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ORIGINAL AND ECLECTIC.

ARTICLE XXI.

The Humoral and Vital Pathology. By D. M. Clay, M. D., of Irwinton, Ga.

The effects of remedial and morbific agents on the vital constitution of man, have doubtless given rise to as much or more scientific investigation than any other subject belonging to the domain of theoretical medicine. The ranks of the pathological, as well as the physiological, school of medicine, have been divided on this momentous subject; one school advocating the merits of the humoral, the other the vital theory.

Out of the discussion of these two theories, sprang another, intermediate in importance and consideration, viz: "The Chemico-Vital," which is probably more favorably received by the mass of the profession than either of the former, owing likely to a mixed character of which it partakes, and ready adaptation.

Each of these theories has been urged with due claims upon the profession, and each alike has passed the unfriendly ordeal of professional criticism, (as usual) without receiving much injury. The humoral theory of medicine is much more familiar to the ordinary practitioner than the vital, hence its almost universal adaptation. To add more currency to the apparent orthodoxy of this theory, it is only

necessary to state, that age has the precedence, combined with the natural antipathy of modern authors and instructors to discard anything relating to antiquity, more especially when it has received the sanction of some of the ablest men belonging to the profession. It is a well known fact that Dupuytren, enlarging on the doctrines taught by Duhamel, Galen and Camper, was erroneous. His theory referring to the manner in which union in fractures is accomplished, was received without suspicion, as a fixed principle, up until quite a recent day, when Mr. Paget called the principle into question, and proved its fallacy. Many other instances might be brought forward to show the inconsistency of medical maxims.

Notwithstanding the familiarity and commonness of this humoral or "blood theory" of medicine, the medical mind gradually and imperceptibly grasped the vital action of remedial and morbfiic agents. Not until the profession had progressed rapidly and far into this theory, did the illustrious Auorat's mind conceive an idea of change, fraught with the highest detriment to professional equanimity. At this period, vitalism had gained such a strong hold upon the talent of the medical world, that it was with the greatest difficulty he could substantiate his revived, but once exploded theory, upon a basis sufficiently sure to attract the attention of the fraternity.

When the two theories were arrayed against each other in point of merit, and the discussion begun, facts were elicited, conclusive, I think, in favor of vitalism. As I have before stated, the humoral theory is much more familiar to the ordinary practioner than the vital, hence it also becomes a matter of convenience, it serves as a ready method to account for all the phenomena, either simple or complicated, connected with health or diseased action. This theory (humoral) certainly protects the professional man from the shrewd attacks of the non-professional, especially when the cause of disease is sought after, from the fact, that the received opinion is that all diseases spring from humors in the blood. It is not uncommon for us to have

old women and men speaking of bad blood being the cause of all their diseased troubles; this, unfortunately, is not confined only to the "old knowing ones," but professional characters love to ease themselves off on this panacea of etiology. I cannot allow this opportunity to pass without quoting from that truly and justly celebrated surgeon, John Hunter, on this subject; he writes: "Among physical people we find such expressions in common use, as the humors are effected in the blood, sharp humors in the blood, the whole humors being in a bad state, the whole blood must be altered or corrected, and a variety of such expressions, without meaning. They even go so far as to have us the parent of our own humors, saying that we breed bad humors. Humors are even supposed to gravitate to the legs slowly, and, in short, the whole theory of disease is built upon the supposition of humors in the blood, or the blood itself being altered. I cannot conceive what is meant, unless it be that a strong susceptibility to a specific disease exists, as small-pox may bring on scrofula, or a strain the gout."

It is true, the vascular system plays an important part in the human organism, we are ready and willing to admit; the machinery of life ceases to go on when the circulating fluid is arrested—the solids languish and die when the rich and nutritive elements are insufficient to meet the demands of their requirements; consequently, we perceive the dependency. But to look for the cause of this change in the blood, and all its peculiarities, it is the object of this paper to refer the reader to its proper source; to produce evidence to show, that it is the effect of a cause operating on the nervous system. This theory, at a glance, may not only appear strange, but preposterous, to those who are thoroughly wedded to humoralism, or to the entire exclusion of all other doctrines; yet it may become rational, philosophic, and in accordance with the views of a reflecting practitioner. I am sure this would be the case, if the subject were discussed in our journals by abler men than myself; particularly with the rising generation of surgeons and

physicians. But it is a source of regret for us to know, at the present day, that the young men who attend medical lectures at our colleges, allow themselves to become the dupes of exploded theories, without ever venturing one thought.

As to knowing or thinking of the precise modus operandi of remedial or morbific agents on the vital constitution of man, I would venture to say, that many care not one cent for the principles, so they get the practice, consequently the science is left to the mercy of a few.

It is asserted by the humoralist, that substances deleterious to life, may be and are taken up into the system by the lacteals, carried the rounds of circulation, affecting the constitution at large.

Upon sound pathological principles, deduced from actual experiment, this doctrine of humoralism can be refuted, beyond a doubt.

The lacteals, according to very high authority, absolutely refuse to *absorb* or take up anything foreign to nutritive chyle: it seems that other agents do not possess that peculiar stimulus requisite to overcome the exquisite irritability, to which this great endowment of elective power is owing. I can think of instances where they may become diseased or morbidly irritated, by sympathy, until they will emit certain substances deleterious to life in the main circulation; but, then, this will not prove that the circulation will be the primary recipient of the effects. It may be, and is, doubtless, that the deleterious substance produced such a powerful impression upon the organic properties of the stomach with which it comes directly in contact, that the substance was permitted to pass through the pylorus (the valve having lost its irritability and sensibility) to the lacteals, from thence, unchecked, into the circulation.

Admitting that substances deleterious to life, enter the circulation, has it not been proven that the kidneys and the various eliminating organs of the system, are sufficiently adequate to remove them in a time that would preclude the

possibility of their affecting the system? It is probable that poisonous substances act as a stimulus, for awhile, at least, to the various eliminating organs of the human system, and thereby establishing a more active function. Again, it may be argued in favor of the vital theory, that which may, by chance, enter the circulation, will be so much diluted by the fluid as to render it totally inert. The peculiar irritability of the system at large, and the powerful determination of nervous power, acts intuitively in arousing all the organs to action, while nature is engaged in throwing off some morbific agent. To show the utter fallacy of this theory still further, it is only necessary to state that the blood is undergoing constant changes; in fact, twenty millions of corpuscles die at each pulsation. It is reasonable and conclusive to my mind, that all agents, no matter what their nature may be, would be rendered totally inert by the constant modification in the circulation of the blood. Admitting, again, that all agents pass into the circulation to produce their final effect, does it not seem that nature has acted very unwisely in placing her susceptible parts so remotely from the main channel of all kinds of sympathy? The tunics of the blood-vessels must be very sparsely supplied with nerves, as they have, to this day, defied any definite arrangement by the best anatomists; taking this, and the rapid flow of the blood into consideration, it would seem unreasonable, that remedial and morbific agents should affect the system in this way.

The application of morbific agents to man comes daily under our supervision, in some form or other, sufficiently appreciable for us to arrive at correct conclusions, as to what system is acted on, and when the effects are displayed. We will take a disease which is not so common as many others, to illustrate our point still further or more fully, viz: Hydrophobia: We see many days, sometimes months, and years, intervening between the infliction of the wound and the development of the alarming symptoms—still the virus, the materies morbi, has been absorbed, (as the humoralist have it) carried the rounds of the circulation time and

again, without producing any effect. Again, is it possible for any substance, I care not of what nature it may be, so it be foreign from the natural elements of the blood, to remain in that fluid days, months and years, without losing its virulence, or becoming eliminated? Certainly not.

If the latent causes of disease are not to be found in the blood, where is the mind directed to search? As a matter of course, in the nervous system. To illustrate this point further yet, it is only necessary to refer the reader to a class of diseases marked by regular incubative stages, where the materies morbi, the very essence of cause, has been operating for several days. After he has investigated thoroughly, and reflected seriously, on the occult cause of this peculiar class of diseases, ask himself where were the primary influences exerted, and where latent? In this class of diseases, (contagious,) upon purely vital principles may that peculiar phenomenon, the liability of non-recurrence, be accounted for. The impressions are so permanently made upon the organic properties of life, that susceptibility is totally destroyed. Of hereditary diseases and their transmission from parent to child, much might be said or written, but a published paper at the present day is sometimes estimated by its length; consequently, it becomes one to be brief.

There are many diseases classed under the general term, cachexia, and all of them partaking of a more or less hereditary disposition. When an individual, who is the victim of a hereditary taint, and is in robust health, chemical analysis has failed to detect any unusual deviation from the healthy standard of the composition of the blood. From this it would seem that the material was sound from which the secretion was secreted, and ought to impart a healthy action to the ovum, but we find the reverse of this to be the case. I think the correct theory of this abstruse principle of nature to be inherent in the vital habits or constitution of the parent. The spermatozoon of the male, and the germ of the female, partaking of the qualities to a more or less extent of either or both, is a physiological fact, embracing

the entire animal kingdom, for the parent to impart characteristics of themselves to their offspring. It then seems that the healthy or unhealthy condition of the ovum depends entirely upon the peculiar state of the vivifying properties of the spermatozoon of the male, or the inherent qualities of the germ.

From evidence produced, all remedial and morbific agents must act upon purely vital principles—the virus vitea, or the organic properties of an organ to which they are directly applied. "In their highest development, says Prof. Martyn Paine, the properties of the vital principle are six, viz: irritability, mobility, vital affinity, vivification, sensibility and the nervous power. A glance at these great attributes of a common principle, one may conceive how the admirable laws of sympathy are originated and kept in action. Upon these attributes, remedial and morbific agents make their impression, and are reflected to the sensorium commune, there registered by the great registering ganglia of the brain, at which point the system becomes cognizant of the effects. The impressions made by agents upon the sentient extremities of nerves, are variable, owing probably to the peculiar susceptibility of the constitution, or the power of the drug. It usually requires from five to thirty minutes for narcotics to effect the system; this may be argued in favor of the humoral theory, on the grounds that it requires a more or less time for the absorption; yet, after due reflection, the fallacy may be seen. It follows, as a matter of course, that it will require more or less time for an agent to bring a nerve, or a system of nerves, under its influence; consequently, the effect may be produced instantaneously, but scarcely appreciable at first.

In passing on to the termination of my paper, I will notice but a few more points characteristic of the vital principle. In the November and December numbers of that valuable periodical, the *London Lancet*, I see two letters addressed to the editor, by a couple of English physicians, in reference to the venous circulation. The one writing in the November number, seems to think the main cause in propelling

the venous blood along the course of the veins, is due to the lateral pressure of the arteries; the other, writing in the December number, to heat.

Now, as far as the lateral pressure of the arteries are concerned, in materially aiding the venous circulation, the gentleman, I think, has justly and correctly refuted his own doctrine. His main argument seems to have consisted in the position of the arteries, especially the deep-seated ones, and those of the brain. Superficial veins and capilaries have no accompanying arteries—still the circulation and temperature is well sustained. During the obstruction of large arteries by aneurisms, ligature, calcification, &c., which has an accompanying vein, the circulation is not at all disturbed, or at least for any length of time. Lastly, the arterial circulation would seem to have a tendency to retard the venous, on account of the current going in contrary directions.

The other gentleman, advocating the theory of "heat," seems so positive in his assertions, and so thoroughly convinced of the correctness of his views, until it almost precludes the possibility of investigation. He may be in some degree correct, as there is a vast deal of heat evolved during the reparation and destruction of the tissues. He has compared the venous circulation to boiling water, conveyed in tubes to different apartments of a house for the purpose of warming it. Heating a fluid to the point of ebulition certainly establishes a current, but if venous blood were heated to such a degree of temperature, it would more than likely prove incompatible with life. The lungs being the great furnace of the system, would, from the above theory, repel rather than attract blood to that organ.

As far as the vis a tergo, atmospheric pressure, propelling action of the blood-vessels, suction of the heart, &c., are concerned, I have no desire to call them into question, but regard them as dependent auxiliaries of a common principle. Taking the six attributes of this principle (vital) into consideration, the true physiologist can at once perceive the vast influence exercised by them on the circulation,

especially vital affinity, vivification and nervous power.

Vital contractility, so beautifully displayed in the heart and blood-vessels, acts an important part in aiding the circulation of the blood. During the simple act of blushing, we need no better evidence of the circulation being under the control of the nervous power. Numerous other instances might be brought forward in proof of the correctness of this theory, if space and time would permit, but enough has been written for my purpose.

I have written this paper, not in the spirit of dictation to the medical profession, but merely to direct their minds to an important branch of the theory of medicine, here of late fallen into disrepute to some extent. I do not lay claim to originality entirely—not by any means; the theory I have attempted to advocate in this communication, is as old as the hills; it was familiar and peculiar to the illustrious Bichat, Mattucci, Hunter and others; and at the present time ably defended and vindicated by the learned and venerable Paine, Professor in the University Medical College, city of New York, both in his lectures and writings.

I might mention numerous other names adorning this scientific galaxy, but those already mentioned are sufficiently renowned to satisfy the scrupulous. In this communication it will be seen that I have scarcely made a beginning in the investigation of this subject, but hope what has been written may serve as an incentive to others, who are at ease with all the true and vague theories of the day.

Much, I think, yet remains to be elucidated clearly and satisfactorily on the vital constitution and the modus operandi of remedial and morbific agents. The susceptibility of the various races of man, especially that of the Caucassian and African, may form a basis of physiology and therapeutics, that may be of vast benefit to the world.

ARTICLE XXII.

Union of Strands of Hair across the Incision in Wounds of the Scalp. By F. M. PITTS, M. D., of Waco, McLennan Co., Texas.

May 10th, 1860.—At an early hour this morning we were called to see Mr. G. of Waco, who in a fit of delirium tremens, had attempted to commit suicide, by striking his head forcibly against the sharp edge of the heavy square post of his bedstead. The whole weight of his body was projected violently against the post, and of course produced a very serious scalp wound.

He was found reclining upon a couch, with his head supported over the edge by an assistant, and was having cold water poured freely over the wound. This was continued for twenty or thirty minutes, with the effect of arresting the hemorrhage almost entirely, and so far removing the coagulated blood as to enable us to examine the wound.

The scalp was cut entirely through, in a line extending diagonally across the top of his head, and about five inches in length. It was also torn from the periosteum, to a distance—except near the extremities of the wound—of nearly two inches, towards the right ear.

It was at once determined, by my colleague, Dr. J. H. Sears, and myself, to adopt the plan of dressing suggested by Dr. H. F. Campbell, in the March number of the *Southern Medical & Surgical Journal* for 1860.

Owing to the peculiarities presented in this case, we thought it best to shave the scalp, to some distance from the wound, on either side, to facilitate the application of the cold water dressing, and thereby prevent, if possible, any erysipelatous or inflammatory action in the wound.

In shaving the scalp, small tufts of hair were left on either side of the wound, at points exactly opposite, and corresponding with the places of entrance and exit of sutures, if they had been used.

The wound was now carefully sponged, and the operation of fastening commenced.

The perforated shot, which we have used very frequently

in performing the modern operations for vesico-vaginal fistula, had given so much satisfaction, that we determined to use them on the hair. A sufficient number of ordinary duck shot were perforated and the united ends of each pair of tufts passed through a shot. The shot was then grasped by a strong pair of forceps, and passed down sufficiently to unite the edges of the wound, when it was mashed firmly, and the most complete and satisfactory fastening that I have seen for wounds of the scalp, was finished. The hair above the shot was removed, and a cold compress applied, and kept in place by a light handkerchief bandage. The delirium subsided in about thirty-six hours.

The wound was carefully watched and the compress frequently renewed. Union by the first intention was secured throughout the entire wound. May 21. To-day—the 11th since the accident—the shot were removed and the edges found nicely united and remarkably free from tenderness.

This hasty report is forwarded with the belief that it will not be wholly uninteresting to Prof. Campbell, and to extend our testimony to a method of dressing scalp-wounds which both our judgment and our experience highly commend.

[Since the publication of our remarks in the March number of this Journal, we have repeatedly applied the method of treatment above described, and are glad to be able to report our entire satisfaction with the result in every instance. One of our recent cases, in which the spit-shot were applied, was after the removal of sebaceous tumors from the scalp; the flaps were brought together and the wound healed well in a few days, the patient having been saved the inconvenience of the loss of a single hair. We are much gratified to find the value of a treatment we ourselves like so much, so fully confirmed by the experience of others.—H. F. C.]

ARTICLE XXIII.

Treatment of Deaf Mutes. Translated from the *Gazette des Hopitaux*, for the *Southern Medical & Surgical Journal.* By JOHN S. COLEMAN, M. D., of Augusta, Ga.

The Profession, and public generally, of Paris, have been a good deal interested recently, in the discovery of a reputed cure for deaf mutes.

About the month of August, 1855, Miss Cleret, a private instructress of Paris, demanded assistance from the Minister of public instruction, founding her claim, among other motives, on the discovery of a remedy capable of curing deaf mutes. This remedy, which she had discovered accidentally, and which she had used with a certain number of her students afflicted with deafness, after having proven its efficacy upon herself, consisted in the employment of sulphuric ether dropped into the ear, and meatus, in the dose of from 4 to 8 drops a day. After continuing for 15 or 20 days, suspend the use of the remedy, in order that its efficacy may not be diminished. In this way it can be continued indefinitely, at any rate for a very long time.

A committee was appointed by the minister, the medical portion consisting of Drs. Lelut, Berard and Behier, to investigate the state of the children submitted to their examination by Miss Cleret.

The committee were pursuing this study with the greatest attention, when suddenly Miss C. was attacked by a terrible malady. After waiting, without much hope, for an amelioration in the mental state of Miss Cleret, the committee reported the result of their investigation, though they had not come to any definite conclusion.

Twenty-nine children had been treated by this instructress, all of whom were benefitted. Two of them, who had been treated by her before the organization of the committee, were examined, and found to be perfectly cured. Seven children were examined before commencing treatment, and the affection satisfactorily proven. In all, and especially in four, after eight or nine months treatment, a

manifest change was noticed. Any noise, i. e., the sound of the voice, was perceived with the greatest facility. The committee stated that they had taken the most minute precautions to avoid all error, and to screen themselves from any illusion which might result from perceptions obtained by the aid of other senses.

This is not all. The committee wishing to increase the opportunities of studying the means employed by Miss Cleret—desirous, above all, to examine other children than those confided exclusively to the care of this lady, requested one of its members to take charge of a number of cases himself.

About twenty persons were given him, children, most of them deaf mutes, and a few old persons whose hearing on one side was injured or lost.

In all of these patients there was a marked improvement.

The committee had also seen the same means promptly cure deafness resulting from typhoid fever.

In conclusion, with the exception of two or three children, in whom the affection had been attested by authentic certificates, and who now hear well, the committee could only report the results of incomplete experiments, commenced, but not terminated, of marked improvements, but nothing definite.

The Theory of Tertiary Syphilis—According to Gamberini, is a prodigious humbug, having the effect of confusing and confounding that which otherwise would be easily understood. The regular succession of symptoms in the onward progress of syphilis, as described by Ricord, may and may not occur. The so called secondary and tertiary syphilis are but different *local* manifestations of the same general disease. The secondary and tertiary forms of syphilis may alternate or co-exist, thus demonstrating their identity.

A Series of three Lectures on Rickets, delivered at the Hospital for Sick Children, in December, 1859, and January, 1860. By Wm. Jenner, M. D., Physician to University College Hospital, and to the Hospital for Sick Children.

LECTURE III.

Summary: Anatomical Characters of Albuminoid Infiltration of Spleen, Lymphatic Glands, Liver, Kidney, Thymus and Brain—State of the Voluntary Muscles—Symptoms—Age, Constitutional Symptoms which precede the Bone Disease—Derangement of Digestion—Perspiration of Head—Desire to lie cool at Night—General tenderness—Commencement Abrupt or Gradual—Softening of the Bones most marked when the Constitutional Disturbance is Severe and the child very Young—Symptoms Consequent on the Softening of the Bones—Loss of Muscular Power—Large Abdomen of the Rickety Child and its Causes—Intellect deficient in Power and Capacity—Teeth—Skin—Fontanelle—General Aspect—the chief Causes of Death in Rickets—Influence of Softening of the Ribs on the Fatal Termination of Bronchitis—Symptoms of Albuminoid Infiltration of Lymphatic Glands, Spleen, etc.—Laryngismus Stridulus—Pathology of Rickets—Not mere want of Lime in the Bones—Causes—Special influence of Mother—Hygienic Conditions—Treatment.

Gentlemen,—At the conclusion of my last Lecture I described the appearances presented by the spleen and lymphatic glands, when the seat of that disease from which rickety children so often suffer—viz: infiltration with a homogenous, firm, tough, transparent, glue-like substance. And I told you that the disease was rarely, perhaps never, limited to those organs. In both the children to whose cases I referred when last addressing you, the liver and kidneys were infiltrated with the same substance as the spleen and lymphatic glands. The liver when the seat of the albuminoid infiltration, as I have observed it in rickety subjects, is larger than natural, heavy in proportion to its size, very tough, its cut surface smooth, its substance semi-transparent: sometimes the exudation infiltrates the portal canals and the interlobular spaces, in others it invades the circumference of the lobules. I have never seen the whole of the structures of the liver infiltrated.

In the boy F., the cut surface of the liver had the appearance of stiff not very well-clarified size, tinted red and thickly studded with small opaque yellowish spots. These latter were lobules, the cells of which were in a state of fatty degeneration. In some cases the infiltration of the organ is concealed by its congestion, but a brief soaking in water removes the blood and makes the lesion of structure visible. The kidney of the rickety child when the seat of this same disease is somewhat enlarged, heavy for its size, tough, more transparent than natural, and, as a rule, very

pale. When the disease attains a high degree, all appearance of structure is lost to the naked eye. Fatty degeneration of the cells may accompany it.

The thymus in ricketty children is often larger than natural; its increase in size being due, in some cases at least, to its infiltration with the same substance as that found in the spleen, etc. The so-called hypertrophy of the white matter of the brain seems really to be albuminoid infiltration of that structure. The transparent substance which I have described as infiltrating the organs of certain ricketty children, presents neither blue, violet, nor crimson reaction with iodine and sulphuric acid, such as are said by Virchow to be characteristic of lardaceous infiltration. I am therefore inclined to believe that it differs in nature from what that pathologist considers to be lardaceous, but for which, probably, the name he has himself proposed, viz. amyloid, is preferable.

The voluntary muscles that have lost their power in rickety children, are small, very pale, flabby and soft. Examined with the microscope, their fibres are found to be singularly colorless, transparent and soft, the transverse striæ very delicate, sometimes scarcely to be made out. I have never been able to detect in these fibres a particle of olein. The disease from which they suffer seems to be the very opposite of fatty degeneration.

Symptoms—I have never seen congenital rickets. I have often heard the mother say that the ricketty deformities of her child had existed from its birth; but no value can be attached to such assertions if unsupported by strong confirmatory evidence. The general cachexia very rarely manifests itself before the fourth month; usually between the fourth and twelfth months.

I have now a boy under my care in whom the symptoms of the constitutional disease did not manifest themselves till he was a little more than three years old, and I saw, some years since, a girl, aged nine years, who was then only beginning to suffer. It is rare, however, for the general cachexia to first manifest itself after the child has passed its second year. At the outset of the disease, there is no deformity of the bones, no enlargement of the wrists, of the ends of the ribs, etc.; no thickening of the flat bones, no bending of the long bones. The child is dull and languid; its skin is hot; it is drowsy, or sleeps little; its appetite is lost; it is thirsty; if it has begun to walk, it is "taken off its legs." It lies about, is unwilling to play or to be

amused. The bowels are irregular—confined, or more commonly relaxed—the stools being usually of a dirty brown or leaden color, and most offensive. The offensive odor is peculiar, resembling that of rotten, half decayed meat. In all these symptoms there is nothing diagnostic. They might arise from deranged digestion, from improper food, or from tuberculosis. By many they are referred to that over-ridden hobby, the irritation of teething; or to that cloak for ignorance—infantile remittent fever.

When conjoined with that infiltration of the spleen and lymphatic glands which I previously described, as it was in the boy H., whose spleen, etc., were on the table at my last lecture, it is extremely difficult to distinguish from tuberculization; and in some cases it is only from the state of the lymphatic glands, or after the anatomical changes proper to rickets occur, that the diagnosis is possible.

Commonly, however, there are certain symptoms present which at once mark the nature of the disease, render the diagnosis easy, and enable us to predicate that the bone affection will show itself.

One of the most remarkable of these symptoms is profuse perspiration of the head, or of the head, neck and upper part of the chest. Not uncommonly, it is because this symptom has arrested the mother's attention, that she seeks medical aid. She uses the strongest terms to express the amount of the perspiration: "It stands in large drops on his forehead"—"it runs in streams down his face"—"his head is all of a reek"—"the pillow is soaked." It is especially when the child sleeps that these copious perspirations of the head occur, but they are not infrequent at other times, as when the child is at the breast, or even resting its head on the mother's arm. A little increased exertion, a little increased temperature, may induce them at any time. When these profuse head-perspirations occur, the superficial veins of the scalp are generally large and full, and sometimes the carotid arteries may be felt strongly pulsating. At the same time that the head, face and neck are bathed in perspiration, the abdomen and inferior extremities are usually dry and hot.

The second symptom which especially indicates that the general derangement of which I spoke is the precursor of the rickety deformity of the bones, is the desire of the child to be cool particularly at night. As a consequence of this desire, the child kicks the bedclothes off, or throws its naked legs on to the counterpane.

"He is always catching cold, because he will lie without any clothes at night," is what one is repeatedly told by the mother in these cases. I have frequently gone into our wards, after the children have been some time asleep, and seen the rickety children lying exposed, and have been assured by the nurses that they had put the bedclothes over them again and again, but to little purpose,—and this, even in cold weather, when the other children were well covered. A third highly characteristic symptom is general tenderness. The child cannot be moved without its uttering a cry; pressure on any part is followed by like evidence of suffering. "He is tender all over," says the mother, or, "I can't think what has come to the child, if I do but touch him he cries."

A child in health delights in movements of every kind. It joys to exercise every muscle. Strip a child, of a few months old, and see how it throws its limbs in every direction; it will raise its head from the place on which it lies, coil itself round, and grasping a foot with both hands, thrust it into its mouth as far as possible, as though the great object of its existence at that moment was to turn itself inside out. The child suffering severely from the general cachexia which precedes and accompanies the progressive stages of the bone disease, ceases its gambols; it lies with outstretched limbs as quietly as possible, for voluntary movements produce pain. Its unwillingness to be moved is so great, that, as Stiebel has observed, it will cry at the approach of those who have been accustomed to dance it—of those at the sight of whom it previously manifested extreme pleasure (a). As the disease progresses, the child gets a peculiar staid and steady appearance; its natural lively expression is replaced by a pensive, aged, languid aspect; its face grows broad and square, and when placed upright on its mother's arms, it sits, as she says, "all of a heap." Its spine bends, and its muscles are too weak to keep it erect. Its head seems to sink between its shoulders, its face is turned a little upwards (b). The general

(a) See Stiebel's admirable article on Rickets, in Virchow's "Path. and Therap." Band 1.

(b) I subjoin a case illustrating some of the points mentioned in the Lecture, and I do so because I am confident that the symptoms present in these cases are very rarely correctly interpreted. A. V., aged 3½, male. His present ailment commenced about four months since, shortly after "a severe cold on the chest," with the following symptoms: Heat of skin, especially at night; thirst; loss of appetite; profuse sweating about the head; extreme tenderness of the whole body, so that he could not be touched without crying from the pain it caused

cachexia is sometimes very severe, at others extremely trifling. And one or other of the more characteristic symptoms may be scarcely observable or wanting, while one or other may be so strongly marked, as to give a general feature to the case. Instead of commencing more or less abruptly, the disease may begin and progress most insiduously, so that the mother cannot say when the child began to suffer. Often the changes in the shape of the bones are the first abnormities she notices.

Ere the general disease, if that be severe enough to attract attention, has lasted long, the bone deformities commence. If the attack be attended with severe general symptoms, the softening of the bones usually precedes, and is out of proportion, for some time, at least, to the enlargement of the ends of the bones. The younger the child also, the softer are usually the bones.

And now the consequences of the bone disease are superadded to the general derangement. It is strange to see a little child sitting placidly on the bed without moving for hours together—its legs placed so as to escape pressure, its spine bowed, its head thrown backwards, the chief weight of its body cast on to its anus; and to know, that notwithstanding the apparent calm, the tiny thing is indeed fighting the battle of life; for it is striving, with all the energy it has, to keep in constant action every one of its muscles of inspiration, endeavoring so to supply the mechanical defects of its respiratory apparatus due to the softening of the ribs. It wants no toys. It is the best of children if you only leave it alone; move it, and you inflict pain on its tender frame; show it the horse or doll that was once its

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him; relaxed bowels, the stools being, to use the mother's own words, "stinking," a "rotteny smell"; desire to lay exposed at night; again, to use the mother's words, "even in that bitter cold weather he would never lay covered over," "in the previous winter he liked to lay warm." Although he had long run alone, he was soon "taken off his legs."

Present state—Rather thin; muscles very flabby; evident tenderness of head, trunk and extremities. The muscles seem to partake of the tenderness; and the abdominal muscles are as tender as those of the thighs. Sits in his chair unwilling to move, from morning to night. Cries if his brothers or sisters approach him. Feverish at night; throws the clothes off; sweats over the head profusely; the perspiration is limited to the head; appetite very small: bowels act once a day, but stools very offensive. Intellect decidedly less acute than that of his brothers and sisters was at the same age. Head large, square. He cut all his teeth long before his illness commenced. Spine curved backwards from about the first dorsal vertebra to the sacrum, and forward from first to last cervical vertebræ. Ribs very soft, so that there is great recession of each rib where it joins the cortal cartilage at each inspiration. Physical signs of trifling catarrh. Very little enlargement of the ends of the long bones. No enlargement of glands, liver or spleen.

delight, and it turns away its head or stares vacantly; to notice would divert its attention too much from the performance of those respiratory movements which are essential to its existence.

At this time the appetite is often good, but the bowels are deranged; the stools being either fetid or white, or the food is passed as it is eaten. As the disease progresses the muscles lose power and waste: but the loss of power is infinitely greater than can be accounted for by their diminished size.

A girl, aged six years, was some time since brought to the Hospital, in whom the loss of muscular power was so extreme that she was not only unable to stand, but even to support herself in the least possible degree. She lay across the arms of the person who carried her, like a large half-stuffed rag doll. When placed in bed, she was incapable of changing her position without assistance; nay she could not raise her arm an inch from the bed. Long after, when greatly improved, she could not feed herself, and had to be tied in a chair and her head placed on a pillow at its back. If her head fell forward, the nurse had to raise it, for, unaided, she could not lift her chin from her breast, (c). And yet I have often seen tubercular children, of the same age, with muscles much more atrophied, walking about, and performing for themselves all necessary acts, as cutting their food and dressing.

Although it is rare to see the loss of power in the muscles so complete as in the case referred to, it is very common to see children of two, three, or even four years of age, who are quite unable to support themselves in an erect position: and if a child has commenced to walk before it becomes the subject of extreme rickets it loses the power.

The abdomen of all young children is large in proportion to the size of the chest; hence the Physician often has a child brought to him because its mother fancies its abdomen is larger than it should be, when, in fact, it is only of normal size.

The causes that conspire to produce the large abdomen proper to the child, are:

1st. The flatness of the diaphragm.

2ndly. The size of the liver.

3rdly. The shallowness and small size of the pelvis.

(c) This child recovered so much as to walk about without assistance. After her return home, she fell down stairs, and was killed by the fall.

4thly. And especially the weakness of the muscles of the abdominal and intestinal parietes, which afford facilities for the accumulation of flatus.

The abdomen of the highly rickety child *is* larger than natural, and usually very much larger, for all the causes which make a large abdomen proper to a young child are greatly more potent in the rickety.

1st. The chest is smaller and the diaphragm more depressed than in health.

2ndly. The liver and spleen are often larger than natural.

3rdly. The capacity of the pelvis is diminished.

4thly. The muscles of the abdomen and intestines are less powerful even than they are in their normal condition; and, moreover, derangement of the digestion is always present to favor the excessive formation of flatus.

It is curious to note the frequency with which writers state that the intellect of the rickety child is precocious, nor is it difficult to account for the origin of the error—for error it unquestionably is. In regard to the intellect of a child, speaking generally, the mother's opinion must be weighed before it is received as correct. If a child be not suffering from chorea, and the mother states that it is mentally deficient, her statement is, I believe, invariably correct; but the mother constantly tells us that her child is very clever, quite a prodigy, when it is only a few degrees removed from an idiot.

The little rickety child separated, in consequence of its physical defects, from other children, and thrown necessarily much into the society of adults, catches their tricks of expression, their phrases, and even some, perhaps, of their ideas, and hence is thought, by the mother especially, to have a larger intellect than other children.

Children, the subjects of extreme rickets, are almost always deficient in intellectual capacity and power. They are not idiots, they offer no signs of idiocy, they resemble rather children of low intellectual capacity and power much younger than themselves. Their mental, like their muscular power, is not merely lowly developed, but it retrogrades as the rickety diathesis progresses. When the disease ceases, the mind, like the body, regains all its powers. The muscles of those who were once rickety, in after life are often marvellously powerful, their bones singularly strong, and their intellect certainly not below the average.

The teeth are always retarded in their development in rickety children. I dwelt on this fact in my first lecture.

Not only, however, are the teeth cut late, but they fall from their sockets very early; thus I have seen the incisor fall from the jaws before the second molars of the first set had made their way through the gums. Occasionally, instead of falling from their sockets, the teeth decay quickly.

The back, arms and sides of the face are very often covered with downy hair. The anterior fontanelle is frequently open till the child is three or more years of age.

On the deformaties of the rickety child I dwelt so long when speaking of the morbid anatomy of the disease, that I must now pass them by.

The general aspect of the rickety child is so peculiar that when the crooked limbs, the large joints, and the deformed thorax are concealed, you may even detect its ailment at a glance. Its square face, its prominent forehead, its want of color, its large, staring, and yet mild eyes, its placid expression, and its want of power to support itself, like other children of its age, on its mother's arm, all conspire to form a picture which has no like in the gallery of sick children.

I told you in my first Lecture how often rickets terminates in death—that it is a most fatal disease. The great causes of death in rickets are:

1. Intensity of the general cachexia.
2. Catarrh and bronchitis.
3. Albuminoid infiltration of organs, especially of the lymphatic glands and spleen.
4. Laryngismus stridulus.
5. Chronic hydrocephalus.
6. Convulsions.
7. Diarrhœa.

It is in rare cases only that the cachexia of rickets proves directly fatal. Death is commonly the immediate effect of some one of the other diseases which I have just enumerated. In this particular it agrees with those other general cachexia of children—tuberculosis, scrofulosis and syphilis.

Catarrh and bronchitis are unquestionably the most common cause of death in rickets. The softening of the ribs rendering the mechanical power by which inspiration is performed so defective, that the impediment offered to the entrance of the air by the mucus in the bronchial tubes cannot be overcome, and collapse of large portions of the lungs follows. Of this cause of death, and of the state of the lungs in such cases, I spoke at length in my last Lecture. From what I then said, you will have seen that the danger of catarrh and bronchitis in rickets is in proportion,

not only to the intensity of the inflammation of the air-tubes, but also to the degree of softening of the ribs; so that, in estimating the danger of bronchitis in the rickety child, it is by no means sufficient to listen to the chest, or to note the lividity of the lips, or the action of the nares, or the frequency or severity of the cough, or the heat of skin and other evidences of febrile disturbance; but you must strip the child, and note to what degree the ribs are softened, how much they recede during inspiration, and to what extent they are forced outwards during expiration.

Albuminoid infiltration of the lymphatic glands, spleen and other organs, is by no means an uncommon cause of death in rickets. The two great features, during life, of albuminoid infiltration of these organs in a young child are emaciation and pallor. The anæmia is often most remarkable; and if, as is sometimes the case, there is a little serosity effused into the cellular tissue, the child has that peculiar transparent, waxy, greenish yellow tint, which is sometimes seen in the anæmia of young women. Now and then there is decided anasarca; the face as well as the extremities, the hands as well as the feet, being œdematous. The emaciation may be very great. I showed you a child suffering from this complication of rickets at my first Lecture, who was very thin, and in the boy Howie, then in the ward, emaciation was carried to its utmost limit. The rickety deformities, in such cases, may be moderate or extreme; they may precede or they may follow the infiltration of the organs. The glands thus diseased, are never very large. Usually they vary in size from a large pin-head to a sweet pea. We feel them in the groins, the axilla and the neck; they are not tender, and rarely, if ever, inflame; they roll under the finger, proving their freedom from undue adhesion to each other, to the cellular tissue in which they lie, and to the skin. When the child is very thin they are visible to the eye. They are hard to the touch, and rounded in form. The spleen is usually, at the same time with the glands, the seat of extensive albuminoid infiltration. It is strange how often enlargement of the spleen is overlooked in the child, seeing the ease with which it may be detected by touch. In every obscure disease of early childhood the absence of enlargement of the spleen should be established. If we place the fingers of the right hand directly under the left twelfth rib, just outside the mass of the lumbar muscles, and the fingers of the left hand a little to the left of the middle line, in front and half

way between the umbilicus and the ensiform cartilage, and then press the parts forward with the right hand, and backwards, and to the left with the left hand, the enlarged spleen may always be readily felt in the left hypochondriac region. We know the hard mass we feel to be spleen, by the sharpness of its anterior margin, by the anterior margin passing from under the cartilage of the 8th, 9th or 10th ribs obliquely downwards and inwards, towards the median line. The obliquity of this line is such that usually if continued downwards it would cross the median line about half-way between the umbilicus and the symphisis pubis. The anterior edge is usually nearer the middle line in front, in the child than it is in the adult, because in the child there is a fold of peritoneum, not usually, if at all, described in English books on anatomy, extending from the left side of the arch of the colon to the left 12th rib, and over the anterior edge of this the spleen must pass before it can extend low enough to be detected by the hand. This fold of peritoneum causes the enlarged spleen to lie more forward as well as to have a more oblique position in the child than in the adult.

The enlarged spleen is distinguished not only by its position, and by the character and the direction of its anterior margin, but also by its moveability. If the spleen be greatly enlarged, and the parietes of the abdomen be thin, the notch in its interior margin can often be felt. The liver in the rickety child is comparatively rarely so much affected with this disease as to be greatly enlarged. Its edge is usually somewhat lower than natural, allowance being made for the depression of the organ from the flattening of the diaphragm. Although the liver be not much enlarged, the edge feels harder and sharper to the touch than natural. Notwithstanding the enlargement of the lymphatic glands and spleen, there is no increase in the number of the white corpuscles in the blood. This fact I have verified by repeated observations, and on many cases.

The connexion between rickets and laryngismus stridulus is very close. I think it is about four years ago that I was struck by the connexion between them, and since that time I have seen a vast number of cases of laryngismus, and in every case, saving two, the child was the subject of rickets: and I believe the reason of laryngismus stridulus being so constantly referred to the irritation of teething, is that the rickety condition retards the development of the teeth, and the Practitioner refers the laryngismus to that which like

itself is the consequence of the constitutional disease. Carpopædal contractions, and even general convulsions, are not, as is well known, unfrequent in these cases, and are, like the laryngismus, to be referred primarily to the irritability of the nervous system and muscular debility. The convulsions in such cases may prove fatal, and nothing be found within the cranium to account for death.

Pathology.—In propounding his theory of Inflammation, Mr. Paget dwells in his most excellent manner on the fact, that, concerned in the process of nutrition, are four agents —viz: the nerves, the cells, the blood, and the blood-vessels—any one of which being deranged at a particular spot, derangement of the others necessarily follows; and he points out, that, when inflammatory action is established in a part, all four are in an abnormal condition—that inflammation is a disease of nutrition. In cancer, and in rickets also, without doubt, all four agents of nutrition are in an abnormal condition. Cancer and rickets, then, are both diseases of nutrition. In rickets, moreover, there is necessarily no pathological exudation or new formation; there is, so far as we know, merely a change in quantity and arrangement of normal structures and secretions. This is true, not only of the bones and muscles, but of the secretions of the skin and kidney. Rickets, then, is essentially and purely a disease of nutrition, not of one part only, but of the whole body. But, if we admit this as proved, we have advanced a very little way on the road to the discovery of its intimate nature. But little as we have progressed, we certainly are in advance of those who still regard rickets to be merely a chemical abnormity of the bones, viz., a deficiency in their earthy salts. That this latter view of the pathology of rickets is altogether erroneous, seems to me to be proved by the fact, that not only is there an insufficient disposition of the lime-salts in the growing extremities of the long bones, but there is an error in position of the small amount deposited there. The earthy matter is found in the cartilage-cells instead of the matrix. And yet, further, not only is there an insufficient quantity of the lime-salts and error in position of those present, but there is absorption of those deposited ere the disease began; for bones, previously hard, soften. The lime is taken up from the well-constituted shafts of the long bones and from the flat bones, enters the blood, and is thrown out of the system in the urine. It has been said, deprive a hen of lime, and she lays eggs with soft shells; deprive a child of lime, and

its bones will be soft. But there is no pathological relationship between the soft shell of the hen deprived of lime and the softened bones of the rickety child. In the former, the lime has never been deposited; in other respects, the growth is normal. In rickets, the lime has been deposited; it is re-absorbed, and then excreted in another place from the blood; and the growth of the bone is abnormal, irrespective of the absence of lime. The agents concerned in the nutrition of the bones not only do not take the lime from the blood, but they take the lime from the bones.

It is not probable that there is any lack of lime in the blood, seeing that one secretion from the blood, viz., the urine, was found, in Marchand's experiments, to contain six times its normal quantity of lime-salts.

I adverted in my first Lecture to that singular change in the chemical constitution of the bones in rickets pointed out by Lehman and Marchand, viz., that they no longer yield gelatine on boiling—a fact, if fact it be, which shows some far deeper change in the nutrition of the bones than a mere want of lime. I should have thought it unnecessary to dwell on so superficial a theory, had I not so often seen it adopted as a basis of treatment. And even the frequency of rickets in London has been supposed to depend on adulterations of the bread whereby its lime-salts are deprived of their solubility.

Of Meyer's opinion that rickets is an inflammatory affection of the periosteum and endosteum, I shall only say that my many examinations of rickety children after death have enabled me to lend no support to such a notion; that I have seen no sign of pre-existing inflammation of the bone or its covering, although I have looked carefully for such. It is, therefore, so far as I can judge, not only an hypothesis without foundation in fact, but an hypothesis to which all known facts are opposed.

It has been said that there is an excessive formation of lactic acid in the stomach of the child; that this acid enters the blood, and that to its presence in the blood all the phenomena which I have described as the symptoms and lesion of structure of rickets are directly secondary. I can only say of this theory that I know of no facts which remove it from the category of pure hypotheses; while the fact that lime is deposited in abnormal situations is opposed to it.

Causes.—It is of much greater interest to the patient and to the practitioner to determine what are the circumstances which cause a child to become rickety, than it is to learn

the nature of rickets. I know of no facts to prove that rickets is hereditary. The health of the mother, however, has a decided influence on the development of rickets in the child. Whatever renders her delicate, whatever depresses her powers of forming good blood, *that* tends to induce rickets in the offspring. Of the influence of the father, I am very sceptical. Of this much I am sure, that where the mother is in delicate health, in a state of which anæmia and general want of power form the prominent features without being the subject of disease usually so called; there the children are often, in a very decided degree, rickety, and that although the father is in robust health, and the hygienic conditions in which the children are placed are most favorable. On the other hand, I know no case, (though I do not deny that there may be such) in which the mother being robust, the hygienic conditions favorable, and the father delicate, the children have proved rickety.

Phthisical parents are no more likely to have rickety children than are non-phthisical parents. Nay, the facts contained in a table made for me by my friend, Dr. Edwards, some years ago resident at this hospital, and now Physician to the Consumption Hospital at the East of London, renders it probable that they are even less likely.

It is very common for the first, or the two or three first, born children to be free from any signs of rickets, and yet for every subsequent child to be rickety. Again, if a woman have one rickety child, in the large majority of cases all her subsequent offspring will be rickety. The explanation of this fact is that among the poor the parents are generally worse fed, worse clothed and worse lodged, the larger the number of their children—the man's wages remain stationary, the calls on his means are increased. And among the rich and poor, the larger the number of children the more has the mother's constitutional strength been taxed, and the more likely is she to have lost in general power.

Whatever external conditions are favorable to the formation of hydræmic blood in a child seem to be favorable to the development of rickets. Impure air constantly breathed—food insufficient in quantity or defective in quality taken daily—deficient light—want of cleanliness.

Whatever ailments interfere with nutrition, and so with the formation of good blood. Deranged conditions of the digestive organs—diarrhœa—attacks of local inflammation,

especially if neglected, or if treated by excess in blood-letting, mercury or antimony. Active treatment is sometimes necessary to save a child's life; but be careful, I pray you, how you employ active depleting remedies in children—you may cure the disease for which you administer your agents, but you may at the same time kill the child by the injuries inflicted on its general powers. And with reference to mercury, I would advise you to have your grey-powder bottles marked: *Dangerous, especially in alterative doses.* I do not mean that such are never given with advantage; but I do mean that where they are once given wisely, they are many times given to the injury of the child's health.

The frequency of rickets among the poor is no doubt partly the result of the improper food with which the children are so often dosed even from their birth. This is the common mode of rearing the children of the poor in London.

For the first two or three days after birth, their tender stomachs are deranged by brown sugar and butter, castor-oil and dill-water, gruel and starch-water: as soon as the mother's milk flows, they are, when awake, kept constantly at the breast. And well for them if they are not again and again castor-oiled and dill-watered, and treated with a few doses of mercurials—for the poor have learned the omnipotent virtues of grey-powder.

After the first month, bread and water, sweetened with brown sugar, is given several times a day, and during the night the child is, when not too soundly asleep, constantly at the breast. As soon as the little ill-used creature can sit erect on its mother's arm, it has at the parents' meal times, "a little of what we have"—meat, potatoes, red herring, fried liver, bacon, pork, and even cheese and beer daily, and cakes, raw fruits, and trash of the most unwholesome quality, as special treats, or as provocatives to eat when its stomach rejects the ordinary diet. Then instead of being weaned when from ten to twelve months old, the child is kept at the breast when the milk is worse than useless, to the injury of the mother's health, and to the damage of its after brothers and sisters, in the hope that it may retard the next pregnancy. The children are sacrificed that the passions of the parents may not be restrained. Can we wonder that rickets is prevalent among the poor of London? Can we fail to wonder that geography, history and crotchet-work form so large items in the instruction imparted at our

national schools, and the doctrines of life so small. Let the girls there educated be taught that Constantinople is the capital of Turkey, if it be any advantage for them to know it, but let them also learn how to dress, nurse, feed and lodge an infant, so that it may run a fair chance of not swelling the amount of that truly awful column in the Registrar-General's returns—"Deaths under one year."

I have told you that rickets causes, primarily or secondarily, more deaths than any other disease of childhood; from what I have said of its causes, you will also have learned that it stands very high on the list of preventable diseases.

Dr. Merei collected some, not all very trustworthy, facts bearing on the comparative prevalence of rickets in different parts of England, Scotland and Wales. The subject is one of very great practical interest. If you, who hereafter will practice in many parts of the country, would each pay attention to the prevalence of this disease in your own sphere of observation, and the causes that induce it, much valuable information would seem to be collected, and practical conclusions readily deduced.

Treatment.—There is no specific for the cure of rickets. Whatever agents are calculated to improve the general health, are the most efficient for curing the rachitic diathesis, and where that is not possible for preventing its worst effects. In the diet, the ventilation of the rooms in which the child lives, and the state of the digestive organs, are the points which ought chiefly to engage the Physician's attention. If, as is usually the case, the child be under eight months old, and brought up by hand wholly or in part, milk diluted with about a fourth part of lime-water, and with a teaspoonful or two of cream added to the half-pint, will generally be found the best food. It is better not to add sugar to the milk—if sugar is used, it is said by some that sugar of milk is preferable to cane sugar, and I have fancied that it is. If farinaceous food is required, a little gruel or plain buscuit, as Robb's, or baked flour, may be added to the milk. The children of the poor, especially, should be fed with a spoon rather than a bottle, as the cleanliness of the feeding apparatus, so essential for preventing acid fermentation of the food, is rarely secured. A little beef-tea and bread, eggs and farinaceous pudding, may be added, when the child is older. Should the child be still at the breast, it will be necessary, if the mother's milk is deficient in quantity or defective in quality, to partially or completely

wean it, or to obtain another nurse. There is no objection to giving the child two or three meals of milk and lime-water in addition to the breast-milk. Be careful to see that the child is not always at the breast, but gets its meals at stated intervals. It should be well washed all over at least once in the twenty-four hours, with warm water and soap. Daily tepid or cold sponging, according to the weather and strength of the child, is useful. The room in which it sleeps should be well ventilated. It should lie alone. It is well to place a good-sized lamp in the chimney for the purpose of aiding ventilation. In the day-nursery, light is as essential for health as fresh air.

As to medicines, it is well if the stools are very offensive, even though the bowels are rather relaxed, to give a single dose of aperient, such as a teaspoonful of castor-oil, or grey-powder and jalap, and then about once a week a dose of rhubarb and soda. These and a little prepared chalk and soda once or twice a day, to correct acidity, will generally be all that is required at this stage of the disease. When the febrile disturbance has subsided, the child must be frequently taken out of door. In fact, it should as far as may be, live in the open air, care being taken that it is warmly clad and not exposed to cold and damp winds. If practicable, it should be removed into the country. Dry, bracing sea air is the best. The east coast, as Scarborough and Lowestoft, in the hot months; Brighton, when London is enveloped in fogs. Tonbridge Wells, though inland, has a special advantage; for not only is the air of the place good for such cases, but as iron is an invaluable medicine in rickets, the water from its springs is a powerful curative agent; and many young children will drink the waters readily. Steel wine, though it contains very little iron, is extremely useful. I think it one of the very best forms for administering iron to rickety children. A teaspoonful or two of steel wine, with half a grain of quinine, and a drop or two of dilute sulphuric acid, constitutes a capital mixture for such cases. It should be taken just before meals.

Cod-liver oil is considered by some French writers of repute a specific in rickets. One advises us to be careful how we administer it to children much deformed, or in the course of a week or ten days we may consolidate the bones, and then recovery from the deformity becomes hopeless. But although my experience of cod-liver oil does not confirm the statements of Bouchut, it enables me to say that it is a very valuable remedy. It is best to give it immedi-

ately after meals. Orange-juice and orange-wine are the vehicles for its administration most agreeable to children.

The condition of the intestinal discharges requires, at this stage of the disease, also to be attended to. Occasional aperients, castor-oil, or rhubarb and soda, or a little essence of senna or magnesia, are usually all that are required. When any of the food is passed from the bowel as it is taken by the mouth, it will generally be found that it is improper in quality or imperfectly masticated.

The teeth of rickety children are so often absent or defective, that great attention must be paid to this point. It is right to pound their meat in a mortar—it is not enough to cut it small. Potatoes should be carefully mashed; and you cannot too strongly impress on the mother the importance of seeing that no little lumps escape, for such little lumps will assuredly be swallowed whole; and if you examine a dish of mashed potatoes, you willl frequently find that the majority of the pieces that have escaped crushing are either half cooked only, or diseased.

Rickety children of twenty months or two years of age require a small quantity of meat every day, in addition to good beef-tea. Milk should form, for them, as well as for older children, the night and morning meals.

If the stools are reported at any time to be white, they should be examined, as it may be that the white color is due to the quantity of undigested curd contained in them. Under such circumstances, it is no use to stimulate the liver or to give alteratives; antacids and a little lime-water with the milk, or the substitution of beef-tea for part of the milk, is indicated.

With reference to the bone deformities and their consequences, you will find, when the ribs are much softened, a well-adjusted bandage round the abdomen useful, by retarding the rapid descent of the diaphragm during inspiration. It is in exceptional cases only, that benefit is derived from mechanical supports to the spine and extremities.

I agree with Dr. Merei, whose work on infantile development and rickets contains very much that is most excellent, when he says, "Both the morbid conditions of the bones, and the constitutional state of rachitic children, do not admit of any notable degree of mechanical compression or embarrassment of movement by steel apparatus, of which frequent instances are observed to the detriment of the patient."

I have sometimes directed splints to be applied in such a

way as to project below the feet, for the purpose of preventing walking.

Time does not permit me to dwell on the treatment of the complications which so often cause death in rickets. I shall therefore conclude by two or three general remarks, having reference to certain points respecting their treatment.

Active depletion in any form, especially blood-letting, whether by a single leech or otherwise, is not to be employed in any of the inflammatory complications of rickets.

Large doses of antimony, so useful in the pneumonia of children of healthy constitution, and even in the subjects of tuberculosis or scrofulosis, are to be held as poison to the subjects of progressive rickets.

Mercury, unless as an aperient in conjunction with some other drug, is equally objectionable.

Ammonia, with or without ipecacuanha and citrate of potash, is the great remedy for the inflammatory, bronchial and lung affections of progressive rickets.

Iron, cod-liver oil, good diet and fresh air, are the great agents for the cure of laryngismus stridulus and general convulsions.

Iodine, iron, and cod-liver oil for the hydrocephalus.

Clinical Lectures on Diseases of the Eye. By Dr. Jacob. (Reported by A. H. Jacob, A. B., L. R. C. S. I.)

GRANULAR CONJUNCTIVA.

I have this morning to give you more of a general than a clinical lecture, having reference to a form of disease which we have had daily before us during the session, and which you must have before you all your lives in your dispensary or military practice: it is one of the most refractory and troublesome of eye affections, and will test your powers of perseverance more than any other. Being a morbid change of structure in a portion of the conjunctiva, I must explain to you what the conjunctiva is; it is the skin of the eye, in more dignified language a modification of tegumentary membrane, and evidently a mucous one, for you have only to put the tip of the finger into the inner canthus and look at it to prove that true mucous is there. Now, you know, I hold that there is no mucous without mucous glands, that no mere membrane makes mucous, and so we must find mucous glands here, as we do, for surely the conjunctiva lining the lids is profusely furnished with minute ones, and these glands become the granulations of which I

have now to speak. On the outside of the eyelids there is true skin, with dry cuticle or epidermis, but on the inside all is soft and wet but modified according to the place it occupies; the palpebral portion glandular, the reflection or fold from the palpebral cartilages to the eyeball soft pulpy membrane, the layer over the sclerotic transparent and flexible, and that on the cornea peculiar and delicate. Some will have it that the conjunctiva over the cornea is *epithelium;* but as that is often but a name for something between moonshine and matter, I must adhere to the old notion that it is real tegumentary membrane with a fine pellicle of *epithelium* over it. Be this as it may, take my advice, and believe, right or wrong, that the insides of the eyelids are studded with mucous glands, and that the cornea is covered by skin; it will save you a world of trouble, and prove a safe foundation for practice. This being premised, let us see what these granulations look like, which we can whenever we meet a sore eye of three or four months standing. Catching a light hold of the eyelashes of the upper lid, draw it firmly toward you, holding on for a moment until you fatigue the *orbicularis palpebrarum*, and then, by a sudden elevation and depression, turn the part inside out: it is easily done, when you learn the knack of it, but surgeons often use a probe to help them, laying it on the skin above the margin of the cartilage, and in private practice this may be preferable, as people like instrumental interference. The lid thus everted, if fully granulated, and never touched with caustic or blue-stone, shows a bright scarlet surface, studded with little bodies closely resembling warts, about the size of heads of large pins or small shot, having deep fissures between them. At an earlier stage, the granulations are smaller, fewer in number, and more irregular in their distribution; while at the commencement there is merely an extreme roughness of the surface, from distinct pointed elevations. After the free use of astringent or escharotic applications, the granulations are found less numerous and less prominent, the spaces between them larger, and the whole surface smoother, in fact, a partial cure has been effected, and you have only to finish it. All this is accompanied by increased and chronic vascularity of the conjunctiva over the sclerotic, and generally by opacities, red vessels, or small ulcers of the conjunctival layer of the cornea. Let us now see what you are to do with the first case to which I have alluded, where the granulations are large, prominent and distinct, growing like vascular warts from the surface, unchecked by escha-

rotics or astringents. Here is the case, and the only one, in which you can resort to the knife with advantage, but to do so requires a keen blade and delicate hand; no lancets or scalpels will do; you must be provided with this little scimitar with convex edge and probe point. You see it is about an inch and a quarter long, slightly curved, and should be sharper than a razor; something of the kind is to be found in cases of eye instruments, for enlarging the section of the cornea in extraction. Having everted the lid perfectly, and dried it with a clean soft bit of old linen, wait a little until all spasmodic squeezing of the *orbicularis palpebrarum* ceases, the learned call it blepharospamus, and then lay the flat of the blade to the edge of the crop of granulations, as you would a scythe to the grass, and mow away; sliding the blade back and forward until you shave off a good slice, and replacing the lid and leaving it to cease to bleed while you attend to something else. After some time evert the lid again, remove the clot of blood, and take off another slice if you can, and then adjourn the treatment for a week, advising light water dressing when the parts become inflamed and painful, and interdicting exclusion of light or confinement to the house. But all this will not cure your patient, it is little more than a preparatory process, although Sir William Adams some fifty pears ago thought otherwise, and as the story went in those days, backed by our versatile Prime Minister, who, you know, is at everything in the ring. After a week or ten days you must follow up this preliminary proceeding with the escharotics, the two most popular being nitrate of silver or sulphate of copper, "the caustic or blue-stone" of discharged soldiers, touching each remaining patch of granulation delicately with a fine point, and not scrubbing the entire surface as if you were scouring a flag; and so proceed at intervals of forty-eight hours until you level the surface. But you will often find that in all this you have been more or less anticipated, and that you have nothing to do but to finish some other man's work, in which case, or in a case where the granulations are not prominent enough for the knife, you have to handle the escharotics more freely; this, in fact, will be your business in a great majority of cases. What escharotic, then, are you to choose, and how are you to use it? The two most popular, as I have said, are the "blue-stone and caustic," and either answers the purpose, as our dispensary proves, for every day we see cured or half-cured cases treated with these

remedies, and especially by the former. Where the granulations are visible, tangible, and distinct, I prefer the nitrate of silver, although requiring more care in its application, it is more decisive in its operation, more easily controlled in its effects, and more within reach of counteraction if spreading in the application. To apply it neatly and effectually, you should be provided with small and large points of it, according to the state of the surface; small, to touch separate granulations here and there; large, for complete dressing of the whole face of the lid. As I have directed, having everted the lid, dried it, and steadied it, take your pencil of caustic, and rub away freely with it, for rub as you may it does not sink deeply into the structures beneath like alkaline caustics, it forms a tough layer, which protects the parts below: but for fear of accident, have some solution of iodide of potassium at hand to decompose any of the salt which may remain on the surface, and wash freely with a large camel-hair pencil and plenty of water, for woe to the patient if you turn a causticed eyelid in on his cornea. After this let the parts rest for three or four days to allow sloughs to clear off and surfaces to heal; and then, if necessary, repeat the application. The sulphate of copper may be used more freely, for if a true escharotic at all it never leaves marks of destruction behind it, or sinks into the subjacent structures; you may, in fact, rub away freely with it as surgeons in general do, but wash it off with having a little soda or potash in it to decompose the excess of salt. Do not, however, be too sure of pleasant results, especially in private practice, for sometimes severe inflammation follows, and great abuse of the doctor; and recollect, that if you would cure these cases, you must stick to them until you polish them off, for if you leave any granulations behind they will keep up the old irritation. Recollect, too, that after the surface is made as smooth as glass, the cure is not yet complete, and your patient must wait a long time, for the long-established vascularity and irritability of the entire conjunctiva continues for months, and nothing but time effects a perfect cure. What else have we to expect, seeing that our cure is but a mutilation, leaving the surface without its source of mucous, and a cicatrix instead of a perfect patch of glands. You hear me tell discharged soldiers to return to their native places and to undertake any labor they can accomplish in the open air, regardless of occasional temporary returns of inflammation; this I call sending them to grass; at all

events, tell them to shun hospitals and poorhouses as they would the place which is paved with good intentions. It is the hospital which brings the soldier to all this, and if ever you come to have influence as army surgeons recollect what I say, and endeavor to contrive some plan which will keep a man with a sore eye out of it. Keep him even out of guard-rooms and barrack-rooms, but let him attend parades and other out-door light duty, put him in a clean fresh hut or under canvass, and the less doctoring the better. I have not said half what I have to say about this granular conjunctiva and its causes and consequences; it is the great Irish difficulty in our line, and must be encountered by every man who has to do with dispensaries or workhouses, so do not be thinking that you can escape from the consequences of ignorance when the time arrives for action.

Mal-Practice. By J. W. Davis, of the St. Joseph Bar.

It is important, in every profession and business, that those who constitute it should be perfectly competent to discharge all of their respective duties; but in none is its importance greater than in medicine, as the life of the patient is placed in the hands of his physician.

For suffering humanity, we wish that it could be said that every physician was a complete master of his profession. But this cannot be, because all men are not endowed by nature with the same capacity. The proficiency and extraordinary skill possessed by one physician, nine-tenths of his brother practitioners have not, and can never hope to acquire. The question is asked, are physicians of ordinary and extraordinary skill all held to the same accountability in law? By no means.

The law only requires the physician to exercise the skill he professes to possess. Hence it is very easy to infer that the duty required by law of the practicing physician is simply to confine his pretensions to his natural ability and acquirements, and to use ordinary care and diligence in their exercise.

This rule for the government of the physician is a simple one, and its justice must be evident to every mind. In unsettled and out of the way places, the very best medical services cannot be obtained, and if a bone is broken, no surgeon can be had to set it; then, let the physician that such a community may maintain perform the operation; never assuring the patient that he will be as well treated as if he were in the hands of a Gross, or a Pancoast, or that his arm will never be

stiff. But rather let him remember that he possesses but little skill and experience, and let his acts and words be governed by this recollection, and he will leave little foundation for a suit for malpractice, even if his treatment does fall below the standard of ordinary skill.

In sparsely settled communities, where there are no surgeons, the physician can with impunity hang out his sign lettered "physician and surgeon." For though he never set a bone, or dressed a wound in his life, some one may be shot or crippled to-morrow, and if he don't attend him, who will? Necessity, then, allows such an assumption, and if such a physician, in such a locality, is besought by the sufferer, as a "dernier resort," to perform a difficult operation, and he performs it with less than ordinary skill, the law would deal with him leniently. If a city physician should perform such an operation with less than ordinary skill, the law would hold him to a strict accountability. For a skillful surgeon had an office next door, and there was no necessity for the physician performing the operation—common honesty required him to send the patient to the surgeon. Every one is the best judge of his own capacity; and, if honest, he will measure it correctly, and hold himself out to the world accordingly, and his works will never get him into trouble. That his works should correspond to his pretensions, is all that the law requires of the physician. It will not permit him to excuse himself because he was ignorant, or because he exercised all the skill he possessed, but hold him responsible at the high-water mark of his pretensions.

As intimated before, the law does not demand of the physician extraordinary skill, such as is possessed by men of rare endowments and attainments, but only such ordinary skill as characterizes the profession. This skill, however, must be exercised according to the best and latest authorities. The law will not tolerate crotchety notions, nor permit a physician to say that he followed the old practice; every physician must keep up with the times—must follow the latest and best treatment.

What has been said, however, must be understood with some qualifications. In all implied contracts, the work done is only to be in proportion to the money paid, or to be paid, for it. So, to some extent, the fee paid may serve as a rule to measure the amount of skill to be employed. If a man is so parsimonious as to pass by the office of a physician he knows to be skillful, in order to get the services of a cheap doctor, —if he thinks so little of his life and limbs, as to hazard them in order to save a few dollars, he could not expect the law to place a very high estimate upon them.

Also, the question will be submitted to a jury as to whether the patient sought the physician, or the physician the patient —i. e. if a man goes to a physician and asks for his medical services, then the physician is looked upon with favor; but where a physician hunts up a patient—for instance, a man with a stiff joint, tells him that he can, by operating, take out the stiffness, that it is necessary that the operation should be performed, and thus induces the operation—then, the physician is strictly answerable, (and, I apprehend, without the sympathy of his fellow practitioners,) if he is guilty of mal-practice. For it may be considered in medicine, what maintenance is in law, and also because it is meddling with *good enough;* the stiff joint, though an inconvenience, could not, probably, in any way be fatal to its possessor.

It is with pleasure that we reflect that the standard of ordinary skill is higher than it used to be—that in our day an impostor, like St. John Long,* cannot deal out suffering and death, in allopathic doses, and in every case have a verdict of "not guilty:" that no judge will now dare declare from the bench, as Lord Ellenborough once did, that a physician might mistake the uterus for the placenta, tear it out by reason of this mistake, kill the woman, and yet not be guilty of gross negligence. At the present day, no excuse is to be found for an error of this kind.

This change in Medical Jurisprudence is highly beneficial in compensating those who may be victimized by quacks, and in checking, if not suppressing, empiricism itself.

While such a change has taken place, it is gratifying to know that our courts now, as ever, regard suits for mal-practice without favor, and show no disposition to encourage this class of litigation; and in this the courts are supported by a large majority of the members of the bar.

Members of the bar can prevent many malicious and unfounded suits; this they can accomplish, in a great measure, by informing themselves thoroughly upon all the facts in a case, outside of the mere statement of their client, and be satisfied in their own mind, by evidence that cannot be doubted, that there has been a case of mal-practice, and then, and not till then, consent to prosecute the case. If every attorney would take this precaution, many suits for mal-practice would never be instituted; and we are pleased to say that the members of the bar, generally, adopt this precaution, and that suits for mal-practice are now of rare occurrence. We are convinced that it is but just that they should do so, when we re-

* Vide Rex vs. John St. John Long. C. & P. 423. 6 Bingham, 440.

flect that the investigation and management of animal life is peculiarly the province of medicine, which it is impossible to fully understand. Sir Gilbert Baine says:* "animal life is not only the most complicated department of nature, but the most vague, for besides being more or less subject to mechanical agencies, it possesses such a number of attributes, peculiar to itself, and those of such a varied and fluctuating nature as to put their influence and combination beyond the reach of all calculation, and so as to present the most formidable and discouraging obstacles to those who may propose, *a priori*, to predict or control its operation, whether in health or disease." In inanimate nature, we can establish with certainty rules for its government. The intellect of man has brought all things to a degree of certainty; but this certainty holds less strictly in the living human body than in any other subject in nature which the intellect of man has contemplated and studied. With all of man's learning, he cannot give you a certain opinion, nor treat with certainty, any object, unless he can either obtain complete control of it, or unless it is governed by fixed and immutable laws. It was truly asserted, by a learned man, that there is nothing certain outside of pure mathematics. The chemist, by reason of obtaining control of the mineral and vegetable products of the earth, can, by his learning, tell you the result of exercising that control. The astronomer, without having the control of the planets, and being distant thousands of miles, will tell you what they will do for ages to come, simply because the planetary system is governed by unchanging laws. But the human body is animated by the fiat of the Almighty, and He alone has absolute control of it—and there are no certain and immutable laws for its government—there are just as many constitutions and temperaments as there are human bodies. Such being the case, the great difficulty and uncertainty attending the practice of medicine and surgery at once address themselves to every intelligent mind, and should enable the lawyer to fully comprehend all the embarrassments and impossibilities attending the practice of a noble sister profession.

Mr. Elwell, in his treatise, justly observes: "If a lawyer is clearly satisfied of these difficulties, as he certainly will be by looking into their causes, very much vexatious and ruinous litigation would be prevented, and worthy and intelligent men be left unmolested to pursue their important professional duties." But it may be said that if a physician is innocent of

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* Elwell, 38. Elmt. Med. Knowledge, London, 1825.

mal-practice, he will be acquitted, and he is not injured thereby. Not so. If the foul breath of slander touches the robes of chastity, the purest innocency, thrice proved, will not eradicate the stain:—so, if a professional man is impleaded, it matters not if the jury do acclaim him innocent, without rising from the box; the fact that he was once on trial for mal practice will live as long as he lives, will follow him wherever he goes, and he will always afterwards be regarded with a degree of suspicion and distrust—he is no longer known among the people as Dr. ——, (especially if he is so unfortunate as to have a name that is difficult to remember,) but is known as the Doctor they had up 'fore Court for killing Squire Jones' son: and the longer the physician lives, the worse does it militate against him; for at first there were those who remembered all about the trial, but in course of time they grow less, and in nine cases out of ten, any one inquiring about the trial would receive the reply: "I've heard them say, that a long time ago, he was up before Court, and that's all I know about it."

We do not wish to be understood as desiring, under any circumstances, to screen the physician; on the contrary, we are willing and anxious always to visit upon him the penalties of the law, if he is guilty. We would gladly second a proposition to transport the whole tribe of empirics and quacks that infest the medical profession from earth, if it were possible, and there was any place in the whole universe, above or *below*, where they could obtain admittance. But, as we have before said, the physician is injured by going through a trial, and out of justice to the profession they should not be impleaded unless it is certain they are guilty.

The premises considered, how important is it, then, that the physician should be sufficiently well acquainted with the law, to thoroughly understand his responsibility; and that the lawyer should understand sufficiently of medicine to know and appreciate when, and under what circumstances, he should consent to prosecute a suit for mal-practice.

We have before us an excellent medico-legal treatise on mal-practice and medical evidence, comprising the elements of medical jurisprudence, by J. J. Elwell, M. D., of the Cleveland Bar, to which we have made reference in this cursory article. We have not examined the work thoroughly, but we can state that the subject is well treated, and contains quite a number of leading cases, both English and American, and we do not hesitate to say that it is a work that should have a place in every legal and medical library.—*St. Joseph (Mo.) Journal of Medicine & Surgery.*

The Effects on Children of Mercurial Treatment of Syphilis in their parents. By Dr. F. C. Faye.

At a time when the opinions of medical men as to the utility of a mercurial treatment in constitutional syphilis appear to be very contradictory, as has moreover been the case several times during the course of the last few centuries, it appears to me that it ought to be of great importance to obtain the well established result of numerous medical observations of the state of health of children born of syphilitic parents who were treated by mercury.

We know very well that a great number of these children have been impregnated with the dyscrasia; and we also know that new modes of treatment, from which mercury is excluded have failed to produce the wished for results in children; and especially, that the treatment by inoculation with chancrous pus, (otherwise called syphilization,) and the simple derivative method, have disappointed our expectations in this respect. It is clear that the absolute condemnation of mercurial treatment of late years pronounced by some physicians, ought to be based on something else than superficial appearances; and that in order to be final, the comparison between the two methods ought to be carried out with precision and accuracy.

The surest and most simple proof of the cure of syphilis the true touchtone showing that the disease is destroyed, or at least so neutralised in the system that the function of the ovaries and testicles remain intact, should undoubtedly be sought for in the circumstance, that the children of parents who have been born healthy, and do not subsequently become affected in any way evidently attributable to the syphilitic dyscrasia.

The time has not yet arrived for deciding to what degree this test, important as it is both in a humane and therapeutic point of view, shall afford a satisfactory result with respect to several new non-commercial modes of treatment; but on the other hand, we have the experience of centuries to show, in contradiction to the repeated condemnation pronounced by the anti-mercurialists, that many children produced by syphilitic parents, who have been suitably treated either by mercury alone, or with mercury, assisted by other remedies, have been born without any trace of the dyscrasia, and have continued healthy—a favorable result, which is obtained more frequently when the father alone has been affected. On this point we must ever remember, that the father may, although imperfectly cured, sometimes procreate a healthy child with a woman who is perfectly sound.

To enable us to judge with certainty, and to base our opinion upon an extensive induction, it is necessary, I think, to

draw not only upon hospital, but also upon private practice, to ascertain the effect of mercurial treatment upon children. I, therefore take the liberty of requesting each practitioner who is interested in these questions, and who is in possession of well established facts bearing on them, to be good enough to communicate the results of their experience in some mode, and to give me the references necessary to enable me to find them, if they are already published. I would also request the several medical societies, and editors of journals, kindly to assist in the publication of the wished-for researches. What I should desire to be briefly informed of is as follows: How many children born of syphilitic parents who have been treated with mercury, have come into the world healthy and have continued so, and how many have succumbed to the dyscrasia or have been successfully treated?

Also, how far the observation, long since made, has been found correct, as to the favorable effect on the health of the children of mercurial treatment undergone by the mothers during their pregnancy, when these mothers have previously produced syphilitic children? However, we must here bear in mind the remarkable fact, that women may purify themselves by repeated accouchements, and may finally give birth to healthy children after having had several diseased ones.

In order to attain the above object more completely, it is very desirable that the report should state whether the father or the mother, or both have been affected. In this mode we may more fully test the accuracy of the generally received opinion, that fathers who have undergone treatment produce healthy children more frequently than mothers, even apparently cured. To obtain conclusive information, it will not suffice to observe the children of the lower classes of the population who have been treated in hospital, because the members of these classes often lead an irregular life, and are exposed to relapses. Persons in easy circumstances, on the contrary, who have been treated at home, and subsequently had several children born in wedlock, are more under the control of the physician, and we may have more confidence that the results of observation will, in such instances, possess a real value in enabling us to judge of the influence of anti-syphilitic treatment upon children.

It is, therefore, to my brethren in all countries, and particularly to those engaged in private practice, that I have the honor of addressing my request, to collect their observations, which I should wish to arrange, as soon as I shall be informed of their publication, or shall have them specially sent to me

so as to render them subservient to a comparison of the modes of treatment in different countries.—*Dublin Quarterly Journal.*

Treatment of Mammary Abscess.

A discussion upon this subject arose at the Boston Society for Medical Improvement. Dr. Cabot observed that this abscess was due to a peculiar cause, which made it differ from common abscess, and rendered it less amenable to treatment. The anatomy of the breast, with its milk tubes radiating from a central depot has been compared to the fingers of a glove radiating from the palm. The inflammation caused by the plugging of one of these tubes, backs up until it reaches the depot and then runs down the other tubes. He thought that bandaging the breast, so as to insure complete support, was of great benefit. Dr. Stevens had never seen mammary abscess cured by external applications. Dr. Clarke spoke very highly of the application of leeches during the time between the chill and the existence of the pain, or when pain is only felt on pressure. By such application the abscess may often be abated. Dr. Buckingham thought that nineteen out of twenty of these abscesses are the result of meddlesome interference. He strongly objected to rubbing the breast, or applying the breast pump as soon as any pain is felt. It should be let entirely alone, the child only being applied to the well side, and its nursing will cause milk enough to flow from the affected side to relieve it. If both breasts are affected, the child should not be applied to either. They will swell and grow painful for twenty-four or thirty-six hours, when a flow of milk will relieve them. Even after the formation of pus the let alone treatment is the best, the application of leeches only increasing the pain. He thought the same method should be followed with sore nipples. The child should be nursed from the well side, and the milk allowed to flow from the affected side. If there is much pain, extr. belladon. of a cream like consistency, applied to the areola with the finger, gives some relief. Woman with dark nipples rarely have them sore, while those with pink ones are very liable. He regarded the various astringent washes used as preventatives as injurious, by removing the oil which is secreted for the protection of the nipple. The application of oil prior to labor, is of more service than anything, possibly because it prevented the patient using mischievous washes. Dr. Putham thought that it was good

to leech, and to keep the breast moist and warm after a chill. After the woman stops nursing he often applies a bland, soft ointment, in order to cause the nurse and others to let the breast alone. He observed that the apparent uncertainty of treatment arose from not considering the exact condition of the breast. In some cases the milk tubes were obstructed, while in others the inflammation was in the cellular tissue. In either case, if seen early, free leeching was of great advantage and next to this he had derived most benefit from cold applications, acetate of lead, lotions, etc. When small knots were formed, gentle friction was of use, and it was good practice to open the milk ducts when they were manifestly distended; one objection to the let alone treatment was, that by keeping the child away too long the secretion might fail altogether. He thought that blistering was only the let-alone treatment by compulsion; for the patient would be very careful how she touched the blistered surface, whatever the amount of distension.—Dr. E. H. Clarke spoke in approbation of the let-alone treatment, which he had followed for three or four years. He used leeches occasionally after the chill.—Dr. Reynolds stated that he had had several opportunities of treating threatened inflammation of the breasts according to Dr. Buckingham's plan, and had been satisfied with the results. In only two out of fifteen or sixteen cases had suppuration occurred. Patients did not usually object to the method on account of the pain it gave rise to, being willing to submit to anything which promised an escape from suppuration.—Dr. Reynolds questioned, however, whether in cases in which great traction of the nipple existed, the old plan of drawing this out, and rubbing the breast with oil, was not the best.—Dr. Parks had followed the let-alone plan with very satisfactory results. He applied it only to those cases in which there appeared to be distension of the breast from over-secretion, and using the common method in obstruction of the ducts or common inflammation.—Dr. Coale thought that it would be a difficult matter to get patients to wait thirty-six or forty-eight hours. The pain was usually severe, and the whole system in an irritated, excited state, which made the suffering more intolerable. He had been very well satisfied with the results from gentle friction with camphorated oil, very sensitive lumps being dispersed by these in a few hours. The friction should be gentle, and prolonged for fifteen or twenty minutes at a time. He could call to mind cases in which the breasts, painful and distended breasts in the morning, became relieved by the evening or next morning. In more advanced cases blistering tissue was applied closely over the breast, and fre-

quently gave great relief by the amount of fluid discharged. A part of the harm done by breast-pumps was due to their faulty shape, and they ought not to be used at all as now made. The sharp edge of the cup presses upon the tubes as they enter the nipple, and obstructing the flow of milk, defeats the very object for which the pump is employed.—Dr. Bowditch considered that the wash of the acetate of lead was of use in diminishing or arresting the secretion; and in some cases this effect had been produced sooner, and more completely than was intended.—Dr. Sargent had not understood Dr. Buckingham to say that suppuration would be avoided in all cases by letting the breast relieve itself, but that a discrimination must be made between those cases in which inflammatory exudation had, and those in which it had not, taken place. In the latter, suppuration might always be avoided, and in the former it was, to say the least, not more likely to ensue if the breast were let alone.—Dr. Minot thought that the formation of abscess was sometimes prevented by strapping. It was his habit, after the chill, to compress the breast in this way, and to give a cathartic in order to induce watery stools. This course had seemed in some cases to have prevented threatened suppuration.—Dr. Clarke, on the other hand, had tried strapping without avail, and thought that in a few instances the early use of leeches prevents suppuration, although this usually will occur.—Dr. Parks, referring to Dr. Clarke's opinion that a really inflamed breast was rarely, if ever, prevented from suppurating, observed, that although this was true as a general rule, cases did occur in which there were chills, with pain, redness, and swelling, but not resulting in the formation of pus. He had lately treated several cases of acute engorgement with quarter-grain doses of antimony, producing nausea and vomiting, with relief to the symptoms, which had been very severe.—*Boston Medical & Surgical Journal*, vol. lxi. pp. 102—105.

Holopathy.—The Lancet says that a distinguished physician of Paris, M. Marshall de Calvi, is now lecturing on a new medical doctrine, to which he has given the name of holopathy.

He considers that diseases are only phases or episodes of a general affection of the organism, which affection or diathesis produces the episodes when circumstances favor their appearance. The lectures, it is said, are creating some sensation in the French capital.

Hypophosphites in some Conditions of Disease in Young Children. By O. C. Gibbs, M.D., Frewsburg, N. Y.

November 15th, 1859, we were called to see a female child, aged 11 months. The child was of a decidedly scrofulous habit, had from the first few weeks of life been troubled with scrofulous sores and cutaneous eruptions: but at present it was suffering from an attack of pneumonia. The general and physical symptoms were all well marked. We ordered syrup of ipecacuanha, spirits of nitre, and paregoric in appropriate does for internal remedies, and applied mustard to the chest. The patient was closely watched, yet the symptoms gradually increased in severity. On the third day, syrups ipecac, and liquorice were given in combination, and powders composed of Dover's powder, quinine, and small doses of the chalk and the mercury mixture were added to the treatment. The symptoms still increased in severity; though the skin was moist, the cough was troublesome, the pulse very frequent, from 130 to 140, and unpleasant head symptoms began to manifest themselves. The ipecacuanha was abandoned, and the iodide of potassium was substituted, and wine or brandy was soon superadded to the treatment. In spite of treatment, great prostration came on, the pulse was very feeble, and so frequent as to be with difficulty counted. The patient was seemingly unconscious of all surrounding objects, a constant moaning was kept up, the arms were constantly sawing the air, muscular spasms were occasionally observed, and the eyes were either strongly drawn to one side, or strabismus was added to the list of ominous symptoms. The eyes were generally open, yet at times there was no evidence of seeing. The pupils were sometimes greatly dilated, and at others as preternaturally contracted. The pectoral symptoms were upon the decline, the cough was less, and the physical signs gave evidence of an abatement of the original disease; yet all hopes of a favorable issue grew less day by day. A blister was applied over the cervical region of the spine, and croton oil applied over such places as had been the more common sites of the former cutaneous disease, with the hope of establishing an eruption not unlike that which for two or three weeks had passed away. Iodide of potassium, quinine, small and frequently repeated doses of opium for its stimulating effect were continued, and milk punch and beef tea were administered liberally.

On the evening of the 23d, the eighth day of treatment, we left our little patient, informing the mother that death

would probably end the child's sufferings before morning. It was with much sorrow and regret that we gave this unfavorable prognosis. The parents were our intimate friends, and the patient was an only child. To please a friend of the parents, we had been asked to consult with a physician of limited study, and still more limited experience, and who, previously, in his intercourse with us, had so shamefully disregarded all principles of professional honor, that we were compelled, on this occasion, to decline the solicited consultation. Death, under such circumstances, would give unfriendly influence an opportunity to incite complainings and regrets. If other influences were wanting to nerve us to the fullest extent of our energies, it might be found in the fact that, though in quite active business, for more than two years, we had not lost a patient under sixty-five years of age, and we were desirous of protracting that interval to the utmost.

On our way home, we mentally reviewed the symptoms and the treatment from the beginning. That the pneumonia was gradually subsiding there could be no doubt. It was quite probable that there was no inflamation about the cerebral meninges, and that there was no effusion upon, or within the brain. It was probable that the symptoms arose from *anæmia*, and that death was about to take place because the nerve centres did not receive the requisite stimulus. Yet what treatment better than that in use could be brought in requisition, unless we practiced transfusion? This last we had never practiced, and were unwilling to commence in so young a patient. A more decided nerve stimulant and tonic was wanted. Was it to be found in our list of remedies? Strychnia was thought of; but could so powerful a remedy be safely administered, in a child so young, with hopes of beneficial results sufficiently speedy for our purpose? Reflecting thus, a conviction came over us, with the assurance almost of prescience, that the syrup of the hypophosphites of lime and soda was the best remedy in the Materia Medica, to meet the indication presented in this case under consideration. The brain and spinal marrow contains phosphorus largely, and it is quite probable that a remedy that will supply it in an immediately available form, will supply the stimulous desired. So plausible was this reasoning to our mind, at the time that we returned immediately back, and in the darkness of a stormy night sought our little patient again. In addition to the treatment formerly advised, we ordered five drops of the syrup of the

hypophosphites of lime and soda, to be repeated every two hours. We urged a persevering use of remedies, however discouraging the circumstances, until death or improvement should take place.

On the following morning we found our patient apparently somewhat improved. The moaning was less, the strabismus and spasmodic drawing of the eyes to one side had passed away, and the sawing of the air with the hands was much diminished. Though the prostration was great, and the symptoms still very alarming, yet the general expression was one that gave us reason to hope still for a favorable issue.

The treatment was continued, and the patient made a rather slow but perfect recovery.

We are aware that any conclusions drawn from one case would be as likely to be false as true, and our readers are left to draw their own conclusions from the case. The reasonableness of the treatment of hydrocephaloid disease, with the hypophosphites, connected with the prompt and satisfactory result in the above case, have induced us to report it. Subsequent experience only can determine the value of the remedy.

Technical Chemistry.—Disinfectants.

The use of a mixture of coal-tar and plaster-of-Paris for purposes of disinfection and for dressing wounds, as proposed by Corne and Demeaux (*Comptes Rendus*, xlix, 127; see this Journal. xxviii, 425), has been recently reported upon in the French Academy by a committee—Chevreul, J. Cloquet, and Velpeau (*rapporteur*)—to which the subject was referred in July, 1859.

The great interest, which this method,—so favorably commented upon by the distinguished surgeon Velpeau soon after its publication,—excited among the medical men of France gave rise to the publication of numerous other systems of disinfection, which being submitted to the Academy for its approval were also referred to the committee, in question. The labors of its members have thus been materially increased, and their report swelled to the dimensions of a general treatise upon disinfectants—especially those applicable to wounds.

In numerous experiments made at the Hospital *de la Charite* the mixed coal-tar and plaster of Corne was exploy-

ed, both in the state of powder and as a poultice made by mixing it with oil. When applied as a thick layer, three or four times a day, upon putrid, gangrenous and sanious wounds, the powder destroyed their odor without giving rise to any special pain. Upon indolent sores, however, or upon recent burns the contact of the powder produced considerable smarting upon some patients, though well borne by others. Wounds of the first class were often found to be cleaned as well as disinfected; while those of the second class generally acquired a dirty, pale, gray tint, their cicatrization being hindered.

The poultices were found to be more advantageous than the powder in the treatment of cavernous wounds, purulent or fetid, and sinuous fociopen suppurating abscesses, anthracoidal suppurations, etc.

Applied directly to the sore, the poultices destroyed the putrid odors, allayed the inflammation without augmenting the pain, leaving beneath them a healthier pus, and the surfaces in better condition. In a word, the mixed coal-tar and plaster, when properly applied, disinfects wounds and putrid suppurations. As for the absorbent and detergent qualities which its inventors also claim for it, these are less clearly evident.

The powder absorbs better than the poultices,—the latter, it is true, take up a portion of the morbid exudations, but unless the dressing is carefully renewed, five or six times a day, pus will nevertheless collect beneath it. From this it follows that after having been somewhat cleansed the wound ceases, at the end of a few days, to clean itself, or to heal more rapidly than it would with the usual topical applications.

Upon ulcerated cancers, the mixture, either as powder or poultice, disinfects them partially, but neither dries up the suppuration nor alleviates the pain.

It is in the dissecting-room, upon organic matter in a state of putrefaction, that the mixed coal-tar and plaster is all powerful. The most infectious masses, when imbued with the powder, or simply rolled about in it, lose at once their disagreeable odor. According to Velpeau, his autopsy room was as approachable towards the close of last summer as it had formerly been repulsive. It was freed from flies and other insects, as well as from putrid odors.

Although it would have been out of the province of the committee to experiment upon the application of this mixture in disinfecting filth upon the great scale, they have

nevertheless proved that it can be advantageously used in hospitals for deodorizing urine or fecal matters.

The following inconveniences, to which the use of the mixture in surgery would give rise, are enumerated:

It not only soils the clothes of the patient, but hardens them and causes them to weigh more heavily upon or about the wound; it imparts to the bandages, with which the poultices are covered, a very tenacious rusty or yellow color; it must be frequently renewed, and although it destroys putrid smells, it retains a bituminous odor by no means agreeable to many persons.

These inconveniences are of comparatively slight importance, it is true, and may possibly admit of being remedied.

Of the other disinfectants submitted to the committee, several were only modifications of that of Corne and Demeaux:—Vegetable tar, as shown by Renault, may be substituted for coal-tar.—A mixture composed of hydraulic lime and tar did not disinfect wounds to which it was applied, nor could it be supported by the patients. With regard to the assertions of some practitioners, that common earth, talc, flour, or other vegetable and mineral powders—even poudrette—when mixed with coal-tar furnish a more convenient and less costly disinfectant than that prepared with plaster, the experiments of the committee have proved that while coal-tar, mixed with common earth, well dried, or with sand, is equally, or perhaps much more, efficacious for disinfecting fecal matter as when mixed with plaster; that while comparative experiments made from the point of view upon sulphate of lime, clay, charcoal, linseed meal, and earth have resulted in favor of the latter, the same is by no means true in surgery. When applied to wounds or infections suppurations these different mixtures were only partially successful, having proved to be less efficacious than the mixed plaster and coal-tar. In like manner the proposal to use an emulsion of coal-tar and tincture of saponine has not been found advantageous in practice; most patients complained of it, their wounds exhibited scarcely anything satisfactory, while the disinfection was very imperfect. The mixture of plaster and coal-tar was substituted for it, upon the same wounds, with decided advantage.

Although the modifications of Corne and Demeaux' process have not been particularly felicitous thus far, they have nevertheless served to confirm the fact that in reality it is

the coal-tar which acts the principal part as disinfectant in these various mixtures.*

Among the numerous other substances proposed as disinfectants, or for dressing wounds, the following have not afforded satisfactory results:

Chlorate of potash,—mixed with clay or kaolin (for example, 10 parts of chlorate to 90 parts of white clay or fine sand) which was proposed as an absolute disinfectant, neither disinfected nor absorbed the pus of fetid wounds. The mixture would be in any case much more costly than coal-tar and plaster and certainly less efficacious.

Whites of eggs,—mixed with chalk and applied to wounds, previously oiled, succeeded no better than simple-cerate.

Powdered sugar.—When employed in layers upon ulcers forms crusts, beneath which the suppurations accumulate and hinder the process of healing.

Cherry-laurel water, glycerine and cellulose.—According to Antier, glycerine mixed with equal parts of cherry-laurel water forms a valuable absorbent or disinfectant to be applied as a lotion or injection. This mixture converted into pomade by mixing it with powdered almonds was also proposed as a topical application for all kinds of wounds. But in the hands of the committee neither the liquor nor the pomade by themselves or mixed with kaolin produced any

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* The inefficiency of sulphate of lime as a general disinfecting agent when used by itself may be readily demonstrated by the following experiment which is of interest in view of the fact that a belief in the utility of gypsum as a deodorizer appears to be widely spread among recent writers. For that matter we are told by Paulet [*Comptes Rendus*, xlix, 199] that during the last 25 years more than fifty authors of processes of disinfection have announced, each as he believed for the first time, the use of plaster as a means of disinfection.

If a mixture of about equal volumes of powdered gypsum and fresh urine be introduced into a small phial, the mixture placed in a warm room and thoroughly shaken several times a day until the urine has become putrid, it will be observed that an exceedingly disagreeable odor will be developed, differing from that of ordinary stale urine inasmuch as it is unalloyed with the odor of ammonia. For the complete success of this experiment it is important that a large excess of sulphate of lime should be present and that the mixture should be frequently agitated, else the whole of the carbonate of ammonia will not be decomposed and will tend to mitigate the fetor of the special odor of the putrid urine. So far from disinfecting in this case the sulphate of lime really destroys a deodorizing, or at least a masking agent, ammonia; leaving free,—purified as it were, and unadulterated, an odor, the peculiar offensiveness of which is remarkable. Sulphate of iron being substituted for gypsum in this experiment afforded a somewhat similar result, although the odor obtained was a trifle less insufferable than that of the experimentr with sulphate of lime. It should be here mentioned that the odors in question were in no instance contaminated with sulphuretted hydrogen,—as was ascertained by careful trials.

F. H. Storer.

effect more marked than that of lead-cerate and other antiputrid or detergent solutions already in use.

The members of another group of disinfectants are worthy, in various degrees of consideration.

Among these charcoal appears in the front rank.—Surgeons have long regarded it as one of the best antiseptics known. Confined between pieces of linen according to the process of Malapert and Pichot it is more readily applied than when used as powder directly upon wounds; but the mixture of coal-tar and plaster, which disinfects still better and is more cleanly, is susceptible of a simpler and a more general application.

Coke of Boghead coal,—in powder as proposed by Moride*

* In view of the claim of Moride (*Comptes Rendus*, xlix, 242) as well as from its general interest the following extract from a report made to the British Secretary of War by Lewis Thompson (London Journal of Gas Lighting, Water Supply and Sanitary Improvement, 1856, v. 11) may here be cited.

Mr. Thompson states that he has instituted a set of experiments having a purely money basis as their exponent.—The articles enumerated were each employed until they practically deodorized one uniform quantity of the same mass of putrid sewage and the money value of the proportions thus used was deduced either from a broker's price-list or, where this failed to give the requisite information, by special inquiry from a wholesale dealer. The amount of sewage operated upon in each experiment was half a gallon taken from a single tank which had been recently filled out of a large and very offensive ditch or open sewer. Two indications of the progress of the disinfection were had recourse to in these experiments; one with paper dipped in sugar of lead which gradually ceased to become brown as the deodorizing agent was added in successive portions; the other had reference to the discontinuance of any offensive smell; and the attainment of this last condition was regarded as the termination of each experiment.

By this means he was enabled to draw up the subjoined table which shows at a glance the comparative cost of executing the same amount of deodorizing work with each agent on the supposition that Boghead charcoal can be had at the rate of $3.00 [=12*s*.] per ton.

Table showing the cost of Purifying one uniform Quality of Feculent Sewage by the several Articles mentioned.

Boghead charcoal (coke.	$3.00
Nitric acid,	8.50
Black oxyd of manganese,	9.25
Chlorid of lime.	10.75
Peat charcoal,	11.00
Subchlorid of iron (imperfect),	11.25
Animal charcoal,	16.75
Chlorid of manganese (imperfect),	17 50
Bichlorid of mercury,	18.00
Impure chlorid of zinc in damp powder,	26.00
Chlorid of zinc in solution as patented by Sir Wm. Burnett,	37.00
Sulphate of copper,	39.00

The sulphates of zinc, iron, and alumina; common gypsum; sulphuric, sulphurous, and muriatic acids; peroxyd of iron, highly dried clay, litharge, and sawdust were found imperfect even when very large quantities were employed.

Arsenious acid and creosote on the contrary, were very active: but the danger of a subsequent evolution of arseniuretted hydrogen in the first case, and the difficulty of diffusing an oily fluid like creosote in the second, seemed to interdict the use of these substances. F. H. S

like carbon when employed comparatively with coal-tar and plaster, alternately upon the same patients, proved to be less efficacious, less convenient and more disagreeable than the latter.

Mixed plaster and charcoal,—proposed by Herpin of Metz, irritates the wounds, disinfects badly, and soils everything it touches.

Carbonic acid,—proposed by the same author, appears to the committee to be too difficult of application in practice, though theoretically founded upon important analogies.

Bituminous Water of Visos—proposed by Manne, and the mud of rivers used as a poultice by Desmartis, do not appear to be susceptible of being substituted for the mixture of Corne and Demeaux.

The following substances have long ago acquired a place, each in its own way, in the class of disinfectants.

Tincture of iodine has been employed as an antiseptic by hospital surgeons since 1823. By modifying the surfaces to which it is applied, it usually improves the appearance of the pus, lessens its acridity, and is, to a certain extent, antagonistic to putrid infections. It disinfects, however, only incompletely, causes severe pain when applied to open wounds, and would be expensive if used on a large scale: finally, the odor of iodine is neither agreeable nor unattended by inconveniences.

Perchloride of iron has been used for some twelve years in hospitals as an antiseptic and as a means of modifying certain wounds, and putrid or sanguineous foci.—Without diffusing the disagreeable odor of tincture of iodine, it has, like the latter, the fault of disinfecting badly, of causing much pain, and of acting violently upon the diseased tissues, besides injuring the cloths which are soaked in it even more than is the case with the coal-tar and plaster.

Both iodine and the salt of iron just mentioned, are in fact agents of another order; they have rendered, and do still render important services. They are certainly well worth preserving, but should not be compared with the mixture of coal-tar and plaster.

Nitrate of lead,* *Creosote*, and other substances which have been proposed at one time or another, have not realized the expectations of their inventors; their price has been too

* [An excellent, though somewhat expensive "disinfecting fluid" (Ledoyen's) which was quite extensively used in this country a few years since, consisted, according to analyses of F. E. Holyoke, of an aqueous solution of this salt. F. H. S.

great, their employment required too much care, or their action has not been sufficiently certain that they could be advantageously used in practice. There is, nevertheless, one of these which deserves special mention, viz., *chlorine*. Ever since Guyton Morveau demonstrated the true action of muriatic acid upon putrifying animal matters, the efficacy of chlorine has been tested in almost innumerable ways. Solutions of chlorine, of "chlorid of soda," and of "chlorid of lime," have rendered signal services to medicine and in the cause of public health, especially since Labarraque, some thirty years since, indicated an improved method of employing them. But the odor of clorine, disagreeable in itself, is neither easily borne nor devoid of inconveniences. Wounds, moreover, hardly accommodate themselves to it any better than the sense of smell, whenever somewhat large doses of it are required.

Chlorinated Sponge.—The idea of applying sponges saturated with chloinated solutions, directly upon purulent or gangrenous wounds, as suggested by Hervieux, appears to be excellent for certain cases. Such sponges, renewed several times per day, absorb the pus gradually as it forms better than anything else, and disinfect the wound very well. Unfortunately, chlorine rapidly alters or destroys the sponges and soon causes undue irritation. While this method, therefore, is an excellent one for cleaning certain gangrenous and sinuous wounds, it is, nevertheless, inferior in most instances to the mixture of coal-tar and plaster.

Sub-Nitrate Bismuth—suggested by Fremy as an absorben and disinfectant, was applied to a large number of wounds Upon large cavernous cancers it disinfected somewhat better than Peruvian bark, charcoal, or chlorate of potash, but less than the coal-tar and plaster. By its use, however, several bad looking wounds were cleansed quite rapidly. Since it causes no pain or irritation, and since it neither soils the skin nor the clothes, the subnitrate of bismuth is preferable to a multitude of other antiseptic powders; but it is useful rather as a solidifier (*incarnatif*), or dryer, than as an absorbent or disinfectant.

In their *resume* the committee affirm:

I. That coal-tar mixed with plaster, according to the formula of Corne, (see this Journal, xxviii, 426), can disinfect putrefying organic matters. Mixed with alvine dejections this powder destroys their odor, and leads one to hope that by its aid profound reforms in the present system of maintaining and clearing out cess-pools, &c., may some day be

brought about. For this purpose, ordinary earth, coal-ashes, or sand may be substituted for the plaster, as Cabanes prefers, being at least equally efficacious.

II. In therapeutics the coal-tar and plaster has fulfilled only a part of its promises. As a disinfectant in the dissecting-room, upon the folds of bandages,—everywhere where there is infections matter, it qualities are incontestable. This is also true as regards putrid or gangrenous foci, fetid suppurations, sanious wounds, ichorous putrilagenous cavities, hospital gangrene, &c.; but upon acute and exposed wounds, or upon ordinary wounds or ulcers, other topical applications are preferable to it.

III. Used with lint upon cloths, with pomades or cerate, it has afforded no useful result, and nothing has occurred to prove that when administered internally it has produced the least benefit.

IV. As an absorbent it leaves much to be desired, although it is not entirely devoid of action. When applied as a poultice, in particular, it absorbs very incompletely. For that matter the mixtures of coal-tar with earth or with other powders, absorb still less than the mixture of Corne and Demeaux, and are scarcely at all applicable in therapeutics. In this connection it must not be forgotton that the morbid liquids, and particularly pus, are very different from water. A substance like plaster, for example, which absorbs water strongly, might be incapable of absorbing pus. It is nevertheless true, that as an absorbent, the mixture of coal-tar and plaster, either as powder or as poultice, is of some use upon fetid and putrid wounds or suppurations.

V. Cellulose, glycerine and cherry-laurel water; chlorate of potash mixed with talc, clay, marl or kaolin, are neither sufficiently efficacious, nor in application are they convenient enough to be retained in practice.

VI. The mixture of saponine and coal-tar does not appear to be preferable for dressing wounds to many other liquids already known,—tincture of aloes for example. The same may be said of the mixed coal-tar and charcoal of Herpin; nor does it seem as if carbonic acid should be used, unless some improved method of applying it can be devised.

VII. The Boghead residue would be useful only in lack of coal-tar and plaster. While charcoal in porous envelopes does not mould itself to cavernous and sinuous wounds with sufficient readiness to come into general practice.

VIII. From its low price, and by its action, at once mild, absorbent, and disinfectant, as well as by its drying proper-

ties, the subnitrate of bismuth will render important services in default of the mixture of coal-tar and plaster. It is even preferable to this when the wounds are accompanied or surrounded with heat or irritation.

IX. Tincture of iodine and perchlorid of iron act rather by modifying the surfaces of wounds and of purulent foci, than as absorbents or disinfectants. They have their special applications in surgery, but agents of this sort are not comparable with the mixed coal-tar and plaster.

X. Sponge soaked in chlorinated water can also render good service upon pale, burrowing sores and upon gangrenous foci.

We have occupied ourselves, say the committee, only with the practical or experimental side of the question. A discussion of its theoretical or chemical bearings would have carried us too far. Moreover, since the authors of the different communications which have been submitted to us have themselves neglected this for the most part, it has seemed to us useless to treat of it at present; whether it be the phenic acid or rosolic, or brunolic acid, or the anilin, picolin, etc., of the coal-tar, which disinfects, is in reality of but little importance. Science will inform us of this some day no doubt; for the moment we have merely to ascertain whether or no the various disinfectants which are brought to us do really disinfect.

After citing the labors of various persons who have proposed methods of disinfection, the committee go on to say: "M. Corne, and the authors indicated above, occupied themselves only with the disinfection and the solidification of animal matter, having in view the preparation of manures. * * * * It is M. Demeaux who appears first to have had the thought of applying to fetid wounds, in surgical practice, the powder invented, or adopted and extolled, by his neighbor. In addition, it is evident that here, as is the case with so many other complex facts with which science is enriched, there is, so to say, neither invention nor priority for any one. The subject has been worked upon for more than a century—a multitude of savans having competed with each other in studying it. Little by little the evolution of the discovery has been effected. M. Corne disengaged it from its gangue a little better than his predecessors, and Demeaux, knowing, perhaps, that from time immemorial sailors and the inhabitants of certain southern countries often dress their wounds with tar; that tar water

and pomades of tar are frequently employed in medicine, has extended its applications to therapeutics."

"Many other efforts are still necessary. In point of fact the results thus far obtained are merely rough outlines,—only first trials. So long as the world at large is not in possession of a simple, easy, and economical method, accessible to every one, which shall be capable of disinfecting immediately, and without inconvenience on the large or small scale, dejections and filth of all kinds, in dwellings as well as in privies or slaughter-houses; in dissecting-rooms and the like, as in the sick room, upon wounds, improvements will still be wanted; there will yet be room for new attempts. While recording those of to-day and those of yesterday upon the road already traversed, let us be careful not to diminish the ardor of the laborers in the future, who will finally endow civilization with a complete and general disinfection."

Finally, certain indispensable precautions must be followed, in order to obtain from the process of Corne and Demeaux its proper effect. It is evident, from having neglected some of these precautions, that different experimenters have been led to believe that the method is useless. Fine moulding plaster, and not the common article, should be employed. The coal-tar, which is mixed with it in the proportion of 2 to 4 parts to a hundred, by triturating or grinding, ought to impart to it a gray tint, without destroying its dry, pulverulent condition. Objects to be disinfected should be rolled in this powder until each point upon their surfaces has been brought in contact with it. Gangrenous or putrid sores should be covered with thick layers of it, by handfuls, several times per day. If one is treating pus, blood, dejections, or the like, enough of the powder should be added to form a paste of the mass, taking care to replace the first layer of powder by another as soon as it no longer absorbs any more. Mixed with oil to the consistence of a thick pap, it forms poultices of convenient application, if they are made thick and broad.

Within the limits which have been indicated the mixture of coal-tar and plaster is a good disinfectant, and may be recommended for use in domestic economy as well as in hospitals. "What we have ourselves seen leaves no uncertainty of the reality of this property, nor of the possibility of its application." * * * * * It remains only to draw from it reasonable, practical consequences, either taking the fact as it is, or by modifying and perfecting it.—*Comptes Rendus*, 1, 279.

[For corroborating testimony, received by the committee from various sources, the reader is referred to their report in question. Numerous other articles upon the subject, by different authors, may also be found in vol. xlix of the *Comptes Rendus*.—F. H. S.]

Subcutaneous Injection of Morphia in a Case of Puerperal Convulsions. By Professor Scanzoni.

Professor Scanzoni observes that, following in the steps of Wood, C. Hunter, and Behier, he could record additional cases of the success of the practice of subcutaneous injection in neuralgias, hyperæsthesias, etc., but he prefers drawing attention to a case of puerperal convulsions which supports the positions laid down by C. Hunter, inasmuch as it proves that we possess in the subcutaneous application of narcotic agents a means of acting more rapidly and more certainly on abnormal irritation of the brain than by administering the same agents by the mouth. It will be readily allowed that opium and its various preparations deserve the first place in the treatment of puerperal convulsions. At all events, the observation of a large number of cases has led Professor Scanzoni to the conclusion that a species of intoxication produced by opium leads more certainly to a favorable termination of the disease than any other mode of treatment. Unfortunately, it is not always possible to administer to the patient a sufficient quantity of opium or morphia, whether this may arise from the deep coma in which he is plunged, from the rapid succession of the paroxysms preventing administration by the mouth, or from the immediate rejection of the enemata which contain it. The subcutaneous method, however, enables us to convey into the economy a sufficiency of spium to ensure its efficient action. The numerous trials which the author has made of these injections have convinced him that, although the effect of this means is not always persistent,—*e. g.* that the neuralgias are not always entirely cured, phenomena are rapidly produced—frequently in a few minutes—which render the action of the opium on the brain indubitable.

The following is the case of eclampsia in which this practice upon the foregoing grounds was resorted to:—

D., aged 21, a robust primipara, was brought into the lying-in ward at eight o'clock on June 8, labour having commenced in the night, and convulsions with loss of con-

sciousness supervening. The entire body, and especially extremities, were œdematous, while the urine was very albuminous, and presented to the microscope numerous fibrinous cylinders. Dilation had commenced, the bag of waters was in part formed, and the head presented; shortly after her admission a violent paroxysm occurred, and this was repeated five other times by five o'clock; complete loss of consciousness, with stertorous breathing also coming on. At ten o'clock venesection to eight ounces, an enema with twenty-five drops of laudanum, and a bath, together with cold irrigations to the head, were prescribed. As opium could not be given internally, a solution of meconate of morphia was subcutaneously injected three times. Labour advanced very slowly; but by three in the morning the membranes had burst, and the os was dilated to the extent of half-a-crown. By seven o'clock the dilation had increased to double this size, the os being very dilatable. The head remained very high and immoveable, and the coma was profound. In spite of this high position of the head, the forceps were applied, though with difficulty. This done the delivery was accomplished easily, no paroxysm occurring the while, and the placenta soon following. Some wine, together with ten drops of tincture of amber and musk were given every hour, rallying the patient somewhat, but not restoring her consciousness. At eleven o'clock in the evening the seventh attack came on, but it was short and slight. By nine o'clock in the morning she could reply to questions loudly put, and during the day seemed like one drunk, her pulse being 128. During the night there were several slight paroxysms of maniacal excitement, but she became calm by the morning. We need not follow the author in the details of the case farther, it sufficing to say that she left the Hospital on June 21, all albuminuria and œdema having disappeared. There were but two paroxysms in the course of nine hours after the injections had been made, while before then there had been three fits within one hour and three-quarters. As a general rule puerperal convulsions not only become more violent, but also more frequent with the progress of labour.—*Bulletin de Therap, March, p.* 193.

On Opiated Colchicum-Wine in Rheumatism. By Dr. Eisenmann.

Dr. Eisenmann, of Wurzburg, first states the wide application which he gives to the word "Rheumatism," denoting

by it every affection which may arise in the healthy system, independently of any specific cause, from exposure to cold. "By exposure to cold I do not understand merely the effect produced by the contact of cold water or cold and humid air with the external integument, but also that which takes place when cold and damp air penetrates into the lungs, or when cold water is taken into the stomach, the temperature of the body having been raised by exercise." This view is justified by the facts—1, That cold gives rise to the most various affections of the nervous and vascular systems; 2, That these various affections may become, by metastasis, transformed into each other; 3, That they communicate to the economy a marked predisposition to affections of the same nature, such predisposition being increased with each reproduction; 4, and that they yield to the same treatment, whether they show themselves under the form of neuroses or of vascular affections. Under the title of rheumatic inflamation, therefore, the author ranges all inflammatory affections of the heart, lungs, pleura, peritoneum, kidneys, serous membrane of the liver, etc., when these are not due to any specific cause, and treats them in the same manner as acute articular rheumatism.

The means which beyond all others he has found of efficacy in the treatment of rheumatism is a mixture of colchicum and opium, the colchicum acting far more efficaciously when so combined, and then not giving rise to the half-poisonous effects which often attend its use when given alone.. Neither the one or the other substances will produce alone the advantageous effects which result from their union. Dr. Eisenmann speaks not only from his own large experience, but from that of many of his Medical friends, among whom "Eisenmann's Drops" have acquired a great reputation. These consist of 12 parts of colchicum-wine, and 2 of tincture of opium, 20 drops being taken three times a-day. Instead of preparing the colchicum-wine with sherry as he formerly did, he now makes it according to the formula of the Prussian pharmacopœia, which directs 150 parts of colchicum seeds to be macerated in 770 of alcohol; this preparation being always uniform in strength, and more active than the ordinary colchicum-wine. Although the above drops succeed so well in acute rheumatic affections, they are of little or no use in old and chronic cases. This induced the author to try the effect of adding minute doses of corrosive sublimate; and although his trials of this modification have been as yet too few to admit of an opinion

being pronounced in respect to chronic cases, he has found the addition of great advantage in many cases of the acute form. Although in the various forms of rheumatism in which he has employed this treatment he has not had to have recourse to preliminary bleeding, he by no means denies that this may not be occasionally desirable in the robust.

In treating *acute articular rheumatism* in this way its course has usually been cut short in from the third to the fifth day, convalescence rapidly following, and no trace of heart affection persisting. When the pains have been very severe, tepid applications of a very weak solution of corrosive sublimate have been made to the joints, with the most satisfactory results. Sometimes after a rapid amelioration by means of the colchicum, when the pulse still continues irritable, and the tongue remains loaded, an emetic or purgative expedites convalescence. Among the rheumatic affections of the *mucous membranes*, which may be rapidly and durably cured by means of the opiated colchicum, without the sublimate, may be specified angina, pulmonary catarrh, and influenza, gastric fever, catarrhal diarrhœa, and catarrho-rheumatic conjunctivitis. In the case of catarrhal ophthalmia, even of a severe character, its remarkable efficacy may be watched step by step. Among affections of the *serous membranes*, pleurisy and perihepatitis stand prominently forward as amenable to this treatment. Of parenchymatous inflammations, *pneumonia* has been the only one in which the medicine has been tried, and that only in two slight cases, which recovered with rapidity. In *muscular rheumatism* of the head, loins, etc., from two to four doses have always sufficed. It is also of great efficacy in cases of *rheumatic neuralgia*, especially in facial or intercostal, in sciatica and odontalgia. But the case must be recent, or it will be of no avail. In *odontalgia* the results are truly remarkable, a single dose rapidly dissipating the pain. The distinction between the rheumatic form of odontalagia, and that which arises from carious teeth is exhibited by the different effects of the colchicum. For the relief of odontalgia arising from carious teeth, the author, after having cleaned out the cavity of the tooth, introduces into it a morsel of nitrate of silver as large as a pin's head. In about a minute the moisture of the mouth dissolves this, and the mouth is then to be gargled with cold water, and the pain disappears. He has employed this plan of relieving the pain of carious teeth for the last twenty years, and he has seldom

known it fail, even after the ineffectual trial of various other measures. It causes no pain, and it retards the progress of the caries.—*Bulletin de Therap.* tome lvi. pp. 75, 120.

Synthesis of Cataract.—At the meeting of the Medical Society of London, on Monday, Dr. Richardson made a second communication on the synthesis of cataract. On the last occasion, he had brought forward forty-six experiments, showing that a peculiar kind of cataract was producible, as Mr. Mitchell, of Philadelphia, had first pointed out, by the introduction of sugar into the bodies of animals. Since that time, he had made experiments with other substances, which experiments he now proceeded to describe: *Glycerine.*—Two experiments were performed with glycerine. In the first, one drachm of glycerine being injected into the dorsal sac of a frog, there was produced, in three hours, posterior opacity of the lens. In a second experiment, a drachm and a-half was injected, which caused death in six hours, without cataract. *Alcohol.*—A drachm of absolute alcohol, injected into the dorsal sac of a frog, caused death in two hours, with extraordinary shrinking of the body, and distinct double cataract posteriorly. Half-a-drachm of absolute alcohol, injected into the dorsal sac of another frog, caused death in six hours, with distinct, but, singularly enough, on one side only. The cataractous condition produced by glycerine and alcohol resembled that produced by sugars. *Choride of Sodium.*—By introducing into the dorsal sac of a frog from two to three drachms of a solution of chloride of sodium, of specific gravity 1150, the animal was rendered tetanic; and, in twenty minutes, the limbs were drawn immoveably towards the body, but jactitation of the muscles continued for an hour, when the animal died. Distinct cataract was produced in both lenses before death. In another experiment, a drachm and a-half of the solution was used; the same symptoms followed, but more slowly. Distinct cataract resulted. In a third case, one drachm of the same solution was injected; death occurred in two hours, marked cataract having previously appeared. In a fourth case, half-a-drachm was used; death occurred during the third hour, with the same signs of cataract. In a fifth case one drachm of solution of chloride of sodium, of specific gravity 1050 was thrown in. In three hours there was distinct double cataract; the animal was immensely shrunken, and the skin was dry, almost like parchment. Placed in water, the animal recovered; and, the water being

frequently changed, the cataract entirely disappeared in fifty-three hours. Cataract was reproduced in this animal, again removed, and again reproduced. Dr. Richardson presented the animal, with cataract a third time produced. The character of the cataract produced by chloride of sodium seems to differ materially from that produced by sugar. The lens is much firmer, and the opacity extends through the whole structure. The lens resembles one that has been boiled. *Iodide of Potassium.*—From the chemical analogy between chloride of sodium and iodide of potassium, Dr. Richardson had been led to use the latter salt in the same way; the general symptoms produced were very similar, but the cataractous condition did not result. *Acid Urate of Soda.*—From the fact of the insolubility of the urate, Dr. Richardson said he did not expect that a cataract could be produced by the introduction of this substance into the blood. He did not conceive, that is to say, that any osmosis could be established by the salt; but an accidental experiment had led him to try what could be done in this direction. On March 2, of the present year, he had commenced to administer to a well fattened and healthy bitch, the acid urate of soda, in doses of two to three drachms daily, with her food. His object was to ascertain whether any affection of the joints would be produced. At this time, she had taken nearly a pound of the urate, with no effect whatever on the joints; but, within the last three weeks, with distinct and rapidly-increasing indications of double cataract. The animal was exhibited to the Society. Acting on this suggestion, the author had tried to produce the same effect on frogs, by charging them with the urate of soda, but without any similar result. The occurrence of cataract in the larger animal might therefore be a coincidence; but Dr. Richardson was inclined to think that it was an indirect effect of the urate; that is to say, he believed that the urate was decomposed in the digestive process, and changed into a soluble salt of soda; which, being conveyed into the blood, produced the cataractous condition. In proof of this, he showed that a solution of lactate of soda, of specific gravity 1060, produced cataract in frogs when injected. Dr. Richardson drew the following conclusions from the experiments:—1. In addition to the sugar-cataract, there is producible what may be called a saline cataract; 2. The appearances of the cataracts as produced by different solutions vary; thus the cataract produced by chloride of sodium differs from that produced by grape-sugar; 3. The same

cataractous appearances can be produced in a clear lens, after removal from the body, by immersion in solutions of sugar, salines, etc.; 4. As the cataractous appearance is modified by the density of the producing body, and is removable by reversing the conditions which have led to it, and as it is producible in a clear lens removed from a body, it is a demonstration that the cataract induced in the different animals is a purely physical—that is to say, osmotic—change.

A Clinical Lecture, at the Royal Free Hospital, London, on Delirium Tremens. By Dr. Brinton.

The patient, a cabman, aged about 33, long addicted to hard drinking, and now in the fourth or fifth day of his third attack of delirium tremens, affords a good illustration of some practical points in the cure of this dangerous malady. His face is wild, flushed and perspiring, and his noisy, struggling delirium, which has been incessant during the twenty hours now past since his admission, evidently, from his language, swarms with the delusions incident to this state. Amongst these may perhaps be included that of expecting us to know all his symptoms, without any observation or inquiry, every approach to which he treats as an insult.

However, we want little oral information. His pulse, though very quick, (120,) is wiry rather than feeble. His epigastrium is tender. His tongue, dry and furred, with red edges, is very tremulous. These facts, taken with those just stated, and the circumstance that his present attack winds up a tolerably continuous debauch of some ten days' duration, afford a clue to what will probably be a successful plan of treatment.

Opium and the "habitual stimulus" are usually regarded as the specifics for this malady. Confessing their frequent value, I would warn you against any but their casual and deliberate use. In other words, apart from some special risks occasionally contra-indicating them in even moderate doses, in this as well as some allied states in which they would otherwise be demanded, there seem to me great perils from their copious administration as a matter of routine.

Let us try to reason out the therapeutics of the malady. How do people die of uncomplicated delirium tremens? Generally, I make bold to say, of exhaustion. And what exhausts them? The perpetual delusions, ravings, shoutings, movements, of this state. It is a most invidious analogy to

offer; but I venture to say that any one who has ever spoken in public for one hour together, would, if he multiplied that hour by the factor requisite to bring it up to the many days sometimes passed in vociferous delirium by a patient, quite understand the perilous degree of exhaustion necessarily present. Besides, the morbid impressions are scarcely less injurious and fatiguing than the actions of the delirious state. Sensation, if varied and intense enough, is very hard work for the nervous system.

Every one who has ever foolishly attempted to "do" a gallery of pictures, must allow that it is easy to tire out the brain through the eyes in a very short time.

The first indication of treatment, then, is to prevent exhaustion; and in fulfilment of this, there is much to do and to avoid. A comfortable room, perfectly well lit as well as aired; a good nurse, with quiet, decisive, fearless, manners; an absence of all that is likely to excite and irritate—if possible, that is, a separate ward. Above all, no mechanical restraint.

This prohibition cannot be too stringently enforced. No matter to what degree reason may be degraded or dethroned, the delirious patient always seems sensible of the debasement and brutality implied by straps and bands. If one nurse could not restrain a patient, I should call in two, or ask for the further assistance (always generously given) of any or every convalescent in the hospital. But I should never strap or tie down a patient, however delirious. I suppose, in the last seventeen years, I have seen and treated a fair proportion of such cases. But though I have once or twice walked up to a raging patient whom nobody had for hours dared to approach, to loosen his bonds, I never had occasion to regret it. Indeed, I have always found that the more limited, temporary and casual that graduated restraint of the patient which the hands of others afford, the better. Watching and persuasion generally suffice.

The same indication, again, dictates the drugs to be administered. That there are instances in which a delirious patient, exhausted by long habits of tippling, or prostrate under some independent disease or injury, is best treated by the stimulus he has latterly been deprived of, I do not deny. The subject of our observations, however, not only illustrates the golden rule of practical physic—to treat the case rather than the malady, and to avoid giving such and such drugs merely because the disease is diagnosed to be so and so—but represents, I think, that common and important variety of delirium tremens in which this routine treatment is specially to be

avoided. In plain English, when a patient comes to me with delirium tremens as the climax of a long debauch, I generally find that this state is modified by two other circumstances. He is more or less drunk, on the one hand; he has more or less gastritis, on the other. His furred tongue, his tender epigastrium, the nausea (or even vomiting) occasionally noticed, are, doubtless, associated with a condition which I have verified, after death, in the gastric mucous membrane—a firm, white condensation of the cell-growth, and a deep congestion of the subjacent vessels, such, as for want of a better term, we may roughly call "inflammation."

Both of these circumstances prohibit the administration of alcohol and opium in their ordinary forms and doses. To what purpose, when a man is already raving drunk, should we give additional quantities of the poison which has made, and is keeping him so? What, again, will opium often do, save increase this drunkenness? Combined with alcohol, opium is, for most races and idiosyncrasies, a stimulant rather than a sedative. Indeed, even when taken alone, opium often acts as a stimulant upon the Malay, the Turk, the Hindoo—aye, and on many an Englishman quite unaccustomed to its use. And I am sure that, given in any but the most overpowering or dangerous doses, it oftener increases than lessens the ravings of the delirious patient; while it certainly so far obscures the symptoms, that after its sufficient (i. e., copious) administration, you must often remain in doubt whether the patient dozes because he is half poisoned or because he is half cured. Furthermore, as respects the gastric lesion, what, in the name of common sense, are large doses of alcohol to do? To increase inflammation; to add fuel to the fire; to constitute an additional source of the pain, fever, delirium, sleeplessness, which gastric irritation alone amply suffices to provoke? Thus much at any rate might be alleged, that their supposed benefits could hardly be deduced or explained by Rational Medicine, unless it were presumed that, in this instance, the general effects of alcohol counterpoised that aggravation of the local injuries which its introduction into the stomach would necessarily provoke. But to this generally beneficial effect we have already demurred; so that we need hardly point out that, granting it useful in this way, there could scarcely be a more clumsy, ineffectual and dangerous mode of administering it, than by pouring it in large quantities and a concentrated form, into an inflamed organ itself essential to life.

Much might, I think, be said for emetics and cold affusion in well-chosen cases of this kind. But in this instance neither

of these two measures seems necessary. Two special attendants; a separate ward; a full dose (fifteen minims) of ipecacuan wine, with a little (seven minims) laudanum, and (ten minims) chloric ether, well diluted, every three or four hours; some three or four ounces of brandy, largely diluted, in the twenty-four hours; and mustard poultices to the epigastrium, are all that we need now order. A mutton chop, to be taken as soon as he wakes from his first sleep, completes the prescription. The action of ipecacuan, thus guarded and combined, I will not now dwell upon, further than to say that it seems to effect a two-fold benefit; to allay cerebral congestion and excitement on the one hand, and to provoke gastric and intestinal secretion on the other. [The patient became gradually calmer, and in twelve hours fell asleep. The next day he was quiet and rational. Under full diet and stout, with bark, he recovered so rapidly as to leave the hospital, cured, in five days.]—*Lancet.*

Therapeutic Effects of Ammonia as a Dermic Agent in the Treatment of Disease. By John Grantham, F. R. C. S.

The importance of the skin in the function of assimilation in nutrition is powerfully shown by Erasmus Wilson, who says: "I counted the perspiratory pores on the palm of the hand, and found 3528 in a square inch; now each of these pores being the aperture of a little tube of about a quarter of an inch long, it follows that in a square inch of skin on the palm of the hand, there exists a length of tube equal to 882 inches, or 73 feet!" Surely, such an amount of drainage as seventy-three feet in every square inch of skin, assuming this to be the average for the whole body, is something wonderful; and the thought naturally intrudes itself—What if this drainage were obstructed? The number of square inches of surface in a man of ordinary height and bulk is about 2500; the number of pores, therefore, is 8,820,000: and the number of inches of perspiratory tube is 2,205,000; that is, 183,750 feet, or 61,250 yards; or nearly thirty-four miles! Of the fact of absorption by the skin, it has, by many physiologists, been fully proved, that after bathing in infusions of madder, rhubarb and turmeric, the urine has been found tinged by these substances; it is also proved, that imbibition takes place in the skin according to the physical laws, in conformity with which they pass most readily into the vessels which present the thinnest walls and the largest surface. Excepting the notice taken of

ammonia, being the principal agent in the Buxton waters, by Dr. Bradley, I am of opinion that no writer has given it the important position it merits, when combined with hot water as a dermic agent in the treatment of congestive diseases.

As far back as the year 1828, I remember a neighboring Practitioner, Mr. Hurst, of Dartford, sponging the skin in in some cases of scarlet fever, with tepid water containing a few drachms of the spt. ammoniæ aromaticus; since which time I have frequently used the ammonia in a much more potent form, viz: liquor ammoniæ fortior, one ounce and a half to two quarts of hot water, at 120° of heat, as a sponging bath;—and as a general bath, the same quantity of ammonia in water, at 100° of heat. To render this statement more intelligible, I will relate some examples. Firstly, an extreme case of severe purpura hemorrhagica. At the onset of the case, the patient was suffering from continuous bleeding from a decayed tooth, which tooth was immediately removed; still the bleeding continued from another decayed tooth; that, and a third, were taken out; it now became evident that the bleeding oozed from the whole surface of the mouth, resisting the application of the nitrate of silver, matico, zinc, alum, etc., then a further loss of blood from the kidneys and intestines occurred, with an eruption of maculæ on the skin, of a dark purple color; these effects continued to an alarming extent, until I adopted the sponging of the skin with two ounces of strong ammonia, in two quarts of hot water, over the chest, body and extremities: after this ammonia fomentation, the skin was dried, and then rubbed over with hot lard, and the chest and abdomen were covered with wool; from that time the nervous system became tranquil, and the exudation of blood gradually ceased; and with the internal administration of quinine, opium, milk and beef-tea, etc., the patient in time became convalescent. This narrative being only written from memory, precludes my entering into particulars; nevertheless, it serves to prove the power of ammonia when so applied, as a compensatory measure. I am also of opinion that the inhalation of ammonia gives a stimulus to the change of the blood as it passes over the air-cells of the lungs, and may assist the vital law of generating animal heat. Secondly, in a case of scarlet fever, when the patient was delirious, the skin of a dark red color, and the body slightly tympanitic, the ammonia bath when so applied, at 120° of heat, bore unmistakeable evidence of its salutary

effects in quieting the nervous system, procuring sleep and abating nausea. Thirdly, a case of stridulous breathing in a child three years old, yielded to the effects of the ammonia bath, at 100° to the chest, and the after application of hot lard and wool to protect the animal heat and keep up the action of the sudoriperous function. Lastly, the ammonia bath at 90° as a sponging bath in the morning, I have known to be very beneficial to the anæmic patient.

I trust that by this statement I am not advocating a particular for a universal; but simply proposing a means of treatment which may be advantageously adopted in the management of fever, particularly in the congestive or comatose forms.

Treatment of Gonorrhœa.

Lectures on venereal diseases, by F. J. Bumstead, M. D., Surgeon to St. Luke's Hospital, are being published in the New York Journal of Medicine. The first two lectures were published before our Summary was commenced, and, consequently, did not fall under our observation. We shall endeavor to give our readers the more important practical observations of these very interesting and comprehensive lectures.

In reference to the abortive treatment of *gonorrhœa*, in the male adult, he gives his preference to the weak, rather than the strong, solution of nitrate of silver. "The formula for the strong injection should not contain less than 10 grains of the nitrate of silver to the ounce of distilled water, and more than fifteen grains are objectionable." Of this, "only one injection will be required." The weak solution, which he prefers, should contain from one to one and a half grains to six ounces of water, and this should be repeated at short intervals, and continued until the discharges "become thin and watery," and slightly tinged with blood. Of this abortive treatment, Dr. Bumstead says: "I recommend it only in the first stage of the disease, and not after acute inflammatory symptoms have set in, or the patient suffers from scalding in passing water."

Where the abortive treatment is not appropriate, he commences treatment with a brisk cathartic, and, if the penis is much swollen, or there is much scalding in passing water, the following is advised:

℞.—"Potassæ bicarbonatis, - - - - ℥ij.
Tincturæ hyoscyami, - - - - ℥j.
Mucilaginis acaciæ, - - - - ℥v.
A table-spoonful every three hours."

If a syringe can be inserted without much pain to the patient, the following injection is advised:

℞.—"Extracti opii, - - - - - - ℈j.
Glycerine, - - - - - - ℥j.
Aquæ puræ, - - - - - ℥iij.
M.—Injection to be used after every passage of urine."

If the case is subacute, from half to one grain of sulphate of zinc to the ounce of the mixture may be added. As a local means, for the relief of uneasiness, local pain, scalding in micturition, Dr. Bumstead fully endorses Dr. Milton's statements in regard to hot water. "Water, as hot as can be borne, is the most grateful local application that can be used."

In the third stage of gonorrhœa, Dr. Bumstead speaks very highly of injections. He says: "In spite of all that has been written and said against them, I do not hesitate to say, that the surgeon who voluntarily renounces injections, deprives himself of his best weapon in contending with gonorrhœa, and is comparatively impotent in his attempts to conquer it."

Of the kind of injections, he says: "If no other ingredients for injections, except sulphate of zinc and nitrate of silver, were known, I believe that the therapeutics of gonorrhœa would be the gainer rather than the loser." "My own preferences for an astringent as the active principle of injections in the third stage of gonorrhœa, are very strongly in favor of the sulphate of zinc." * * * "In most cases, we need not, at any period, exceed the proportion of the sulphate in the following formula:

℞.—Zinci sulphatis, - - - - - gr. xij.
Aquæ puræ, - - - - - ℥v. M."

In connection with the use of the above-mentioned injections, Dr. Bumstead advises the administration of copaiba and cubebs, separately or combined. For the administration of copaiba, the following formula is recommended:

℞.—"Capaibæ,
Spiriti ætheris nitrici, - - - aa., ℥j.
Liquoris potassæ, - - - - ℥ij.
Spiriti lavandulæ comp. - - ℥ij.
Syrupi acaciæ, - - - - ℥vj. M.
From a tea-spoonful to a table-spoonful after each meal."

Cubebs may be administered alone or combined with iron or quinine, if the case demands a tonic. It may be combined with copaiba, and administered in pill. "The following prescription is particularly adapted to delicate stomachs:

℞.—Copaibæ, - - - - - - ℥ij.
Magnesiæ, - - - - - - ℥j.
Glei menthæ piperitæ, - - gtt. xx.
Pulveris cubebæ,
Bismuthi subnitratis, - - - aa ℥ij. M.

To be divided into pills of five grains each, and coated with sugar."

From 4 to 8 are to be administered three times a day.

For the relief of the chordee, lupulin may be administered in 15-grain doses, or camphor-tincture in full doses, or if preferred, two of the following pills at bed-time:

℞.—Lactucarii,
Pulveris camphoræ, - - - aa ʒij.
M.—ft. pil., No. xx."

[*American Medical Monthly.*

Treatment of Gleet.

In the continuation of the lectures of Dr. Bumstead on venereal diseases, the subject of *gleet* is treated of in the November issue of the New York Journal of Medicine. In the treatment, "the bowels should be kept open daily," and "one of the following pills, taken at bedtime, will usually insure a free stool in the morning:

℞.—Strychniæ, - - - - - gr. ss.
Pil. colocynth. comp., - - ℥ss. M.

Divide into thirty pills."

As a tonic and astringent, the muriated tincture of iron is usually indicated. The proper dose is usually from five to twenty drops, three times a day. Tincture cantharides is also indicated, and may be combined with the iron as in the following formula:

℞.—"Tincturæ cantharadis, - - - ℥ij.
Tincturæ ferri chlorodi, - - - ℥vj. M.

Ten drops, in water, three times a day."

Where the constitutional impairment is considerable, quinine may be added to the treatment, as in the following:

℞.—"Tincturæ cantharidis, - - - ℥j.
Quiniæ sulphatis, - - - ℥ss.
Tincturæ ferri chlorodi, - - ℥ij.
Acidi sulphurici diluti, - - (gtt.) xxx.
Aquæ destillatæ, - - - - ℥viij. M.

One ounce three times a day."

In regard to local treatment, Dr. Bumstead speaks highly of bougies. Except when they are found to aggravate the symptoms, the passage of the bougie may be repeated every second or third day at first, and afterwards every day, or in some instances as often as twice a day." If desirable, the bougies may be medicated, and the following ointment will be found of service:

℞.—Unguenti hydrargyri, - - - ℥ss.
Extracti belladonnæ, - - - ℥ss. M."

Of injections, as in gonorrhœa, he ordinarily prefers the sulphate of zinc. "From two to three grains of the sulphate of zinc to the ounce of water may be taken as the standard of medium strength, and the solution should be employed as frequently as the patient is able to pass his water, or every two or three hours." Of blisters, he does not think as highly as does Dr. Milton; in obstinate cases, however, he thinks they are worthy of trial.—*American Medical Monthly.*

Balanitis.

In continuing the subject of venereal, Dr. Bumstead devotes one Lecture to *balanitis*. In regard to treatment, "All that is necessary, in most cases, is to free the parts from any collection of matter by gently washing them with tepid water, and then to cut a piece of lint or soft linen into pieces about an inch square, and laying them upon the glans with their upper margin well up in the corona, to draw the prepuce over them. In this manner the inflamed surfaces are isolated from each other, and speedily take on a more healthy action." If the case should prove obstinate, the lint may be moistened in the following mixture, and changed three or four times in the twenty-four hours:

℞.—"Extracti opii, - - - - ℈j.
Zinci sulphatis, - - - - gr. vj.
Glycerin, - - - - - ℥j.
Aquæ, - - - - - ℥ij. M."

Or the following may "be introduced between the glans and prepuce by means of a camel-hair pencil:

℞.—Cerati simplicis, vel. mellis,
Olei olivæ, - - - - aa., ℥j.
Hydrargyri chloridi, - - - ℥ss.
Extracti opii, - - - - - ℥j. M."

"The influence of a long prepuce in producing relapses of this disease has already been referred to. I have some-

times succeeded in remedying this by directing the patient to keep his prepuce constantly retracted by means of a narrow bandage around the penis, posterior to the glans." This should be worn for several weeks, and if it prove unsuccessful, "our only resort is the removal of the superfluous integuments by circumcision."—*American Medical Monthly.*

Woorara in Tetanus.

We have already noticed the fact that M. Vella, of Turin, had experimented with the above material in cases of tetanus which occurred lately in the military hospital at Turin. M. Bernard had often shown in his lecture at the College de France, that this substance, when introduced into the system, exhibits an action directly opposed to that of strychnia; it seems to paralyse the action of the motor nervous system. In animals the poisonous effects of one of these substances have thus been frequently counteracted by the properties of the other. It was from facts of this kind that M. Vella took his practice. In two of his cases the remedy was tried late in the day, but although the patients died, their symptoms were markedly ameliorated. In the third case he commenced operations earlier; and before twenty-four hours had expired, the woorara was applied in fomentations to the wound—10 to 50 centigrammes of it to 40 grammes of liquid. "In about three-quarters of an hour after each application, and for half an hour at a time, there was a marked diminution of the tetanic rigidity, followed by such a complete relaxation of the muscles, that the patient was able to drink, make water, and sit up in bed." "On the other hand, when the action of the woorara had ceased, the wounded limb was again first seized with spasms. For the first three days of this extraordinary treatment, absorption by the wound was sufficient to produce muscular relaxation, and general repose of the body. After this period, the Surgeon applied a blister to the thigh, and on the eighth day, repeated it, in order to produce a large absorbing surface. During four days the dressings were renewed every three hours; and afterwards every five hours. On the twelfth day, the attacks, which had gradually diminished in duration and intensity, completely disappeared. Fifteen days afterwards, the man left the Hospital." This case M. Bernard considers as a beautiful specimen of the application

of scientific logic to therapeutics; but M. Velpeau does not agree with him, and thinks people often jump too rapidly to conclusions. "The author of the communication," says M. Velpeau, "has stated that there were numerous cases of tetanus among the wounded in the Army of Italy. Now, I have heard from many Surgeons, and from M. Larrey himself, the head of them, that, on the contrary, there were very few cases. Moreover, this case of tetanus that is arrested, that begins again, that is again stopped, and, as it were, at the pleasure of the Surgeon, inspires me, I must say, with little confidence! Now here are three cases spoken of; two die after ordinary treatment, and the third recovers under the use of woorara. Now, I have had at La Charite three cases of tetanus in the course of 1857 and 1858; and of these two died and the third recovered, just as happened at Turin. It is these cases of recovery that have given a temporary reputation to numerous means of cure which have been vaunted as efficacious in tetanus, and which have, nevertheless, left the disease almost constantly a fatal malady. A single fact—and I only see one here—is worth little in therapeutics." The physiological effects of woorara as an antidote to the symptoms produced by strychnia, fully warrant us in making further careful experiments of a similar kind to the one here spoken of. Such experiments are rational, and founded on the most legitimate scientific induction.—*Medical Times & Gazette.*

Treatment of Lupus.

Peter F——, aged 17, was admitted into the Royal Free Hospital in the first instance, on the 14th of May, 1856, under the care of Mr. Weeden Cooke. His occupation was that of an oyster-dredger, at Maldon, in Essex; and he had suffered for seven years from lupoid ulcers of the face, nose and lips. He had been a patient in the Colchester Hospital, and also in St. George's Hospital. At the time of his admission, the whole face was covered with either the cicatrices of old ulcers, or ulcers encrusted and dipping into the muscles beneath the skin. The columna nasi was destroyed, and the disease was encroaching upon the alæ. The upper lip was thickened and ulcerated. The scaly ulceration extended upwards to the inner canthus of both eyes. Added to these miseries, he was extremely deaf, and altogether presented a most pitiable and unsightly appear-

ance. Mr. Cooke ordered an ounce and a half of lemon juice to be taken three times a day, meat and porter, with green vegetables; and the following lotion and ointment: bichloride of mercury, 8 grains; hydrochloric acid, 10 minims; water, 8 ounces; to be applied three times a day as a wash, afterwards covering the parts with zinc ointment. He remained in the hospital under this treatment gradually improving, until August 17th, when he was discharged, with all the ulcers entirely healed, the deafness diminished, and his general health re-established.

In May, 1857, he again came to town and was admitted, the disease having returned on the cheeks and upper lip. The same treatment was adopted, and this time he was well again in a month.

In July, 1859, he again appeared among Mr. Cooke's out-patients, the upper lip and one cheek only being affected with the scaly ulcers. He was enabled to stay with a sister in town, and was therefore not admitted, but placed under the same treatment—namely, lemon juice, fresh green vegetables, bichloride of mercury lotion, and zinc ointment. The cure was very rapid, the ulcers having well cicatrized in less than three weeks. His hearing also at this time was very greatly improved, and his general appearance so altered, that he was scarcely recognized as the same unhappy youth who first came under notice in 1856.

Mr. Cooke states that there was no sponginess of the gums, but that the strumous aspect of the lad, and his occupation as an oyster-dredger at the sea, led him to prescribe lemon-juice as an antiscorbutic remedy, and, as it turned out, with the happiest results. Still the adjuvant effect of the local applications must be by no means slighted or overlooked in the treatment of similar cases. Perhaps, however, the leaning generally is to depend too much upon local, and especially caustic applications.—*Lancet.*

White Lead Paint in Cutaneous Maladies.

Mr. Alfred Freer (Dublin Hospital Gazette) calls attention to the value of the common pigment, white lead in oil, in treatment of erysipelas, carbuncle, furuncle, etc. He states:

I first became acquainted with its great efficiency in the treatment of erysipelas by my late father and my brother. It is in this disease that the most striking benefit results

from its application. I have never yet met with a case of this nature where it has not done immense good. I find it far superior to lead lotions, mucilage, hot fomentations, nitrate of silver or collodion. After erysipelas, the paint proves of the greatest service, perhaps, in eczema in its several forms. In chronic eczematous eruptions of the aged, it affords much comfort, and often speedily effects a cure. Of late years I have extended its employment to other complaints of the skin, including herpes in its several forms. I have tried it in some cases of small-pox, with the view of diminishing the number of vesicles on the face, and of controlling their size; the latter indication it seems likely to fulfil, but I cannot speak with confidence about the former, the papules being already numerous at the time of my visit. I have also used it in several cases of carbuncle and furuncle. The first was in an instance of a huge carbuncle situated on the loin of a man, and rapidly extending, notwithstanding free incisions, linseed poultices, and appropriate constitutional treatment. I applied a thick, wide circle of paint round the swelling, and dressed with resin ointment and cotton wool. There was no advance of the disease from that time, the centres rapidly broke up, and recovery took place. It is, however, probable that the omission of the warm poultice may have contributed to the improvement, for I have often observed that warm poultices, however well made, seem to foster and spread carbuncular inflammations.

The paint seems to act in two ways: first and chiefly, as an efficient excluder of the air—that great irritant to the cutaneous surface when disordered; and secondly, as a direct sedative to the sentient nerve filaments, rendering them less prone to become involved in inflammatory action. In boils it relieves the painful tension, and favors resolution. In some forms of painful ulcers of the leg, of a small size, it gives relief. In galling of the skin, where anasarca is present, it is also of use; and is the best application that we have in burns of the first and second degree. But it is in erysipelas that its triumph is most manifest; the patient soon finds the comfort of it. The tight, shining skin soon becomes wrinkled and shrunken; indeed, the inflammation very rarely extends after the second or third painting.

All my friends to whom I have recommended the pigmentum album, speak highly of it, and one who is a Surgeon in the Peninsular and Oriental Company's service, has used it for the last two years with great success. The

manner of applying it is by means of a feather, painting the affected parts and a *little beyond*, and laying on a fresh coat every two hours or so, until a thick layer is obtained, and then sufficiently often to maintain a covering. In erysipelas it peels off in a week or so, with the shed cuticle, leaving beneath a smooth, clean, healthy surface. Patients are struck with the benefits they derive from its employment.

Treatment of Prolapsus of the Funis. By George Mendenhall, M. D., Professor of Obstetrics in the Med. College of Ohio.

Gentlemen:—In a previous number of your journal, I made some remarks upon prolapsus of the funis as a complication of labor, accompanied by the details of a case, its treatment and result. I have within a day or two had another case of this kind, where two or three inches of the cord prolapsed, following the evacuation of a large quantity of liquor amnii. I immediately placed the woman upon her breast and knees, introduced the hand into the vagina, and readily replaced the cord. It kept its proper position by gravitation until the contractions of the uterus pressed the head pretty firmly against the os uteri, which prevented its descent. In a few minutes after it was replaced, the woman was placed on her left side, and the finger was kept in contact with the os so as to ascertain whether the prolapsus of the cord returned. This did not take place, and in about an hour the woman was delivered of a fine living and healthy male child, much to the gratification of the parents. In view of the frequent fatality to the child of this complication, I deem a knowledge of its proper treatment a matter of great importance. I think with this knowledge that few, if any, cases ought to result unfavorably to the child, and a resort to turning the child is seldom, if ever, necessary.

The Value of some New Remedies lately introduced in the Treatment of Phthisis.—Dr. Botini affirms that the hypophosphites of Dr. Churchill have not even relieved a single patient. The *phospholcine* of M. Baud, extracted from the spinal marrow of animals, does not seem to possess any other value than as a nutritive, etc. Milk, iodized by *digestive assimilation*, is preferable to the most part of medicaments containing iodine or iodide of potassa. In view of this fact, Dr. Carmagnola puts forth some very just considerations,

establishing clearly that there is little reason in demanding from a product of secretion, as from cow's milk, a medicine whose first action has been to alter the health of the animals, and even the nature of the milk furnished. It would be better to use the flesh of the cows, so as to have iodized soups and beefsteaks.—*Gaz. Medica Italiana: L' Union Med. de la Gironde.*

Iodohydrate of Ammonia in Constitutional Syphilis.—Prof. Gamberini deduces the following conclusions from fourteen cases: 1. Iodide of ammonia and the iodohydrate of ammonia are indicated in the same cases of syphilitic diseases as the iodide of potas; 2. The treatment from the employment of this remedy in increasing doses from 10 to 80 centigrammes daily, in from 100 to 180 grammes of some liquid, has lasted from 14 to 35 days, averaging 21 days; 3. A sensation of burning or heat in the throat and stomach of some patients forced us to suspend temporarily the iodide, as well as to lessen the dose; 4. A liniment, composed of the same remedy, with olive oil, 15 centigrammes of the former and 30 centigrammes of the latter, has assisted in curing the osteocopic pains; 5. Syphilitic accidents cured by iodide of ammonia have been cases of arthralgia, rheumatic neuralgia, periostosis, ganglionic enlargements of the groins and neck, and a papulo-vesicular eruption of the back.

The process of making this medicine is very simple. It is that of Ruspini, consisting in precipitating a solution of the iodide of iron by carbonate of ammonia, filtering the solution, which is then to be evaporated promptly, until a pellicle is formed, and then crystalize. This salt crystalizes in cubes, and is very soluble in water. Its taste is not very disagreeable, being a little more bitter than iodide of potas. *Bolletino delle Scienza Medica: L' Union Medicale de la Gironde.*

Phosphornecrosis is becoming so prevalent among those engaged in making lucifer matches in Paris, that the government has consulted the Academy of Medicine as to means for preventing this terrible malady. The Academy simply recommends, that as a preventive, matches should be made of pureamorphous phosphorous, or without phosphorous at all, the *white* phosphorous being altogether prohibited.

EDITORIAL AND MISCELLANEOUS.

Medical College of Georgia.—We call the attention of our readers to the twenty-ninth annual announcement of this institution, which will be found enclosed under the cover of our present issue. The prospects of a large class for the coming session are very encouraging, and it will be seen by the circular that the most ample arrangements have been made for their accommodation and advantageous instruction.

The building devoted to the Practical Department of Anatomy has been thoroughly remodelled and enlarged to double its former dimensions. New and more perfect arrangements have been made for the injecting and preparation of anatomical material; and with these improvements, the amphitheatre of the Medical College of Georgia is, perhaps, one of the most commodious and pleasant to be found in the United States.

The present City Hospital, with the rapid increase of the lower and working classes in Augusta, has been found too restricted in its accommodations for the number of patients applying, and the municipal authorities have the plan and arrangements in progress for the erection of a large, commodious building, well suited to the demands of our rapidly increasing population. The great variety of cases to be found at present, in the City Hospital, and also the cases of negro diseases presented in Jackson-street Hospital, will together afford ample means of illustration for a most valuable and instructive course of Clinical Lectures during the approaching session.

Students intending to attend Lectures in Augusta this winter, will observe the arrangements for Preliminary Lectures, which, though not constituting any part of the regular course, will be found highly interesting and instructive, as the subjects selected by each Professor for these Lectures, will be such as will allow him to impart the largest amount of medical instruction to the class. Some of these will be Clinical Lectures delivered at the hospitals; while others will be delivered in the lecture rooms at the College.

The London Medical Review.—We have just received from Messrs. Baillierre and Brothers, of New York, the first number of the *New Medical Journal*, just published in London.

The present number contains a large amount of most valuable and

nstructive medical reading, contributions of several highly distinguished gentlemen of Great Britain. Among these we find the names of Dr. Samuel Wilks, Mr. Holmes Coote, Mr. J. W. Hulke, and Dr. C. T. Coote, each furnishing valuable original communications, which, together with the Reviews and the Domestic and Foreign Electic Departments, render this number a most interesting issue. The work, therefore, is not, as would appear to be indicated by its title, simply a review, but a regular monthly medical journal, conveying excellent medical instruction and interesting medical news to its readers

Like most of the British journals, both literary and scientific, it leaves us to guess the name of its editor. We would prefer seeing it plainly printed on the cover, that we might welcome him without danger of mistake in o the community of journalists. We cordially commend the *Review* to the attention and favor of our readers, and hope that this first number may prove the beginning of a prosperous and useful career. American subscriptions should be addressed to Messrs. Baillierre & Brothers, No. 440 Broadway, New York, or directly to "The editor of the *London Medical Review*, care of H. Baillierre, 219 Regent-street, London W., and should in all instences be accompanied by the name and address plainly written." It affords us much pleasure to add the name of the above new journal to the list of our foreign exchanges.

Thirteenth Annual Meeting of the American Medical Association.

THIRD DAY.—CONTINUED FROM AUGUST NUMBER.

It was moved, that in order to expedite business without a session next day, the sections meet at 2½ P. M., and at 4 P. M. the Association again convene to close business and receive their reports.

CLOSING SESSION.

The Association was called to order at 4 P. M., by V. P. Wilson Jewell, in the chair.

Various special committees were called upon to report, and failing to do so were discharged—other reports which had been placed on the Secretary's table were, without reading, on motion, referred to the Committee on Publication, with power to act.

The various sections were called upon for their reports, and the various papers respectively discussed by them were referred to the Committee on Publication.

The report of the Committee on Rules of Order, lying on the table, was then called for and read, and the order of business acted upon, and the articles severally adopted, and afterwards the whole report was laid on the table.

A communication was read from the Essex Co. Medical Society, of

the State of New Jersey, containing the following preamble and resolution, for action upon by the Association :

Whereas, the indiscriminate sale of poisonous drugs at retail, is fraught with danger to the community, be it

Resolved, That in the opinion of this Association, it is the duty of the public authorities in the different States of the Union to pass prohibitory laws against the retailing of morphia, strychnine, prussic acid, etc., except on the written prescription of a regular practitioner of medicine, or on the personal application of a well-known citizen ; and that a committee be appointed in the different States, to endeavor to carry into effect the spirit of the resolution.

The paper was received and the resolution adopted.

The report was referred to the Committee on Publication, with power to act.

On motion of Dr. Davis, of Illinois, it was decided that the committee called for be appointed at his leisure by the President of the Association.

On motion, Dr. Cox, of Maryland, was requested to present at the next meeting of the Association a paper on Necrology.

Dr. A. N. Dougherty, from the Committee on Tracheotomy, reported that from the mass of facts they had gathered with regard to the result of this operation, the proportion of successful operations was 1 in 3 4-10. The statistics of cases in this country, as far as ascertained, was 17 cures out of 58 cases.

Trousseau before 1844 had 212 cases, of which there were 40 cures and 132 deaths—after 1848, he had in 49 cases 48 deaths. From 1849 to 1858, he had at the Children's Hospital, at Paris, 466 cases—which resulted in 126 cures and 340 deaths. Another operator met with but 4 cures in 36 cases. Statistics of other operators were presented, and at the request of Dr. Dougherty, the report was referred back to the committee, with power to complete the report, and present the same at the next meeting of the Association.

Dr. Bell, of Brooklyn, offered the following resolution .

Whereas, some of the papers submitted to this Association require a longer period of time for their examination than the annual meetings will admit of; therefore, be it

Resolved, That the several sections have power to refer such papers to experts, who shall determine whether they are worthy of being referred to the Committee of Publication, for publication in the Transactions.

On motion, this was laid over to the next meeting of the Association.

A motion of Dr. Chapin, that all papers which had not been disposed of by the sections, should be referred by the Committee of Publication to experts, who should report back to them, whether the papers were worthy of publication in the Transactions, was laid on the table.

Various rules of order and amendments to the Constitution, which had laid over from previous meetings, were again indefinitely postponed.

TO BE CONTINUED.