officers from the several departments of the government for temporary duty, to act under the direction of said board, to carry out the provisions of this act; and such officers shall receive no additional compensation except for actual and necessary expenses incurred in the performance of such duties.

SEC. 8. That the National Board of Health shall, as often as quarterly, make a full statement of its operations and expenditures under this act to the Secretary of the Treasury, who shall report the same to Congress.

SEC. 9. That so much of the act entitled "An act to prevent the introduction of contagious or infectious diseases into the United States," approved April twenty-ninth, eighteen hundred and seventy-eight, as requires consular officers, or other representatives of the United States at foreign ports, to report the sanitary condition of and the departure of vessels from such ports to the Supervising Surgeon-General of the Marine Hospital Service, and so much of said act as requires the Surgeon-General of the Marine Hospital Service to frame rules and regulations, and to execute said act, and to give notice to Federal and State officers of the approach of infected vessels, and furnish said officers with weekly abstracts of consular sanitary reports, and all other acts and parts of acts inconsistent with the provisions of this act, be, and the same are hereby, repealed.

The resolution was unanimously adopted by the New Orleans Medical and Surgical Association.

In answer to further inquiries, Dr. Chaillé stated that the Senate Committee had, subsequently to the publication on March 22 of the amended bill, stricken out the latter part of Sec. 5, authorizing certain charges on shipping.

Mr. Whitney stated that he did not object to the provisions of the bill, but he thought it unjust that the expense of their execution should be shouldered on the shipping interest solely.

The resolution was presented to the Sanitary Association.

Mr. Ginder moved the following amendment to the resolution:

"*Provided*, that the fees or expenses imposed upon the shipping interest by Sec. 6, be borne by the general government."

The amendment was accepted and the resolution, as amended, unanimously endorsed by the Executive Committee, representing the Auxiliary Sanitary Association.

Dr. Levy then moved that the New Orleans Medical and Surgical Association adopt as a whole the report of the Conference Committee, *as amended by the New Orleans Medical and Surgical Association.* The motion was seconded and carried.

There being no further business, the meeting adjourned.

F. W. Parham, M. D.
Secretary.

Current Medical Literature.

TRANSLATIONS.

GLEANINGS FROM THE TRANSACTIONS OF THE FRENCH ACADEMY OF MEDICINE.

M. Ball's Theory of Hallucinations.—*Gazette des Hospitaux.*

In order to explain the most complex hallucinations—such, for instance, as those which cause the afflicted individual to hear words and entirely coherent sentences, M. Ball, a recent candidate for the pathological section, has formulated a theory, which is certainly ingenious, but surprising on account of its great boldness.

According to this observer hallucinations can originate peripherically.

Such would be the case with a patient whose history M. Ball has related, in whom the mind faculties have remained perfectly clear and unimpaired, notwithstanding the fits of

anger and violence of a purely impulsive character, which have led to his admission into the St. Anne Asylum.

The patient presented to us by Dr. Ball was a young man twenty-two years of age, though he looks still younger. He ceased to develop after an attack of typhoid fever, which prostrated him at sixteen.

Prior to the occurrence of this event, and in consequence of a slap, he was seized with a very intense otitis of the left side, which was followed, he says, by suppuration of the middle ear and tympanic perforation. This condition was greatly aggravated by the typhoid attack, and, since that time, has gradually been growing so much worse that now he is completely deaf in the affected ear.

Now, it is this absolutely deaf ear which hears noises and voices.

The voices which he hears are usually full of words of an aggressive and injurious import, and in the early days of his trouble were of such a deceptive character that they kept the poor sufferer in constant conflict with those about him.

At present, however, he explains to himself the complete emptiness of his perceptions, and reasons with calmness whenever he is troubled by their insinuating and disturbing expressions. He argues with judgment, that the same disease of his ear which causes him to hear the sounds of bells and gongs, can also cause him to hear conversational voices of a no less delusive or imaginary nature.

The reasoning of this patient is then quite in conformity with M. Ball's theory, which, in turn, is not very unlike the explanation of the same phenomena given by M. Luys.

In truth, it is, at bottom, the theory of ganglionic automatism by remembrance, in the production of language, whether perceived simply or articulated. Only that, in cases of this kind, the automatic functions of the ganglionic bodies, induced occasionally by external excitation, terminates in a pure sensation, whilst in the disease which M. Luys designates by the name "chorea of language," the same automatism is manifested by "the emission of an involuntary flow of words."

In the course of his reading, at the Academy, M. Ball, recalled the fact that M. Luys, and his pupil, Dr. Ritti, had searched for the cause of these hallucinations in the optic thalami, and that Prof. Tambourini (of Madère) attributed these phenomena to a sensorial irritation of the cerebral cortex. In turn, he stated, that in order that a hallucination may be produced, an excitation is necessary whose point of departure may be at any point whatever of the nervous system; under the condition, however, that there exist in the individual a cerebral or psychical predisposition to their production.

Therefore, lesions of the cerebral cortex, of the optic thalami, and of the sensory centres of the spinal cord and peripheral nerves, and diseases of the organs of the special

senses, would all be so many causes, which, reacting upon an already predisposed individual, would give birth to the hallucinations. "The cerebral centres themselves would not necessarily be affected; their normal functions would thus be preserved intact; and an individual while still enjoying the full possession of his reasoning faculties, could become the sport of his own fancies."

"In the normal state," said M. Ball, in the concluding sentences of his interesting paper, "the sensory nerves are the obedient servants who are entrusted and charged with the preparation of a feast for the intelligence; in pathological conditions, they are the importunate guests who, sitting by her side, clamor vigorously and inconsiderately for their share of the repast."] R. MATAS.

FORMULARY.

SELECT PRESCRIPTIONS CULLED FROM RECENT FRENCH JOURNALS.

BY R. M., M. D.

AUDHOUI'S LIMONADE SULFURIQUE A LA ROSE.

℞ Petals of red rose,.....20 parts.
Boiling water,.....1,000 "
Dilute Sulphuric Acid,.... 4 "
Sugar,.....1,000 "

Pour the boiling water on the petals, infuse for one hour, filter and add the acid and the sugar.

A pleasant drink in fevers, hemorrhages, diphtheria, scurvy, etc. Dose, one wine glass full every two or three hours.

BOUCHUT'S SALVE FOR ECZEMA OF THE FACE.

℞ Ungt. Aquæ Ros.....
Olei Cadini *aa*.....℥i. ℳ

S.—To be used in the declining stages of the eruption.

PLEASANT SUBSTITUTE FOR COD-LIVER-OIL,—(*Audhoui*).

℞ Glycerinæ pur.....fl ℥i;
Spirit. Vini Gallici.....fl ℥ii;
Olei essent. menth. pip.....gtt. i. ℳ

S.—To be taken three times daily.

POMADE FOR THE EPHELIDES OF PREGNANCY—*Neuman*.

℞ Acidi Chrysophanici.....gr. xv;
Adipis.....℥x. ℳ

S.—Before using the unguent the skin should be thoroughly washed and dried, and a cloth used to prevent it from running over more surface than it is desired to affect. Carefully observing these precautions the practitioner should make two or three applications, at two days' interval, always avoiding

the eyelids and diluting the salve whenever it is desired to relieve a delicate skin. The annointed regions become red—then black; the skin desquamates, and the spot disappears.

PILLS FOR CONSTIPATION.—*Lay.*

℞ Quiniæ sulphatis.....gr. xv;
Piperinæ.....aa;
Hydrarg, submuriat.....gr. xii;
Extracti Nucis Vomic.....gr. iv.
ft S. A. in pill no. xxx. ℳ

S.—One pill morning and evening.

TREATMENT OF DYSENTERY,—*Defize.*

℞ Decocti Cinchonæ.....fl ℥vi;
Potass. Chloratis.....3i. ℳ

S.—All to be taken in the course of twenty-four hours.

BLUE OINTMENT FOR RING-WORM.—*Claudat.*

℞ Adipis.....3vi;
Glycerinæ.....fl. 3ii;
Sodii carbonat.....3i;
Calcis pul.....3ss;
Carbonis (liq.) pulv.....℥iss. ℳ

S.—Before applying this salve remove scabs by using starch poultices. Treatment should be kept up two or three months, in cases of tenia tonsurans.

TREATMENT OF NERVOUS VOMITING, PARTICULARLY VOMITING OF PREGNANCY.—*Vidal.*

℞ Infus. Aurant. flor.....fl. ℥iii—iv;
Chloral. Hydrat.....gr. xv. ℳ

For one enema, to be administered half an hour before meals.

TREATMENT OF LARYNGEAL PHTHISIS.—*Cadier.*

Pencil the ulcerated surfaces with the following mixture:

℞ Glycerinæ.....fl. ℥i—℥ii;
Alcohol.....fl. 3v—3viii;
Creasoti.....m. xv. ℳ

TRANSACTIONS OF THE R. I. MEDICAL SOCIETY, SEPT., 1881, PAGE 329.

Remarks upon vaccination, by Dr. E. M. Snow, Superintendent of Health of the city of Providence:

He had had considerable experience in vaccination, having the records of about 26,000 persons vaccinated in his office since he had held the office. He had used humanized virus entirely, taking great care never to get it mixed with the modern "bovine" virus, so-called. The virus used in his

office had undoubtedly been transmitted from arm to arm since the time of Jenner, and probably this is the only true humanized virus in the country. The local and constitutional effects of this virus are precisely the same from day to day, as those described by Jenner. His description is perfectly reproduced by the vaccinations every week.

In regard to the protection from small-pox, given by the humanized virus, it is absolutely perfect. Dr. Snow's experience on this point had been so positive and certain, that he had no patience in talking with those who denied that vaccination prevented small-pox. He related some cases.

On one occasion, a young lady from Maine was taken with small-pox three or four days after arriving in the city. She was taken to the small-pox hospital, and her mother and brother came from Maine to take care of her. Neither had ever been vaccinated. They went to the hospital, and the next day Dr. Snow vaccinated them. The vaccination in both took perfectly, they remained at the hospital until the case of small-pox, which was very severe, had recovered, and neither the mother nor brother of the patient had the slightest symtoms of the disease.

In another case Dr. Snow was called to see a woman whom a physician was treating for some obscure trouble with the bowels. He found the patient with a profuse eruption, not quite fully developed, of modified small-pox. The tenement had only two rooms, and in the room was a child of two years who had never been vaccinated. This was on Sunday. On the Tuesday following, he visited the family to vaccinate the child. He found that the woman had been relieved of her bowel trouble, by the birth of a child which was then just twenty-four hours old. He vaccinated the child of two years and the child of twenty four hours; the vaccination took perfectly, and neither child had the slightest symptoms of small-pox, though both remained with the mother until she recovered.

At another time, March 13, 1859, Dr. Snow was called to visit a case of small-pox on Aborn street. He found, in a cluster of seven houses, twenty-five families, and in these families ten cases of small-pox, all apparently at about the same stage of the disease. In the same families there were twenty-one children who had never been vaccinated. There being so many cases, it was not thought best to remove them to the hospital. The families, including the unvaccinated children, were quarantined at home, and a guard placed over them. The twenty-one children were vaccinated and compelled to remain at home with the sick. Several other cases of small-pox occurred in persons who had been previously exposed, and it was several weeks before those families were free from the disease; but not one of the twenty-one children referred to had the slightest touch of the disease.

Dr. Snow said the cases he had related were only examples of many more he might give the particulars of; his experience of the protective power of vaccination with humanized virus, had been such that he could have no possible doubt upon the subject; his was positive knowledge.

With regard to bovine virus, Dr. Snow had no experience; he had not used it; but he had known something of its effects when used by others. He had known two cases in which children lost their lives from small-pox because the bovine virus did not take effect. He had known from others, of scores, and probably hundreds of cases, in which the bovine virus failed to produce any result. He believed it was generally acknowledged that the bovine virus, as used in this city, was very uncertain in its results.

He had seen very severe and even most serious local ulcers produced by the bovine virus, far worse, and more frequent, than he had ever known from the use of humanized virus.

Dr. Snow doubted whether we had yet a fair and full investigation in regard to the protective power of bovine virus, and several facts had led him to believe that it might fail to give full protection from small-pox. At any rate, as he knew the protective power of humanized virus to be absolutely perfect, and as, in a large experience, he had never seen any seriously injurious results from its use, he continued to use it without one particle of doubt that he was acting for the best.

TREATMENT OF FELONS.

Adinell Hewson offers some suggestions for the accurate diagnosis and successful treatment of felons.

For diagnosis he makes a flattened conical tube of binder's board, with its base 5x3½ inches in diameter, so trimmed as to fit closely over brow, cheeks and upper lip. The length is such as to bring the apex at about the distance of the range of distinct vision. The apex is an orifice ½x3-16 of an inch in diameter. The tube is made from a sheet of binder's board, by dipping in warm water to soften it, then rolling it diagonally, and wrapping with cord to retain the form until dry.

By means of this simple apparatus he examines the tissues by transmitted light. In the case of a suspected felon, the patient's finger is brought to the point of the tube, which is held in the direction of a bright light, either natural or artificial, while the face is so applied at the base as to make it fit closely and exclude the light. During the examination, Dr. Hewson finds it of advantage to have the patient practice forced, rapid respiration to produce an anæsthetic effect. If the apex of the tube covers healthy tissues of the finger, the characteristic bright pinkish red color is readily perceived; while, if the tissues are engorged, the darker red tint, deepen-

ed in proportion to the intensity of the engorgement, will be equally characteristic, and will form a marked contrast to the color to be seen on examining the corresponding finger of the other hand.

If the tint, though still reddish, be of a yellow hue, pus has formed in the cellular tissue around, or in the theca of the tendon. If by making firmer pressure, so as to cut off the lateral illumination through the tissues, the tint is found of a positive yellow, it is evident that there is suppuration in the theca of the tendon. Finally, if the tint so transmitted is a dirty or opaque yellow, the bone or periosteum is the seat of purulent formation and collection.

When such examination demonstrates that pus has not yet formed, he has generally succeeded in aborting a felon by the application of a thick paste of wet clay, covered first with tissue paper, and then with a thin layer of bandage stiffened by liquid glue painted in strips lengthwise on each side of the finger. The object of applying the glue thus instead of covering the whole surface, is to allow the drying of the clay, which would be prevented by coating the whole surface with glue.

Dr. Hewson's experience with such uses of clay has been very extensive, and he reports some very interesting and valuable results obtained by this agent. In the class of cases here considered, he finds that, as a rule, the relief is very prompt, in which case the dressing is allowed to remain for several days. When the pain is not relieved in two or three hours after the application of the earth, he removes it at once, and makes a free incision, as he feels sure that nothing else will arrest the process.—*College and Clinical Record.*

LISTERINE.

We find in listerine one of the most sightly, pleasant, convenient and valuable remedies we have. In *ulcerative stomatitis* it is superior to anything we have used. R. listerine, half ounce; syr. simple, three and a half ounces. M. S. One teaspoonful every two hours. This, with a weak solution of cupri sulphas, as a local application, will show favorable results immediately. This is for children from two to five years old. Adults may have the same treatment, but the doses should be larger. In a short time, after commencing the use of the listerine, all the fetid odor coming from the diseased mouth disappears, and the ulcers show a healthy surface —put on the appearance of convalescence.

Many patients come to us complaining of "bad breath." Young ladies, especially, detest bad breath. Sometimes bad teeth occasion bad breath. But no matter about the source; listerine will correct the difficulty. If from bad teeth, instruct the patient to have them cleaned, and

then wash the mouth with listerine twice a day, or, better, immediately after each meal. This will insure a sweet mouth. If bad breath comes from sour gases in the stomach, or effete material through the lungs, then listerine, taken in half or teaspoonful doses four times a day will soon correct the trouble. These are mere hints regarding the value and convenience of listerine. We shall refer to it time and again, as cases come to our notice requiring its use.—*American Medical Journal, St. Louis.*

DIABETES INSIPIDUS TREATED BY ELECTRICITY.

BY C. P. B. Clubbe, L. R. C. P. Lond.,

Late House-surgeon to the Kidderminster Infirmary.

C. H——, aged thirty-five, house-wife. This woman presented herself as an out-patient at the Kidderminster Infirmary in October, 1878, suffering from diuresis. She was at that time passing from eighteen to twenty pints of urine per diem. It was light-colored, of very low specific gravity, and contained no sugar. The drugs that are recommended for this disease—namely, iron, nux vomica, valerian, and bromide of potassium, were all tried in turn, but without any marked effect. The woman at this time was losing flesh. She was then ordered electricity (faradaism) to be applied over the region of her kidneys every day for about twenty minutes at a time. In the table below there is given the daily average for each week of the amount of urine in ounces during the time this treatment was continued:

	Daily average.		Daily average.
1st week	237 oz.	11th week	151 oz.
2nd "	217 "	12th "	154 "
3rd "	163 "	13th "	154 "
4th "	154 "	14th "	123 "
5th "	138 "	15th "	103 "
6th "	113 "	16th "	130 "
7th "	140 "	17th "	129 "
8th "	157 "	18th "	123 "
9th "	168 "	19th "	108 "
10th "	160 "	20th "	117 "

This shows that there was a great improvement up to the seventh week, after this the daily average is seen to vary but slightly. At the end of the twentieth week all treatment was left off. During this time she had improved in her general health. She was seen six months afterwards, and was found much in the same state, as when she left off using the battery. She was no worse, but was still passing from six to seven pints of urine daily. This case shows that this treatment (probably the most rational of all) for this disease may be tried with advantage.—*London Lancet.*

TREATMENT OF HYPERTROPHY OF THE TONSILS BY IGNIPUNCTURE.

The removal of diseased tonsils, by the help of the finger, ligature, cauterisation by caustics of the actual cautery, are all methods which have fallen into disease. In Europe, the bistoury only records a few partisans, amongst whom is one of great authority, M. de Saint-Germain. The treatment now-a-days most in favor is excision, performed with the guillotine, which has given rise to very serious and often fatal hemorrhages. It is now alleged that, with the thermo-cautery, this serious accident is no longer to be dreaded. M. Krishaber, who has tried it during two years, and has collected more than forty cases (*Annales des Maladies de l'Oreille et da Larynx*, July, 1881), has never had any accident after this treatment, and the results obtained have been lasting. It is likewise a novel application of a method which he has found perfectly successful for granulations of the larynx and pharynx. He proceeds as follows: The patient is placed, firmly, if a child, as if for laryngoscopic examination, in front of the operator, the mouth open, the tongue held back by a large spatula, the bottom of the throat well illuminated. M. Krishaber generally uses Paquelin's narrow-pointed thermo-cautery, heated to red heat. When it is only required to modify the nutrition of the gland, he gives preference to Trouve's polyscopic galvano-cautery. The puncture of the gland, made as deeply as possible with the point of the instrument, should be repeated five or six times at each sitting. An interval of two or three days is left between the sittings, so as to allow the fall of the eschar, and to estimate the result. The operation is not at all painful, and pain, from burning, is rarely felt. Nothing need be administered after the operation, except, in some cases, a gargle of warm water, slightly carbolized.—*Medical Gazette.*

ACTION OF COFFEE AND SUGAR IN DIGESTION.

M. Leuen makes a report before the Paris Biological Society of the effects of these articles of food, in connection with Dr. Semerie. There is a great diversity of opinion on these subjects. Some, as Trousseau and Pidoux, consider coffee an excellent digestive. Others, on the contrary, consider it very injurious.

M. Leuen thus writes: He mixed 30 grammes of coffee in 150 grammes of water, for a dog, which is killed three hours after. The mucous membrane of the stomach is found pale, discolored, and profoundly anæmic. The vessels on the internal surface, as well as those in the periphery, are contracted. There remains 145 grammes of the mixture undigested, and the stomach digestion diminished, because the contraction of the vessels, and the consequent anæmic condition of the mucous membrane, prevent the secretion of the gastric juice. The abuse of coffee will produce dyspepsia. Thus the English and

the Dutch, who drink freely both of tea and coffee, are very dyspeptic. Coffee increases the cerebral functions, an effect useful, agreeable, and innocuous.

Sugar has been denounced by modern chemists as a substance whose effects on dyspetics are deplorable. Dr. Leuen did not partake of these fears. He cites the case of a dyspeptic doctor who, for twenty years, had a terror of sugar, but who now consumes 120 grammes (3¾ oz.) of sugar daily, without inconvenience. He followed similar experiments with sugar. A dog eat eighty grains of sugar with 200 of other food. Six hours afterwards its stomach showed little food. The mucous lining of the stomach was red and highly congested. The congestion of the liver was notable. If one opens an animal after eating 200 grains of food and no sugar, ninety to one hundred grammes of food is undigested. Sugar, then, favors the secretion of the gastric juice. Coffee sweetened loses part of its defects.—*Le Medicin Practicien.*

TREATMENT OF PAINFUL CALLUS.

Prof. Gosselin, of Paris, observes that when the pains which have their seat in the callus of a fracture are of a neuralgic origin, we should treat them by blisters or cutaneous revulsives, and especially by the tinctures of iodine. Hot or cold douches, or sulphurous douches, or frictions which a chloroform liniment may also be had recourse to. Finally a roll-bandage with wadding is of undoubted utility, dimishing the pain sensibly by saving the limb from the little shocks which keep up the painful condition.—*Med. and Surgical Report.*

Russia encourages women in the medical profession. Twelve female doctors are now officially engaged in teaching medicine to women, thirty are in the service of the Zemstvos and forty other serve the hospitals. The number of female students is steadily increasing. Twenty five female doctors who took part in the military operations of 1877 have been decorated, by the order of the Emperor, with the Order of St. Stanislas of the third class.

Editorial Department.

Dr. L. F. Salomon has furnished the following report of the proceedings of the Sanitary Council of the Mississippi Valley, at its recent meeting:

It will be seen that eleven States were represented, and that the meeting was characterized by unanimity of sentiment and

action. The efforts of this annual congress of delegates from the various Sanitary organizations of the West and South have been continually directed to the accomplishment of the one important end, which is securing harmonious and united action in the prevention of disease, but more especially of epidemic diseases.

Such objects as these should enlist the sympathy and zealous co-operation of all sanitary organizations. The necessity for concord in council, and in arrangement of contemplated measures of quarantine, or inspection service, and also for the most unrestricted candor in dealing with each other, is too obvious to require argument, or comment.

It is therefore to be hoped that this Council will, in the future, number among its representatives delegates from all the Boards of Health in those States bordering upon the tributaries of the Mississippi. We believe it to be especially desirable that the various Boards of Health in the State of Louisiana, where unfortunately, we have no general State Board, should participate in the annual deliberations and executive action of this Council.

The election of Dr. Devron of this city, as President, is a merited compliment to his zeal as a sanitarian.

It is also well understood that the Council was gratified by an opportunity to exhibit its cordial intentions towards the people of Louisiana, by electing one of its cititzens.

But the election of Dr. Devron is something more than an empty compliment. It confers an actual benefit upon Louisiana in the following manner: The three officers of the Sanitary Council, with whom all the business matters of this body are confided during the intermission between its meetings are the President Dr. Devron; Vice-President Dr. Hillis; and Secretary Dr. Racuh.

These gentlemen are just and reasonable, and very little likely to act in quarantine matters without due deliberation and a sufficient cause. It should, therefore, occur, the President of the Sanitary Council, being in New Orleans, and in full accord with the representatives of the National Board in

this city, and also within ready access of the State Board, that neither panics nor unnecessary quarantines will mark the events of the ensuing season.

In other words, it is a movement looking directly to concert of action between the various health organizations engaged in protecting the health of the Mississippi Valley. If the State Board in New Orleans should enter the compact and yield a hearty co-operation, it seems to us that the good work prefigured should be both pleasant and eminently successful.

SANITARY COUNCIL OF THE MISSISSIPPI VALLEY.

The Council met in the Halliday House, Cairo, Ill., on Wednesday, April 19th, at noon, the President, Dr. J. J. Speed, of Louisville, Ky., in the chair and eleven states represented.

After the usual routine business the sessions of the council were occupied in the discussion and adoption of the following resolutions:

Resolved, That the Sanitary Council of the Mississippi Valley earnestly urges the immediate passage of Senate Bill No. 1049 (known as the "Harris Bill,") as amended March 22d, 1882.

Resolved, That the work of the National Board of Health and its objects meet the cordial approval of this Council; and, this Council respectfully and urgently requests the Congress of the United States to make the necessary appropriations to enable said board to continue its work.

Resolved, That the Sanitary Council of the Mississippi Valley, duly appreciating the utility of an efficient inspection service during the summer months for the Mississippi River, and for railroads having their termini on the Gulf Coast, and also the efficiency and moral effect of such service as was maintained by the National Board of Health during the past three summers, do now respectfully request the National Board to re-establish that inspection service on the Mississippi River for the approaching summer, that is to say until the middle of October.

Resolved, That the National Board of Health be requested to place on duty at New Orleans, and such other Southern ports as may be deemed necessary, an inspector, or inspectors, whose duties shall be to supervise the shipment by river or rail of all goods, merchandise, baggage, etc., and to inspect persons when necessary; and to advise by telegram the Secretary of each Board of Health interested in the matter, whenever such goods or persons are believed to be infected or in anywise dangerous to public health.

Resolved, That the Secretary of this Council be instructed to transmit to the Secretary of the National Board of Health a list of the organizations represented at this Council.

(2) WHEREAS, the prevention of the introduction of yellow fever into the United States is a subject of national importance; and

WHEREAS, we believe there is no safety if an infected vessel is allowed to enter the Mississippi river;

Resolved, That, in the opinion of this Council, it is proper for the Louisiana Board of Health to ask, and it is the duty of the National Board to continue to give, aid in the prevention of the introduction of yellow fever into the Mississippi Valley.

Resolved, That, because of the duties of the National Board of Health in aiding in the prevention of the introduction of yellow fever, and in giving accurate information to all States interested in the sanitary condition of the Mississippi Valley; (1) An inspector of the National Board of Health should be placed at Eadsport, to act conjointly with the officer of the State Board, in securing the exclusion of infected vessels from the Mississippi river, and in notifying such vessels that they must be thoroughly disinfected. (2) A representative of the National Board of Health should be stationed at the Mississippi Quarantine Station. (3) That it is the duty of all health authorities in the Gulf and Seaboard States promptly to communicate to the National Board of Health any and all possible information in regard to the occurrence of yellow fever, or a case which may be suspected to be yellow fever, and in every way to aid the National Board of Health to perform its duties in giving accurate information for the guidance of other State Boards of Health throughout the country.

(3.) Whereas, the efforts of local organizations are insufficient to prevent the spread of contagious and infectious diseases throughout the United States;

Resolved, That the national government be requested to take such necessary action as shall prevent the introduction and spread of all contagious and infectious diseases.

The subject of the spread of small-pox throughout the country by immigrants, and the action of the Illinois State Board of Health recommending an inspection service by the National Board of Health, in co-operation with State Boards, was referred to a committee which reported as follows, and the report was adopted:

The committee to whom was referred the subject of immigrant inspection and protection from small-pox in 1882, would respectfully recommend that this inspection service be commenced May 1st, and that all the state and local sanitary organizations interested unite with, and co-operate with the National Board in order to accomplish the object desired.

This service contemplates the placing of inspectors at points in all directions from New York and other ports of entry, so as to prevent if possible the spread of small-pox from points primarily infected, and has special reference to the inspection of immigrants through whom the disease this year was introduced into the United States, and spread throughout the North and Northwest in such violent form.

Suitable resolutions were adopted in relation to the death of Dr. C. B. White, of New Orleans.

It was moved and adopted that a committee be appointed to report at the next annual meeting, for the purpose of ascertaining whether the recent inundations have had any effect upon the health of the localities inundated.

The following were appointed on the committee:

Dr. L. F. Salomon, of New Orleans, chairman;

Dr. G. B. Thornton, of Memphis, Tenn.;

Dr. Thad. Stevens, of Indianapolis, Ind.;

Dr. R. J. Farquharson, of Des Moines, Iowa.

Dr. G. Devron, of New Orleans, La., was elected President for the ensuing year, and Dr. R. M. Hillis, of Keokuk, Iowa, Vice President.

Dr. J. H. Rauch, of Chicago, was re-elected secretary for three years.

The retiring President, Dr. J. J. Speed, of Louisville, delivered his annual address at the Cain Opera House, and the meeting adjourned *sine die*.

TO OUR SUBSCRIBERS.

Volume IX of the N. O. Medical and Surgical Journal will be completed with the June number. While the support accorded us has always insured success and continuance, we are forced to confess that a large number of subscribers are in arrears. This will not do. We say to each of these delinquents come up with the amount due. The Journal needs it.

MISSISSIPPI STATE MEDICAL ASSOCIATION.

We learn, through the press dispatches, that Dr. Wirt Johnson has been elected President of the Mississippi State Medical Association.

The compliment is a merited one. Thorough-going and industrious, he unites with these traits administrative abilities of high quality.

Obituary.

DEATH OF DR. C. B. WHITE.

At the meeting of the Auxiliary Sanitary Association held on the 22d instant, Mr. Edward Fenner announced the death of Dr. White in the following language:

Gentlemen—It is my painful duty to announce to you that since our last meeting this Association has met with an almost irreparable loss. Dr. White, our associate and friend, is no more. He died on last Sunday; and though his death was not wholly unexpected, it yet seems painfully sudden. He died in the prime of a manly and most useful life.

To the last he persisted in laboring, and only a few hours before his death, held a protracted interview on business of this Association with one of its officers. His whole soul was in his work, and it is impossible to estimate at its full value the services he rendered to the public as medical director of the Sanitary Association. He made sanitary science a special study, and his reputation in matters of hygiene had become national.

Dr. White was yet young. He was born in Thetford, Vermont, 14th February, 1826, and, after a residence of about fifteen years in the State of New York, he removed to Indiana. His father became President of Wabash College, where Dr. White was graduated in 1846. In 1848 he removed to Alabama and began there the study of medicine in that State; thence he came to New Orleans, and graduated from the Medical Department of the University of Louisiana in 1852, and almost immediately commenced a practice in that profession, which placed him foremost among its most brilliant ornaments.

During the late war he was made Surgeon of the United States Volunteers, and, some time before the close of the war, Medical Director of the Thirteenth Army Corps.

Though always in sympathy with the Union cause, he was conservative in his views, and after the war made many friends among all parties.

In 1868 he was appointed President of the State Board of Health, and during the seven years he held that responsible position he never ceased for a moment his efforts in the performance of his onerous duties. In this office he displayed that practical sense and judgment and unremitting zeal that characterized his life. In 1876 he was made a member of the Board of Judges of the Centennial Exhibition. During his visit to this country, Dom Pedro II, Emperor of Brazil, consulted Dr. White on the subject of yellow fever, and regarded him as an eminent authority on that subject.

In 1879 this association felt that much of their success would depend on a judicious selection of its Medical Director.

They at once recognized in Dr. White the qualities that were needed, and chose him for that office; and, in spite of his failing health for the past year, the association found him always at his post and zealous in the performance of his duties.

Perhaps, however, no more fitting compliment was ever paid him than that by the American Public Health Association, when, at their late meeting in New Orleans, they elected him their President.

The members of that association came from all parts of the Union, and their selection proved how universally his talents were recognized and appreciated.

In closing these desultory remarks, I cannot refrain, gentlemen, from expressing my personal sense of the great loss that each of us has experienced in the death of our friend. Our relations with him were always of the most gratifying character. He possessed that genial, courteous and indefinable quality—a magnetic trait—that attached to him all with whom he came in contact.

He was not merely assiduous in the performance of his duties, not simply a useful citizen; but he was generous, true and honorable. He was in every sense a gentleman.

Reviews and Book-Notices.

Marriage and Parentage, and the Sanitary and Physiological Laws for the Production of Children of finer health and greater ability. By a Physician and Sanitarian. 12 mo. Pp. 185. New York: M. L. Holbrook & Co. 1882. [Sold by Hawkins, 196½ Canal street. Price, $1.00.]

This little anonymous work was obviously written for the general public, rather than the medical portion of it, and is particularly adapted to those contemplating or having recently entered the married state. Devoid of the pruriency which characterizes most books on such subjects, it contains useful lessons, based on a sound morality.

Some of the author's precepts, we think, will be found rather difficult to reduce to practice, even among those best schooled in self-control. Thus, on pp. 111 and 112 he inculcates the desirability of limiting the number of offspring; and on pp. 154 and 155 that the married pair must settle the number of their progeny according to their circumstances and desires; but elsewhere he gives forcible warning of the evils which result from attempts to interrupt the course of nature in the function of reproduction. An example quite *a propos* at the present time is the assassin, Guiteau, whose mother is said to have

made ineffectual efforts to terminate his utero-gestation prematurely; but the conclusion to be drawn from this single instance would be, that failure in the attempt to induce abortion is the most disastrous feature, in a practical point of view.

Optimism is certainly preferable to its opposite extreme, pessimism, and the author's aspirations for our race are praiseworthy, though their fulfillment may be distant. The motto opposite the title-page is illustrative: "There is nothing utopian in hoping for the time to come when men and women will consult a wise sanitarian before entering into the marriage relation." Hope is a dual exercise of desire and expectation: as mankind are now constituted, we must regard the above hope as partaking much more of desire than expectation, since the average candidate for matrimony now inclines to the fortune-teller rather than the sanitarian, and those that would consult "a wise sanitarian," instead of an advertising charlatan, would be an insignificant fraction. The evolutionist might indeed contemplate, in the distant future, a system of sanitary match-making, and a medical specialty organized for its practice. A private detective bureau would be an important attachment, in order to discover any natural or acquired defects of health or character in the person of either party to the transaction. The *raison d'etre* of such a service is already seen in the practice of examining titles before purchasing real estate properties, and its exemplification in Pinkerton's detective establishment.

Again, not supposing that the religious element will die out of human character, it is reasonable to presume that doctrines and rites will undergo evolution in the future, as they have in the past. The rite of circumcision has undoubtedly been a useful sanitary measure, and may originally have had a sanitary purpose, which was secured by consecrating it as a religious rite. How much more conducive would it be to the welfare of the human race, to restrict procreation to the best specimens, as is now done with domestic animals. It might then be left to a sanitary priesthood to decide what individuals should be reserved to the duty of perpetuating and improving the race, and to administer the rite of castration to those laboring under

any physical, mental or moral defects which would disqualify them for the duties of sanitary parentage.

The above views we admit as somewhat speculative, but believe in harmony with the grand doctrine of evolution, and trust not antagonistic to the religious instincts of humanity. We are not, however, prepared to suffer martyrdom for such faith, nor ambitious to undertake the specialty of matrimonial sanitation. *Chacun à son gout.* S. S. H.

Sensation and Pain. By Charles Fayette Taylor, M. D. A Lecture delivered before the New York Academy of Sciences, March 21, 1881; being one of the public course for 1880–81. 12mo. Pp. 77. New York: G. P. Putnam's Sons. 1881. [From Eyrich, 130 Canal street. Sold by Hawkins.]

A portion of the lecture is devoted to the physiology of nervous action, aided by a few wood-cuts illustrating the simpler anatomical features of the nervous structure. This is, however, only introductory to the main subject, which is in reality illusions, or disordered sensations. The lecture is of a popular character, and will be found interesting and instructive to those for whom it was intended, as it will enable general readers to understand many things which are sure to puzzle and deceive the uninitiated. S. S. H.

Lectures on Diseases of Children: A Handbook for Physicians and Students. By Dr. Edward Henoch, Director of the Clinic and Polyclinic for Diseases of Children in the Royal Charité, and Professor in the University of Berlin. 8vo., pp. 357. New York: Wm. Wood & Co. 1882. [Sold by Hawkins, 196½ Canal street. Price, $1.25.]

This is the March number of Wood's Library of Standard Medical Authors. It is evident that the sale of these publications must be very large to enable volumes of such dimensions to be sold at the low price of a dollar and a quarter; and equally evident that the margin of profit must be very narrow. As the works are by foreign authors, it may be presumed that they receive no portion of the "margin."

Not being able to give anything like a complete analysis of the work, we have selected a few subjects for critical notice, and begin with croupous pneumonia, or "fibrinous" pneu-

monia, in the author's language. He rejects the commonly accepted view of its extreme rarity in young children, and we have his assertion that "The former view with regard to the frequency of this form has long been exploded." This may be true in Germany, but not in the United States. However, we agree that it is common enough, even under the age of two years. His treatment is mainly expectant (do-nothing), while waiting for the spontaneous termination in about a week, more or less (generally more). "I have now ceased," he says, "the use of quinine and other antipyretics, and confine myself to the local application of cold." Blistering is not mentioned; perhaps never was thought of by the author; certainly never was tried in the earliest stage. Had he tried it, he would have less to say about spontaneous recovery by crisis.

Pulmonary consumption is treated under the single head of pulmonary tuberculosis, though he recognizes the German doctrine of catarrhal phthisis as a result of broncho-pneumonia. He says: "While some consider these conditions [cheesy processes and tuberculosis] entirely distinct, others take a more intermediate stand-point, which, as I believe, is justified by clinical facts. It cannot escape the unbiased observer that the frequent simultaneous occurrence of miliary tubercles and cheesy degenerations, and the experimentally proven development of the former from cheesy spots present in the body, is a clinical proof of the intimate relationship, if not identity, of the two processes, which is more weighty than microscopical appearances." Here we find none of the positivism so common among the German school of pathologists, and this is the more remarkable as Dr. Henoch is a university professor.

In cholera infantum it is clear that he has had no experience with the disease as it occurs under the excessively elevated summer temperature of our American cities. His slow, anti-dyspeptic plan of treatment is not suited to our rapid cases. He would wait several days before resorting to opium, meanwhile giving calomel and hydrochloric acid. Not a word is said of removal of children from the city to the country, the importance of which is so well understood in the large Northern cities of the United States.

He would commence the treatment of catarrhal diarrhœa by a purgative, and remarks, "After the purgative has operated, the diarrhœa not infrequently disappears after a few days." We prefer to give a dose or two of chalk-mixture, fortified with a vegetable astringent and a little laudanum, at the very onset, and put a stop to the complaint within the first twelve hours.

Diphtheria is classed among the infectious diseases, specific in character, and distinct from membranous croup. While there is much to be said upon both sides of the question of the unity or duality of these two maladies, we strongly incline to agree with the author. In regard to treatment, his language is remarkable: "In my treatment all remedies hitherto recommended (and I believe I have tried almost all, with the exception of sulphur preparations) are entirely useless in severe cases of the disease, and these alone should be considered, since the milder ones recover spontaneously. I believe that all experienced physicians will agree with this statement." The statement is certainy made from a Teutonic standpoint, and may be correct in its local application. Yet, after this declaration, he recommends rather early resort to tracheotomy, and claims sixteen recoveries out of sixty-six trials of the operation. He speaks of gargles—lime water among them—and some vegetable tonics; but not a word of the muriated tincture of iron, and only disparaging words of the internal use of chlorate of potash.

Of course English and American practitioners need not expect to gain any therapeutic knowledge from German writers and teachers. In pathology we may yield them the palm, but this work makes no original contributions. On the whole, we fail to see the utility of this volume to American readers, since they can easily make better choice. S. S. H.

Aids to Rational Therapeutics. By J. Milner Fothergill, M. D., M. R. C. P. 18 mo. Pp. 121. New York: G. P. Putnam's Sons. 1882. [From Eyrich's, 130 Canal st. Sold by Hawkins.]

This is one of the volumes of the "Students' Aid Series," published in paper covers at the low price of 25 cents. It is

intended for the use of students and young practitioners, and well answers the purpose. It abounds in prescriptions for some of the most common ailments, with such explanation of their indication and mode of action as will render the matter clear to the young prescriber. A serious defect is the absence of both table of contents and index, if the book is to be used for reference; but, if studied and thoroughly learned, this want will hardly be noticed. S. S. H.

Holmes' System of Surgery. By PACKARD. Vol. III.—*Diseases of the Respiratory Organs, Bones, Joints, Muscles and Nervous System; Operative and Minor Surgery, Gunshot Wounds, Hospitals, Miscellaneous Subjects.*

Such is the list of subjects considered in the third and last volume of this magnificent work.

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ERRATA.

In page 752, line 9, cancel letter "a" after of, and substitute "respected" for reputed.

Page 752, line 13 from bottom, for problem read "problems."

Page 752, line 8 from bottom, read "suscitate" for resusitate.

Foot note, page 753, read "Gaceta" for Garda.

Page 754, line 19 from bottom, read "fievre" for fiebre.

Page 754, line 16 from bottom, read "assimilate" for assimulate.

Page 754, line 7 from bottom, read "fievre mauvaise" for fiebre mannaise.

Page 755, line 12, read "pressure" for presence.

Page 755, line 22, read "then" for there; line 13, from bottom, read "were" for we.

Page 756, line 4, read "gram" from grain.

Page 764, line 27, read "now" for how.

Page 764, line 7, from bottom, read "dwelt" for dwell.

Meteorological Summary—March.
Station—New Orleans.

Date.	Daily Mean Barometer.	Daily Mean Temp'ture.	Daily Mean Humidity.	Prevailing Direction of Wind.	Daily Rain-fall.	General Items.
1	30.031	65 1	67.3	North	....	Mean Barometer, ———.
2	30.163	64.7	74.7	S. E.	.....	Highest Barometer, 30.511, 22d.
3	30.137	68.0	84.7	S. E.	.....	Lowest Barometer, 29.789, 27th.
4	30.030	70.9	81.0	South	....	Monthly Range of Barometer, .722.
5	30.002	71.4	82.0	South	* ..	Mean Temperature, ——.
6	30.070	72.7	77.7	South	.....	Highest Temperature, 81.0, 19th.
7	30.128	66.2	88.0	N. E.	.....	Lowest Temperature, 53.0, 23d.
8	30.047	72.8	79 0	South	.01	Monthly range, ——-
9	30.053	67.4	66.7	N. W.	.....	Greatest daily range of Temperature,
10	30.251	59.9	64.3	North	.....	20.0, 31st.
11	30.249	61.5	66.0	East.	.12	Least daily range of Temperature,
12	30.021	71.0	82.0	South	* ..	8.8, 28th.
13	30.098	70.0	73.0	N. E.	.....	Mean of maximum Temperature, 74.9.
14	30.253	64.1	67.0	East.	.....	Mean of minimum Temperature, 60.9.
15	30.181	70.8	74.3	South	.....	Mean daily range of Temperature, 14.0.
16	30.146	71.7	77.7	South	.....	Prevailing Direction of Wind, South.
17	30.086	70.8	80.0	South	.....	Total No. of miles 5622.
18	30.105	74.1	79.7	S. E.	.....	Greatest Velocity of Wind, 24 miles
19	30.113	74.2	79.3	South	.....	N., 24 S. E.
20	30 039	74.4	77.0	South	.....	Number of Clear Days, 12.
21	30.211	63.7	67.7	North	.41	Number of fair days, 14.
22	30.478	60.4	25.0	North	.....	Number of Cloudy days, 5.
23	30.442	58.5	44.7	East.	.. .	No. of days on which rain fell, 7.
24	30.309	64.1	51.3	North	....	
25	30.232	63.5	72.3	East.	....	
26	29.941	71.3	87.3	S. E.	.17	
27	29.843	73.7	83.0	South	.21	
28	30 044	65.2	66.3	N. W	.....	
29	30.136	64.8	56.7	East.	.....	
30	30.203	67.9	66.0	S. E.	.....	
31	30.216	69.0	65.0	East.	.....	
Sums	.... .	...	....	.....	total	
Means	30.137	67.9	71.2	South	.03	

COMPARATIVE TEMPERATURE.

1872.....	....	1877.....	60.7
1873.....	60.4	1878.....	66.4
1874.....	66.2	1879.....	64.7
1875.....	63.5	1880.....	65.7
1876.....	59.9	1881.....	

COMPARATIVE PRECIPITATIONS.
(Inches and Hundredths.)

1872.....	....	1877.....	4.9
1873.....	5.1	1878.....	4.6
1874.....	7.6	1879.....	1.2
1875.....	10.8	1880.....	6.
1876.....	11.3	1881.....	....

* Inappreciable.

A. J. ARMSTRONG, Ass't,
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Mortality in New Orleans from March 25th, 1882, to April 15th, 1882, inclusive.

Week Euding.		Yellow Fever.	Malarial Fevers.	Consumption.	Small-pox.	Pneumonia.	Total Mortality.
March	25	0	5	16	15	6	109
April	1	0	2	14	17	4	103
April	8	0	5	10	17	6	124
April	15	0	8	15	17	6	122
Total....		0	20	56	66	22	458

NEW ORLEANS
MEDICAL AND SURGICAL JOURNAL.

JUNE, 1882.

ORIGINAL COMMUNICATIONS.

Annual Address.

A SHORT STUDY OF SOME OF THE PHENOMENA OF MIND.

Delivered before the Medical Association of the State of Alabama, in Mobile, April 11, 1882.

By PETER BRYCE, M. D, Superintendent of the Alabama Insane Hospital, Tuscaloosa, Ala.; Senior Counsellor of the Medical Association of Alabama, and Member of the Board of Censors, of the Committee of Public Health, and of the State Board of Medical Examiners, etc.

Members of the Medical Association of Alabama, Ladies and Gentlemen:

I propose to present to you this evening a short study of some of the phenomena of Mind. The enquiry will be conducted on data reached by the severest processes of modern science—beginning with the earliest manifestations of Mind in the lowest forms of animal life, thence tracing its subsequent development in connection with organism up to its highest expression in man, closing with a brief glance at its probable future outcome in this life, and its continuance in the life to come. A grand and engaging theme indeed! and one which, in the light of modern scientific research, is evoking an intensity of interest scarcely paralleled in the intellectual activities of the age. "Psychology," says a thoughtful contemporary, "is the one science of the future; all other sciences are attendants at its court, and on their knees before it. Physics,

general physiology, anatomy, sociology, philosophy, even astronomy itself, with its amazing precision and ineffable splendors, are but feeders and parasites to the science of all the sciences, the true *scientia scientiarum*—the study of the human mind."

Problems of Mind, as most of you know, have been my special study during the somewhat protracted period of my professional life, and I frankly admit that there is no subject that I should take more pleasure in presentiug to an assembly of this character—an assembly comprising not only many of the most eminent members of the Medical Association of the State, but probably the best representatives of a community justly distinguished for its broad scientific culture, general intelligence and refinement.

In the selection of a subject manifestly so complex, so difficult of conception and presentation, it is hardly needful to premise that the short hour allotted to the occasion will not suffice for more than the briefest elucidation of some of the most general principles reached by late scientific exploration. And it may be proper, too, in view of the conflicting opinions entertained by men of more than ordinary ability with reference to Mind, especially in its origin and relations to the body, to anticipate the attempted discussion so far as to say that without endeavoring to determine what Mind is, in its essential nature, I shall regard it as a product of evolution that has advanced to a particular stage on the lines of animal life. Marvellous as are the beauties and proportions of vegetables, and the seeming wisdom with which they conform to the circumstances of their life—the multiplicity of their apparently designed actions—there is no good reason for any other supposition than that all their behavior, which so mimics intelligent action, is purely automatic—a wondrous adaptability of their organic powers to the circumstances of their life, the range of this adaptability having been marvellously enlarged by the almost infinitessimal advances of successive generations in the incomputable ages of the past.

That the senseless materials and forces of matter could by any possible process be moulded into the forms and forces of

living, sentient organisms, must ever involve peculiar difficulties of conception, and yet it can be readily shown that there is scarcely anything about Mind that is more marvellous than the properties of material substances. The wonders of the force of gravity—whose pulsations through immeasurable space consume absolutely no time; and of the material ether —a substance of such marvellous tenuity as to be only philosophically demonstrable, and yet is to be regarded as a solid —are matched by those infinite transmutations of quality which chemical substances undergo by combination in different proportions. The properties of the substances termed material are indeed a vast complexus of potentialities which have just begun to be revealed. And the more their capacities are studied the more probable becomes the supposition that the activities of Nature are distinguished by an intenseness of constancy that knows no "variations or shadow of change." In other words, the more profoundly the subject is studied, philosophically and experimentally, the more probable does it appear that all manifestations of force in Nature must have been immanent in matter from the very beginning of its existence. Long after chemical science had made considerable advance it was generally supposed that the vital force was so peculiar that none of the compounds formed under its influence could be formed in its absence. But this idea has been fully exploded by the framing of hundreds of these organic compounds in the laboratory. The orders of combination among inorganic materials are severely regular, and the forms which they evolve in crystallizing are as definite as those encountered in the organic world. It is even proposed to make large use of the symmetrical beauty of crystallizations, for decorative purposes. The forms of snow crystals closely resemble the blossoms of many plants, and any one who has studied the beautiful arabesques of frost-covered window-panes cannot have failed to be impressed with the resemblance to pictures of forest depths—interlacements of vine and shrub, leaf and flower—adumbrations of forms to be evolved by subsequent strides of material substances in organic combinations.

While therefore, the chasm once supposed to separate organic from inorganic forces is being rapidly bridged, that between plants and animals is likewise rapidly disappearing before the blaze of modern biological research. As a proof of the indistinctness of the lines marking the two great organic kingdoms, naturalists are still disputing whether certain lowest forms are plant or animal. It is even thought by some that certain low forms of organization may be either plant or animal as circumstances determine. The selection of food by some of the lowest animals seems to be determined by principles like that by which the magnet selects particles of iron from a mass of rubbish. Both in plants and animals there are instances of genesis without sexuality; and the individuality of many animals is as loosely expressed as that of plants; for the animal torn to shreds, each of the parts gives rise to new and perfect individuals of the same kind. Many animals are attached, like most vegetables, to footstalks, and like them are developed by buds. It is needless to point out other common characteristics of the two orders, such as the locomotion of certain vegetables, and the capture and digestion of insects by others.

The most careful study of the two orders has hitherto failed to seize any characteristic that is absolutely peculiar or distinctive. The nervous system is not such, for the lowest animals have no nerves, a general irritability of the animal substance supplying their place. In many plants, too, there is a quality which is almost identical with nervous action—a wave of molecular disturbance propagating itself along certain lines as in the nerves of animals. It is very suggestive of the close analogies that exist among these very diverse orders that if the points of a crystal be broken off and it be put in a proper solution, the points will be rebuilt, just as a lobster's claw when cut off is renewed. With this brief glance at the insensible gradations from the inorganic to the organic, and from plants to animals, we are better prepared for special study of animal life—that mode of life in which alone is encountered what we call Mind.

ANIMAL LIFE.

Animal life is presented to us in great variety and in almost countless degrees of advance from low to high. And though in the lowest or simplest forms with which we are acquainted there are intricacies of adjustment which the human mind may never fully fathom, the distinctions are sufficiently pronounced to fully justify the use of the terms high and low in characterizing the various types. On investigation it is found that the quantity and quality, or definiteness of motions are the circumstances which determine our estimates of the grade of animal life. Every advance of life is marked by increase in the quantity and quality of the animal's movements. And this increase is found to depend upon advance in organization, that is, upon the differentiation of its tissue. In the simplest or lowest animals the substance is homogeneous. There are neither nerves, muscles, respiratory nor digestive tracts. The whole substance is endowed with an irritability corresponding to the function of nerves, a contractility answering to the function of muscles, and a capacity for absorption corresponding to the functions of the digestive and respiratory apparatus. As in primitive human society every individual is engaged in similar avocations, and every advance from the savage to the civilized state of life is marked by steps in the division of labor; so in animal life every advance to higher modes of existence is marked by more definite divisions of labor or function among different portions of its substance.

Let us glance briefly at some of the methods of achieving differentiations of tissue and specializations of function. In the case of a lower animal whose substance is only advanced to the extent of a limiting membrane and its contents, the external membrane must perform the functions of a stomach by the absorption of food; the functions of lungs by absorption of air; the function of nerves by impressibility; and the function of muscles by contractility. It is easy to see that when, by inversion, a portion of this external limiting membrane is converted into a closed sack, or blind pouch, or open passage for the purpose of receiving food and digesting it, the remaining

portion of the external membrane, relieved of the task of absorbing food, has much better facilities for exercising its function of impressibility to external influences. The same is true as to its task of absorbing air when a special breathing apparatus is evolved; and to its task of contractions when muscles are formed. The relief of the external tissue from a multiplicity of functions gives great intensity to its remaining function, impressibility, and directly favors the formation of the special senses—for it is now conceded that seeing, hearing, smelling and tasting are developments of the sense of touch. It is futhermore obvious that each portion of the animal's substance that becomes a special tissue for the performance of a special function loses its general, primitive capacities, and becomes dependent upon other parts for nutriment and air. A special apparatus, therefore, the circulatory, with its freight of oxygenated food, becomes needful. It is hardly necessary to remark that these differentiations of tissue and of function take place very gradually, and that in proportion to the specialization of function does the excellence of its discharge augment.

It has already been noted that the lowest animals have no nerves—a general impressibility of their substance supplying imperfectly their office. In some instances the nervous matter seems to be dispersed through the system along the routes to be afterward pursued by the nerve bundles. With the advent of a nervous system the animal's movements become more definite, it being the fundamental office of the nervous system to substitute special movements for indefinite contractions. In proportion to the animal's capacity for instituting special movements of parts, or all of its substance, will be its encounter with external agents. And if we remember, that according to the development theory, the forces that are mainly concerned in modifying an organism are those emanating from its environment, we will readily see what a potent influence towards a higher life must be those augmentations of an animal's power to institute special and general movements of its substance. The farther it travels, the greater will be the variety of objects and influences to which its impressibilities are subjected. The

better, too, will be its supply of food, from the greater opportunities for selection. In other words, every advance in the organization or specialization of function introduces it to new experiences, new incident forces, which, reacting upon the organism, cause fresh strides to be made in its capacity for advancing to new experiences, and by consequence, to new modifications of its modes of existence.

In the simplest nervous systems with which we are acquainted—and the principles of the complex are the same—there is a central cell to which the in-coming nerve-fibres go, and from which the out-going nerve-fibres issue. An in-coming fibre, impressed at its terminal or superficial extremity, propagates the disturbance of its molecules along its whole length to the central portion or ganglion, overthrowing its equilibrium, and loosening its forces which instantly flow off by one or more out-going fibres. These being distributed, say to a muscle, cause it to contract, or induce movement in it. This is the process of what are termed reflex actions. The principle of these actions is the same when the nervous arc advances from the simple to the complex.

EARLIEST PSYCHICAL PHENOMENA.

But this reflex excitation of muscles or other portions of the animal substance is not the whole effect of the disturbance brought about by irritation of the in-coming fibre. In the central substance or ganglion there is wrought a psychical or mind phenomenon—a sensation or feeling, or consciousness of a change effected in it. This brings us face to face with Mind in its first and simplest manifestation. At what stage of the nervous development this consciousness steps in, it is difficult to say. How far also we are justified in regarding nervous phenomena unattended by consciousness as psychical phenomena, is a question upon which there is great room for difference of opinion. I incline to agree with those who regard consciousness as an element essential to Mind; and hence am disposed to regard all those phenomena of the nervous system which precede its appearance, rather as conditions for the eventual manifestation of the Mind, than its actual outcrop.

In the new born infant there are unquestionably multitudinous impressions made upon the nervous system, without consciousness; but I doubt if it be right to style any of them psychical phenomena– however indissolubly they may be yoked with subsequent manifestations of Mind—if they be not attended with consciousness. In the adult, it is true that much of the material of thought are impressions, and the compounding of impressions by the nerves, which do not eventuate in consciousness. But these, like the impressions upon the developing brain of the infant, can not, I think, be rightly regarded as any part of Mind until directly or indirectly they have entered into the consciousness.

Although we can not determine the precise point where the nervous force gives out the unquestionable psychical phenomena of consciousness, it is evident that the consciousness, in its first stages, must be undefined, and the actions must appear very much more designed than they really are—they being for the most part automatic or unconscious. But however vague at first be the consciousness, it must from the first moment of its inauguration differ *toto cælo* from all other phenomena which precede or attend it.

How the phenomenon of Mind or thought first comes about, how the organic forces at this point make the high stride from material to mental manifestations--how the organic force, which eventuates in motion, presents in its obverse aspect phenomena of Mind—is, and perhaps ever will be, a great mystery ; for we know nothing, and probably will never know anything, of the nature of the ultimate essence of matter and the forces bound up with it; and this sublimest product or effect of their organic combination must have an origin in the profoundest depths of their very mysterious subsistence.

As the organism advances in dignity by new differentiations of tissue and specializations of function, the nervous system advances from the simple to the compound, and doubly and triply compound. For, in proportion to the advance in differentiation of tissue and specialization of function, will there be need of new stimulative and regulative influences of the nervous force, and only by compound nervous arcs can all the

various movements and functions be so co-ordinated as to act in unison for the benefit of the organism as a whole. It is evident, therefore, that the psychical or perceptive power must ever be chiefly resident in the most superior ganglion, inasmuch as only there can the multitudinous nerve-fibres be influenced to that co-operation which is essential to the higher life. It is also evident that as the nervous system becomes more complex, there will be greater range and exactness to the perceptions, resulting from, so to speak, the multiplication of the raw material of thought, and the sifting and comparing, or compounding, of a larger multitude of sensations. The impressions coming by the senses of sight and hearing and touch will exert specially potent influences in augmenting the range of the intellectual power.

Although we cannot determine with precision where unquestionable mental phenomena first outcrop from the nervous phenomena, we have in the organism a very reliable measure of the grade of psychical advance, namely, the development of the brain or cerebral ganglia. This is a very interesting fact, and one that establishes, beyond the possibility of question, the very intimate relationship of physical and psychical development. It is now universally conceded that the office of the superior brain or cerebrum is not to beget or preside over sensations. This office is discharged by lower ganglia which crown the upper part of the spinal cord. The upper cerebral lobes are clearly the physical basis for ideation, or the formation of perceptions from sensations, and combining them into ideations that mount by gradations from the simplest concrete to the most involved abstract.

The bodily organism precedes any manifestation of Mind, and every advance of Mind is associated with advance of organism. But too exclusive development of the mental powers must not be attached to the material organism; for however long they may have waited on organism, and been utterly dependent on it for any of their peculiar phenomena, yet from the moment of their advent they become potential factors of all subsequent developments or advances of their own and the bodily powers also. In a large exogenous tree we have

the utmost reach of development that is purely material. Grandly majestic and beautiful as are its labyrinth of limbs, twigs and leaves, it yet fails to excite that interest which attaches to very inferior animals. The reason is the absence of designed actions, or of the phenomena of Mind in its life. In animals the development started on lines that favored the eventual outcrop of thought; and though at its commencement in the simplest consciousness its manifestations were so weak as to be scarcely descriminable from automatism, yet it gradually assumed a commanding role, and augmented the rate and quality of development. It is an established physiological truth that all the special senses are modifications of the sense of touch, but it was the presence of Mind or consciousness that made their origin and usefulness possible. If such a violent supposition be allowable, suppose the existence of special organs, say the ears, without Mind. The jars or vibrations of air might shock the organism, but no meaning could be attached to them, and the animal could derive little or no benefit from such impressibility. All the special senses are therefore an outcome of Mind—were fashioned for its demands, and have continued to be its mighty servants in expediting and guiding the course of subsequent corporeal developments.

But mind is not only a chief promoter of bodily development, it is directly and indirectly the chief agent of its own development. This fact has not received the attention it deserves. The exercise of its functions improves them, while the greater ranges which it gives to special and general movements multiply greatly the influences brought to bear upon the organism. And these reacting upon the resulting improvements of the organism, its own powers are augmented in quantity and quality.

Late investigations establish what was *a priori* probable, that special centres of the cerebral substance are associated with particular activities of the mental powers. In the very nature of things, these special centres or tracts cannot be very sharply defined, but must interlace to some extent with each other. Not only so, but it is highly probable, where injury of

a tract or centre has occurred, that the special function is to some extent vicariously performed by other centres, just as the liver, kidneys, lungs and skin take upon themselves the function of an injured organ.

It has already been noticed that it is as much or more the function of nerves to promote motion as to promote sensation and thought. In truth the conditions for movements being more explicable than the conditions for mental phenomena, psychologists have come to pay special attention to the movement function of nerves, and then to regard the mental functions as the subjective or indirect phase of that explosion of nerve force which institutes the movements. The only objection to this mode of considering the origin of mental phenomena is the necessary omission of the part which Mind itself plays in its own development and which has before been considered.

Notwithstanding this, it is a fact that the two functions of nerves, sensation and motion, are most intimately conjoined. Any animal's intelligence is largely dependent upon its abilty to initiate a great variety of movements. The saying of Democritus, that given to animals a man's form, and they would have a man's intelligence, is very suggestive of a great principle now universally conceded. Animals like the Primates, or even the parrot, that can handle various objects and view them on all sides in quick succession, have much better means for acquiring exact ideas of objects than those destitute of such powers. A dog, even, has advantages over hoofed animals in the data supplied by the superior sensitiveness of his feet to objects trodden upon and imperfectly handled. Mr. Herbert Spencer compares the sensations experienced by a lobster through its claws to those which a man would gain by feeling around with a stick. This idea is enforced by remembering that that most noble sense, the sense of sight, could not, apart from the sense of touch, give anything approximating correct ideas of solidity, or of the three dimensions of objects.

It follows, therefore, as a corollary that the loss of any sense must result in loss of mental power in some of its phases, by lack of those aspects of things which the special sense can alone give. For there is an inevitable absence in all abstract speculations and involved ratiocinations, of the transfigured aspects that would naturally spring from the perceptions in which such sensations enter as factors. In all such cases there must be a greater or less distortion of the thought when forced to sum up its judgment with the important elements left out. Those who have charge of deaf and dumb persons declare that there are defects in their mental organization which cannot be fully remedied—an obtuseness of perception and a grossness of taste which are never surmounted. The blind labor under similar difficulties; their character, from lack of those comprehensive impressions which come by way of the eyes, being narrow, crooked or disjointed. "Owing to their infirmity," says M. Anagnos, Director of the Perkins Institution and Massachusetts School for the blind, "the sensations of the blind are, in the natural order of things, imperfect. They awaken indistinct and limited perceptions, and consequently the intellectual processes that follow will be feeble."

Is not the intimate conjunction of motion and mind, not only in the origin of the latter, but in most of its subsequent developments, very suggestive of the importance of physical education? A physical frame so developed in all its parts as to be able to respond adequately to every proper demand for movements must be a prime condition for a good mind. And any infirmity, natural or acquired, which limits the range of just movements must indirectly detract from mind in some of its most vital dependencies.

I am perfectly aware that objection will be made to my very imperfect presentation of some of the more fundamental phenomena of Mind on the ground that it takes too materialistic a view of the matter, makes Mind too dependent on the bodily organism. Those who make the objection must be convinced that there is some other theory which emancipates Mind from intimate dependence on the body. But where is there such a

theory? On any theory the dependence of mental phenomena upon bodily conditions is one of those facts that are as indisputable as the dependence of day and night upon the revolution of the earth about its axis. The rise of the animal spirits following an ingestion of wine is not more manifest than the rapid generation of ideas—both phenomena being evidently due to the quickened flow of blood through the brain. The failure of the mental powers in extreme old age is clearly referable to the failing nutrition of the general system. Excretive matters retained in the body affect the mind quite as soon as the bodily activities. Any considerable loss of blood is attended with weakening of the mental power. And this dependence extends to the moral as well as the intellectual operations of Mind. Bad health almost always makes one fretful, peevish, despondent. The bravest persons while recovering from a severe attack of illness are easily alarmed by so simple an occurrence as the slamming of a door, or the crash of a plate, or any unexpected noise. Thought is instantly abolished by pressure on the brain of a portion of the broken skull. and even by the pressure of blood from a ruptured artery. Non-development of brain substance insures idiocy. Illustrations might be piled on illustrations, but every one knows how utterly dependent upon states of the bodily constitution are all intellectual operations. Whatever theory may be adopted of the genesis and development of Mind all must admit its intimate dependence upon states of the body; just as all, whatever they may think of the theory of Development as a whole, are compelled to believe that every human being is the result of development from formless, embryonic matter. As the homogeneous speck of animal substance, resembling in its successive embryonic stages the rudiments of fishes, reptiles, birds and mammals, becomes at length a perfect human being and compels universal assent to a short development of nine months—whatever may be thought of the development through countless ages contended for by the scientists—so whatever opinion may be held of the origin and nature of Mind, a myriad of facts compel the admission that all mental operations are contingent upon bodily conditions.

INSTINCT; THE WILL; EMOTIONS; MEMORY, ETC.

Only a few words need be devoted to Instinct, and to the reconciliation of its phenomena with the general principles before presented. It is a fact, confirmed by daily observation and experience, that an action which is at first done only with great difficulty, becomes at length so easy as to be done automatically or without thought. The operation of the muscles of the legs in standing, walking or running, is one of many such instances of the lapse of voluntary into involuntary or automatic actions. Add the fact that acquired facilities are in a large degree transmitted to offspring in the shape of constitutional traits, and we will see how the range of automatic capacities of action, or instincts, might be gradually enlarged. And what is true of bodily actions is true of intellectual—they readily pass from the volitional or willed acts to involuntary or automatic. With what vast labor do most children acquire a store of facts and of ideas and methods needed for the production of a simple exercise in composition! But to the cultured man sitting down to write, facts, fancies, analogies, relations, comparisons come trooping and offering themselves for employment in the general willed result. In a long train of thought, the mind, as in walking, wills only the most general results. The details are supplied by the automatic powers from stores and methods acquired by previously willed efforts. It is highly probable, therefore, that a large share of the wisdom termed instinctive in animals was slowly acquired and registered in the successive organisms of which they are the continuations. The fact, before noticed, that the mental power is always chiefly resident in the superior ganglion, or that it travels upward with advance of the organism, lends force to the supposition that many of the actions of animals that are now instinctive or automatic were once voluntary. It is, however, never to be forgotten how large is the element of automatism in even the most voluntary actions, and that much of the seeming instinct of animals is pure automatism. This is especially true of some of the lowest classes of animals. Their actions, which so mimic designed movements, are now regarded by leading scientists as the outcomes of the purely

reflex function of the nervous system—the element of consciousness not entering into them in even a slight degree.

It would hardly be proper, even in so imperfect a discussion of the phenomena of mind as my time allows, to omit a reference to one other feature of the important subject. The will and free-will have in the past been the occasion of much intellectual contention; and in our day the old questions having come out in new forms, some of our most eminent scientists manifest a disposition to range themselves on the side of the disputants that deny freedom to the will. With the theological doctrinal aspect of the question I would not presume to meddle, the more so as I conceive that between Christians the question is of vastly more theoretical interest than practical importance—all parties at one stage or other formulating identical principles of right conduct. On the scientific aspect of the subject there is something that to my mind seems to need saying. Because mind is a concomitant of a particular kind of organic life, and the degree of mental advance is infallibly indicated by the organic advance, the assumption is made that all mental states, like the physical, are a series of successive conditions in which each is infallibly determined by those that went before. Now this comes of regarding mind or thought as a product of the brain, just as bile is of the liver. Given a liver of such and such a size and condition, and there flows out inevitably such and such a quantity and quality of bile; and given a brain of such and such proportions and quality and there results such and such series of thought, affection and will. But this is clearly to lose sight of a fact by no one insisted upon more strongly than Mr. Herbert Spencer that mental phenomena are *sui generis*, and differ immeasureably from all other phenomena of the material universe. Here is what Mr. Spencer affirms: "Though accumulated observations and experiments have led us by a very indirect series of inferences to the belief that mind and nervous action are the subjective and objective phases of the same thing, we remain utterly incapable of seeing and even of imagining how the two are related. Mind still continues to us a some-

thing without any kinship to other things; and from the science which discovers by introspection the laws of this something, there is no passage by transitional steps to science, which discovers the laws of these other things."

I have before called attention to the fact that it is as much the office of nerves to induce and preside over motions as to give rise to and coordinate sensations, or impressions. In those simply constructed animals in which the earliest psychical phenomena appear, the consciousness must be so vague that the movement must be as automatic as the sensations. But with the advance of the organism and of the mental phenomena waiting on a more complex nervous tissue, the animal's movements lose little by little their automatism, and become more or less the results of volition, a new phase of the mental phenomena, that comes by differentiation of the primitive consciousness. Any one who has studied the actions of lower animals can not have failed to observe that in their poor minds there is an unquestionable election of actions. They often hesitate between courses of conduct, and elect the one which their weak powers of reasoning indicate as best. Being incapable of the highly idealized abstractions of right and wrong their volitions are determined by their feeble conceptions of the pains and pleasures of conduct. Still their actions show an election of courses which can only be regarded as automatic by assuming that the laws which govern the mental are identical with those which prevail in the material or organic. This assumption is very unwarranted. It is like affirming that there is no difference between slavery and freedom, because the freeman is as much the slave of circumstances as the life-bondsman is of his master. This is an egregious blunder that comes of mistaking likeness for identity. As the intelligence of animal life augments, there is a corresponding augmentation of capacity to weigh and elect courses of conduct, until in man, the high degree of development being attained which grasps the conceptions of right and wrong, the election of courses to be pursued, of actions to be done, becomes a matter of morals. Moral responsibility clearly hinges upon the ability to elect

one of several courses of conduct presented to the imagination. Much confusion of thought on this subject comes of confounding wish and will. To wish is to desire, to will is to resolve to do.

To prevent confusion I have passed by one phenomenon of the advancing consciousness, namely, the pleasure or pain attending it. At first the three great elements of Mind—the capacity to estimate relations, the capacity to estimate pleasures and pains, and the capacity to institute volitions—are inextricably commingled in the simple consciousness of a change wrought in the sensations. But at length they are differentiated into separate powers, for the more perfect development of which are probably assigned the three great divisions of brain substance; for there have of late been demonstrated in the brain not only centres of pure intellection and of motion, but another tract which ought probably to be regarded the physical basis of the affections and emotions.

Memory is the analogue of a universal property of the material world, of recording in every substance all influences brought to bear upon it. The registering capacity of every portion of the material organism exercises a marvellous potency on the nervous system, or rather I ought to say, that so wonderfully constructed is the nervous system that those nice influences, which all material substances register, become manifest factors of all its subsequent exercises of functions. We have already attributed to Mind a commanding influence in all organic developments subsequent to it, and have seen that every stride it makes is materially registered in new conformations of the nervous tissue as a new and broader physical basis for its subsequent acts. If now we remember that those physical conditions when excited have the power of recalling the mental actions which produced them, we will see how large is the basis of memory in the physical organism. Memory is clearly in the world of Mind what the persistance of force is in the material world.

I have endeavored in this very imperfect presentation of some of the most general phenomena of Mind, and the intimate connection of physical and mental development, to sug-

gest how necessary it must be, in any exhaustive study of Mind, to give due attention to those phases of the subject in which there is the unqualified and indisputable association of mental forces with the general forces of nature and organism. Encouraging as are the disclosures hitherto made by scientific enquirers, it should not be forgotten that the scientific study of Mind has just been begun, and that greater things are to be expected in the not distant future. Problems of Mind are indeed the points at which all the forces of nature converge and upon which are now being directed the highest talent which our marvellous age is producing. What our times demand are not ingenious speculations but demonstrations of Nature's methods, and to the ascertainment of these every known device is being applied, and new ones invented, and most exact records of skilled observation is insisted upon. While preparing this address I am in receipt of a circular from one department of the Social Science Association, the object of which is to promote a more exact observation of the mental phenomena of infant life, by a systematic record of children's sayings and doings. This circular is rightly pointed, and very suggestive of the wise methods of contemporary investigations which are aimed at endeavors to grasp the order and curriculums of Nature.

THE FUTURE OF MIND.

But what does science testify as to the probable future of Mind in earthly life? Have Mind and body attained their supreme development? Is humanity a fixed entity incapable of essential modifications or improvement? All the evidence goes to show that the improvement of the human race is practically illimitable. This is true both of mind and body, which, as has been shown, advance *pari passu*, and is made very evident by the fact that the pre-eminence of Europeans over barbarous races, which is so manifest in their anatomy and physiology. There is a diversity of proofs of the advance of the physical man in modern times. No one questions that the average duration of life is being steadily prolonged. Besides a multitude of new

arts and new sciences, all the arts and sciences known to the ancients have been so wondrously developed as to seem like new creations of the modern man. Geology, Zoology, Botany, Chemistry, Geography — physical and political — Medicine, Painting, Politics, Theology, etc.,—every department, in fact, of human interest—have grown, as it were, into new and marvellous revelations. But to suppose that these immense developments of art and science can have resulted without corresponding improvements in the human intellect, is to ignore very important biological principles. As an advanced science implies an advanced art—the progress of the two being ever conditioned upon each other—so the great advances of the sciences and arts imply a corresponding development of human intelligence. The principle of action and reaction prevails in the world of mind as in the world of matter, and while the human intellect, by cogent applications of its powers, has established multitudinous differentiations in things once inextricably intermingled, a corresponding differentiation and specialization of its own powers have inevitably resulted. But specialization of functions being the direct evidence of its greater perfection, it is incontrovertible that the multiplication of specializations of knowledge by human enquiry has resulted in improvements of the power of the human mind. The strain which is now put on human power to keep pace with the advances already made are assurances that there will be in the future no lack of occasion for continued mental development. All departments of human enterprise have, in truth, been already so marvellously developed as to defy the complete grasp of any but specialists of more than ordinary capacity. Croakers may find fault and stigmatize the advance of the age as mainly material. Never did carping criticism have poorer ground for its averments. The material advance is fully matched by the moral advance. Proofs of it are so multiplied as scarcely to deserve enumeration. Liberty to think boldly and to give free utterance to honest convictions is fast becoming a sacred principle of society. Liberty of person and equal justice—irrespective of rank and wealth—are now almost

everywhere recognized as divinest principles of government. The sick and the unfortunate, instead of being left to die without aid or to pine through a miserable existence, are now everywhere provided for at the expense of those whom fortune has subjected to less severe trials. Sumptuary laws are now not only known to be useless, but their principle is condemned. Private war has almost ceased to be waged; and the duty of revenge, once sanctioned by religion, has given place to the duty of forbearance and forgiveness. The well-being of one's neighbor is now universally felt to be the good fortune of one's self. Vast accumulations of wealth, instead of being squandered in the purchase of places and useless decorations for elevating one's self above his fellows, are now employed in educational industry and eleemosynary foundations.

Nor is this true of individuals only. Governments, both monarchical and republican, instead of employing their resources in war and destruction, are now rivals in the most beneficent achievements for prolonging and ennobling human life. Slavery has been abolished in nearly every civilized country, and all forms of privileged oppression are rapidly meeting with the same condemnation. In truth, such has been the progress of morals and the general assimilation of the principles of equity, that the most important functions of life and society are now accomplished without the intervention of government, giving promise of a gradual declension of the functions of the central power before the more precise and equitable supervision of society constituted of individuals imbued with ever-present aspirations for justice and advancement. Already this day of a new excellence has dawned, and there are not a few indications that new crystalizations of social forces are destined to supervene. The liberation of woman from her ancient servitude, and her rapid advance to every privilege for which her powers adapt her; the emancipation of children from the severe domestic tyrannies and cruelties to which they were time out of mind subjected, are striking evidences of the ameliorations due to general moral advance. Like the animal organism the social organism responds throughout its whole substance to any force brought to bear upon it,

and the influence of scientific methods of thought is destined to exert upon society augmenting influences of the most pervading and salutary kinds. Truth and morality are inextricably intermingled, and whatever aids in the discovery of truth is a potential moral adjuvant. As in Scripture, condemnation of the belief in lies is everywhere enjoined, so moral advance is ever assured by devices that accomplish the enlargement of the realm of truth. To carp at scientific methods is to carp at truth, for scientific methods are only severe procedures for the discovery of truth; and there is, to my mind, little doubt that in no great while the much desired reconciliation of natural with revealed truth, will be successfully achieved. I find in late utterances of scientific men of the highest stamp, much that is in conformity with some of the prevalent teachings of religion. Herbert Spencer is unquestionably the most perfect embodiment of advanced scientific thought. While in special departments there are many that go before him, in the power of co-ordinating the various sciences, and embodying their myriad diverse facts into a consistent body of philosophy, he goes far before all his contemporaries. His writings, indeed, stand apart as a great mountain range looming far above the lesser heights. It would be easy, from Mr. Spencer's writings, to accumulate declarations that have wondrous congruity with orthodox doctrine. The worship of humanity, Mr. Spencer declares, can never take the place of the worship of God. He also affirms with all our orthodox creeds, that precepts of right living do little or no good, unless the corresponding emotion can in some way be roused. His standard of right conduct, scientifically deduced, is a perfect law of righteousness which may not be debased below the mark of perfection, however unable men and women may be to fulfill its requirements.

In every aspect, therefore, the prospect of human advancement is very cheering. Individually and collectively man is so steadily progressing to the achievement of the great problem of his life—perfect conformity to the conditions of his being—that no mad enthusiasm is needful to prompt the anticipation of a rapid advance to that condition of things which

the ancient seers foresaw and aspired towards; when "they shall beat their swords into plowshares, and their spears into pruning hooks; nation shall not lift up the sword against nation, neither shall they learn war any more."

IMMORTALITY OF MIND.

But while science is disclosing the methods of Mind and preparing for it on earth a nobler and still more noble roll, what are its testimonies as to the duration of Mind—its immortality? Some of the most devoted adherents of scientific methods have reached conclusions which are unfavorable to Mind's immortality. But it is not surprising in view of the novelty and marvellousness of many lately demonstrated scientific truths that even men of calm temper should be led to attach undue importance to them—to claim for them reaches and meanings which do not of right belong to them. Close as may be the demonstrated union between Mind and body, no philosophy of organization and life satisfactorily accounts for the presence of Mind. Mind is indeed unique, peculiar; has its own laws, and overleaps and undermines all mere material phenomena. The study of Mind is, therefore, incomplete unless subjectively pursued. The Mind must be questioned, must testify of itself, if we would arrive at anything approaching just conclusions with reference to it. This is indisputable from the fact that Mind is that mysterious quality in us by which we explore all material phenomena. It is only, therefore, by due attention to Mind's subjective contemplation that we gain the right to reason upon the phenomena of material things. A surveyor who should go around, determining boundaries, directions and areas, without having first put to severe tests his compass and chains, would be acting not a whit more absurdly than they who leave out of the study of material and mental phenomena a subjective study of Mind. But if only by questioning Mind about itself we can rightly understand its nature, dare we, in conducting the enquiry, ignore a whole host of its most prominent intuitions? Surely not. But Mind's testimony of itself is that there are in it indefeasible principles of individuality, responsibility and immortality. It

would be strange indeed if this noble, this intensely royal thing, which disdains to be classed with any material forces, however sublimated they may be, should be remanded to the companionship and fate of the phenomenal, the sensual, the perishing!

Happily for the Theory of Evolution, not all nor even the majority of its advocates have given assent to such conclusions. Mr. Darwin has ever conjoined with his marvellous disclosures of the relations of organic facts a spirit of religious reverence. Mr. Herbert Spencer avows that there are unseen, eternal verities which justify Religion. Lessing, David Strauss and Professor Helmholtz could not reconcile themselves to the thought of a final destruction of the living race, and with it all the fruits of all past generations. Others among them, however, assume that since Mind is only known to us as a phenomenon of organism, the death of the organism involves a discontinuance of all its functions—thought, affection and will not excepted—and their resolution into the more primitive forces from which they originally sprang. But it is clearly a most unwarranted assumption that spiritual individuality —the fundamental principle of which no one pretends to apprehend—cannot be prolonged or perpetuated except under such material circumstances as earth supplies. If it be recollected how ignorant man is of the essence of matter and motion, and that there are in Mind or spirit qualities which can not be ranged with material things, or with their almost infinitely subtle forces, we will readily see that the assumption of no conscious life except under such circumstances as material things supply, is most unwarrantable.

Even the argument against immortality based upon the relations of Mind to organism, when closely examined, loses much of its seeming fitness. The persistence of force is indeed as much an axiom of science as the indestructibility of matter. What appears to be cessation of force is simply its transformation into other forces. But muscular movements provoked by volition are not actuated by mental force. The Mind, in voluntary motions, does not supply the force. It only signals the nerve centres that furnish the force. The

centres of motion, which have of late been demonstrated in the brain, do not supply the force for the operation of the muscles, whose contractions they specially control. The brain-centres are properly only intellectual signal centres—centres whence issue the volitions that liberate the forces of the lower nerve centres for contracting special muscles. Fatal errors in reference to Mind may easily grow from confounding nervous force with mental force. It is impossible to form right conceptions of Mind so long as it be regarded as a merely resultant force made up of the organic forces which lead up to it. In any such conception there is left out an important element which it is difficult explicitly to define, but which may be forcibly suggested by a comparison. The beautiful form—symmetry and proportions—of a noble tree may be regarded apart from the organic materials and forces which underlie it. Thus regarded it is, as it were, spiritual, and is capable of arousing conceptions of beauty and grandeur in the soul of the beholder. Mind in this view, instead of a mere force, becomes a symmetrical and living expression of the relations of the myriad forces which have from the very beginning entered into the life. It is, therefore, in one view, as absolutely immaterial as the form and beauty of a tree. But in still another aspect Mind must be considered a higher and vastly more subtle force than any physical forces with which we are acquainted, and in its actions and methods of development is governed by laws peculiarly its own. Mind or mental force is therefore unique, and stands apart is a grand exception to the general law of the correlation of forces. But as all the physical forces are persistent in some form or other it is eminently unreasonable to suppose that this peculiar force that immeasurably transcends all others, should alone undergo absolute extinction. It needs must be, therefore, that Mind or mental force shall continue to exist after dissolution of the organism with which its manifestations are associated by passing into a new state, or new conditions of activity, of which science takes no cognizance. Thus considered, Mind, in its ultimate analysis, becomes a purely spiritual entity which can never be dissolved and commingled with the heterogeneous forces of the material world.

The most characteristic element of the spiritual man hints strongly of its immortality. Human happiness is largely made up of recollections and anticipations—thoughts of past enjoyments, hopes of future. Nothing is more manifest than that, even in the servitude to its earthly or formative conditions Mind disdains all proximate joys, and is ever deriving its highest satisfaction from things desired, things hoped for. But faith is the summing up of all the powers of this grand principle of hope. It is a concentration of the soul upon a desire, a hope, that includes all possible good—the desire, the hope of God. To say that this, the testimony of an all-pervading principle of man's spiritual being, is false, is to brand all Nature a delusion, and man, its noblest product, a gross fraud. May this safely be done? In every view then we must conclude that the aspirations of man for an indefinite continuance of life are prophecies of existence beyond the tomb:

> "It must be so—Plato, thou reasonest well!—
> Else whence this pleasing hope, this fond desire,
> This longing after immortality?
> Or whence this secret dread, and inward horror,
> Of falling into naught? Why shrinks the soul
> Back on herself, and startles at destruction?
> 'Tis the divinity that stirs within us;
> 'Tis heaven itself that points out an hereafter,
> And intimates eternity to man."

In conclusion, ladies and gentlemen, I feel as though I ought to apologize, for venturing, in the short time allowed me on such an occasion as the present, a discussion of the intricate but sublime topic which is now, and must continue to be, the most interesting and supremely important that can challenge human investigation. If, as I hope, something that I have said can avail to point you to new studies of man's noblest endowment, I shall feel that I have not spoken in vain. At any rate my effort must have the merit of being signed with that profound summation of wisdom embalmed in the apothegm of the ancient philosophers and inscribed over the portals of the Temple of Apollo—KNOW THYSELF.

Vaccination.

By Dr. J. M. Watkins.

Read before Orleans Parish Medical Society, April 24, 1882.

Mr. President and Gentlemen—I had thought of presenting for your consideration this evening, the subject of preventive medicine, as foreshadowed in the recent experiments of Pasteur by vaccination in various diseases, as well as to theorize as to the use of the sulphite of soda in the prevention of yellow fever, and the administration of Belladona to persons exposed to scarlet fever. If it were possible to demonstrate the truth of a single one of these propositions, not only could medical research boast of a brilliant triumph, but humanity would rejoice as it did when the experiments of Jenner found a panacea for one of its bitterest woes. The skepticism of this enlightened nineteenth century, however, leads me briefly to consider some of the facts in reference to small-pox and vaccination.

After a trial of vaccination since 1798, and in the face of so much positive evidence which has, and still testifies to its effecacy, it is certainly remarkable that so many intelligent members of the laity, influential newspapers, and even members of our own profession, are lending their support in behalf of those who question, and who even go so far as to reject, the idea of prevention. It is a sad commentary on our enlightenment, that a defence of this, surely the greatest boon humanity has ever experienced, should be necessary; but, that there is a spirit of opposition existing, sufficient to render it necessary, is beyond doubt. Were it confined to the ignorant classes, we might pity their ignorance, and by means of legislation compel them, though unwilling, to share the public good, but as I have said before, they are not the only ones who manifest a spirit of opposition. It may be well to refer here to the history of epidemics of this disease in the past, and thus by contrasting it with our own experience since vaccination has been practiced, show the volumes of evidence which have accumulated in support of its truth. In the year A. D., 544, we have the first authentic history of its devastation, and in the

year 569, it is related, that the army at Mecca, was so scouraged by it, as to be compelled to retreat. In a single year of the eighteenth century, one-tenth of the entire population of France were destroyed, and during 20 years, Copenpagen lost one-eleventh of its entire population. We may reasonably suppose that for every death there were 2 or 3 cases which did not prove fatal. It is considered that fully two-thirds of the pauper blind of England, were rendered so by small-pox. In the century preceding vaccination 45,000,000 people died of small-pox, to say nothing of those who were disfigured, or made blind, in either case, ruined for life. In Russia alone, 2,000,000 perished in a single year. The mortality in England was over 45,000 annually, cities were decimated, villages deserted, and whole armies disbanded on account of its ravages. To us, such things are as a dream that is told, and the stupendous fact can scarcely be realized. Why is it that no such terrible record marks its advent in this day?

Ignorance of hygienic laws, and improper treatment may account in some degree for its mortality in the past, but according to the best authorities, small-pox is the same malignant disease to-day, that it ever was whenever it has had an opportunity of manifesting itself unchecked. In proof of this, in 1863, of 50,000 children in London, 30 per cent. of those unprotected by means of vaccination, suffered with the disease. The first check given to the spread of small-pox, was by means of inoculation, which the Chinese claim to have been the first to employ, by placing the crusts within the nostrils. Its success, however, was not complete until the year 1721. All are familiar with the next important step, which was made in the arrest of this disease. Jenner's work, published in 1798, heralded to the world his grand discovery, valuable as a fact, and also in a principle, which may be destined to prove of wider application, and yield still more brilliant results. It was not until 1819, that statistics of any great value were accumulated showing the efficacy of vaccination; it was afterwards proven that in cases of post-vaccinal small-pox, the death rate up to the year 1856, was 1.75 per cent. Vaccination was made compulsory in Ireland in 1863, and the effect on the mortality from

small-pox was exceedingly striking. In the Prussian army since the introduction of systematic vaccination, the annual deaths from small-pox have not averaged more than two. Heim found that among 14,384 vaccinated soldiers in Wittenburg, only one case of varioloid occurred in 5 years, and among 30,000 re-vaccinated persons in civil practice, only two cases of varioloid occurred in the same length of time, though small-pox prevailed in 344 localities. In the face of so much evidence, and more could be gathered in support of its truth, on what do the opponents of vaccination base their objections?

(1.) That persons previously vaccinated have contracted small-pox.

(2.) The liability of transmitting other diseases as scrofula, syphilis, etc.

All know that cases of small pox have occurred among those bearing evidence of previous vaccination, but so far from this exciting wonder, it is stranger still that such cases are not of more frequent occurrence, when we consider that a large number of vaccinations are made by midwives, without any reference, as regards the matter used, to the number of removals from the original bovine virus. Physicians are not always careful themselves to obtain a complete vaccination. Some individuals, even after thorough vaccination with pure bovine virus are liable to contract the disease. These cases we may reasonably conclude are rare, and the fact that variola occurs in such a case, is presumptive evidence that the vaccination was performed with non-protective virus. Jenner himself discovered that cows had a disease similar to vaccinia, the virus from which had no effect in preventing small-pox. During a season such as we have just experienced, when the demand for vaccine virus has almost exhausted the supply, and has yielded so rich a harvest to those interested in its propagation, it has no doubt prompted those who are scarcely acquainted with its nature and method of propagation to engage in it and as a consequence to foist a worthless article on the trade The experience of many physicians during the past winter, has fully demonstrated this to be a fact, while many have been

compelled to condemn some of it not only as worthless, but absolutely injurious. Dubting the character of this virus, we therefore feel justified in supposing that in some cases where it has seemed to run a typical course, that such was not in reality the case, and should these persons in the future contract small-pox it would reflect not so much on the value of vaccination as a means of prevention, as it would on the quality of the virus employed. Another fact of importance, in my opinion, and one which I have never seen fully discussed, is the probable length of time protection, after successful vaccination, may be said to exist. Most writers on this subject recommend that persons should be vaccinated every seven or eight years, seeming to recognize this as the usual period of protection. I am fully persuaded that the length of time may and does vary in individual cases. All of us no doubt have seen individuals having scars as evidence of vaccination performed in infancy, in whose cases subsequent vaccinations have never been followed by a recurrence of the disease, although twenty, thirty or even forty years may have elapsed. On the other hand there are individuals in whom every attempt at vaccination is followed by what can not be distinguished from genuine vaccinia, in other words the disease runs a typical course every second or third year.

Whether this depends upon some peculiarity of the system, whereby the effect produced upon the blood, by means of the virus, is more rapidly rendered inoperative, or whether this condition of system modified the action of the virus on its introduction, I am unable to say. Were we to admit that in all cases vaccination did not insure absolute protection, we would still not be without sufficient argument upon which to base a plea for its being made compulsory. To acknowledge that it does not always protect, is yet to insist upon the fact that frequently it does, and that it lessons the virulence of the variola poison is unquestioned, thereby converting what might have been a case of a malignant confluent type, into one of a milder form.

To insure the greatest amount of protection pure bovine virus should be employed, and the disease should run a typi

cal course. As to the second objection, which refers to the introduction into the system of diseases, more to be dreaded than small-pox itself, the use of the pure bovine virus, which is acknowledged to be by far the most efficacious, completely does away with this ground of complaint; not only this, Dr. Marston and other eminent physicians disbelieve in the transmission of syphilis, or any scrofulous disease, in any properly conducted vaccination. As the existence of either of these diseases would so modify the progress of vaccination and alter the character of the scab, as to lead any physician exercising ordinary care to discard it at once.

When vaccination is carefully performed, and with pure humanized or bovine virus, untoward symptoms may some times occur; these are perhaps due to the condition of the patient's system, or they may be due to irritation from scratching, or too violent use of the arm.

The principle underlying the discovery of Jenner, is one which scientific physiologist and pathologist have been slow in developing. Nearly ninety years have passed, and yet no one has demonstrated that similar methods may be employed in the treatment of other diseases. We regard those who practiced medicine previous to the discovery of the circulation of the blood by Harvey with astonishment, that so important, and to us, so evident a fact, could have been so long overlooked, and yet who knows but that our successors will wonder that we so long neglected a principle, which it is reasonable to suppose will prove universal in its application to the treatment of all zymotic diseases. Pasteur laboring in this fruitful field, has recently discovered that chicken cholera, and splenic fever in sheep could be entirely wiped out by vaccination. Should future experiments prove the correctness of his theory in reference to diptheria, measles, etc., the practice of medicine is destined to be revolutionized in the sense, that physicians, instead of devoting themselves, as now, almost exclusively to the treatment by drugs, of symptoms present in each disease, will be able to follow the dictates of a rational system of preventive medicine, and by means of vaccination render the patient's system insus-

ceptible to the disease, or at least to so modify the character of the disease itself, as to render it comparatively harmless. The subject of preventive medicine, considered in reference to a proper observance of the ordinary rules of hygiene, is one which offers an inviting field to sanitarians generally, but the important results in this branch of preventive medicine, are to be accomplished alone by the careful experiments of members of the medical profession.

Protection Against Disease.

ANNUAL ADDRESS DELIVERED BEFORE THE SANITARY COUNCIL OF THE MISSISSIPPI VALLEY IN SESSION AT CAIRO, ILLINOIS, APRIL 20, 1882.

By Dr. J. J. SPEED, President.

Gentlemen—Lying directly on the surface of our constitution, and interwoven with all our proceedings you find the idea of protection against disease. It is the central idea of all sanitary teaching and of the practice of sanitary art. It is a very old idea—old as civilization. In some crude shape we find it recognized by the earliest government of which we have any record. Crude as were the appliances and the philosophy, they are proofs of the importance attached by all peoples to a freer and stronger life—the stronger and freer from disease the better the manhood even if that manhood was savage—but if instead of savage, that manhood was a part of civilized society how infinitely enhanced was that civilization. This idea of a better civilization by reason of freedom from disease ran down through all the ages from Moses through the Pharoahs, and the Ptolemies, and the Cæsars, making an impress upon history everywhere, and yet culminating in no comprehensive phylosophy, and no minute detail of application till the middle of the 19th century.

It was reserved for this generation to claim for human health, supremacy over all material interests; lift sanitation to the dignity of a science, and to demand for the individual and for the nation, protection against disease.

The announcement of a new phylosophy and the setting on foot of new devices for securing a longer life, arrested individ-

ual and governmental attention; and have opened up a new chapter in human history. It is in the interest of this new movement that we are assembled in council to-day, in the heart of the Mississippi Valley.

"To prevent the spread of disease and to promote inter state sanitation," says the constitution.

Now, to prevent the spread of disease we must know something of the origin and mode of communication. It is true of all diseases. Touching the especial scourge of this great valley, we know that over the persistent heat and rainfall which have so much to do with yellow fever we have no control, but over our own drainage, and cleanliness, and general surroundings, we have control; and while we may not stamp out the germ in its original habitat, we can refuse to furnish a nidus for its propagation in our midst.

The two modes of warfare open to us against foreign diseases are quarantine and personal surroundings. Both these ideas are very old. Tyranny in the rulers and degeneracy in the people of older governments, have let slip their obedience to law whether moral or physical. It is to be seen whether in the far future, when the enlightened governments of the world have reached their acme, they will, from a high morality and a fine physique, lapse rapidly into anarchy and physical degeneration. In whatsoever of genuine vitality this great valley can infuse into the cause of humanity, this council must do its share.

It is too late in the centuries to discuss the value of quarantine. I'd as soon assault the multiplication table or the revolution of the earth, and yet there are persons bold enough to attack and deny and misrepresent all these things. Sydney Smith says that he has known a man to speak disrespectfully of the equator, and I know an old Kentucky gentleman who insists that a mile in 2:40 is impossible, and gives as a reason that the distance is too great for the time, and in the face of Maud S. and Goldsmith's Maid he sticks to it yet. Perhaps, in view of all this we ought not to be astonished that men in 1882 should claim that sanitary science should be restricted by a geographic line.

In discussing the subject of State medicine and the value of quarantine as an instrument in state and governmental hands for the protection of all the people, I took occasion to comment upon the propagation of yellow fever—its local origin and its general spread.

The subject of quarantine also comes within the province of state medicine; for while domestic diseases are formidable enough, a tremendous mortality comes from the occasional visitations of foreign troubles. Thus it not only becomes us to labor with all energy toward the best home surroundings, but aim also to arrest and hold at bay whatever may threaten us from abroad. The transportation of disease by steamship and by railroad in these days of constant and rapid commercial intercourse, is felt to be a source of real danger, and sanatarians appeal to governments, and governments answer the appeal by quarantine against everything which can transport a germ.

There are conflicting opinions as to the communicability of yellow fever—whether it is contagious, whether it is infectious, whether it is communicable from man to man in any sense, by any process at all. It is claimed by some of our best thinkers to be purely a climatic disease, and that wherever the necessary conditions of persistent heat and moisture are found, there you will find yellow fever without resorting to the supposed necessity of an imported case. I can not subscribe to this doctrine; the facts as they are observed at all points north of the line where yellow fever is one of the annual diseases, to my mind, are against this theory.

Nor do I regard it as contagious. I do not believe that man communicates it to man in any direct sense, but I hold that the presence of a case in any given locality, in Kentucky or Indiana, or Ohio, or New York, or Philadelphia, is necessary to its propagation. How? Thus: Heat and moisture long-continued in any given locality, in Hickman, in Cairo, in Bowling Green, at the Nashville depot, have generated a condition of things which is exactly the nidus in which a germ developes its vitality; and finding its way into a human organiza-

tion sets up the morbid processes we call yellow fever. This germ I do not believe to be indigenous; it is imported; it is to the already vitiated atmosphere what the match is to combustible material. In the absence of the match there would be no combustion; in the absence of the germ there would be no yellow fever. This germ may be brought by the man, by his clothing, by the goods from an infected district, and is borne upon the air. It may traverse a wide expanse of country and prove innoxious till it strikes a district in which heat and moisture have already done the work necessary to form a breeding place for this specific poison. It is the yeast which may be dropped into dry meal without setting up any fermentation, but which, dropped into meal with the requisite heat and moisture, at once brings into action a force which could not be developed from the minutest mixture with the dryer and cooler meal.

I say, then, that while yellow fever is not contagious in the sense of being communicable from man to man in all climates its existence and spread in any northern climate are dependant upon a germ imported into, and specifically poisoning an atmosphere already impure and fitted to the development of that germ.

Now the heat imparted to the air and the earth by the sun is not under our control, nor can we control the rainfall; but decaying vegetable and animal matter, out of which this heat and moisture evolve such deadly miasms, is under our control, and can be so managed as to render innoxious the air which surrounds our dwellings. Cleanliness and drainage seem to forbid—preclude—the existence of a deleterious atmospheric condition. This is accepted as a hygienic axiom. Perfect cleanliness forbids malaria, and whatever has been done by individual effort on a space of forty feet can be done by combined effort over a larger surface—over the surface of the largest cities—and it has been done. New Orleans, under military rule, was free from yellow fever because military rule kept her streets and her alleys clean.

Heat and moisture alone are not sufficient; there must be vegetable and animal matter going to decay under the influence

of this heat and moisture. Thus there are three factors necessary to the production of a vitiated atmosphere. Having under control then, one of the factors we are held to a rigid responsibility. Sanitarians accept the responsibility and say, be clean.

They say, also, quarantine must touch other things besides the man; it must cover all things to which the morbific agency may attach. It is idle to exclude the man and yet admit his clothing and his merchandise. These things are as surely impregnated by the materies morbi as the individual who owns them, and if they are transported to any locality whose atmosphere is made up of the necessary elements, you may look with absolute certainty for an outbreak of yellow fever.

The value of quarantine is too thoroughly established to be any longer held as a question open to discussion. It has the same value to threatened cities that isolation of the individual has to the family. You isolate the case of small-pox, his clothing and bedding. Keep out of the reach of morbific agencies, and the disease does not spread; quarantine your infected ship, anchor it out, isolate it, and the city is safe.

Now what I have said about the prevention of yellow fever I believe about very many other diseases. The words drainage, cleanliness, isolation, and quarantine carry along with them the ideas which are prominent in the minds of sanitarians as preventive measures.

Now over this quarantine, not only as a speculative phylosophy, but in the practical application to our own protection against the most formidable of foreign diseases, this valley council claims some control. The millions whom we represent are exactly the millions who stand in the sweep of its progress. Criminal beyond forgiveness if we do not so speak as to be understood. Questions which involve the vital interests of half a continent; by all possible scientific and moral and legal means are to be encouraged, forwarded—accomplished; nature and the right demand it. These interests are too dear and high and far reaching to be thwarted by caprice or narrowness

or local assumption. I would as soon attempt to circumscribe the beneficence of sunlight or restrict the spirit of Christianity. Absolute freedom of scientific thought is not more essential than universal appreciation of sanitary measures. I have infinite respect for clear convictions and for strong impulses, but when convictions run athwart the world's judgment, and impulses assume supremacy over reason, and in great emergencies of life propose to control the destiny of millions, we look for disaster instead of help.

The influence of foreign diseases has ceased to be a local matter, telling only upon ports of entry. By reason of wonderful developments in the last quarter of a century, giving rapid transit to tens of thousands through every corner of the continent, it has become an American question, and if the national arm is paralized and fails to reach the east or the west, the north or the south, the millions whom we represent are powerless, unprotected and at the mercy of ports of entry, and ports of entry are sometimes warped by commercial greed, and commercial greed eats deep into the highest human duty—money first—health after.

But human health which is an over-mastering human interest, transcends all assumed restrictions by geographic lines. You have general control over your town lot or your thousand acre plantation, but when you permit a health nuisance which affects your neighbor, nature itself revolts and justice demands its abatement. It is said that the law is wiser than any one man. So public justice is higher and stronger than any personal right. The lives of forty men, women and children are of infinitely greater interest to the State than your private right to a nuisance which breeds disease. Very many personal claims, under government, must be subordinated to the public good. We, Americans, talk very flippantly about our rights. You have no rights which are in conflict with my rights. This is an axiom of civilization. It is simple justice. Science, and christianity, and sunlight are the world's—not yours alone, nor mine alone, but the world's. Where money is involved, and a secret is sought to be protected, as my brain-work, "No Admittance" is written over the door-way; but,

in the interest of humanity, shall the spirit of beneficence be barred out by the words "No Admittance?" The assumption of exclusive right in questions of life and health is disgraceful. Dark ages? Occult Science? No free science and an age lighted by greater brain-power than the world ever saw.

We, of this great valley, cannot stop to chaffer with exclusive rights in the presence of a danger which strikes at the life of man and woman; wife, and child, and neighbor and friend, are not to be weighed in the balance against commerce and bank accounts. The interests of the sugar-house and the cotton shed are not be consulted at the expense of the hearthstone. The desolation of the fire side can not be replaced by the commerce of all the cities on the continent.

When the lives of twenty millions are at stake, how paltry is the prejudice which stops to talk about constitutionalities, and the sacredness of the line which runs between your sick-room and mine. Quarantine touches public health, and where public health is concerned the strong arm is invoked by public instinct. We, of this council, openly ask exactly that; more, we earnestly demand that.

But the president forsooth is to be humiliated, dishonored subordinated, placed under a tyrannic power, and ordered to do its bidding, execute its behests; all of which is not, by any manner of means, embodied in the constitution of the United States of America. If he attempts by his strong arm, intensified in its strength by the spirit of that tyrannic power, whose creature he is made—if he attempts, I say, to interpose between the people of these States and an invasion of foreign disease, come from what quarter it may, we are deprived of inalienable rights, and personal self-protection is trampled under foot, and no plea of sanitation—no plea of betterment to the people—no plea of life itself can justify the tread of the tyrant! Now the answer to all this is—that in the ast eight or ten months this president of ours has so borne himself in this great office—has loomed so largely as a man before the American people, that this council is confident that for the good of men, women, and children all over this country, he will bear as gracefully this humiliation as he bears the

dignities which crowd upon him, utterly unconscious, that he has trod upon any inalienable right or deprived a single human being of the privilege of self-protection.

In the protection of the world's sanitation you will find enacted a higher law than any rules of lower courts which prescribe geographic lines as the limit of health measures and humanity's best being. Science outruns the surveyor and man's demand for life overleaps all lines born of a Jacob's staff and chain.

But this is not the only disease against which the council is called upon to protect the people of the Mississippi valley.

A part of the glory of this country is that we are an asylum for the oppressed of all nations. It is a proud boast and has given origin to some fine bursts of oratory concerning tyranny, despotism, iron-heels, autocracy and all that figures in many striking passages of legislative and stump oratory. Freedom, broad acres and the priceless franchises with a pos sible seat in congress are offered in contrast with all this old world hardship, and ships after ships with thousands after thousands come in answer to the trumpet call. Now while we invite the muscle and the brains of an overcrowded European population, we don't invite their diseases, and yet the diseases come—and just now small-pox infests the country from the Atlantic to the Rocky Mountains, and from Canada to the Gulf under a rapidly progressive civilization new questions arise, new problems demanding solution—must be solved.

The emigrant strikes New York, or Boston, or Philadelphia, but the disaster of his coming is felt in any town, or city, or hamlet, between the port of entry and the sunset city of the Pacific ; who is to look after this great interest, who is to solve this great problem ? Illinois, from her great central city, answers at once and says it is a national question and the federal government, the parental head, must see to it that the people shall be protected everywhere, against a scourge which sweeps with such loathsome influence, blighting what it touches and desolating alike the hearthstone of the cottage and the mansion.

It is not in any whining spirit that we talk about the paternal government, it is a proud citizen's outspoken demand in support of his most cherished right. I want protection against foreign disease. I want protection for my wife. I want protection for my children. Personally I can't give it. It is not a matter of bluster and personal courage. All the pistols and and shot-guns and bowie-knives in Kentucky or Illinois, wielded by the gamest hands North or South, cannot arrest and beat back the silent moving of the germ which carries yellow fever or small-pox to the cherished companion of your life, or to the beautiful children about your fire-side. In utter helplessness and instinctive consciousness of right, I demand protection from the only power in whose hands protection lies.

With the view of emphasizing these opinions I hope the council will reaffirm judgments heretofore expressed and recently endorsed by several States and very forcibly worded by the State Board of Michigan. These resolutions I make a part of this address.

I commend to you the action of the Illinois State Board and ask its endorsement by the council. It speaks plainly, thus:

WHEREAS, Quarantine measures for the prevention of the introduction of epidemic, contagious or infectious diseases from foreign countries into the United States are matters of national concern, affecting not only the seaboard and Gulf States (where, necessarily, such measures must be enforced,) but also and equally those of the interior—as evidenced most recently by the wide diffusion of imported small-pox; therefore be it

Resolved, That, in the judgment of this Board, such quarantine measures should be under the direct control of the National Government; the necessary rules and regulations formulated by a national organization; and their execution intrusted to national officers.

Resolved, That the Senators and Representatives be, and they hereby are respectfully and earnestly requested to use their influence toward securing the necessary legislation to this end.

Adopted.

Along the track of civilization for two centuries and a half the student of history marks many stages of advance now. The discovery of type, the establishment of the printing press,

the development of new philosophies; fresh governmental ideas, their circulation by morning papers; the freest thought-power the world ever knew; the railway, the telegraph in the air and under the sea, and last of all the audible speech from city to city; and interblended with all these last interests, culminating in and constituting the crown and glory of the 19th century, the effort of our great profession to make disease impossible.

This is a high aim, and this council is recognized as a factor in its possible accomplishment. Let us be true to our mission, and set forward the great movement—dignity and manhood and the interests of humanity demand it.

Gentlemen, we stand on a higher plane than any trod by our fathers. In many lines of thought they achieved grand results. Whatever they achieved we must secure, but we must achieve more, necessarily more, for the field is wider—widening with each succeeding generation. These old fathers have transmitted to us in rich profusion the treasure of their lives. Those of us, who are gathered here to day, laboring jointly with the array of comrades not with us, must add to that treasure; must enlarge the beneficence of that profession by true facts and noble deeds, not false facts and ignoble deeds, elevate it by a true philosophy, not a specious and false philosophy, no false thing ought to stand for a single day in the face of science and a real manhood. Blot it from God's green earth. Let life be a benefactor and our names will receive a benediction.

A Case of Suspected Embolism of the Pulmonary Artery, with Remarks.

By Rudolph Matas, M. D., New Orleans, La.

The subject of this observation, Marie A——, æt. 12 years, may be introduced as a small, well-formed, anæmic brunette, who, up to the time of her last illness, had not yet menstruated, or even developed into the proportions of incipient adolescence. Endowed with an intelligence beyond her years;

of a vivacious and amiable disposition; possessed of a highly sensitive organization and of decidedly emotional tendencies, she could well be regarded as a fair exponent of the so-called nervous temperament. In addition to these personal characteristics, she could claim the advantages of a healthy ancestry.

It was on the evening of April 9th, 1882, while accompanying her mother, Mme. A., on a call to a friend, that she was observed in the course of the visit to be in an unusually dull mood, which attracted the mother's attention, and in turn, caused her to notice an abnormal dryness and heat of the child's skin. This circumstance, led her to fear the return of a fever that Marie had had a short time previously, and which we will state at this juncture, was one of the few diseases that Marie had ever been afflicted with. Somewhat uneasy about her daughter, Mme. A. returned immediately to her home, leaving word at my office, before doing so, however, for me to call at an early opportunity. Next morning I called at her residence, and found Marie fretting considerably under the influence of a troublesome headache, caused doubtless by a fever that raised the index of the thermometer to 103° F., the pulse was rapid and full, averaging from 110–115 pulsations per minute, the skin hot and dry, the tongue slightly coated with a whitish fur, the bowels constipated, the intellect perfectly clear, and outside of the headache, thirst and anorexia attendant upon the fever, the patient complaining of nothing else and obstinately refusing to go to bed; at last, however coaxed by her mother, she obeyed and permitted her mother to comply with my instructions, which were, to administer a purgative and to give 12 grs. of quinia, divided into six pills, in the course of the day.

Next morning, (April 11th) I called and found the temperature had been reduced to 100° F., but fearing the fever might again return in the evening, some more quinia was ordered, (about 20 grs. I believe,) to be administered by enema, as patient objected to pills. In the evening I found the temperature had descended to normal and the child was doing well. I gave instructions accordingly.

Upon visiting the house the succeeding morning, (April 12) when I expected to find the child over all her difficulties, I was considerably surprised to learn from her mother that she was again feeling ill, although not complaining much. I hastened to her bedside, took her temperature, and found the mercury at 104° F. It was plain I had an obstinate case to deal with, and at once prepared for thorough cinchonic saturation. It is needless for me to detail the daily record of observations that followed. It will suffice to say that it was a history of continued remissions and exacerbations, in other words, a well characterized case of remittent malarial fever. The remissions took place regularly for five consecutive days, the thermometric tracings indicating a pyrexia of a dangerous character, as the oscillations varied only from 104° to 105°F.

This state of affairs, continuing for five successive days and nights, without an alleviation, was sufficient to create alarm, particularly when, after thorough cinchonism, induced by the administration of quinine by all the methods excepting the hypodermic and attended by the excessive deafness and other disturbances of the special senses, no defervescence took place. Encouraged by the happy results obtained previously in two similar cases, I was led to try the anti-thermic properties of the salicylate of sodium. The remarkable virtues of this agent, which probably has not received the attention it deserves in the treatment of the hyperpyretic forms of malarial poisoning, stood in magnificent contrast to the strangely dormant action of the usually potent quinia. A formula containing two drachms, of the sodium salicylate, to four ounces of a mixture of glycerine, syrup of orange peel and water, was prescribed and administered in tablespoonful doses every hour. The results were highly satisfactory; so much so, that the temperature seemed to diminish, *pari passu* with the amount of salicylate administered, and in the course of one evening's treatment, when about six doses had been taken, the temperature which had registered that evening 105°, at 6 P. M., fell to 99°, at 2 A. M., to the great relief of the little sufferer. I must add that a liniment containing one drachm of the sulphate of cinchonidia to about 6 oz. cologne water was

kept up during the exhibition of the salicylate. It is unnecessary to state that I felt greatly pleased at the result obtained by this salt, and it will be acknowledged that I had reason to feel satisfied with it. My exultation was destined to be of short duration, however, and rather served to make me feel more bitterly the disappointment which I was destined to experience.

It is important that I should now state that, during the declining stage of the febrile movement, I was frequently struck by some abnormalities in the character of the pulse beat; thus, irregularities in time and volume but particularly the former, made me stop frequently to recount the pulse to satisfy myself of the accuracy of my observations; these irregularities, however, I did not think much of at the time, believing them to be either the effects of the fever, or, possibly, of the quinine, etc., and, in fine regarding them, to use a Fothergillian expression, as "mere tricks of no practical significance." I was also informed by the mother that on Sunday night, though the child was perfectly cool and apparently free from fever, she was very restless and woke up several times, sat up and complained that there was "not enough air in the room," calling for the doors and windows to be opened as "she could not breathe well." The mother gave some stimulant, cognac toddy, I believe, and shortly after the child slept; as she woke up in the morning feeling "quite well," this incident was passed over without comment. That day, Monday (April 16), in the evening, the temperature fell to the low figure of 97 4-5°, and the child's fever was regarded as ended, and convalescence fully established. Believing this to be the case I ordered an augmentation of the diet, and prescribed such analeptic measures as I thought were indicated to procure the earliest return to health. The patient had been considerably prostrated by the fever, but was now very lively and impatient to leave the bed, in order that she might play with her younger brother.

On the morning of the 18th (Wednesday) I did not call to see the patient, believing all was doing well, but in the evening, about 3.30 p. m., I was sent for in great haste by Madame

A., with the information that Marie had had "a change and was coughing up blood." Not knowing what was the nature of the complication, I armed myself with a hypodermic syringe and some fluid extract of ergot, and hurriedly departed for the seat of trouble, hoping that the alarming summons was merely the result of some unimportant event, greatly exaggerated by maternal anxieties. Immediately upon my arrival I was informed by Madame A. that her daughter, had all the morning been feeling unusually well, had been sprightly, gay and talkative, and had, in truth, appeared so well that, listening to her entreaties, she had dressed her and permitted her to set upon a lounge to play with her brother. At the dinner hour she had insisted upon sitting by her mother's side at the table to take some broth that had been especially prepared for her. It was at this very moment, when just about to lift to her mouth a tablespoonful of the nourishing fluid, that she was stopped, troubled by a sudden senseof oppression about the precordia and chest, and, becoming ashy pale, cried loudly to her mother that she "needed more air." A few minutes afterward she began to cough and expectorated a considerable quantity of bloody sputa.* In the meantime I had been sent for by the alarmed mother, and upon my arrival, about fifteen minutes after the beginning of the trouble, I found the little patient in the condition which I will now attempt to describe:

As I entered the room I beheld the little girl sitting up, on a lounge in front of a door facing a balcony, where she had been carried from the dinner table by her mother. As I approached, she quickly turned towards me and imploringly asked me to give her relief from the terrible want of breath that was "suffocating her," at the same time clasping her bosom with both hands as if to tear away the clothes that seemed to overburden her. I was at once struck by the pallid, waxy face that anxiously looked at me; but from this

* I examined this and found it to possess all the characteristics of the rusty expectoration of pneumonia, excepting the peculiar mucilaginous adhesiveness of that glairy fluid. It measured about two ounces.

my attention was immediately directed to the unusually labored efforts at respiration, which, as indicated by the alternate rising and falling of the breast, was going on at the rate of 30 to 40 inspirations per minute; the pulse was beating with an irregularity that I never felt before, at times throbbing with almost countless rapidity, at others, it stopped for what seemed to me a terribly long interval, and then began to beat with renewed velocity. All this was done, however, irregularly throughout, the intermittencies not following in any order of succession, but occurring when least expected, and *vice versa.* The finger placed upon the radial and carotid arteries received a weak spasmodic impulse; the arterial walls were highly compressible, and reminded me of the peculiarly empty feel of the latter part of the aortic regurgitant pulse. With my finger still upon the pulse, I placed my ear over the precordia and was, at once, startled at the tumultuous and irregular action of the heart, it was indeed most strange to hear that great organ beating one instant forcibly and heavily against the thoracic walls, at another, with a barely perceptible impulse; sometimes apparently inhibited and silent, and again, shaking the whole thorax with its turbulent vibrations and the rapidity of its action; but, at all times, it seemed to me, in the brief instant that I was permitted to listen to it, that the heart was barely nourishing the puny, stifled, bloodless, peripheral pulse. I had barely time to recognize the above peculiarities of the heart's action, and also to catch the cardiac sounds, though I confess very hurriedly, when a coughing spell and the anxieties of the patient (and probably my own) caused me to cease my attention to the heart and directed it elsewhere. I was, therefore, precluded by the urgency of the symptoms from making such a minute and thorough examination of the heart sounds for the detection of a murmur as I would have wished, and which, if a murmur had been detected, would have greatly strengthened my actual suspicion of the nature of the case; as it is, the semeiotic features of the subsequent history are so strongly in favor of the diagnosis of pulmonary embolism that, even if a murmur had *not* been

audible,* I doubt if it would affect the tenability of my position. Over the chest, which I auscultated with particular attention, no abnormal sounds could be heard excepting some occasional râles of a mucous character, over the scapular and infra-scapular regions of both sides. The *respiratory murmur was distinctly perceptible over the whole chest,* only that it was intensely puerile. The temperature in the axilla was about 100° F.

Meantime, the little patient grew more restless, more anxious and evidently more troubled. The face, which in the beginning had been pale, now gradually became livid, the prolabia began to assume a cyanotic hue, the eyes became staring and wild, cold drops of perspiration commenced to form about the forehead, and the nostrils moving rythmically with the respiratory movements, sought, by dint of the utmost dilatation of their alae to inhale all the air possible for the unfortunate sufferer; the lineaments of the face, but a few moments before so soft, graceful and imperceptible, now became fixed, rigid and marked as with the "signet of old age," and the hands clutched with avidity the nearest objects to facilitate the extraordinary and all absorbing efforts of the muscular system, which sought to aid the lungs in the crippled but vital function of blood oxygenation. The superficial veins, normally of a feint bluish tinge, now became prominent, tense and turgid, and, by their angry hue, foretold the fearful struggle that was going on within, and proclaimed the persisting inability of the right heart to empty itself.

I confess I was perplexed when I found myself in the presence of this formidable array of symptoms and candidly acknowledged that I came to no conclusion as to the exact nature of the primordial cause of all these phenomena, one thing I knew, and that was, that the heart was rapidly succumbing in

* In regard to this particular, it may not be amiss to cite the following assertion from the pen of the distinguished Sir James Y. Simpson (Obstetric Memoirs, 1856): "Hitherto auscultation has not enabled pathologists to make out special signs indicative of the existence of obstruction of the pulmonary artery; and indeed, the sudden supervention and presence of such severe cardiac or pulmonic disturbances as occur in this complication *without* any corresponding stethoscopic signs, forms in itself, perhaps, one of the best tests of the lesions consisting in some occlusion of the pulmonary vessels.

the continued and apparently ineffectual struggle to overcome some obstacle in the way of the circulating fluid, and that sooner or later its action would be arrested either from direct palsy of the cardiac muscle produced by the overdistending force of the incoming current; from sheer exhaustion, or through the paralyzing influence of the rapidly accumulating carbon dioxide.

What was to be done, was then the problem that urgently demanded solution.

I believe the therapeutic plan of action was plainly laid before me as soon as my finger touched that feeble, struggling pulse. To relieve the abnormal tension of the cardiac chambers, if possible, and to support the strength of their weakening walls by the administration of some potent auxiliary was the indication that at that moment instantly occurred to me. Nearly a teaspoonful of sulphuric ether was at once administered by the mouth and frequent hypodermics of brandy with a little ergot, as I feared an increase in the hemoptysis, were freely exhibited. The feet were immersed in hot mustard pediluvia, and large sinpisms applied over the precordia and chest. The ether was repeated shortly after, diluted and in smaller quantities, and, as soon as the feet were removed from the bath, mustard rubbed into a paste with water, was liberally applied to the extremities to produce, if possible a decided cutaneous erythema. A short momentary lull in the symptoms, soon after these active procedures began made me feel hopeful of relief, and instructing the attendants to continue the derivative applications of the mustard and not to neglect the repeated administration of cognac toddies, I left, and hastened to a neighboring pharmacy, in the hope of finding an esteemed confrére whom I knew was usually to be found in attendance there at that hour. I was disappointed, however, as the doctor had just left. In the meantime I procured some tincture of digitalis and sent word to another physician, who lives near by, to come to my assistance—he also was not to be found; but I was fortunate enough to meet Dr. Roquero, a Spanish practitioner, who kindly accompanied me to my patients bedside. As we entered the sick room, we were informed that the "attack" had begun anew, almost immediately after

my departure. The amelioration had indeed been exceedingly transitory; the symptoms had progressively increased for the worse, the face had now assumed a dusky hue, and the countenance wore that expression of intense anxiety that is depicted upon those persons who are aware and feel the near approach of death. The mind was clear, as the child spoke lucidly, though interruptedly and wildly to her mother and brothers, who were piteously crying at her bedside.

With the approbation of Dr. R., I immediately injected 15 minimims of the tincture of digitalis with brandy into the subcutaneous tissues of the arm; another foot bath was also ordered and ether and brandy frequently administered by the mouth and hypodermically. The abstraction of blood by phlebotomy to relieve the engorged venous system, occurred to me,—but one look at that blanched, exhausted face, convinced me of the dangers with which such a measure was fraught,—besides, the conviction was now rapidly growing within me, that an insuperable obstacle was situated somewhere in the tract of the pulmonary artery,—that it was an embolus,—and that venesection was a worse than useless measure. The consulting physician, who partook largely of my views of the case, thought likewise.

All the measures that so far had been instituted failed to give relief; the pulse became imperceptible at the wrist and larger arteries, and it beat with great frequency; it finally became extinct, and at the same time the patient, who so far had managed to sit up in bed, by dint of extraordinary efforts, lost suddenly all consciousness and fell back gasping, and apparently moribund, upon her pillow. Strange to say, however, an instant after dropping back, apparently unconscious, she lifted herself suddenly to the sitting posture, and with inconceivable energy, in which all the accumulated forces of that worn out little organism seemed to have taken part, extended her arms to her mother—cried with great tenderness "good-bye!" and then fell heavily upon her pillow murmuring some incomprehensible words that were drowned in the final tracheal rattle! Upon looking at my watch, I observed that the last

breath had been sped away two and a half hours after the complication first began.

REMARKS.

In meditating on the remarkable incidents that were associated with this sudden death, I have endeavored, by a calm consideration of the whole case, and the careful examination of each individual symptom, to sift down this clinical problem to its ultimate etiological principle. And the more I have striven to reach the core of this difficult proposition, the more I have been convinced of the correctness of my first impression, and have had reason to feel satisfied that the only reasonable solution of the case lies in the embolic hypothesis. A glance at the prominent symptoms will, I believe, suffice to establish the solidity of this explanation: The sudden precordial oppression, which, in the midst of health and without premonition seized the patient—the rapidly succeeding dispnœa, the cyanosis, the peculiar, irregular, compressible pulse, the turbulent intermittent heart, the hemoptysis, the swollen turgid veins, the surest index to the condition of the right ventricle, and, in fine, the death of the patient, in spite of the most active stimulation, in the short period of two and a half hours. Now, when we consider that all these symptoms are of more than causative significance, and that, in fact, air always found free access to the pulmonary parenchyma, at least, almost up to the last moments of life; and finally, that during this great disturbance, the thermometer only registered 100° F., then surely, but little margin is left to us for any supposition extraneous to some obstructions to the pulmonary circuit.

The mucuous râles heard disseminated over the bases of both lungs, and the rusty colored sputa might suggest a double pneumonia. But who ever heard of such a fulminating form of pneumonia with a temperature or only 100° F. ? The sputa, besides, was not possessed of all the characteristic features of the pneumonic expectoration, and, again, I doubt if any real case of pneumonia has ever existed which, per se, culminated in such a rapidly fatal termination. In view of the previous paludal intoxication, although the patient was

barely recovering from cinchonism, a case of pernicious pulmonary congestion has been suggested. This supposition is easily disposed of by remembering the temperature already given, the absence of coma and algidity, and the general discordance of any such case with the present. Thus we find that, while no other morbid states can well be adapted to the foregoing symptoms, nothing assimilates with them better than the pathological form which, by exclusion, we have been driven to diagnosticate. If the hemoptysis be found objectionable by some, we will cite the authority of Niemeyer, who, in speaking of pulmonary infarcti, lays special stress upon this symptom and details the differential characters of this expectoration and that of pneumonia; a description, we will state, which is in full harmony with the account already given of this patient's sputa. Besides, it is certainly clear that an increased intravasculor pressure is almost bound to follow the blocking up of some large branch of the pulmonary artery, whether we explain it by the establishment of a counterbalancing collateral circulation, as was believed by Rokitansky, or whether we adopt the more complex, but probably more satisfactory, views of Ludwig,* both of which, however, are mere speculations, in explanation of a real fact—*i. e.*, that plasmatic transudations and hæmorrhages will follow the strain upon the vacular walls, consequent upon the sudden interposition of an impediment in the way of the *vis-a-tergo*. The clinical corroboration of this general pathological induction will be found not only in the experience of Niemeyer, but in the descriptions of cases of pulmonary emboli, in connection with the puerpural and other states, that have emanated from the classical studies of Fordyce Barker and W. S. Playfair, Simpson, Ball, Paget and others.

Now, after accepting the above interpretation of our patient's symptoms, the question that naturally suggests itself, is: how did this embolus form, and whence did it come? Certainly, if the conclusion that we have just arrived at, as to the nature of the causative agent, is *only* the most reasonable approxima-

* Vide Niemeyer's Text Book.

tion to the truth of the case then to determine the origin of this factor is to enter into a process still more encumbered by hypothetical surmises. Yet if we remember some of the peculiarities of this patient's symptoms we cannot fail to conjecture some theory in favor of its elucidation. If we recall the fact, particularly recorded in the history already given, that in the declining stage of the pyrexia, just prior to the thermic defervescence, the attention of the observer was frequently arrested by the irregularities of the pulse beat; if we also remember the observation made by Mme. A., that on Sunday night, the child though "apparently free from fever, seemed to be agitated and "woke up several times, calling for more air;"—and, further, that two days after, the same cry initiated the terrible paroxysm of suffering that so briefly ended in death,—it will be conceded that the *secondary* formation of the fatal embolus from a preexisting autochthonous cardiac thrombus, is not an improbability. Finally, if we consider that the fever which afflicted our patient was, (1), malarial fever,—a condition in which the blood is known to be charged with minute pigmentry particles,—notoriously the cause of cappillary emboli (DaCosta, Jones); that, (2), this fever was a protracted and intensely pyretic manifestation of paludal intoxication, thereby placing the blood in a condition propitious to its coagulation, by the diminution of its normal alcalinity*; and lastly, (3), that from the high range of 105° F., the patient was cooled down to normal in the course of a few hours and, in consequence, the velocity of the blood stream was diminished to that of a *relatively* sluggish current by the correspondingly rapid reduction of the cardiac pulsation

* It appears that, besides the diminished alcalinity of the blood which characterizes all fevers, other changes take place in the circulating fluid in the course of malarial fever which favor the formation of ante-mortem heart clots, notwithstanding the fact that in this fever, as in most others of non-inflammatory origin, the fibrin is diminished. Dr. Joseph Jones remarkably strengthens our position by the following authoritative assertion:

"The fibrin is not only diminished in malarial fever, but it is altered in its properties, and in its relation to the other elements of the blood, and to the blood vessels, *and in severe cases heart clots, (fibrinous concretions), are frequently formed before death.*" (Originally italicized by Dr. Jones.)—"Comparative Pathology of Malarial and Yellow Fevers." Proceedings Louisiana State Medical Society. 1879.

from the quick beat of 120–130 to the comparatively slow and measured rate of 65–75 pulsations per minute; if to the preceding circumstances an accessory condition is superadded, i. e., enfeebled cardiac systole, then we will have gathered four circumstances, which combined at a given time, would, *a priori*, powerfully predispose to the deposition and entanglement of coagula in the right heart cavities, and which, if assisted by some idiosyncrasy or inopexia,* as Vogel has termed it, did probably cause the formation of a primitive thrombus in one of the cardiac chambers.

Once such an occurrence is admitted, it is easy to understand how, in the course of two days, when some part of the clot, beginning to loosen, was suddenly detached, by an unusual effort on the part of the heart muscle, and swiftly carried through the trunk of the pulmonary artery to block up some of its larger branches and ultimately totally close this vessel by the continued accretion of fibrinous material.

In conclusion, I will state with regret, what has doubtless been already surmised by the reader, that I was not permitted to verify my suspicions of the nature of the case, by the conclusive evidence only furnished by a necroscopic examination.

Report of the Proceedings of the Medical Association of the State of Alabama.

SESSION OF 1882.—HELD AT MOBILE, APRIL 11TH–14TH.

By M. R. RICHARD, M. D.,
(Delegate from the Orleans Parish Medical Society.)

Mr. President and Gentlemen of the Orleans Parish Medical Society: I herewith beg leave to hand you report and pro-

*In alluding to inopexia we cannot refrain from expressing a hope that the persevering efforts of the distinguished hematologist, Bizzozero, of Turin, will finally shed light upon those obscure alterations in the constitution of the blood which characterize the puerperal state, pneumonea, rheumatic and typhus fevers, and other numerous diseases in which the blood, without being necessarily hyperinotic, does, through its abnormal tendency to coagulation in various parts of the circulatory apparatus, destroy life with unfortunate frequency. The recent discovery of a minute cell or "blood plate," analogous, if not identical, to Hayem's hematoblasts, and demonstrated by Bizzozero to be especially concerned in the process of coagulation, has encouraged us to entertain this hope.

gramme of order of business of the Medical Association of the State of Alabama. Meetings were held at Temperance Hall, and occupied the greater part of four days and nights. The Association was called to order at 12 o'clock precisely. All officers, 36 counsellors and 31 delegates present. Addresses of welcome on behalf of the Committee of Arrangements (Mobile Med. Society) and people of Mobile (Mayor Owen) and annual message of President followed. One of the best and most interesting points made by the President (Dr. Jno. B. Gaston, of Montgomery,) was the comparative death rates among convicts in several States. In Sing-Sing, Auburn and Clinton prisons of New York, average number of convicts in 1879 was 3,379, with 41 deaths, a death rate of 1-14 per cent. Average number in the Pennsylvania prisons for 1879 was 2,573, with 27 deaths, giving 1-06 per cent. In Ohio Penitentiary in 1881, 1,250, with 16 deaths, giving 1-33 per cent. In Alabama for 1879, 597, with 42 deaths, giving 7 per cent., and this from the unnecessary rigors of penal servitude in Alabama. He recommended that the State Board of Health memorialize the General Assembly to constitute the State Health Officer an Inspector of the Penitentiary and county prisons of the State, with such powers as may be necessary to make him an efficient guardian of the sanitary condition and interests of the prisons and convicts of the counties of the State. The reports of the Secretary (Dr. T. A. Means), and Treasurer (Dr. W. C. Jackson), were read and referred to the "Board of Censors."

Brief verbal reports from the delegates and from the medical societies of thirty odd counties were then made. Dr. J. Cochran, senior Censor, moved that the delegate from the New Orleans Parish Medical Society be allowed the privelege of the floor. Carried.

On adjourning, the members marched in a body to the hall of the Mobile Medical Society to partake of a collation. The room was beautifully decorated, and the floral decorations on the tables bespoke the work of the fair sex. The collation was a most appetizing one, and the M. D.'s certainly proved themselves skilled in the use of the knife and fork. Invigora-

ting draughts were prescribed by the hosts and partaken of by the guests and themselves without a murmur, thus putting an end to the slander that physicians will not take their own medicine. Toasts followed in quick succession, interspersed by humorous recitations by Dr. Means, of Montgomery. A toast to the Louisiana State Medical Society was answered by your delegate.

The annual oration by Dr. Peter Bryce (see present number of the JOURNAL) was delivered at night to a very large audience, most of them ladies. The subject was "A Short Study of Some of the Phenomena of Mind."

SECOND DAY.

On motion of Dr. Cochran, a committee of two was appointed to introduce to the Association your representative, and having been introduced was welcomed by the President, etc. Reports by the regular reporters were first in order. Next followed Dr. John Godfrey's paper on "Marine Hospital Clinics," read by title (Dr. Godfrey is now on duty, U. S. M. Surgeon in New Orleans); Dr. John Meyers Godfrey, "Rabies in Alabama;" Dr. James F. Heustis, "Recent Progress in Surgery." This was the most ably handled and fullest report of the kind yet made, and interested the Association exceedingly.

Observations on an epidemic typhoid fever, which prevailed in Birmingham in 1881, by Dr. M. H. Jordan, caused a great deal of debate.

History of the yellow fever epidemic in Selma, Ala., in 1853, by Dr. B. H. Riggs.

THIRD DAY.

A report from Committee on "Medical Journal," in which it appeared that it was not at present feasible to establish such an organ, was presented and further time asked for.

The Committee on "Temperance Legislation" reported, and action deferred until next year, when Dr. Cochran will defend the other side.

An excursion to Point Clear was tendered by the Cotton Exchange.

Night Session.—The "Omnibus Discussion," which is nothing more than a talk among all the members, unreservedly on such medical topics as may be selected by an appointed leader, and which also elicits opinions from each member, was now in order and very enjoyable. Dr. Geo. A. Ketchum acted leader, and such subjects as small-pox, vaccination, quinine, medical ethics and antiseptic surgery occupied this and the first part of the fourth day.

FOURTH DAY.

First part devoted to continuation of omnibus discussion.

The "Report of the Board of Censors," including the "Report of the Committee of Public Health" was next in order. A number of complaints, such as superficial examination by county boards of candidates for practice in the State; failure to be present at three consecutive meetings, non-payment of dues, advertising physicians, quacks, etc., were disposed of. Revision of the "Four Rolls" (1. Roll of the county Medical Societies; (2) Roll of the College of Counsellors; (3) Roll of the Correspondents; (4) Roll of the Officers), was gone through with fluency and despatch, and in perfect order.

The election of officers was then held, resulting as follows: Clifford D. Parke, M. D., of Selma, President; Drs. Jno. Meyers Godfrey and Daniel S. Hopping, Vice Presidents; Dr. Edw. H. Sholl, of Gainsville, Orator; Dr. W. H. Sanders, Alternate.

The meeting then adjourned to meet at Bermingham, Ala.

M. R. RICHARD, M. D.

CURRENT MEDICAL LITERATURE.

FORMULARY.

EXTERNAL APPLICATION FOR ERYSIPELAS.—*Journal de Médecine.*

℞ Alcoholis rectif.....
Acidi Carbolici aa..... 1 part;
Glycerinæ..... --- 5 parts;
Olei Terebinthinæ..... 2 "
Tr. Iodinii..... 1 " ℳ

Sig. Smear over affected part every two hours, and cover with wadding.

TREATMENT OF FETID VAGINAL DISCHARGES.—*Cheron.*

℞ Aceti.....fl. ℥xss ;
Tr. Eucalyptus.....fl. ℥iss
Acidi Salicylici.....gr. xv
Sodi Salicylatis.....℥v.; ℳ

S.—From one to 5 tablespoonsfuls in one quart of luke warm water. Two or three injections daily. An excellent detergent.

POMADE FOR PETYRIOSIS.—*Cullerier.*

℞ Adipis.....℥ü ;
Sulphuris subl.....℥i ;
Hydrarg. Sulphat. flav.....℥üss ;
Laudani (Rousseau's).....fl. ℥üss; ℳ

ANTI-RHEUMATIC MIXTURE.—*Duhamel.*

℞ Zinci Cyanidi.... .. gr. viiss. (50 centigrams)
Ag. Lauro-Ceras.....fl. ℥iiss (10 grams)
Syrup Acaciam.....q.s. ad. ℥iv (110 grams) ℳ

A. S.—One tablespoonful every hour.

APPLICATION FOR HEMORRHOIDS—(*Sabat.*)

℞ Pulv. Iodoformi.....℥i ;
Pulv. Opii.....gr. xiv ;
Ungt. Petrolei.....gr. vi; ℳ

Sig. Apply locally morning and evening after each evacuation, taking care to wash the bowels thoroughly before each application. One drachm of tannin may be added if odor of iodoform is objectionable. The bowels should be kept regulated by the following :

℞ Magnes Sulph.....
Magnes Carbonat..... } aa ℥ss;
Sulphuris precip.....
Sachar. lactis.....
Pulv. Anis.....℥ü. ℳ

Dose.—1 to 2 teaspoonfuls of this powder at bed-time.

ANTI-METRORRHAGIC INJECTIONS—(*J. Lucas Championniere.*)

℞ Ergotinæ (Bonjean's).....℥ss;
Glycerinæ.....
Aq. Lauro cerasi.....aa ℥iv. ℳ

A trace of salicylic acid may be added to this solution in order that its preservation may be insured. After delivery, from 15 minims to ½ a drachm may be injected subcutaneously into the anterior, external and prosterior regions of the thigh.

NERVOUS EXHAUSTION.

Since the appearance of the January number of this Journal, where we detailed the treatment of some important nervous diseases, and illustrated the use and virtues of celerina, with some other valuable drugs, numerous inquiries have been

received from different directions, some from physicians, others from laymen, all asking for advice regarding ailments of various kinds.

A gentleman from Iowa, upon the recommendation of his family physician, applied to me regarding his own health. A married man, about thirty-seven, general appearance good, but he complained of a lameness of the back and sexual weakness. He had suffered from shifting pains in the back for a year or more, and had realized that the back was losing strength and the sexual powers failing. An application of the faradic current revealed a condition of anæsthesia over two or three points in the lower third of the spine; sensibility exceedingly limited over the whole of the lower third. He declared that he had been a vigorous man all his life till within the last year or so, and had enjoyed as strong sexual desires and power as most men, but was now the next thing to impotent. There was scarcely any irritability about the sexual organs, and a great mental as well as physical effort was required to excite the least sexual feeling, and under no circumstances could he acquit himself like a man.

Treatment.—We ordered this man to take one dessert spoonful of celerina four times a day every second day. Also ordered him to take comp. phosphorus and nux vomica pills, one three times a day every second day, the day he does not take the celerina. This is a daily alternation of drugs. The pills are composed of phosphorus gr. 1-100; ext. nux vomica gr. ¼; each pill. I ordered enough of each of these to last one month. On the fourth of February I received a line from the patient saying he was almost well. His back was much stronger and the natural feelings of healthy functions were rapidly returning. I ordered the treatment continued, and feel confident that a radical cure will result. I know the faradic current would aid him materially, but he will recover without it.

A gentleman from an adjoining State, two hundred miles from St. Louis, called on me and gave me a history very similar to that given by the first patient, only that he had been failing longer, and was almost impotent. He had accidentally picked up the January number of the Journal in a physician's office in Kansas, and after reading the article on *nervous diseases* he immediately started for St. Louis. I gave him a treatment similar to that ordered in the first case, *celerina*, phosphorus and nux vomica, and, under date of January 30th, 1882, he writes as follows: "As the one month's medicines prescribed by you are all now taken, I thought to write you. I am very much improved every way; have gained fully ten pounds in weight, and the *sexual organs* are decidedly improved in strength."

These cases are examples of interest and value, and nobody can dispute the results. And these cures will be complete and

permanent. This is not merely a temporary nervous excitement; no, indeed. Hear the second patient tell how he has gained ten pounds in weight in one month. This shows a general improvement of nutrition, a building up of the whole man.

On the 9th of this month (February, 1882), I was called to see Mr. S., aged 45. He had been vomiting occasionally for a day or two. For last six hours had been suffering from a diarrhœa and cramps in the muscles of the legs and arms. He was exceedingly nervous, trembling greatly upon the least exertion. I found that he was a regular drinker, and that he had, on several previous occasions, suffered from attacks of vomiting that had lasted three or four days, but this was the first time he had been troubled with cramps and such distressing nervous symptoms, although he has been quite nervous before.

Treatment.—We ordered morphia sulph., gr. ¼, to be given at once. Bromide potassium in ten grain doses every three hours. The morphia to be repeated after each effort at vomiting till three doses were taken.

Called on the morning of the 10th and found that one dose of the morphia was sufficient to quiet the stomach and relieve the cramps. And under the influence of the bromide he was more composed, but felt exceedingly feeble, exhausted mentally and physically. He looked like one who had passed through a long siege of sickness and trouble, completely worn out. We ordered a bottle of celerina for him, and he took one dessert spoonful four times a day for a week, then three times a day for another week. This was all the medicine he required, for he immediately felt refreshed, invigorated and improved in every way. His appetite was natural, digestion quite good, nerves quiet, and he was ready for business before he had taken the medicine a week.

There is nothing that will restore a patient after a fit of drunkenness like celerina. It excels anything we have ever tried.—*American Medical Journal.*

PROLAPSE OF THE OVARY—ITS DIFFERENTIAL DIAGNOSIS.

By O. E. Herrick, M. D., Grand Rapids, Mich.

While the above lesion is comparatively rare, even in gynecological practice, it is still important to be able to differentiate between it and numerous other abnormal conditions often found within the female pelvic cavity. There are a number of conditions quite similar to, and very liable to be mistaken for prolapse of the ovary, and indeed, some of them may be associated with that difficulty, in which case the diagnosis is rendered still more obscure. Among the abnormalities most likely to be mistaken for ovarian prolapsus may be mentioned uterine retroversion and retroflexion, cyst of the broad ligament, uterine fibroids attached to the posterior wall, especially the

pedunculated variety, fibrous tumors and cysto-fibroma of the ovary.

Dermoid, and in fact any and all of the variety of tumors found in that locality, may, when small, be mistaken for and confounded with prolapse of the ovary. The inflammatory deposit, from an old cellulitis, scybala in the rectum and cancerous deposits have in their turn been mistaken for the ovary in Douglas' *cul de sac.*

From the frequency of reported cases of ovarian prolapse, and the comparative rarity of their occurence in female hospitals, and in the practice of our most noted gynecologists, together with the limited space devoted to the attention of the subject in all text books upon diseases of women, I am led to think perhaps some of the many cases reported as such, may be mistaken for, or at least complicated with, some of the conditions enumerated above. The differential diagnosis is rendered comparatively easy, if a few of the following points are borne in mind. In prolapse of the ovary we have a small tumor in Douglas' *cul de sac*, extremely tender and painful upon the least pressure, and varying from the size of a small walnut to that of a hen's egg and about that shape, being always enlarged sufficiently to make it prolapse. It is situated and confined to one side of the median line in the *cul de sac*, and can be replaced only in the direction from which it is prolapsed ; the reason for this is readily seen when we remember that it is attached by its anterior margin to the broad ligament, and can only become prolapsed by either dragging that ligament down or stretching it, and hence displacement only occurs when from some cause the ovary becomes enlarged and sufficiently heavy to prolapse from its own weight or is dragged down by some growth attached to it. Unless it is held down by some growth or is adhered through inflammation to the surrounding parts, it is easily reduced by putting the woman in the knee chest position, when it will usually fall back to place by its own weight; if it does not, it is easily pushed back by the finger, or, found in the vagina, by the finger in the rectum, and can be held there by packing the *cul de sac* with cotton or oakum and the holding it there by a properly fitting pessary or support. The pessary is necessary for the reason that there is usually in such cases more or less displacement of the uterus; as a rule there is retroversion to greater or lesser degree.

I have given the above description in detail for the reason that the subject is but barely mentioned in any of the text books upon gynecology with which I am familiar. Prolapsus of the ovary may be known from retroversion or retroflexion by the absence of that excessive tenderness upon pressure in the latter, though there may be and often is moderate tenderness in both retroversion and retroflexion. Again, the pro-

lapsed ovary is not confined to the median line, while in the other two conditions the opposite is true.

As there is generally retroversion accompanying prolapsus of the ovary, it is important to distinguish the difference between a retroversion with and one without; without prolapsus of the ovary there is a tumor accompanying Douglas' *cul de sac*, larger than the ovary and presenting the round feel of the fundus of the uterus and not the oval feel of the ovary; it is only moderately tender to the touch, as a rule, in contradistinction to the excessive tenderness of the ovary. Again, in most cases of either retroversion or retroflexion, the cervix points more to the anterior than the posterior wall of the vagina, though it is not so pronounced in retroflexion. The introduction of the uterine sound will also detect either of these conditions: and lastly, the introduction of the finger in the rectum will always determine the character of the tumor in the *cul de sac*, as it can be thus felt in its entirety. From cyst of the broad ligament or other cystic tumors, prolapsus of the ovary may be known from the fact that these tumors do not prolapse into the *cul de sac* as completely as does an enlarged ovary; besides these growths are fluctuating in character instead of hard, like the ovary; they are different in shape and not tender. It is scarcely possible to mistake a dermoid growth for the ovary, as they are unlike in shape, and a dermoid could be only partially displaced into the *cul de sac.* Inflammatory deposits can be easily distinguished by their board-like feel and irregular out-line usually filling the greater portion of the *cul de sac.* Fibroids, and especially the pedunculated variety, are the most likely to be mistaken for a prolapsed ovary, for many times they are nearly the shape and size of the ovary; but with the exercise of a little care and attention to a few distinctive features, the error may be avoided. A fibroid is not sensitive to the touch; it is much more dense than the ovary; often occupies the median line, and is as liable to move in any other direction as that of the broad ligament. In the pedunculated variety, if the pedicle is long enough to admit of motion, the growth may be found upon one side one day and the other the next; may be in the median line or not; this is never true of a prolapsed ovary. When there is a fibroid growth or cysts fibroma attached to the broad ligament, and complicated with prolapsus of the ovary, I can see how any one might be misled in making a diagnosis, and it is important that great care be exercised in examining such cases before a positive diagnosis be given.

The following case is a typical one and I give it as an illustration: Mrs. A———, of Shelby, Mich., was sent to me for treatment by her father, Dr. Wright, the 1st of January, this year. Her case had been diagnosed as retroversion of the uterus with prolapsus of the ovary, but there had been no vaginal examination made for a year past. She had been

troubled with uterine trouble for the past ten years, with all the usual symptoms, neurasthenia included. At times her nervous troubles were so bad that insanity was apprehended by her physicians and friends. Upon making a vaginal examination I found only very slight retroversion of the uterus, but found a small tumor occupying Douglas' *cul de sac*, which, after a careful examination, I had no hesitency in pronouncing a prolapsed ovary. I placed her in position upon the knees and chest, and reduced the displaced uterus. I then attempted to reduce the ovarian displacement, as per foregoing description, but found that while the ovary could readily be pushed out of Douglas' *cul de sac*, it would not go up entirely out of reach. After working at it a short time the lady complained of so much pain that I desisted for the day after filling the *cul de sac* with glycerated cotton. The next time I examined the case I passed the finger into the rectum, and after a long and careful examination, found there was a fibroid attached above the ovary, and it was that which was pressing the ovary out of place and preventing its being replaced. After treating the case for a few days with hot water injections and glycerated cotton tampons by way of preparation, I made an incision about two inches long through the wall of the vagina and with a blunt hook brought down the growth, which I found had a pedicle of about two and a half inches; this I ligated with a silk ligature, and then cut away the tumor, closing the vaginal incision with three silver wire sutures. The vaginal wound closed by first intention, after which I found no trouble in reducing the displaced ovary and keeping it there by cotton tampons, which she wore for about a week, having them changed every day. I then adjusted a soft rubber and silver wire supporter, with a very thick ring, to take the place of the cotton, and sent her home with instructions to wear the instrument for a month. Since returning home there has been no return of the displaced ovary up to this time. This case illustrates the danger of mistaking a pedunculated fibroid for true ovarian prolapse. Here was a case where there would have been no displacement of the ovary except for its being dragged down by the weight of the fibroid. The physicians having her case in charge had made this mistake, and I did the same, until I examined per rectum, and came very near not finding it then, although well aware that there was some reason for the ovary not returning to its place.—*Michigan Medical News*, March 10.

THE PRE-CANCEROUS STAGE OF CANCER, AND THE IMPORTANCE OF EARLY OPERATIONS.

By Jonathan Hutchinson, F. R. C. S.,

More recently I have often explained and enforced the doctrine of a pre-cancerous stage of cancer, in the hope that by its

aid a better comprehension of the importance of adequate and early treatment might be obtained. According to this doctrine in most cases of cancer of the penis, lip, tongue, skin, etc., there is a stage—often a long one—during which a condition of chronic inflammation only is present, and upon this the cancerous process becomes engrafted. I feel quite sure that the fact is so. Phimosis and the consequent balanitis lead to cancer of the penis; the soot-wart becomes cancer of the scrotum; the pipe-sore passes into cancer of the lip; and the syphilitic leucoma of the tongue, which has existed in a quiet state for years at length in more advanced life takes on cancerous growth. The frequency with which old syphilitic sores become cancerous is very remarkable. On the tongue in particular cancer is almost always preceded by syphilis, and hence one of the commonest causes of error in diagnosis and procrastination in treatment. The surgeon diagnoses syphilis, the patient admits the charge, and iodide of potassium seems to do good; and thus months are allowed to slip by in a state of fools' paradise. The diagnosis, which was right at first, becomes in the end a fatal blunder, for the disease which was its subject has changed its nature. I repeat that it is not possible to exaggerate the clinical and social importance of this doctrine. A general acceptance of the belief that cancer usually has a pre-cancerous stage, and that this stage is the one in which operations ought to be performed would save many hundreds of lives every year. It would lead to the excision of all portions of epithelial or epidemic structure which have passed into a suspicious condition. Instead of looking on while the fire smouldered, and waiting till it blazed up, we should stamp it out upon the first suspicion. What is a man the worse if you have cut away a warty sore on his lip, and when you come to put sections under the microscope you find no nested cells? If you have removed a painful, hard-based ulcer of the tongue, and with it perhaps an eighth part of the organ, and when all is done, and the sore healed, a zealous pathological friend demonstrates to you that the ulcer is not cancerous, need your conscience be troubled? You have operated in the pre-cancerous stage, and you have probably effected a permanent cure of what would soon have become an incurable disease. I do not wish to offer any apology for carelessness, but I have not in this matter any fear of it.—*Louisville Medical News*, Feb. 18.

At a meeting of the Midland Medical Society, Birmingham, England, Nov. 2d, Mr. Bennett May exhibited the following tumors: 1. Cystic testicle, the result of traumatism. 2. Sarcomata of the mamma, parotid gland, and phalanx of great toe. 3. Tumor of bursæ.

Editorial Department.

THE RED CROSS OF THE GENEVA CONVENTION.

We do not conceive that we can better set forth the nature, object and origin of this association, than by extracts from this little pamphlet whose title heads this page, allowing it to speak for itself of its character, its principles and its method of work. It is not a vague plan of what may be, but the sketch of an association in full and active organization throughout all of Europe and parts of South America and Asia. It has received the governmental sanction of thirty-two of the nations of the civilized world, the United States of America giving in its adherence to the Geneva Conference on March 1, 1882. Its power to really and practically ameliorate the horrors of war were signally proved in those wars which have occurred in Europe, since the organization of the society in 1863. In many instances the efficacy and promptness of its action and its generous aid to the suffering and wounded, must command our admiration. But while the primary object of this association was to relieve the sufferings necessarily connected with war, it also covers the entire field of national relief for great national woes and calamities in peace no less than in war.

ORIGIN AND PROGRESS.

This society had its inception in the minds of two noble men of Switzerland—M. Gustave Moynier and Dr. Louis Appia. The latter had served as an army surgeon at the battle of Solferino, and was deeply impressed with a conviction of the need of more extended and efficient means than any which yet existed for ameliorating conditions consequent on war. M. Moynier had entertained similar views and published a work entitled, "A Souvenir of Solferino," in which he strongly advocated more humane and extensive appliances of aid to wounded soldiers. As a result of their thoughts and consultations, Mr. Moynier, who was at that time president of the Society of Public Utility of Switzerland, called a meeting of this society

to consider "A proposition relative to the formation of permanent societies for the relief of wounded soldiers." This meeting took place on the 9th of February, 1863. The matter was laid fully before the society, was heartily received and acted upon, and a committee appointed, with Mr. Moynier at its head, to examine into methods by which the desired results might be obtained.

A re-union was announced for the following October, to which men from all countries were invited. The ensuing August the convention of Geneva was held, with the co-operation of the Swiss federal council and eleven other governments. Out of compliment to the Swiss republic, the red cross on white ground was chosen as a badge, being the Swiss colors reversed. This was to be worn on the arm by all the persons acting with or in the service of the committees enrolled under the convention.

ORGANIZATION AND METHODS OF WORK.

One of the things considered indispensable, and therefore adopted as a resolution by the conference of 1863, was the centralization of the work in each country separately, by itself. While the Treaty must be universally acknowledged, and its badge accepted as a universal sign, it was equally essential that the societies of the different countries should be simply national and in no respect international. It was therefore ordained by the conference, that all local committees or organizations, desirous of working with the Red Cross, should do so under the auspices of a central committee of their own nation, recognized by its government, and also recognized by the International Committee from which the sign of the Red Cross emanates. Singularly enough, the International Committee has had considerable difficulty in making this fully understood, and frequently has been obliged to call local committees to order, for assuming centralization or nationality. Once in three months the International Committee publishes an official list of all committees recognized by it as central or national. In this way it is able to exercise a certain control and repress entanglements and abuses which would be consequent on irresponsible or counterfeit organizations. To recapitulate: The Commission of Geneva, of which Monsieur Moynier is president, is the *only International Committee.* All other committees are simply national or local. The conference of 1863 foresaw that national differences would prevent a universal code of management, and that to make the societies international would destroy them so far as efficiency was con-

cerned; they therefore adopted a resolution that "central committees should organize in such a manner as seemed the most useful and convenient to themselves." Every committee being its own judge has its own constitution and laws. To be efficient, it must have government recognition, must bear the stamp of national individuality, and be constructed according to the spirit, habits and needs of the country it represents. No hierarchy unites the societies; they are independent of each other; but have an individual responsibility to the Treaty, under the ensign of which they work, and they labor in a common cause. It is desirable that they should all be known by one name—viz: The Society of the Red Cross.

The functions of the INTERNATIONAL COMMITTEE, whose headquarters are at Geneva, were also determined by the conference of 1863. It is to serve provisionally as an intermediate agent between national committees and facilitate their communications with each other. It occupies itself with the general interests of the Red Cross, in correspondence, and the study of theoretical and practical methods of amelioration.

The NATIONAL COMMITTEES are charged with the direction and responsibility of the work in their own countries; they must provide resources to be utilized in time of need; take active measures to secure adherents, establish local societies, and have efficient working force always in readiness for action; and in time of war dispatch and distribute safely and wisely all accumulations of material and supplies, nurses and assistants, to their proper destinations; and, in short, whatever may be gathered from the patriotism and philanthropy of the country, always remembering that central committees without abundance of sectional branches would be of little use.

As will be seen by the foregoing pages, the objects and provisions of the Geneva Convention and the Societies acting under it, are designed for, and applicable to, the exigencies of war only. The close contact of the nations hitherto signing this treaty, renders them far more liable to the recurrence of war in their midst than our own, which by its geographical position, and distance from neighboring nations, entertains a feeling of security which justifies the hope that we may seldom if ever again have occasion to provide for the exigencies of war in our land.

This leads the American Association to perceive the great wisdom, foresight and breadth of the resolution adopted by the convention of 1863, which provides that "Committees shall organize in the manner which shall seem most useful and convenient to themselves;" also in their article on the organization of societies in these pages occurs the following: "To be efficient, societies must have government recognition, must bear the stamp of their national individuality, and be constructed according to the spirit, habits, and needs of the country they represent. This is essential to success." The

articles of this Treaty provide, as its first and most important feature, for the entire and strict neutrality of all material and supplies contributed by any nation for the use of the sick and wounded in war; also that persons engaged in the distribution of them shall not be subject to capture; that all hospitals, general or field, shall be neutral, respected and protected by all belligerents; that all persons comprising the medical service, surgeons, chaplains, superintendents, shall be neutral, continuing their work after the occupation of a field or post the same as before, and when no longer needed be free to retire; that they may send a representative to their own headquarters if needful; that field hospitals shall retain their own equipments; that inhabitants of a country who entertain and care for the wounded of either side, in their houses, shall be protected; that the generals of any army shall so inform the people; that commanders-in-chief shall have the power to deliver immediately to the outposts of the enemy soldiers who have been wounded in an engagement, both parties consenting to the same; that the wounded, incapable of serving, shall be returned when healed; that all transports of wounded and all evacuations of posts or towns shall be protected by absolute neutrality. That the sick and wounded shall be entertained regardless of nationality; and that commanders-in-chief shall act in accordance with the instructions of their respective governments, and in conformity to the Treaty. In order that all may understand, and no mistake be possible, it also provides that one uniform international flag shall mark all hospitals, all posts of sick and wounded, and one uniform badge or sign shall mark all hospital material, and be worn by all persons properly engaged in the hospital service of any nation within the Treaty.

This is what the Red Cross means, not an order of Knighthood, not a commandary, not a secret society, not a society at all by itself, but the powerful, peaceful sign and the reducing to practical usefulness of one of the broadest and most needed humanities the world has ever known.

In attempting to present to the people of this country the plan of the Red Cross societies, it is proper to explain that originally, and as operating in other countries, they recognize only the miseries arising from war. Their humanities, although immense, are confined to this war centre. The Treaty does not cover more than this, but the resolutions for the establishment of societies under the Treaty, permit them to organize in accordance with the spirit and needs of their nationalties. By our geographical position and isolation we are far less liable to the disturbance of war than the nations of Europe, which are so frequently called upon that they do well to keep in readiness for the exigencies of war alone. But no country

is more liable than our own to great overmastering calamities, various, wide-spread and terrible. Seldom a year passes that the nation from sea to sea is not, by the shock of some sudden, unforseen disaster, brought to utter consternation, and stands shivering like a ship in a gale, powerless, horrified and despairing. Plagues, cholera, fires, flood, famine, all bear upon us with terrible force. Like war, these events are entirely out of the common course of woes and necessitles. Like death, they are sure to come in some form and at some time, and like it no mortal knows where, how or when. What have we in readiness to meet these emergencies, save the good heart of our people and their impulsive, generous gifts? Certainly no organized system for collection, reception nor distribution; no agents, nurses nor material, and worst of all no funds; nowhere any resources in reserve for use in such an hour of peril and national woe; every movement crude, confused and unsystematized, everything as unprepared as if we had never known a calamity before and had no reason to expect one again. Meanwhile the suffering victims wait! True, in the shock we bestow most generously, lavishly even. Men "on 'Change" plunge their hands into their pockets and throw their gold to strangers, who may have neither preparation nor fitness for the work they undertake, and often no guaranty for honesty. Women, in the terror and excitement of the moment and in their eagerness to aid, beg in the streets and rush into fairs, working day and night, to the neglect of other duties in the present, and at the peril of all health in the future—often an enormous outlay for very meagre returns. Thus our gifts fall far short of their best, being hastily bestowed, irresponsibly received and wastefully applied. We should not, even if to some degree we might, depend upon our ordinary charitable and church societies to meet these great catastrophies; they are always overtaxed. Our communities abound in charitable societies, but each has its specific object to which its resources are and must be applied; consequently they cannot be relied upon for prompt and abundant aid in a great and sudden emergency. This must neccessarily be the case with all societies which organize to work for a specific charity. And this is as it should be; it is enough that they do constantly bestow. Charity bears an open palm: to give is her mission. But I have never classed these Red Cross societies with charities: I have rather considered them as a wise national provision which seeks to garner and store up something against an hour of sudden need. In all our land we have not one organization of this nature, and which acts upon the system of conserved resources. Our people have been more wise and thoughtful in the establishment of means for preventing and arresting the destruction of property than the destruction of human life and the lessening of consequent suffering. They have provided and maintained at an immense cost, in the aggregate, a system of fire

departments with their expensive buildings and apparatus, with their fine horses and strong men kept constantly in readiness to dash to the rescue at the first dread clang of the fire bell. Still, while the electric current may flash upon us at any moment its ill tidings of some great human distress, we have no means of relief in readiness such as these Red Cross societies would furnish.

In considering this condition of things, it seemed desirable to so extend the original design of the Red Cross societies operating in other lands, as to include not only suffering by war but by pestilence, famine, fires or floods—in short any unlooked-for calamity so great as to place it beyond the means of ordinary local charity, and which by public opinion would be pronounced a national calamity; but that this addition should in no way impair the original functions of the society, and that for their own well-being they should be held firm by the distinguishing feature of the international constitution which provides that local societies shall not act, except upon orders from the National Association which is charged with the duty of being so fully informed upon all such subjects, both at home and abroad, as to constitute it the most competent judge of the magnitude and gravity of any catastrophe.

If we accept the data of this little book, it simply becomes a question of how our responses to the wants of suffering humanity shall be made. Whether systematically and carefully, by responsible agents from a stock slowly accumulated and provided against the day of trouble, or lavishly, wastefully, with a blind trust that the proper man will turn up in the proper place and the proper moment, to stand as medium between us and those we would aid.

There is no more generous, more sympathetic nation on the face of the earth than our own American. Quick to hear the cry of anguish, ready to help before help is asked, whether the cry comes from the victim tossing on his bed of fever, the Western farmer fleeing before the forest fires, or the Southern planter helpless before the overwhelming floods of our own Mississippi, we are really what we should be, one family. Only, to our mind, it seems a pity in this day of great organizations and well directed efforts, that our charities also should not be properly organized—calmly and wisely distributed—in times of need not at the mercy of the excitement of the moment, but with the steady self-control which accompanies consciousness of preparation for whatever emergency may arise.

LOUISIANA STATE PHARMACEUTICAL ASSOCIATION.

FIRST DAY.

Pursuant to call, a convention of druggists of this State was held April 24th, at the rooms of the State Medical Association in the Medical College of the University of Louisiana, on Common, between Baronne and Dryades streets. The convention was called for the purpose of organizing a State Pharmaceutical Association, the object of which shall be to unite the educated and reputable pharmaceutists and druggists of the State, to improve the science and art of pharmacy, and to restrict the dispensing and sale of medicines to regularly educated or registered druggists and apothecaries.

Dr. F. Brooks, of Baton Rouge, called the meeting to order and nominated

DR. J. T. THIBODAUX,

of Thibodaux, Lafourche Parish, for chairman, *pro tem.*, and Mr. Hiland Flowers, connected with the house of E. J. Hart & Co., for secretary, *pro tem.*

The nominations were unanimously endorsed. Dr. Thibodaux, in accepting the chair, returned his thanks for the honor conferred upon him, and addressed the meeting as follows :

" It is indeed a source of great pleasure to see so many present who think that a pharmaceutical association ought to be organized in Louisiana—a most gratifying evidence of progress and of a determination manifesting itself everywhere among pharmaceutists to elevate the character and standing of their calling to the rank of a learned profession, and to prevent its falling to the level of a mere trade.

" Societies similar to the one we have met to organize exist in nearly every State of the Union, and exert a powerful influence in developing and fostering the scientific interests of pharmacy, in uniting the educated and reputable pharmaceutists, in encouraging and stimulating the professional improvement, in advancing the social and business advantages of its members, and in securing proper legislation restricting the sale and dispensing of medicines and poisons to regularly educated and responsible pharmaceutists.

" Such an organization is really desirable, and has been a long felt need in this State. It will eventually be a great boon to all who are disposed to participate in its annual meetings and take an interest in its prosperity. Not only will its influence be marked on its members, but will exert a positive good on the fraternity generally and the public at large.

"I hope that our meeting will be characterized by fraternal unity and wise deliberations, and that our efforts will be crowned by the formation, on a solid and permanent base, of an energetic and efficient corps of pharmaceutists, actuated by the desire to be useful and for the diffusion of scientific knowledge, working harmoniously together for the common good of all, and for the creation of a true fraternal feeling in our profession.

"The occurrence by an almost criminal negligence happening recently in my parish, by which a vial of strychnine was sold by a clerk in a general country store for one of quinine, and administered as such, thereby causing the death of a patient, a beloved and only son of fond parents, is the excuse for my apparent haste in addressing a call for the formation of a pharmaceutical association. A repetition of this gross carelessness (to use no harsher term) is likely to occur at any moment, and if, by our prompt action in the premises, we can be the means of arresting the recurrence of such a sad accident to the extent of saving one human life, I shall feel that, at least so far as I am concerned, I have received full and ample reward for my poor exertions herein.

"I hope you will excuse the imperfections in my feeble efforts to serve and pay homage to our cherished profession."

Upon motion of Dr. Brooks the meeting went into

PERMANENT ORGANIZATION,

and the chair appointed the following committee to draft a Constitution and By-Laws: Dr. F. M. Brooks, chairman; C. L. Keppler, A. K. Finlay, Ben. Lewis and S. Hiriart.

* * * * * *

The Committee, through Dr. Brooks, reported the following Constitution and By-Laws:

CONSTITUTION.

ARTICLE 1. This Association shall be called "The Louisiana State Pharmaceutical Association."

ART. 2. The object of this Association shall be to unite the reputable pharmacists and druggists of this State, to improve the science and art of pharmacy, to elevate its standard, and to restrict the practice of pharmacy to properly qualified pharmacists and druggists.

ART. 3. Every pharmacist and druggist of good moral and professional standing and of legal age, whether in business on his own account or employed by another, and teachers of pharmacy, materia medica, chemistry and botany, who may be specially interested in pharmacy, shall be eligible to membership.

ART. 4. This Association shall meet annually, at such time and place as the Association may determine.

ART. 5. The officers of this Association shall be a President, two Vice-Presidents, a Secretary, a Treasurer and an Executive Committee of three members, all of whom shall be elected annually, by ballot, and shall serve until their successors are duly elected.

ART. 6. Every proposition to alter or amend this Constitution shall be in writing and shall be acted upon at the next annual meeting, when, upon receiving a vote of three-fourths of the members present, it shall become a part of the Constitution.

BY-LAWS.

CHAPTER I.—MEMBERSHIP.

Article 1. Propositions for membership shall be made to the Executive Committee in writing, with the indorsement of two members of the Association in good standing, and the vote of three-fourths of the members present at any session shall be required for election.

Art. 2. No persons shall be considered a member of this Association until he has signed the Constitution and By-Laws, and paid an intiation fee of $3 and the annual contribution for the current year.

Art. 3. Every member shall pay in advance to the Treasurer, two dollars as his yearly contribution, and shall forfeit his membership by neglecting to pay said contribution for two successive years.

Art. 4. Resignation of membership shall be made in writing to the Secretary, but no resignation shall be accepted from any one who is in arrears to the treasury, and until he has surrendered his certificate of membership.

Art. 5. The Association shall have power to expel a member by a three-fourths vote, but the vote shall not be taken until the next annual meeting after the charges have been preferred and the accused shall be notified of the charges and specifications made against him.

Art. 6. Pharmaeists, chemists and other scientific men who may be thought worthy of the distinction, may be elected honorary members. They shall not, however, be required to contribute to the funds, nor shall they be eligible to hold office or vote at the meetings.

Upon motion of Mr. Levy, the Constitution and By-Laws were adopted as a whole.

A motion by Dr. Brooks that the chair appoint a committee of five to nominate candidates for

OFFICERS OF THE ASSOCIATION

was lost, and the motion of Mr. Flowers that the officers be elected in open meeting carried.

The following gentlemen were thereupon elected by acclamation: Dr. Jos. T. Thibodeaux, President; Alex. K. Finlay, First Vice-President; Dr. F. M. Brooks, Second Vice-President; Hiland Flowers, Recording Secretary; Ben Lewis, Corresponding Secretary; Jno. B. Lavigne, Treasurer.

SECOND DAY.

* * * *

Mr. Keppler, in the absence of Dr. Brooks, Chairman of the Committee on Constitution and By-Laws, reported the following additions to their report presented at the last meeting.

CHAPTER II.—DUTIES OF OFFICERS.

Article 1. The President shall preside at all meetings of the Association. In his absence or inability to preside, one of the Vice-Presidents, or in the absence of all, a president *pro tempore* shall perform the duties of the President. In all ballotings and upon all questions upon which the yeas and nays are taken, the President is required to vote; in other cases he shall not vote, unless the members be equally divided. He shall call a special meeting whenever requested by twenty-five members, and present at each annual meeting a report of the operations of the Association.

Art. 2. The Recording Secretary shall keep a record of the proceedings of the Association, a list of the names, residences, and dates of entrance of each member, and be the custodian of all papers read.

Art. 3. The Corresponding Secretary shall conduct the correspondence of the Association with other scientific bodies and associations, and such other correspondence as may be assigned him by the President or by the Executive Committee. He shall also assist the Recording Secretary in his duties during the meetings of the Association.

Art. 4. The Treasurer shall have charge of all the funds of the Association, for which he shall be personally responsible, collect all moneys due the Association, pay all bills when countersigned by the President, issue certificates of membership, render a full report at each annual meeting, and report the state of the treasury when called upon by the Executive Committee; for the faithful performance of all which he shall furnish a good and solvent security to the amount of $500.

Art. 5. The Executive Committee shall take into consideration and report without delay on all matters of business and all propositions for membership and audit all bills against the Association.

CHAPTER III.—MEETINGS.

Article 1. Fifteen members shall constitute a quorum for the transaction of business.

Art. 2. The order of business shall be as follows.

1. Calling roll.
2. Reading minutes.
3. Election of members.
4. Report of officers.
5. Election of officers.
6. Reading communications.
7. Reports of committees.
8. Miscellaneous business.

CHAPTER IV.—RULES OF ORDER.

Art. 1. The ordinary rules of parliamentary bodies shall be enforced by the presiding officer, from whose decision, however, appeals may be taken, if required by two members, and the meeting shall thereupon decide without debate.

Art. 2. When a question is regularly before the meeting, and is under discussion, no motion shall be received but to adjourn, to lay on the table, for the previous question, postpone to a certain day, to commit or amend, to postpone indefinitely—which several motions have precedence in the order in which they are arranged. A motion to adjourn shall be decided without debate.

Art. 3. No member shall speak twice on the same subject, except by permission, until every member wishing to speak has spoken.

Art. 4. On the call of any two members the yeas and nays shall be ordered, when a member shall vote, unless excused by a majority of those present, and the names and manner of voting shall be entered on the minutes.

CHAPTER V.—COMMITTEES.

Article 1. The president shall appoint the following committees, viz:

A committee of three members on matters of trade interests.

A committee of three members on papers and queries.

A committee of three members on the adulteration and deterioration of drugs.

Art. 2. Five delegates and five alternates shall be annually elected to attend the meetings of the American Pharmaceutical Association.

Upon motion of Mr. Florat, the supplementary report was received and unanimously adopted.

Mr. Stendel presented the name of Mrs. E. Rudolph, the

ONLY LADY DRUGGIST

in the State, to be placed on the roll of membership. Though refused admission into the medical college of the University of Louisiana, she had perfected herself by a private course of lec-

tures. Mrs. Randolph was unanimously elected a member of the association.

The president appointed the following gentlemen as the

COMMITTEE ON LEGISLATION:

G. J. Mattingly, Erich Brand, Oscar Robin, of New Orleans, Dr. F. M. Brooks, of Baton Rouge, and Jas. A. Lee, of New Iberia.

Upon motion of Mr. Girling, members were required to pay their dues at the time of signing the constitution.

Upon motion of Mr. Brand, the executive committee was authorized to have printed 1,000 copies of the report of the first and second meetings, with blank forms of application for membership appended, for distribution among the profession throughout the State.

Mr. Girling moved that the delegates of the American Pharmaceutical Association be invited to hold their next annual meeting in New Orleans. Carried.

Upon motion of Mr. Levy, it was agreed to hold the next regular meeting of the Louisiana State Pharmaceutical Association on the first Monday in April, 1883, and upon motion of Mr. I. L. Lyons, New Orleans was again selected as the place of meeting.

Upon motion of Mr. Lewis, the executive committee were authorized to have blanks and all other papers necessary for the transaction of business printed.

The suggestions of Mr. Girling, chairman of the executive committee, that all members signing the constitution give their full addresses; that the corresponding secretary address a suitable answer to the fraternal letter of J. W. Colcord, Secretary of the Massachusetts Pharmaceutical Association, and that a vote of thanks be tendered Dr. Richardson for his kindness in furnishing the rooms of the State Medical Association and the Secretary be authorized to write him a letter to that effect, were adopted.

Upon motion of Mr. Otto, an amendment to the article of the Constitution, referring to the qualifications for membership offered by Mr. Flowers, was referred to the Committee on Constitution and By-Laws.

The request of Mr. Finlay that the latter committee be given time until to-day's meeting to further report, was granted.

The following gentlemen were unanimously elected

DELEGATES AND ALTERNATES

to the meeting of the American Pharmaceutical Association, to be held on the 12th of September next, at Niagara Falls: I. L. Lyons, Hiland Flowers, B. Tuma, C. L. Keppler and S. Hiriart, delegates; R. N. Girling, St. Cyr Fourcade, Erich Brand, Dr. F. M. Brooks and M. P. Young, alternates.

THIRD DAY.

The president announced the following

COMMITTEES.

On Trade Interests—St. Cyr Fourcade, chairman; Wm. C. Harrison, of Orleans, and E. N. Roth, of Lafourche.

On Papers and Queries—F. C. Godbold, chairman; B. Tuma, of Orleans, and R. A. Kearney, of Iberville.

On Adulteration and Deterioration of Drugs—John Johnson, chairman; Hiland Flowers and R. N. Girling, all of Orleans.

He also read the following communication

FROM MRS. E. RUDOLF:

NEW ORLEANS, April 26, 1882.

To the President and Members of the Louisiana Pharmaceutical Association:

Respected Gentlemen: Permit me to offer my heartfelt thanks for having been elected a member of your Association. Your efforts in organizing a State Pharmaceutical Association, whose noble purpose is to contribute to the safety of the public and to elevate the science of pharmacy, must command the approbation of all who comprehend its true motive.

May the success which your efforts have so far justified continue to increase with harmony, cordiality and justice.

Very respectfully, E. RUDOLF.

P. S.—Inclosed please find amount of $5 for initiation fee.

Mr. Finlay presented the following report of the

COMMITTEE ON CONSTITUTION AND BY-LAWS.

The Committee on Constitution and By-Laws has considered the motion of Mr. Flowers relative to the amendment of Article 3.

Inasmuch as the Constitution provides for such cases, the Committee are of the opinion that it shall lay over for the next annual session, as provided.

ALEX. K. FINLAY,
F. M. BROOKS,
C. L. KEPLER,
S. HIRIART,
BEN. LEWIS.

Mr. Flowers' amendment reads as follows :

" Any adult of legal age and of good moral and professional standing, who shall have been actively engaged in the practice of pharmacy for four years or more, either on his own account or employed by another in either a wholesale or retail store, where medicines are dispensed, all graduates, teachers and professors of botany, *materia medica*, chemistry and pharmacy, and of such sciences as are collateral with our profession, and chemists, whether actively engaged or retired, so long as they are interested in the progress of pharmacy, shall be eligible for membership."

Upon motion of Mr. Brand, the report of the Committee on Constitution and By-Laws relative to Mr. Flowers' amendment, was received and approved. The committee having completed their work were thereupon discharged.

Mr. Geo. J. Mattingly, chairman of the

COMMITTEE ON LEGISLATION,

presented the following report :

Mr. President—It will be of great service to this Association that the Committee on Legislation should have their work prepared in time for the Legislature, which will hold session on the second Monday in May of this year.

Now a reasonable time must be allowed them wherein to make the necessary preparation, and as several members yesterday expressed a desire to be acquainted with the nature of the work before it is submitted to the Legislature, I would respectfully suggest that a meeting be called for Monday, May 15, in order that all all who may desire it may know what is to be done.

GEO. J. MATTINGLY,
F. M. BROOKS,
OSCAR ROBIN,
ERICH BRAND.

Upon motion of Mr. Levy, the report was received and the suggestion in reference to holding a special meeting on Monday, May 15, adopted.

Mr. Brand, in asking for a point of information, stated that he had been requested by a gentleman connected with a prom-

inent wholesale drug house, claiming to be no pharmacist, but simply a dealer in drugs, to enquire whether, under the wording of Article 3 of the Constitution, he could become a member of the Association.

This query provoked considerable discussion, ending, finally, in a motion by Mr. Tilford, that the President be allowed to interpret the words in Article No. 3 of the Constitution, "every

PHARMACIST AND DRUGGIST,"

etc.—that is, to state whether the term "pharmacist and druggist" applied to one or more persons. Upon the adoption of Mr. Tilford's motion, the President decided that it referred to one person only. Accordingly, as a pharmacist is a person that confines himself strictly to putting up prescriptions and dispensing drugs, and a druggist one who merely sells and handles them, a druggist whether wholesale or retail, is not eligible for membership unless he possesses the qualification of being a pharmacist in addition.

This decision quieted the storm of debate that had been engendered by Mr. Brand's question, and had raged with some violence for awhile.

A motion by Mr. Brooks, that the President's decision be spread upon the minutes, was adopted.

Mr. Gill's question—whether a person who has received a diploma in pharmacy, but is not actually engaged in business, is eligible for membership—was decided by the President in the negative.

Upon motion of Mr. Tuma, a general invitation was extended to

ALL PHYSICIANS

throughout the State, to attend any of the meetings of the Association, and have the privilege of the floor for the purpose of offering suggestions, etc.

The following distinguished scientists, whose names were presented by President Thibodeaux, were unanimously elected honorary members of the Association:

Prof. P. W. Bedford, professor of pharmacy, New York College of Pharmacy, and President of the American Phar-

maceutical Association; Prof. John M. Maisch, Professor of Materia Medica, Philadelphia College of Pharmacy, editor of the *American Journal of Pharmacy* and Secretary of the American Pharmaceutical Association, and Mr. Alonzo Robbins, Ph. D., of Philadelphia.

Upon motion of Mr. Flowers, the nomination of honorary members was closed.

There being no further business before the Association, an an adjournment was taken until May 15th, when a

SPECIAL MEETING

will be held to consider the subject of a pharmacy law.

Before adjourning, President Thibodeaux addressed the members of the Association, congratulating them upon the orderly and amiable manner in which they had conducted the business of the meetings and thanking them for their kindness and indulgence toward himself.

Mr. Keppler also addressed the assemblage as follows :

" *Gentlemen*—Before adjourning allow me to make a few remarks and express, on behalf of our worthy confreres of New Orleans, our sincere thanks for the able and kind assistance and the duties so well performed by our worthy President, Dr. Joseph T. Thibodeaux, also the assistance and great interest taken in this movement by our worthy confreres of the different parishes of the State.

As it has been my long-cherished hope to have a pharmaceutical association in this state, I felt happy to see the day when we called our first meeting and found the great interest taken by all members of our profession.

May we see our efforts crowned by having such laws enacted, by the prompt action of our committee and the kind assistance of the proper authorities, as well as the medical profession in general, at the coming session of the legislative body of our State, for the protection of the practice of pharmacy.

In conclusion, allow me to express my sincere thanks for the honor of electing me one of your delegates to the next meeting of the American Pharmaceutical Association. I will endeavor to further the interests and advancement of our profession, and represent this Association to the best of my ability. [Applause.]

Mr. Flowers moved that Mr. Keppler's remarks be accepted and heartily endorsed by the Association ; unanimously carried. The convention then adjourned.

MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The American Medical Association will meet in St. Paul, Minnesota, on the 6th of June.

Dr. M. R. Richard has been appointed a delegate to represent the Louisiana State Medical Association. We have not been informed of any other appointments.

There is no doubt that other delegates would have been appointed, but for the extraordinary inundation of a large portion of this State.

We hope that Dr. Richard will not fail to attend the meeting.

CLOSE OF VOLUME.

We hope our patrons will exert their good influences in enlarging our subscription records, both by renewal of old names and addition of new subscribers.

TRAINING SCHOOL OF NURSES.

So the school for training nurses is likely to go on and accomplish a good work, in spite of obstacles thrown in its way. A noble-spirited citizen of the most noble of cities has made a generous donation in aid of the enterprise. While the money bestowed is an opportune and materially important assistance, the fact that the attention of the beneficent and humanitarian people, situate as remote from New Orleans as Boston, is awakened to a knowledge and sympathy with our efforts here should greatly encourage us and be accepted as a token of future success.

AN OMISSION.—Through inadvertance we failed to give due credit, in the April issue, to the *Boston Medical and Surgical Journal*, from whose pages we borrowed the article on the assassin, Guiteau.

ERRATA.

On page 819, line 18 from top, read 1017, instead of 1.1071,

On page 819, line 24 from top, read leucitin, instead of leutin.

On page 819, lines 2 and 4 from bottom, read leucitin, instead of leutin.

METEOROLOGICAL SUMMARY—APRIL.
STATION—NEW ORLEANS.

	Daily Mean Barometer.	Daily Mean Temp'ture.	Daily Mean Humidity.	Prevailing Direction of Wind.	Daily Rain-fall.
1	30.226	70.0	70.3	East.	.....
2	30.215	69.9	70.3	East.	.....
3	30.200	70.4	66.0	S. E.	.....
4	30.161	69.8	71.0	East.	.....
5	30.660	73.4	81.0	S. E.	.....
6	30.022	75.7	81.3	South	.24
7	30.032	76.8	85.3	S. E.	.....
8	30.028	75.3	70 0	S. E.	.02
9	29.993	76.1	75.3	S. W.	.....
10	28.835	77.7	81.0	North	.....
11	28.821	73.1	84.0	East.	1.60
12	29.724	71.0	82.3	East.	.71
13	29.863	67.7	76.7	North	1.30
14	29.959	64.9	78.3	N. E.	.....
15	30.093	63.0	56.3	North	.....
16	30.175	65.1	48.7	North	.....
17	30.184	64.9	66.0	N. E.	.....
18	29.991	73.6	85.3	South	.....
19	29.887	77.1	81.0	S. W.	.....
20	29.869	75.9	58.7	West.	.....
21	28.855	75.9	83.0	S. E.	.....
22	29.769	75.8	80.7	South	.37
23	29 931	71.8	47.0	S. W.	.....
24	30.042	71.0	77.8	N. E.	.....
25	30.066	71.8	68.7	S. E.	.01
26	30.028	75.0	74.7	S. E.	.33
27	30.017	78.3	65.3	East.	.....
28	29.992	78.2	72.3	N. E	.....
29	30.010	74.9	64.0	North	.16
30	30.150	70.1	43.3	North	.....
Sums	.....	.....	.....	.....	total
Means	30.005	67.9	71.8	S. E.	4.83

GENERAL ITEMS.

Meau Barometer, ———.
Highest Barometer, 30.260, 2d.
Lowest Barometer, 29.668, 12th.
Monthly Range of Barometer, .592.
Mean Temperature, ——.
Highest Temperature, 86.0, 10th.
Lowest Temperature, 63.0, 15th.
Monthly range, ——-
Greatest daily range of Temperature, 19.3, 20th.
Least daily range of Temperature, 6.0, 14th.
Mean of maximum Temperature, 78.9.
Mean of minimum Temperature, 66.1.
Mean daily range of Temperature, 12.8.
Prevailing Direction of Wind, S. E.
Total No. of miles 6070.
Greatest Velocity of Wind, 28 miles 8th & 22d.
Number of Clear Days, 9.
Number of fair days, 10.
Number of Cloudy days, 7.
No. of days on which rain fell, 12.

COMPARATIVE TEMPERATURE.

1872	....	1877	68.6
1873	67.0	1878	67.4
1874	65.6	1879	67.9
1875	65.3	1880	71.2
1876	67.1	1881	67.2

COMPARATIVE PRECIPITATIONS.
(Inches and Hundredths.)

1872	....	1877	4.79
1873	1.74	1878	1.51
1874	13.62	1879	9.17
1875	8.05	1880	6.88
1876	6.41	1881	3.92

L. DUNNE,
Sergeant, Signal Corps, U. S. A.

MORTALITY IN NEW ORLEANS FROM APRIL 15TH, 1882, TO MAY 13TH, 1882, INCLUSIVE.

Week Ending.	Yellow Fever.	Malarial Fevers.	Consumption.	Small-pox.	Pneumonia.	Total Mortality.
April 22	0	7	19	18	4	139
April 29	0	4	16	16	4	130
May 6	0	4	19	15	3	126
May 13	0	6	14	15	4	114
Total....	0	21	68	64	15	509

TROMMER EXTRACT OF MALT.

"The proper medicinal value of Malt Extracts must be held to depend on the amount of diastase which they contain. * * * * * In Malted Barley we have at command an unlimited suppy of diastatic power."

WILLIAM ROBERTS, M. D., F. R. S.,
Prof. Clinical Medicine, Owens College;
Physician to the Manchester Infirmary, etc.

"This Extract of Malt is one of the best samples which have come under my notice. One hundred parts contain two and five-tenths parts diastase."

A. RIVERS-WILSON, Ph.D.,
Author of "Text-Book of Chemical Analysis." etc.

"It has evidently been prepared with great care and judgment, as it retains the property of acting on amylaceous bodies as diastase does."

T. REDWOOD, Ph.D., F.R.C.S., etc.,
Prof. Chemistry and Pharmacy to the Pharmaceutical Society of Great Britain.

Our Extract of Malt, the first manufactured in America, is *prepared by an improved process which prevents injury to its properties or flavor by excess of heat.* It represents the soluble constituents of malt and hops, viz: *malt sugar, dextrine, albuminoids (chiefly diastase), resin,* and *bitter of hops, phosphates of lime and magnesia.* It is a most efficient therapeutic agent for the restoration of feeble and exhausted constitutions, being rich in both muscle and fat-producing material, and a most valuable restorative in diseases attended by disordered digestion and emaciation.

Our Malt Extract is sold throughout the United States, Great Britain, the West Indies, and Central and South America, and elsewhere. In all those countries we have placed large supplies in the most important Hospitals, Asylums and Infirmaries, and in the hands of the leading physicians for trial in private practice. From these sources we have received abundant testimony to the excellence of our Extract in regard to purity and efficiency in the treatment of diseases in which its employment is indicated.

TROMMER EXTRACT OF MALT COMPANY,
FREMONT, OHIO

DR. McINTOSH'S
Galvanic and Faradic Battery.

This celebrated Battery combines both the Galvanic and Faradic, or induced current which can be used separate or in combination.

Any strength and intensity desired can be obtained for use in Electro-therapeutics. This Battery is constructed on an improved plan, as follows: The zinc and carbon plates are arranged in couples securely clamped to hard rubber plates with thumb screws. These thumb screws are also used for binding posts. All the connections are positive and brought near together, thus lessening the internal resistance. The cells are made in sections of six, composed of one solid piece of hard vulcanized Rubber. By this arrangement a section can be handled, emptied, cleaned and refilled as easily and quickly as one cell. A hard Rubber drip cup is placed by the side of each section of cells, to receive the zincs and carbon plates when removed from the cells. The rubber plates, which hold the zinc and carbons, project over on one side enough to cover the cells, when the zinc and carbons are placed in the drip cups. The under side of this projection is covered with soft rubber, which is clamped over the sections, which makes the cells water tight, this alone recommends the Battery.

We claim superiority over all other batteries for the reason that by the improved plan of construction and close connections we gain more quantity and intensity of current. We combine all that is desirable in either a Galvanic or Faradic Battery, a combination never before attained. We furnish it with or without the Faradic coil. It weighs less than any other of the same power. It can be carried without spilling the fluid, thus being the only perfect portable Galvanic Battery made. We will be pleased to send circulars giving full information, price, &c., free on application.

McINTOSH GALVANIC BELT AND BATTERY CO.

Nos. 192 and 194 Jackson St., CHICAGO, ILL.

OFNER RAKOCZY BITTER WATER

THE BEST

Natural Aperient,

MOST EFFECTIVE

BITTER WATER

KNOWN.

Recommended and prescribed by Prof. CHAS. R. C. TICHBORN, of London, Prof. MOLNAR, of Budapest, Prof. FARWELL, of Paris, and a host of other prominent members of the Medical Profession, for the relief and cure of **Dyspepsia, Liver Complaint, Habitual Costiveness,** *and all Diseases arising from Chronic Constipation and Impure Blood.*

For Sale by all Druggists.

SOINE & CO.,

21 ST. CHARLES ST., Baltimore, Md.

Sole Agent for the United States.

For Consumption and Wasting Diseases.

HYDROLEINE

Has been proved of the highest value in CONSUMPTION and all WASTING DISEASES, invariably producing INCREASE in FLESH and WEIGHT.

FORMULA OF HYDROLEINE.

Each dose of two teaspoonsful, equal to 120 drops contains:

Pure Oil	80 *m.* (drops.)	Soda	1-3 Grains.
Distilled Water	35 "	Boric Acid	1-4 "
Soluble Pancreatin	5 Grains.	Hyocholic Acid	1-20 "

DOSE.—Two teaspoonsful alone, or mixed with twice the quantity of soft water, to be taken thrice daily with meals.

The principles upon which this discovery is based have been described in a Treatise on "THE DIGESTION AND ASSIMILATION OF FATS IN THE HUMAN BODY," by H. C. BARTLETT, Ph. D., F. C. S., and the experiments which were made, together with cases illustrating the effect of Hydrated Oil in practice, are concisely stated in a Treatise on "CONSUMPTION AND WASTING DISEASES," by G. OVEREND DREWRY, M. D.

In these Treatises the Chemistry and Physiology of the Digestion of the Fats and Oils is made clear, not only by the description of a large number of experiments scientifically conducted, but by cases in which the deductions are most fully borne out by the results.

☞ Copies of these valuable works will be sent free on application.

HYDRATED OIL

HYDROLEINE

WATER AND OIL.

May be described as partially digested oil, which will nourish and produce increase in weight in those cases where oils or fats, not so treated, are difficult or impossible to digest. In CONSUMPTION and other WASTING DISEASES, the most prominent symptom is *emaciation*, of which the first is the starvation of the fatty tissues of the body, including the brain and nerves. This tendency to emaciation and loss of weight is arrested by the regular use of HYDROLEINE, which may be discontinued when the usual average weight has been permanently regained.

The ordinary so-called emulsions of Cod-Liver Oil and other fats, *whether pancreatized or not*, merely remain in the form of a coarse mechanical mixture for a short time after agitation. The digestion of oil having in no sense been artificially produced, still devolves upon those functional powers, the deficiency of which is the most prominent symptom in these cases.

Hydroleine is not a patent medicine or a secret preparation; the formula is on every bottle. Can be taken by the most delicate stomach; is immediately assimilated.

The permanence and perfection of the emulsion, and the extreme solubility of the HYDRATED OIL, solely prepared and sold by us under the name of HYDROLEINE, is shown by its retaining its cream-like condition as long as the purest Cod-Liver Oil will retain its sweetness. Unlike the preparations mentioned, or simple Cod-Liver Oil, it produces no unpleasant eructation or sense of nausea, and should be taken in such very much smaller doses, according to the directions, as will insure its complete assimilation; this, at the same time, renders its use economical in the highest degree.

To brain-workers of all classes, Hydrated Oil is invaluable, supplying as it does the true brain food.

Economical in use—certain in result. Tonic—Digestive and highly nutritive.

NEW PRINCIPLE FOR THE ASSIMILATION OF FAT

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BE PARTICULAR TO GET THE GENUINE

KIDDER'S SACCHARATED PEPSINE.

TAKE NO OTHER.

OUR PEPSINE IS NOT SOLD IN BULK, the only way you can get the genuine is in original packages, as follows:

ONLY STYLES OF KIDDER'S SACCHARATED PEPSINE.

One ounce, four ounce, and eight ounce oblong white flint glass bottles, with our name (Kidder & Laird) blown in the bottle, and sixteen ounce, round (plain) bottles, all having on them our metallic caps and labels. THESE ONLY STYLES, THE GENUINE, are sold at 75 cents per ounce, in quantities less than a pound, and $4 50 by the pound.

CALIFORNIA.

Kidder & Laird, San Francisco, Cal., Sept. 13th, 1878.
Gentlemen:—I have used Kidder's Saccharated Pepsine in my own family with the most satisfactory results and consider it one of the best preparations of the kind manufactured. Yours, etc.,
JAMES G. STEELE, *Chemist.*

Kidder & Laird. San Francisco, Cal., July 1st, 1878
Gentlemen:—We find it very satisfactory, and will always purchase your brand hereafter. Yours, etc.,
LAFORE & KAHN.

CONNECTICUT.

Kidder & Laird, Bridgeport, Conn., July 15th, 1878.
Gentlemen:—The physicians have used it in prescriptions, and think it a valuable preparation, and as good as they ever saw, and will give it the preference in their practice. We have been using Hawley's for the last five or six years. Yours, etc.,
W. & E. SHELTON.

Kidder & Laird, Willington, Conn., Sept. 20th, 1877.
Gents:—Your elegant preparation of Pepsine has been received. I think it superior to any that I have ever used in my practice. Yours, etc.
W. L. KELSEY, M. D.

ILLINOIS.

Kidder & Laird. Edgewood, Ill., July 11th, 1878.
Gentlemen:—I find Kidder's Saccharated Pepsine a fine article and very effective in conjunction with other treatmentsl n cases of cholera infantum; would recommend it highly in such cases. Yours, etc.,
JOSEPH HALL, M. D.

Kidder & Laird. Millstadt, Ill., June 26th, 1878.
Gentlemen:—I have adopted the use of Kidder's Saccharated Pepsine in preference to any other. It has proved satisfactory in every respect. Yours, etc.,
F. H. KRING.

Kidder & Laird. Stanton, Ill., July 30th, 1878.
Gentlemen:—Please send me one pound of Kidder's Saccharated Pepsine. This makes two and three-quarter pounds. I have used it mostly in prescriptions, and prescribed it in my practice, and find it a reliable article.
Yours, etc., GEO. BLEY, M. D.

Kidder & Laird. Stone Creek, Ill., June 15th, 1876.
Gentlemen: I gave forty grains in ten grain doses and it acted like a charm; shall use no other. Yours, etc.,
L. HOBIE, M. D.

Kidder & Laisd. Wellington, Ill., March 2d, 1878.
Gentlemen:—I shall be glad to avail myself of another supply when needed. I have tested it, and find it fully up to your representations. Yours respectfully,
DANIEL WESTON.

INDIANA.

Kidder & Laird. Galveston, Ind., July 8th, 1878.
Gentlemen:—I have given your Kidder's Saccharated Pepsine my careful attention, and find it a splendid preparation. I can recommend it in my practice on account of its good quality. Yours, etc., B. U. LOOP.

Kidder & Laird. Indianapolis, Ind., July 12th, 1878.
Gentlemen:—Have given Kidder's Saccharated Pepsine in a number of cases of dyspepsia; also given it to the physicians in this locality, who were well pleased with the superior quality of it. Yours, etc.,
S. J. HILLMAN, M. D.

Kidder & Laird. Sullivan, Ind., July 11th, 1878.
Gentlemen:—I have prescribed your Saccharated Pepsine, and recommended it to several physicians, who have used it and pronounce it a first-class article
Respectfully yours, B. MALOTT, M. D.

Kidder & Laird. Waterman, Ind., July 19th, 1878
Gentlemen:—I have ascertained from three doctors in my neighborhood that your Kidder's Saccharated Pepsine is a better article than some of the mere expensive preparations. Yours, etc, OLIVER LA TOURETTE.

LOUISIANA.

Kidder & Laird. Delhi, Richland Parish, Mar. 20th, 1878.
Gents:—When in need of Pepsine will always order Kidder's in preference to all others, as I like it best.
Yours very respectfully, E. W. THOMSON.

Kidder & Laird. Mansfield, La., Jan. 31st, 1878.
Gents:—I know it to be an excellent remedy, and shall in future keep it always on hand, both for my practice and myself. Yours respectfully, R. T. GIBBS, M. D.

MARYLAND.

Kidder & Laird. Annapolis, June 20th, 1878.
Gentlemen:—Since the reception of your sample of Kidder's Saccharated Pepsine we have used no other. We consider it a first-class preparation. We have never heard anything to the contrary. We shall continue to dispense it unless well founded objections are made, which we do not fear. We purchase from Messrs. Thomson & Muth.
Yours etc., J. F. PERKINS & BRO.

Kidder & Laird, Baltimore, June 19th, 1878
Gentlemen:—I am using Kidder's Saccharted Pepsine with a great deal of satisfactiou. I tested it with Schefer's and could not detect the least difference, and, in consequence, have had a number of pounds of yours, purchased from Thomson & Muth. Yours, etc.,
ISAAC R. BEAM.

Kidder & Laird, Baltimore, June 19th, 1878.
Gentlemen:—Your Kidder's Saccharated Pepsine appears to be all you claim for it. I have not bought a grain elsewhere since I commenced using yours.
Yours, etc., C. A. GOSNELL.

Kidder & Laird, Baltimore, Md., June 20th, 1878.
Gentlemen:—Your Kidder's Saccharated Pepsine has given good satisfaction. It is all you claim for it. Will hereafter use none but Kidder's. Yours, etc.,
A. C. HUTHWELKER

Kidder & Laird. 181 Lexington St., Baltimore, Md.
Gentlemen:—I have used Kidder's Saccharated Pepsine for the past year with entire satisfaction. I use no other except specially prescribed. I obtain my supply from Messrs. W. H. Brown & Bro., or Messrs. Thomson & Muth, Baltimore. Yours, etc., H. C. MOORE, M. D.

Kidder & Laird. Baltimore, June 21st, 1878.
Gentlemen:—I have used Kidder's Saccharated Pepsine alongside Scheffer's, Boudault's and others, as ordered and have no reason to believe yours below the standard.
Yours, etc., JOHN SCHWARTZ.

Kidder & Laird. Cumberland, Md., Jan. 21st, 1878.
Dear Sirs:—Kidder's Saccharated Pepsine meets every want of the physicians here. Very truly.
J. F. ZACHARIAS

Samples and Circulars sent to Druggists or Physicians on application to

KIDDER & LAIRD, 83 John Street, N. Y.

For Sale at all Wholesale and Retail Druggists.

REGISTERED COSMOLINE TRADE MARK.

Unguentum Petrolei

Prepared by E.F.Houghton & Co.Philadelphia,U.S.A.

Put up in 1 lb. Cans, 5 lb. Cans, 10 lb. Cans, 25 lb. Cans, 50 lb. Cans, 100 lb. Cans.

SAMPLES FURNISHED ON APPLICATION. The Post-Office Laws forbid anything of an oleaginous nature being sent through the mails.

In chemical composition, Cosmoline (Unguentum Petrolei) is an oleaginous hydrocarbon corresponding to the heavy petroleum oils, and containing a large amount of the parafines and olefines of the formulæ $C_{16}H_{34}$ and $C_{16}H_{32}$. It contains but a small percentage of the parafines and olefines, corresponding to the formulæ C_7H_{16} and C_7H_{14} respectively, and the offensive and irritating properties of the crude oil have been carefully removed. In the process of purification no acids, alkalies, or other chemicals are employed, and no injurious additions of any kind are made to the natural product. The result is a semi-solid, translucent substance, with a faint odor, and unctuous feel.

Cosmoline (Unguentum Petrolei) melts at abent 100° Fah (38° Cent.); and boils at abont 625° Fah. (329° Cent.); its specific gravity is abont 0.875 at 60° Fah.

As it contains no oxydizable or organic matter capable of change by putrefaction or fermentation, and is absolutely without affinity for moistnre, it offers to the profession an admirable unguent, which can never decompose, ferment, or become rancid in any climate or temperature.

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291 MADISON AVENUE, NEW YORK, February 26, 1878.

I have examined the preparations of Cosmoline as mahnfactured by E. F. Houghton & Co., Philadelphia, and believe them well adapted to the purposes for which they are designed. As lubricants and as the bases of simple or medicated ointments, they have a decided advantage over the fixed oils and fatty substances in ordinary use, in that they do not become rancid, and do not acquire irritating qualities from atmospheric exposnre.

ALFRED C POST, M. D., LL. D.,
Emeritus Professor of Clinical Surgery in the University of New York,
Visiting Surgeon to Presbyterian Hospital, etc.

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218 SOUTH SIXTEENTH ST., PHILADELPHIA, July 7, 1880.

Messrs. E. F. HOUGHTON & Co.:

Gents—The petroleum product prepared by you and supplied to physicians under the name of Cosmoline (Unguentum Petrolei), was first brought to my notice while I was resident physician in the Pennsylvania Hospital, and it at once commended itself to me as a bland emollient, as an elegant substitute for carbon oil in burns and scalds, as a protective in excoriations and certain diseases of the skin, and as an excipient in the place of lard for applications to the eye and ear. For the last five years I have used the plain Cosmoline, both in hospital and in private practice, in Gynæological and Obstetrical cases, with perfect satisfaction, and consider it much snperior to Olive Oil, which is so generally used. Carbolated Cosmoline is a useful combination, but the rose-scented Cosmoline is, beyond all qnestion, a work of art, which cannot be too highly commended. I have the honor to be

Very respectfully yours,

FRANK WOODBURY, M. D.
Physician to German Hospital.

Messrs. E. F. HOUGHTON & Co.: PHILADELPHIA, Jnly 10, 1880

I have for a number of years made extensive nse of Cosmoline (Unguentum Petrolei) and consider it a most valuable article for surgical pnrposes. Either as a dressing by itself or as a vehicle for the application of medicaments, it is greatly superior to lard or other fatty matters, especially by reason of its non-liability to change by time or temperature.

Yours truly, JOHN H. PACKARD, M. D.

1031 WALNUT STREET, PHILADELPHIA.

Messrs. E. F. HOUGHTON & Co.:

I have used extensively Cosmoline (Unguentnm Petrolei) both in dispensary and private practice, with very great satisfaction. As a vehicle for making ointments it is invaluable, and far superior to lard, for the reason that it will not become rancid or undergo chemical change like the latter, when exposed to the atmosphere. I cannot too highly commend it as an application in various skin diseases.

Yours truly, JOHN V. SHOEMAKER, A M, M. D.
Physician to the Pennsylvania Free Dispensary for Skin Diseases.

Prepared by E. F. HOUGHTON & Co., 211 S. Front St., Philadelphia.

College of Physicians & Surgeons,

(Medical Department of Columbia College,)

Corner of FOURTH AVENUE and 23d STREET, NEW YORK CITY.

SEVENTY-FIFTH SESSION, 1881-2.

FACULTY OF MEDICINE,

ALONZO CLARKE, M. D., President and Professor of Pathology and Practice of Medicine.
WILLARD PARKER, M. D., Emeritus Professor of the Principles and Practice of Surgery.
JOHN C. DALTON, M. D., Professor of Physiology and Hygiene.
THOMAS M. MARKOE, M. D., Professor of Surgery.
T. GAILARD THOMAS, M. D., Emeritus Professor of Obstetrics and the Diseases of Women and Children.
JOHN T. METCALF, M. D., Emeritus Professor of Clinical Medicine.
HENRY B. SANDS, M. D., Professor of the Practice of Surgery.
JAMES W. McLANE, M. D., Professor of Obstetrics, of Gynæcology, and of the Diseases of Children.
THOMAS T. SABINE, M. D., Professor of Anatomy.
CHARLES F. CHANDLER, Ph. D., Professor of Chemistry and Medical Jurisprudence.
EDWARD CURTIS, M. D., Professor of Materia Medica and Therapeutics.
FRANCIS DELAFIELD, M. D., Adjunct Professor of Pathology and Practical Medicine.
JOHN G. CURTIS, M. D., Adjunct Professor of Physiology and Hygiene; Secretary of the Faculty.
WM. DETMOLD, M. D., Emeritus Professor of Military and Clinical Surgery.
WILLIAM H. DRAPER, M. D., Professor of Clinical Medicine.
CORNELIUS R. AGNEW, M. D., Clinical Professor of Diseases of the Eye and Ear.
ABRAHAM JACOBI, M. D., Clinical Professor of Diseases of Children.
FESSENDEN N. OTIS, M. D., Clinical Professor of Venereal Diseases.
EDWARD C. SEGUIN, M. D., Clinical Professor of Diseases of the Mind and Nervous System.
GEO. M. LEFFERTS, M. D., Clinical Professor of Laryngoscopy and Diseases of the Throat.
WILLIAM T. BULL, M. D., Demonstrator of Anatomy.
GEORGE HENRY FOX, M. D., Clinical Professor of Diseases of the Skin.
WILLIAM S. HALSTED, M. D., First Assistant Demonstrator of Anatomy.
FRANCIS U. MARKOE, M. D., Second Assistant Demonstrator of Anatomy.
T. MITCHELL PRUDDEN, M. D., Director of the Physiological and Pathological Laboratory of the Alumni Association.
PAUL F. MUNDE, M. D., Clinical Lecturer upon the Diseases of Women.

Prof. THOMAS will deliver a Special Series of Didactic Lectures upon *Uterine Displacements*.

THE COLLEGIATE YEAR consists of One Session, attendance upon which is required for graduation. The Session for 1881-2, begins October 3d and continues until May, with short vacations at Thanksgiving and at Christmas.

TUITION is by the following method:—

I. DIDACTIC LECTURES—During the Session from two to six lectures are given daily by the Faculty. Attendance obligatory.

II. CLINICAL TEACHING—Ten Clinics covering all departments of Medicine and Surgery, are held weekly throughout the entire year in the College Building. In addition, the Faculty give daily clinics at the larger City Hospitals and Dispensaries (such as the Bellevue, Charity, New York and Roosevelt Hospitals, the New York Eye and Ear Infirmary, The Woman's Hospital, etc.) as a regular feature of the College curriculum. Attendance optional.

III. RECITATIONS are held daily. Attendance optional.

IV. PERSONAL INSTRUCTION—Cases of *Obstetrics* are furnished without charge. Personal instruction is given in *Practical Anatomy, Experimental Physiology, Operative Surgery, Minor Surgery, Physical Diagnosis, Opthalmology, Otology, Laryngoscopy, in Normal and Pathological Histology, and the examination of the Urine*. Attendance optional, except upon Practical Anatomy.

EXPENSES—The *necessary* expenses are a yearly matriculation fee ($5), the fees for the lectures of the Session $20 for the course on each branch, or $140 for the entire curriculum), the Practical Anatomy fee ($10, and a small charge for material), and a Graduation Fee of $30. The GRADUATING COURSE requires three years' study, with a preceptor (including the time spent in attendance at the College), attendance upon two full courses of lectures and upon one course of Practical Anatomy. Remissions and reductions of lecture fees are made to graduates and students who have already attended two full courses. *All fees are payable in advance*. Board can be had for from $5 to $9 a week, and the Clerk of the College will aid students in obtaining it.

For the Annual Catalogue and Announcement, or for further information, address JOHN G. CURTIS, M. D., Secretary of the Faculty, College of Physicians and Surgeons, corner of Twenty-Third Street and Fourth Avenue, New York.

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Each dose of two teaspoonsful, equal to 120 drops contains:

Pure Oil	80 *m.* (drops.)	Soda	1-3 Grains.
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DOSE.—Two teaspoonsful alone, or mixed with twice the quantity of soft water, to be taken thrice daily with meals.

The principles upon which this discovery is based have been described in a Treatise on "THE DIGESTION AND ASSIMILATION OF FATS IN THE HUMAN BODY," by H. C. BARTLETT, Ph. D., F. C. S., and the experiments which were made, together with cases illustrating the effect of Hydrated Oil in practice, are concisely stated in a Treatise on "CONSUMPTION AND WASTING DISEASES," by G. OVEREND DREWRY, M. D.

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Kidder & Laird. San Francisco, Cal., July 1st, 1878
Gentlemen :—We find it very satisfactory, and will always purchase your brand hereafter. Yours, etc.,
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Kidder & Laird. Bridgeport, Conn., July 15th, 1878.
Gentlemen :—The physicians have used it in prescriptions, and think it a valuable preparation, and as good as they ever saw, and will give it the preference in their practice. We have been using Hawley's for the last five or six years. Yours, etc., W. & E. SHELTON.

Kidder & Laird, Willington, Conn., Sept 29th, 1877.
Gents :—Your elegant preparation of Pepsine has been received. I think it superior to any that I have ever used in my practice. Yours, etc. W. L. KELSEY, M. D.

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Gentlemen :—I find Kidder's Saccharated Pepsine a fine article and very effective in conjunction with other treatmentsi n cases of cholera Infantum; would recommend it highly in such cases. Yours, etc.,
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Kidder & Laird. Millstadt, Ill., June 25th, 1878.
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Kidder & Laird. Stanton, Ill., July 30th, 1878.
Gentlemen :—Please send me one pound of Kidder's Saccharated Pepsine. This makes two and three-quarter pounds. I have used it mostly in prescriptions, and prescribed it in my practice, and find it a reliable article.
Yours, etc., GEO. RILEY, M. D.

Kidder & Laird. Stone Creek, Ill., June 15th, 1876.
Gentlemen : I gave forty grains in ten grain doses and it acted like a charm ; shall use no other. Yours, etc.,
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Kidder & Laisd. Wellington, Ill., March 2d, 1878.
Gentlemen :—I shall be glad to avail myself of another supply when needed. I have tested it, and find it fully up to your representations. Yours respectfully,
DANIEL WESTON.

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Kidder & Laird. Galveston, Ind., July 8th, 1878.
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Gentlemen :—Have given Kidder's Saccharated Pepsine in a number of cases of dyspepsia; also given it to the physicians in this locality, who were well pleased with the superior quality of it. Yours, etc.,
S. J. HILLMAN, M. D.

Kidder & Laird. Sullivan, Ind., July 11th, 1878.
Gentlemen :—I have prescribed your Saccharated Pepsine, and recommended it to several physicians, who have used it and pronounce it a first-class article
Respectfully yours, H. MALOTT, M. D.

Kidder & Laird. Waterman, Ind., July 19th, 1878.
Gentlemen :—I have ascertained from three doctors in my neighborhood that your Kidder's Saccharated Pepsine is a better article than some of the more expensive preparations. Yours, etc, OLIVER LA TOURETTE.

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Kidder & Laird. Delhi, Richland Parish, Mar. 20th, 1878.
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Yours very respectfully, E. W. THOMSON.

Kidder & Laird. Mansfield, La., Jan. 31st, 1878.
Gents :—I know it to be an excellent remedy, and shall in future keep it always on hand, both for my practice and myself. Yours respectfully. R. T. GIBBS, M. D.

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Kidder & Laird. Annanolis, June 20th, 1878.
Gentlemen :—Since the reception of your sample of Kidder's Saccharated Pepsine we have used no other. We consider it a first-class preparation. We have never heard anything to the contrary. We shall continue to dispense it unless well founded objections are made, which we do not fear. We purchase from Messrs. Thomson & Muth.
Yours etc., J. F. PERKINS & BRO.

Kidder & Laird, Baltimore, June 19th, 1878
Gentlemen :—I am using Kidder's Saccharted Pepsine with a great deal of satisfaction. I tested it with Scheffer's and could not detect the least difference, and, in consequence, have had a number of pounds of yours, purchased from Thomson & Muth. Yonrs, etc.,
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Kidder & Laird, Baltimore, June 19th, 1878.
Gentlemen :—Your Kidder's Saccharated Pepsine appears to be all you claim for it. I have not bought a grain elsewhere since I commenced using yours.
Yours, etc., C. A. GOSNELL.

Kidder & Laird, Baltimore, Md., June 20th, 1878.
Gentlemen :—Your Kidder's Saccharated Pepsine has given good satisfaction. It is all you claim for it. Will hereafter use none but Kidder's. Yours, etc.,
A. C. HUTHWELKER.

Kidder & Laird. 181 Lexington St., Baltimore, Md.
Gentlemen :—I have used Kidder's Saccharated Pepsine for the past year with entire satisfaction. I use no other except specially prescribed. I obtain my supply from Messrs. W. H. Brown & Bro., or Messrs. Thomson & Muth, Baltimore. Yours, etc., H. C. MOORE, M. D.

Kidder & Laird. Baltimore, June 21st 1878.
Gentlemen :—I have used Kidder's Saccharated Pepsine alongside Scheffer's, Boudault's and others, as ordered and have no reason to believe yours below the standard.
Yours, etc., JOHN SCHWARTZ.

Kidder & Laird. Cumberland, Md., Jan. 21st, 1878.
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Cosmoline (Unguentum Petrolei) melts at about 100° Fah (38° Cent.); and boils at about 625° Fah. (329° Cent.); its specific gravity is about 0.875 at 60° Fah.

As it contains no oxydizable or organic matter capable of change by putrefaction or fermentation, and is absolutely without affinity for moisture, it offers to the profession an admirable unguent, which can never decompose, ferment, or become rancid in any climate or temperature.

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291 MADISON AVENUE, NEW YORK, February 26, 1878.

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Emeritus Professor of Clinical Surgery in the University of New York,
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218 SOUTH SIXTEENTH ST., PHILADELPHIA, July 7, 1880.

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Very respectfully yours,

FRANK WOODBURY, M. D.
Physician to German Hospital.

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I have for a number of years made extensive use of Cosmoline (Unguentum Petrolei) and consider it a most valuable article for surgical purposes. Either as a dressing by itself or as a vehicle for the application of medicaments, it is greatly superior to lard or other fatty matters, especially by reason of its non-liability to change by time or temperature.

Yours truly, JOHN H. PACKARD, M. D.

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SEVENTY-FIFTH SESSION, 1881-2.

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WILLARD PARKER, M. D., Emeritus Professor of the Principles and Practice of Surgery.
JOHN C. DALTON, M. D., Professor of Physiology and Hygiene.
THOMAS M. MARKOE, M. D., Professor of Surgery.
T. GAILLARD THOMAS, M. D., Emeritus Professor of Obstetrics and the Diseases of Women and Children.
JOHN T. METCALF, M. D., Emeritus Professor of Clinical Medicine.
HENRY B. SANDS, M. D., Professor of the Practice of Surgery.
JAMES W. McLANE, M. D., Professor of Obstetrics, of Gynæcology, and of the Diseases of Children.
THOMAS T. SABINE, M. D., Professor of Anatomy.
CHARLES F. CHANDLER, Ph. D., Professor of Chemistry and Medical Jurisprudence.
EDWARD CURTIS, M. D., Professor of Materia Medica and Therapeutics.
FRANCIS DELAFIELD, M. D., Adjunct Professor of Pathology and Practical Medicine.
JOHN G. CURTIS, M. D., Adjunct Professor of Physiology and Hygiene; Secretary of the Faculty.
WM. DETMOLD, M. D., Emeritus Professor of Military and Clinical Surgery.
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Prof. THOMAS will deliver a Special Series of Didactic Lectures upon *Uterine Displacements.*

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which has proven its superiority over other Pepsins by its greater strength, by its stability and uniformity, and by its almost entire tastelessness.

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One Crust, new method, in air-tight Glass Capsule, prepared for immediate use	2 00

Also **Humanized Virus**, from HEALTHY CHILDREN, procured for us by physicians of undoubted reliability.

One Crust from Unruptured Vesicles (one remove from heifer if preferred) $2 00

We will give a fresh supply, in case of failure reported within twenty days for Points, thirty days for Human, and ninety days for Kine Crusts.

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Maltine in Pulmonary Phthisis.

The great value of MALTINE in all wasting diseases, and especially in Pulmonary affections, is becoming more and more apparent to the Medical Profession.

Since we issued our pamphlet on MALTINE one year ago, we have received nearly one thousand commendatory letters from the Medical Profession from most parts of the world, a large portion of which speak enthusiastically of it in Pulmonary affections.

Any Physician who will test MALTINE, Plain, in comparison with Cod Liver Oil, in a case of Pulmonary Phthisic, will find that it will increase weight and build up the system far more rapidly. There are, however, many cases when the compounds with Hypophosphites, Phosphates, Peptones, Matto-Yerbine, and Pepsin and Pancreatine are strongly indicated.

After full trial of the different Oils and Extract of Malt preparations, in both hospital and private practice, I find MALTINE most applicable to the largest number of patients, and superior to any remedy of its class. Theoretically, we would expect this preparation, which has become *practically officinal*, to be of great value in chronic conditions of waste and mal-nutrition, especially as exemplified in phthisis. Being rich in Diatase, Albuminoids and Phosphates, according to carefnl analysis, it aids in digesting farinaceous food, while in itself it is a brain, nerve and muscle producer. WM. PORTER, A. M., M. D., *St. Louis, Mo.*

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123 LANDSDOWNE ROAD, NOTTING HILL, W., LONDON, October 16th, 1880.

I have used MALTINE with Cod Liver Oil with the happiest results in a case of tuberculosis attended with tubercular peritonitis, in which the temperature of the patient rose to 105 1-5° and persistently remained above 100°for upwards of two months. The only medicine taken was MALTINE with Cod Liver Oil, and an occasional dose of Carbonate of Bismuth to check diarrhœa. She gradually improved and made a perfect recovery. I find MALTINE with Cod Liver Oil is more readily taken and more easily assimilated than Cod Liver Oil in any other form

EDMUND NASH, M. D.

BRIDGE HOUSE, REVESBY, BOSTON, LINCOLNSHIRE

The trial of your MALTINE I made in the case of a lady suffering from phthisis pulmonalis has been most satisfactory. Her left lung had been in the last stage of disease for some time, and her temperature had ranged for many months between 101° and 104°. After taking the MALTINE for a few days the temperature came down to 100°, and to-day it stands below 99° which makes me feel sanguine that the disease is checked. THOMAS HUNTER, L. R. C P.

KENSINGTON DISPENSARY, LONDON, Nov. 24th, 1879.

We are using your MALTINE among our patients, and find *great benefit* from it, especially in cases of phthisis. DR. CHIPPENDALE, *Resident Medical Officer.*

PROF. L. P. YANDELL, in *Louisville Medical News, Jan. 3rd*, 1880:—MALTINE is one of the most valuable remedies ever introduced to the Medical Profession. Wherever a constructive is indicated, MALTINE will be found excellent. In pulmonary phthisis and other scrofulous diseases, in chronic syphilis, and in the various cachectic conditions, it is invaluable.

ADRIAN, Mich., Feb. 16ih, 1880.

I have used your MALTINE preparations in my practice for the past year and consider them far superior to the Extract of Malt. I have used your Malto-Yerbine in my own case of severe bronchitis that has troubled me for the past five years. It has done me more good than anything I have ever tried. J. TRIPP, M. D.

LEIGHTON, Ala., Feb. 18th, 1880.

I am more pleased with your MALTINE preparations every day that I use them. I don't know how I could dispense with them in some cases I have under my care at this time. In one case especially, the MALTINE with Cod Liver Oil has had a most marked effect, agreeing with the patient's stomach, without the least trouble, after other preparations of Cod Liver Oil had been tried in vain. J. M. KUMPE, M. D.

NEW RICHMOND, Wis., Aug. 14th, 1880,

After having given several of your elegant MALTINE preparations thorough trial, I have found none of them to disappoint me. I consider it invaluable and as indispensable to the profession as opium or quinine. F. W. EPLEY, M. D.

During The Past Year

We placed Maltine and several of its compounds in the hands of one hundred leading Physicians of the United States, Europe, Australia and India with a request that they thoroughly test it in comparison with other remedies which are generally used as constructives in Pulmonary Phthisis and other wasting diseases.

From the tone of the seventy reports already received, fifteen of which are upon comparative tests with the principal Extracts of Malt in the market, we are fully justified in making the following claims, viz:

FIRST:—That Maltine (Plain) increases weight and strength far more rapidly than Cod Liver Oil or other nutritive agents.

SECOND:—That Maltine with Peptones, and Maltine with Pepsin and Pancreatine rapidly correct imperfect digestion and mal-nutrition in wasting diseases.

THIRD:—That Maltine is the most important constructive agent now known to the Medical Profession in Pulmonary Phthisis.

FOURTH:—That Maltine causes an increase in weight and strength one and a half to three times greater than any of the Extracts of Malt.*

LIST OF MALTINE PREPARATIONS.

MALTINE—Plain.
MALTINE with Hops.
MALTINE with Alteratives.
MALTINE with Beef and Iron.
MALTINE with Cod Liver Oil.
MALTINE with Cod Liver Oil and Iodide of Iron.
MALTINE with Cod Liver Oil and Pancreatine.
MALTINE with Cod Liver Oil and Phosphates.
MALTINE with Cod Liver Oil and Phosporus.
MALTINE with Hypophosphites.
MALTINE with Iodides.
MALTINE with Peptones.
MALTINE with Pepsin and Pancreatine.
MALTINE with Phosphates.
MALTINE with Phosphates Iron and Quinia.
MALTINE with Phosphate Iron, Quinia and Strychnia.
MALTINE Ferrated.
MALTINE WINE.
MALTINE WINE with Pepsin and Pancreatine.
MALTO-YERBINE.
MALTINE with Petroleum.

*MALTINE is a concentrated extract of malted Barley, Wheat and Oats. In its preparation we employ not to exceed 150 deg. Fahr., thereby retaining all the nutritive and digestive agent unimpaired. Extracts of Malt are made from Barley alone, by the German process which directs that the mash be heated to 212 deg. Fahr., thereby coagulating the Albuminoids and almost wholly destroying the starch digestive principle, Diastase.

We will send gratuitously a 1st bottle of any of the above preparations upon payment of the expressage.

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COMPRESSED

Soluble Hypodermic Tablets.

We have recently given much attention to the preparation of Soluble Compressed Tablets to be used in hypodermic medication. This idea was brought to the notice of the medical profession by H. Augustus Wilson, M. D., of this city, in a paper read before the Philadelphia County Medical Society. His views were based upon carefully made experiments, and were received with much interest. At his instance, we undertook to prepare in this manner a number of combinations, which have upon trial proved eminently satisfactory. We therefore feel warranted in offering these articles to the profession as superior in several respects to all other forms for hypodermic purposes.

An extensive experience of many years in the manufacture of compressed powders (or pills), and the precision and accuracy of our mechanical appliances, enable us to make these articles with a degree of perfection, not attainable in any other way, or by any other process. The exact amount specified of each drug is thoroughly incorporated and distributed throughout every tablet. In water, at ordinary temperatures, a perfect solution may be made in from thirty to sixty seconds.

No extraneous material is employed, except the Sodium Sulphate, and this only in such proportions as to facilitate solution.

CAUTION—The dose of Morphia for hypodermic use varies from 1-12 to ¼ grain. We would suggest to the profession the necessity for caution. The large doses sometimes recommended—½, ¾ and even 1 grain—are unsafe for the first trial, unless the conditions requiring the injection be exceptional. *In commencing, it should not exceed one-third of that ordinarily administered internally.*

DIRECTIONS— The syringe is charged with about twenty minims of water, which is poured into a teaspoon or other convenient receptacle; the pellet being dropped in, is crushed with the end of the syringe, to which the needle fits, and after all the lumps are broken the solution is drawn up and forced out three or four times, when usually the whole mass will be entirely dissolved and ready for use.

If warm water be used or the spoon be heated over a lamp or gas jet, a perfect solution is effected in a moment. The tablets may be readily powdered with the blade of a knife, and a solution is even more speedily made in this way.

The following formulæ and combinations embrace all those in general request. Others will be added as the demands of the profession warrant their manufacture.

We claim for our Hypodermic Tablets:

Absolute accuracy of dose.
Ready and entire solubility,
Perfect preservation of the drug.

Their convenience and utility will at once be apparent on examination.

PER CASE OF 10 TUBES OR 200 TABLETS.

No. 1	Morphiæ Sulphuas 1-2 grain. Sodæ Sulphas 1-4 grain.	$3 00	No. 10	Morphiæ Sulphas 1-6 grain. Atropiæ Sulphas 1-180 grain. Sodæ Sulphas 1-4 grain.	$2 50
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These Tablets can be sent by Mail.

Physicians when ordering, will please enclose the proper amount, specifying the numbers as above.

JOHN WYETH & BROTHER,

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Grimault & Co. Quinquina Ferruginous Wine.

The preparations of Iron are not always well borne by the stomach. In order to obvitae such intolerance, it becomes necessary to combine them with Quinquina, but such a combination can only be usefully accomplished under two essential conditions: The first consists in depriving the Quinquina of all astringent principles which it contains and only preserving its tonic properties; the second, in choosing such a preparation of Iron not incompatible with the alkaloids of Quinquina. The Pyrophosphate of Iron and Soda is the only preparation which has the advantage of forming with the tonic principles of Quinquina, an irreproachable combination. It is the principal ingredient of the VIN DE QUINQUINA A FERRUGINEUX DE GRIMAULT ET CIE., which is a great deal superior to any other or similar preparation in its therapeutic virtues, as well as its clearness and agreeable taste, as it has been demonstrated by the majority of the physicians of Paris during the last twenty years.

The VIN DE QUINQUINA FERRUGINEUX DE GRIMAULT ET CIE. must be taken half an hour before each meal in the dose of a table spoonful for a grown person, and a desert spoonful for children.

Depot à Paris—8 rue Vivienne.

Pepsic Peptones, with the Beef Meat

OF CHAPOTEAUT, PHARMACIST, OF THE FACULTY OF PARIS.

These Peptones are very pure and prepared with great care, with the pure beef meat well digested and rendered assimilable by the gastric pepsin; before leaving our laboratories they are brought to their extreme state of concentration, that is, at 33 p. 100; they are rich in alimentary principles, and cause a rapid increase in nutrition in the whole organism. They are quite different from the other Peptones sold in the market, which are prepared with the pancreas of hog, and have a very disgusting smell and disagreeable taste, susceptible of fermentation and putrefaction, and containing some foreign matters and very little peptonized meat from 8 to 13 p. 100.

The following preparations were found to be the best to facilitate the use of pepsic peptones, and they may answer to all therapeutical indications:

Chapoteaut's Preserve.

This preserve is neutral and aromatic; it keeps well; it acquires the consistency of jelly at the temperature of 15° C., and melts at 35°. A tea spoonful represents double of its weight of beef meat. It may be taken either pure, or mixed with *bouillon*, with sweetened sugar, cakes, grapes. It may also be administered as an enema.

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This wine contains for each wine glass full 10 grammes of beef meat. It has a very agreeable taste, is an excellent nourishment, and well likod by the patients. The dose is of one or two wine glass fulls before meals.

PRINCIPAL INDICATIONS—Anæmia, Dyspepsia, Cachexia, General Debility, Atony of the Stomach and Bowels, Convalescences, Alimentation of wet nurses, of children, of old men, and of diabetic and phthisical people.

Syrop of Iodined Horse Radish,

PREPARED COLD BY GRIMAULT.

It is a good combination of Iodine with the juices of the antiscorbutic plants, water cresses, horse radish, cochlearia, and water trefoil. The inocuonsness of this preparation on the stomach and bowels makes it preferable to those mixtures with iodide of potassium and iron, and is a very useful medicine for children, in the lymphatic cachexia and phthisis. The syrup of horse radish with iodine is used in Paris as a substitute for cod liver oil; it never causes any accident of intolerance. Each table spoonful represents 5½ centigrams of iodine. The daily dose for childreu is 1 table spoonful twice a day, morning and evening; for grown persons is from 2 to 4 tablespoonfuls a day. Depot No 8 Viviene street, Paris. For sale in all drug stores

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DELERAS, DRUGGIST and DOCTOR in SCIENCES.

1st. Solution and syrup containing 20 centigrams of the salt of iron in each tablespoonful.

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3d. They do not cause constipation, on account of a small quantity of sulphate of soda, which is produced during the preparation of this salt, without causing any influence on the savour of the medicament.

4th. They combine iron with phosphoric acid, the two principal elements of the bones and blood—a circumstance, which is of a great influence on digestion and respiration.

5th. The salt is not precipitated by the gastric juice, consequently it is immediately digested and assimulated and always well borne by the most delicate persons, whose stomachs cannot tolerate other ferruginous preparations.

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OF

LACTO-PHOSPHATE of LIME,

AN ALIMENT AS WELL AS A MEDICAMENT,

The properties of which are scientifically founded on physicological experiments, has now received the sanctiou of several years' successful trial by the British medical profession as producing durable reconstituent effects IN ALL CASES OF CACHEXIA OR ADYNAMIA, when nutrition has been impaired by acute or chronic complaints.

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As an article of diet it acts as a general excitant of all the nutritive functions, ensures digestion, brings back or increases the appetite, enriches the milk of the mother, and generally improves the vital energies. As a medicament it is chiefly used in convalescence, teething, rickets, and imperfect growth, dyspepsia, various nervous diseases, wounds, fractures, and all complaints of the osseous system.

DUSART'S SYRUP of LACTO-PHOSPHATE of LIME and IRON is a ferruginous medicament specially invaluable for the above cases when complicated with anæmia.

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The essential Oil of Santal is employed with success in the place of Copaiba and Cubebs. It is harmless even if taken in large doses. At the end of 48 hours a completo relief is felt by the patients, the running being soon reduced to a simple serous secretion.

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The Santal of Midy is prepared in small round, transparent capsules, it is chemically pure, and obtained by or from the distillation of Citrine Santal of Bombay.

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TO PHYSICIANS.

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FORMULA.—Listerine is the *essential Antiseptic* constituent of Thyme, Eucalyptus, Baptisia, Gaultheria and Mentha Arvensis in combination. Each *fluid drachm* also contains *two* grains of *refined* and *purified* Benzo-Boracic Acid.

DOSE. One teaspoonful *three* or *more* times a day (as indicated). As a local application to ulcers, wounds and abscesses, or as a gargle, mouth-wash, inhalant or injection, it can be used *ad libitum*, diluted as desired.

LISTERINE is a *Powerful, Safe* and *Pleasant* Antiseptic. The beneficial results following its use in Phthisis, Diptheria, Catarrh, Dysentery, Scarlatina, Erysipelas, Small Pox, Typhoid and Malarial Fevers, etc., proves it to be a Restorative Antiseptic of the very highest order of merit. It is the most efficient agent to disinfect the hands after surgical or gynecological operations, and is *the best* injection in Leucorrhœa, Gonorrhœa, etc., used in the proportion of two or three parts water and one part Listerine.

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THIS CELEBRATED BATTERY COMBINES BOTH THE GALVANIC AND FARADIC CURRENT

Which can be used separately or combined. Any strength and intensity desired can be obtained for use in Electro-therapeutics. THIS BATTERY is constructed on an IMPROVED PLAN, as follows: The zinc and carbon plates are arranged in couples, securely clamped to hard rubber plates with thumb screws. These screws are also used for binding posts. All the connections are positive. The cells are made in sections of six, of hard rubber, with hard rubber drip cup. The following points of excellence render our Batteries superior to others:

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To the Medical Profession.

CELERINA,

THE NERVE TONIC.

FORMULA: CELERINA is the *isolated*, active *nerve-toning* principle of Celery, Coca, and Viburnum, *Combined* in a pleasant *fluid* form.

DOSE: One or two teaspoonfuls *three* or *more* times a day, as indicated.

Each fluid drachm represents three and one-half grains each—Celery, Coca and Viburnum, combined with Aromatics.

CELERINA is *the* Nerve Tonic *sans pareil*. It *refreshes the tired brain*, and imparts tone and vigor to the entire nervous system; therefore, it is of the *utmost value* in Nervous Exhaustion, Sexual Debility, Paralysis, Dysmenorrhea, Spermatorrhea, Hysteria, Chorea, Weakness of old age, and *all* LANGUID conditions of the system.

☞In prostatitis or any irritation of the urethral canal, there is certainly no remedy that will give relief as quickly as Celerina.

☞It is the *only* remedy that gives satisfaction in the treatment of Impotency. This preparation possesses the peculiar property of *enhancing* the value of tonics, alteratives and constructives—better results are obtained from the preparations of malt, iron, and the usual tonics and alteratives when prescribed *in combination with* CELERINA.

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LITCHFIELD, ILL. CHARLES ZOLLER, M. D.

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We have received a large number of testimonials to the efficacy of these preparations, and will take pleasure in forwarding copies to all physicians who may apply for them.

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which has proven its superiority over other Pepsins by its greater strength, by its stability and uniformity, and by its almost entire tastelessness.

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which possesses eight times the digestive power of the Saccharated; particularly recommended to manufacturers.

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a very active and palatable medicine, being a solution of Saccharated Pepsin in acidulated water and glycerine.

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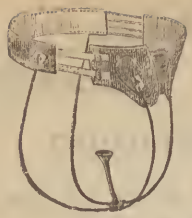

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Natural Uterine Supporter.

No instrument has ever been placed before the medical profession which has given such universal satisfaction. The combination is such that the Physician is able to meet every indication of Uterine Displacements. Falling Womb, Anteversion, Retroversion and Flexions are overcome by this instrument, where others fail; this is proven by the fact that since its introduction to the Profession it has come into more general use than all other instruments combined.

Among the many reasons which recommend this Supporter to the Physician is its self-adjusting qualities. The Physician after applying it need have no fear that he will be called in haste to remove or readjust it as is often the case with rings and various pessaries held in position by presure against the vaginal wall, as the patient can remove it at will and replace it without assistance.

The Abdominal Supporter is a broad morroco leather belt with elastic straps to buckle around the hips, with concave front so shaped as to hold up the abdomen. The Uterine Support is a cup and stem made of highly polished hard rubber, very light and durable shaped to fit the neck of the womb, with openings for the secretions to pass out, as shown by the cuts. Cups are made with extended lips to correct flexions and versions of the womb.

The cup and stem is suspended to the belt by two soft elastic Rubber Tubes, which are fastened to the front of the belt by simple loops, passed down through the stem of the cup and up to the back of the belt. These soft rubber tubes being elastic adapt themselves to all the varying positions of the body and perform the service of ligaments of the womb.

The instrument is very comfortable to the patient, can be removed or replaced by her at will, can be worn at all times, will not interfere with nature's necessities, will not corrode, and is lighter than metal. It will answer for all cases of Anteversion, Retroversions, or any Flexions of the Womb, and is used by the leading Physicians with never failing success even in the most difficult cases.

Price—to Physicians $8.00; to Patients, $12.00.

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It cannot be injured by exhaustion of water, or any attainable pressure, and will last for many years.

It does not throw spirts of hot water; is convenient, durable, portable, compact, and cheap, in the best sense of the word. Price, $5 00.

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Neatly made strong Black Walnut Box, with convenient handle, additional $2 50.

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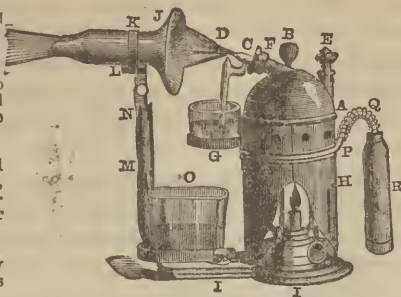

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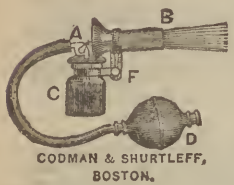

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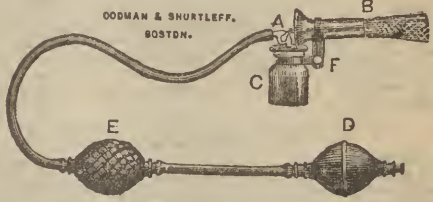

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Dr. Clark's Atomizer, postage 20 cents	3 00
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Atomizing Tubes in great variety	25 cents to 15 00

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Maltine in Pulmonary Phthisis.

The great value of MALTINE in all wasting diseases, and especially in Pulmonary affections, is becoming more and more apparent to the Medical Profession.

Since we issued our pamphlet on MALTINE one year ago, we have received nearly one thousand commendatory letters from the Medical Profession from most parts of the world, a large portion of which speak enthusiastically of it in Pulmonary affections.

Any Physician who will test MALTINE, Plain, in comparison with Cod Liver Oil, in a case of Pulmonary Phthisic, will find that it will increase weight and build up the system far more rapidly. There are, however, many cases when the compounds with Hypophosphites, Phosphates, Peptones, Matto-Yerbine, and Pepsin and Pancreatine are strongly indicated.

After full trial of the different Oils and Extract of Malt preparations, in both hospital and private practice, I find MALTINE most applicable to the largest number of patients, and superior to any remedy of its class. Theoretically, we would expect this preparation, which has become *practically officinal*, to be of great value in chronic conditions of waste and mal-nutrition, especially as exemplified in phthisis. Being rich in Diatase, Albuminoids and Phosphates, according to careful analysis, it aids in digesting farinaceous food, while in itself it is a brain, nerve and muscle producer.

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123 LANDSDOWNE ROAD, NOTTING HILL, W., LONDON, October 16th, 1880.

I have used MALTINE with Cod Liver Oil with the happiest results in a case of tuberculosis attended with tubercular peritonitis, in which the temperature of the patient rose to 105 1-5° and persistently remained above 100°for upwards of two months. The only medicine taken was MALTINE with Cod Liver Oil, and an occasional dose of Carbonate of Bismuth to check diarrhœa. She gradually improved and made a perfect recovery. I find MALTINE with Cod Liver Oil is more readily taken and more easily assimilated than Cod Liver Oil in any other form

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The trial of your MALTINE I made in the case of a lady suffering from phthisis pulmonalis has been most satisfactory. Her left lung had been in the last stage of disease for some time, and her temperature had ranged for many months between 101° and 104°. After taking the MALTINE for a few days the temperature came down to 100°, and to-day it stands below 99° which makes me feel sanguine that the disease is checked.

THOMAS HUNTER, L. R. C. P.

KENSINGTON DISPENSARY, LONDON, Nov. 24th, 1879.

We are using your MALTINE among our patients, and find *great benefit* from it, especially in cases of phthisis.

DR. CHIPPENDALE, *Resident Medical Officer.*

PROF. L. P. YANDELL, in *Louisville Medical News, Jan. 3rd*, 1880:—MALTINE is one of the most valuable remedies ever introduced to the Medical Profession. Wherever a constructive is indicated, MALTINE will be found excellent. In pulmonary phthisis and other scrofulous diseases, in chronic syphilis, and in the various cachectic conditions, it is invaluable.

ADRIAN, Mich., Feb. 16th, 1880.

I have used your MALTINE preparations in my practice for the past year and consider them far superior to the Extract of Malt. I have used your Malto-Yerbine in my own case of severe bronchitis that has troubled me for the past five years. It has done me more good than anything I have ever tried.

J. TRIPP, M. D.

LEIGHTON, Ala., Feb. 18th, 1880.

I am more pleased with your MALTINE preparations every day that I use them. I don't know how I could dispense with them in some cases I have under my care at this time. In one case especially, the MALTINE with Cod Liver Oil has had a most marked effect, agreeing with the patient's stomach, without the least trouble, after other preparations of Cod Liver Oil had been tried in vain.

J. M. KUMPE, M. D.

NEW RICHMOND, Wis., Aug. 14th, 1880,

After having given several of your elegant MALTINE preparations thorough trial, I have found none of them to disappoint me. I consider it invaluable and as indispensable to the profession as opium or quinine.

F. W. EPLEY, M. D.

During The Past Year

We placed Maltine and several of its compounds in the hands of one hundred leading Physicians of the United States, Europe, Australia and India with a request that they thoroughly test it in comparison with other remedies which are generally used as constructives in Pulmonary Phthisis and other wasting diseases.

From the tone of the seventy reports already received, fifteen of which are upon comparative tests with the principal Extracts of Malt in the market, we are fully justified in making the following claims, viz:

FIRST:—That Maltine (Plain) increases weight and strength far more rapidly than Cod Liver Oil or other nutritive agents.

SECOND:—That Maltine with Peptones, and Maltine with Pepsin and Pancreatine rapidly correct imperfect digestion and mal-nutrition in wasting diseases.

THIRD:—That Maltine is the most important constructive agent now known to the Medical Profession in Pulmonary Phthisis.

FOURTH:—That Maltine causes an increase in weight and strength one and a half to three times greater than any of the Extracts of Malt.*

LIST OF MALTINE PREPARATIONS.

MALTINE—Plain.
MALTINE with Hops.
MALTINE with Alteratives.
MALTINE with Beef and Iron.
MALTINE with Cod Liver Oil.
MALTINE with Cod Liver Oil and Iodide of Iron.
MALTINE with Cod Liver Oil and Pancreatine.
MALTINE with Cod Liver Oil and Phosphates.
MALTINE with Cod Liver Oil and Phosporus.
MALTINE with Hypophosphites.
MALTINE with Iodides.
MALTINE with Peptones.
MALTINE with Pepsin and Pancreatine.
MALTINE with Phosphates.
MALTINE with Phosphates Iron and Quinia.
MALTINE with Phosphate Iron Quinia and Strychnia.
MALTINE Ferrated.
MALTINE WINE.
MALTINE WINE with Pepsin and Pancreatine.
MALTO-YERBINE.
MALTINE with Petroleum.

*MALTINE is a concentrated extract of malted Barley, Wheat and Oats. In its preparation we employ not to exceed 150 deg. Fahr., thereby retaining all the nutritive and digestive agent unimpaired. Extracts of Malt are made from Barley alone, by the German process which directs that the mash be heated to 212 deg. Fahr., thereby coagulating the Albuminoids and almost wholly destroying the starch digestive principle, Diastase.

We will send gratuitously a 1st bottle of any of the above preparations upon payment of the expressage.

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Soluble Hypodermic Tablets.

We have recently given much attention to the preparation of Soluble Compressed Tablets to be used in hypodermic medication. This idea was brought to the notice of the medical profession by H. Augustus Wilson, M. D., of this city, in a paper read before the Philadelphia County Medical Society. His views were based upon carefully made experiments, and were received with much interest. At his instance, we undertook to prepare in this manner a number of combinations, which have upon trial proved eminently satisfactory. We therefore feel warranted in offering these articles to the profession as superior in several respects to all other forms for hypodermic purposes.

An extensive experience of many years in the manufacture of compressed powders (or pills), and the precision and accuracy of our mechanical appliances, enable us to make these articles with a degree of perfection, not attainable in any other way, or by any other process. The exact amount specified of each drug is thoroughly incorporated and distributed throughout every tablet. In water, at ordinary temperatures, a perfect solution may be made in from thirty to sixty seconds.

No extraneous material is employed, except the Sodium Sulphate, and this only in such proportions as to facilitate solution.

CAUTION—The dose of Morphia for hypodermic use varies from 1-12 to ½ grain. We would suggest to the profession the necessity for caution. The large doses sometimes recommended—⅓, ½ and even 1 grain—are unsafe for the first trial, unless the conditions requiring the injection be exceptional, *In commencing, it should not exceed one-third of that ordinarily administered internally.*

DIRECTIONS— The syringe is charged with about twenty minims of water, which is poured into a teaspoon or other convenient receptacle; the pellet being dropped in, is crushed with the end of the syringe, to which the needle fits, and after all the lumps are broken the solution is drawn up and forced out three or four times, when usually the whole mass will be entirely dissolved and ready for use.

If warm water be used or the spoon be heated over a lamp or gas jet, a perfect solution is effected in a moment. The tablets may be readily powdered with the blade of a knife, and a solution is even more speedily made in this way.

The following formulæ and combinations embrace all those in general request. Others will be added as the demands of the profession warrant their manufacture.

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Absolute accuracy of dose.
Ready and entire solubility,
Perfect preservation of the drug.

Their convenience and utility will at once be apparent on examination.

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Physicians when ordering, will please enclose the proper amount, specifying the numbers as above.

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JOHN C. DRAPER, M.D., LL.D, Professor of Chemistry.
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J. WILLISTON WRIGHT, M.D., Prof. of Surgery.
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FANEUIL D. WEISSE, M.D., Professor of Practical and Surgical Anatomy.
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D. B. ST. JOHN ROOSA, M.D., Professor of Opthalmology.
WILLIAM A. HAMMOND, M.D., Surgeon General, U. S. A. (Retired); Professor of Diseases of the Mind and Nervous System.
STEPHEN SMITH, M.D., Professor of Orthopædic Surgery.
J. W. S. GOULEY, M.D., Professor of Diseases of the Genito-Urinary System.
MONTROSE A. PALLEN, M.D., LL.D., Professor of Gynæcology.
HENRY G. PIFFARD, M.D., Professor of Dermatology.
A. E. MACDONALD, L.L.B., M.D., Professor of Medical Jurisprudence.
JAMES L. LITTLE, M.D., Professor of Clinical Surgery.
FREDERICK R. STURGIS, M.D., Professor of Venereal Diseases.

THE COLLEGIATE YEAR is divided into three Sessions—a Preliminary Session, a Regular Winter Session, and a Spring Session.

THE PRELIMINARY SESSION will commence September 21, 1881, and will continue until the opening of the Regular Winter Session. It will be conducted on the plan of that Session.

THE REGULAR WINTER SESSION will commence October 5, 1881, and end about the first of March, 1882.

The location of the new college edifice being immediately opposite the gate of Bellevue Hospital, and a few steps from the ferry to Charity Hospital, Blackwell's Island, the students of the University Medical College are enabled to enjoy the advantages afforded by these Hospitals with the least possible loss of time. The Professors of the practical Chair are connected with the Hospitals, and the University Students are admitted to *all the Clinics* given therein *free of charge.*

In addition to the daily Hospital Clinics there are eight Clinics each week in the College Building. Five Didactic Lectures will be given daily in the College Building, and Evening Recitations will be conducted by the Professors of Chemistry, Practice, Anatomy, Materia Medica, etc., Physiology, Surgery, and Obstetrics, upon the subjects of their lectures.

THE SPRING SESSION embraces a period of ten weeks, beginning in the first week of March and ending the last week of May. The daily Clinics, Recitations, and Special Practical Courses will be the same as in the Winter Session, and there will be Lectures on Special Subjects by the members of the Faculty.

THE DISSECTING ROOM is open throughout the entire Collegiate Year. Material is abundant, and is furnished free of charge.

Students who have studied two years, and who have attended two full courses of lectures, may be admitted to examination in Chemistry, Anatomy, and Physiology; and if successful, will be examined at the expiration of their full course of study on Practice, Materia Medica, and Therapeutics, Surgery, and Obstetrics; but those who prefer it may have all their examinations at the close of the full term.

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For Course of Lectures	$140.00
Matriculation	5.00
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Graduation Fee	30.00

For further particulars and circulars, address the Dean,

Prof. CHARLES INSLEE PARDEE, M. D.,
University Medical College, 410 East 26th Street, New York.

JEFFERSON MEDICAL COLLEGE,

PHILADELPHIA.

The Fifty-seventh Session of the Jefferson Medical College will begin on Monday, October 3d, 1881, and will continue until the end of the third week of March, 1882. Preliminary Lectures will be held from Monday, 12th of September.

PROFESSORS:

JOSEPH PANCOAST, M. D.,
General, Descriptive and Surgical Anatomy, (Emeritus.)

S. D. GROSS, M. D., LL. D., D. C. L. Oxon.
Institutes and Practice of Surgery.

ELLERSLIE WALLACE, M. D.,
Obstetrics and Diseases of Women and Children.

J. M. DA COSTA, M. D.,
Practice of Medicine.

WM. H. PANCOAST, M. D.,
General, Descriptive and Surgical Anatomy.

ROBERT E. ROGERS M. D.,
Medical Chemistry and Toxicology.

ROBERTS BARTHOLOW, M. D.,
Materia Medica and General Therapeutics.

HENRY C. CHAPMAN, M. D.,
Institutes of Medicine and Medical Jurisprudence.

The enlargement of the College, now in progress, will enable the Faculty to perfect the present system of *Practical Laboratory Instruction*, in all the Departments. Rooms are assigned in which each Professor, with his Demonstrators, will instruct the Class, in Sections, in direct observation and hand-work in the Chemical, Pharmaceutical, Physiological and Pathological Laboratories. Operative and Minor Surgery, and investigation of Gynæcological and Obstetric conditions on the *Cadaver* will be taught, as also Diagnosis of Disease on the living subject.

This course of Instruction is *free of charge, but obligatory upon* candidates for the Degrees, except those who are Graduates of other Colleges.

A SPRING COURSE of Lectures is given, beginning early in April, and ending early in June. There is no additional charge for this Course to matriculates of the College, except a registration fee of five dollars; non-matriculates pay forty dollars, *thirty-five of which, however, are credited on the amount of fees paid for the ensuing Winter Course.*

CLINICAL INSTRUCTION is given *daily* at the HOSPITAL OF THE JEFFERSON MEDICAL COLLEGE throughout the year by members of the Faculty, and by the Hospital Staff, which is constituted as follows:

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S. W. GROSS, M. D.,
R. J. LEVIS, M. D.

Opthalmic Surgeons.

PROF. WILLIAM THOMSON, M. D,

Aural Surgeon,

L. TURNBULL, M. D.

Physicians.

J. SOLIS-COHEN, M. D.,
JAMES C. WILSON, M. D.,
OLIVER P. REX, M. D.,
W. W. VANVALVAH, M. D.

Gynæcologists.

F. H. GETCHELL, M. D.,
J. EWING MEARS, M. D.

Pathologist.

MORRIS LONGSTRETH, M. D.

FEES.

Matriculation Fee [paid once] - -	$ 5 00	Practical Anatomy	$10 00
Ticket of each Professor [7] $20 -	140 00	Graduation Fee	30 00

Fees for a full course of Lectures to those who have attended two full courses at other (recognized) Colleges—the matriculation fee, and.....$70 00
To Graduates of less than three years of such Colleges—the matriculation fee, and 50 00

The Annual Announcement giving full particulars will be sent on application to

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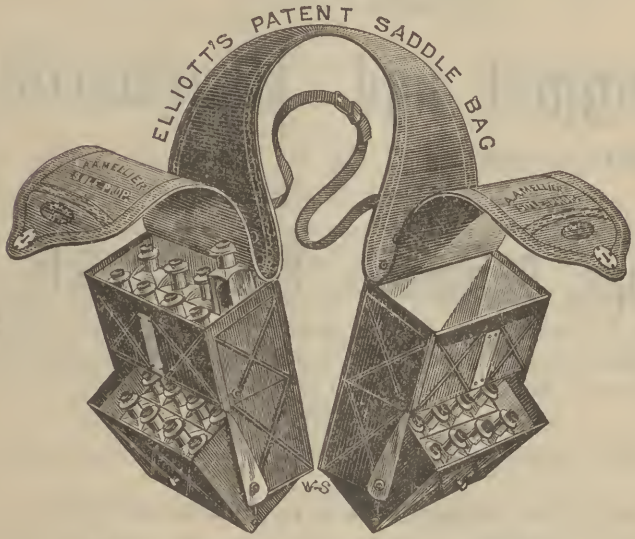

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Ex-President Medical Society of Virginia.

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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.

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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 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.

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COD LIVER OIL with LACTO-PHOSPHATE OF LIME;
COD LIVER OIL with SOLUBLE PHOSPHATE OF LIME;
COD LIVER OIL, FERRATED;
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NUTRITIVE ELIXIR, (Beef, Cognac and Bitter Orange) NUTRITIVE ELIXIR, FERRATED, designed as SUBSTITUTES FOR DUCROS' ELIXIR, at more moderate prices.

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SYRUP LACTO-PHOSPHATE IRON.
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SYRUP IRON, free from taste and acid.
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SYRUP LACTO-PHOS. LIME and IRON
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FLUID EXTRACT ERGOT prepared from the selected grains, and all fluid Extracts of STANDARD STRENGTH.

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FORMULA.—Listerine is the *essential Antiseptic* constituent of Thyme, Eucalyptus, Baptisia, Gaultheria, and Mentha Arvensis in combination. Each *fluid drachm* also contains *two* grains of *refined* and *purified* Benzo-Boracic Acid.

DOSE.—One teaspoonful *three* or *more* times a day (as indicated). As a local application to ulcers, wounds and abscesses, or as a gargle or mouth wash, it can be used *ad libitum*.

Listerine IS THE MOST POWERFUL Antiseptic and Restorative yet discovered. The extraordinary beneficial results following its use in Phthisis, Diphtheria, Dysentery, Scarlatina, Erysipelas, Small-Pox, Typhoid and Malarial Fevers, etc., proves it to be a Restorative Antiseptic of the highest order of merit, and deservedly popular with all Physicians who have used it in the treatment of Zymotic diseases.

It is especially attracting the attention of the profession as a remedy in the treatment of Phthisis, and as a surgical *antiseptic* dressing for wounds and abscesses, and as a local application *for the prevention* of Septicæmia during the parturient period. It is also the most efficient agent to disenfect the hands after surgical or gynecological operations, and for disinfecting sick rooms.

A few drops of Listerine on a tooth brush, and used after meals, completely disenfects the mouth, and removes all unpleasant odors.

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☞Listerine is *many times more* powerful than Carbolic Acid or any other *antiseptic* or *disinfectant*, and is comparatively harmless.

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BELLEVUE HOSPITAL MEDICAL COLLEGE.

CITY OF NEW YORK.

SESSION OF 1881-2.

At and after the Session of 1881-2, the College will return to its former requirements as regards fees and graduation, viz., those in force before the Session of 1880-1.

The COLLEGIATE YEAR in this Institution embraces the Regular Winter Session and a Spring Session. The REGULAR SESSION will begin on Wednesday, September 21, 1881, and end about the middle of March, 1882. During this Session, in addition to four didactic lectures on every week-day except Saturday, two or three hours are daily allotted to clinical instruction. Attendance upon two regular courses of lectures is required for graduation. The SPRING SESSION consists chiefly of recitations from Text-Books. This Session begins about the middle of March and continues until the middle of June. During this Session, daily recitations in all the departments are held by a corps of Examiners appointed by the Faculty. Short courses of lectures are given on special subjects, and regular clinics are held in the Hospital and in the College building.

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FORDYCE BARKER, M. D., LL. D.,
Prof. of Clinical Midwifery & Diseases of Women.

BENJAMIN W. McCREADY, M. D.,
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AUSTIN FLINT, M. D.,
Prof. of the Principles and Practice of Medicine, and Clinical Medicine.

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Prof. of Chemistry and Toxicology.

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JOSEPH W. HOWE, M. D.,
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BEVERLY ROBINSON, M. D.,
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Fees for Tickets to all the Lectures, Clinical and Didactic,	$140 00
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Matriculation Fee,	5 00
Dissection Fee (including material for dissection)	10 00
Graduation Fee	30 00

No Fees for Lectures are required of Graduates of three years' standing, or of third-course Students who have attended their second course at the Bellevue Hospital Medical College.

FEES FOR THE SPRING SESSION.

Matriculation (Ticket valid for the following Winter)	$ 5 00
Recitations, Clinics and Lectures,	35 00
Dissection (Ticket valid for the following Winter),	10 00

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FLUID AND SOLID EXTRACTS,

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PURE CHEMICALS, ELIXIRS, SYRUPS, DIALYSED IRON, ETC.,

SACCHARATED PEPSIN,

Prepared from the Stomach of the hog, *Uniform in Strength*, and *free from unpleasant odor and taste.* Ten grains of Saccharated Pepsin, dissolved in one ounce of water, with addition of ten drops of muriatic acid, will completely dissolve 150 grains of coagulated albumen, at a temperature of 100 to 150° F., in 4 to 6 hours.

We also prepare a full line of Perfectly Soluble

SUGAR COATED & GELATINE COATED PILLS,

Comprising all the officinal and other well-known favorite formulæ.

These PILLS are all Prepared with the Utmost Care, under our Immediate Supervision.

The DRUGS entering into their Composition are of the Best Quality.

The Quantities and Proportions are Invariably as Represented on the Labels

The Excipients to make the Masses are Carefully Chosen in each Case, to make the Pill Permanently Soluble in the Fluids of the Stomach and Bowels.

The Sugar Coating and Gelatine Coating will be found very Soluble, and not Excelled by any other in point of Beauty or Finish

Catalogues giving Composition, Doses, etc., of all our Preparations Mailed to Physicians by applying to us direct, or to our wholesale agent,

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AN EFFICIENT ANTIPERIODIC.

Costing less than one-sixth the price of Quinia.

The continued use of this Alkaloid and the Mixture by those who have become familiar with their merits induces us to call the attention of Physicians, who desire to use a cheap antiperiodic, to the articles.

We have received a large number of testimonials to the efficacy of these preparations, and will take pleasure in forwarding copies to all physicians who may apply for them.

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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.

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which possesses eight times the digestive power of the Saccharated; particularly recommended to manufacturers.

LIQUID PEPSIN,

a very active and palatable medicine, being a solution of Saccharated Pepsin in acidulated water and glycerine.

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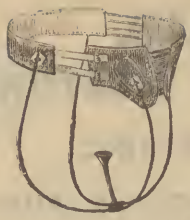

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Natural Uterine Supporter.

No instrument has ever been placed before the medical profession which has given such universal satisfaction. The combination is such that the Physician is able to meet every indication of Uterine Displacements. Falling Womb, Anteversion, Retroversion and Flexions are overcome by this instrument, where others fail; this is proven by the fact that since its introduction to the Profession it has come into more general use than all other instruments combined.

Among the many reasons which recommend this Supporter to the Physician is its self-adjusting qualities. The Physician after applying it need have no fear that he will be called in haste to remove or readjust it as is often the case with rings and various pessaries held in position by presure against the vaginal wall, as the patient can remove it at will and replace it without assistance.

The Abdominal Supporter is a broad morroco leather belt with elastic straps to buckle around the hips, with concave front so shaped as to hold up the abdomen. The Uterine Support is a cup and stem made of highly polished hard rubber, very light and durable, shaped to fit the neck of the womb, with openings for the secretions to pass out, as shown by the cuts. Cups are made with extended lips to correct flexions and versions of the womb.

The cup and stem is suspended to the belt by two soft elastic Rubber Tubes, which are fastened to the front of the belt by simple loops, passed down through the stem of the cup and up to the back of the belt. These soft rubber tubes being elastic adapt themselves to all the varying positions of the body and perform the service of ligaments of the womb.

The instrument is very comfortable to the patient, can be removed or replaced by her at will, can be worn at all times, will not interfere with nature's necessities, will not corrode, and is lighter than metal. It will answer for all cases of Anteversion, Retroversions, or any Flexions of the Womb, and is used by the leading Physicians with never failing success even in the most difficult cases.

Price—to Physicians $8.00; to Patients, $12.00.

Instruments sent by mail, at our risk, on receipt of Price, with 16 cents added for postage, or by Express, C. O. D.

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Our valuable pamphlet "Some Practical Facts about Displacements of the Womb," will be sent you free on application,

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We continue, as for several years, to supply **ANIMAL VIRUS** propagated at our own stables from lymph of the "Beaugency Stock," imported by ourselves expressly for this purpose. Results of experience enables us to recommend it as of unsurpassed excellence.

The establishment is under the care of a competent physician of long experience in this specialty, who will spare no pains to produce a perfectly RELIABLE and PURE article, which we are prepared at all times to furnish in FRESH and ACTIVE condition.

Our new method Kine Crusts will be found much superior to the ordinary form, though points are recommended as the most reliable form of virus attainable.

All our Virus is put up in strong, AIR-TIGHT, SEALED PACKAGES, for safe conveyance by mail or express, and will be sent (postpaid if by mail) upon the following terms:—

Fifteen large Ivory Points, well charged on both sides.....$2 00
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Large Ivory Points, less than seven, well charged on both sides, each..... 25
One Crust, new method, in air-tight Glass Capsule, prepared for immediate use..... 2 00

Also **Humanized Virus**, from HEALTHY CHILDREN, procured for us by physicians of undoubted reliability.

One Crust from Unruptured Vesicles (one remove from heifer if preferred).....$2 00

We will give a fresh supply, in case of failure reported within twenty days for Points, thirty days for Human, and ninety days for Kine Crusts.

Orders by mail or telegraph answered by return train.

Liberal discounts upon large supplies for Cities, Towns and Institutions.

Scarifying Vaccinator. Steel, Nickel Plated. (See Cut.) Each 25 cents.

New Illustrated Catalogue of Surgical Instruments postpaid, on request.

In writing us please name this journal.

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Makers and Importers of Surgical Instruments,

Nos. 13 & 15 TREMONT STREET, Boston, Mass.

N. B.—See our other advertisements in other numbers of this journal.

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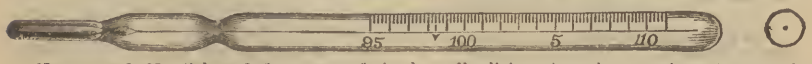

Nos. 2 and 95 Selected from one of the best English makers by one of our firm; made expressly for us; warranted accurate, thoroughly seasoned, and very superior. Straight; self-registering; contraction in stem, to prevent loss of index; graduated to one-fifth degree.

No. 95, in addition to the above, has patent lens front, causing the register to appear greatly magnified, so as to be easily read; having plano-convex cross section, it does not roll. Prices as follows:—

No 2. In German Silver or in Ebony Case, 3, 3½, 4 and 5 inches long, each.....$3 00
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Also, a full assortment of Surgical Instruments.

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See other advertisement above, and in writing please mention this journal.

Maltine in Pulmonary Phthisis.

The great value of MALTINE in all wasting diseases, and especially in Pulmonary affections, is becoming more and more apparent to the Medical Profession.

Since we issued our pamphlet on MALTINE one year ago, we have received nearly one thousand commendatory letters from the Medical Profession from most parts of the world, a large portion of which speak enthusiastically of it in Pulmonary affections.

Any Physician who will test MALTINE, Plain, in comparison with Cod Liver Oil, in a case of Pulmonary Phthisic, will find that it will increase weight and build up the system far more rapidly. There are, however, many cases when the compounds with Hypophosphites, Phosphates, Peptones, Matto-Yerbine, and Pepsin and Pancreatine are strongly indicated.

After full trial of the different Oils and Extract of Malt preparations, in both hospital and private practice, I find MALTINE most applicable to the largest number of patients, and superior to any remedy of its class. Theoretically, we would expect this preparation, which has become *practically officinal*, to be of great value in chronic conditions of waste and mal-nutrition, especially as exemplified in phthisis. Being rich in Diatase, Albuminoids and Phosphates, according to careful analysis, it aids in digesting farinaceous food, while in itself it is a brain, nerve and muscle producer.

WM. PORTER, A. M., M. D., *St. Louis, Mo.*

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123 LANSDOWNE ROAD, NOTTING HILL, W., LONDON, October 16th, 1880.

I have used MALTINE with Cod Liver Oil with the happiest results in a case of tuberculosis attended with tubercular peritonitis, in which the temperature of the patient rose to 105 1-5° and persistently remained above 100° for upwards of two months. The only medicine taken was MALTINE with Cod Liver Oil, and an occasional dose of Carbonate of Bismuth to check diarrhœa. She gradually improved and made a perfect recovery. I find MALTINE with Cod Liver Oil is more readily taken and more easily assimilated than Cod Liver Oil in any other form

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The trial of your MALTINE I made in the case of a lady suffering from phthisis pulmonalis has been most satisfactory. Her left lung had been in the last stage of disease for some time, and her temperature had ranged for many months between 101° and 104°. After taking the MALTINE for a few days the temperature came down to 100°, and to-day it stands below 99° which makes me feel sanguine that the disease is checked.

THOMAS HUNTER, L. R. C. P.

KENSINGTON DISPENSARY, LONDON, Nov. 24th, 1879.

We are using your MALTINE among our patients, and find *great benefit* from it, especially in cases of phthisis.

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PROF. L. P. YANDELL, in *Louisville Medical News, Jan. 3rd*, 1880:—MALTINE is one of the most valuable remedies ever introduced to the Medical Profession. Wherever a constructive is indicated, MALTINE will be found excellent. In pulmonary phthisis and other scrofulous diseases, in chronic syphilis, and in the various cachectic conditions, it is invaluable.

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I have used your MALTINE preparations in my practice for the past year and consider them far superior to the Extract of Malt. I have used your Malto-Yerbine in my own case of severe bronchitis that has troubled me for the past five years. It has done me more good than anything I have ever tried.

J. TRIPP, M. D.

LEIGHTON, Ala., Feb. 18th, 1880.

I am more pleased with your MALTINE preparations every day that I use them. I don't know how I could dispense with them in some cases I have under my care at this time. In one case especially, the MALTINE with Cod Liver Oil has had a most marked effect, agreeing with the patient's stomach, without the least trouble, after other preparations of Cod Liver Oil had been tried in vain.

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After having given several of your elegant MALTINE preparations thorough trial, I have found none of them to disappoint me. I consider it invaluable and as indispensable to the profession as opium or quinine.

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During The Past Year

We placed Maltine and several of its compounds in the hands of one hundred leading Physicians of the United States, Europe, Australia and India with a request that they thoroughly test it in comparison with other remedies which are generally used as constructives in Pulmonary Phthisis and other wasting diseases.

From the tone of the seventy reports already received, fifteen of which are upon comparative tests with the principal Extracts of Malt in the market, we are fully justified in making the following claims, viz:

FIRST:—That Maltine (Plain) increases weight and strength far more rapidly than Cod Liver Oil or other nutritive agents.

SECOND:—That Maltine with Peptones, and Maltine with Pepsin and Pancreatine rapidly correct imperfect digestion and mal-nutrition in wasting diseases.

THIRD:—That Maltine is the most important constructive agent now known to the Medical Profession in Pulmonary Phthisis.

FOURTH:—That Maltine causes an increase in weight and strength one and a half to three times greater than any of the Extracts of Malt.*

LIST OF MALTINE PREPARATIONS.

MALTINE—Plain.
MALTINE with Hops.
MALTINE with Alteratives.
MALTINE with Beef and Iron.
MALTINE with Cod Liver Oil.
MALTINE with Cod Liver Oil and Iodide of Iron.
MALTINE with Cod Liver Oil and Pancreatine.
MALTINE with Cod Liver Oil and Phosphates.
MALTINE with Cod Liver Oil and Phosporus.
MALTINE with Hypophosphites.
MALTINE with Iodides.
MALTINE with Peptones.
MALTINE with Pepsin and Pancreatine.
MALTINE with Phosphates.
MALTINE with Phosphates Iron and Quinia.
MALTINE with Phosphate Iron Quinia and Strychnia.
MALTINE Ferrated.
MALTINE WINE.
MALTINE WINE with Pepsin and Pancreatine.
MALTO-YERBINE.
MALTINE with Petroleum.

*MALTINE is a concentrated extract of malted Barley, Wheat and Oats. In its preparation we employ not to exceed 150 deg. Fahr., thereby retaining all the nutritive and digestive agent unimpaired. Extracts of Malt are made from Barley alone, by the German process which directs that the mash be heated to 212 deg. Fahr., thereby coagulating the Albuminoids and almost wholly destroying the starch digestive principle, Diastase.

We will send gratuitously a 1st bottle of any of the above preparations upon payment of the expressage.

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COMPRESSED

Soluble Hypodermic Tablets.

We have recently given much attention to the preparation of Soluble Compressed Tablets to be used in hypodermic medication. This idea was brought to the notice of the medical profession by H. Augustus Wilson, M. D., of this city, in a paper read before the Philadelphia County Medical Society. His views were based upon carefully made experiments, and were received with much interest. At his instance, we undertook to prepare in this manner a number of combinations, which have upon trial proved eminently satisfactory. We therefore feel warranted in offering these articles to the profession as superior in several respects to all other forms for hypodermic purposes.

An extensive experience of many years in the manufacture of compressed powders (or pills), and the precision and accuracy of our mechanical appliances, enable us to make these articles with a degree of perfection, not attainable in any other way, or by any other process. The exact amount specified of each drug is thoroughly incorporated and distributed throughout every tablet. In water, at ordinary temperatures, a perfect solution may be made in from thirty to sixty seconds.

No extraneous material is employed, except the Sodium Sulphate, and this only in such proportions as to facilitate solution.

CAUTION—The dose of Morphia for hypodermic use varies from 1-12 to ¼ grain. We would suggest to the profession the necessity for caution. The large doses sometimes recommended—½, ¾ and even 1 grain—are unsafe for the first trial, unless the conditions requiring the injection be exceptional. *In commencing, it should not exceed one-third of that ordinarily administered internally.*

DIRECTIONS—The syringe is charged with about twenty minims of water, which is poured into a teaspoon or other convenient receptacle; the pellet being dropped in, is crushed with the end of the syringe, to which the needle fits, and after all the lumps are broken the solution is drawn up and forced out three or four times, when usually the whole mass will be entirely dissolved and ready for use.

If warm water be used or the spoon be heated over a lamp or gas jet, a perfect solution is effected in a moment. The tablets may be readily powdered with the blade of a knife, and a solution is even more speedily made in this way.

The following formulæ and combinations embrace all those in general request. Others will be added as the demands of the profession warrant their manufacture.

We claim for our Hypodermic Tablets:

Absolute accuracy of dose.
Ready and entire solubility.
Perfect preservation of the drug.

Their convenience and utility will at once be apparent on examination.

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No. 1	Morphiæ Sulphuas 1-2 grain. Sodæ Sulphas 1-4 grain.	$3 00	No. 10	Morphiæ Sulphas 1-6 grain. Atropiæ Sulphas 1-180 grain. Sodæ Sulphas 1-4 grain.	$2 50
" 2	Morphiæ Sulphas 1-3 grain. Sodæ Sulphas 1-4 grain.	3 00	" 11	Morphiæ Sulphas 1-8 grain. Atropiæ Sulphas 1-200 grain Sodæ Sulphas 1-4 grain.	2 50
" 3	Morphiæ Sulphas 1-4 grain. Sodæ Sulphas 1-4 grain.	2 50	" 12	Morphiæ Sulphas 1-12 grain Atropiæ Sulphas 1-250 grain. Sodæ Sulphas 1-4 grain.	2 50
" 4	Morphiæ Sulphas 1-6 grain. Sodæ Sulphas 1-4 grain.	2 50	" 13	Atropiæ Sulphas 1-60 grains. Sodæ Sulphas 1-4 grain.	2 00
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" 7	Morphiæ Sulphas 1-2 grain. Atropiæ Sulphas 1-00 grain. Sodæ Sulphas 1-4 grain	3 00	" 16	Strychniæ Sulphas 1-60 grain. Sodæ Sulphas 1-4 grain.	2 00
" 8	Morphiæ Sulphas 1-3 grain Atropiæ Sulphas 1-120 grain. Sodæ Sulphas 1-4 grain.	3 00	" 17	Strychniæ Sulphas 1-100 grain. Sodæ Sulphas 1-4 grain.	2 00
" 9	Morphiæ Sulphas 1-4 grain Atropiæ Sulphas 1-150 grain. Sodæ Sulphas 1-4 grain.	2 50	" 18	Strychniæ Sulphas 1-150 grain. Sodæ Sulphas 1-4 grain.	2 00

These Tablets can be sent by Mail.

Physicians when ordering, will please enclose the proper amount, specifying the numbers as above

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During The Past Year

We placed Maltine and several of its compounds in the hands of one hundred leading Physicians of the United States, Europe, Australia and India with a request that they thoroughly test it in comparison with other remedies which are generally used as constructives in Pulmonary Phthisis and other wasting diseases.

From the tone of the seventy reports already received, fifteen of which are upon comparative tests with the principal Extracts of Malt in the market, we are fully justified in making the following claims, viz:

FIRST:—That Maltine (Plain) increases weight and strength far more rapidly than Cod Liver Oil or other nutritive agents.

SECOND:—That Maltine with Peptones, and Maltine with Pepsin and Pancreatine rapidly correct imperfect digestion and mal-nutrition in wasting diseases.

THIRD:—That Maltine is the most important constructive agent now known to the Medical Profession in Pulmonary Phthisis.

FOURTH:—That Maltine causes an increase in weight and strength one and a half to three times greater than any of the Extracts of Malt.*

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MALTINE with Phosphate Iron, Quinia and Strychnia.
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MALTINE WINE with Pepsin and Pancreatine.
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*MALTINE is a concentrated extract of malted Barley, Wheat and Oats. In its preparation we employ not to exceed 150 deg. Fahr., thereby retaining all the nutritive and digestive agent unimpaired. Extracts of Malt are made from Barley alone, by the German process which directs that the mash be heated to 212 deg. Fahr., thereby coagulating the Albuminoids and almost wholly destroying the starch digestive principle, Diastase.

We will send gratuitously a 1st bottle of any of the above preparations upon payment of the expressage.

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(FIVE GRAINS EACH.)

FOR HOARSENESS, BRONCHIAL IRRITATION, SORE THROAT, DIPHTHERIA, CROUP, ETC., ETC.

Chlorate of Potash is a remedy of acknowledged value in cases of Diphtheritic Sore Throat, and in inflamation of the Mouth and Throat, induced by depressed state of the system. In these instances, as in the milder form of Croup, it has, besides its depurative and detergent effects, a solvent action on the deposits, characteristic of those troublesome and dangerous affections. It relieves Hoarseness: and in many cases of Fetid Breath from disordered secretions it proves an efficient corrective. Its virtues in simplo Angina, or ordinary Sore Throat, are recognized by many of the most eminent Physicians.

FOR SORE THROAT, HOARSENESS, ETC.

DIRECTIONS.—Adults should take one every hour or two until relieved, allowing it to dissolve slowly in the mouth. Children half of one as often.

For Offensive Breath, no remedy will give more certain relief, use one, two or three times a day.

For Diphtheria, Croup, and the more serious ailments, the hysician should direct.

COMPRESSED PEPTONIC PILLS.

(FOUR GRAINS EACH.)

PEPSIN, PANCREATIN, WITH LACTO-PHOSPHATE OF LIME AND LACTIC ACID.

This pill will give immediate relief in many forms of Dyspepsia and Indigestion, and will prove of permanent benefit in all cases of enfeebled digestion, produced from want of proper secretion of the Gastric Juice. By supplementing the action of the stomach, and rendering the food capable of assimilation, they enable the organ to recover its healthy tone, and thus permanent relief is afforded. One great advantage of the mode of preparation of these pills is the absence of sugar, which is present in all the ordinary Pepsin and Pancreatin compounds—in this form the dose is much smaller, more pleasant to take and is less apt to offend the already weak and irritable stomach.

DIRECTIONS.—Take one pill immediately after eating or when suffering from indigestion, Lump in the Throat or Flatulence. For Children, reduce the pill to powder and give a fourth or half, according to age.

Compressed Chlorate of Potash and Muriate of Ammonia.

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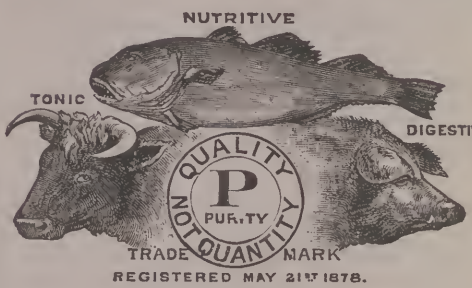

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THE ATTENTION of the medical profession is invited to the consideration of the advantages which **Powell's Combined Beef, Cod-Liver Oil and Pepsin** offers as a general nutriment and Tonic invigorator in debilitated states of the system, exhaustive and eruptive diseases where a nutritive tonic and alterative that is pleasant and easily digestible, is required.

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THE COD-LIVER OIL used is of the finest quality, being the virgin drippings of fresh livers, which is so well known to the profession as a remedy for scrofula, all the forms of idiopathic strumus, caries, rachitis, white swelling, chronic arthritis, fistulæ, lupus vulgaris, impetigo, psoriasis, and kindred diseases.

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The manufacturers of POWELL'S BEEF, COD-LIVER OIL and PEPSIN guarantee to the medical profession not to advertise this article in any way so as to bring it under the head of a "patent medicine," expecting its sale to come from its intrinsic merits, as shown to the physicians who will prescribe it. A pamphlet stating more fully its composition and application to disease, sent to any *physician* free, See the other side of this page for the endorsement our preparation gets from leading practitioners.

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VOL. IX. JULY, 1881. No. 1.

THE NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

EDITED BY

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W. H. WATKINS, M. D. S. S. HERRICK, M. D.

New Series—Published Monthly at $3 per Annum, in advance.
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LACTOPEPTINE is the most important remedial agent ever presented to the Profession for Indigestion, Dyspepsia, Vomiting in Pregnancy, Cholera Infantum, Constipation, and all diseases arising from imperfect nutrition. It contains the five active agents of digestion, viz: Pepsin, Pancreatine, Diastase or Veg. Ptyalin, Lactic and Hydrochloric Acids, in combination with Sugar of Milk.

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LACTOPEPTINE is sold entirely by Physicians' Prescriptions, and its almost universal adoption by physicians is the strongest guarantee we can give that its therapeutic value has been most thoroughly established.

The undersigned having tested LACTOPEPTINE, recommend it to the profession.

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