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SYMPATHETIC OPHTHALMITIS—A PRACTICAL STUDY.*

BY D. J. GIBB WISHART, B.A., M.D.,

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Mr. President and Gentlemen,—In attempting to place before you to-day a few thoughts upon the subject of Sympathetic Ophthalmia, I am led to do so by questions that have arisen in dealing with such cases as have fallen under my direct observation; and as you are all likely to meet with similar cases, I feel the less diffidence in addressing you at some length in connection therewith.

That inflammation might arise in a sound eye, the result of and caused by pre-existing inflammatory processes in the other, is a fact long since noted, but the only really earnest investigations into the subject have been made within the last fifty years.

The pathology of this disease is an interesting study, but as yet the question is so unsettled that we can hardly gain any positive and reliable indication in treatment from its consideration.

The idea advanced in 1844 by McKenzie, of Glasgow, that the irritation travelled by the path of the nerves from the one to the other eye, has still to be shown to be unsound.

The bacteriological investigations* of Deutschman, who maintains that he has proved conclusively by experiment, the presence of bacteria in the affected eye, which have travelled thither from the irritating eye by means of the peri-vascular

lymphatic system of the optic nerve, are held by Schweigger, Alt and others, to upset the nervous theory, and to settle the question finally by proving that this disease is dependent alone upon the entrance of bacteria—an obvious inference being that the disease can be prevented by procuring and maintaining an aseptic condition of the irritating eye.

Even if the presence of these bacteria were always discoverable, they would not in any way explain the lapse of time which sometimes occurs between the injury to the irritating eye and the onset of the sympathetic inflammation—a period which in one case is recorded as sixty-one years. Moreover, the results of Deutschman's investigations have been denied by Randolph, who in a large number of experiments on animals, *was never able to detect the presence of bacteria in the eye or the optic nerve of the sympathizing side.*

I think we are still bound to admit that clinical evidence is in favor of the theory that the influence is a nervous one, travelling by the ciliary nerves through the ophthalmic ganglia of the sympathetic, trophic and the vasomotor nerves, or by the optic nerve, exciting trouble in an eye otherwise sound, and so giving rise to the various conditions present. The share which bacteria take in the causation, if any, is still undefinable.

The view I have here urged, is directly opposed to that of the author of a recent article in the *Montreal Medical Journal*, who adopts the bacteriological theory of causation as the only tenable theory. Much as I respect his opinions, I submit that we have many instances where a constantly irritated point will give rise reflexly to pathological conditions elsewhere, as in the nasal neuroses; and that while it is true that in those cases where the removal of the irritating eye has been too late to prevent the occurrence of the sympathetic inflammation in the other, the virulence of this inflammation has been modified by the enucleation, this fact only goes to show that the cause was neuropathic, for with the removal of the irritating point, the effect upon the nerves soon wore off; whereas, if bacteria have once travelled from the one eye to the other, I fail to see how their action in their new home could be modified by the fact that their former one was destroyed after their departure.

The cases of eye trouble in which so-called sym-

* Read before the Huron Medical Association at Seaford, January, 1892.

pathetic ophthalmia may be feared as a possible contingency, may, for the purposes of this paper, be viewed as divided into those where the danger is an *immediate* or a *remote* contingency.

The danger is immediate in all cases where the eye-ball has been recently wounded, from any cause, or to any extent, especially if the wound be in the ciliary region, and, more especially still, if the object causing the wound remain lodged in the eye. The danger is remote in all cases where some disease process has been going on in one eye, which in its course has involved the iris or the ciliary region, such involvement frequently leading at some future time to the onset of sympathetic inflammation in the other eye.

When called to see a patient suffering from some injury involving, or suspected of involving, the eye, the question must present itself in view of the damage done, Is it wise to leave the eye in position, or should some step be taken to preclude the possibility of an ultimate loss of sight in the other eye?

The answer to this question will depend upon several points: 1st, the amount of sight left in the injured eye; 2nd, the region involved; 3rd, is there a foreign body in the eye?

1. If the sight is lost, the eye should be removed instantaneously, as *any blind eye is at any time a source of danger*. If the sight be largely affected and not likely to be regained, and unless there be other strong reasons to the contrary, it were better to enucleate at once. It is true that a better stump will be made by evisceration and the insertion of an artificial vitreous, but this is an operation that the general practitioner can hardly be expected to be prepared for, and ere an oculist can be brought, great damage may be done.

In advocating the removal of the irritating eye I am fully of the opinion that in the hands of an oculist other operative measures, less radical and less repugnant to the patient may be equally efficacious, but in the hands of the general practitioner, I consider enucleation the only justifiable course.

In the case of children, where the loss of the eye-ball is so frequently attended by imperfect after-development, the operation of enucleation should be avoided if we can avail ourselves of skilled advice.

2. With regard to the bearing of the position of

the wound upon the question, we must keep in mind that any wound of the ciliary region, which involves the iris, even wounds of the cornea near the sclero-corneal margin, are especially liable to cause sympathetic inflammation. Still it is in all cases most desirable to save the eye, and if the patient be intelligent and good aid be close at hand, I would prefer to recommend an expectant plan of treatment combined with thorough asepsis, instead of immediate removal.

The danger of sympathetic inflammation is not limited to accidental wounds of the eye-ball, but is found in connection with wounds made by the surgeon himself.

3. Where we have to deal with a foreign body, the question is even more serious. Foreign bodies have remained imbedded in the eye for years, without causing any serious damage, but as a rule the prognosis is bad, especially if they have penetrated or are located in the ciliary region. A foreign body can be removed, as a rule, if lodged in the cornea or iris, but if it has entered the vitreous, removal is difficult, and it is apt to gravitate to the lowest point, and there produce irritation.

The danger from a foreign body abiding in the eye, arises whenever it is embedded in the iris, ciliary processes or the choroid, or is lying on the retina, and pressing upon the choroid. In cases where the entrance of a foreign body is suspected but not demonstrated, the suspicion will be strengthened if the wound does not heal kindly, or if the reaction is in excess of what the origin and nature of the wound would appear to justify.

The residence of a foreign body in an eye will endanger, sooner or later, the existence of that eye itself, and may bring about sympathetic trouble in the other; therefore the course of action and prognosis must be carefully considered, and unless you are sure that your patient is of sufficient intelligence to keep watch for the slightest symptom of irritation, it is wrong to let him out of your hands without providing against the contingency. The object which enters the eye may be of any nature whatever, and is equally dangerous in all. A case was reported by Goode, in the *Journal of the American Medical Association* some time ago, where a bullet was supposed to have grazed the eye-ball, as no trace of it could be found. For ten years, there were symptoms of irritation in the sound eye—not referred to the original trouble—

and removal of the wounded eye revealed the bullet lodged in the rear, and relieved the patient of all trouble. Too much importance can hardly be placed upon the necessity of a prompt realization of the dangers to the patient, which arise from the injury, that no stone be left unturned to remove the danger and to make the patient realize that danger. Many have had to bless their physicians for the loss of eyesight, that might have been spared to them.

A lens dislocated by a blow is a foreign body that has not infrequently produced sympathetic trouble and must not be overlooked. Another cause of sympathetic inflammation which hardly falls under this head, and yet must be remembered, as explanatory of indications of inflammation not otherwise explained in an apparently sound eye, is the irritation of an artificial eye upon a stump.

Given a patient in whom then we have reason to look for the occurrence of the disease, but where the conditions are not such as to demand the immediate removal of the irritating eye, we must be able to put him in possession of such information as will enable him to lose no time in consulting a physician when the first symptoms appear.

The symptoms that the sound eye is threatened vary, but include, a vague sense of smokiness before the eye; a difficulty in focussing small objects; difficulty or painfulness in reading fine print; flashes of light with changing colors; wavering mists before the eyes, as of heated air rising from a stove; lachrymation in using the eye for near work.

These are the symptoms of the *stage of irritation* which always precedes the outbreak of inflammatory processes. Sometimes they only appear when the bad eye becomes inflamed, to subside again when the inflammation subsides, but any of these should form sufficient ground for a thorough ophthalmoscopic examination.

The patient sometimes has a constant sense of something wrong in the sound eye; now and then neuralgic pains are felt in connection with the sound eye, or photophobia when exposed to a bright light.

Further information may be gained when the patient is examined. A painful spot may be located in the sound eye, corresponding to the seat of pain in the irritating eye. A faint blush may be observed around the cornea. The patient may read

fine print, or see well at a distance, but be unable to maintain the effort for any length of time. Optic neuritis may perhaps be discovered with the ophthalmoscope, or signs of choroidal trouble be made out.

Such a conjunction of symptoms would warrant a diagnosis of sympathetic irritation, which experience has dearly taught us, may develop even in twenty-four hours into true inflammation. We cannot be too keenly aware of the danger, and of the necessity for prompt action, or the very worst results may be anticipated.

We unfortunately often meet with these cases for the first time after the irritable condition has become too serious to be longer neglected, or where the second stage, that of inflammation, has begun. The irritable stage is generally of short duration, so short as sometimes to cause a denial of its presence at all, and especially so in the class of cases that we styled *immediate*.

The signs of actual inflammation will be pain, redness, decided impairment of vision, as experienced by the patient, and as observed by the physician, iritis with discoloration of the iris, contraction of the pupil, posterior synechiæ, and blocking of the posterior chamber. Pain is, however, not always present, especially in children. The development of the inflammation is rapid, with a great output of very plastic lymph, which has pronounced tendencies to organize.

Coming now to the discussion of our line of action when either of the above conditions presents itself, we find that as a rule we cannot err, if we fully apprehend the conditions present. First, as regards the treatment of the *diseased eye*. When we have signs merely of irritation in the sound eye, we must treat only by removal of the cause—the diseased eye. It is a standing menace to the sound one, and must be removed as quickly as may be.

The loss of an eye is viewed with repugnance naturally by every patient, but there is all the more necessity for a clear statement upon the part of the physician as to what may be feared, nay, expected from the retention of the irritating eye. Few are so sanguine, or unintelligent as to fail to understand what the loss of two eyes entails. We have, moreover, the almost absolute certainty, that the removal of the diseased eye will be followed by a cessation of all symptoms, and future

exemption from the danger. It is dangerous to attempt any palliative measure.

We have already stated, that in that class of cases where the danger is an immediate one, we are without option in removing the eye, if all sight be lost. Where partial sight is retained, we are justified in waiting cautiously, but the first symptom of irritation must be followed by enucleation.

In the cases where danger was classed as remote, the operation must also be performed upon the first sign of irritation, and again the happiest results may be predicted.

If the stage of inflammation has begun ere we have been able to enucleate, we had better leave the diseased eye alone, if it possess any vision worth speaking about. Removal of the irritating eye at this stage seldom effects any good results for the sympathizing eye. An early operation may stop an inflammatory process, but this is not to be counted upon even if done the very first day. Its only effect, as a rule, is to mitigate the sufferings of the patient. Operation is contra-indicated if the stage of inflammation be advanced. If a degree of sight remains in the diseased eye this may be afterwards all the patient will have to depend upon.

With regard to the treatment of the sympathizing eye. In the irritation stage it is very amenable to treatment, the other being removed. Rest from all work, for months if need be, and shade will effect wonders. These may be assisted by mercury inunctions, tonics, fresh air and exercise.

In the inflammatory stage, we can simply try to soothe, for it shows great power of resistance to every measure. Atropia instillations, belladonna fomentations, morphia hypodermically, will assist, and mercury may be given hypodermically through the conjunctiva. Operative interference, such as iridectomy, is unwarranted.

The outcome of this stage is generally the worst possible.

Sympathetic affection of a sound eye, however it arise, is something which it behoves us to carefully watch for and guard against, seeing our patients have but two eyes, and yet it frequently requires the nicest discrimination to decide whether or not an injured eye must be excised as liable to bring about the consummation not devoutly to be wished.

The fact that there is no time limit to the

danger is a great element of difficulty in diagnosis, inasmuch as we can never assure our patient of safety in the enjoyment of his treacherous possession. Danger is present from the very first. As a rule, two to three weeks elapse before the sympathy is exhibited. The danger of sympathetic inflammation exists especially during the period in which the irritating eye is inflamed, and every symptom of this must have disappeared ere we can let our patient out of close observation.

It is, however, no uncommon thing for a year to elapse before the sound eye is affected, and even ten, twenty, and in one case reported from Chicago, sixty-one years elapsed.

No time limit can therefore be set beyond which symptoms may not arise. The disease is, among diseases a veritable "snake in the grass."

A NARROW PREPUCE AND PREPUTIAL ADHESIONS IN CHILDHOOD—FURTHER OBSERVATIONS ON THEIR DELETERIOUS RESULTS. *

BY H. W. BRUCE SMITH, SEAFORTH, ONT.

The causes of disease present to every worker in the field of general practice, the most interesting, yet sometimes the most difficult, themes for thought and research, and experience establishes the fact that in many of the most common affections, we are yet occupying positions which we cannot regard as perfectly sound and unassailable. While contagion or infection are recognized as etiological factors in many diseases, yet in few of these has the ultimate element by which the disease is communicated been with perfect certainty determined, although as isolated and brilliant exceptions, which mark the modern achievements of medical science, must be mentioned the research which led to the discovery of certain microscopic organisms, micrococci, bacteria and bacilli, as the true causes of different diseases. These discoveries have, however, as yet yielded but meagre therapeutic results, and necessity compels us to fall back upon our clinical records, for the best possible basis upon which to study and combat disease. In no class of diseases is this more true, and in no department of general practice do

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the gleanings from practical experience prove of greater value than in the diseases of children, and the only object of this paper is to furnish a few further observations on a subject which I deem worthy of attention.

At the meeting of this Association two years ago, it was my privilege to present a paper on certain reflex nervous phenomena due to preputial contractions, and to briefly relate the clinical histories of a few cases, in which, as the results clearly proved, there might be a causative relation between certain nervous symptoms, and an abnormal condition of the penis, and that by directing our efforts to relieve that condition, we might in some instances restore a delicate boy to the full vigor of joyous childhood. I have now to present, as briefly as I may, the histories of two interesting cases, which have lately come under my observation, and the results of which are, to me, further convincing evidence of the importance of the subject I have, now for the second time, to bring before the Association.

In reference to the cases previously reported, I may say that the relief has been permanent, that each child has lived, and developed in mind and muscle, and none of them have had any return of the symptoms once so distressing.

CASE No. 1.—Albert L., aged nine years, the son of parents who have been exceptionally healthy, and neither of whom has any relative who has any nervous disease, was brought to me by his father, who gave me the lad's history. For the first five years of his life the boy had enjoyed good health, but in his sixth year the parents noticed choreic movements of the lower limbs, and inability to remain standing more than a moment or so at a time, without peculiar twitchings in the muscles of his legs. Shortly after passing his sixth birthday and after a day spent in play, the child had a severe convulsion lasting several minutes, which so alarmed his parents that the family physician was called, and after prescribing the usual remedies the patient was soon restored to his usual health. Three months afterwards another severe convulsion occurred, the next in two months, and gradually at shorter intervals, until when brought to me he was in the habit of having a convulsion every two or three weeks. He would generally make a rapid recovery after each convulsion, but the choreic movements of the limb

would continue unabated. His appearance when first seen at my office was that of a pleasant-faced healthy lad, and there was no evidence of any impairment of the mental faculties. The father brought with him a detailed account of the child's history and from this I readily saw that all the remedies commonly employed in such cases had been given a faithful trial. On examination of the penis I found the prepuce elongated, contracted and adherent, and did not hesitate to explain to the father that I thought that abnormal condition might account for the lad's disease. Placing the child under chloroform, I introduced a director and slowly broke up the adhesions, and after making a small slit in the prepuce the glans were exposed having a perfectly raw surface as far back as the corona. The prepuce had to all appearances been adherent for a long time to the glans, which was much smaller than usual at that age. Behind the corona glandis and pressing into it was hardened cheese-like smegma which on removal left a distinct red ring of depression, completely encircling the organ. I painted the parts over with tr. benzoin co., and after applying dressing, the child was removed to a friend's house. The next day he was bright and doing well. There being no unfavorable symptoms and the parts healing nicely, I gave my permission in a few days, for the child's removal by train to his home. The father was instructed to keep the parts carefully washed with hot water every day, for a short time, and to examine the penis each week and prevent any tendency to adhesions again forming. At my request the lad was brought to me every month for three months, but at the end of that period as there had been no return of the convulsions and choreic movements of the limbs had entirely ceased, I was glad to dismiss the case as cured. I quote from a letter received from the father of the child during the past week, as follows: "Albert is doing well and appears to be in the best of health. He is at school every day and has not had a convulsion since you performed the operation on him last summer."

CASE No. 2.—R. S., aged 9 years, son of a clergyman living in a western town, was referred to me by the family physician, in November last, with the following history. For the first two years of the boy's life, he had been healthy and bright. At the age of twenty-seven months he

had a slight convulsion, and as none of the other children in the family had ever had a similar attack, it caused considerable anxiety to the parents, who, however, presumed that it was due to some derangement of the digestive organs, and did not call in a physician. Three months after, the child was seized with another convulsion, which was more severe than the former one, and medical aid was at once invoked. The cause assigned for the convulsions was that term so commonly, and yet often so erroneously, used "worms," which, I fear, are too frequently called upon to account for morbid conditions with which they have no connection. During the next five years the convulsions returned with marked frequency and with such effect that the child once bright and active began to manifest symptoms of impaired mental activity and the parents were inclined to look upon the case as hopeless. During these years the child had been given, as far as I could learn, careful medical treatment but nothing seemed of the slightest avail. At the age of six he commenced to learn the alphabet, and for a time seemed to grasp the subject, but as the convulsions became more frequent memory grew weaker, and the alertness and brightness of youth gradually gave place to the characteristic appearances and actions of a mild imbecile. During his ninth year the convulsions occurred at least every two or three weeks and general symptoms, prominent among which were nocturnal enuresis and involuntary passage of feces, indicated to the grief of the parents that their son had become a confirmed invalid. Shortly after a severe convulsion his father brought him to me. His appearance was that of a well developed child with that expression of countenance peculiar to children of weakened intellect. After careful examination of the patient, his habits and family history, and realizing that the lad had doubtless had excellent medical treatment, I suggested that the cause might perchance be due to an abnormal condition of the penis.

On inspection I found distinct evidence of phimosis the prepuce being greatly elongated, and on making an effort to retract it and expose the glans, I discovered that the prepuce was completely glued down to such an extent that there was no trace of it ever having been anything but adherent. Placing the child under chloroform I made a complete circular incision and removed a portion of

the prepuce and slowly dissected the remaining portion until the glans became gradually exposed. In this case there was marked enlargement of the glans, and behind the corona and completely encircling it was smegma as tough as leather, as large in circumference as an ordinary lead pencil and containing chalky concretions. This too was partially adherent, and when taken off left a surface studded with small granulations which bled freely on touch. After dressing in the usual manner, and giving strict precautions as to cleanliness, etc., I allowed his father to take him home the same evening by train. He reported favorably of the child's condition every few days, and a month afterwards brought him to me again. He had had no convulsion during that time and had every appearance of improved health. The wound had healed completely and showed no sign of the mutilation, which has sometimes been urged as an objection to circumcision. The prepuce was freely movable. For the following four months the little fellow was brought to me each month, and from the date of the simple operation in November last, to the present time, he has not had a single convulsion. Within two months after the operation his parents noticed that the child's mental faculties were commencing to improve, and although I assured them that a considerable time must necessarily elapse before the intellect, impaired as it had been by the long continued convulsions, could, if it ever would, be clear, they remarked with pleasure several indications of improvement in mind and memory. A few weeks ago, being convinced that the cause of the convulsions had been removed, and noting the anxiety of the parents to hasten the acquirement of the lad's intellectual faculties: I advised his removal to an institution where special attention is given to the mental treatment of children. I am glad to know that by following my advice the child has been given the best possible chance for acquiring that which the persistency of his disease deprived him of for such a length of time.

These and the other cases, which I have had the privilege of reporting, furnish, I think, further distinct evidence that in some instances, where there is no evidence of an organic lesion in the brain or nervous system, and where the practitioner is puzzled in determining the exact cause he may discover those reflex nervous symptoms to be due

to a narrow and adherent prepuce. The explanation is by no mean difficult, knowing that no nerves in the human system are more sensitive than those supplying the genital organs, and being familiar with the varied reflex symptoms due to dental, gastric or uterine irritation. I again repeat that while any attempt to relieve nervous symptoms when due to some central lesion by an operation on the genitals would be utterly unjustifiable, we are always to bear in mind that very anomalous and extraordinary nervous symptoms may be entirely dependent upon genital irritation, and for relief, the simple operation to which I have alluded, is not only justifiable but absolutely demanded.

Selected Articles.

NERVOUS AND MENTAL PHENOMENA AND SEQUELÆ OF INFLUENZA.

BY CHARLES K. MILLS, M.D., PHILADELPHIA, PA.

All practitioners have been struck by the prominence of nervous and mental phenomena in influenza; and much has been written, but mainly in a desultory way, about the symptoms of the disease which are referable to the nervous system, and its more or less persistent nervous and mental sequelæ. The part played by the nervous system in the etiology and history of the disease has been variously interpreted. One holds that it is a "nervous disease," without explanation; another describes it as a pneumogastric neurosis; another as a neuropathy due to ptomaine poison. According to Blocq, cited by Church, the primary infectious action takes place upon the nervous system during the disorder, while sequelæ are to be attributed to secondary infection from ptomaines. Cheston Morris, of Philadelphia, advances the theory that the general symptoms of influenza may be traced to a derangement of function, or partial paralysis of the pneumogastric nerve, and that the affection is brought about by conditions of the atmosphere, which particularly tax the cardio-pulmonary apparatus which is regulated by this nerve, a view which, after all, relegates the disease to an atmospheric or infectious cause. Graves long ago referred the bronchial and pulmonary symptoms of grippe to lesions of the nervous power of the lungs, and Blakiston regarded it as a disorder of the nervous system, with concomitant derangement of the organs of digestion, circulation, etc. Levick, who cites the last two authorities, holds that certain symptoms are produced when the poison is expended on the

sensorium, and certain others when its influence is chiefly exerted on the respiratory centres.

The analogies or relationships between influenza and other diseases generally recognized as belonging to the nervous system, either primarily or because of the situation of their most notable lesions, have been strongly brought out by able writers, as by Levick, for example, who has even suggested that epidemic cerebro-spinal fever, or cerebro-spinal meningitis, may be simply a malignant form of influenza, a view to which he was led because of the resemblance in the symptoms of the two diseases, which differ in degree rather than in nature, and also because for three centuries the two have occurred coincidentally or in close sequence.

Grasset and Rauzier, in a monograph on the grippe of 1889-90, lay great stress on the enormous predominance of the nervous over the catarrhal elements in the epidemic, as evidenced in the high fever, great cephalalgia, the marked delirium, the widespread pain, and the excessive nervous irritability. They refer to cases communicated by M. Coustan, in which the entire symptomatology of the disease seems to have reduced itself to a horrible migraine. They review the literature, which shows that writers of various countries are unanimous in proclaiming the importance of the nervous element—referring to Austrian, Russian, Belgian, German, English, and Polish contributions.

According to Schmitz, who read a paper on the subject before the Psychiatric Society, at Bonn, influenza is a disease of the nervous system with secondary involvement of the heart, lungs, and digestive organs. In several hundred cases which he observed the nervous symptoms were always primary, followed in every case by secondary involvement of the other organs.

What seems to be needed is an analysis and practical grouping of the facts, almost too numerous to handle, which shows the important part played by the nervous system in the development, progress, and results of the disease. How is the nervous system affected by influenza? What are its primary or direct effects on the nervous system, and what are some of the more persistent and permanent impairments, and how are these determined by the disease? What are its acute nervous and mental phenomena, and what are the most common sequences? What is the probable pathology of these states, and what treatment is best in view of the neurotic characteristics of the affection?

The briefest consideration of the subject brings forcibly to mind the fact that all diseases of infectious or toxic origin—epidemic, endemic, sporadic, or accidental—may strike any or all parts of the nervous system with a result which will be proportionate: first, to the virulence of the infecting

agent; and, second, to the resistance of the individual, whether this is due to constitutional predisposition or to reductions the result of previous injury or disease. The microbes may differ, but a bond of union and close resemblance can be recognized between the effects on the nervous system of all contagious and infectious diseases, as variola, scarlatina, diphtheria, measles, whooping-cough, typhoid or typhus fever, leprosy, mumps, cholera, erysipelas, puerperal fever, influenza, or cerebro-spinal meningitis; of all of such constitutional and diathetic affections, as tuberculosis, gout, rheumatism, and diabetes; and of all such toxic agents artificially introduced into the system, as alcohol, mercury, lead, arsenic, copper, and poisonous gases. These diseases, these diatheses, and these poisonous metals and gases produce, or may produce, nervous and mental phenomena of the same character, differing in degree in particular cases and for special reasons.

In all these affections at the time of acute onset, if the illness is of a serious character, such symptoms are present as great mental and nervous debility, irritability, restlessness, sleeplessness, or the opposite state of torpor, stupor, hebetude or coma; delirium; vertigo or syncope; headache, browache, napeache, backache and limbache; pains of all degrees of severity referred to various nerve areas; hyperæsthesia of the skin, of muscle-masses, or confined to nerve-trunks or branches; spasms, local or general, and with or without unconsciousness; sometimes mental disturbance amounting to a true mania or melancholia. During the progress of such affections any one or several of these enumerated symptoms may be present. Supra-orbital pain, for example, may be the only prominent nervous symptom in a case of influenza; headache and backache in diphtheria; hyperæsthesia in mumps, diabetes or gout; and mania in a case of puerperal infection. Any infectious or toxic disease may, in brief, produce the same symptom, syndrome, or train of phenomena; and—which is the main point—for the same reason, namely, because of the introduction into the system of an agent which directly and powerfully poisons nerve centres, and possibly also nervous conducting tissues.

Following all infectious, diathetic, or toxic diseases, moreover, or directly springing from them, common experience teaches that we may have great nervous or general weakness; forms of insanity of the depressive type; paresis and paralysis of every grade from an affection of a single muscle to that of all the extremities, and even more; localized spasm or cramp; general convulsions; pain in nerves, muscles and joints; and losses or perversions of sensation.

These symptoms and conditions, which may occur at the onset, during, or after the subsidence of any infectious or toxic disease, are those which

constitute the nervous features of the prevailing epidemic. I have introduced the subject in this way because it seems to me that it is this comprehensive grouping of generically similar phenomena which enables us to most readily grasp a subject even for practical purposes. We differentiate phenomena in our daily labor, which we only understand by properly grouping them, and by referring them to a common or to related causes.

Any attempt to classify the nervous and mental phenomena of influenza must be attended with great difficulties. These are, in the first place, symptoms and conditions which, although manifested in non-nervous organs, are directly traceable to a nervous origin; secondly, affections which would be recognized by all as properly referred to the nervous system; and, thirdly, affections occurring in nervous tissues and organs, although, strictly speaking, not nervous diseases.

I will refer very briefly to the first of these classes, although of much importance. I will not, however, discuss the nervous origin of the fever of influenza, nor will I attempt to explain the catarrh, indigestion, etc., on some neurotic theory, as such a method might lead us anywhere, and for our present purposes would be unprofitable. I wish simply to emphasize the fact that some of the most prominent pulmonary, cardiac, and vascular affections of influenza can best be explained on neural theories. Many personal observations have led me to the conclusions, not new, which has recently been well presented by Elliott, of New Orleans, that the pneumonias of influenza are often due to vasomotor paralysis; that they are, in fact, forms of blood stasis or passive congestion from vasomotor paralysis, which in its turn is dependent upon the action of the infection upon the pneumogastric centres and the nervous system in general. A distinct difference can be made out between the true pneumonic lung and this "grip-lung," as it has been termed by Elliott. Graves long ago attributed the œdema of the lungs which occurs in influenza to an affection of the vagus.

"The 'grip-lung,'" according to Elliott, "has a long and very varying condition of passive blood stasis unaccompanied by râles. If resolution occurs within three or four days, it is accompanied by large mucous râles, and no time is given for the slow appearance of bronchial breathing or bronchophony; but during the long continuance of the blood stasis, an exudation occurs, increasing slowly, which will give, in time, some bronchophony and bronchial breathing, but never so complete as in pneumonia. Resolution never occurs in these cases with the suddenness that characterizes it in acute pneumonia. The condition passes off as gradually as it formed. The sharp, clear-cut, and sudden phases of pneumonic attack separate it clearly from the obscure, irregular and slow phases of the *grip-lung*."

Many disorders in various parts of the body are best explained on this theory of local vasomotor paralysis, although it is not necessary to attempt to force this explanation for all. Hemorrhages, minute, or even of considerable size, occurring in diverse localities, as in the retina, membrana tympani, and interna auditory apparatus, or in the skin, or mucous or serous membranes anywhere, may be due to deficient vasomotor tonus. Brain, kidneys, liver or pelvic organs may suffer from forms of passive hyperæmia, subacute or chronic, which are in fact due to forms of vasomotor palsy. Occasionally we meet with cases of vasomotor disorders of the extremities, such as flushed or pallid fingers.

Even trophic affections have occasionally been observed. Wilson, for example, refers to gangrene of the lungs as one of the less common complications. Abscesses of the limbs have been recorded. Grasset records two observations of eschars occurring in young subjects in the absence of prolonged decubitus. The greater tendency in surgical cases to suppuration may have its best explanation in the depression of healthful vasomotor and trophic influence.

The peculiar forms of pulse, and uncertain or perverted action of the heart, extending in some cases to cardiac palsy and death, or in a strict sense nervous phenomena due to paralysis, partial or complete, of the inhibitory apparatus of the heart.

Let me take up those symptoms and affections which would clearly be recognized as belonging to the nervous system.

I believe, with Church, "that the infection of influenza has a marked action upon the nervous system which may give rise to immediate acute manifestations or to remote and persistent conditions; and that in the predisposed, grippe is competent to cause marked excitement or great depression of the motor, sensory, and mental nervous apparatus."

Great nervous and mental prostration, both as an acute manifestation and as a persisting sequel, has engaged the attention and required the treatment of all practitioners. The mental depression often present as an initial symptom has been, in some cases, simply overpowering. Some of the patients are affected like individuals whose mental and motor centres have been poisoned to the limits of human endurance, while still permitting the retention of consciousness. In other cases even consciousness itself has been overwhelmed.

Not a few patients who suffered from attacks of influenza during the early period of the present epidemic are still victims of profound neurasthenia. I refer now to cases which are not distinctively of the melancholic type. These neurasthenics are unable to endure a fair amount of work; their nervous forces are soon routed; they are weak,

worrisome, and unrecuperative. The cardiac weakness which has been left is undoubtedly in part the cause of this neurasthenia, and with reference to this, Church says that "the persisting neurasthenic condition, which so usually follows influenza, is attributed by some to cardiac weakness of nervous origin; and this contention is not without weight, if it is observed that even after appetite, sleep, body-weight, and physical functions have been long restored, the slightest exertion immediately produces disproportionate fatigue accompanied almost invariably by either a retarded or more frequently accelerated pulse, and rarely by præcordial distress and even by angina pectoris."

Curtin and Watson, whose experience in influenza has been enormous, say that although general nervous prostration often extended over long periods without any discoverable local cause, it was always worth while to examine the urine with care. "Sometimes a nephritis, sometimes a faulty digestion or hepatic inaction seemed to underlie the general condition in latent form. These cases, by enforced rest and attention to local complications, gradually recovered. These cases and nervous cases generally, were very disappointing when sent to the seashore during convalescence."

Among organic nervous diseases which have developed during the influenza or have been left in its wake, are in the order of their frequency, so far as my personal observation has gone, neuritis, meningitis, myelitis, and cerebritis, or various combinations of these inflammatory affections, as, for example, concurrent neuritis and myelitis, ingo-myelitis or men-ingo-encephalitis.

Probably no single affection of the nervous system has been so common during and after the grippe, and particularly as a sequel of the disorder, as neuritis. Almost every variety of neuritis as regards location and diffusion have been recorded, and have come under my personal notice. Multiple neuritis, while not common, has not been rare; and I have seen a concurrence of this affection with poliomyelitis in the same case. Isolated neuritis of almost every cranial nerve has been recorded, with such resulting conditions as optic atrophy, loss of smell and of taste, ophthalmoplegias, both internal and external; ocular-motor, facial, and bulbar or pseudo-bulbar palsies of various types, including true pneumogastric paralysis. Several cases of specially located affections of the sympathetic ganglia or nerves have been recorded. Of the forms of local neuritis most common might be mentioned the supraorbital, intercostal, sciatic, and plantar.

An interesting case of neuritis with a myxœdemoid condition of the limbs presented herself at the Philadelphia Polyclinic recently. She had a sharp attack of influenza five weeks ago, having been in good health up to that time, except five years since, when she suffered for several weeks

with inflammatory rheumatism. On recovering from the influenza, the attack not having been specially marked with nervous symptoms, she was extremely weak in the legs, and was scarcely able to drag herself around. In a few days her feet and legs began to swell and to be painful, and soon became of enormous size and exquisitely tender. She has gradually improved, but still has a condition of firm swelling, which does not pit on pressure, from her knees to her ankles, and she also still has great tenderness on squeezing the feet or ankles, or in handling the nerves or muscles of the limbs. She has no cardiac affection.

The articular pain and other so called rheumatic manifestations so numerous during the after attacks of the gripe, are after all best explained on the theory of infectious neuritis or myositis.

These cases with articular and other pains, and with swelling, recall the endemic or epidemic form of multiple neuritis known as beri-beri, in which the chief phenomena are œdema and paralysis of the limbs, with marked pain, hyperæsthesia and paræsthesia, followed later by anæsthesia, lost knee-jerk, and depressed electrical reactions. Myositis certainly, and probably also periostitis, occur as complications or sequences of the influenza, and usually in association with neuritis of some type.

Many of the reports speak of the frequent occurrence of various neuralgias. Doubtless a distinction is seldom made by observers and recorders between neuralgia and neuritis, which are or may be separate affections. Practically these cases should be regarded as neuralgic, in which pain is referred to certain nerve lines or radiations; but which pain on pressure, and the other phenomena of neuritis, such as anæsthesias, vasomotor and tropic disorders, and even paralysis, are absent. In my own experience the cases which could properly be diagnosticated as neuritis are by far the most common. The distinctively neuralgic pains are probably due to toxæmically depressed or exhausted sensory nerve-roots or centres in the cord or bulb.

Of diseases of the spinal cord proper, occurring as complications or consequences of influenza, the reported cases are not numerous, but they are none the less important. A few cases of myelitis have been put on record by native and foreign observers—one that I recall in which all four extremities were paralyzed. As would be expected, in accordance with the analogies with other infectious and toxic diseases, anterior poliomyelitis is the most common type. I have had several cases of temporary paralysis of one or more limbs, which, owing to the absence of pain and of cerebral symptoms, were apparently spinal in their origin, and probably light forms of inflammation. Concurrent multiple neuritis and poliomyelitis has

already been referred to as having been observed by me in one case, in which the neuritis, which was not severe, soon disappeared, but a limited paralysis, evidently spinal in character, was left behind.

Several observers have reported cases of bulbar paralysis, and one striking example of this disease, attributed to the gripe, has come under my own observation, although exactly how far the influenza was responsible it is difficult to say. This patient, a clergyman, had a severe attack of influenza in May, 1890, and during its progress continued to work, and ate but little. In a very short time he noticed he was losing power in his hands, which soon atrophied. In January, 1891, he began to have difficulties of speech, and, briefly stated, the case went on until November, 1891, when he was first seen by me; his symptoms were those of well marked bulbar paralysis, with progressive muscular atrophy, chiefly involving the upper extremities.

In accordance with analogy, we would expect the occasional occurrence both of nuclear poliomyelitis, and even rarely Strumpell's cortical poliomyelitis. One or two of the few cases of probable poliomyelitis of the latter type have occurred in patients suddenly stricken with fever, loss of appetite, and other symptoms which may have been due to infection.

Priester has reported the case of a man fifty-four years old, who was taken with influenza in February, and in the beginning of March was seized with extremely violent headache which resisted all medication, and later the patient became deeply somnolent, remaining in this condition for four weeks; he could be aroused, but was apathetic and soon slept again. Reflexes and temperature were normal; pulse from 40 to 60. The patient had no paralytic symptoms, and slowly improved. His affection, according to the reports of the case, closely resembled Gerber's disease—paralyzing vertigo—although the latter is a disease of the warm weather. Tumor could be excluded by the absence of all local symptoms a year before the attack. The most probable cause, he believed, was a pathological process, involving the central gray matter of the third ventricle, which would bring the disease into closer relation with poliomyelitis of the nuclear type. Dr. G. J. Kaumheimer, who translated this report for the *Review of Insanity and Nervous Disease*, December, 1891, observed an exactly parallel case which originated in April, and lasted into July before recovery took place.

That meningitis, either cerebral, spinal, or cerebro-spinal, occurs during the decline of the influenza cannot be doubted in the light of the evidence which has been presented by various observers, and particularly during the epidemic of the last three years. It is, however, comparatively rare

concomitant or complication. Some of the facts adduced as proofs of the existence of meningitis, and some of the cases reported as examples of the disease, are clearly instances of improper interpretation. The intense cephalalgia and rhachialgia; the atrocious pains variously localized in the face, trunk, limb-nerves, muscles or joints; the vigilant delirium, with hallucinations and delusions, sometimes assuming great gravity; the intense vertigo, with or without nausea and vomiting—these and other well-known nervous manifestations which are so prominent in many cases at the initiation of the disease, are not necessarily evidences of meningitis, or even of meningeal hyperæmia. Rather they are due to an overwhelming toxæmia of the nerve centres and of the brain. Severe and terrible in character at first, they frequently pass away almost as rapidly as they came, which would not be the case if they were the evidences of a true meningitis. The enormous prostration which is left behind shows that the centres of nervous energy have been subjected to a depressing agency of great virulence, not that merely enveloping membranes composed mainly of fibrous tissue and blood-vessels have been congested or inflamed. No reason could be given why such congestion or inflammation should leave such results.

The reports of cases terminating fatally because of meningitis, and even the reports, personal or official, of the frequent occurrence of this affection, must be received cautiously and sometimes incredulously. They are only to be relied on when confirmed by autopsies, or when from observers who are accustomed to closely differentiate the meaning of nervous symptoms, and particularly of pain.

It may also be worth while at this point to refer to the somewhat frequent diagnosis of chronic meningitis as one of the sequelæ of the disease. This diagnosis is usually made because of the presence of more or less persistent pain in or on the head. Experience has led me to believe that this pain is usually neuritic rather than meningeal. Even deep-seated intra-cranial pain does not necessarily indicate meningitis. They may be due to neuritis, just as certainly as a pain in the hand or foot. The fifth nerve has an immense distribution within as well as outside the cranium, largely to the dura mater but also to other tissues and parts. It is a pathological possibility to have dural neuritis without a pachymeningitis, and this is the true explanation of some pains, both acute and chronic, which are present in other diseases as well as in influenza.

The form of meningitis most likely to be present in influenza is inflammation of the pia-arachnoid or soft membranes, now often designated leptomeningitis. From observations, corroborated by autopsies, I know that this affection may exist without pain; while pain of varying degree of

severity, and usually intense, is practically invariable in pachymeningitis. Lepto-meningitis, however, is not usually without pain and hyperæsthesia as symptoms, but it may be absent, and its presence or absence will depend upon the location, extent, grade, and complications of the meningitis.

While believing that these criticisms upon the sometimes hasty, and the too frequent diagnosis of meningitis in influenza, and indeed in many other infectious and febrile diseases, are just, and can be sustained, it remains true that a genuine meningitis, sometimes of a malignant type, may appear during the progress or closely following influenza. Some very competent observers have reported cases of this character, and in a very few instances the diagnosis has been confirmed by autopsies. The diagnosis should be made to hinge upon the signs and symptoms which would be satisfying as to the occurrence of meningitis from any cause; not alone on the presence of such phenomena as headache, vertigo, and vomiting, but on such more convincing manifestations as optic neuritis, and localized spasms or palsies, either cortical or of cranial nerves.

The fact that meningitis, and even the cerebro-spinal form, does occasionally occur in influenza, is by no means proof that this disease and epidemic cerebro-spinal fever are identical. It simply emphasizes the point with which I started, namely, that every infectious or poisonous agent introduced into the economy, may produce the same or similar pathological results in the nervous system. Largely according to the vulnerability, special or general, of certain tissues and organs, will be the preponderance of this or that form of so-called disease—for instance, of neuritis, myelitis, meningitis, cerebritis, or of combinations of these affections. All infectious and toxic diseases give neuritis as the most common acute or chronic inflammatory manifestation, although myelitis, cerebritis, and meningitis may occur. Even in cerebro-spinal fever, as I was perhaps the first to point out, multiple neuritis is a common complication; but the infection being virulent and overwhelming, we may not only have meningitis but even meningo-encephalitis, or meningo-myelitis, with all their malignant phenomena and permanently disastrous results.

Vertigo is another symptom, like pain, often improperly referred to meningeal or cerebral inflammation. It is sometimes due to such disease, but occurring in influenza it may arise from other causes, as, for instance, from extravasations into the labyrinth or other portions of the auditory apparatus.

Müller reports the case of a man, fifty years old, who, after influenza, presented great physical exhaustion. In a few weeks his mind seemed affected and he became somnolent, so that he

could be roused only with difficulty and would then fall asleep again. In this respect the case was much like the one reported by Priester. Pain upon pressure was present over the vertebrae, the neck was rigid, the pulse was small and irregular, the skin reflexes were diminished, and the tendon reflexes were absent. In two weeks he began to improve. The author believed the case was one of spinal cerebro-spinal meningitis, similar to that seen after infectious diseases.

Without entering into a discussion of their pathology or their peculiarities, I will briefly mention a few other forms of nervous disorder, occurring during or as apparent sequelæ of the influenza, examples of which have come under my personal observation. Convulsions have been reported by various observers, and in a few instances the convulsive habit has been established, and the patients have remained up to the time of report as cases of epilepsy. I have seen two such cases. Hystero-epilepsy and other grave hysterical phenomena have been initiated, or have recurred in cases in which the symptoms had long been dormant. Of local spasmodic affections I have seen no records, but one case of persistent clonic torticollis, with some pain and tenderness in the spinal accessory distribution, has been in attendance at the Philadelphia clinic. Two cases of facial paralysis, occurring immediately upon the heels of influenza, have come under my observation.

Many affections not of, but occurring in, the nervous system have been reported as complications or sequences of the influenza. These include such affections as apoplexy, due either to hæmorrhage, thrombosis, or embolism. One of my Poly-clinic patients, a man thirty-seven years old, was attacked with influenza in January, 1890. He was not confined to bed, but suffered severely from headache, cough, and persistent general weakness, and in February he was suddenly paralyzed in the right half of his body, and completely aphasic. Well-marked cardiac murmurs were present, and the grippe in this and similar cases is probably causative by lighting up old endocardial trouble, or through the blood dyscrasia and general prostration which it leaves.

Various observers have reported cases of monoplegia and hemiplegia, without indicating the pathological character.

Recently, in consultation, I saw a typical hæmorrhagic apoplexy occurring in a case of influenza in a woman about sixty years old, who had previously been in fair health, and was not known to have had any disease of the kidneys or heart, although her vessels were somewhat atheromatous. Dr. S. S. Prentiss, of Washington, has reported three cases of cerebral apoplexy occurring during the progress of the influenza: one was in a man fifty-seven years of age; another in a man of eighty-seven; a third in a woman of sixty-seven. One

of these was probably hæmorrhagic; the other two, from the histories, were probably from thrombosis. In cases of this character the infection of the disease acts to bring about an apoplexy both by the changes which it produces in the blood, by its effect upon cardiac action, and by the general debility induced. Such apoplexies might occur from other depressing causes; they are to be regarded not as phenomena, but rather as accidents of the epidemic.

Uræmic convulsions in patients suffering from chronic Bright's disease have been precipitated by the influenza, and it has seemed to me to have been active in lighting up lurking syphilitic diseases.

In one case of paretic dementia of somewhat irregular type, seen in consultation, the initial symptoms of the disorder were observed soon after recovery from a severe attack of grippe, the wife and friends of the patient in fact attributing the mental disorder to this attack. The probabilities are that syphilis was present, but latent, prior to the epidemic.

Purulent meningitis and brain abscesses have been somewhat frequently noted in connection with the numerous instances of purulent otitis media.

The relations of influenza to insanity have not received much attention from writers. Mairet, of Montpellier, has recently published a lecture on the subject delivered at his clinic for mental and nervous diseases. Rush, who is referred to by Mairet, speaking of the epidemic which lasted from 1789 to 1791, and particularly of the year 1790, mentions that several persons were stricken with symptoms of insanity, and that one attempted suicide; he also speaks of several having had hallucinations of sight. Bonnet, reporting on the epidemic of 1837, cites one case which was stricken with a furious mania as the result of the grippe; and Petrequin, referring also to the same epidemic, records several patients tormented by melancholy ideas, and states that four or five suicides were accomplished or attempted at the hospitals in Paris.

The following conclusions compress into small compass so much that it is valuable, with reference to the relation between influenza and the psychoses, that I cannot do better than quote them. They are reported as the conclusions arrived at by Dr. Leledy, and were presented to the Medical Society of London by Dr. Savage:

1. Influenza, like other febrile affections, may establish a psychopathy.
2. Insanity may develop at various periods of the attack.
3. Influenza may induce any form of insanity.
4. No specific symptoms are manifested.
5. The rôle of influenza in the causation of insanity is a variable one.

6. Influenza may be a predisposing or exciting cause.

7. In all cases there is some acquired or inherited predisposition.

8. The insanity is the result of altered brain nutrition, possibly toxic.

9. The onset of the insanity is often sudden, and bears no relation to the severity of the attack of influenza.

10. The curability depends on general rather than on special conditions.

11. The insane are less disposed to influenza than are the sane.

12. In rare instances, influenza has cured psychoses.

13. The insane may have mental remission during the influenza.

14. There is no special indication in treatment.

15. Influenza may lead to crimes and to medico-legal issues.

I can indorse from experience almost every one of these conclusions. With reference to the statement that no specific symptoms are manifested, it should be said that while this in a general sense is true, the most frequent type is a form of melancholia.

The cases of active insanity have been observed at the onset of influenza and during its height but more particularly during its period of decline and convalescence. The published cases have been recorded chiefly as instances of acute mania or melancholia. The commonest type of grippe mental disorder, as I have just stated, is a form of melancholia or lypemania; but as this not unfrequently assumes the form of melancholia agitata, it is often regarded as mania by practitioners not accustomed to differentiate the varieties of insanity. These patients are intensely depressed and emotional; they are filled with apprehensions of disgrace and ruin; they believe that they will never recover their former health; they are suspicious and delusional with reference to those who surround them; they are frequently unwilling to eat, or to rest, or to take medicine; and in some cases they have definite delusions of terrible character, for the most part hypochondriacal or religious. They are frequently plagued with the thought of suicide, and sometimes make successful or unsuccessful suicidal attempts. They have been deprived by the ravages of the disease of mental and moral stamina. In the majority of these cases, but not in all, some hereditary or acquired predisposition is present. While, however, the grippe usually gives us mental disorder of special type—a form of delusional melancholia—under special conditions it may be the starting point or exciting cause of any variety of mental disorder, as mania, paranoia, parietic dementia, hebephrenia, etc., but I can no more than glance at this phase of the subject.

The investigations of Church show that in each year in Cook County, Illinois, the epidemic of influenza has been attended by an increase in the number of proceedings for the commitment of the insane, which he believes cannot be explained by increase or movement of the population of the county.

Of the influenza occurring in the hospitals for the insane, I have had no opportunity for observation except in connection with the insane department of the Philadelphia Hospital. A great disproportion has been observed between the number of cases occurring among the women and the men. One hundred cases are recorded as having occurred among 460 female patients; and only three in a larger number of men. The disease did not prove particularly disastrous among these patients, only three deaths having occurred from pulmonary complications. The cases were, as a rule, not of severe type; less severe than in an equal number of sane patients.

K. Helweg has recorded the results and action of influenza in the Asylum at Aarhus, Denmark, and Pritchard has translated and summarized this paper for the *Review of Insanity and Nervous Disease*, for December, 1891. The account is of such interest that I will give it in detail: "The disease appeared in the asylum January 4, a few weeks after it had first been observed in the neighborhood. Out of 520 insane forty-one were so severely attacked that they were confined to their beds. The disease seemed decidedly contagious. It spread with difficulty on account of the wards being divided from another. Eight of the twenty-five wards were spared altogether. When a ward would be invaded, the disease would rapidly run its course to proceed to another. The transmission of the contagion could be distinctly seen in the sick wards, where those stricken down in the other wards would bring the disease with them and transmit it to patients there. Seven patients had pneumonia. A relatively large percentage (6) died, of which four were from pneumonia. Among these was a man with such a severe cerebral disease that he must be excluded (the post-mortem results in the remaining five, which were women, were all more or less similar). The most essential results were extreme hyperæmia of the cranial bones and membranes, where the dura and the brain mass itself twice presented fresh and strongly vascular pseudo-membranes with small hæmorrhages as well. The veins and arteries of the thinner cerebral membranes were filled to bursting with blood; the large basal arteries were so filled with coagula that they stood out like cords, or those of an injected specimen. The brain substance itself was very hyperæmic, and its consistence increased. The average weight of these brains was about the ordinary of those of Aarhus. The writer also

gives the history of the man mentioned, and those of three other cases where influenza could not be diagnosticated during life, including the post-mortem findings of a case of influenza in a (sane) nurse who died of pneumonia. Here also was great hyperæmia of the brain and its membranes, yet not so pronounced as in the insane cases. The writer has seen influenza accompanied by severe psychic symptoms. In a few cases, the condition resembled acute delirium, which, however, is transient, and seems easily controlled by antifebrin. On the contrary, in two hopeless cases of insanity the disease had such a favorable and curative action that they may be regarded as cured. In both cases there was pneumonia.

The epidemic influenza has impaired the *morale* of the community. Lack of spirit in work, and an apprehensiveness with reference to health, business, and all matters of personal interest are abnormally prevalent. The hysterical have become more hysteric; the neurasthenical more neurasthenic. Hypochondria has displaced hopefulness in individuals commonly possessed of courage and fortitude. In brief, certain neuropathic and psychopathic features have been impressed upon the community. We cannot afford even to dismiss entirely from consideration the bearings of the epidemic upon the increase not only of suicides, but of other grave crimes.

Many interesting questions in connection with the treatment might be discussed; but as the subject of treatment has been assigned in this discussion to Dr. Hare, I will only speak of one point.

The use in influenza of hypnotics, narcotics, sedatives, and motor depressants is a question of particular interest in connection with the study of the nervous and mental phenomena of the disorder. The views of practitioners and writers are here decidedly at variance. Serious mental and nervous complications or actual insanities occurring during influenza have been attributed to the too free use of such chemically powerful remedies, as phenacetin, antipyrine, antifebrin, chloral, bromides, sulfonal, and paraldehyde, and our older narcotics such as opium, hyoscyamus, conium, and cannabis indica, have also come in for a share of blame. Persisting conditions of nervous prostration, and chronic respiratory and cardiac neuroses, have also been charged to drugs. Undoubtedly such criticisms have some foundation, but it remains true that each of the remedies named has proved itself of some value in the treatment of influenza, and particularly of its nervous types. The enormous consumption of a drug like antipyrine is a practical argument both for and against its use. What Grasset has said of this remedy might with almost equal truth be said of almost any of the rest. "This agent," he says, "vaunted by some as a panacea against all mani-

festations of the disease, is considered by others a remedy absurd and irrational in all cases. The truth would seem to reside between these two extreme opinions."—*Cincinnati Lancet-Clinic*.

REMARKS ON DEATH DURING CHLOROFORM ANÆSTHESIA.

In giving a short description of the results of the Hyderabad Chloroform Commission I may remind you that the object of the research was essentially a practical one: it was to save people's lives, to use the words of his Highness the Nizam himself, to whose generous and enlightened liberality the Commission owed its existence. The Commission was originally suggested to the Nizam and his ministers by Surgeon-Major Lawrie, resident surgeon at the hospital of Hyderabad, and, like myself, an old pupil of Professor Syme.

The chief rule laid down by Professor Syme for administering chloroform was to attend carefully to the respiration, and take it as a guide for the continued administration or the suspension of the inhalation. This was the rule which had chiefly attracted Dr. Lawrie's attention, and upon it he founded his practice. Two other rules which Syme also laid down and which chiefly attracted my notice, were always to use the best chloroform and always to use plenty of it. Syme's utterance was brief and dogmatic, and he entered into no explanation of these latter rules, but I attempted to do so in a paper which appeared in the *British Medical Journal*, December 4th, 1875. I then attributed death during imperfect chloroform narcosis to the occurrence of shock, which was prevented by full anaesthesia.

In making their experiments the Commission had before them the questions how far death during the administration of anaesthetics was likely to be due to the action of the anaesthetic itself, and how far to the effect of shock from the operation. The question regarding the action of the anaesthetic also divided itself into two, namely, how far the lethal effect might be due to affection of the heart, how far to affection of the respiration, and how far to both. Before we attempt further to describe the experiments made by the Commission, I think it might be well to clear the way by mentioning that the time was too short to allow of the general action of chloroform or ether upon the tissues generally being investigated, and that we had to confine our attention to the methods in which death was likely to occur during surgical operations as usually performed. Previous researches had pretty well established that chloroform is a universal protoplasmic poison, and will destroy the contractile power of individual cells, of cilia and of muscular fibres, and, when injected into the artery of a limb, will produce rigor mortis in it,

and make it stiff as a board. There was no question, therefore, of the power of chloroform to destroy any structure of the body if applied to it in sufficient concentration, nor do we attempt to deny that chloroform will destroy the contractility of the heart just as it would that of a voluntary muscle, provided always it reached the heart in sufficient concentration. But this was just the point at issue. If we drive chloroform into the trachea, or air very heavily loaded with chloroform vapor into the lungs by artificial respiration, it will be absorbed in sufficient quantities to paralyse the heart, but the question is an entirely different one if the chloroform be administered in the usual way, by inhalation. Our contention is that when chloroform is administered in this way it acts more readily upon the respiration than it does upon the heart, and from the respiration failing first, a sufficient quantity to paralyse the heart is never conveyed to it, and that therefore death from chloroform inhalation is respiratory death, death beginning with the respiration and not with the heart.

It will be convenient to take up, first, more fully the question of death from the anæsthetic, by which I mean death due to the action of the anæsthetic itself, and, later on, to discuss the question of death during anæsthesia—that is, death from operation or other causes than the anæsthetic, sometimes in spite of its action, and at other times, perhaps, aided by its action.

The experiments made by the first Chloroform Commission showed that in dogs subjected to its action the respiration invariably failed before the circulation. Those made by the second Commission confirmed this, but they brought out a new point—namely, the rapidity with which the heart fails from the combined action of asphyxia and chloroform. This action is of two kinds: First, asphyxia during chloroform stops the heart's action through the vagus nerve. This is the action which was looked upon by the Glasgow Committee as so dangerous, but which, as Dr. Bonfort pointed out, is rather a safeguard, tending to prevent the too rapid conveyance of chloroform vapor from the lungs to the medulla. The second action of asphyxia and chloroform combined is a paralysing one upon the heart itself. If an animal inhales pure chloroform vapor with free admixture of air its heart will go on for a long time—in fact, we might say, almost indefinitely. If an animal is asphyxiated, either by stoppage of the respiratory movements or by obstruction to the free entrance of air into the lungs, notwithstanding the continuance of respiration, the heart will go on for a certain time, but in the course of a few minutes will stop. This stoppage, however, occurs very much more quickly if chloroform be administered at the same time as an animal is asphyxiated, so that we may say that the great risk of death from

the action of chloroform lies in the occurrence of asphyxia during its administration.

I must here draw attention to what I believe to be a grave fallacy in some experiments of my friend Professor H. C. Wood, mentioned by him in his Address on Anæsthetics at the Berlin Congress. A tracing which he there showed seemed to indicate most clearly that the action of the heart failed long before the respiration. I here reproduce, as nearly as I can remember it, the general effect of this tracing. In it we seem to see clearly a stoppage of the beats of the heart while the blood pressure sinks, and yet the respiration goes on freely. Now I believe that the stoppage of the heart in this tracing is only apparent and not real, and that it is, in fact, due to a small clot of blood in the cannula which connects the artery of the animal with the kymograph. I have had many such tracings, and my experience has led me, whenever I got them, to disconnect the cannula and remove the clot. Had there been no clot, the stoppage of the heart would have caused the blood pressure to fall abruptly instead of gradually, as shown in the tracing exhibited by Professor Wood.

In comparing the action of ether and chloroform, we found that the great points of difference between them were, first, that ether was a less powerful anæsthetic than chloroform: and, secondly, that while neither of them paralyses the heart when giving plenty of air, the heart would continue to beat much longer during asphyxia when combined with ether than when combined with chloroform. Chloroform is thus a more powerful agent, and, as I have already said on a previous occasion, it is like a sharp knife in the hands of the surgeon as compared with a blunt one. It is more efficient for good if properly handled, it is more powerful for evil if misused.

Shortly before the Commission began its labors a most unfortunate case of death occurred in Edinburgh during anæsthesia from nitrous oxide—an anæsthetic which is usually supposed to be absolutely free from danger. The report of this case led the Hyderabad Commission to suppose that death in it was due, not to the anæsthetic, but to asphyxia from tight lacing, and accordingly they made some experiments to test the effect of compression upon the chest and abdomen. These experiments caused a storm of indignation amongst the antivivisectionists, who falsely stigmatised them as horribly cruel, whereas, in truth, there was absolutely no cruelty about them. The only thing that was done was to imitate upon monkeys already under chloroform that compression of the chest and abdomen which is daily exercised at the bidding of fashion by thousands of women in this country without chloroform. The Commission found, as was to be expected, that tight lacing greatly increased the risk of death from chloro-

form on account of the imperfect respiration and consequent tendency to asphyxia to which it gave rise.

The second part of the labors of the Commission consisted in attempting to determine the effect of shock as a cause of death during chloroform inhalation. In a paper published in the *Practitioner* I have attempted to distinguish between shock and syncope, my idea being that syncope is due to temporary stoppage of the heart's action and may be rapidly recovered from, while shock is due to paralysis of the abdominal vessels and is a very grave and persistent condition. Many attempts were made to produce syncope in the animals experimented upon by raising the head, by attempting to stimulate the vagus reflexly or even by direct irritation, but all these experiments seemed to show that stoppage of the heart's action through the vagus was not a dangerous condition. We also attempted to produce shock by a blow upon the intestine or by such an operation as avulsion of the toe nail—an operation which has frequently been followed in man by fatal results. In these attempts, however, we were unsuccessful—Lauder Brunton in *Br. Med. Jour.*

THE PRACTICAL DETAILS IN THE TREATMENT OF CROUPOUS PNEUMONIA.

A consideration of the treatment of acute croupous pneumonia renders it necessary, first of all, to define this form of pneumonia. Acute, croupous, or lobar pneumonia is a disease which is characterized by a well-marked beginning, course and termination in the great majority of cases. It is ushered in with a chill, fever, pain, dyspnoea, accelerated respiration and slow pulse. Among the physical signs are weakened and roughened respiration, prolonged expiration, or bronchial respiration, crepitation and dullness. The pathological changes are also typical. First, there is the stage of congestion; second, there is that of red hepatization; and third, there is that of gray hepatization, or of resolution. During the first stage, the capillaries which surround the alveoli of the affected part dilate and become overdistended with partially stagnant blood. Indeed, the blood vessels seem to be in a semi-paralyzed condition.

Croupous pneumonia is a disease, therefore, which shows its first visible manifestations in the capillary circulation of the lung. In the course of a short time, the disease shifts or extends its sphere of activity. The overburdened blood vessels are no longer able to hold their contents, the serum, with leucocytes and red blood-cells, exudes through their walls and collects in the cavities of the air-cells. At first, this exudation is in a fluid

condition, but when it becomes mixed or comes in contact with air, it coagulates, and in this way the alveoli are filled with a semi-solid substance resembling the dark-red color of the liver; and hence this stage is known as red hepatization. The active stage of croupous pneumonia is now completed so far as the local process is concerned, and that which takes place subsequently is merely the result of a chemical disintegration of the exuded material. Albuminous material, no matter where it collects in a mass, as it does here, must decay sooner or later. Pathological chemistry teaches us that a quick and moist degeneration of this sort takes on the form of fatty degeneration; that a slow and dry degeneration assumes the nature of a cheesy decay; that a still slower and drier process ends in calcareous degeneration. Now, it so happens that the exudation of croupous pneumonia undergoes a fatty degeneration after it has lodged in the air-vesicles for a period of from three to five or six days and even longer, and while this takes place the color of the affected part is changed from red to gray, and hence is called the stage of gray hepatization, also called that of softening or of resclution.

In the first stage there are found roughened and weakened respiration and generally a crepitant r le, together with some degree of dullness in the affected spot. In the second stage, or that of red hepatization, the crepitation disappears largely, and, perhaps wholly, while prolonged expiration or bronchial respiration and decided dullness take its place. In the third stage, or that of resolution, crepitation re-appears, and is followed by moist r les of all sorts.

On the other hand, it is very important to have a clear and distinct idea of catarrhal pneumonia, in order to distinguish it for therapeutic purposes from the croupous form. Catarrhal or lobular pneumonia, as it is often called, comes on more gradually and generally in the form of bronchopneumonia—*i. e.*, a catarrhal affection extending from the bronchi into the alveoli. The pathological changes are also typical in this affection. They chiefly consist in a proliferation and accumulation of epithelial cells within the alveolar cavities. Alveoli and groups of alveoli, in different lung areas, become filled in this manner, and it is very rare to find a whole lobe or lung entirely involved. The physical signs which accompany this form of pneumonia consist usually of dullness, crepitation, sibilant and mucous r les, together with prolonged expiration and bronchial respiration. The crepitation, when once present, is of a more permanent character than in croupous pneumonia. In fact, all the physical signs are less variable than in the latter.

That which is of the greatest local interest here are the facts that croupous pneumonia, so far as the lungs are concerned, is primarily an affair of

the pulmonary capillaries, and that the implication of the alveoli is a secondary matter; that catarrhal pneumonia is primarily a catarrh of the alveolar epithelium; and that hence the former is an *extra-alveolar*, and the latter an *intra-alveolar*, disease. It appears very much as if the sudden distention of the pulmonary circulation in croupous pneumonia is due to a general loss of vasomotor nerve-tone in the affected part, and that hence the real source of the disorder is to be looked for rather in the nerve-supply than in the lung itself.

Another question of intense interest from a therapeutic standpoint is whether croupous pneumonia is a self-limited disease in the same sense as is understood in smallpox, measles and other well-defined and self-limited diseases. If it is self-limited, then all you can expect to do is to stand by and watch the symptoms, without any thought of restraining or controlling the disease. Smallpox goes through a series of well-defined steps, none of which are retraced during the same attack, while pneumonia invades a certain tract of lung tissue, and in a day or two, or longer, extends its territory. Given a deposit of exuded material in the air-cells, the time necessary for the lung to free itself of this product is governed greatly by the number of times the exudation imposes itself on new ground. This is not true of any infectious or self-limited disease. There certainly are relapses, as in typhoid fever, for example, but it cannot be said, with any degree of truth, that in such instances the disease extends into fresh tissues, but rather that it repeats its assaults on tissues which had been previously invaded. To me it seems very probable that the progress and intensity of acute pneumonia are controlled by the degree of lung-resistance which is offered by the constitution to the spread of the disease, and that it is not self-limited in the true meaning of that term.

The therapeutic indications in this disease are:

- (1) A circumvention of the inflammatory process;
- (2) a reduction of the temperature;
- (3) a toning up of the pulmonary and cardiac innervation; and
- (4) a support of the constitution.

Circumventing the inflammatory process.—It makes very little difference from a therapeutic standpoint whether we regard the pulmonary stasis as the result of increased blood-pressure or of a semi-paralyzed condition of the blood vessels. For practical purposes, it is enough to know that the lungs are over-charged with blood, which will, sooner or later, flood the whole implicated area with some of its constituents, and that we must aim to relieve this condition. Now, what measure or measures will accomplish this end? It may be said that the "old and well-tried" method of venesection is a remedy which is highly recommended for this purpose. Whether it succeeds is indeed questionable. Venesection is a keen-edged sword, and, while its employment may cut short some

cases of pneumonia, it has also aggravated some, and accomplished no good in many others. From what has been said, it is evident that, if it is ever to be employed, it is only applicable in croupous and positively forbidden in catarrhal pneumonia. Local bleeding, such as cupping or leeching, is frequently employed with advantage over the inflamed lung.

Croupous pneumonia, being a disease, however, which tends to undermine the vitality of the patient more quickly than any other acute disease, with the possible exception of cholera and yellow fever, it seems, indeed, a serious matter to advocate a treatment, which, if it fails to check the disease in its incipency, certainly enhances the pathological trend of the disease and aids in defeating the very end for which it is employed. For the purpose of counteracting the spread of the pneumonic process, I have, therefore, lately applied rubber bags filled with ice over and around the inflamed lung area, and, so far as I can see, with rather favorable results. At least, I think this is a measure which bears repetition.

Aconite and veratrum viride are also useful in reducing the pulmonary hyperæmia. Of the two I prefer aconite, because its physiological effects can be produced with greater certainty and safety. It must be given with effect and it is well to begin with drop doses of the fluid extract every half hour, or two drops every hour, until the pulse becomes soft and easily compressible.

Reduction of fever.—All the depressant measures which have been mentioned—viz.: local bleeding, local application of ice, aconite and veratrum viride—have a strong antipyretic action; but over and above the influence of these agents, steps must be taken to depress the pyrexia in a more direct manner. This is accomplished by applying ice to the head and neck, by sponging the body with cool water, adding to the latter alcohol, bay rum, vinegar, or liquor ammonia. Quinine may be administered in ten or twenty-grain doses three or four times a day. Binz has shown that this alkaloid exerts an inhibitory influence on the migration of leucocytes—a process which is actively going on in pneumonia—and it may therefore serve the double purpose of diminishing high temperature, and of restraining undue cellular activity. It is possible, however, and indeed it is probable that quinine manifests its febrifuge power by checking cellular metamorphosis. Phenacetin, antifebrin and antiyprin, the first two in four grains, and the latter in from seven and a half to fifteen-grain doses, every four hours, are productive of excellent results, and one of these agents should always be employed.

Elevating the nerve tone.—Whatever the precise relation may be which exists between croupous pneumonia and the nerve-supply of the lung, it is very certain that the former process is always ac-

accompanied by grave disturbance of the general nervous system, and that those therapeutic agents which have a special action on the pneumogastric nerves and the respiratory centre also exert a beneficial action on this disease. Among the agents which possess such a selective affinity, strychnine, digitalis and atropine rank the highest. Strychnine, on account of its local and general nerve-action, should be preferred, and should be given in doses ranging from one-fiftieth to one-thirtieth of a grain every four hours. Digitalis should only be employed in the form of leaves, and in doses from half a grain to a grain, and atropine in one-six-hundredth-grain doses every four hours. Quinine in small doses, and alcohol in doses which, in their effects, fall short of the point of narcotism, always tend to enhance the vigor of the body. This point of alcoholic tolerance varies very much with the course of the disease: for when the latter is the most aggressive, toleration by the body for alcohol seems to be greatest, and to be gradually diminishing as recovery sets in. Practical experience teaches us that alcohol may be given in very large doses, say in one, two or three, or even four tablespoonfuls every hour or two.

Relief of dyspnoea.—Dyspnoea is nearly always present; sometimes it becomes so urgent that marked cyanosis supervenes. If this is not alleviated by the measures already recommended, oxygen must be administered by inhalation. This gas is readily obtained or made, and is given to the patient out of a bag in its pure state, or diluted with a varying proportion of atmospheric air. When there is great restlessness with the difficult breathing, the admixture of twenty parts of nitrous oxide to eighty parts of oxygen has a very quieting effect on the patient. This combination, or the oxygen alone, must be given as frequently as the case demands it.

Nutrition.—Nearly all that has been done so far for our patient is only of temporary service, and only tends to bridge him over the present emergency in case the strength which he possesses holds out against the disease. It is our duty, therefore, to support the patient's resisting power, and to give him material wherewith he is able to repair and rebuild the textures which are rapidly disintegrating in his body. In other words, we must feed him with substantial nourishment, and feeding here implies the use of food which concentrates a large amount of nutritive material in a small bulk, and which requires a small amount of digestive energy on the part of the stomach and intestinal tract. Such food is readily provided in the freshly expressed juice of beef muscle, of oysters, and of clams.

These foods are prepared in the following manner: Beef, preferably taken from the round steak, is cut in pieces of the size of a walnut and placed in a pan and held over the fire momen-

tarily for the purpose of broiling the surfaces. Stirring will accelerate the process. The whole is then placed in a large-sized beef-press, which separates the juice from the fibre. This juice, divested of fat and well seasoned, is to be taken cold in one, two, three or four tablespoonful doses every three or four hours. In the case of oysters and clams, heat is applied and the juice expressed in the same way, and the latter is taken cold and seasoned, but in somewhat smaller doses. These juices contain the very essence of fresh nourishment, and are of easy administration to the most fastidious of patients. I have also for a long time employed these juices in feeding phthisical patients, and can confidently say with the happiest advantages. Beef meal is another excellent albuminous food to be employed here. Next in importance comes milk, which is to be given in tumblerfuls, every three or four hours with or without brandy or whiskey. With the exception of an egg, occasionally in the form of milk-punch, no other food is necessary until convalescence is established.

Rest and sleep.—It is very important to counteract restlessness, sleeplessness and delirium. If the remedies already advised fail to accomplish this, morphine, hyoscine, chloral or codeine may be employed. Hyoscine may be given hypodermically in $\frac{1}{100}$ grain doses at bedtime, and morphine may, indeed, be administered in the same way throughout the course of the disease, in $\frac{1}{4}$ or $\frac{1}{10}$ grain doses every four hours, with admirable effect.

General management.—Do not disturb the patient with frequent physical examinations, unless these are absolutely necessary. Make your diagnosis, lay down your general plan of treatment at the outset, and follow out the latter with as little variation as possible. The patient must not be worried by administering food or medicines too frequently. After the nature of the local applications has been decided on, I prescribe the following:

R—Phenacetine or antifebrin . . . gr. lx.
 Quinina sulph.
 Pulv. digitalis aa gr. xx.
 Strych, sulph. gr. $\frac{1}{2}$.
 Atropin, sulph. gr. $\frac{1}{30}$.
 Morph. sulph. gr. i. M.
 Ft. capsul. No. 20.

Sig.—One capsule four times a day.

If aconite is administered it must be given in frequently repeated doses in the early stages of the disease. The albuminous juices of beef, oysters and clams, already mentioned, and the milk, may be alternated with the capsules every two hours during the daytime. Throughout the night the food is to be given at least twice, one of which times must be early in the morning. Brandy

or whiskey must, of course, be administered as often as the case requires. Any extra antipyretics, such as quinine, antipyrin, or whatever may be needed, are subject to the same rules in their administration. Sponging of the body entails such little inconvenience to the patient that it may be carried out at reasonably frequent intervals. The temperature of the chamber must be maintained at a uniform rate, the air kept pure, and all noises excluded as much as this is possible. Liquid discharges from the bowels, which frequently occur at the crisis period, as well as at other stages of the disease, should be carefully disinfected.—T. J. May, M.D., in *Univ. Med. Mag.*

DYSMENORRHŒA AND ITS TREATMENT

Of the many ills which the gynæcologists of to-day are called upon to treat, none, perhaps, has caused more controversy, nor been attended with such varying results, as the subject of this paper. And I have noticed, as time goes on, that the question of treatment is still unsettled. Nor is it my purpose to recommend any one course of procedure to the exclusion of all others, each case being a well recognized law unto itself. But so satisfactory have been my experiences with the treatment herein described, that I have ventured to hope a *résumé* of my plan may be of interest to you; if so, the office of this article will be accomplished.

We have been taught that dysmenorrhœa is a *symptom*; but, oftentimes, it will be solely for the relief of this symptom that patients come to us—as they suffer in no other way, and it is for the cure of just such cases, I have practised the treatment as described.

It has been said that any condition, whether of a general or local character, which interferes with the escape of the catamenial discharge, gives rise to pain at such times, of greater or less degree, and it is for the relief and cure of this pain that our services are sought.

On examination we find one of these conditions exist:

1st. A chlorotic or highly nervous temperature (and I may mention that they are apt to be closely associated).

2d. An unhealthy uterus.

3d. Inflamed ovaries

Which of these exist, is our first business to determine. The pain attending sudden cessation of the menstrual flow from cold, wet feet, etc., comes under the head of amenorrhœa rather than dysmenorrhœa, and as it usually disappears on the reëstablishment of the function, I shall not consider it here. Generally, too, the *location* of the seat of pain will give us a clue to its cause, and is to be sought for.

In the consideration of those cases due to the

first variety, they will be found the easiest of all to diagnose, because the causes are in plain sight of every observing man. But the successful treatment of them is often most difficult, especially among the higher classes of society; for the demands made upon our women of to-day by close application to study in youth, and by social occupations later, accompanied as they are by improper rest and light dressing before, during and after the menstrual period, are serious obstacles in the pathway of good results. Should these be carefully attended to, however, and general treatment faithfully carried out, a cure of this most distressing condition is almost certain, as illustrated in the following case:

Miss M., aged twenty-six, single, came to my office last November, suffering from severe pain in pelvis and back, headache and general malaise. She had not noticed any menstrual flow till she was seventeen years of age, but having studied very diligently while in school, attributed her amenorrhœa to that fact, as her flow made its appearance after her graduation in that year; since then, she has been regularly ill every twenty-eight days, and continued so four to five days. Four months before I saw her, sudden family affliction had come upon her just previous to her catamenial period, which was accompanied by vertigo, "fainting fits," as she described them, and agonizing pain. The flow was nearly normal in amount, but the suffering was so severe that her medical attendant was obliged to resort to hypodermics of morphia for her relief. Her trouble had preyed upon her mind to such an extent that her naturally nervous and chlorotic condition was greatly exaggerated, and her sleep and appetite much impaired. Each period since then had been accompanied by great suffering, growing markedly worse each succeeding month. On examination, I could find nothing abnormal in either uterus or ovaries. I accordingly advised a course of treatment consisting of calisaya, iron, and syrup of hypophosphites. One week before her expected period, I administered daily treatment with the faradic current, as strong as she could bear it; the electrodes were on the abdomen and under the lumbar region, and each *séance* lasted eight minutes; the flow made its appearance with only a moderate amount of pain. I thought then that had I administered electricity as described, every other day during the whole month, my results would have been better, and accordingly did so the next month, being rewarded by a reëstablishment of the normal flow and without more than a sensation of uneasiness, never amounting to actual pain. Since then, she has continued regular, her appetite and desire for sleep have returned, and she suffers little inconvenience from her periods, although the condition of her nerves leaves much yet to be desired.

In considering dysmenorrhœa due to an *unhealthy uterus*, I may define it as being caused by any condition of that organ whereby the passage of the ovum through its canal is rendered abnormally difficult. These conditions are many, chief among them being stenosis of the canal, congenital, or accidental, anterior, posterior, and lateral, displacements; mural and sub-mucous fibroids; polypoid growths; metritis and endometritis. In my experience none of these conditions have been permanently relieved by internal medication, and, at best, I could but alleviate my patient's sufferings by anodyne—a practice which must be most closely guarded against, lest we then and there sow the seeds of a habit of dependence on them at such times, and which is more than likely to end by making them morphine habitués. Some good may be done by local application of remedies in cases of metritis and endometritis, although so satisfactory have been my results when I have resorted to the battery, that I have now nearly abandoned any other treatment, until I am assured that different means should be tried. The holding in place of flexed or verted uteri by pessaries, will also accomplish much; and for stenosis of the canal or os, as well as in cases of polypi, operative procedure is indicated. But with patients suffering from either mural or sub-mucous fibroids, as well as those where metritis and endometritis are the causes of dysmenorrhœa, nothing has given me such universally good results as the use of the galvanic current, when applied according to the directions of Apostoli. His method of administration of electricity for fibroids, is too well known to require extended notice here under this title; and for the treatment of inflammation of the uterus or its lining membrane, his procedure is as follows: Having thoroughly douched the vagina with an antiseptic solution, and inserted the forefinger of the left hand within the vagina and the os uteri found, the intra-uterine electrode should be carefully run along the finger and introduced into the uterine canal up to the fundus. I cannot lay too much stress upon the importance of exercising the utmost care and gentleness in this procedure, as any rough handling would be apt to not only increase the existing inflammation, but cause a peri-uterine one. The clay pad having been placed upon the abdomen over the fundus and the negative conducting cord connected with it, the positive cord should be attached to the electrode *in utero* and the current turned on so gradually that no shock will be felt by the patient during the increase of it, which may be accomplished by means of a rheostat. The strength of the current should depend upon the resistance of the skin and the sensibility of the patient—never using more than the inflamed organ can bear with moderate discomfort, and never causing severe pain. I have usually been able to use 30 milliampères at

first, for a *séance* of three to five minutes, and have increased it as well as the length of time, at each successive treatment. The current should then be very slowly shut off and the electrode withdrawn, the same gentleness being used as upon its introduction: after which, if the patient can rest for a time, it will be to her advantage. The good results of this proceeding if done in this manner are a surprise to those accustomed to the older methods of iodine, carbolic acid, etc.

As for dysmenorrhœa due to inflamed ovaries—it may be recognized by its presence some days before the flow is established and its diminution after it has made its appearance. A vaginal examination reveals exquisite tenderness on pressure, generally accompanied by a sensation of nausea. For years it has been thought that treatment availed nothing for its relief, and so fixed has the idea become, that the patient has been hurried to the operating room and the organs removed with the idea of saving unnecessary suffering. In some few cases, it is true, operation must be eventually resorted to, but the number of these, I am thankful to say, is being rapidly reduced, and ere long they will be the great exception if the results of others who use the current of electricity in such cases be as happy as mine. When the grave questions of future maternity, prolonged convalescence, and risk, are taken into consideration, surely our patients will not blame us for making an honest effort to cure their dysmenorrhœa by treatment before consigning them to the knife. And when I say an *honest* effort, I do not mean two or three trials of a method about which little is yet known, but I mean the same endeavors in their behalf that would be extended to an orchitis before amputation or an iritis before removal of the inflamed organ. For many months past, I have made a special study of the cure of such cases, both in my clinic at the Woman's Hospital and in private practice, and when I have had sufficient time allowed me to make a thoroughly complete test of the following method, I have rarely regretted my efforts, nor has the patient. My procedure consists in placing a flat, pliable electrode over the inflamed ovary and a similar one beneath the lumbar region as the patient lies on her back. They are then connected with a faradic battery and a current as strong as can be borne without pain is turned on gradually, the *séance* lasting eight minutes. After a few treatments, it will be found that a ball electrode connected with the positive pole can be tolerated against the ovary, (the negative being on the abdomen), and a current of tension used thrice weekly. I apply it five minutes daily for a week previous to the expected flow, and have rarely been disappointed in its prompt and painless appearance and eventual cure of the case. During the course of treatment, complete rest and freedom

from pressure are to be desired, and cocaine is to be prohibited. I have also endeavored to use external applications of Churchill's iodine, but was obliged to discontinue it as it rendered the skin intolerant of the negative pole, thereby impairing the value of the treatment.

Of course, vaginal stenosis and occlusion, as well as imperforate hymen are to be treated surgically, for other treatment of those conditions is useless.

In conclusion, let me state that I make no claim of having found electricity a panacea for all conditions herein described; but I do claim results by its use which I have been unable to attain by any other means; and its *safety* and *ease of application*, as well as its lack of terror to the patients themselves in comparison to operation for the relief of their sufferings cannot fail to commend itself for a fair trial to those who seek the advancement of conservative gynecology.—*New York Journal of Gynecology and Obstetrics*.

TREATMENT OF CATARRH OF THE PROSTATIC URETHRA.—Some recommend the daily passage of metallic bougies. Begin with an average size, and increase until the full size of the urethra is reached, which can readily be determined by Dr. Otis' plan. After the urethra has acquired a tolerance of the instrument, it is recommended to depress the handle of the instrument when in the bladder, and let it remain from five to twenty minutes; it appears the instrument acts favorably by pressure. Under this plan of treatment some improve, but are not cured.

Another mode more successfully used is the daily injection of a 1 to 15 per cent. solution of sulphate of zinc deep down into the urethra. Never use over eight or ten drachms of the injection at one time, and have it of the temperature of the body. After four or five such applications in ordinary cases, the malady begins to improve, but in some cases no improvement is apparent. Then stronger injections or cauterization must be used by means of a Dittel's *porte remède*, or an Ultzmann's urethral dropper, depositing only a few drops of the solution in the prostatic urethra. Five-per-cent. solution of nitrate of silver is generally used. Some surgeons use the cold sound, or psychrophor of Winternitz. The temperature of the water circulating in the hollow sound must be about 75° F. to begin with, and, at each subsequent sitting, which should not be longer than ten to twenty minutes, the water is made cooler, until fifty or forty-eight degrees is reached. Some derive much benefit by the use of warm or even hot water passing through the psychrophor. Rectal enemata of warm water seem to act well as an accessory to the other plans of treatment. Cocaine, four-per-cent. solution, has been used in

catarrh of the prostatic urethra with good results, often resulting in a speedy cure without any other than the ordinary constitutional treatment, which consists of the administration of alkaline diuretics to neutralize the urine, and of tonics to build up the system. The cocaine drives the blood out of the inflamed tissue, and tends to lessen the inflammation, and greatly diminishes the pain. The application of cocaine is made like that of nitrate of silver solution—only it is made oftener—as much as three times a day. Medicated urethral suppositories have been used by many, but with only limited success. Electricity has been used with great benefit, and it is predicted that this agent, if the proper electrodes are used, will be the only reliable remedy for catarrh of the prostatic, as well as other portions of the urethra. The last resort, when all other remedies are of no avail, is one of the cystotomies, which drains the bladder by a new channel and gives rest to the chronically inflamed urethra, thereby tending to restore the inflamed tissues to their normal condition.—*Virginia Med. Monthly*.

CAUSES OF THE REMOTE RESULTS OF PHIMOSIS.—The remote results produced by phimosis can be readily understood by studying the anatomical distribution of the nerve supply to the penis. The sympathetic nervous system, with its delicate make-up, and its peculiar susceptibility to irritations of any nature, certainly finds a locality in this organ where its singular function is demonstrated: The inferior hypogastric or pelvic plexus, situated as it is by the side of the bladder and rectum, has free communications between the second, third, and fourth sacral nerves, and liberal communications with the internal pudic, a branch of the lower part of the sacral plexus. After uniting with the pudic, the two are distributed to the corpus cavernosum and spongiosum, urethra, and in fact to all parts of the organ. The knowledge of this fact is quite sufficient to explain why any pathological irritation at the periphery should be followed by a similar condition in a remote organ, if long continued, supplied by the same set of nerves. The pudic nerve, taking its origin from the sacral plexus, distributes its branches to the urethra, skin, and muscles of the penis. The sensitive nerves from the mucous surface of the end of penis interlace with the motor nerves supplying the bladder, and any irritation applied to the periphery may be followed by a muscular contraction of the bladder. This is only the reverse of the condition existing in stone in the bladder. The moment the stone comes in contact with the irritated mucous membrane of bladder when empty, it produces a contraction of its muscular layer, and the pain is felt with greatest intensity in the glans penis. It is the friction of the nerves upon the surface of glans penis which brings on

the emission and erection associated with sexual intercourse or masturbation by exciting associated muscular contraction of the muscles of penis and those concerned in ejaculating the semen. In infants the inhibitory action of the brain over the spinal cord is still in abeyance, and reflex action is more uncontrollable. In these cases there is an exaggerated sensitiveness of the senso-motor centres. This condition is one favorable to the full manifestations of remote evil effects of a constant peripheral irritation.—*Kansas Med. Journal.*

CHLOROFORM AS AN ANÆSTHETIC IN OPERATIONS ON THE NECK.—In a paper on the surgical treatment of tuberculous cervical glands, Mr. Edward Owen, the well-known surgeon, makes the following remarks in support of his recommendation that a special anæsthetist should be engaged when anything like serious difficulty is to be anticipated: "In the whole course of my experience I have never met with an instance in which any child died from the administration of chloroform. But, so far as my recollection serves, the two instances in which I have seen this calamity most nearly approached, were in severe operations for the removal of tuberculous glands from the neck. In each instance I thought the child was actually dead—in spite of treatment by hanging it up by the feet, so as to stimulate the anæmic brain, and at the same time resorting to slow and rhythmic compression of the chest by way of artificial respiration. In one of these cases the father, a medical man of the Edinburgh school of medicine, was administering the chloroform to his child. Acting on the Scotch plan, he was not watching the pulse during the operation; but I must say that he behaved splendidly during the crisis. In the other case the failure of the pulse was noticed by the family medical attendant, who was present during the operation, the anæsthetist having contented himself with watching the respiration only. What it may have been with those friendly associates of the experimental physiologist, when under anæsthesia, the monkey, the dog, and the guinea-pig, I know not; but I am sure of this, that in the human species the pulse is terribly apt to fail before the respiration. And I fear that the teaching of the Hyderabad Commission—that only the respiration need be watched—will be accountable for much faulty administration of chloroform with the inevitable result. It is more than possible that the sudden syncope of these two children during the operation may have been owing to the serious disturbance to which the lungs, vessels, and nerves beneath the base of the skull were necessarily subjected during the removal by enucleation or scraping of adherent masses of gland.—*Practitioner.*

THE INFLUENCE OF THE CLIMACTERIC UPON

FIBRO-MYOMATA.—Müller (*Archiv. f. Gynak.*) has made a careful study of this subject, based upon 109 cases. He found that while in many cases the tumor evidently diminished in size after the menopause, in nine instances it was clearly proved that the neoplasm continued to grow; such an increase in size was noted in women aged fifty-six and seventy-nine respectively. He infers that it is not safe to trust too much to the curative influence of the menopause. In opening the discussion Werth took occasion to differ from Hofmeier regarding the effect of castration. The removal of the ovaries had, he believed, a direct atrophic influence upon the tumor. When menstruation ceases, its vascular supply is diminished, but if the hæmorrhages continue atrophy does not take place. Tait's statements on this question were valueless. Benckiser stated that in examining a fibroid uterus removed three months after castration had been performed, he found the same atheromatous changes in the vessel walls which were so often observed after the climacteric. This was a form of obliterating endarteritis which Thoma had described as a result of extensive arrest of the capillary circulation of an organ. Veit said that he had seen large myomata increase in size in elderly women. He did not expect retrograde changes to take place in the tumor before the age of fifty or fifty-four. Progressive increase of the neoplasm after the climacteric must be due to some unusual source of blood-supply. Fritsch had found that the occurrence of both the artificial and the natural climacteric arrested the growth of the tumor. If it continued to grow, it was usually due to cystic degeneration of the neoplasm.—*Am. Jour. Med. Science.*

THE ETIOLOGY OF CROUPOUS PNEUMONIA.—Modern medical research has devoted considerable attention to the study of the etiology of disease. In the department of bacteriology discovery upon discovery, indicative of the causal relation between microorganisms and disease, has been made and verified. In the enthusiasm and excessive zeal which attended the promulgation of a new and promising doctrine, the indifferent student is apt to ignore important accessory conditions in a desire to reach a preconceived ideal.

At this day no unprejudiced mind will attempt to controvert the validity of the germ-theory of disease; but we have not done in accepting the principle which the theory implies. Something more than a germ is requisite for the production of disease—not that the germ is a mere concomitant, but that, while perhaps the most important, it is but one of a number of elements, the association of which is the essential factor in the determination of a definite result; the soil must be fertile and the conditions propitious for growth and development. How else explain the immunity.

of some and the infection of others exposed to like influences under conditions apparently similar? Though we may never be able to explain the mode of action, it is well to recognize this association of etiological elements; while not detracting from the importance of the part played by microorganisms in the production of disease, we must not ignore or underrate the significance of other factors.

In a study of one hundred cases of uncomplicated croupous pneumonia, Brunner (*Deutsch. Archiv. für klin. Medicin*, Hefte 1 and 2, 1891) was able to determine that the disease is more common in males than in females; that most cases occur in the third and fourth decades of life; that those who lead active lives in the open air are predisposed; that the right lung is more commonly involved than the left; that the onset usually takes place in the morning with a chill; and that the disease is most prevalent in winter and in spring. Careful comparative observations upon the mean temperature, the mean humidity of the atmosphere, relative and absolute, the mean barometric pressure, as well as upon other meteorological conditions, in conjunction with the number of cases of pneumonia observed at different periods, revealed the fact that most cases occurred when the temperature was low, the absolute humidity slight, the relative humidity great, and the barometric pressure very high or very low. It appeared that those meteorological conditions that increased the physiological activity of the lungs favored the development of pneumonia.

The brief period of incubation which characterizes pneumonia may be explained by the almost constant presence of pneumonia-cocci in the air-passages, suitable, extrinsic and intrinsic conditions conferring virulent properties upon a hitherto innocuous agent.

From many considerations it therefore appears that merely waging warfare against bacteria will not eradicate disease. The physical difficulties to be overcome alone render such a mode of treatment impracticable. A rational prophylaxis will have for its object the avoidance, as far as possible, of exposure to infection to deleterious influences of all kinds.—*Med. News.*

AVOIDANCE OF STIMULANTS DURING HÆMORRHAGE.—It is customary, when the accident of hæmorrhage occurs, for the operator, or some bystander, to administer wine, brandy, or some other alcoholic stimulant to the patient, under the false idea of sustaining the vital power. It is my solemn duty to protest against this practice on the strictest and purest scientific grounds. The action of alcohol, under such circumstances, is injurious all around. It excites the patient, and renders him or her nervous and restless. It relaxes the arteries, and favors the escape of blood through the divided

structures. Entering the circulation in a diluted state, it acts after the manner of a salt in destroying the coagulating quietly of the blood; and above all other mischiefs, it increases the action of the heart, stimulating it to throw out more blood through the divided vessels. These are all serious mischiefs, but the last named is the worst. In hæmorrhage the very key-stone of success lies so much in quietness of the circulation that actual failure of the heart, up to faintness, is an advantage, for it brings the blood at the bleeding-point to a stand-still, enables it to clot firmly, when it has that tendency, and forms the most effective possible check upon the flow from the vessels. Dr. Richardson (*Asclepiad*, Nov. 29, 1891), refers to a case in which three pounds of blood was lost and the patient was unconscious, but which recovered. He refers to this as typical, because, if a stimulant were not wanted in it, a stimulant cannot be called for in examples less severe. The course followed was simply to lay the patient quite recumbent when signs of faintness supervened, and, so long as he could swallow, to feed him with warm milk and water freely. Such in my opinion, is the proper treatment to be employed in every instance of syncope from loss of blood.—*Dietetic Gazette.*

THE VALUE OF BICHLORIDE OF MERCURY IN THE TREATMENT OF URETHRITIS.—Brewer (*Internat. Jour. of Surg.*) reiterates his confidence in the efficacy of bichloride of mercury in the treatment of urethritis. His method was as follows: At the first visit the patient was instructed in the proper use of a syringe, and was given a large amount of a solution of bichloride of mercury, varying in strength from 1 : 16,000 to 1 : 50,000, according to the sensitiveness of his urethra and the stage of the disease. This he was instructed to use twice daily, by taking ten injections in the morning and ten at night, holding each one in the urethra one minute to imitate as nearly as possible the result of irrigation. The patient was seen three times a week. As soon as the discharge lost its purulent character, bichloride was suspended and a mild astringent was substituted, preferable bismuth suspended in water. In the fifty-five cases treated in this way, five were not benefited, after an average employment of the method for seven days. In the remaining fifty cases, the average length of time necessary to affect a change in the discharge from pus to thin watery secretion was a fraction over eight days. The discharge entirely disappeared on an average of twenty-one days. Epididymitis occurred in three of these cases and posterior urethritis was developed in two. The reporter very fairly states that these statistics are of little value from a scientific point of view, since the cessation of the discharge can by no means be considered as an index that the disease has been

cured. He offers his conclusions not so much on the basis of these cases as upon a very large personal experience, and states positively that the judicious use of bichloride of mercury in cases of acute gonorrhœal urethritis is attended with better results in subduing the painful and disagreeable features of the disease than is any other agent. The recovery is more rapid and permanent, and the frequency of inflammatory complications is very greatly reduced.—*Therap. Gaz.*

TREATMENT OF DIABETES WITH MORPHINE AND CODEINE.—According to Federigo Gori, in the *Gazzetta degli ospitali*, the diet prescribed by Cantani, while it acts favorable at times upon the glycosuria of relatively recent cases, is not capable of suppressing the disease. This diet is sometimes borne badly; but in general this is not the case if lactic acid in large doses (150 grains) is employed at the same time. Both morphine and codeine exert a favorable influence upon the glycosuria; but whereas the former may cause the disease to disappear completely as much cannot be said for codeine. The effect of morphine is always manifest, but is more energetic when the patient is upon an absolute meat diet; the same is true of codeine when the patient is upon a diet largely of meat, but when on the rigorous diet of Cantani its effect is doubtful. The effect of codeine, and probably that of morphine also, though with less intensity, persists after the administration of the drug has been suspended.

Morphine undoubtedly exerts its good effect, when the patient is upon a mixed diet, by not only removing the glycosuria, but also by increasing the body-weight and improving the subjective feeling of the patient. Both morphine and codeine have, besides their influence upon an existing glycosuria, an inhibitory action, as they prevent the increase or the return of the sugar, although such substances as favor glycosuria are swallowed in relatively large quantities. This action stronger in the case of morphine, which may give valuable aid when it is desired to change from a meat to a mixed diet. Neither the employment of morphine nor codeine causes disturbance of any kind in the general nutrition, but it exerts rather a helpful influence and favors the increase of body-weight; it always improves the subjective condition of the patient. It appears that the diabetic condition *per se*, independently, or nearly independently, of the diuresis, favors the tolerance of the two alkloids.—*Deutsche Medizinal-Zeitung, Therap. Gaz.*

EPHEDRA AS A REMEDY FOR RHEUMATISM.—Very recently Dr. Betchine, of St. Petersburg, has reported in the *Revue de Therapeutique* his studies upon the antirheumatic properties of *Ephedra vulgaris*, or *Ephedra distachya*. The

plant is widely distributed over Russia, and has long enjoyed a great reputation among the peasants as an anti-rheumatic and antisymphilitic remedy. Dr. Betchine has employed a decoction of four grammes of the powdered bark and root in twenty grammes of water, the dose of which is a desertspoonful every two hours. The remedy appears to be particularly useful in acute articular and muscular rheumatism. In from twenty-four to twenty-eight hours the pain is relieved, the temperature is reduced, and the pulse and respiration are quieted. In about eight or ten days the patient may be said to be cured, and the pericarditis that sometimes exists disappears with the other rheumatic manifestations. Chronic rheumatism is not so favorably influenced by the drug, and the author recommends it only in cases accompanied with more or less fever. The remedy possesses laxative, diuretic, and diaphoretic properties, to which its favorable influence upon this disease may be attributed. Professor Nagai, of Tokio, has isolated the alkaloid ephedrine from *Ephedra vulgaris*. This injected into dogs and cats, produces general convulsions, mydriasis, and exophthalmia. It is an efficient mydriatic, but has not yet been put to practical use.—*N. Y. Med. Jour.*

MENIERE'S VERTIGO AND THE SEMICIRCULAR CANALS.—The experiments of Flourens, which seemed to attribute to the semicircular canals the rôle of maintaining the equilibrium of the body, have been controverted by others to such an extent as to make it appear doubtful whether that part of the labyrinth is the seat of the lesion which determines the so-called vertigo of Ménière. The peculiar character of the vomiting, the fact that the latter symptom may occur suddenly without nausea, after irritation of the membrana tympani, the intimate connections between the pneumogastric and the auditory nerve at their origin, renders it more probable that the vertigo and cardiac symptoms are due to a reflex action in the pneumogastric dependent upon a lesion in some portion of the auditory nerve. The term Ménière's disease serves more frequently to mark ignorance of the lesion which occasions a series of symptoms often analogous but which are under the influence of very different causes.—*Brit. Med. Jour.*

SUBINVOLUTION OF THE UTERUS.—Prof. Barton Cook Hirst, of the University of Pennsylvania, recently gave the following as best combination to use:

R—Strychnine sulphatis gr. $\frac{1}{10}$.
Quinine sulphatis gr. ij.
Ext. ergote gr. j.

M. ft. pil. No. 1. Sig.—At one dose; to be repeated thrice daily.

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APPENDICITIS.

During the last few years the diseases incidental to the right iliac region have attracted considerable notice, and appendicitis, typhlitis and perityphlitis have been much discussed.

Dr. Joseph Price read a paper on appendicitis before the Philadelphia Medical Society recently, which sums up the diseases as understood by surgeons at the present time.

Dr. Price says: "The old terms were arrived at by examining old, neglected cases, frequently *post-mortem*; more recently the one term, appendicitis, is used before laparotomy, before *post-mortem*, because these two performances prove that so far as the gravity, intensity, and extent of the disease are concerned, the symptoms are unreliable, inadequate. Further, abdominal sections and *post-mortems* have determined what the treatment should be—that is, surgical—under a surgeon from its inception; hence the name impressing the nature of the disease and the character of the treatment, that is *appendicitis surgicalis*.

"Idiopathic peritonitis indicates nothing—is an empty term. The terms typhlitis, perityphlitis and paratyphlitis, are useless except to indicate a secondary or late process originating, without exception, in inflammation of the vermiform appendix."

This language is misleading. The great majority of right iliac cases are of a mild nature, and amenable to medical treatment.

A little further on, Dr. Price says: "Thirty-five per cent. of all *post-mortems* show residue of appendicitis; thirty-six per cent., over one-third of three hundred autopsies done at random, revealed diseased appendix (Taft). One case of perityphlitis to one hundred of appendicitis (McBurney). Assume that one-third or more of all adults have one or more attacks (Keen)."

With these statements we can agree, but were surgical interference necessary in every case, laparotomy would become an every-day occurrence, whereas we know that the majority of cases of appendicitis yield to medical measures, and in fact are frequently so mild in their nature as to remain unsuspected and are put down as colic, or some mild neuralgic affection of the iliac region.

The results arrived at from surgical measures, in advanced cases which would not have recovered under purely medical treatment, are certainly most encouraging; but as the surgeon does not usually have his attention drawn to the mild cases he naturally concludes that the disease is a more dangerous one than it really is.

A clinical lecture recently delivered by Jules Simon at the Children's Hospital, Paris, shows another phase of the question. The investigations, though made upon children, are applicable to adults, particularly as many of the adult cases are heritages from childhood. One case, reported by Prof. Simon, indicates his general views upon the subject. A little girl *æt.* six years had been the subject of obstinate constipation from infancy. She presented signs of *cæcal* obstruction, followed by diarrhoea and inflammation of the region. Under ordinary treatment, at the end of three weeks she was entirely well, not the slightest *cæcal* thickening remaining.

The mother was cautioned to look out for relapses, and particularly to watch for signs of constipation, and to prevent it. In spite of this, these hygienic measures were disregarded, and a year later typhlitis set in, followed by appendicitis and perforation, death ensuing.

Simon believed that in this case the constipation had caused *cæcal* dilatation; the intestinal walls were irritated by hardened *fæces*, the appendicular orifice became dilated, foreign bodies entered the appendix with the result of perforation and death.

This much is certain, obstinate constipation and

some form of right iliac disease, preceded the fatal appendicitis.

"Simon says: "In all the cases that I have investigated, either in private or hospital practice, I have observed the same pathological evolution, and in cases where a special hygiene was observed and suitable treatment, laxative, instituted, the patient always escaped further accidents."

With these statement, most medical men will agree. Simon recognizes three stages of the disorder, preliminary to appendicitis: 1st. Simple constipation; 2nd. Engorgement and thickening of the cæcum; 3rd. Stercoræmia or constitutional manifestations from retained fæces. It is not uncommon to meet with cases of sudden pain in the right iliac region, with tenderness on pressure. There may be a nervous condititon, simulating shock, a rapid pulse with mental anxiety, with or without any elevation of temperature.

Tenseness of the abdominal muscles, with possibly induration of underlying tissues, is usually present. In view of the revelation of the *post-mortem* table these cases ought to be classed as appendicitis. In such cases, flushing of the bowel usually brings to light old hardened masses of fæces. An immediate cause, such as shock, injury or indiscretion in eating, may often be found. Now, appendicitis would not have resulted from the particular exciting cause had not the predisposing condition been present. So if these cases be appendicitis, then it is only occasionally a surgical disease, for the vast majority of such cases recover promptly under laxative and other ordinary methods of treatment.

Right iliac disease is very common. It usually yields to medical measures. Its danger is in progressive appendicitis.

TO THE MEDICAL PROFESSION OF CANADA.

Robert Farquharson, M.D., M.P., long a prominent member of the Parliament of Great Britain, at the late seventeenth annual congress of the Sanitary Association, of which he is president, said "The foundation of all effective progress in preventive medicine must be education." Indeed it has now been found out in Great Britain that much greater progress can be made by educating the masses than by trying to coerce them. In Canada, our Provincial Legislatures may enact laws, and local Boards of Health may be organized by hundreds, and although all this is a good beginning and essential, much more still remains to be done. Sanitary work is but begun when

good laws are passed and local boards organized. These do not create the public realization of their usefulness. Health acts are now in advance of the public feelings. The people often instead of welcoming them take their enforcement as an intrusion and interference with individual rights and liberties. The masses of the people are not disposed to inconvenience themselves by keeping their bodies and premises clean, and their infected families isolated to gratify the whim of their neighbors or even their law makers. They require to be taught that compliance with health rules and regulations will be a direct benefit to themselves, yea, money in their own pockets:—that non-compliance with such rules and regulations is the cause, indeed the only cause, of disease, with all its attendant pains, expenses and loss of time, that wherever there is a high mortality or a high sickness rate, there surely will be found unsanitary conditions or environment which demand attention. In this education of the people, although not at all akin to the education of the schools, it is very desirable that a spirit of emulation be stirred up, in order that the various districts, or municipalities shall vie with each other in showing a low death-rate, and a "clean bill of health" by keeping themselves free from epidemic and other diseases.

It is and has long been the universal opinion of sanitarians that the basis of all public health work and progress, both educational and coercive, is a system of health statistics—of births, marriages and deaths. Beyond this, it has become clear, in recent years, that for the best, or even fair, preventive progress, statements or reports (not exactly statistics, for they cannot practically be complete or accurate) monthly or oftener, of prevailing diseases, especially of any outbreak or cases of infectious disease of importance, are absolutely essential. It will not do to wait for the death returns. Not only the local boards, but the central organization should be early informed of any such diseases. Returns and records of these statistics and reports or statements of prevailing disease would form a vast valuable record, year after year for the Federal—the Canadian government to possess. but to be of practical value, the information obtained from month to month, or oftener especially of prevailing diseases, must be scattered freely amongst the people, at least monthly, as by means of a bulletin. These reports not only show where unsanitary conditions need attention, but they give rise to the desired spirit of emulation amongst the different municipalities. Every community then would have a strong tendency to endeavor to prevent as far as possible any outbreak of disease, each in its own respective locality, and to preserve a "clean bill of health," as ships at sea usually desire to do, for their own credit

Now it must be obvious to anybody, even if he be not versed in political economy, that it would be much more economical, on the whole, for but one centre in Canada the Federal government, to carry on this work of collecting statistics and reports, recording them, and issuing a bulletin of their condensed facts, etc., than for each province to do so on its own account, while the results in the former case would be incalculably better. If done by the one central government, all the information obtained would be in one central Canadian record, and, more important still, the information conveyed by the returns would then be distributed throughout all the provinces; done by each province, each would only collect and distribute the information within its own boundaries, except perhaps to a few outside officials, and the people of each, would therefore only receive and obtain the information gathered within and relating to their own province; whereas, it is almost as essential for the Eastern or Western provinces, for example, to learn in what special localities any epidemic or prevalence of disease exists in Ontario or Quebec, as in their own provinces, while the same principle holds good with regard to Ontario and Quebec, in relation to the East and West. In short, if

done by the one centre, all the provinces would get the good of all the information obtained; if done by each separate province, each would only get that relating to itself—a vast and most vital difference. There appears to be a good deal of misapprehension amongst members of the profession relative to this question of Federal and provincial public health legislation and action, arising apparently from want of time amongst the busy practitioners to consider thoroughly the whole question in all its bearings. Coercive legislation, enactments, by-laws, etc., and the carrying out of the same, must remain as now under provincial and municipal control. But any one who will give the subject due thought and consideration will surely see that the collection of the proposed statistics and reports and utilization of these for the public instruction and benefit, as above indicated, can be much more thoroughly, economically and profitably done by one centre than by many—with vastly better results in every way. In agriculture, the one Central Experimental Farm can be utilized for the education of the farmers of the whole Dominion much better than for each province to sustain such a farm and attempt the instruction separately. Somewhat similar it is in relation to the analysis of food, etc., in the Dominion; and to the quarantines and diseases of animals. Moreover, it may be well to note here that, if we desire to make Canada as soon as we can the great country she is surely destined to become, while defending in a large measure provincial rights and privileges, we must as far as possible encourage a spirit of Canadianism, a unity and oneness, in all possible questions and subjects and not manifest too much "provincialism." As already in several of the provinces there is in a large measure provision for obtaining a record of births, marriages and deaths, it has been well suggested that, at least for some time to come, each province may as well in its own way collect such statistics and then allow them on some terms, to be utilized by the Central Department and dealt with for the public benefit in all the provinces; those provinces which have not now a system for this purpose being induced in some way to provide such. It appears that it is now proposed to endeavor to obtain for the statistical department in Ottawa the information above indicated, from physicians in all parts of the Dominion, relating to the prevailing condition of the public health—i. e., reports of any epidemic and cases of the most important diseases, by providing the physicians with blanks for this purpose. Doubtless the Government, any liberal government, would be quite willing to pay fairly for such reports, if the people through their representatives in parliament were willing to vote the money for the purpose. Are the people willing? Many members of parliament, including at least one physician say, decidedly no: that if they were to vote for a sum requisite for such purpose they would be censured by their constituents. Then we can only, or must, first of all, educate the people up to a right appreciation of the importance and necessity for such information. They will then doubtless be willing to pay fairly for it.

Now this is largely, almost wholly, in the hands of the medical practitioners of Canada: what will they do in its behalf? It has been repeatedly said by a few of them that physicians now do too much without remuneration, more than their share, etc., and that the government, i. e., the people, of course, should pay for all such information. This is very true; the people should pay; but as it is now, they will not pay, at present. Shall we not then endeavor not only to teach them the value of having it done for their own sakes, but also to be willing in course of time to pay for the same?—teach them without pay, for a time? What else can be done? Medicine, it may be observed, is not a business, but a liberal profession, perhaps the most liberal of all the professions, once chiefly practiced free by the priesthood. Is not the profession now, are not the members of it as a class, worthy and

desirous that it shall ever remain thus liberal, free, noble, bounteous? The physician gives what cannot be weighed or measured, and hence well estimated as to its money value. He must, however, get a livelihood for his family and in this business age a certain amount of business energy is necessary. As the *New York Medical Record*, of Jan. 16th, 1892, says the physician's sympathy for the suffering, and his absorbing interest in the scientific aspects of his cases, raise his mind above financial considerations, and cause him to forget that he is working for the support of himself and family, as well as for the good of humanity. The physician has furthermore, as a rule, an inborn repugnance, or incapacity, for money-making pure and simple. He dislikes the financial relations and would gladly treat patients without a thought of fee, if he could be guaranteed an income to supply the needs of his family. Owing to this shrinking from even the appearance of being mercenary he often hesitates to prosecute his just claims. No one knows better than the writer how much has already been done by the medical profession in Canada in promoting and advancing the public-health interests in the Dominion. It has always been foremost in this work and indeed all sanitary progress is due to its efforts. Will physicians not now "one and all," continue thus liberal, and not allow the question of "pay" to influence them to the neglect of any public benefit or scientific proceeding? Colton it appears long ago said "Physicians are becoming too mercenary." But he wickedly added,— "Parsons too lazy and lawyers too powerful." Notwithstanding the influence which wealth now gives, there is that which wealth cannot purchase or procure. If the profession desires to retain its high position, or to push itself up to its proper place in society, as the first of all professions, the members of it must not approach the "mercenary," although they may properly and should place a high value on their services with all those who are able and especially not unwilling, to make full return for the same. When an effort is made, as it may be, to obtain a fair recorded return from the medical practitioners of Canada as the general condition of public health, especially as relating to infections or malarial diseases in their respective localities, hundreds will doubtless cheerfully respond to the calls of science and the public weal. Will they not all do so? When the work has been done for a time and the value of it has been manifested, proper representation of it to the Government and the people will doubtless bring the reward.

EDWARD PLAYTER.

Ottawa, Feb. 1892.

ON THE RELATION OF EPILEPSY TO INJURIES OF THE HEAD.

In concluding a paper on the above subject J. J. Putnam, M.D., says (*Boston Med. and Surg. Jour.*) (1) The causes of epilepsy are numerous; and we cannot hope in most cases remove them all by early trephining and care to the wound, though these measures, and especially the removal of fragments, are probably very important.

(2) The local and the general injury of the brain are probably of prime importance, as causes of epilepsy, and are to some extent independent of fracture. The former may perhaps sometimes be treated as suggested by Keen, but the latter can only be reached by general treatment.

(3) The treatment of the general conditions of the brain, by cold and by prolonged, absolute mental rest is probably of great importance, and might perhaps be reinforced by other measures directed to the same end.

(4) The occurrence of localized convulsions or auras does not necessarily indicate disease, to be removed by operation; since, on the theory that the disease is a general one, it would have to find some local expression. It is especially true that convulsions or sensory auras beginning in the hand or face are untrustworthy indications of the extent of the cerebral lesion, because the cortex corresponding in these parts has a high degree of irritability.

(5) Considering the long period that usually elapses after an injury in the head, before epilepsy declares itself, a period during which the patient may be perfectly well, it is reasonable to seek for some better term than "local irritation" to express the connection between the two events. We may fairly suspect that in most such cases a degenerative process goes on, which increases in extension, and perhaps in intensity. Sometimes a neuritis, starting from the seat of injury seems the important link ["History of Franco-German War," Nothnagel].

We know that such a progressive degenerative process as this is capable of giving rise to epilepsy of the localized type, independently of any gross local irritation, as in the case of epilepsy complicating general paresis, of ordinary epilepsy of certain types, and perhaps of epilepsy in cases of head injury without fracture, and of diffuse cerebral sclerosis. We know, further, that the removal of gross irritations in case of an already existing epilepsy of traumatic origin usually gives only a temporary relief. It is, therefore, reasonable to suspect that the state of impaired storage power on the part of the ganglion cells, which we call the epileptic state, is liable to be more widespread than the signal symptoms of the fit would suggest; that we have as often an instance of impaired inhibition or mutual support between different cerebral centres as of locally impaired storage power; that the fit is local in its first expression because the centre corresponding to the initial symptom was an especially irritable centre (for physiological or pathological reasons), and that the impulse to its discharge may originate

elsewhere, or be inoperative unless reinforced by other influences.

How near the epileptic condition may be to apparent health, that is, the latency of the epileptic state, is shown by the fact that epilepsy interchanges with other neuroses, and that the attacks may be brought on by slight causes. This, of course, is a reason for trying first to inhibit attacks for a time so as to check the habit, and, next, to keep away all possible exciting causes. This may constitute a sufficient reason for trephining even when we cannot believe that we can remove the cause of the disease.

(6) May not operation by trephining, for the sake of exploring the parts, be called for in case of patients presenting themselves for the first time after the fracture has healed, but before the outbreak of epilepsy—say within six months or a year? In some respects the tissues are perhaps in better condition for exploration, with the prospect of finding a delimited and removable lesion, a short time after the injury, though it is also true that degenerative processes may already have been initiated. This is a matter for further study.

ITCH POMADE.—Lollis, *Lin Le Monde Pharmaceutique* gives the following, which is said to be a sovereign remedy against the itch:

R—Creolin, 5 parts.
Vaselin, 100 "

Mix. Use with friction, once every day over the parts affected.

THE LAW OF PERIODICAL FUNCTION IN WOMEN.—Ott (*Wiener Med. Presse Archiv f. Gynæco. l.*) reports some observations, not exclusively upon menstruation, but upon the various vital processes occurring in women during the period of generative activity. These processes correspond in time to the hæmorrhage,—are associated conditions, with a dependent relation to it. Observations upon temperature, pulse, and blood-pressure indicated that vital activity attained its maximum preceding the menstrual period, and declined at its commencement or immediately before. Sphygmographic tracings, muscle strength, and excretion of urea suffer similar variations. Observations were made at a certain hour each morning during prolonged periods, sometimes extending into the

menstrual periods, upon heat radiation, muscle strength, pulmonary capacity, inspiratory and expiratory force, the tendon reflexes, in healthy women placed under the same condition; and a physiological functional periodicity of the female organism was demonstrated. To establish the connection between menstruation and this periodicity of function, it is necessary to determine if the rhythmical variations are independent of menstruation. A large number of observations made by Dr. Schichareff, under the guidance of Ott, upon pulse, temperature, and blood-pressure in girls between the ages of 8 and 13, and in women between the ages of 58 and 80 years showed that no such periodical variations of physiological functions occur in females during the periods in which they are not capable of conceiving, and in which they do not menstruate.

MERCURY IN TYPHOID FEVER.—From a clinical experience embracing nearly seven hundred cases of typhoid fever, Dr. Smakovsky (*Univ. Med. Mag.*) concludes that the simplest and most efficacious treatment consists in the administration of calomel in fractional doses, according to the method of Professor Zacharine, of Moscow. Three-fourths of a grain of calomel is given every hour for ten doses, if necessary, or till copious, soft greenish stools have been secured, a gargle of chlorate of potash being meanwhile used to prevent stomatitis. In cases in which cardiac weakness already exists, an infusion of digitalis is used before the calomel. If instituted in the course of the first seven days of the fever, this treatment is said to abort the disease, even when grave in type. If this result is not obtained, the drug exercises the most favorable action in shortening the duration of the disease and preventing complications. A second course of calomel may be given a day's interval after the first, the abortive action being produced sometimes only after this second administration. During the interval, and subsequently if the disease is not aborted, the author prescribes:

R—Subnitrate of bismuth . . . 2½ grains.
 Pure naphthalin ʒ³/₁₀ grain.
 Sulphate of quinine 1½ grain.

Sig.: One powder. Four of these daily.

The author is convinced that the mortality should be *nil* in all cases where the treatment is commenced before the tenth day of the disease, except-

ing with the very old, or where it occurs in the course of another grave malady.

CURE FOR DRUNKENNESS.—Dr. Reagan, (*Med. Summary*) says: Some years ago my friend, Colonel N., had become a confirmed drunkard. He drank day and night. He had lost the use of his lower limbs, so that he had not been able to stand on his feet for two years. The physicians of the town where he lived had done all they could for him, to no effect. He sent for me; the physicians laughed at the idea of doing anything for him. I weighed out the strychnia in his presence, and measured the whiskey so that every half ounce of the latter contained one-twentieth of a grain of the former. I told his family to let him have no whiskey except that in the bottle, and of that only one-half ounce three times a day. I also pusted the spinal column with croton liniment. In three weeks he could walk, and in three months he was well and his appetite for whiskey was gone. He lived twenty years after this, and frequently told me he had no taste for stimulants. He was not only an advocate of temperance, but made many speeches for prohibition, and before his death his town became a prohibition town and remains so yet, mainly through the influence he exerted when alive.

GOLDEN RULES OF SURGICAL PRACTICE.—These rules are from the pen of a London hospital surgeon. They contain so much valuable material, expressed so well, that we have decided to reproduce the paper entire in our columns. (*Times and Reg.*)

Abdomen.—Always avoid purgatives in treating a patient who has swallowed a foreign body. Give opium and constipating food—boiled eggs, cheese, puddings, potatoes, etc.

Never close any wound of the abdominal wall till all hemorrhage has ceased.

Never, under any circumstances, apply pressure to a wound of the abdominal wall to arrest hemorrhage.

Never mind increasing a superficial wound of the abdomen in order to remove a foreign body or to secure a bleeding point.

Never probe any wound in the abdominal wall.

Never forget that all abscesses of the abdominal wall should be opened freely and at once.

Never hesitate or delay to open and drain an

abscess in the loin due to rupture or injury to the kidney.

Never procrastinate in strangulated hernia. It is not usually the operation which will prove unsuccessful in herniotomy; the danger lies in your allowing the bowel to become irrecoverable.

Never be deceived by an opiate masking the acute symptoms of hernia, obstruction, peritonitis.

Never tap a suspected renal tumor through the abdominal parietes, *i. e.*, through the peritoneum.

Always relax the abdominal wall after suturing.

Never ligature *en masse* in cutting off omentum. Do it piecemeal.

[The constricted edge of the apron of omentum may unravel, and fatal hemorrhage result.]

In protrusion of the viscera never neglect to pass your finger fairly through the wound to make sure that the reduction has been complete.

And be careful never to push the bowel into an interstice between the muscle or into subperitoneal tissue.

AN IMPROVED METHOD OF GRAFTING ULCERS.—

Dr. Gill says: "Cleanse the surface well for a few days with boracic fomentations, slightly abrade the granulations, enough to cause oozing, and then apply the grafts to the abraded surface, where they are held in place by green protective. After the grafts are applied, about one to every square inch of surface, the limb is to be encircled with a fold of carbolic gauze, which extends for two or three inches above and below the ulcer, and is attached to the skin by collodion. The ulcer is then thoroughly dredged with boracic powder through the gauze and the whole is wrapped in a layer of wet boracic lint. As a rule, the dressing is not disturbed for three days, when the lint is removed and the limb well irrigated with a boracic lotion. After dressing the limb in this way, it is again done up in the wet lint which is changed daily. The gauze and protection are removed entirely at the end of ten days, and each graft will be found to be as large as a sixpence, while those near the edges will have caused a rapid ingrowing of epithelium.

"The half-inch squares of green protective, four or five, are placed one on top of the other."

FOR ASTHMA.—Dr. Holland, writing to the *Times and Reg.*, says: "Seven weeks ago a young

lady, nineteen years of age, was brought to my office by her parents, who said she had suffered from asthma ever since she was ten years old. I found the following symptoms present: Shortness of breath, occurring in paroxysms; sometimes does not recur for several days, then lasting, with intermissions, for weeks; may last for a whole night at a time; is not made worse by exercise, nor relieved by rest; no expectoration; attacks were at night; no wheezing sound in violent exercise; tongue clean; bowels generally constipated; respiratory murmur on right side distinct; expiration sound not markedly prolonged; on left side, murmur slightly harsh; no râles; respiration jerky; more marked on left side than on right; heart-beats distinct and forcible; impulse increased; soft murmur at apex—cause not traceable. Has had chills and fever since above trouble.

"I put this patient on the following treatment. She came back, at the expiration of two weeks, much improved in every way. I renewed the same, and she has just left my office entirely well in every way, as far as I can ascertain.

R.—Acid hydrocyanic dil ℥ xv.
Tinct. lobeliæ ʒij.
Syr. scillæ comp ʒss.
Spt. lavand. comp ʒij.
Syr. simp. ʒj.

M.—Sig. One teaspoonful to be taken when attacks come on, and repeated within an hour if not relieved.

"Also, for the constipation, gave her Prof. Waugh's pill:

R.—Ext. aloes purif. gr. x.
Ext. nucis vom. gr. x.
Podophyllin gr. ij.
Oleoresin capsici gr. ij.
Sacch. lactis q. s.

M. ft. in tablet, No. xx. Sig. One at breakfast daily."

GASTRIC HEADACHE.—Says the *Hosp. Gaz.*: A large proportion of cases of "headache" are of gastric origin, and are amenable only to remedies directed to the defect underlying the condition. The slightest departure from the normal process of digestion favors the elaboration of more or less toxic nitrogenous products, the absorption whereof leads *inter alia* to remittent headache. The rage

which at present exists for the use of analgesics such as antipyrin has diverted attention from the simpler, more effectual (because more permanent) and less injurious method of treatment. Dr. Westphalen, of Berlin, points out that deficient acidity of the gastric juice is accountable for this symptom in a very large number of cases. He has tried the administration of dilute hydrochloric acid with the most gratifying results, the remedy being given immediately after a meal, and particularly after the ingestion of any special article of diet, which has already been noticed to be followed by the typical cephalalgia.

FORMULÆ FOR ECZEMA.—The following formulæ are taken from the *Memphis Med. Monthly*: Dr. Macintosh gives the following as an ointment, which in most cases pretty nearly approached the character of a specific:

R—Bismuthi subnitratis, ʒ iv.
Zinc oxidi, ʒ j.
Acid carbolic liquid, ʒ ss.
Vasellini albi, ʒ ij.

M. ft. ung.

Or:

R—Bismuthi subnitratis, ʒ iij.
Zinc oxidi, ʒ ss.
Glycerini, ʒ iss.
Acidi carbolic liquid, ℥ xx.
Vasellini albi, ʒ vj.

M. ft. ung.

The latter ointment mixes into a beautiful enamel-like cream, which is cooling, and acts as a balm to the irritated skin. When constant tingling and irritation disturb the patient's rest at night, the following lotion is said to be valuable:

R—Bismuthi subnitratis, ʒ j.
Glycerini, ʒ iv.
Acidi carbolic liquid, ℥ xij.
Aque rosæ, ad. ʒ j.

M. Sig. Shake up and apply with a camel's hair pencil.

The following medical proverbs are from the *Med. Age* :—

German—A physician is an angel when employed, but a devil when you must pay him.

Dear physic always does good.

A disobedient patient makes an unfeeling physician.

Spanish—What cures Sancho makes Martha sick.

The earth hides as it takes

The physician's mistakes.

He that sits with his back to a draught, sits with his face to a coffin.

Of the malady a man fears he dies.

He that would be healthy must wear his winter clothes in summer.

English—Diseases are a tax upon our pleasures.

A good surgeon must have an eagle's eye, a lion's heart and a lady's hand.

Tender surgeons make foul wounds.

* *Miscellaneous*—A physician is a man who pours drugs, of which he knows little, into a body of which he knows less.—*French*.

Do not doubt; you are no doctor.—*Anon*.

Most physicians, as they grow greater in skill, grow less in religion.—*Massinger*.

FRIGHT AND CHLOROFORM.—Under this title the *Br. Med. Jour. (Therap. Gaz.)* reports the following case of death from chloroform. The facts elicited at the inquest held upon the remains of Mr. Weguelin-Smith showed that he suffered from varicose veins, for which he was to undergo an operation in St. Thomas' Home. Before this he was examined by the anæsthetist, who was struck by his "looking ill." However, the examination showed Mr. Weguelin-Smith, who was only twenty-five years of age, to be free from organic disease. He was, however, very nervous, and expressed a fear of chloroform. This anæsthetic was given, but when 20 or 30 drops had been administered, breathing and the heart's action stopped. All efforts to restore vitality failed. The chloroformist stated that his patient was at no time really under the influence of the anæsthetic, and that death resulted from syncope.

THE ANTISEPTIC TREATMENT OF BURNS.—Mr. Mayland concludes a paper in the *Glasgow Medical Journal* on the above subject as follows:—

1. The parts sterilised by the burn are kept sterile.
2. No active inflammation takes place, and hence no further death of tissue ensues.
3. No copious purulent discharge.
4. Infrequency of removal of dressings.
5. Little or no pain, connected with such removal.
6. No offensive odor.
7. The necrosed tissue is rapidly thrown off by the growth

of healthy granulations. 8. The resulting cicatrix is the least possible, from the fact that parts are preserved which might otherwise, from septic influences, have died. 9. Lastly, the process of healing being unimpeded by any local disturbances, there is an absence of any constitutional symptoms.

We are pleased to note the enlargement of the *Physician and Surgeon* for January. It is a live and progressive journal and we wish its proprietor all success.

Books and Pamphlets.

A MANUAL OF HYPODERMIC MEDICATION. By Roberts Bartholow, A.M., M.D., LL.D. Fifth edition. Philadelphia: J. B. Lippincott Co.

This edition is a compend of what is known of hypodermic medication down to Sept., 1891. It need hardly be said that it contains a vast amount of information on a subject in which many practitioners are greatly interested. If the doses given hypodermically be small, the number of medicines thus used is now very large, as this volume shows. Those who desire to be well informed in this method of medication cannot do better than consult this work, which consists of 529 good sized pages—as large as some of the class books which embrace the entire subject of materia medica and therapeutics—and is the work of one who stands very high as a therapeutical authority.

A SYSTEM OF PRACTICAL THERAPEUTICS. By American and foreign authors. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Phila., Secretary of the Convention for the Revision of the U. S. Pharmacopœia of 1890, Physician to St. Agnes' Hospital, Phila., etc. Assisted by Walter Chrystie, M.D., formerly Instructor in Physical Diagnosis in the University of Pennsylvania, and Physician to St. Clement's Hospital, Philadelphia. In a series of contributions by seventy-eight eminent authorities. In three large octavo volumes of 1000 pages each, with illustrations. Philadelphia: Lea Bros. & Co. Toronto: D. T. McAinsh, Canada Life Building. Price per volume: Cloth, \$6; Leather, \$7; Half Russia, \$8

We have received from the publishers the first volume of this system. To give an adequate review of the work would occupy more space than is at our disposal. We can only outline the gen-

eral impression this volume makes upon us after a careful study of its contents; and that impression is wholly in the direction, that the work is one of equal importance with any that has ever been issued. The time is ripe for a system of therapeutics. Every practitioner must have felt how meagre is the therapeutical side of our best works in medicine. Now this system will, we believe, just fill the niche that has so long been left vacant. Many excellent, but more or less limited treatises on the subject, have from time to time appeared, chiefly in connection with manuals on Materia Medica, but this is the first comprehensive system we have seen, and when we glance over the list of contributors and find among the seventy-eight, such names as H. C. Wood, A. D. Rockwell, Edwin Solly, Simon Baruch, Henry B. Baker, J. Burney Yeo, Solis-Cohen, James Stewart, Packard, R. W. Taylor, Lewis Smith, Sayre, Lauder Brunton, A. D. Blackader, Hyde, Sachs, and scores of others whose names are equally well-known men in the profession; we may well expect that the forthcoming work will be the best that can be produced at the present day. As is well said in the announcement:

There is an art as well as a science in Medicine and all the labors of the distinguished investigators who have by their discoveries within a generation transformed etiology, symptomatology, pathology and pharmacology, would be of little benefit to mankind if the practitioner had not found their applications in therapeutics. To the practising physician and his patient, therapeutics is the one essential subject of study, to which all the rest are subservient. It is the art of healing, and he is the most successful practitioner who is most fully acquainted with all the resources and methods which it places at his disposal.

The idea of such a "system" is to bring within the reach of the profession the collaboration of a number of men, each eminent in his own department, for it is manifestly impossible for any one man to be conversant with all its divisions, so great has been the advance made within the last few years, in this branch of medicine. We notice that surgical therapeutics have been introduced wherever necessary, to make clear and complete the subject under discussion. The publishers propose to sell the work only by subscription, and to that end have established an agency here, with D. T. McAinsh as its head. We can only say that, the first volume being an earnest of what is to follow, the system will fill a very important place in medical literature, which has hitherto been vacant and that the work should be in the hands of every practising physician in the country.