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THE CANADA LANCET.

A MONTHLY JOURNAL OF

MEDICAL AND SURGICAL SCIENCE, CRITICISM AND NEWS.

VOL. XX.] TORONTO, NOV., 1887. [No. 3.

Original Communications.

THE BEHAVIOUR OF THE FLUID IN, AND THE PATHOLOGY AND TREATMENT OF EMPYEMA.*

BY A. M'PHEDRAN, M.D., TORONTO.

In all cases of empyema many points present themselves for decision, on which, any one who is responsible for their management, would be glad of the opinion of a meeting such as this. The difficulties in diagnosis are much greater in the child than in the adult, but even the latter often present difficulties sufficient to baffle any but the most experienced. The signs and symptoms do not maintain the uniformity which the descriptions in the text-books, especially the older ones, would lead us to suppose, and reliance on which has doubtless caused most of us much chagrin at some time in our professional experience. I well remember the case of a man of middle age admitted to the Toronto General Hospital when I was a student there, who was suffering from moderate cough, dyspnea and considerable febrile movement. The percussion note over the left half of the chest was universally flat, but bronchial breathing and bronchophony were distinct all over it. He had led a dissipated life; he was too ill to give us a history. The condition was supposed to be pneumonic consolidation. He came to the marble slab a day or two afterwards, and we found we had grievously blundered, not an unusual discovery to make at post-mortem examinations. The left pleura was distended with pus to its utmost capacity.

In children, many cases, no doubt, go through all the stages to recovery or death without there being any suspicion as to the true nature of their ailment, and that, too, in the hands of the most capable practitioners.

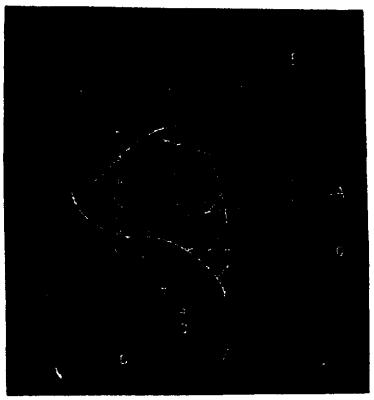
*Read before the Dom. Med. Assoc. at Hamilton, Aug. '87

Probably more than half of all cases of empyema occur in the first decade. Owing to the great resiliency of the lung in this period, small effusions cause no distension of the chest. As the effusion is poured out, the lung contracts on account of its own retractile energy, making room for the effused fluid, which thus exercises no compression on the lung; the result is exactly the same—so far as the lung is concerned—as that which would occur if an equal quantity of air were admitted. When the effusion has been considerable, expansion occurs; but owing to the great yieldingness of the chest-walls, the expansion is uniform, without bulging of the intercostal spaces and with seldom much, if any, displacement of the heart or depression of the diaphragm. Then it is all-important to remember that bronchial breathing and voice sounds persist in almost all cases in children; few of the standard works note this. Nor do the anomalies stop here. Goodhart says, "It is common enough that one draws fluid from such part of the chest as is apparently filled with air in inspiration and gives clear resonance in percussion."[1] Until recently the authorities taught that the effusion, when not circumscribed by adhesions, changed its position with the altered position of the patient, the upper margin of the region of dulness always maintaining a horizontal disposition or nearly so. Da Costa says, "When the patient lies on his face, the fluid gravitates towards the anterior chest-walls and percussion dulness posteriorly becomes far less perceptible."[2] Recent investigation, especially by Garland, Douglas Powell and others, proves that moderate effusions are immovable, maintaining their fixed position irrespective of the position the patient may assume. Gravity has no influence on them as it has on fluids in open vessels. And owing to the same causes, the upper margin of the fluid does not maintain a horizontal or water-level line, but is drawn up into a curved line, having its highest point in the axillary region. These are some of the reasons that render the diagnosis of fluid in the pleural cavity, especially in children, difficult.

The causes which occasion the accumulation of pus in the pleural cavity are far from being well understood. With many writers the opinion obtains that it is an alteration, accidental or other-

1. Brit. Med. Jour., 1887, vol. I, p. 1203. 2. Physical Diagnosis, p. 318.

wise, of a fibrino-serous effusion. Fraëntzel affirms, "In almost every case the effusion is at first fibrino-serous, and it is during the subsequent course that it becomes, sooner or later, purulent, and this may occur as early as the first week."[3] Reynold's System, Pepper's System and Quain's Dictionary of Medicine teach similar views. On the contrary, that empyema is a suppurative inflammation from the beginning and not an altered simple pleurisy, is held by many, among whom are Wilson Fox, Austin Flint and Douglas Powell. The latter says, "Unquestionably serum is more easily effused than pus, and purulent effusions are at first thin and diluted, but the pus element is from the first largely present and active in acute empyema."[4] In this early stage, while the effusion is



(From "Diseases of the Lungs and Pleuræ," by R. Douglas Powell, M.D., Lond.)

Percussion signs in case of moderate effusion. *A*, area of complete dullness ("flatness"); *B*, area of tympanitic (Skodaic) resonance; *C*, inferior curved line of tympanitic (stomach) resonance.

thin and serous, no means that we can adopt will prevent it from becoming purulent. That a fibrino-serous pleurisy may become suppurative, we know only too well, from this untoward event occurring sometimes after operative measures; but without such operative interference, it is seldom such spontaneous alteration in the character of the disease occurs. Excluding cases that arise from such obvious causes as penetrating wounds of the chest, fracture and caries of ribs, pulmonary gangrene, rupture of tubercular cavities into the pleura, phlegmonous abscesses in the walls of the chest, etc., what are the conditions then that determine a suppurative rather than a simple pleurisy in any given case? The authorities, when they refer to this subject at all, usually assign such causes as "depressed condition of system," "morbid constitutional states," "intensity of reaction," and the like; and we have been usually content to accept unquestioningly such obscure phrases as satisfactory pathological statements. In a recent address, Goodhart, in accounting for the greater frequency of empyema in children than in adults, says, "surely one cannot be far wrong in attributing it to the intensity of reaction in growing tissues to inflammatory irritation, to the rapidity with which cells grow, and to the greater sensitiveness in young life to sudden changes to their environment."[5] This expresses a very prevalent opinion as to the causation of suppurations in general and of empyema in particular. According to this opinion the causes of both kinds of pleurisy may be the same, the difference in the character of effusion being due simply to a difference in constitution. If this theory were correct, then all simple pleurisies would become purulent, were the inflammatory reaction only sufficiently acute and the constitution depressed. But it is well known that even the most severe simple pleurisies do not become spontaneously purulent, and we never expect them to; in fact, while simple pleurisy is fairly common after thirty years of age, and often characterized by the most severe constitutional disturbance, in subjects of low vitality, yet acute empyema is fortunately rarely met with at this period of life. Again, among young persons it is not exceptional to meet with cases of empyema with only moderate reaction, while in others, perhaps less robust, simple pleurisy has been attended with severe constitutional symptoms. It will thus be seen that the difference in the causation of the two varieties of pleurisy cannot be simply one of degree, but must be a difference in kind. Few English or American writers throw any light on this subject; Bristowe, Roberts, Anstie, Loomis and J. Lewis Smith make no reference to it. Donaldson says nothing more than "that there are cases in which neither local nor general conditions explain the transformation of serous into

3. Ziemssen's Cyclopedia, p. 611. 4. Diseases of Lungs and Pleura, p. 66.

5. Brit. Med. Jour., 1887, vol. I, p 1203.

*The Address on Medicine at the Canadian Medical Association at Hamilton, August 31st, 1887.

purulent effusion in the chest."[6] Flint goes further and is of opinion that all cases of empyema are due to a special cause as yet unknown. Douglas Powell is more explicit; he thinks, "we may, indeed, with some plausibility, maintain that some septic agent present in the blood renders the inflammation purulent rather than serous, as in the joint affections in pyemia, although the pus-producing quality in the blood is very difficult to estimate and would seem to be of different sorts."[7]

If we turn to German writers, we find much more definite statements as to the pathology of empyema, and it is a matter for surprise to find our radical American friends, who are usually inclined to follow the lead of German pathologists, in company with, or rather behind, the conservative Englishman, who is rather slow to accept any new theory. In Ziemssen's Cyclopedia, Fraëntzel, to account for the enormous production of pus cells in many cases of empyema, which far exceed in number all the white corpuscles of the blood, suggested that a rapid process of cell division took place in the migrated white corpuscles, and that this cell division was due to some cause hitherto undiscovered. Since then the germ theory of disease has seen almost its whole development, and its widest application is received with little reservation by the German profession generally. Rindfleisch asserts that micrococci are present in all suppurations. They are found in the pus of all acute abscesses, and, with few exceptions, in the pus of all cases of empyema. Strumpel's Text Book of Medicine, the latest work we have from the German, gives it as an undoubted fact that purulent pleurisy can only be excited by infection of the pleura with a specific virus, and his teaching is widely accepted in Germany. Eichhorst says, "It is probable also that the bacteria to which such acute diseases, as typhoid fever, scarlet fever, acute ulcerative endocarditis, puerperal fever, etc., owe their origin, exert a direct inflammatory irritation on the pleura to which they are carried by the lymphatics."[8] We know that if we keep all micro-organisms out of external wounds by appropriate dressings they do not suppurate, even if the system of the patient is depressed. If all other agencies than germs are insufficient for the development of the suppurative process in wounds, will they not also be insufficient for the development of a similar process in the pleural cavity? This leads to the discussion of the pathology of suppuration generally, which is beyond our province.

In the treatment of empyema, medicine has little to offer towards aiding us in the management of this disease; but, the development of aseptic surgery has done very much in lowering the mortality rate, and not only so, but also in effecting such cures as are satisfactory alike to patient and surgeon. Instead of "generally proving fatal," as Trousseau mournfully remarks of this disease in his time, the results, in the experience of doubtless not a few present, have been uniformly favorable as to life, and fairly so, as to the completeness of the cure. In the past, as now, in a few cases the pus was absorbed, leaving no evil effects; in some others, in whom the pus found its way into a bronchus, and a smaller proportion still of those in whom it found exit by perforation of the chest-wall, recovery ensued; nearly all others died, operative interference being almost necessarily fatal and therefore scarcely justifiable. In our day the conditions are reversed; it is in the *retention* of pus in the body, not in its *evacuation*, that dwells the danger; so that on the discovery of pus in the pleural cavity, our imperative duty, with rare exceptions, is to remove it. If the effusion be large the removal must be prompt, irrespective of the condition of the patient, since large effusions—even in patients apparently suffering but little from them—are liable to a sudden fatal termination.

In what cases is it advisable to delay interference? The most common are those in whom perforation of a bronchus has occurred and the pus is being expectorated; some of these recover in fair time without operative aid. Godlee, of Brompton Hospital, specifies the following also:[9]—1st. Cases of chronic phthisis in whom the presence of pus may apparently be doing no harm for a considerable time, but its evacuation may be followed, apparently as a result, by increased destructive changes in the lungs. 2nd. In a class of tubercular cases, where the empyema is in direct communication with a bronchus and the patient suffering

6. Pepper's System of Medicine. 7. Ibid.
8. Diseases of Lungs, etc.

9. Lancet, 1886, vol. I, p. 95.

but little inconvenience. In all other cases active measures are necessary, and two methods present themselves for our consideration, viz., aspiration and free incision. In what kind of cases is aspiration to be recommended as a rational means of cure? There is no doubt that a certain proportion of cases recover after one or more aspirations, but these successes are confined to children only; these cases, it is well to bear in mind, would be also the most favorable subjects for free incision. Even in children, aspiration seldom succeeds, except when the effusion is localized. Of 120 cases of empyema in children, collated by Dr. Holt, of New York,[10] only 21 were cured by aspiration, and in all but one of these the effusion was localized. These would probably have recovered even more rapidly by free incision, so that all they gained was the escape from the inconvenience of an open wound and the applications of dressings. Aspiration should therefore be confined to those cases in which the pus is slowly effused or localized; the process may be repeated if, after the first aspiration, the pus re-accumulates slowly, is more serous, and quite inodorous; a second aspiration should be done before much fluid accumulates to injure by distension any adhesions that may have taken place. If the results of aspiration are not satisfactory, free incision should be promptly resorted to, because of the liability of the lung to become permanently contracted by formation of adhesions and cicatricial thickening of the sub-pleural tissue. Many do preliminary aspiration in all cases, even if they have little hope of any good being done. This is unwise, not only because there is loss of time and increased liability of permanent contraction of lung, but also because, as Dr. Clifford Allbutt first pointed out, hectic fever often develops after aspiration. In all adults, and in the majority of children, the aspirator is of use only as an instrument of diagnosis, not of treatment.

In using the aspirator, the greatest care should be taken that all is done with strictest antiseptic precautions. The part to be punctured, the operator's hands, and the aspirator should be thoroughly cleansed and rendered aseptic. Before introducing the needle, it and the attached tube should be filled with antiseptic fluid, in order to pervent the possibility of the entrance of air containing any septic particles.

10. Med. News, June 4th, 1887.

Having determined that free drainage is necessary, where should the incision be made? what anesthetic used? what antiseptic precautions are to be taken? what is the best method of drainage? Is the pleural cavity to be washed out in any, or all cases? In what cases is excision of ribs necessary, or advisable? What additional means are to be adopted in chronic cases? These are all questions deserving of our most careful consideration. My time will allow me to touch briefly on only a few of them.

Some, with Marshall, advise that the opening be made well forward, near the sternum, in the 4th or 5th interspace, the usual seat of spontaneous perforation, on account of the thinness of the chest-wall here—there being but little muscular covering. Some, again, believing that drainage is best attained by making the opening as low as as possible, as tapping a barrel low down best empties it, make the incision well down below the angle of the scapula. The majority of writers, however, recommend about the 7th or 8th interspace, near the posterior fold of the axilla, as on the whole giving the best results. This point affords ample facilities for drainage in recent cases, and is not liable to be occluded by the upward and outward pressure of the diaphragm. Just how, so high an opening drains the lower part of the pleural cavity is difficult to explain, but it is no doubt due to the elasticity of the lung and chest, and the upward pressure of the diaphragm. In making the opening, the liability of puncturing the diaphragm is a possible accident always to be borne in mind. It has occurred in several reported cases, in one of which the incision was made in the 6th interspace.[11] The accident is owing to the diaphragm being elevated and adherent to the chest-wall, instead of being depressed as usual. It is therefore advisable always to explore with the aspirator, to satisfy ourselves of the existence of pus, before making an opening; at the same time remembering that the needle may give negative results, on account of the thick consistency of the pus, or the occlusion of the needle by fibrinous deposit.

What anesthetic are we to use? Chloroform is safer than ether in this disease, both are probably more dangerous than in most other diseases. For the adult, general anesthesia is seldom required,

11. New York Med. Record, 30th Sept., 1886.

the local injection of cocaine, or the use of the ether spray being sufficient. In children, chloroform is fairly safe in uncomplicated cases, and I think its administration is to be advised in almost all cases, even for aspiration; for the terror excited in children by any of these operative procedures is probably nearly as dangerous as chloroform anesthesia and certainly much more disagreeable.

What is the best method of drainage? On this opinions differ, but the majority favor a rubber tube one-quarter or one-half inch in diameter, and only sufficiently long to enter the pleural cavity. If the interspace is not wide enough to admit it easily, a portion of rib had better be excised to allow the free insertion of the tube at times of dressing; in this way the dressings are much less painful and the drainage much more perfect. Many practitioners prefer drainage by syphonage to the open free drain, and they have had the most gratifying results by that method. I am not prepared to offer an opinion on the relative merits of the two methods, as I have had no experience with the syphon; but many who formerly advocated and used it exclusively, have now discarded it for the open drain, with strict antiseptic measures. It is very important that the tube be removed as early as possible, as its presence is sufficient to prolong the discharge. In few children is it necessary to retain it longer than about two weeks, in some a few days suffice; in adults it must be retained until the discharge is almost completely dried up. If the tube be removed too early, the temperature will soon indicate the necessity for its re-introduction.

Shall we wash out the pleural cavity? There is room for dispute here. Writers with few exceptions answer this in the affirmative, though most of them admit that the proceeding is not devoid of gravest danger. In the treatment of purulent collections in any part of the body, the first requirement is to give free vent to the pus and prevent the retention of any part of it. To do less is repugnant to true surgical instincts. If this is done and suitable antiseptic dressings applied, nothing further will be required in any acute suppurative process. Any meddling with the cavity can do no good, but will probably do harm by interfering with the union of opposing surfaces or the organization of granulations.

Empyema is but a pleural abscess, peculiar in having a more or less rigid outer wall, a yielding elastic inner one and close relations with vital organs that are very susceptible to impressions. In the treatment of empyema if we secure perfect drainage and complete antisepsis, we have fulfilled our duty and a cure will soon result. If we fail in these objects the results will be imperfect, and the usual course is to endeavor to make up for the deficiency by the use of antiseptic washes to remove residual pus and correct or mitigate its septic properties. While collections of pus in the liver, large joints, the peritoneum, or even the brain, may be washed out almost with impunity, similar treatment of pleural collections is attended with grave dangers, and death is liable to result unexpectedly during or after the operation. The death roll from this cause is a large one. In all the fatal cases reported, the unpleasant symptoms have occurred only after repeated washings, always during the entrance of the fluid, but never during the first washing. The most frequent cause of these sudden deaths is probably syncope, due to the suddenly increased pressure or reflex disturbance.[12] Sudden withdrawal of large pleural effusions may have a similar effect by lessening pressure and allowing rapid dilatation of the auricles. In some cases the injected fluid causes occlusion, by its pressure, partial or complete, of the vena cava inferior; such a case occurred to Fraëntzel. Another cause of sudden death is cerebral embolism, from clots loosened in the veins of the lungs, by increased pressure. Some substances as sodium salts, nitric acid, chlorine, are poisonous to the heart and should not be used under any circumstances. Fluids used too hot or too cold may have equally disastrous effects. In view of these dangers, it is quite evident that washing out the pleural cavity should not be done as a mere matter of routine, a practice which, were it even not dangerous, is wholly unnecessary. We should not resort to it, when it is feasible to pursue the more rational method of enlarging the opening in the chest, by resection of ribs, for the purpose of free drainage and removal of fibrinous deposits with curette or other suitable means. It is in the highest degree reprehensible, under any circumstances, to distend the cavity with a view of ascertaining its capacity. Lastly, if washing out the cavity is necessary, it should not be entrusted to an unqualified assistant. Instead of washing out the cavity, some have tried the insufflation of disinfectant powders, especially iodoform, with fairly satisfactory results.

12. Medical Chronicle, Aug., 1887.

ADDRESS ON OBSTETRICS BEFORE THE CANADIAN MEDICAL ASSOCIATION.

BY F. R ECCLES, M.D., LONDON, ONT.

Animated by a desire to promote the interest of this Association, and feeling the obligation which rested on me as a member thereof, I consented to open the discussion in the department of obstetrics and gynecology. Soon thereafter I recognized the responsible position in which I had placed myself, and began to sorely repent my rashness. But the consciousness of the liberal-mindedness of the members of the Canadian Medical Association assured me that in an honest endeavor to discharge a self-imposed duty, I need not look in vain for their kind indulgence.

I was anxious to present to this Association some subject in connection with this department which would not only be interesting to the specilist, but to the general practitioner as well, as the general practitioner largely prevails in this young country of ours. I have therefore selected so commonplace a subject as *Subinvolution of the Uterus*, not more on account of the frequency of its recurrence and the not unfrequently more or less unsatisfactory results of treatment, than the personal desire to obtain the views as well as the experience of a great number of those present. And even if the observations, clinical research and line of treatment of so many here, who are more competent to speak upon this subject than I am, shall not bring out any great advance, I shall nevertheless not regret the introduction of the discussion. If no new remedies are brought forth, no specially different lines of treatment are advocated, still if we catch the inspiration to the proper use of remedies well known, I venture to say that the time is not misspent. Because of the prevalence of this affection, so much the more has it enjoyed the mind of the general practitioner, and in many instances is looked upon as the opprobrium of an art. "Sir, thou hast nothing to draw with, and the well is deep." I use the term "subinvolution" in preference to any other name, such as areolar hyperplasia, chronic metritis, etc., and for two reasons. It conveys in its meaning a fact that there has been an arrest or retardation of all those normal and physiological changes which are embraced under the head of involution, and secondly, one is free from those mists and obscurities, those suppositions and hypotheses, where an honest endeavor to give a name according to the pathological condition of the parts obtains. For one hears of areolar hyperlasia, chronic metritis, hypertrophy of the uterus, sclerosis of the uterus, chronic parenchymatous inflammation, or chronic corporeal parenchymatous inflammation, diffuse proliferation of connective tissue, diffuse interstitial metritis, etc., etc., all of which indicate to the thoughtful student that further elucidation of the nature of the pathological changes of this condition may yet be expected.

As eczema in its early stages differs from eczema in its later stages, and as the pathological conditions of hepatic cirrhosis in its early stages differ materially from those noticed in the later stages, so we often find the subinvolved condition of the uterus frequently presenting variations consequent upon the duration of the ailment, although I believe this is not invariably so. For this reason, more than from natural conservative tendencies, I would retain the old familiar term "subinvolution."

We understand by this that there has been a failure to undergo sufficient reduction in size after delivery or abortion. I infer that something has prevented the ordinary changes incident to the retrograde metamorphosis from taking place, which in the short space of six or seven weeks reduce a uterus of 24 ounces to two ounces. Nature intends a proper and rapid reduction of this organ. How, then, is it that we have this ailment occurring so frequently? That there are known or unknown causes—avoidable or unavoidable—which prevent involution, will not be denied. The art and science of medicine are not only to relieve symptoms and remove morbid conditions, but to worthily stretch out into other and more philanthropic fields; and now in all civilized countries preventive medicine is occupying a prominent place.

After delivery, gradual diminution of blood supply and an increasing activity of the processes of absorption bring about involution of the uterus. But amidst unfavorable circumstances, the ordinary retrograde metamorphosis undergoes some departure from health.

I shall endeavor to present to you some of those unfavorable circumstances or influences, the prevention of which will largely contribute towards

the normal involution of the uterus. And first amongst those unfavorable influences is fever. An elevated temperature, whether it be from specific fever or septic causes, or inflammatory changes, interferes with general nutrition, and to a marked extent is this the case with the uterus following parturition. Recall to your minds some of the peculiarities of the muscular tissue, of which the uterus forms a good example. Arrest of the function is followed by little or no atrophy, whereas exaggerated action leads to hypertrophy to a marked extent. Irritation of the nerves supplying these muscles has less influence on the contraction of their fibres than direct excitation of the muscles themselves, and regeneration of their fibres takes place rapidly; in marked contra-distinction to the voluntary muscles, the structure of which is not easily restored. In reference to the uterus itself, there is no organ in the body which so readily responds to irritation. The presence of a myoma deranges its vascular supply and leads to hypertrophy. So will a contracted os or a flexed cervix, because resistance is offered to the passage of the blighted elements of the lesser reproductive process. Pregnancy so stimulates the nutritive activities, that an organ of 12 or 14 drachms increases to twice as many ounces during the short period of a full utero gestation, while the inverse process is accomplished in the marvellously short period of six or eight weeks. Our attention should therefore be directed to the uterus in all cases where fever has occurred during the puerperium; *very frequently we will find arrested involution.* Then inflammatory attacks occurring in the body or neck, or in immediate connection with the uterus, as in pelvic peritonitis or cellulitis, may be looked upon as unfavorably influencing retrogression; these are the cases in which one may expect to find subinvolution present.

A lacerated cervix or a lacerated perineum, or any serious injury to the vagina, is more known to arrest involution, not only of the uterus, but of the vagina often.

Then there are cases of general debility—impoverished blood—an enfeebled and disordered state of the nervous system, where the nutritive processes are below par; where there is muscular atony, and consequently but feeble rhythmical contraction of the uterus. In all these cases, one almost invariably finds involution retarded. And these are the very cases where the mother is considered unable to nurse her child; and consequently the stimulus to reflex action, which is an important factor in the production of uterine contraction, is lost—a not unimportant point to remember in all cases of abortion. The retention of any portion of the secundines, displacements, prolapses and flexion, keep up a state of hyperemia which interferes with involution. My experience, however, leads me to believe that displacements are more frequently the effect than the cause of the ailment. The weighty uterus is not so easily steadied, and hence topples over, and generally in the backward direction, perhaps being first influenced in that direction by a distended bladder. Other unfavorable circumstances influencing involution are post-partum hemorrhage, neglect to empty the rectum once in 24 hours, a too early resumption of the upright position, or any local cause whatever productive of venous obstruction. With the knowledge of all these circumstances the physician stands as sentry on guard, and who can say in how many instances disease has been averted, and the physiological changes incident to involution have gone on without let or hindrance. The prevailing idea amongst the laity that the patient should be up and about on the ninth day is productive of no little harm. At times it requires considerable firmness on the part of the physician to break down these old-time prejudices. I look upon too early getting up of etiological importance in connection with subinvolution.

There are certain accidents which frequently occur in connection with the subinvolution. For instance, a subinvoluted uterus is liable to prolapsus—liable to displacement. Indeed I very frequently find, with subinvolution, retroversion or retroflexion, or both, with the ovaries dragged down, enlarged and tender; and in not a few instances I have been enabled to detect a varicose condition of the veins of the ovary. In the majority of cases, these are results of subinvolution—conditions which, although relieved, are liable to return after subsequent pregnancies. Hypertrophy and elongation of the cervix are often present.

As far as symptoms are concerned, I think it almost impossible to determine that subinvolution exists. Indeed there are no pathognomonic symptoms, and there are many symptoms in common

with other uterine diseases. If there is one symptom to which I attribute more importance than another, and one which more frequently occurs, it is the sense of pressure on the top of the head, just about the position of the anterior fontanelle. Some patients speak of a burning pain there, others as if they wanted to press their head against something, while others will tell you of a sensation there so unbearably distressing that they believe they will go crazy. This is a symptom I have noticed as being not unfrequently present. I do not remember this as a symptom denoted by any author, but it is one I have recognized for the last fifteen or sixteen years. Oftentimes the patient consults you only on account of the headache, and will tell that it is not at all like the headache from stomach derangement, neither is it like neuralgia, but incomparably more unbearable than either. Then in old standing cases, where the headache of this character has been more or less persistent, there comes in the current of the history fits of melancholy, and, indeed, the patients will volunteer the statement that her usual jollity has given place to irritability, by which she really means mental depression. Close observation will often detect an anxious countenance. Catching this anxious and frequently sallow countenance, I often feel pretty certain of my diagnosis before the patient is rightly seated in my consulting-room. With many of these poor women how wearily the day passes, and without a ray of sunshine to brighten their path. To make better their body—to cure them of their ailments is really to regenerate them—is to change a saddened countenance into one expressive of gratitude beyond any pecuniary consideration.

Now a great deal has been written about mental depression and tendencies to insanity in cases of laceration of the cervix of long standing, but I have frequently seen the same symptoms in subinvolution, unaccompanied by any laceration. When you cure the subinvolution, whether it be accompanied or unaccompanied by a lacerated cervix, you cure the melancholy and headache as well, and in general all the other symptoms. But some of these cases cannot be cured with any medicinal agent, either by internal administration or local application, but by some operative procedure, of which I will have occasion to speak. Recent subinvolution will always be characterized by more or less menorrhagia, and in not a few instances those also of long standing. The inference from a clinical standpoint is that the condition of the uterus in those latter cases always remains much the same. One who has at all carefully observed his cases of subinvolution will have noticed some of long standing, which, aside from the history, would appear to have been cases of only recent date, cases in which the uterus, body and neck, still remains soft and large, while others present the sclerosed condition, in which the menstrual discharge becomes scanty. Upon examination, we often find a patulous os and open canal, with considerable enlargement of the uterus. The enlargement is evenly distributed and is readily made out by the bimanual method and confirmed by the sound, which may pass from three to five inches. Excluding pregnancy and abnormal growth, the enlargement in conjunction with the history will seldom fail to establish the diagnosis. There is in general an increased sensitiveness about the uterus, more noticeable when you endeavor to raise the uterus up than when you press upon it from above; and more especially is this the case if the uterus be retroverted or retroflexed. In all such cases dispareunia is a prominent symptom; unrest and an aggravation of symptoms follow cohabitation. I am always suspicious of retarded or arrested involution, where the history of illness dates from labor (either at full term or premature), where it is accompanied by menorrhagia, and especially if menorrhagia occur during lactation. Whatever may be the direct cause, I suspect involution. Then I confirm my suspicions by a diagnosis made negatively; that is, as far as possible, by eliminating the possibilities. Careful physical examination, with the information already obtained, will in general clear up all doubts about the case. In a few cases we find that the menstrual flow, from its first re-appearance, is scarcely beyond the normal, and yet there is marked subinvolution. It will generally be observed in these patients that lactation exercised a sufficient influence to prevent menstruation until some nine or ten months after the birth of the child. I have a patient under my care now (who recommenced menstruation when her child was nine months old, and who continued to nurse the child for five months longer), in whom menstruation has been normal since its first re-ap-

pearance, now some fifteen months ago, and yet her uterus in large and heavy, measuring quite 3½ inches. In the great majority of cases it is not so, and in recent cases of subinvolution more or less menorrhagia may be looked for.

The treatment of subinvolution differs materially according to the conditions present. When one finds the uterus enlarged, soft, and relaxed, feeling very much like the uterus in the second month of pregnancy, it is noticed that this condition responds very readily and promptly to treatment. The chlorate and bromide of potassium, with ergot and quinine, are amongst the most useful remedies. Two grains each of ergotine and quinine, given three times a day, with 25 or 30 grains of bromide of potassium at bed-time, will in general promote involution. It will be materially aided by douching the cervix with a gallon of hot water night and morning, to the last pint of which I generally add one drachm of borax or alum. If the recovery is not prompt and the cervix looks congested, I scarify it, make applications of iodized phenol or Churchill's tincture of iodine to the endometrium at intervals of ten or twelve days, painting the whole vaginal cervix at the same time. I do this whether endometritis be present or not, and I am satisfied involution is promoted thereby.

It is unnecessary for me here to mention that any displacement should be rectified as soon as possible, as I have before intimated that this accident superimposes an additional element of venous congestion. But when the condition of the uterus becomes altered, and we recognize hardness of tissue, we find a more obstinate resistance to treatment These are the cases which have run on for months and even years with little or no treatment, beyond tonics and laxatives; and these are the cases in which we find extraordinary nervous symptoms developing themselves. Unfortunately a number of those cases will never fully recover, but their condition may often be so ameliorated that they may pass the years to the menopause with comparative comfort. In addition to the line of treatment which has just been advocated, and which must be carried out very vigorously, I am in the habit of applying nitric acid to the whole endometrium, after the manner of Atthill, when the carbolic acid, iodized phenol or tincture of iodine fails to produce a healthy condition of the mucous membrane. The application of the various caustics has a two-fold purpose—*to establish* a healthy condition of the mucous membrane, and *to whip* the uterus into contraction. Undiluted carbolic acid is a very safe and almost painless caustic, if care is exercised in not allowing any to trickle down into the vagina. If after a satisfactory trial of this treatment no very marked benefit be produced, I have tried dilatation of the whole cervical canal to the extent of an inch or more, endeavoring in this manner to produce a strong impression upon the uterus. In one case in particular I believe I obtained much good. As this is an operation not fraught with much danger, it can readily be tried in obstinate cases. But I can recommend with much more hope of success, removal of a portion of the cervix. In a number of my early trachelorrhaphies, I was surprised to find what a marked impression was made on the nutritive activities of the subinvolved organ. In one of my first this was especially noted. The uterus was large, retroverted, somewhat prolapsed, and the cervix lacerated into three sections, and the symptoms of backache and dragging pain were so unbearable that the poor woman had been an almost helpless invalid for three years, with all the nervous symptoms which accompany such a condition. In addition, there was a laceration of the perineum almost back to the rectum. In this case I was associated with Dr. Edwards, of London, and operated April 24, 1881. The uterus rapidly diminished in size, and the woman bloomed into health in a manner wholly surprising to her friends and medical attendants. In a short time after her return home, she attended to all her household duties connected with a farm, and in a letter to me some ten or twelve weeks afterwards, refused to come back to have the perineum repaired, saying, "as long as I feel as well as I do now I will not have the other operation done." Diminution in tenderness was as marked as diminution in size. As I mentioned, the cervix was lacerated into three segments, one small and two large. The small segment was entirely cut away and the operation thus converted into a bilateral one. I was strongly impressed, aside from the mere stitching up and healing of the cervix, that the operation should have produced such an impression upon the uterus as to start up afresh the nutritive activities which had

been arrested some four years previously, and thus involution was brought about.

Another case of subinvolution without any laceration of the cervix, in which I was associated with Dr. Fraser, of London, in which the uterus was so large and the menorrhagia so profuse, that some considerable doubt was expressed as to whether there might not be a fibro-myoma in the walls of the uterus. The patient was much exhausted from repeated periodic hemorrhages and was incapacitated for work. She had the best of treatment, both constitutionally and locally, but with only temporary benefit. I saw her on Oct. 16, 1884 (uterus then 4½ inches), when we agreed that removal of the cervix would afford the best chance of recovery, might wake up the uterus, as it were, and accordingly on November 8th I removed it with the écraseur and scissors, using the Paquelin cautery to restrain the hemorrhage. It was completely healed in four weeks, and the improvement in the general condition was uninterrupted. The menses became regular both as regards time and quantity, and has remained so up to the present time. I asked Dr. Fraser to examine the uterus, which he very kindly did on the 29th inst., and his report is that the body of the uterus is normal in size (measurement 1¾ inches), menstruation normal, and her general health good. It will be remembered that she had a long course of treatment, of applications of caustic to the uterus, ergot, quinine and strychnia, etc., and with little or no benefit. No treatment except tonics after the removal of the cervix, and the improvement commenced at once.

Every one who has had any experience in gynecology can bear witness to the evident improvement of the subinvoluted condition of the uterus after what has been called Emmet's operation, now known as trachelorrhaphy. Dr. Emmet himself says: "For many years past I have met with few or no cases of subinvolution which were not due to laceration of the cervix." And again he says: "If the operation be performed after the different sources of irritation have been removed, the uterus will be reduced rapidly in size, and the patient will not only regain her health, but will remain in the full enjoyment of it afterwards." One hesitates in differing from so good and excellent a man as Dr. Emmet—such a careful observer, and one in whom wonderful results have been the outcome of *such careful observation.* But I do not believe that *complete recovery* will occur in every case, at least such has not been my experience; but that in the great majority of cases similar results *will follow*—the involution will take a fresh start and become completed. But that there are cases of subinvolution in which there has been no laceration of the cervix, and in which the improvement has not been satisfactory under the usual treatment, I question if any one here will deny.

Just as in some cases of enlargement of the tonsils in children—you improve the general health, pay careful attention to the function of the skin, kidneys and bowels, endeavor to correct faulty nutrition, apply topical applications to the tonsil, use frequent compression of the gland between the fingers, and still the gland diminishes very little in size. But while the health is in the best possible condition, if you remove a small portion of the most prominent part of the tonsil with the tonsillitome, it appears to start up a new condition whereby absorption takes place and the enlarged tonsil gradually melts down. In a similar manner, with my limited experience, a removal of a portion of the cervix in obstinate cases of subinvolution produces like results. The operation surprises the uterus; increased nutritive activities result, and involution is set up.

When I was in Europe in 1876, '77 and '78, it was quite the fashion in some hospitals to cauterize the cervix deeply with caustic potash in enlargement of the cervix with subinvolution, but the subsequent contractions in the cicatricial tissue have, I believe, justly made the operation unpopular. It was the impression made on the uterus by the powerful effect of the escharotic that produced a revulsive action on that organ.

In some cases wedge-shaped sections have been taken from the cervix with good results, not only to the enlarged cervix, but also to the uterus itself, and, as I said, in a few cases I have had fairly good results from dilatation. In that very excellent work of the late Dr. John Thorburn, of Manchester, whose untimely death took place while his work was going through the press, he quotes from his colleague in reference to the operation on the lacerated cervix, and says "that the operation must often be looked upon as merely a step in the course of treatment of a uterine disease," a statement with which I am fully in accord. Any

operation on the cervix for the promotion of involution must only be looked upon as a means to an end. It is all-important, therefore, that the system should be put into the best possible condition. Local and constitutional treatment must join hands, otherwise we will be frequently disappointed. In defective nutrition the uterus suffers in common with other organs, and this alone greatly predisposes to arrest of involution.

BISMUTH IN INFLAMMATORY AFFECTIONS OF THE INTESTINAL MUCOUS TRACT.

BY A. C. GAVILLER, M.D., GRAND VALLEY, ONT.

In a case of acute dysentery which came under my care lately, I gave bismuth tris nitrate and opium as the medicinal treatment, in doses of fifteen grains of the former to one grain of the latter, every two or three hours. The symptoms became no worse but did not improve, so I doubled the dose of bismuth and continued the opium as before The pain speedily became worse and finally agonizing, after about twenty-four hours' treatment with the increased dose of bismuth. The evacuations became excessively frequent and of a garlic-like smell, while the same odor was readily perceptible in the breath. Thinking the bismuth might be impure and contain arsenic, I changed the treatment to plumbi acetat. grs. ij., opium gr. j., every two hours, with rapid improvement in pain, speedy fall of the temperature which had been rising rapidly, and a rapidly lengthening interval between the stools, which, with the breath, soon lost their garlic-like odor.

In twenty-four hours the motions had diminished to one in six to twelve hours, and the pain almost disappeared as long as the medicine was continued. I then gave pulv. kino co., grs. xx., every 2-3 hours and continued it with lengthening intervals until convalescent. I now wrote to Messrs. Lyman Bros., of Toronto, from whom I had procured the sample of bismuth which I had been using, and stated my suspicions as to its purity and the symptoms of irritant poisoning produced by it. They promptly submitted some of the bismuth from which mine was taken to Prof. Hays for analysis, who found no arsenic; the only impurities it contained being traces of iron and lime. I may state that the bismuth was of Howard's manufacture, a name which is considered a guarantee for purity. Nor could the bismuth have become contaminated with arsenic after I received it from Toronto, as I kept it in a bottle which had contained only bismuth for years. This case is instructive as it shews:

1st. That bismuth may become soluble in the intestinal canal, probably through chemical combination with the sulphuretted hydrogen so commonly found as a result of the decay of albuminous foods or dysenteric stools, which usually contains more or less (in bad cases considerable) albuminous material, through chemical change a sulphur and a hydrogen compound are formed, the former giving the dark color so often observed in the stools of patients taking bismuth, and the hydrogen giving the garlic-like odor to the stools, and by absorption into the circulation and inhalation by the lungs, to the breath also.

2nd. That bismuth, when so changed, acts as an irritant to the mucous lining of the intestines.

In these points a similarity to arsenic is shown, a similarity at which we need not be surprised when we view the close chemical relationship existing between the two metals.

The practical point that I would adduce is this: use bismuth with caution in active inflammatory affections of the intestinal tract, where rapid chemical and fermentative change is going on, as where the changes which render the bismuth poisonous are most readily effected.

Correspondence

To the Editor of the CANADA LANCET.

SIR,—In reading, not long ago, I came across the following professional aphorisms of Amédée Latour, which are sufficiently curious and shrewd to merit reproduction. I have endeavored to make the translation as literal as possible:

1. Life is short, patients fastidious and the brethren deceptive. 2. Practice is a field of which tact is the manure. 3. Patients are comparable to flannel, neither can be quilted without danger. 4. The physician who absents himself runs the same risk as the lover who leaves his mistress; he is pretty sure to find himself supplanted. 5. Would you rid yourself of a tiresome patient; present your bill. 6. The patient who

pays his attendant is but exacting, he who does not is a despot. 7. The physician who depends on the gratitude of his patient for his fee, is like the traveller who waited on the bank of a river until it finished flowing so that he might cross to the other side. 8. Modesty, simplicity, truthfulness! cleansing virtues, everywhere but at the bedside; there simplicity is construed as *hesitation*, modesty as *want of confidence*, truth as *impoliteness*. 9. To keep within the limits of a dignified assurance without falling into the ridiculous vauntings of the boaster, constitutes the supreme talent of the physician. 10. Remember always to appear to be doing something—above all when you are doing nothing. 11. With equal and even inferior talent the cleanly and genteely dressed physician has a great advantage over the dirty or untidy one.

Yours, etc.,

ARTZ.

OUR NEW YORK LETTER.

From our Special Correspondent.

DR. GIRDNER'S TELEPHONIC BULLET PROBE, WITH CASES.

NEW YORK, Oct. 18th, 1887.

The telephonic bullet probe, and induction balance, are two cleverly constructed little instruments for locating any metallic substance in the human body, and designed by Dr. Girdner, of this city, who, with the help of Prof. Bell of telephone fame, has perfected what bids fair to be an invaluable instrument in general, and particularly in military surgery. The induction balance is constructed on the plan that,—should perfect balance be established between primary and secondary currents from a battery, there will be perfect silence in an ordinary telephone receiver attached to the secondary current, and so the instrument is made up of these parts,—first, there is an ordinary six cell battery, to this is attached a rheotome which interrupts the current, which then goes to a coil, part of the adjusting coils, and then to another coil, part of the exploring coils, and then back again to the battery; this makes the primary interrupted current. The secondary current is generated by coils, one making the second coil of the adjusting coils, and the other forms the other half of the exploring coils. The wires from these are attached to the telephone receiver and make the secondary current. Now, if the exploring coils are perfectly balanced there is silence in the telephone, but if they are brought within three or four inches of any metallic substance, the balance is disturbed and a sound produced. To keep them perfectly balanced they are imbedded in paraffin in a wooden block with a handle, convenient to move about any part of the body. The adjusting coils are merely to check and adjust the exploring coils. To detect the foreign substance, the telephone is placed to the ear and the exploring block is gently passed over the suspected parts, and as soon as it comes near the metal there is heard a high pitched musical sound, gradually increasing until it is heard at its maximum at a spot directly over the foreign substance; this spot is called the *sonorous spot*. The sound is characteristic, and there can be no doubt that you are very near some metallic substance. You can count the nails in the floor or table with it, or discover metal anywhere within three and a half inches. And now, after finding the sonorous spot, the telephonic probe is brought into play. This is made up of a piece of flat steel, moistened and laid on the surface near the sonorous spot, to this is attached a wire, the other end of which is attached to any telephone receiver, while the probe or exploring needle is attached to the other knob of the telephone by another wire. Now it is complete. The tissues of the body form the battery fluid, the steel plate one element of the battery, the foreign metallic substance in the body the other, and when the probe or needle is thrust in at the sonorous spot, and comes upon the metal, a circuit is established, and there is a sharp "click" heard in the telephone. Touching bone or tissues has no effect upon it, so when the click is heard you know your probe is touching a metallic substance. Dr. Girdner has been experimenting for the last two years, and has relieved many an old army veteran of his interesting but painful memento of his soldiering days. It is merely an interesting coincidence that Nélaton's probe was invented to locate a bullet in the ankle of the great Garibaldi, while one of Dr. Girdner's first cases was to locate a bullet in the ankle of a colonel, received in the battle of Chancellorsville. Dr. Girdner has given me leave to quote some of his cases, which I shall append in his own words, as published in the *N. Y. Med. Journal*, of September 17th:

CASE III.—A young man received a pistol-shot wound in the right arm, the ball entering about the point of insertion of the deltoid muscle. This patient was under the care of Professor William T. Bull, by whom I was invited to examine him a few days after the accident happened. Exploration of the arm and axilla with the induction balance gave negative results, but when the coils were brought over a point on the top of the shoulder in front of the origin of the deltoid and about the junction of the acromion process with the spine of the scapula, a response was had in the telephone which was distinct and heard by several medical gentlemen present besides Dr. Bull; pressure also over this spot caused pain. The patient told me that as he saw his assailant approach from the front prepared to shoot, he turned his right side to him and threw up his right forearm on a level with his eyes, and thus the bullet, which would otherwise have struck the face or head, was received in the attachment of the deltoid, and the bullet, following its horizontal course, would naturally traverse the entire length of the deltoid while the arm was held in this horizontal position. The shoulder-joint not being involved and the patient's general condition being so good, it was decided not to do an operation for the removal of the bullet, and the patient recovered shortly, still carrying the bullet in his shoulder.

CASE IV.—A man, aged forty-four years, received a bullet in the right ankle at the battle of Chancellorsville. I quote from a copy of the history of the case furnished me through the kindness of Professor T. M. Markoe, whose patient he was, and by whom I was invited to examine him.

"Right ankle is much enlarged and tissues about it thickened and indurated. The lower ends of both tibia and fibula show increased size and involucral action; movements of ankle-joint limited owing to surrounding enlargement; one inch and a half above tip of external malleolus is a sinus which discharges a small amount of pus daily and admits a probe the distance of one inch and a half in the direction of the centre of the limb."

When an ordinary silver probe was passed into this sinus, its walls for a greater part were found to be composed of dead bone, and the bottom of the sinus everywhere communicated to the hand the presence of dead bone or some hard substance, and no man could tell certainly if it were lead or dead bone which he was probing, or if indeed there was any lead at all in the wound, a condition of things such as, I am informed, inspired Nélaton to devise the porcelain probe. The Nélaton probe was next introduced, but no staining of the porcelain could be found, nor was this surprising, since the bullet had lain in its present position in the tissues for twenty-four years, and, as was shown on its removal was thickly covered all over with a coating of lead salts, so that the porcelain could not be stained by the metal.

The telephonic probe was now introduced, and after probing a hard substance for a while, which was bone, without response, the bullet was struck, and a loud distinct "click" was heard in the telephone, announcing, beyond the shadow of a doubt, the precise location of the missile.

As an audience was present which had been invited to see the induction balance used, I now began an exploration of the ankle with the coils, and soon found a sonorous spot in front of the ankle which gave a very clear sound, and was heard by Dr. Markoe, Dr. Peabody and others. As Dr. Markoe held the telephone to his ear, listening to the unmistakable announcement by the bullet of its presence in this man's leg, he enthusiastically said to the audience: "Gentlemen, I wish every man in this room could hear what I am listening to at this moment." This sonorous spot was, of course, the point on the skin nearest to the bullet. Dr. Markoe now enlarged the sinus with the chisel and hammer, and removed from between the tibia and fibula a thickly incrusted leaden bullet weighing 200 grains, and the patient made a good recovery.

CANUCK.

Selected Articles.

REST IN THE TREATMENT OF DISEASE.

BY H. C. WOOD, M.D., LL.D.

The object of the present lecture is to give you such ideas of the endeavors of the physician in the application of rest to the treatment of disease that you may intelligently co-operate with the doctor in charge of the case. You will remember, I trust, from your early childhood's teaching, that when Adam fell it was announced that by the sweat of man's brow he should earn his daily bread. In these later days we have changed all that, and a great many of the higher portion of man earn their daily bread not by the sweat of the brow but by the toil of the brain. In early childhood, when the little atom of humanity should be out in God's sunlight, he or she is put in school in cramped quarters, leaning over desks and learning lessons, struggling with toil, and weariness to develop the brain and nervous system at the expense of the physical powers, if thereby in the future he may climb over some other little atom, who, like himself, has been sacrificed to the Moloch of culture. As we grow in age this toil ever increases, until at last, when early manhood, or, perhaps, early womanhood, is reached, life is one of perpetual nerve-strain Many years ago, when old Professor Jackson, himself an example of this ruin which is wrought by overstrain, used to lecture to us at the University of Pennsylvania, he taught us this invaluable lesson, that every human being has a certain amount of nerve-force, which is produced by his system daily, and that if more nerve-force than the daily product be used, there will be a continual drawing on the reserve power, until there comes a time when nervous bankruptcy results. It is precisely the same as when a man with a fixed income lives on through the years, spending each year only a little, it may be, more than his income, but, as this continues, at last the capital begins to feel the drain, and, with an accelerated pace, ruin comes on.

Few of us, I think, clearly understand how much of nerve-force it requires simply to live. Remember that the heart beats seventy to eighty

times a minute. These great strokes of the central pump must go on through night and day in order that the blood may freely flow through the system. The great tides of air must be drawn in and forced out of the lungs continually, at the expenditure of an enormous amount of nerve-force. When digestion is to be performed, it must be at the expenditure of nerve-force. Most of you have learned from experience this fact, that when you are over-tired a meal will not be digested, which, at other times, you would be able to appropriate without trouble. Many years ago, when a boy, I walked across Chester County from Maryland to the Chester Valley. I had nothing to eat all day, and at night, when we came to a farmer's, he loaded his board down with heavy short-cake. Now, short-cake is a substance that yields only to the digestion of untired boys and ostriches. All through that night, and for several weeks afterwards I wished that I had never been born. I had so exhausted myself that there was left no nerve-power to digest this unreasonable food, and, as a result, it underwent fermentation, and poisoning occurred. The heart must act and air must be breathed, but digestion is not absolutely essential, and, consequently, when a man or woman becomes over-exhausted, digestion suffers and no food is taken. When power is failing and strain is greatest, too little fuel is supplied to meet the demand, and so, little by little, this vicious circle is passed around, until it ends in failure and bankruptcy, which is more and more complete. Again, often after an acute disease there is left a condition of exhaustion in which the vital powers are not able to supply the needs of every-day life and at the same time accumulate strength. Here, again, rest is necessary.

In health, to meet company and associate with our friends adds new life and vigor and power, but the entertainment of people by a woman who is feeble and worn out requires a physical expenditure which is often a great strain. Hence comes the exhaustion of an excessively active social life. Hence it has come that as a central idea of the rest-cure isolation is an important feature. Here there is of course great danger that there shall be rest-cure quacks, just as there are quacks with almost every form of special therapeutics. This is a remedial measure which is to be employed with care. It is not a stereotyped and set mould into which every little fragment of exhausted humanity is to be crowded and made to fit whether or not. In some instances it is to be applied with great severity, while in other cases it is only the principles which underlie it that are to be used.

The principle which underlies the rest-cure is, in the first place, the absolute avoidance of all physical expenditure of strength, so that there shall be opportunity to accumulate the wasted income. One of you lives beyond financial income, and you then go to some hamlet and live in a corner until the income thus saved adds to the capital, and the fortune is restored. This is precisely what the doctor attempts to do when he applies the rest-cure. He puts the patients to bed, keeps them quiet, and does everything to avoid the expenditure of a single unnecessary grain of vital force. He takes that little grain of nerve-energy and uses it to digest a little particle of food, and thereby adds to the exhausted power. It is a very common thing in hungerless patients, put to bed under proper surroundings and kept quiet, to see the appetite return at once. Under these circumstances the appetite is the measure of the deficiency or of the surplus of nerve-power. If there be too little power for nerve-digestion there will be no appetite. When there is a husbanding of the resources the appetite returns.

If a patient is put to bed and allowed to lie there perfectly quiet, then his muscular system is in much the same condition as is that of the fakir's arm. He ties up his arm, and keeps it so through the decades, and as a result there is a withered, structureless mass without power, the muscular fibre absolutely gone out of it. It is in the muscles of the human being and of the animal that the animal heat is chiefly produced. It is chiefly in the muscular system that are burnt up the effete substances that are the waste of the body, so when the muscles waste the animal heat fails, and the power to destroy effete matters fails. If, then, a patient is put to bed and kept perfectly quiet, there is lack of oxygenation of the tissues, and a gradual loss rather than a gain of power. The importance of rest in the treatment of disease has been long recognized, but it is to the sagacity of Dr. S. Weir Mitchell that we are indebted for the comprehension of the fact that we must not only try to conserve nerve-power, but to also supply power by maintaining the activity of the muscles in such a way that there shall be no draught upon the nerve-centres. If I move my arm there is an impulse flows out from the brain, and, by virtue of this expenditure, the arm is moved. If, however, I apply electrical stimulation, the muscle contracts, the structure of the muscle is maintained, and the activity of the muscle in destroying waste matters is kept up, but there is no expenditure of nerve-power.

Again, where there is no contraction of the muscles, there is a tendency to the accumulation of the juices from the blood in what we may call the by-roads of the system. It is not chiefly the blood that is in the vessels that directly nourishes the body, but the juices that have escaped from the blood that nourish the tissues. Along with every blood-vessel there runs a channel through which these juices that are not used are taken up, carried back into the trunk, and returned to the blood. When the muscles are inactive these little

channels become choked up. When I forcibly contract my arm all these little channels are squeezed by the muscles, much as you squeeze a sponge when you take it in your hand. The squeezing of the muscles drives the blood on towards the centre of the body, and also causes the return of these juices to the trunk, and finally to the blood. With absolute rest and quiet there is very little return, and the parts become choked with the half-used blood or flesh-juices. Electrical stimulation causes contraction of the muscles and aids very much in the return of these juices, but it is chiefly single muscles that we pick out by the electrical current. Therefore, partly for the purpose of aiding in the nutrition of the muscles, and partly for the purpose of returning these juices to the body, we add massage to the electricity. I have gone a little into the details of the principles involved because it not infrequently happens that persons in applying massage make mistakes because they do not appreciate the principles. Sometimes you will see a person rubbing the limb in a downward direction. This is contrary to the direction in which you wish these flesh-juices to go. You do not want to drive them from the arm into the fingers. You want to force them from the extremities to the centre. You continually try to work these juices from the outermost parts and return them to the central portions, where they will soon find their way into the blood.

Under certain circumstances the nurse is called upon to apply electricity. This is always an unfortunate thing, and the treatment sometimes fails on this account, for in using electricity for the purpose of which I am speaking, constant judgment is required to know what succession of muscles to cause to contract and also how much of power to employ. It is always much better, where it is possible to do so, to employ some of the younger members of the profession whose time is not as valuable as that of the middle-aged man. I shall not occupy your time with an elaborate discussion of the methods of applying electricity, but shall only call your attention to those parts of the electrical treatment which it is the duty of the nurse to understand. In the first place, it is the duty of the nurse to know how to take care of the battery. There are various forms of faradic batteries, which are the ones employed in this method of treatment, but they all have certain features in common. There is always a cell which contains some acid liquid, into which is plunged a plate of zinc. When the battery is in action the zinc is gradually eaten up by the acid, and the acid is gradually exhausted by the destruction of the zinc, so that the battery destroys itself. The nurse should see that when the battery is not in actual use the zinc is removed from the acid. In the form of battery which I have here, the zinc is removed by simply pulling up this rod. In other forms of batteries you have to loosen a screw which holds the zinc, and lift it out and put it into another cup. It is also the duty of the nurse to see that the battery is so kept that there is no spilling of the acid. The nurse should always see that the phsician is provided with warm water, in which he can wet the sponges, and it is well to use a little salt in the water. The water when first brought into the room should be hot, otherwise it may become cold before the séance is over.

With regard to massage, I believe that every thoroughly-instructed nurse should understand it. It, however, cannot be taught by lectures, but must be acquired by personal instruction. I myself know the theory of massage pretty thoroughly, but the practice of it is an entirely different thing. This requires training and the repetition of certain muscular movements until they are done firmly, smoothly and gracefully. In massage the movements should commence with the fingers. It is well to begin with a rotatory movement in the joints. Then you begin the massage proper. There are three different movements employed,—first, stroking; second, kneading; third, a beating movement, which is made with the fingers acting like so many sticks. The stroking movement is especially directed to driving the juices out of the part operated upon towards the centre of the body. It should be made with the two hands simultaneously. The pressure must be made with the ball of the thumb and the palm of the hand. Before making this movement, if the skin is very susceptible, it should be greased with sweet cocoanut oil, vaseline, or some other unguent. Remember always that this is not rubbing. If you rub a patient, you want to irritate the skin. When you are practising massage you do not want irritation of the skin, but you especially desire to affect the deeper structures. The stroking movement is sometimes made simply with the upward movement of the two hands. It is better to grasp the limb with the one hand above the other. Then you commence the movement with the left hand, and follow it with the right, then slip back with the left hand, while the right keeps up the pressure.

In the kneading movement the effort is made to pick up the individual muscle, and so grasp it between the thumb and forefinger that you roll the muscle on itself. The movement in striking or beating is made with the fingers perfectly loose, and should be made from the wrist and elbow, never from the shoulder. It should be made as rapidly as possible, and carried up the entire limb.

The question of feeding a patient who is undergoing this method of treatment must be decided absolutely by the doctor. It is the nurse's simple business to carry out the directions given by the doctor. The doctor under these circumstances,—and I think he should do so in the treatment of

all diseases,—should make out a written schedule, so that there can be no possible doubt as to the orders. Some years ago I had an important patient suffering with typhoid fever, who, I believe, was killed by a mistake of the nurse. It certainly was a very distinct solace to me that the orders of the nurse were plainly written. It was absolute carelessness on herpart. In all cases of disease the orders for the nurse should be written A schedule should be made out. We may start at eight a.m. with breakfast. At nine o'clock the bath may be given. In giving the bath it is essential that the patient should be absolutely nude, and she should be put between blankets. The water used should be as hot as can be borne. Unless otherwise directed, it is better to add a little heartshorn or ammonia to the water, rather than to use soap. From one-half to one ounce of ordinary aquæ ammoniæ may be added to the small bucketful of water This will leave the skin soft and in better condition than if soap has been freely used. The bath should occupy about thirty minutes. In most cases the patient is much better if rubbed with ice immediately after the bath or during the bath. This is not to be done unless ordered by the physician. If ordered to rub the patient with ice, you do not take a great ice berg, thrust it on the skin of the patient, and then go to sleep. You take a piece of ice, and, with an up-and-down motion, rub it over the limb until the whole surface has been covered. Then dry with a coarse towel. You will find that under this treatment the pale, muddy skin rapidly becomes pink. We have no power equal to this use of hot water and ice in drawing the blood to the surface of the body and in stimulating the skin.

At ten o'clock the patient may have massage. At eleven o'clock milk or some food will probably be ordered. At one p.m. dinner will be taken. Medicines, if employed, are to be put in their proper places. At four o'clock electricity may be employed and a glass of milk given. At five o'clock supper will be given. Seven or eight o'clock will be bedtime. Usually the patient is in bed all the time, but I think patients progress more rapidly if they are permitted to be up a portion of the time.

In making the toilet of these patients never allow them to do up their hair. The great mass of hair which many women have is in itself a labor to comb, and the holding up of the arms is especially tiresome, yet frequently this is one of the points on which patients are most stubborn. In a case of strict rest-cure, you must cut up the food of the patient, and see that the patient does not feed himself or herself. These are the cases in which the method is being used in its utmost strictness. If you have not had definite instructions with reference to these points, ask the physician what he wants you to do.

The hours of the day are twenty-four, but when a person is confined to bed they seem to become forty-eight. In this method of treatment there is so much to be done, in the way of bathing, massage, and electricity, that much of the time is past without the patient knowing it. There are, however, hours for which it is better to provide some amusement for the patient. I think, therefore, that every nurse, or every nurse who hopes to reach the highest point in her profession, should study the art of reading. The matter read is to be selected by the physician. It is very easy for the patient to tyrannize over the nurse who reads to her. A nurse recently told me that she had to read seven hours to the patient. This is tyranny, and it is the business of the physician to protect the nurse as much as it is his business to protect the patient. There is, perhaps, nothing which develops selfishness more rapidly and thoroughly in human nature than does a long period of chronic invalidism.

What I have been saying to you applies especially to the treatment of chronic diseases, but it seems to me to be a matter of importance that you should have a clear idea of the application of the same principles to acute diseases. It also seems to me important, in order that you may be *en rapport* with the medical profession, that you should have some understanding of modern therapeutics and ways of treatment. Therefore I shall at this point branch out a little from the discussion of my main subject, coming back to show you how rest comes into the treatment of all diseases. There was a time when medicine was a purely empirical, dogmatic art. There is of necessity still much of dogmatism and empiricism in the practice of medicine—that is, we are forced to do certain things because experience has taught us that certain things do good—but every day are we, as scientific physicians, getting the power of treating disease intelligently and rationally. Perhaps the greatest nuisances that the doctor ever encounters are those amateur doctors, usually, I am compelled to say, of your estimable sex, who think that they know medicine; the amount of their conceit is in direct proportion to the depth of their ignorance. Under these circumstances you will find that the great stronghold out of which no argument will drive these amateur triflers with life is, "I have seen, and therefore I ought to know." Once I was in the smoking room of a trans-atlantic steamer, and there was one of these pestilential creatures there, who this time wore a hat. He was continually bothering me with questions as to the why this and that man had been cured by this or that irregular practitioner after regular physicians had failed. Finally, after I had for some time dodged his questions to the best of my ability, a little Frenchman spoke up, and said to the questioner, "Your talk remimds

ane of a story." He then told the following story, which I regret that I cannot give in his broken English: "Once in a village there was a shoemaker who was very sick of a fever. Some one who was visiting the wife said to her, 'Your husband has been sick for a long time. I can cure him. Give him as much pork and cabbage as he can eat, and he will get well of the fever.' The next day the woman fed her husband on pork and cabbage, and lo and behold, the fever left the man and he recovered. He put down in his note-book, for future reference, 'Pork and cabbage cures fever.' A few days later there was no ring of the anvil in the village smithy. The shoemaker went to inquire what had become of the blacksmith. He was told that he was sick with a fever. At once he said, 'I know what will cure him. Give him pork and cabbage.' The wife adminstered pork and cabbage, and the blacksmith incontinently died. The shoemaker, on seeing the symbols of death on his neighbor's house, gets down his note-book to see if there has been any mistake. No, there it is, black and white, 'Pork and cabbage cures fever.' Finally, after rubbing his head awhile, he exclaimed, 'I have got it!' and he wrote in his note-book, 'Pork and cabbage cures shoemakers with fever, but it kills blacksmiths.'"

This pork-and-cabbage style of therapeutics was the only method of treatment of disease forty or fifty years ago; but, thanks to homeopathic physicians, who emboldened the profession to watch the course of disease without treatment, the regular profession learned this important fact, that most acute diseases have in themselves a tendency to recover. It is the physician's duty to study the dangers which attend the disease and the methods which nature takes to bring about recovery. He should also study the drugs which he has at his command, and by inductive reasoning apply his knowledge of drugs to his knowledge of the dangers of the disease. To make this clear, let me take you out on the broad Atlantic, where the sunlight is thrown back from every wave as the steamer ploughs the furrows that unite two continents. The captain notes that the mercury is falling. The mate sees a little cloud gathering in the west. To-morrow the hurricane will be upon the vessel. The captain cannot put back the hurricane, but he can make everything snug and tight about the vessel, and he can so turn the helm that the ship goes before the wind. He knows the dangers and avoids them. He goes with the tempest and does not try to oppose it. This is generally the position of the physician in a case of acute disease. We cannot cure typhoid fever, but we can, if we study typhoid fever properly, carry the ship right on through the tempest and bring it into quiet waters.

The first thing that we learn in studying typhoid fever is, that in the majority of instances it causes death by producing exhaustion. We learn also that sometimes it kills by producing disease of the bowel with ulceration, and that a little particle of solid food getting upon one of these ulcers may tear open the bowel with fatal results. We study the dangers and see how they are to be avoided. Of all the dangers in typhoid fever exhaustion is the most serious. The successful treatment of typhoid fever rests not upon the administration of drugs, although this may be important, not upon the meeting of this and that symptom as it arises, although the skilful physician does that, but it rests especially upon the fact that the disease has been recognized early, and that every grain of strength has been husbanded, so that in the coming weeks, when it shall be needed, it shall be present. I have often compared a patient with typhoid fever to a ship on a coast in a storm. The ship is being driven on to the point of rocks, but beyond the jutting promontory is smooth water and safety. If the captain can carry the ship around that jutting rock, it makes no difference how close he may come to it, if he but clears it he is safe. So, in typhoid fever there often comes a time when it is the last grain of strength that holds the man as he crosses by the edge of the open grave. If you can hold him for a few hours, until a little strength is gained, he is safe. The grain of strength which you as a nurse wasted by allowing the patient to get out of bed three weeks before, may be the grain of strength which might have carried the man through. In every case of such disease it behooves you to remember that every particle of strength that you can save is perhaps life to that patient. The moment that there comes the slighest indication of the approaching storm the patient should be put to bed, kept quiet, and not allowed to make any motion or exertion. Many a doctor orders absolute rest, and the nurse perhaps thinks that she is carrying out her instructions, and the patient dies because the doctor is careless and the nurse is ignorant. Under these circumstances absolute rest means absolute rest. It means that the patient shall be put in bed, and not allowed to get out for anything. The patient may feel fairly strong, and will insist that he can get out of bed for the natural acts of the body. The patient is to be kept in bed, and under no circumstances, as you value your professional honor, do you let him rise. If the house is on fire, throw him over your shoulder and carry him out, but do not allow him to rise by himself

Never allow these patients to make their own toilet. If a bath is ordered by the physician, which apparently involves a waste of strength, see to it that it is your strength and not the patient's that is wasted. Do not let the patient do anything whatsoever. Do not let him make any exertion. The writing of a letter may mean death. A man may write a letter to his wife which is his own death-warrant.

This application of rest in the treatment of disease goes further. In all diseases the powers of the nurse should be directed to the saving of the strength of the patient, and you should remember that there is a mental worry which is more exhausting than physical exertion. Mere uncleanliness, a low voice to a deaf patient, a loud, high-pitched voice to a patient whose hearing is acute, failure to quickly understand the whims and caprices of a sick man or woman, are tormenting things which take away the rest and destroy the life of the patient. We talk about uncleanly nurses, and we all know the type of nurse which was pinned up by Dickens for all ages, as the entomologist pins up the beetle and watches its unclean movements, but the unclean nurse is scarcely as bad as the fussy nurse. In one of the hospitals during the war there was a young soldier who happened to be good-looking and near the door. The majority of amateur nurses that came into the room wanted to do something for him A young lady came into the room one day and said, "Can I not do something for you?" "Perhaps," he replied. "Can't I wash your face?" "Yes if it will give you any pleasure, but you are the thirty-seventh that has done it to-day." A nurse who is continually shifting the blinds, moving about the room when there is no need for it, asking the patient whether he wants this or that, or is excessively active and alert, is a great evil.

Now, nurses of the University Hospital, let me say one more word to you. I think that your calling is one of the highest to which a human being ever devoted herself. You remember that the Bible tells us that, "He giveth His beloved sleep;" but sleep is rest, so will you, I trust, comport yourselves, that in the future, as you go from house to house, it shall be said of you, "She gave me rest."—*Therapeutic Gazette.*

ON THE EARLY RECOGNITION OF HIP DISEASE.

BY A. J. STEELE, M.D., ST. LOUIS, MO.

Knowing that formerly the mortality from hip disease was thirty per cent. of all cases, and that of late it is but five per cent.; and secondly, that marked deformity was then the rule of the cases that recovered, and that now serviceable limbs are had, we realize what better understood pathology, earlier diagnosis and improved methods of treatment have accomplished in this affection.

My old preceptor used to teach that the first duty of the practitioner was diagnosis, and that if we would benefit our patients it should be made early. As we now know how rationally to treat hip disease, excellent results, if such we would have, will turn upon the early recognition of the affection. In nine cases out of ten it is the family physiclan whose attention is first called to these cases; thus all the more important that he should early diagnose it, that he may at once institute treatment himself or relegate the case to the surgeon. It shall, therefore, be my aim at this time to so plainly outline the early indications of the affection that it may be readily recognized by all.

In the pathology of hip disease there is nothing so peculiarly different from diseased processes of the joints occurring elsewhere, that it should merit a special name. We might, perhaps, with as much propriety, speak of "liver disease," of "brain disease." Still, on account of the size of the hip-joint and the peculiar features of the disease, its symptoms, its history, its course, and the special treatment required, it does merit a separate name. Thus, from time immemorial it has been designated *morbus coxæ.*

We have but to remember that it is a chronic inflammatory affection, originating usually in the bone, and doubtless strumous in character, peculiar to the age of childhood, rare in later life. When far advanced, readily recognized by the mearest tyro in medicine, but in its incipiency often difficult to diagnose. No single sign is indicative of it, but a combination of the symptoms presenting themselves makes it comparatively certain. These symptoms are as follows (not, however, in the order necessarily in which they present themselves): Lameness, pain, change in position and apparent length of the limb, loss of motion, wasting of the muscles of the limb, tenderness on motion or pressure and enlargement of or about the joint. In making the examination the patient should be undressed and examined both standing and lying. For the latter a table covered only with a blanket or a quilt is best. And, 1st, of the *limp.* It is the lameness that probably first excites the attention of the mother to the child, perhaps neither severe nor constant, but more marked in the morning on arising, and gradually wearing away during the day. I cannot say that there is a limp peculiar to hip disease, because its character varies with the stage of the affection, and yet it may be that the patient favors the hip-joint, *i. e.*, though the ankle moves and the knee has motion, yet that the hip is stiff. The foot is put down firmly, it does not drag, as in paresis.

It is an interesting study, and I have indulged in some observations on the subject, of determining the part affected by the peculiar lameness or gait of persons as seen in their walk. Each joint has a characteristic limp; each part also. Recently I diagnosed Pott's disease in a patient seen for the first time, coming up the steps to my residence, from his peculiar carriage alone, the disease having been unsuspected by physicians previously

treating him for stomach and kidney troubles respectively. The limp in hip disease is due to the patient restraining the movement of the joint on account of pain, or because the joint is fixed by reflex contraction of the muscles. The lameness differs from that of partial paralysis—there is a stiffness in the motion. At first the child favors the limb; there is a certain awkwardness, the foot is not raised so high, the step is shorter. Later on, falls occur and the child manifests less confidence in the affected limb. Much activity during the day increases the limp. The effort of the child is to save the limb. Thus, in the limp of early hip disease, we have a sign always present, and from its peculiarity, almost diagnostic.

2nd. Perhaps the next more important sign is the *pain*. This, however, varies, sometimes so slight throughout the continuance of the affection as to be misleading, and again so severe as to excite the keenest sympathy for the little sufferer. It varies, not only in different cases, but also in different stages of the affection. Early there may be a complaint of fatigue and of soreness merely, and after exercise, of positive pain referable to the hip, and later on, to the knee. This pain is reflex in character and liable to exacerbations. The anterior crural, sciatic and obturator nerves send twigs to the joint and peripheral branches to the limb below, as to the knee, and the inner side of the thigh and leg. This fact is interesting, namely, that certain short branches of a nerve being irritated, pain is experienced in the long peripheral branches, and unless borne in mind will be misleading as to the seat of the trouble. I am constantly seeing mistakes of this character made by the physician and friends. In other disorders we have illustration of this same peculiarity of nerve irritation. In Pott's disease the pain is experienced in the front of the body, remote from the spinal lesion; so in stone in the bladder, such disquietude is experienced in the end of the penis that the patient would ever be pulling it.

Finding no difference in the contours of the two knees would help to settle the suspicion of affection of that joint. Later on a paroxysmal pain occurring at night is symptomatic of bone lesion and called the ostitic cry. The same is found in bone involvement of other large joints or of the spine. In my experience it is of frequent occurrence that cases are brought in for knee-joint affection or rheumatism of the thigh and leg that prove to be hip disease. The chagrin of the family physician is often great when told of his error. A neuralgic hereditary tendency on the part of some children may render them more sensitive, and account for their suffering more in hip disease than others who have no such idiosyncracy.

3rd. *Of Altered Position.*—Very early the limb is slightly flexed; a little later, abducted and rotated outwards; thus the foot is thrown in advance or a little forward of the body. Some carefully made experiments of injecting the synovial cavity of the hip-joint with fluid, in which the line of the femur was made to take a direction forwards and outwards, with rotation, would seem to indicate that, when in joint disease the limb assumes such position, therefore, there must be fluid in the joint, synovial or purulent. Such has been the specious reasoning of the past, but more correct pathology now shows that this position is assumed as one of greater comfort, whereby the ligaments are more thoroughly relaxed. As you know, Mr. President, sit at ease the thighs are flexed, the knees separated and the feet turned outwards, *i. e.*, there is flexion, abduction and rotation, naturally assumed as a position of greater comfort. This position of the limb affects the character of the locomotion. In order to get the foot to the ground the body is bent forward and inclined outwards, this is accomplished through curving the lumbar spine. If the limb will not conform to the body the body must conform to the limb, like the story of the mountain and Mohammed.

The pelvis is tilted downwards on the affected side, thus producing an apparent lengthening of the limb.

4th. *Loss of Motion in the Joint.*—The patient cannot move his thigh, except limitedly, and there is impairment of passive motion, a symptom of the greater value. The examination must be very gentle and critical. If it is roughly made all the muscles will contract to protect the joint, and this contraction will be mistaken for rigidity from disease. The patient lying on his back, the *sound* limb should be first seized and put through the motions of flexion, extension and rotation, for two reasons: 1st. To get the confidence of the patient. 2nd. To refresh the memory as to the possible movements of the limb. Then the suspected limb is seized and flexed to its utmost without force; then extended, and just here comes in the test so insisted upon by recent authors, the *experimentum crucis*, namely, that in extreme extension with the popliteus striking the table, the lumbar spine will be flexed, or bowed forward, if disease is present; then as the limb is flexed, the spine again will lie flat on the table. This is due to the contraction of the psoas and iliacus. Then, with the limb flexed to an angle of 120 degrees with the trunk, the thigh should be rotated, and this rotation will be limited if the joint is affected. If the rotation is unimpaired, almost to a certainity no disease exists. We may state the case axiomatically, that if hip disease is present, impairment or limitation of motion is certain. In these examinations do not use an anesthetic, for the consequent relaxation of the muscles would nullify the test and render nought the otherwise clear symptoms. I can well remember the day when to diagnose a

case of hip disease chloroform was given and the joint freely moved, to elicit grating of the suspected eroded joint surfaces, an exceedingly harmful and unnecessary proceeding. Tact must be used, the confidence of the little patient gotten. Finding you are not to hurt him, he will place himself in your hands, and the delicate tests may be satisfactorily made. So often in cases brought to me for consultation the child cries, and the mother apologetically says: "Dolly has become afraid of doctors" Shame! as Shakespeare has it, use all gently.

5th. I have found *wasting of the limb* a very constant sign, and with it too a flabbiness of the muscles. The circumference of the two calves should be compared, and then the thighs, taking a point on each equidistant from the upper edge of the patella (the markings are best made with an aline pencil)—and thirdly the flattening of the glutei and obliteration of the lower gluteal or natal fold. Great emphasis was placed by the older writers on this flatness of the natis, and so we were taught, but I do not give such significance to it. While it may be due measurably to wasting of the gluteal muscles from reflex nervous irritation, it is largely affected by position of the limb, and thus a secondary sign. This wasting of the limb, like the pain, is due to nervous reflex, and is quite constant. I do not assert that wasting of the limb is never caused by other affections, for in ankle disease, infantile paralysis, in flat foot, congenital dislocation of the hip, diminution in the size of the limb results, but it is present in hip disease and is a most important and ever-present sign. When marked and rapid, grave bone involvement may be suspected; when slight, that the affection is not yet severe. Would you suggest that the wasting is due to non-use of the limb? It is too marked and too rapid for that.

6th. *Of the Swelling.*—This perhaps is the least important sign in the early stage of the affection, possibly because so difficult to determine on account of the depth of the joint, the hip being covered by large muscles—different in the case of the knee, for example, it lying superficial. However, when present, may be recognized in front of the capsule or behind the trochanter, or by a brawny thickening about the joint. Best detected by grasping the part with the thumb in front and the fingers behind the trochanter, or *vice versa.* Remember, I am speaking here only of the early stage; later on, formation of pus causes marked swelling, easily detected.

Lastly, in regard to *sensitiveness of the joint*, elicited by some surgeons by striking upon the sole of the foot or knee,—a very unreliable procedure, because the muscles being put on guard, very little or none of the concussion will affect the joint surfaces, unless great force is used, which might even cause complaint if employed on the sound side. Again, in the early bone trouble the joint surfaces are not involved, and therefore, not sensitive. Recently I heard at a medical society a prominent physician relate a case of diagnosis and cure of hip-joint disease. He suspected such a trouble, placed his patient on the floor, and pounded on the sole of the foot; a cry resulting, hip disease was certain. Recumbency and weight to limb effected a cure in a few weeks. *Mirabile dictu!*

If we *should* desire to elicit sensitiveness of the joint, such being present, a better plan would be to use the femur as a lever, one hand under its upper third as a fulcrum, the other on the front of the knee pressing it back as the power, and the head of the bone forced against the ascetabulum as the weight. This can be done gently without exciting antagonism of the muscles or doing injury to the joint.

Of the Family History. If tendency to tubercle or struma exist, all the more would opinion incline to arthritic bone involvement. You perceive I am a disciple to the scrofulous origin of the affection, either congenital or developed *de novo* from some acute disorder recently experienced by the child. Thus I have rapidly individualized the signs of early *morbus coxæ.* When grouped, they furnish such unmistakable evidence of the affection that he who runs may read. Not all the symptoms may equally be present, one or more may be strongly marked, and others in abeyance. But I beg of you that with the limp and pain and impaired motion and wasting present, don't pooh-pooh the fears of the anxious mother, and say "growing pains," "rheumatism," "child will grow out of it." If the positive signs, on the one hand, and exclusive reasoning on the other leave the case still in doubt, keep it well under observation, You may already have had the alarm of the falling barometer, though the storm is yet distant.

In closing, you may desire to ask: "If hip disease, what then? What is to be done?" Even though time permitted, it is not my intention at present to reply, except in one word: Quiet. Keep the joint at rest, immobilize it.

Discussion.—Dr. Edw. Boeck dwelt upon rigidity of the affected limb as an early symptom. Dr. Jacob Geiger did not think struma the prime cause. The disease begins in the cartilage and synovial membrane rather than in the bone. Immobilization, without drugs, often cured. Early diagnosis meant early cure. Dr. Young called attention to pain at night during sleep Thought it well to make sound leg higher than the diseased one, so that the weight of the latter would make extension. Dr. Hurt thought that cases were decided by a traumatic cause acting on a strumous subject. Dr. Halley, in autopsies, had found the

bone always diseased, and but partial destruction of the cartilage and synovial membrane. Believed disease began in bone. The granulations appeared to him to be of tubercular type. Dr. Griffith called attention to Gibney's definition of hip-joint disease, "tubercular osteitis of the hip-joint." Dr. J. W. Heddens dwelt upon the importance of an early symptom, namely, rotation of the leg outwards. This is an effort of nature to cure. The iliacus muscle draws the head of the bone out of the socket and thus relieves friction and pain. Rotation of the limb inwards at once causes pain. Local treatment could be summed up as rotation outwards, extension, and fixation. Dr. Steele had reserved the theme of treatment for another occasion. He believed in the old teaching of Gross as to the causative influence of struma. *Quietness* to the joint, no matter how obtained, was the point. Excision can ordinarily be avoided.—*Transactions of the Medical Association of the State of Missouri.*

MEDICAL NOTES.

Pilocarpine is said to be of distinct advantage in *Menière's disease*, if given early. It may also be used with success in aborting an attack of ague, if given at the very outset.

In giving *quinine*, it is well to combine with dilute hydrobromic acid; it renders the disagreeable cerebral effects much less, does not interfere with its action, and renders it more soluble, while it really adds to its efficacy.

Prof. Bartholow states, gelseminum will often do more good in *irritable bladder* than any other remedy. It is especially adapted to those women of hysterical type, troubled by irritability at the neck of the bladder, calling for constant urination.

Prof. Bartholow insists on the value of ipecacuanha in *dysentery*, especially of the puerperal state. The patient should, however, be in ordinary good condition, and the initial dose should be at least ten grains, but a scruple is better. Push the remedy, in spite of emesis, until the appearance of the characteristic ipecac. stools.

The following was prescribed, at a recent clinic for *epileptiform seizures*, due to some coarse lesion in the brain, occurring in a child 13 years old:—

℞—Hydrarg. chloridi corrosiv., . . gr. $\frac{1}{10}$
Ext. ergotæ (aquos), ... gr. ij.
Ft. pil.
Sig.—Morning and evening.

A case of obstinate *secondary syphilis* was treated as follows by Prof. Gross:—

℞—Hydrarg. chlor. corros., . . gr. $\frac{1}{10}$
Cocainæ, ... gr $\frac{1}{2}$
Aquæ (tepid), ... gtt. xv. M.
Sig.—Inject subcutaneously every other day.

Every night, on going to bed, resort to fumigation, using about ʒ ss calomel each sitting. Give quinine, iron, milk punch and best possible diet.

Prof. Da Costa presents the following as a strong point in the differential diagnosis of *chronic cerebral softening* and nervous exhaustion, or *neurasthenia*: In the latter, for a short period of, perhaps, a few minutes, the patient's mind will remain clear, and he is capable of mental effort, soon, however, to lapse again into his indifferent stupor. This alone, with the facts and history of the patient, will do much to establish a diagnosis when in doubt. In the latter, also, the headache is comparatively slight, while in the former it is a marked feature of the case.

For local applications in *gonorrheal epididymitis*, to be used after the more acute inflammatory process has subsided, Prof. Gross recommends the following:—

℞—Extract belladonnæ, . . ʒ ij.
Glycerini, ... f ʒ ss.
Aquæ, ... f ʒ j. M.
Sig.—Smear on inflamed part.

Or—

℞—Iodoformi, ... ʒ j.
Unguent. petrolati, ... ʒ iij. M.

For the *hemorrhage of fibroids* of the uterus Prof. Parvin advised, in their order, the following: Ergot, hydrastis canadensis, infusion of gossypium, hot water injections, dilatation of os uteri, astringent tampons to uterine cavity, incising endometrium over the tumor, scraping and curetting the mucous membrane, application of persulphate of iron, removal of tumor by vagina, by gastro-myotomy or gastro-hysterectomy, or anticipate the menopause by oöphorectomy; the last, however, is not always certain in its results.—*Coll. and Clin. Rec.*

THE ROCKY MOUNTAINS FOR RECREATION.—Why do so few of our young men go West for recreation? There is no land where nature recreates a man as she does there. You literally renew your youth. The climate is invigorating beyond words. For nervously exhausted men, for weary brains there is simply nothing to touch it. I have gone to the (Rocky) mountains thoroughly fagged out, unable to sleep well or eat well—life a burden and work an impending horror. In a fortnight I have been eating as many meals a day as I could prevail on my men to cook, and have been glad to fill up chance spaces in my internal economy with raw bacon. Yes, many a time after a monumental dinner, when we have gone into camp at five in the afternoon, have I eaten with relish that most lasting of all provisions, a piece of raw bacon, before turning in. It is true some

at first find the rarified atmosphere of the mountains trying to chest or heart, and many also complain of loss of appetite and loss of sleep; but if the man is sound in limb and lung, and if he does not over-do it or over-exert himself at the very beginning, but does take regular exercise, in ten days or so all life seems to awaken within him; he may not sleep so long or so heavily, for he has probably camped at an altitude of eight or nine thousand feet (excellent camping-places are sometimes found at a height of ten thousand feet or over), and he does not need as much sleep as if he were at sea-level He may puff and blow like a grampus as he faces a moderate hill; for he has scarcely realized yet that the atmosphere is so rare that he must boil his potatoes (if he is lucky enough to have any) for at least two hours, and he will do better if he boil them all the morning, and that he cannot by twenty-four hours' boiling make beans soft enough to feed to his horse. But he is growing younger, not older. The world of cark and care seems very far away, walled out by the heavy mists that roll up from the plains. What a fool he was to bother his soul as he did with a thousand useless things.—W. S. Rainsford, D.D., in *Scribner's Magazine*.

THIERSCH'S METHOD OF SKIN-GRAFTING.—Dr. Mynter reports this method, as proposed by Thiersch, of Leipzig, and as he has used it in the Buffalo (N.Y.) General Hospital, as follows:

The granulations are removed by the aid of a sharp spoon down to the underlying firmer tissues, and the rather copious bleeding stopped by pressure with compresses dipped in a solution of chloride of sodium, 0.6 per cent. The bleeding stops generally in the course of five to ten minutes, The flaps are now cut with a sharp razor, generally from the outer surface of the humerus, and then transferred directly on the shining surface of the wound, deprived of its granulations. The flaps are five to ten centimetres long, one or two centimetres broad, and contain, even if microscopically thin, the whole papillary layer and a part of the underlying stroma.

The flaps are completely unravelled by aid of two probes, and then firmly pressed against the surface by aid of a soft sponge dipped in the same solution of chloride of sodium. The transplanted wound is covered with a piece of protective dipped in the salt solution and an antiseptic bandage applied over it, which is not disturbed for eight days; the superficial wounds produced by the razor healing in eight days under iodoform bandages. If the wound be completely covered with flaps it will be healed in about eight days; but in very large ulcerations especially after severe burns, it is almost impossible to get skin enough from the patient himself, and one will then after eight days have the opportunity of seeing not only the growth of the flaps themselves, but also the stimulating effect on the border of the wound, which is quite wonderful to observe. It is astonishing to see how quickly the citcatrization progresses in those large ulcerations from the border and the numerous island formed by the new flaps.—*Buffalo Med. Press.*

HYDROCELE IN THE FEMALE.—The *New York Medical Journal* has recently published a report of three cases of this rare condition, read before the New York Clinical Society by Dr. Wright. He notes that hydrocele in women has been ignored by most surgical writers till within the last few years; not forty cases have been reported. It is liable to be mistaken for irreducible hernia, and, when inflamed, for strangulated hernia. In doubtful cases the diagnosis may easily be settled by the hypodermic needle. In the first case there was a fluctuating tumor, the size of a pigeon's egg, just above the inner half of Poupart's ligament, on the left side; it had existed for several years; there was no impulse and it was irreducible. It was aspirated twice, straw-colored serum being withdrawn. On the second occasion, the inside of the sac was scarified with the point of the the needle; the sac inflamed and was completely obliterated six months later. The patient had borne four children. In the second case there was a soft fluctuating tumor the size of a pigeon's egg in the right inguinal region, just above the middle of Poupart's ligament; it seemed to consist of a large superficial and a smaller and deeper sac. There was no impulse, and the tumor was reported as irreducible, but the patient had noticed it present occasionally ever since the birth of her first child, and she used to push it back with her hand. Three weeks before examination, while lifting a child, the tumor described by Dr. Wright appeared and she could not reduce it. Colic, flatulence and constipation came on, and the tumor was tender. On November 15th, 1883, after ice had been applied to the swelling, it was aspirated. The two cysts required a separate application of the needle, clear yellow serum was withdrawn and the small sac had to be aspirated again three days later. The tumors had never refilled when the patient was seen three years later. The third case was in the practice of Dr. Quimby; the patient was a single woman, aged forty-two. A fluctuating tumor, about as large as the last joint of the thumb, was found just above and parallel to Poupart's ligament on the right side. Six or eight years before the patient had, it appeared, been operated upon for hernia of the same side. The tumor had existed "for some time," and caused a dragging pain. The patient used to reduce it herself. It was aspirated seven times in nine days and then ceased to fill any more.—*British Med. Journal.*

TREATMENT OF FRACTURED OLECRANON.—Reginald Horsley, M.B., C.M.Edin., writes: During my term as house-surgeon in the Royal Infirmary, Edinburgh, Prof. Annandale operated in three cases for united fracture of the olecranon after ordinary treatment had been tried and failed. The operation was thus performed under strict antiseptic precautions, the warm douche of corrosive sublimate, 1 in 2,000 being used. A straight incision, similar to that for excision of the elbow-joint, having been made, the fragment of the process was found, scraped, and sutured to the end of the ulna, which was also freshened. Strong catgut was used in the case of a child, silver wire in the other two cases. After operation the limb was laid on a straight, padded, anterior splint, and fixed in position by bandages. In this position it was left undisturbed for three weeks, when rubbing and partial movement was begun, the arm being each day replaced upon the splint. A fortnight later movement was voluntarily performed with sufficient ease, the splint was removed and the patients left the Infirmary. When they returned a little later to "show themselves," movement was perfect and the joint free from stiffness. In one case re-fracture occurred, and the operation was repeated. Owing probably to greater disorganization of the parts, the wound suppurated after the operation. It was, therefore, dressed daily, the arm being carefuly supported meanwhile, and bandaged to the splint during the intervals. The final result of the case was as stated. I hope this rough statement will be of use to "A Member."—*British Med. Journal.*

CORROSIVE SUBLIMATE IN THE TREATMENT OF DIPHTHERIA.—Stumpf has used the following prescription, with excellent results:

℞.—Sublimat.,	. . . . .	gr. 3.
Aq. destil.,	. . . . .	℥ 5¼
Aq. menth.,	. . . . .	℥ 1

The cavity of the throat was sprayed with this every three hours.

Thirty-one cases were so treated, with but one death. No ill effects were observed from the treatment excepting salivation, which was not severe, and persisted only three or four days.

The temperature fell under the treatment.

As to the amount of fluid which could be safely used, one drachm of the fluid is enough for one application. When a solution of 1 to 2,000 was used fifty inhalations would give a maximum dose, of one and a half grains of sublimate for an adult.

In children older than six years, 1 to 1,000 solution was used; for children between two and six years, 1 to 2,000; in children under two years of age, 1 to 4,000 or 1 to 3,000.

Inhalations with a hand-spray are best given for the first five times, hourly; then for five times ever two hours; then every three hours until the symptoms are mitigated.—*Therapeutische Monatshifte.*

HISTORICAL SKETCH OF ST. BARTHOLOMEW'S HOSPITAL.—In 1102 a certain Master Rahere, who had followed the profitable, but not wholly respectable, trade of minstrel during the reign of William Rufus, and had attracted the favorable notice of William's successor, Henry I., found himself in possession of what was for those days a tolerably large sum of money. This money he resolved to use—like many other gay gentlemen of his time—in atoning by some good work for the little irregularities of his earlier years. Accordingly he founded a priory in Smithfield, the ancient chapel of which still exists as the parish Church of St. Bartholomew the Less. Nor did his zeal stop there. Hardly was the priory built when its founder obtained from King Henry the grant of "a certayne peece of waste lande nigh thereunto," upon which he built and endowed "to the honor and prayse of the blessed Sanct Bartholomew, a hospital for a master, brethren and systers and for the good entertaynement of all poor folk and such as bene sick of divers diseases, until such time as they be whole and sound agayne." Thus established in the heart of London, the new hospital did abundance of good work, and was manfully helped in doing it by the honest burghers of the city. In process of time the priory was incorporated with it, and in 1547 the boy king, Edward VI., made over the entire building to the citizens of London as a public hospital, in which capacity it probably found plenty to do in an age when every man had a weapon and what Paddy would call "a dacent notion of usin' it," and when street fights, with three or four lives lost on either side, were matters of almost daily occurrence. The great fire of 1666, which swept away so many priceless monuments of London's past, reverenced the famous hospital, but its ancient walls gradually crumbled before the slower assaults of time, and in 1729 the whole edifice was rebuilt in the modern form, which it still retains. In 1782 the management of St. Bartholomew's was united with that of Bethlehem, St. Thomas's, Christ's Hospital and Bridewell, and the group thus formed recived the title of "The Five Royal Hospitals," the superintendance of which was intrusted to the "pious care of the Lord Mayor of London."—*N. Y. Times.*

TALISMANIC BELTS.—About two years ago a physician of Saint-Germain, having been called to a woman in the last stages of consumption, found her body tightly girt with a belt or band made of cords (the *ceinture de Saint-François*). These *ceintures* are believed by the superstitious to have the power to preserve those who wear them from hell. A *ceinture bénie*, supposed to facilitate

parturition, is given out from one of the principal convent schools in Brittany. It bears the painted inscription, "*Notre-Dame de Délivrance, protégez-nous.*" Before it is sent out, great care is taken to touch it with a fragment of the *ceinture* that is reputed to have belonged to the Holy Virgin, the authenticity of which piece of material is guaranteed by numerous parchments.—*N. Y. Medical Journal.*

AN INCIDENT AT AN ANTIVIVISECTION MEETING. The Paris correspondent of the *New York Times* tells of an amusing occurrence at a recent meeting of an antivivisection society held in that city. One of the speakers, a woman, having inveighed particularly against medical students, was asked by a student, who happened to be present, why she wore a bird in her hat—"a poor little robin" that "had been slaughtered simply to supply a vain woman with a foolish ornament." The account goes on to say that the lady was cut short in her eloquence, and could only stammer forth the poor protest that she hadn't done the bloody deed herself.—*N. Y. Med. Journal.*

SUCCUS ALTERANS IN RHEUMATISM AND SYPHILIS.—We are reliably informed that the preparation Succus Alterans (McDade) is becoming a very popular remedy with the profession, and being very extensively prescribed in general practice as an alterative tonic, aside from its use in syphilitic diseases. The good results from its use in treatment of rheumatism, of chronic character especially, is worthy of consideration. The remedy is certainly growing in favor, and as no great claims have ever been made for it, but simply placed upon its own merit, we think it could possess no higher recommendation.—*Indiana Medical Journal.*

"ODE TO BACILLUS."

Oh, powerful Bacillus,
With wonder how you fill us,
Every day!
While medical detectives,
With powerful objectives,
Watch you play;

In epidemic glanders,
In certain forms of "janders,"
You delight.
E'en to the fifteenth culture,
Voracious as a vulture,
You can bite.

Koch and Spina growing splenic,
O'er your powerful septicemic,
Rant and roar.
Schmidt says, when pus grows rotten,
Only then you are begotten,
Not before.

In lung tuberculosis,
In skin necrobioisis,
How you squirm.
While gonorrheal burning
Is caused by sporules turning,
Some affirm.

'Tis said a crypto-coccus
Will very often choke us,
If we fail
To drop the acid phenic—
Which is antisepticemic—
On its tail.

Friar says in fever, yellow,
He finds a little fellow
Breeding pest.
Gregg swears, do what he will he
Sees nothing but fibrilli
By his test.

In atmosphere nephritic,
In poison diphtheritic,
How you revel!
In earth and air and ocean,
You keep disease in motion
Like a devil.

But, Bacillus, O, Bacillus,
You try in vain to kill us,
Yet we thrive.
And though you try to blind us,
Yet next year I hope you'll find us
Quite alive.

—*Journal of Reconstructives.*

WASHINGTON—THE MEDICAL CONGRESS.

Oh, city of broad streets and ample ways,
Whose stately avenues attract the eye;
Not here on frowning battlements we gaze,
Awing with martial front the passer by;
Yet here, too, has been heard the cry, "To arms!"
And hearts have wildly throbbed at war's alarms!

What if the din of Commerce pass thee by?
Fair city, with thy Founder's deathless name!
While lifts thy Capitol its dome on high,
What rival city shall eclipse thy fame!
Mistress of States—of central pow'r the seat,
Where all a mighty nation's pulses beat!

And now the doctors of the world are here,
Not arm'd with lancets, as to meet a foe,
But each presenting in his chosen sphere,
A fragment of the truth he best can show;
Gleanings from distant fields with toil and care,
Or happy inspirations—all too rare!

Or trotting out some hobby, with slow pace,
(I had one of my own, and ought to know),
Or, curious, studying the foreign face,
Or, musing, idly sauntering to and fro;
Or starting from brief sleep with vivid sleep,
Born of the garden party and ice cream!

Thanks, hospitable friends, for kindness shown,
Too good to last, these pleasant busy days,
The winged hours have all too quickly flown,
And home we hasten by our diff'rent ways:
Meeting as strangers, parting now as friends,
Adieu fair city! for the Congress ends.

Lindsay, Ont. THOMAS W. POOLE, M.D.

THE CANADA LANCET.

A Monthly Journal of Medical and Surgical Science Criticism and News.

☞ *Communications solicited on all Medical and Scientific subjects, and also Reports of Cases occurring in practice. Address,* DR. J. L. DAVISON, 12 Charles St., Toronto.

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AGENTS.—DAWSON BROS., Montreal; J. & A. MCMILLAN, St. John, N.B.; GEO. STREET & Co., 30 Cornhill, London, Eng.; M. H. MAHLER, 23 Rue Richer, Paris.

TORONTO, NOVEMBER, 1887.

The LANCET *has the largest circulation of any Medical Journal in Canada.*

MEDICAL SPECIALISTS.

The question of medical specialism is one of increasing interest. The range of medical knowledge and practice has now become so wide as to have outgrown individual mental capacity, however generously endowed by nature, or cultivated by education and experience. No man can be, at the same time, the foremost physician and foremost surgeon of the day. No one can be the first oculist of his time, and also the first gynecologist. The fact that the field is too extensive for individual careful cultivation is patent to all. The admission of this opens the door to specialists, and the question resolves itself into the possibility of a man's ability to do a special work more successfully than can one who attempts to be more or less perfect in all. The day for sneering at the specialist is gone by; his advent is past, and his stay is assured, therefore, the most rational course to adopt is to define his qualifications and sphere of action, and allot him his true status as a necessary member of the profession.

The practice of specialties has been brought into much disrepute by quacks and humbugs. Recognizing the reasonableness of specialism, and the readiness of the public to attribute extraordinary powers to the specialist, many persons have not been slow to plume themselves in the garb of the specialist without possessing the first qualification for the work. The true specialist is no embryonic product, but a full-grown man, a giant in fact; for unless he be far in advance of his fellows in his chosen field, he is no specialist. Medical specialism is unique, and differs widely from specialism in other professions and callings. The medical specialist must needs qualify himself by a careful study of the whole range of medical science. The human mechanism is not made up of detached pieces fitted together like the wheels of a clock, but is rather an inseparable mysterious whole, each part in direct relation, communication and sympathy with all the other parts. It naturally follows, therefore, that the specialist must be acquainted, not with a part merely, but with the whole organization. Not only so, but he must also be acquainted with the pathological conditions liable to affect the various parts, and the symptoms, local and general, to which they give rise. This involves a vast amount of preparatory labor. The competent specialist, however, is not yet equipped for his work. Specialism can never have a spontaneous evolution. It can never properly exist, except as the outcome of general experience in the diagnosis and treatment of diseases. When a general practitioner finds that he has special tastes and adaptations, let him cultivate these, and if successful beyond his neighbors, his right to be regarded as a specialist will be recognized and undisputed.

The following cases illustrate how important it is to the specialist to be well grounded in general practice. A leading physician went to New York to obtain relief from misty and cloudy vision—"the atmosphere appearing as though a smouldering fire were near." The gentleman first consulted was not a specialist, and apparently, without inquiring into the case, took him to a distinguished oculist. The patient was advised to go home and confine himself in a darkened room, take mercury and live on low diet. He gradually grew worse. His urine was at last examined and revealed albumen and tube casts. He died in less than two months. Nephritic amaurosis was mistaken by the specialist for acute retinal congestion. Another medical man suffered similarly. A noted oculist assured him that he had post-polar cataract. He was advised to postpone operation until vision had become much more imperfect, as it most certainly would. This gentleman gave his eyes needed rest, lived more generously, and exercised in the open air. A few months of this treatment removed his cataract, and completely restored his sight.

Here eye-strain and imperfect nutrition were mistaken for cataract by a noted specialist. Still another medical man, run down by fever and other causes, suffered nervous troubles, for which he consulted a leading neuro-pathologist. The thermo-cautery was applied to his occiput for congestion of the brain; he was ordered mercury and iodide of potassium before meals, and ergot and bromide of sodium after meals. His condition did not improve, and, growing impatient, he quit medicine and took to the country where his troubles speedily vanished. The specialist mistook blood poverty for grave cerebral disease. The following case is more remarkable for its negative side, as regards the specialist consulted. A medical gentleman of our acquaintance, whose wife had suffered from uterine troubles for some months, decided to consult one of the most distinguished gynecologists on this continent. The lady had been troubled with irregular and excessive menstruation, unhealthy discharges, etc. The cervix was greatly enlarged and nodulated. The uterus also was firm and enlarged. Malignant disease was apprehended. The specialist made a careful examination. He was unable to make a definite diagnosis, but leaned to the belief that the disease was non-malignant. He could not say whether pregnancy existed or not. Four months after the lady was delivered of a healthy child, and the distortion of the cervix was afterwards ascertained to be due to laceration.

These instances of error are not referred to as a bill of indictment against specialism; on the contrary, they offer a strong plea in its favor. If the well trained and experienced specialist is beaten on his own chosen ground, what must be the diagnostic record of the man who strives to cover the whole ground? We also learn from the above cases that specialism has its own peculiar dangers. Moving within a given circle, or along a certain groove is not unattended with danger. In obedience to a well-known mental law, the tendency is to widen the circle and embrace within its circumference matter foreign to it. That the greatest amount of good may be done to the greatest number, it is manifestly in the interest of suffering humanity that specialism should have a leading place, and that specialists should rise to a higher plane in the profession than they have hitherto done.

THE USE OF ALCOHOL IN DIPHTHERIA.

The rule usually given by lecturers in medicine as to the use of alcohol in various diseases is, that its action should be watched, and that if the pulse is found to become slower and fuller, the temperature lower and the tongue more moist, continue to give it; but if on the contrary the pulse and temperature are not favorably affected, or the tongue shows no sign of an improvement in the condition of the mucous membrane of the alimentary tract, it should be discontinued. This is a good general rule, and one which most medical men follow. In one dread disease, however, namely, diphtheria, it is to be doubted whether it is ever contra-indicated. Here we have the system profoundly affected by a specific poison, and antiseptic treatment should be followed by the best results. As to any specific antiseptic for the germs of diphtheria, it yet remains to be discovered, as is witnessed by the countless methods of treatment we see vaunted by various writers in all countries. Since the introduction of the potash treatment some five and twenty years ago, nearly every important drug in the Pharmacopœia has been used, and with alleged success, for the amelioration of the symptoms and cure of the disease, and the results obtained, as shown by statistics, vary greatly, owing no doubt to the varying circumstances of environment, the virulence of the epidemic, the previous condition of the patient, etc. It is doubtful whether any drug, save tinct. fer. mur., receives the same recognition in the treatment of diphtheria that alcohol does. It is an antiseptic of high value, as well as a general stimulant, and is, therefore, indicated both on account of its specific action upon the germs of the disease, which have found their way into the blood, and for the purpose of tiding the patient over a very difficult place. Some of the oldest, most thoughful and most successful of our practitioners believe, that the alcohol treatment alone would be perhaps the best and safest which can be undertaken. Under its influence the patient improves as to the worst symptoms, the membrane gradually disappears, the temperature is lowered, the pulse is slowed, and a sense of well-being is given to the patient, which places him in the best possible position for recovery.

But to get the full benefit of this drug, it must

be given in *large quantities.* The best method of administering it is to prescribe small and repeated doses, to be given by the clock. It is best given diluted with water, and to the amount which even a child of two or three years will take with great advantage, is astonishing. Many give it in milk, by which means nourishment is supplied at the same time, a matter of great importance; but whatever method is adopted, the great point to be remembered is to give it freely. Dr. Richardson, the late president of the Ontario Medical Association, states that he has known a child of two years suffering with diphtheria, take a bottle of port wine in 48 hours with the happiest results, and that he has the fullest confidence in the action of alcohol, not only in diphtheria, but in all its congeners, depending upon the presence of specific germs in the blood. Potter recommends it as a local antiseptic, diluted with equal parts of water, and applied as a spray every half hour. The editor of the N. Y. *Medical Times* says:—"Alcohol, we make bold to say, is the prince of antiseptics, and the most perfect and reliable medicine of which we have any knowledge in diphtheria. Diluted with equal parts of water, and given in small and repeated doses, the malignant symptoms of this most fatal malady soon disappear and convalescence becomes assured." It is said to be an excellent prophylactic, used as a gargle three or four times a day.

THE EARLY REMOVAL OF TUMORS.

Few individuals relish the idea of having a new growth removed as soon as discovered, and when it is, perhaps, causing no pain or inconvenience beyond some slight mental discomfort. While many persons, and especially women, are ever on the look-out for cancer, and frequently imagine their days are numbered on the discovery of a lump in the breast, or lip, yet they will, in the majority of cases, postpone operative procedure as long as possible, and frequently, in case the neoplasm is malignant, till such procedure can not be hoped to afford more than a short margin of life to the unfortunate sufferer. So long as life is bearable they will press the cause of all their woes to their bosom or lips, as the case may be, notwithstanding the advice of friends and medical attendants.

Perhaps the profession does not sufficiently insist on the immediate removal of all new growths that are found in those under their care. Surely such a rule could be only productive of good. It is not always possible to make a positive diagnosis as to the malignant or benign character of a tumor, but what does that matter? All tumors are unsightly, they are frequently obstructive to the ordinary movements and occupations of life, and we may say are always the cause of more or less mental disturbance and worry. As was remarked by a young woman who had a benign tumor removed from her breast, she "did not draw a breath of pleasure for months" before its removal. In any case, then, the early removal of new growths seems to be indicated, but especially will the patient be benefited by such action when malignant disease has been established, for it is certain that, in many cases, the early removal of even malignant growths is followed by years of non-recurrence; perfect health, and comparative mental ease being enjoyed during those years, a happy consummation not to be hoped for if the remedial measure be postponed till the latest possible date.

RASH FROM THE ADMINISTRATION OF SALICYLATE OF SODIUM.

This remedy is among those which produce cutaneous disturbance. Twenty grain doses of the drug every six hours, administered for acute rheumatism, produced, after a few days, a petechial eruption accompanied by distressing itching. The neck, breast and arms suffered most, but no part of the body, except the scalp, was entirely free from it. Neither the conjunctivæ nor throat were affected. Upon cessation of the remedy, the rash and itching disappeared. There was some shedding of the skin in flakes. Morrow mentions cases of erythematous, urticarial, petechial and edematous condition of the skin from the use of the soda salt, as also from the salicylic acid. He says the erythematous eruption bears a striking resemblance to that of antipyrine, belladonna, chloral, etc., and he says the pyrexia, sweating, edema, with which the erythema is usually accompanied, are vaso-motor phenomena, experiments upon animals having shown that the salicylates act "primarily and principally upon the vaso-motor centres." In

the case alluded to above, carbolic oil (1 in 30) relieved, to a great extent, the intolerable irritation and itching which was the most disagreeable manifestation of the action of the drug.

THE PUPIL IN CHLOROFORM ANESTHESIA.—In an exhaustive article in the *British Med. Journal*, on the above subject, Dr. Henry J. Neilson, has formulated his conclusions as follows:

1. The effects produced by chloroform on the pupil are at first dilatation, varying in degree and duration, then contraction as the narcosis becomes profound, and dilatation again as the sensibility is returning. If the administration be still continued with the pupil strongly contracted and motionless, the pupil will also dilate, but in this case more suddenly and completely, and will be coincident with a state from which it will be difficult or impossible to resuscitate the patient. This latter is the dilatation of asphyxia. 2. So long as the pupil dilates in response to excitation by pinching, etc., the patient is not sufficiently narcotized for the operation to be proceeded with, unless the operation is slight and does not require complete anesthesia. 3. When the pupil becomes strongly contracted and immobile, no more chloroform should be given until it begins to dilate again. If, then, further anesthesia be required, a little more chloroform should be given until the pupil again contracts. 4. The occurrence of sickness causes dilatation similar to, but more sudden than that which happens when sensibility is returning, and the efforts of vomiting have the effect of arousing the patient. The watching of the respiration and the pulse, which are doubtless the best indications of the effect produced on the individual by chloroform, and, therefore, of vital importance for safe administration, does not, in many cases, furnish evidence of the state of sensibility, in regard to which he regards the state of the pupil to be of the greatest assistance. The sign usually relied on, namely the insensibility of the conjunctiva, is by no means a satisfactory test, for in many cases conjunctival anesthesia is established long before the patient can be said to be under the influence of the drug. By observing the pupil, the administrator can tell at once when the effect of the drug is on the wane, because the pupil then begins to dilate slowly. Noticing this he can, by the administration of a few drops more chloroform until the pupil again contracts, prevent the occurrence of struggling and interruption of the operation. In this way he can keep the patient in a state most suitable for the satisfactory performance of the operation without narcotizing him more than is necessary.

THE MUTUAL RELATIONS BETWEEN PHYSICIAN AND PHARMACIST.—The *Pharmaceutical Era*, of Detroit, says that the importance of the above to both professions has led them to offer a prize of *fifty dollars* in gold for the best essay on the subject. The essay should endeavor to show how the ideal harmonious relations between physicians and pharmacists, both as individuals and as represented in their respective organizations, may be best realized, and all competitors must be governed by the following conditions:—

1. Anyone interested in the subject may compete. 2. The essay must not exceed 2,000 words in length and must reach us previous to January 1st, 1888. 3. The MSS. must be free from the author's name, address, or other marks of identification, and we recommend typewriter copy wherever practicable. 4. The author's name and address must be enclosed with the manuscript on separate paper. 5. All the essays submitted in competition for the prize are to be the property of the *Pharmaceutical Era*, and to be published or not at the discretion of the editor, but names of authors will be suppressed if requested. 6. A committee consisting of five representative men chosen from the medical and pharmaceutical professions, to whom the essays shall be submitted anonymously, shall award the prize, and the names of the committee will be announced with their decision. Address, D. O. Haynes & Co., box 583 Detroit, Mich.

TREATMENT OF TYPHOID BY COLD WATER.—Dr. Austin Flint's conclusions in this matter are borne out, says Dr. Allen (*Med. Times*), by the results in 13 cases which have occurred in his practice. They are as follows:—1. That by the use of cold water externally in cases of typhoid fever the temperature of the body may, after a variable time of its continuance, be reduced to 102°, or even lower. 2. After a period, varying very much in different cases, and also at different times in the

same case, the temperature rises as high or higher than before the reduction. 3. Upon repeating the employment of cold as often as the axillary temperature exceeds 103°, the number of repetitions necessary is extremely variable in different cases. 4. The sponge-bath, with the wet sheet and sprinkling, may be employed to the exclusion of the bath-tub in the treatment of typhoid fever. 5. These modes of employing cold water may be continued sufficiently long for the reduction of the temperature to 102°, or even lower, and repeated as often as may be required, without fear or injury. And the study of these cases furnishes no ground for supposing that a liability to complications or accidents is thereby increased; and that the reduction of the temperature by these modes, as often as it rises above 103°, improves the condition of the patient. 6. The results of the analysis of those cases where cold has been faithfully used, afford us encouragement to employ it with the expectation of diminishing the severity of the disease and its dangers to life.

MIND CURE.—In referring to a recent article by Rev. Dr. Buckley on this subject, the Boston *Med. and Surg. Jour.* says:

Perhaps the cream of the whole article is the following, which constitutes a portion of a prayer, printed *verbatim*, capitals and all, from a text-book on a "Mind-Cure," issued by the President of the "New York School of Primitive and Practical Christian Science," who states that his school will be free from "eccentricity, pretension and fanaticism:"

"'PRAYER FOR A DYSPEPTIC.

"'Holy Reality! We BELIEVE in thee that thou art EVERYWHERE present. We *really* believe it. Blessed Reality, we do not pretend to believe, think we believe, believe that we believe. WE BELIEVE. Believing that Thou art everywhere present, we believe that Thou art in this patient's stomach, in every fibre, in every cell, in every atom; that Thou art the sole, only Reality of that stomach. Heavenly, Holy Reality, we *will* not try to be such hypocrites and infidels as every day of our lives to affirm our faith in Thee, and then immediately begin to tell how sick we are, forgetting that Thou art everything, and that Thou art not sick, and therefore, that nothing in this Universe was ever sick, is now sick, or can be sick. Forgive us our sins in that we have this day talked about our backaches, that we have told our neighbors that our food hurts us, that we mentioned to a visitor that there was a lump in our stomach, that we wasted our valuable time, which should have been spent in Thy service, in worrying for fear that our stomach should grow worse, in that we have disobeyed Thy blessed law in thinking that some kind of medicine would help us. . . . Lord help us to believe that ALL Evil is utterly unreal; that it is silly to be sick, absurd to be ailing, wicked to be wailing, atheism and denial of God to say "I am sick." Help us to stoutly affirm with our hand in Your hand, with our eyes fixed on Thee, that we have no dyspepsia, that we never had Dyspepsia, that we will never have Dyspepsia, that there is no such thing, that there never was any such thing, that there never will be any such thing. Amen.'"

HOW SCARLET FEVER COMES TO MICHIGAN.—The Michigan State Board of Health has received information from Dr. Sifton, Health Officer of Sutton's Bay township, which illustrates, in a striking way, how this country gets contagious diseases from the old countries. October 2, 1887, a family arrived in Sutton's Bay, Leelanaw county, direct from Norway. The family came over in the *S. S. Ohio*, of the Inman line, reaching New York September 30. Scarlet fever was on board the steamer during the passage, one child dying before the landing, and "several more were sick in the same way." One child of this family was taken sick with scarlet fever the day after reaching New York. The family, however, proceeded over the New York Central and the Lake Shore and Michigan Southern, to Michigan; then over the Detroit, Grand Haven and Milwaukee, and the Grand Rapids and Indiana, to Traverse City; then to Sutton's Bay. Another child of the family has since come down with the disease. The family had a certificate, signed by the surgeon of the steamer, that they had been protected by vaccination against small-pox; so they passed without detention the quarantine authorities at the port of New York, after they had been exposed to a contagious disease which causes more deaths by far in this country than small-pox.

ANOTHER NEW LOCAL ANESTHETIC.—Since cocaine made such a noise, drunime has been put in the market, but this latter has not filled the bill. Now a new remedy, an alkaloid named *stenocarpine*, is before the profession. Dr. Claiborne, of New York, has prepared it from the leaves of a tree, the exact place of which is not yet known, but which has a close resemblance to *acacia stenocarpia*. This alkaloid is said to possess powerful anesthetic

properties, rivalling cocaine in its importance in ophthalmic practice. From two to four drops of a 2% solution introduced into the conjunctival sac, are sufficient to produce anesthesia, rendering various otherwise painful operations on the eye perfectly painless. The anesthesia is lasting, from fifteen to twenty minutes elapsing before sensation returned. It is also a mydriatic, and lessens intra-ocular tension.

How Some of the World's Great ones see us. — In dedicating "Underwoods" to his uncle, Thos. Bodley Scott, Robt. Louis Stevinson thus pays homage to the medical profession:

"There are men and classes of men that stand above the common herd: the soldier, the sailor and the shepherd not unfrequently; the artist rarely; rarelier still, the clergyman; the physician almost as a rule. He is the flower (such as it is) of our civilization and when that stage of man is done with and only remembered to be marvelled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race. Generosity he has, such as is possible to those who practice an art, never to those you drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarassments; and what are more important, Heruclean cheerfulness and courage. So it is that he brings air and cheer into a sick room, and often enough, though not so often as he wishes, brings healing."

A Sanitary Convention, under the auspices of the State Board of Health, will be held in Albion, Mich., on Tuesday and Wednesday, Dec. 6th and 7th. There will be sessions the first day at 3 p.m., and 7.30 p.m.; on the second day at 9.30 a. m., 2 p.m., and 7.30 p.m., local time. At each session of the convention there will be addresses or papers on subjects of general interest pertaining to public health, each paper to be followed by a discussion of the subject treated. The admission to all sessions of this convention will be free, and the ladies are cordially and especially invited. The invitation is especially extended to health officers to be present and take part in the discussions.

The Farny Suture.—We beg to call attention to the advertisement of this article, by Reichardt & Co., of New York. From samples sent to our office we should say it will prove of the greatest practical value, not only in cases of ordinary flesh wounds, but also in many of the minor surgical operations. It will be found of great service as an adjunct to relieve the strain on sutures, as well as a very handy and effectual means of exerting pressure upon any portion of the body where such may be necessary. From the sutures being made in either straight or rounded pieces they may be applied to all kinds of wounds, no matter how irregular. Altogether, we think it will prove of great service to the general medical and surgical practitioner.

Lime in the Treatment of Cancer.—Dr. P. Hood, writing to the *Lancet*, says, that as the lime recommended for the cure of cancer, that of oyster shells, is not always obtainable, he would suggest as a substitute, the oyster preparation of the London Pharmacopeia, in doses of six grains twice a day, in "a wine glass full of milk or other fluid, such as tea." For an ointment to be applied to an open cancer, he recommends creta. prep. ʒiij, ol. amygdal. ʒij, the lime to be well mixed with the oil, and then added to two ounces of lanolin. This does not usually have a disagreeable odor, but if it does, a few drops of essence of bergamot may be added. It is to be applied on lint twice a day.

Warner's Safe Cure.—The *Druggist* gives the following as the formula for Warner's Safe Cure:

℞.	Powdered Saltpetre, . .	gr. 320.
	Liverwort, ...	ʒ i.
	Water, ...	q. s.
	Alcohol, ...	ʒ 2.
	Glycerine	ʒ 1½.
	Ess. Wintergreen . . .	gtt. 40.

Infuse the liverwort with a pint of hot water for two hours; strain and filter. Dissolve the nitre in this liquid; when cold add the other ingredients and water to make up to one pint.

Notched Teeth.—Jonathan Hutchinson calls attention *(Brit. Med. Jour.)* to a form of notched teeth, not due to syphilis. He says: There is a notching of the upper incisor teeth, affecting the two central ones of the permanent set, which is often confounded with that due to syphilis, although having no connection with it. The points of distinction are that the non-syphilitic tooth is wide at its free edge, and is hard and craggy, while that from syphilis is pointed and worn down. A

case is mentioned where such notched teeth were hereditary in a family, the effects occurring in pairs, and never affecting the whole row.

SULPHUR IN CHLOROSIS.—Schutz and Strübing have drawn the following conclusions (*Med. Chron.*) as to the treatment of chlorosis by sulphur:—1. In cases of simple chlorosis, in which iron has no effect, the general condition is markedly improved by sulphur. 2. After sulphur has been given for some time, treatment with iron could be started and continued successfully. 3. Sulphur is not borne in cases of chlorosis complicated with catarrhal, inflammatory conditions of the digestive tract.

℞—Sulph. depur., ... 150 grains.
Sacch. lact., ... 300 grains.
M. F. pulv. Half a teaspoonful three times daily.

CARMINATIVE FOR COLIC IN INFANTS.—Dr. McGee recommends the following (*Med. Record.*):

℞.—Magnes. carb., ... ℈ij.
Ol. aniseed, ... ♏j.
Tr. cardimomi,
Tr. asafætide, ... ♏ij.
Glycerinæ, ... ʒij.
Aquæ menthe viridis,
Aquæ Camphoræ, . . . ad fl. ℥ij.
M. Sig.—Teaspoonful every half-hour till child is comfortable.

This does not preclude warm baths, hot cloths on abdomen, relief of constipation if present, massage, etc., *but it does* all opiates and soothing syrups.

THE ONTARIO MEDICAL LIBRARY ASSOCIATION.—The secretary of the Ontario Medical Library Association has received a letter from Dr. Hodge, of Mitchell, Ont., donating to the library the entire collection of medical works of the late Dr. John Rolph; as also from Dr. H. C. Wood, of Philadelphia, making a large number of donations from his private library. It is gratifying to know that the interest in the scheme is general throughout this Province, and it is to be hoped the gifts so far offered, are but an earnest of many more to follow.

PNEUMONIA.—Dr. Moore, of Dublin, concluded his paper before the late International Congress in these words: "The day is seemingly not far distant when we shall speak of pneumonic fever in precisely the same way as we use the term enteric fever at present; that is, to signify a zymotic or specific blood disease, manifesting itself after the lapse of a certain time—the period of incubation—by physical phenomena, objective and subjective, connected in this instance with the lungs."

POT. IODID. IN ASTHMA.—Dr. Cozenave de la Roche says (*British Med. Jour.*) that the above remedy is very efficient in asthma if given in cow's milk. His formula is *aq. dest.* 150 grammes, *pot. iod.* 8 grammes. A tablespoonful in a cup of milk twice a day.

BROMO-SODA.—W. C. Deane, M. D., 727 Lexington Avenue, N. Y., says, during my voyage on the steamer *Arizona* I cured at least twenty-five cases of sea-sickness by giving Warner & Co.'s preparation of "Bromo Soda" in large doses. I heartily commend it, as from personal experience it afforded great relief when other remedies failed.

SACCHARINE.—A New York druggist announces (*Med. Rec.*) that he has just received an invoice of anhydroorthosulphamidobenzoic acid (C_6H_4 ($^{Co}_{So_2}$) N H), or saccharine, one grain of which is sufficient to sweeten a cup of tea or coffee.

DOSE OF ANTIPYRINE.—Dr. Ostrander, of Lansing, Mich., writes (*Med. Rec.*) that he has always succeeded in getting the desired result with five grain doses of antipyrine, repeated each hour for three hours. He believes it useful in migraine, and to relieve the pain of rheumatism.

DR. JOHN WILLIAMS has such faith in antiseptic treatment, says Junius C. Hoag, that he would not hesitate to attend a patient in labor, although he had, on the same day, visited another patient suffering from puerperal fever.

PROFESSOR BARTHOLOW recommends a three-grain pill of iodoform three times a day, for the flushings and other morbid sensations occurring about the climacteric.

The London (Eng.) School of Medicine for women has sixty students.

RICHARD QUAIN, the great anatomist, died recently, aged 71 years.

Books and Pamphlets.

PATHOLOGY AND TREATMENT OF GONORRHEA AND SPERMATORRHEA. By J. L. Milton, Senior Surgeon to St.John's Hospital for Diseases of the Skin, London. Octavo, 484 pages. Illustrated. Price, bound in extra muslin, $4.00. New York: William Wood & Company. Toronto: Carveth & Co.

This work is intended for the practitioner and not for the college student, as it takes for granted an acquaintance with the elements of the subject.

Some of the statements contained in it are pretty sweeping, and will be read with some surprise by the majority of medical men. As an example, we may quote the following: "In men who have reached the age of three or four-and-twenty, anything beyond one (nocturnal) emission a month, requires attention." Besides the pathology and treatment of Gonorrhea and Spermatorrhea he includes, in the present work, chapters on the pathology and treatment of Impotence. He is somewhat iconoclastic, but gives as his reason the fact that most of the remedies vaunted as curative in Gonorrhea Spermatorrhea and Impotence have not fulfilled the expectations which the first accounts of them were calculated to raise.

He says, "Nothing has been recommended by myself in this work but what has stood the brunt, not merely of experience, for that I rate rather low, but that of special observation."

The book is, we believe, invaluable as a consultation book, filled with sound doctrines, and what is of more importance to the busy, general practitioner, practical and concise directions as to treatment. The publishers have done their part of the work well.

A MANUAL OF THE PHYSICAL DIAGNOSIS OF THORACIC DISEASES. By E. Darwin Hudson, jr., A.M., M.D., Professor of General Medicine and Diseases of the Chest, in the New York Polyclinic, etc.

This is a well printed book of 150 pages, on good paper, from the press of W. Wood & Co. In consequence of the sudden death of the author, "just after the manuscript had been placed in the printers' hands," the correction of the proof sheets devolved on his friend Lawrence Johnson, M.D. The work will most probably be more highly valued by the teachers of clinical medicine than by the students, though to both it will not fail to prove highly serviceable. Chapter VI, which is devoted to a synoptical exposition of the diseases of the lungs, will be studied with profit by both classes of readers. The author has here given, in a condensed and clear form, everything of importance in the "definition, pathology, causes, symptoms, physical signs, diagnosis, prognosis, and treatment," of the most important affections of the lungs, sixteen in number. The like, if not more and better, may be said of his synopsis of diseases of the heart. The illustrating engravings, numbering 93, will be more easily understood by the teacher than by his pupils. In truth they present sorrowful evidence of the consequences of the untimely removal of the author from earthly labour; but the student who has become well grounded in his anatomy, will be quite able to overlook those deficiencies and obscurities which must be presented to the beginner, or to the idle and careless, who are always promising to *begin* to study earnestly, but too seldom reach this herculean achievement. No book, however excellent its merits, can ever benefit this class of illusionists.

LESSONS ON GYNECOLOGY. By William Goodell, A.M., M.D., Prof. of Clinical Gynecology in the University of Pennsylvania, etc. Third edition, revised and enlarged. Illustrated. Philadelphia: D. G. Brinton. 1887. Toronto: Hart & Co.

The new edition of Goodall's popular work shows careful revision. It is not a complete treatise on the diseases of women, but consists mainly of clinical and didactic lectures delivered to students at the University of Pennsylvania, and possesses the advantages and disadvantages of matter from such a source. Suffice it to say, that the work is practical, without much padding, and that the author goes straight to the point. The book is a very useful one both to the student and practitioner.

MASSAGE, PRINCIPLES AND PRACTICE OF REMEDIAL TEATMENT BY IMPARTED MOTION. By Geo. H. Taylor, M.D. New York: John B. Alden. 1887.

This little book of 173 pages, will be useful as a guide to those ignorant of massage in the treatment of chronic disease. It is written for the general public, but will be found interesting and instructive to the general practitioner.

Births, Marriages and Deaths.

On the 19th Oct., Dr. T. H. Robinson, of Kleinburg, to Annie C. Hill, of Toronto.

On the 24th Oct., Dr. J. F. Bell, of Toronto, to Jessie Brown, of Eglington.