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THE

MONTREAL MEDICAL JOURNAL.

VOL. XXXIV.

MAY, 1905.

No. 5.

ADAPTATION AND TUBERCULOSIS.

BY

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In casting around for some aspect of the tuberculosis problem upon which to address this meeting, it struck me that it might be serviceable to take up the matter of adaptation in its relationship to the disease. The term possibly is unfamiliar to you, but it embraces a series of processes, both on the part of the organism, the human body, and of the micro-organism, the tubercle bacillus, which are of the highest importance. And I am of the opinion that it is the failure to realize the existence of these processes which renders it difficult for the majority of men to appreciate the various happenings in the course of this disease, and again the points at issue and their significance in the controversies that have arisen of late years regarding the same. It has seemed to me that all those, and they are many, who are interested in the work of prevention, would possess a more intimate appreciation of that work if they could acquire, as it were, a mental picture of the moves in the game,—of those moves whereby now the organism, now the micro-organism seeks to gain the advantage and checkmate the other. In truth it is a gruesome game but one of very vital import, this of the cells against the bacilli and the bacilli against the cells. Some of our moves are instinctive, or have been practised before against other bacteria; many have to be learned and tested during the course of play. Too often, not knowing the science of the game, and playing "bumblepuppy"—I forget its equivalent in chess—we make a wrong move at a critical moment and the game is lost, and loss is death.

Let us consider first the moves on the part of the organism, and in order to gain a clearer picture let us take the case of a disease of briefer course and apparently more self-contained in its gross effects upon the body. Has it ever struck you, I wonder, what takes place in a case of acute pneumonia? This you know is a bacterial disease, due to a mic-

Being the Address delivered at the Annual Meeting of the Dominion Association for the Prevention of Tuberculosis at Ottawa, March 15th. 1905.

rococcus, a minute rounded or lance-head shaped organism that hunts, if I may so express it, like the Northwest Mounted Police of the old days, or the Irish Constabulary, in pairs—hence we often speak of it as the diplococcus of pneumonia. You all know that the disease develops very rapidly. That rapid development is associated with an extraordinarily rapid multiplication of the diplococci so that these which, under ordinary circumstances, are not present in the lung, come to be present in teeming millions in the air sacs of the same, and there by their poisons, they set up so much irritation that all the air sacs of one or more lobes of the lung become solid through the intense inflammatory exudate that is poured out into them from the blood vessels, displacing the air that should be there. And so it is that in a very few hours the affected part of the lung comes to look more like a piece of liver than like a sponge with abundant air in its cavities.

And then you know that if all goes well, in four, or eight, or ten days, suddenly, in the course of a few hours, the crisis comes, the fever drops sharply, the patient feels better, and I may tell you that after this crisis we find the diplococci for the most part dead, or if not dead so weakened that they can have little effect on small animals.

This has always seemed to me as something approaching the miraculous, that bacteria grow abundantly in one of the tissues of the body for a few days, then as suddenly they are killed off and disappear. If they grow at first why do they not continue to grow—if eventually killed, why not killed at the start? Years ago we found out that this was not because they have exhausted the food supply. I do not know if this has been tried in connexion with pneumonia, but it has been repeatedly tested in the lower animals in connexion with one or other of the diseases from which these may suffer; it has been found that the tissues will afford abundant nutriment for the bacteria. It is not, again, that they are poisoned by the products of their own growth,—this occurs it is true when we grow them on broth in a closed test tube outside the body,—but we can make an emulsion of a pneumonic lung and while, if we add the diplococci to this, some will be killed (for as I shall point out, there are substances poisonous to the bacteria in such a lung), yet when a certain number have been killed the rest will grow freely. If the poisons were produced by the diplococci themselves then the greater the number of bacteria destroyed the more these poisons would be liberated into the lung emulsion and still less the chance would be for any to remain alive and multiply.

Neither of these explanations will suffice. The only adequate explanation for this eventual destruction of the bacteria is that of adapta-

tion. When first the diplococci began to grow in the lungs they did so because the tissues could not neutralise their poisons, but with continued growth and discharge of their toxins, these last diffuse out of the lungs and act in the tissues elsewhere in less concentrated form, and these react, becoming educated until the moment is reached when the cells of the body produce sufficient counteracting poison to kill off the bacteria and to neutralise their toxins, which toxins it is that do all the damage to the system.

And here is the interesting and important fact—a fact I think too little realized by most medical men, although instinctively all strive to act up to it. It is not the lungs alone that are in action in destroying the germs of the disease and so bringing about recovery, it is not even the white corpuscles or leucocytes which, passing into the lungs, accomplish the good effects; the whole organism, or practically the whole organism, is actively engaged in the process. Do not think that by this that I mean that the germs of the disease are disseminated all through the body. In a case of pneumonia of medium severity, one that recovers in due course, the diplococci are confined to the lungs; we do not find them elsewhere, or at most they are few and far between. But, notwithstanding this, the whole body plays a part in the engagement.

You have all, I doubt not, heard much of late years about these white blood corpuscles or leucocytes; how they are, as it were, at once the main avenging army and the scavengers of the body; without doubt these play a great part. We can see them in various stages full of bacteria which they have taken up, and at times we can make out that bacteria are undergoing digestion and destruction. Nay, it is not difficult for any one to experiment on himself, as Leishman has shown,—to take a few drops of his own blood, separate off the white blood corpuscles and taking a drop of blood serum, holding these in suspension, add to it a number of disease-producing bacteria of one or other order; in fifteen minutes time, kept at the body temperature, each little leucocyte can be seen to have taken up, it may be a score or more separate bacteria. But here is another fact. This eating up of bacteria does not depend upon the white blood corpuscles alone. It depends, as Wright and Douglas have shown recently, upon a curious interaction between the cells and the fluid of the blood. And if you take the white corpuscles of a man who has not had a given disease and place some in the fluid of his own blood, and place some others in the blood serum of a man who has successfully resisted that same disease—who has recovered from an attack—you will find that these little white blood corpuscles will take up very many more of the particular bacteria causing that disease in the latter case than in

the former. There is, therefore, something circulating in the general fluids of the body after it has gone through an infectious disease, something not local but generalized, something which was not there before in any amount and has therefore been elaborated during the course of the disease, and this aids in the destruction of the bacteria of the disease.

The same was noted some years ago in connexion with typhoid fever and that not merely after recovery but during the progress of the disease. We utilize the fact now as a most useful means in diagnosing doubtful cases. In typhoid the bacilli grow more particularly in the lymphoid tissue of the intestine—for here is an interesting point to remember that the different bacteria of disease have their seats of election. Once they gain a footing in the body there are certain tissues in which they grow in greatest abundance, while at first they do not grow to any extent in other tissues, or in other words if they do find their way into the other tissues they are easily destroyed. But while the typhoid bacilli thus grow locally, if we take the fluid of the blood of a typhoid fever patient on the fifth day of his disease or so, we find that this now has new or greatly exalted properties. Although we dilute that blood 40 or 50 times, if we place in it some of the actively growing typhoid bacilli they become motionless and clump together in masses. The blood fluid has acted upon them. Nothing of this kind occurs in similarly diluted blood from one who has not had typhoid. What does this all mean? It means that during the course of the disease there is gradually developed on the part of the organism as a whole, the power of coping with and neutralising or destroying the micro-organisms of that disease. Something has developed, not locally but generally, which either was not there before or which now is developed in greater quantity than before. There is an adaptation to changed conditions. The body as a whole reacts and produces substances which tend to give it the advantage in the fight against its foes.

Need I remind you that the modern treatment of diphtheria makes use of this fact. We utilise the fluid of the blood of animals which have been inoculated with the diphtheria bacillus in order to give to the diseased human being antitoxic substances which those animals have produced, and produced in excess, in order to cope with the inoculated microbes. Where precisely these antitoxic substances are produced we are still engaged in determining. We know that the leucocytes produce one set, but the substance or substances which activate these and render them effective we know less about. Some are inclined to believe that the leucocytes also give origin to these. Recent evidence tends to

show that certain tissue cells—of the liver, brain, etc.—elaborate them. It may be that in tuberculosis the muscle cells play some part.

So now to return to the case of pneumonia. Let us try to translate what happens there. Through some lowering of vitality the tissues of the air sacs, which in health can destroy individual bacilli, finding an entrance into the lungs, are overcome and the bacteria multiply and set up disturbance. Then the second line of defence comes into action—not so much the lung tissue itself as the leucocytes which belong to the general circulation blood. They make their way into the damaged area, are unable to take up diplococci in sufficient numbers and destroy them; on the contrary, they themselves tend to be destroyed, and the diplococci continue to multiply. In the meantime the poisons from the diplococci have diffused out of the air sacs into the blood and so are carried all over the body, and with this we have the development of high fever. And now the cells of other parts of the body take up these less concentrated poisons or toxins and taking them up proceed to manufacture counteracting bodies which neutralise, or help in the process of neutralization of the poison, and once they start to do this they continue and produce more of the antitoxic bodies, so much in fact that the excess passes into the blood and from the blood passes into the damaged lungs until the moment is at last reached when sufficient of these antitoxic bodies are present there to reinforce the action of the leucocytes and with this all the diplococci are killed and recovery ensues. I say reinforce the leucocytes for the leucocytes are developed largely in the marrow of the bones and the later relays of young leucocytes have, before they reach the lungs, become accustomed and adapted to the bacterial poisons, and thus are much more powerful than the earlier drafts of leucocytes which passed into the lung. These, aided by the fluid of the blood, are effective, the former were not. Hence it is through the general adaptation of the tissues in the organism and not merely through local efforts that the body overcomes infectious disease.

Once one realizes that it is all so clear, and, if I may express it, so very human—so like, for example, what happened in the Boer War. There we had local irritation in one part of that vast organism, the Empire; local efforts were unable to quell the disturbances, and war flared up and there was great local damage and arrest of the normal local activities. It looked as though the part might be completely lost. The effects of this local disturbance rapidly diffused through and influenced the whole Empire and, like the leucocytes, soldiers were drafted to the seat of the irritation from all parts of the organism, even from distant por-

tions like our own Canada. We contributed, as it were, from the marrow of one of the limbs. Those soldiers, at first unused to Boer methods of warfare, were at a great disadvantage and we had Nicholson's Nek and Colenso and other terrible disasters. But as the Boer methods became better understood our soldiers adapted themselves to them; the spirit of depression gave way to one of grim determination to overcome the enemy; more and more soldiers, contingent after contingent, from all parts of the Empire were collected and sent to the front. Supplies of all kinds were produced at a distance and poured into the focus of inflammation and at last the pathogenic organisms were completely overwhelmed and recovery ensued.

Now to apply all this to tuberculosis and its arrest. The disease, it is true, is of a different type—it is of slower development and more progressive character. To pursue my simile, if I may venture to do so without offence and without wishing to give offence, tuberculosis is to the human organism something like what Irish discontent is to the body politic. If we are healthy our first line of defence, the surface cells of the nose, mouth, throat, air passages and digestive tract can directly destroy occasional tubercle bacilli taken up by them; only if an excessive number be taken up are they killed by the bacilli. Healthy people that is can breathe in tubercle bacilli without harm resulting. That this occurs has been proved by examining the nasal secretion of nurses and students in tuberculosis wards and finding tubercle bacilli in the same, and I may point out the remarkable fact that in a well conducted tuberculosis hospital the nurses are found not to contract tuberculosis. They keep themselves in good condition.

The bacilli may get beyond this first line of defence into the lymph and blood and there may not cause any disturbance, being killed before they can multiply. Quite a number of cases are on record in which tubercle bacilli have been found in apparently healthy lymph glands showing no signs of tuberculosis. Again we can, for example, take two healthy young dogs and feed them with milk to which we have added a fair but not excessive number of active tubercle bacilli, and killing one of them two or three hours later, we can detect the tubercle bacilli in the lymphatic fluid draining away from the intestines. This is a process which, as I and others have pointed out, is constantly proceeding to a slight extent in connexion with the abundant bacteria of various kinds which people the intestines. Keeping the other dog for some weeks or months it may show not a sign of tuberculosis, and killing it at the end of this time we may not detect a sign of this disease in any region of its body.

But now, even if temporarily the general health is depressed, the history may be very different. The tubercle bacilli at the point of entrance, or it may be when they are carried into the circulating lymph or blood, are not necessarily destroyed. In many parts of the body they are, but if the organism possesses an Ireland—a region of constitutional weakness with poor circulation, and poor nutrition—if by chance the bacilli find their way into this, the cells cannot destroy them, but on the contrary they multiply, produce their poisons, killing the cells and developing a focus of inflammation—a tubercle. Such a region, as everyone knows, is the apical part of either lung. From its relationship to other parts there is there poor circulation and nutrition, and, added to this—although here remembering my simile, I must speak delicately—there may be something innate in the properties of the tissue cells themselves. Certain it is that here more particularly the tuberculous process may manifest itself.

A priori, one would think that the bacilli having once gained a footing in a part would continue to grow and spread from this focus, that growing their concentrated toxins would depress the vitality of surrounding cells rendering them an easy prey, so that, of necessity, once the disease was established in the system it would go on from bad to worse with progressive invasion, poisoning and destruction of the tissues throughout the body until a merciful death ended the scene. This does occur in some cases in which the tissues seem to have no resisting power, but as a matter of fact it is by no means necessarily or usually the case. Progressive invasion we know, is the exception, not the rule. As a matter of interest I looked last week through the records of the 139 post mortem examinations performed last year in my department at the Royal Victoria Hospital, and I found that while there were 18 cases out of the total, or 13 per cent. in which tuberculosis had assumed a progressive character and had surely been the cause of death, there were 41 cases, 29.5 per cent., or more than twice as many in which there was absolute evidence of old arrested or even healed tuberculosis (there were in addition three cases of progressing tuberculosis in which death was from some other cause.) The disease, as has been often stated before, is more often arrested in man than it is fatal, and the process in this arrest and healing must, from every consideration, be not so much by local effort as by the co-operation of the other tissues. We have clear evidence that this is so. Just as in typhoid fever so here, it has been shown, more particularly by Courmont, that the blood and body fluids of tuberculous patients contain a substance not present in healthy blood, a substance which causes the clumping of the tubercle bacilli. And,

as pointed out long ago by Koch, if an animal has tubercular infection of one region, say the eye, the injection of virulent tubercle bacilli into another region at a distance, say the skin of the flank, leads it is true to a temporary local inflammation during which the bacilli are destroyed, but it is followed by no local development of the disease proper and by no extension from that region; a clear proof that under ordinary conditions the primary local development of the disease is accompanied by the development of increased resisting powers on the part of the rest of the tissues. Here again there is adaptation, by means of which these other tissues of the organism as a whole reinforce the local effort tending to produce so much antitoxic or anti-bacterial substance that at last the system overwhelms and arrests the local growth of the bacilli.

I have not seen this matter hitherto worked out adequately, and as I believe it is useful to present it to those interested in our work, even though at first hearing—being perhaps to some extent novel—it may be difficult to follow and fully grasp. Once grasped we grasp with it the whole rationale of the treatment of tuberculosis. Let us just glance at this.

First as to Koch's treatment by injections of tuberculin; that is, of the body juices and toxins of the tubercle bacilli. The basis of this treatment is clearly the carrying further of this natural process of stimulating the tissues in general to produce anti-bacterial substances by means of the circulating toxins. As we know by observation, outside the body of the individual tubercle bacilli do not produce much toxin; indeed it is only when they die or are destroyed that much poison escapes from them. Probably one of the reasons why tuberculosis tends to gain foothold in the body is that the bacilli are at once so slightly irritant and so resistant. As there is no extensive diffusion of toxins at the beginning of the process the rest of the tissues are not adequately stimulated; this especially when the body as a whole is in a low state of nutrition. By injecting these diffusible toxins we stimulate the cells in general to manufacture increased amounts of antitoxic substance and thus aid the local resistance. I put this purposely in a general way; to discuss this matter in the terms of complements and amboceptors and all the armamentarium of the modern bacteriologist, would utterly confuse, but this obviously is at base the rationale of the process.

But as all now know Koch's treatment is but partially successful. It is useless in advanced cases where the disease is extensive and where there must already be relatively abundant circulating toxins. To inject

more toxins into such cases is to poison rather than to stimulate the cells. In dealing with the treatment of tuberculosis there are two factors to be taken into account. You may take a horse to the water but you cannot make him drink. You may supply a cell with tubercle toxins which are necessary in order to stimulate it to produce antitoxins, but it may be so feeble that it will not react—will not produce these toxins. All its energies may be used up in the performance of ordinary everyday function. And here we have the basis of the modern treatment in which, as you know, we do not try to do anything specifically against the disease itself; on the contrary we leave the disease as such severely alone. But we do everything in our power to improve the general bodily condition. We enforce rest, so that the cells shall not be overcrowded and may have spare energy; we give abundant, easily assimilable food, so that they may build themselves up; we demand life in the open air with abundant oxygen and that toning up of the system, which the freshness and coolness of the air brings about more naturally than does anything else. For, just as a lax violin string will give no note, while, made taut, it vibrates to the slightest touch, so by improving the tone of the tissues in general they respond more immediately and more fully to the stimulus of the circulating toxins and produce the counteracting bodies which, developed in greater abundance and poured out into the blood, can now act locally on the tubercle bacilli in the areas of disease.

We in short do everything we can to help the body to adapt itself to the changed conditions, and this adaptation we know means also counteraction. The success of our modern treatment of tuberculosis—treatment, be it remarked, purely empirical in its inception and based upon no adequate theory of the modes of defence on the part of the organism,—this success is the strongest proof of the correctness of the conclusion reached along other lines, that recovery from infectious disease is not merely nor mainly a local reaction, but is a process in which the tissues not directly involved and the body as a whole take a most active part, becoming educated thereto during the course of the disease.

I have taken possibly too much of your time in discussing the moves on the part of the organism and have delved, it may be, too deeply for a general address. I would gladly think that my digging, if deep, has also been sufficiently broad in its scope to let in the light. Before closing some words must be said of that other matter, the moves made by the bacilli.

You must not look upon these producers of disease as fixed in their properties and unalterable; rather we have to realize that they also are

capable of adaptation. For us it is a fortunate fact that their power of adaptation is not so extensive and so rapidly developed as that of the healthy human organism. This we must take as another instance of the fact that union is strength. It may well be that the individual cells of the body have not the same power of adaptation as has the tubercle bacillus, but while the bacilli are isolated and independent, the cells of the body are united and co-operate and the sum of their reactive changes may well be greater than the adaptative changes possible in an isolated tubercle bacillus. Nevertheless bacteria are capable of great changes, suiting them to altered conditions of their surroundings. There is, for example, a large bacillus, the bacillus megatherium, first found, if I remember aright, upon the cabbage leaf; this is absolutely harmless for warm-blooded animals—one can inject these by the million into the rabbit without causing any recognizable disturbance,—but, as Vincent has pointed out, place some of these in a thin-walled celloidin capsule in the abdominal cavity of the rabbit, a capsule such that the fluid part of the lymph can easily penetrate through the walls and so afford nourishment to the bacilli, while the leucocytes and antitoxic bodies cannot enter—we find that after sojourning there for several weeks the bacilli have become accustomed to their surroundings so that now they will grow in the tissues of the rabbit without any capsule being needed. From having been perfectly harmless they are now pathogenic, and can set up disease.

What is to be said regarding the tubercle bacillus in this connexion? In the first place we may have the complete assurance that Adam was not created suffering from tuberculosis. The bacillus, we may be fairly sure, from living it may be on foodstuffs outside the body, accustomed itself first to living on the surface and in the passages of the organism as a harmless saprophyte, and only later gained the power of living not on but in the tissues, and from that moment it became pathogenic. This, it is true, must have happened centuries and centuries ago, for the disease was known to and well described by the early Greek writers on medicine. While this is so I do not think that we must imagine that the virulence of the bacillus has remained the same from that day to this; the probability is that were the ancient Greek to come to life again and mingle with us moderns his would be but a brief visit to this earth; he would be carried off by fulminating malignant tuberculosis in a very short space of time, if even before that the modern influenza bacillus, or the pneumonia diplococcus had not marked him for its own. I mean here, that the indications are that there has been a steady adaptation of

both organism and micro-organism, the one to the other; as the system has become more resistant, the bacillus has become more toxic. We have a parallel to what is here suggested in the remarkable history of the way in which the South Sea Islands were devastated by measles when that most puerile disease was first introduced by Europeans. We must suppose that measles originated in Europe and Asia at some period after the first natives found their way across to the South Sea Islands, or that the Aborigines did not carry it with them in their canoes when they colonized the islands, and so henceforth remained free. Probably it began as a mild disease, and as it became habituated to the human organism so did that organism become more resistant and the microbe increase in virulence *pari passu*; what continued to be a mild disease to Europeans therefore was most fatal to the Melanesians who had not undergone this progressive adaptation.

We have abundant evidence bearing upon this matter of modification in the virulence of bacilli by growth in the organism of one or other species; adaptation that is, to the surroundings whereby existence is rendered more sure. By the passage of a given pathogenic bacillus through a series of animals—by inoculating one animal of a species, a guineapig for example, with a feebly pathogenic microbe, then when the disease is at its highest taking some of the body fluids containing the germs and inoculating that into another guineapig, and from this again into another, and so on through a succession of a score or so—we can render the bacilli extraordinarily virulent so that whereas the disease in the first series ended in natural cure, at the end of the series the greatly diluted body fluids, diluted so as to contain only a few rare microbes, when injected may cause death in from six to ten hours.

By this artificial process bacteria adapt, and more than adapt, themselves to the organism of the one particular species; but this does not necessarily mean that they have adapted themselves at the same time to the conditions found in the organisms of other species. That may or may not be the case. An organism which by passage through a series of human beings has acquired greater virulence for man, may or may not gain increased virulence, say for oxen, and vice versa. On the whole the reverse is more often the case. As a matter of fact we have positive evidence that if we take two calves and inoculate them subcutaneously with equal amounts of cultures of tubercle bacilli, which have been gained from the cow and man respectively, the disease is very much more rapid in its progress, spreads much more rapidly and leads to earlier death when the bovine bacillus is employed than when the human strain has been used. This may be laid down as a general rule. Nay

more, if only a moderate dose of bacilli gained from man be injected, nothing more than a local nodule is produced in the inoculated calf; there is no generalization, and after a few weeks or months no signs of the tubercle bacilli are to be made out. In view of the Interim Report of the British Royal Commission on Tuberculosis, I would lay special emphasis upon this point. That commission has in quite a number of cases caused tuberculosis in cattle by the injection of human tubercle bacilli. Because disease can be transmitted experimentally by injection of a number of bacilli far in excess of the number which in nature could possibly gain entry at any one focus, it is by no means proved that under natural conditions these same bacilli are liable to cause infection. What the Commission should demonstrate in order to establish that human tuberculosis is dangerous to cattle, is that the minimum dose of human tubercle bacilli capable of setting up tuberculosis in cattle approximates to the minimum dose of bovine bacilli producing the like effect. This I am convinced is not the case. There may be examples of bovine infection of man in which the bacilli still retain the high grade of virulence for cattle, but everything indicates that these are the exceptions. So much so is this the case that Von Behring is now utilizing bacilli gained from cases of human tuberculosis to vaccinate cattle and prevent them from becoming infected from their fellows by means of the bovine tubercle bacilli. This is all now freely accepted; the opposite case remains still a matter of some debate, though the two parties are coming to take a more intermediate position. This matter was discussed very thoroughly by Dr. Ravenel in the address before this Association last year, and Dr. Ravenel, you may remember, took the position that tuberculosis is rather frequently conveyed to man from cattle. I still hold that such conveyance is not so frequent as is generally accepted. I have never from the first taken the position that it never occurs, but I still firmly believe that a tubercle bacillus which has passed from cow to cow for a long period, while it becomes more and more virulent for cattle, becomes less and less virulent for man, so that under ordinary conditions we have not so much to fear from milk and other products containing these bacilli, so far, that is, as the fully developed adult is concerned; but with weakly young children the case is different. They are susceptible, and if a large dose of tubercle bacilli be given to them in the milk, I firmly believe that even relatively slightly virulent bovine tubercle bacilli may gain entrance into their system in such large numbers that the cells are unable to kill them and that here and there they may gain a point of growth, and once they grow they may gradually adapt themselves to the human organism, and so set up the fatal disease.

I doubt if this necessarily occurs in all children; we have, that is, cases brought forward in which children have been fed upon milk of cows suffering from tuberculosis of the udder, without showing a sign of the disease. It must not be thought that I recommend that milk from tuberculous cattle should be drunk with impunity; it is simply repugnant in the idea that milk containing any form of infective disease should be used as a food. The fullest precautions should be taken and legislation developed to prevent the use of milk from animals suffering from any form of infective disease. Still, undoubtedly, the danger is there. Here I would only say that certain very interesting observations recently published support my view that the relative frequency of tuberculosis of the intestines in children must not be ascribed positively to drinking the milk of tuberculous cows; it may equally well be due to swallowing saliva containing breathed in tubercle bacilli, discharged into the air from the lungs of men and women suffering from the disease, or may have been sucked from the fingers after a child has been crawling on the floor. And these are observations by one of the greatest bacteriologists of our time, a man who first made pure cultures of the bacillus of tetanus and was one of the first to work out the antitoxine treatment in infections, the discoverer also of the plague bacillus, and that man is the great Japanese bacteriologist Kitasato.

Now-a-days we have a thorough and wholesome respect for the Japanese and his methods, and not the least for his thorough knowledge and practical application of bacteriology. The nation which has taken to heart the dictum "if preventable why not prevented," has applied bacteriological methods in the conduct of warfare, sending bacteriologists with each division, which has had the wisdom to recognize that *le Général Microbe* would be for her a far more powerful ally than Czar Nicholas's *Général Fevrier*, that from the experience of recent wars for every one Russian put out of action by shot, or shell, or bayonet, four would be invalidated by pestilence and, accepting the warnings and advice of the bacteriologists, has managed to much more than reverse these figures in her own army; that nation and the bacteriologists of that nation deserve our respect. It is a recent paper by Kitasato that I wish to bring before you. In this, with a wealth of statistical data, he has shown that the deaths from tuberculosis in Japan are just about in the same proportion to the total deaths and the total population as are the deaths from this disease in European countries. There is in fact a remarkable similarity in his tables, suggesting very strongly that the factors at work are identical. In the second place, though here I confess his data might be fuller, he shows that in those under 18 years of age the number of

cases of evident primary intestinal tuberculosis is certainly not less, but on the contrary rather more than among Europeans and Americans, namely 30 per cent. of the total deaths from this disease, whereas in Europe of late there has been a rather remarkable consensus of observations giving the proportion at about 25 per cent. But, as I have already stated, it is usual to attribute these cases in early life to infection from cow's milk, while Von Behring goes so far as to attribute most human tuberculosis to this cause—the use of cow's milk in infancy. But now, says Kitasato, the use of cow's milk for feeding infants is unknown in Japan; if a mother is unable to feed her child a foster mother is employed. Singularly little milk is consumed in Japan and a careful calculation made from the total population, from a census of milch cows throughout Japan, and the average daily amount of milk yielded per cow, indicates that the individual Jap on an average consumes daily just about three quarters of a teaspoonful of cow's milk. Even in Tokio, the largest city, where most milk is consumed, the amount per individual works out to two and one third teaspoonful's.

Next it is shown that bovine tuberculosis is unknown among the native Japanese cattle, though by cross-breeding with imported European cattle they become infected. Experimentally, subjected to a severer test than is ever likely to occur in nature, a certain number can be given the disease. A few, very few, cases have been reported in which the disease has been notified as found in native cattle and this only in Tokio and Yokohama where most foreign cattle have been introduced and the so-called native cattle may have been of mixed breed; for, in accordance with Mendel's law a certain proportion of cross-breeds are likely to have the characters of the native sire or dam and to be distinguishable from the native race.

To epitomise; the facts gathered in Japan show that intestinal tuberculosis, which is as frequent there as in Europe, cannot be attributed to the ingestion of infected cow's milk, cannot therefore be of bovine origin, and the inevitable conclusion is that if intestinal tuberculosis is moderately frequent and not of bovine origin, then, similarly, a large proportion of the cases of European intestinal tuberculosis is in all probability not due to infection from milk. In other words, these observations support the view that I have maintained for the last six years, that undue stress is laid upon bovine tuberculosis as a source of human infection. The danger is there; do not let me be misunderstood, I am convinced that weakly children are susceptible to the disease conveyed through the milk of cows suffering from udder tuberculosis; only the

danger has been exaggerated. With Koch I hold that infection in the great majority of cases is from man to man and that our main efforts should be in the direction of preventing such infection.

This does not mean that I would restrict the legislation regarding tuberculous cattle. Far from it. These observations of Kitasato support what I have urged all these years, that it is possible to eradicate bovine tuberculosis independently of our efforts to eradicate the disease in man. Kitasato points out that so far as the chronicles of Japan extend back through the centuries they tell of the existence of human tuberculosis, and yet although the disease has been present all these centuries the cattle of the present day are not infected. If the human strain of bacilli easily adapt themselves to an existence in the bovine organism this could not be possible. This is another link to the chain of evidence which led me to urge in 1899, before the Canadian Medical Association and repeatedly since, that we in Canada should lead the world in completely banishing the disease from among our cattle. The disease is altogether too prevalent in European countries, for example, for this to be possible—the cost there would be too great. We are remarkably free from the disease; still it exists and its eradication is obviously a national and a provincial concern. We are told that the Federal Government hesitates to interfere in the prevention of human tuberculosis, not because they do not recognize that this is a work of national import, but because doing this they would be trespassing upon provincial rights, and the law is above the welfare of the people. But the health of animals has been from Confederation onwards, a matter both of national concern and of federal legislation. I would once again urge that it is for the Government to select some one well defined section of our country and there to root out completely the disease from among the cattle. Let them take Prince Edward Island, for example, appoint inspectors and be prepared to superintend the health of the animals on the Island for, say five years; let those inspectors make a census of all the cattle on the island, let them apply the tuberculin test and take over and compensate all reacting cattle; disinfect the byres and forbid any fresh animals to be landed without rigorous determination that those animals are free from the disease. I am convinced, first, that by the end of two years, if from the start they thoroughly entered into their work, the inspectors would find not a single case of the disease cropping up anew on the island. The disease, I say, only passes from animal to animal and not from man to animal under natural conditions, and if there are no infected animals to convey the disease no new case

can show itself. In the second place, the farmers would be benefited materially; no longer would they be subject to loss from the disease decimating their herds, and what is more, the certainty that their stock was free from the disease, would enhance the value of that stock and afford a market for it for breeding purposes, not merely at home but in distant countries which despair of obtaining uninfected animals, their own stock being so riddled with tuberculosis. And lastly, the experience gained in eradicating the disease in one locality, would show how it can be accomplished most economically and surely in other parts and eventually throughout the whole of the Dominion, so that Canada, our Canada, would stand before the world as the first country to solve the great problem and to possess stock wholly free from this devastating disease, so ruinous to agricultural communities throughout the world.

This is no chimerical plan; it is a perfectly feasible experiment, assured of success from the first, causing little disturbance and capable of being carried out at no great cost. If the Government has not merely the fear of the provincial politician before its eyes but possesses a statesman-like foresight, if it has the welfare of the community at heart, the well-being of this Canada of ours, then I urge that it take up this work; that it make a forward move fraught with advantage to what is by far the greatest industrial interest in the country, even if it fears to take up measures for the benefit of the greatest national interest of all, the health and the well being of the people.

SOME PATHOLOGICAL CONDITIONS OF CLINICAL INTEREST ASSOCIATED WITH MOVEABLE KIDNEY.

BY

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In studying a series of cases of moveable kidney one is struck by the number of symptoms present, which are referable to other organs; so much so that there is oft-times difficulty in diagnosing correctly the true condition. Many of these associated pathological conditions are found to be due, more or less directly, to the moveable kidney itself, and in a large series of cases almost all abdominal conditions may be represented. In a series of 61 cases of moveable kidney at the New York Presbyterian

Hospital there were the following associated conditions: Femoral hernia, 2; gastric symptoms, 25; marked constipation, 28; diarrhoea, 3; jaundice, 1; chronic appendicitis, 9; urinary symptoms, 18; renal colic, 7; calculus, 1; pyelitis, 1; chronic nephritis, 2; neurasthenia, 11; general enteroptosis, 3; uterine abnormalities, 5.

In face of such an array of associated conditions it seems worth while taking up several of these with a view to showing how a loose, moveable kidney can, by pulling on its peritoneal and other attachments, affect organs more or less distant from it; and, at the same time, try to get a true idea of the frequency of this condition as an etiological factor in the production of many symptoms not usually attributed to it, which might be benefited by fixation of the kidney. Landau claims that 50 per cent. of moveable kidney cases have associated conditions, such as hernia, retroversion of the uterus, enteroptosis, etc. Edebohls claims that 60 per cent. of chronic appendicitis cases are associated with a moveable right kidney as an etiological factor, and that in 80 per cent. or 90 per cent. of women with moveable kidney there co-exists appendicitis. While these are, in my opinion, rather sweeping statements, they are made by men who have large experience.

Pathological conditions associated with moveable kidney may be either (1) those affecting the organ itself; (2) those due to its influence on other organs because of its mobility. In the first group we have temporary congestion of the kidney due to traction on the blood vessels at the hilum, and occasionally perhaps to compression of the organ between the last rib and the vertebral column. Or, again, we find a kinking of the vessels and ureter by rotation of the kidney on its axis, producing renal paroxysms, the typical Dietel's crisis, a condition at times closely resembling strangulated hernia. Often there is extreme pain with hæmaturia, casts and albumin in the urine, and sometimes temporary retention of urine. In mild degrees of moveable kidney hæmaturia and albuminuria are slight and of but temporary duration. When severe and continuous it will be found that some pathological condition exists in the kidney itself e.g. calculus or tuberculosis. In many cases it has been noted that a condition of polyuria exists, accompanied by frequent straining efforts at micturition. The free flow of urine following the attacks of "renal crisis" is well known, but many cases show polyuria continuously. In cases of some standing, where the ureter is frequently kinked, a condition of hydronephrosis is produced, relieved only by nephropexy, and that, too, only when done early. For, if the trouble be too long continued, a cystic, useless kidney is the result, necessitating

complete removal. Such a case I operated upon in 1901, and I here-
with present a short abstract of the case report.

W. H., drug clerk, aged 28, was referred to me by my colleague, Dr. Blackader, at the Montreal General Hospital. For years he had suffered from attacks of intermittent hydronephrosis of the right kidney. A large tumour would appear in the position of the right kidney, associated with pain, chills, fever, and vomiting. After a variable lapse of time, the patient would get relief by passing very large quantities of pale urine, and the tumour would rapidly subside. The kidney, in the intervals between these attacks, could be palpated, and was found apparently enlarged and fairly moveable. We decided to do nephropexy, thinking that thereby we might prevent the kinking of the ureter which was judged to be the cause of the trouble. This was done, and a somewhat cystic kidney was fixed after Edebohls' method. To our disappointment, this did not effect a cure, and one year subsequently, at the patient's request, I removed the kidney entirely, and found that although the kidney had remained firmly fixed where it had been stitched, the ureter, just below the pelvis of the kidney, was kinked and held so by adhesions,—very much as we often find to be the case in the appendix vermiformis. The kidney, moreover, had become so cystic as to be practically useless to the patient, who has been quite well and working steadily ever since he recovered from the operation for nephrectomy. Such cystic kidneys and infective conditions of pyuria, pyelitis, and pyonephrosis are late results usually of long standing cases. Vesical irritability is a symptom noted in some cases.

Associated conditions in the gastro-intestinal tract are extremely common with a moveable right kidney. Glénard is quoted² as stating that 2.7 per cent. of men and 22 per cent. of women with gastric and visceral troubles have moveable kidney. Glénard claims that moveable kidney is only one factor in a general splanchnoptosis, and that the low level of the liver, stomach, spleen and other viscera seen in cases of moveable kidney are only evidences of the same condition (Glénard's disease). Ewald, Morris and most other writers do not agree with this statement, and it has been pretty conclusively shown that the increased size of the foramen of Winslow, the altered level and size of the stomach and duodenum, are frequently directly due to the traction exerted by a kidney in its descent. Bramwell,³ by a study of a case *post mortem*, shows that the kidney does not slide down under the peritoneum, forming a sub-peritoneal channel as many writers claim, but that it pulls down the peritoneum with it, forming a meso-nephron, and that the superior peritoneal reflections up over the pylorus and duodenum,

and those inwards over the inferior vena cava and aorta are finally elongated into distinct bands, which press upon and constrict the underlying structures. In this connexion a full study of the anatomical relationships of the right kidney, duodenum, pancreas and other structures in this region is to be found in a splendid article by Brown⁴ published in the *Philadelphia Medical Journal* in 1903, in which he describes the so-called duodenal ligaments. The ligamentum hepato-duodenale passing from the hilum of the liver to the first part of the duodenum (edge of lesser omentum) is the upper one; then from the neck of the gall-bladder to the superior curve of the duodenum the ligamentum cystico-duodenale brings this viscus into relation with the duodenum; while at a lower level the ligamentum duodeno-renale connects the superior curve of the duodenum to the upper pole of the right kidney. In the condition of moveable kidney the stretching of these folds of peritoneum will at once alter the normal position of the duodenum and (as in Bramwell's case⁴) produce duodenal obstruction, spasm of the pylorus and an extreme degree of gastric dilatation (in this case proving fatal). The "gastric crises" seen associated with moveable right kidney are to be frequently explained by such traction and temporary obstruction of the duodenum. It is well known that women with this affection suffer frequently for years with "chronic dyspepsia," varying from occasional bilious attacks to severe attacks of vomiting and nausea, abdominal distension, colic, tenderness over the epigastrium, even rise of temperature and symptoms of collapse. The very frequent condition of obstinate constipation, amounting at times to almost complete obstruction, may possibly be directly due to the interference with the functions of the duodenum and of the hepatic flexure of the colon by the moveable kidney, as well as to interference with the flow of bile through the common duct into the duodenum. At the same time it is not uncommon to find attacks of diarrhoea in such cases. Hæmatemesis has been observed in cases of gastric trouble, associated with right moveable kidney, and probably was due to a circulatory disturbance depending upon venous obstruction, as the symptom disappeared after nephropexy was performed. The symptoms of general enteroptosis found in many cases show a similar disappearance after fixation of the kidney, and Morris⁵ shows that hepatoptosis may exist without nephrop-tosis, which goes to disprove Glénard's original conception of the condition, as found in his "Les Ptois Viscerales."

Edebohlis,⁶ in an exhaustive paper, published in the *Annals of Surgery*, 1902, draws attention to the co-existence of disturbances in the gall bladder and biliary passages, associated with, and often due to, right

moveable kidney. A case in my service at the General Hospital last summer furnished a good illustration of this, and I have had two other cases somewhat similar.

The notes of this case are as follows:—M. B., aged 47, unmarried, consulted me first about twelve years ago for pain in the right loin, with associated dyspeptic symptoms. I found a freely moveable right kidney. Her circumstances did not permit of any operation at that time, and I am not sure that I advised it then. I saw her from time to time, and no mechanical belt or truss relieved her trouble, though they were tried faithfully. As the years went on, I urged the operation of nephropexy, but care of sick relatives prevented. In the meantime, she had two slight attacks of jaundice, associated with symptoms of cholecystitis. In the winter of 1903 I did a nephropexy, hoping thereby to prevent further interference with the gall-bladder. The recovery from the nephropexy was without incident, and she remained well for three months, when she had another attack—more severe than the former—of cholecystitis and localized peritonitis, with jaundice, vomiting, etc. This attack subsided, but was soon followed by another, and in the following spring (1904) she again came into the hospital, and I cut down upon the gall-bladder, which I found attached firmly, at its fundus, to the transverse colon and pulled well forward in extreme ante flexion. With considerable difficulty I separated it, and opened and drained the gall bladder, fixing it up to the drainage opening in the anterior abdominal wall by stay-sutures, as I usually do. The wound healed as usual and the patient has since been in perfect health. The kidney, I found at the second operation, still firmly fixed. I have no doubt that here the repeated attacks of cholecystitis were due to the moveable kidney, which had been sutured up too late to prevent the gall-bladder trouble. Litten, in 1880, reported a case of moveable kidney with frequent attacks of deep jaundice; Urag, one with adhesions between the transverse colon and the gall-bladder; and many other observers have found conditions varying from temporary attacks of jaundice to cholelithiasis and obliteration of the gall-bladder, due to a moveable right kidney. There are those who maintain that when the two conditions co-exist, the gall-bladder is the primary trouble; but Roux, Morris, Tulpius and others have reported cases of gall stones, or inflammatory and obstructive conditions of the biliary tract, which have disappeared on fixing the kidney. Morris, in 1895,⁸ drew attention to the fact, that direct pressure by a moveable right kidney on the duodenum just below Vater's diverticulum, associated with the traction of the peritoneal ligaments on the bile ducts, will certainly give conditions which produce gall-bladder troubles. It

is not admitted that the kidney can press directly on the bile duct, though cases of adhesion between the kidney and the gall-bladder are reported. An instructive case is reported by Jonathan Hutchinson, Jr.,⁹ of severe cholecystitis with jaundice in which this was supposed to be the only trouble, but at operation, a moveable kidney was found and subsequently anchored after the obliterated gall-bladder was removed. All symptoms were absent after nephropexy. In a second case, with jaundice, the gall-bladder and ducts were examined and found normal, and following the kidney-fixation all symptoms disappeared. Dr. Shepherd, of Montreal, cited a similar case. Hutchinson concludes that the symptoms of biliary trouble may be due to any of three conditions induced by the moveable kidney, viz.: 1. Downward displacement of the third part of the duodenum with stretching of the common bile duct. 2. Displacement of the gall-bladder and sharp kinking of the cystic duct (as in the case I have cited). 3. Torsion of the vertical portion of the duodenum and perhaps even of the bile duct.

Edebohls seems to have been one of the first to call attention to the associated condition of recurrent appendicitis, and certainly lays more stress on a moveable right kidney as an etiological factor in such cases than any other writer, and demonstrates the facility with which the appendix may be examined and removed through the same incision by which the kidney is reached in nephropexy. In a large series of cases he found that after renal fixation the symptoms of appendicitis disappeared, (twelve out of 58 cases) without appendectomy being necessitated. I have had two such histories in the past three years: both women, unmarried, who had repeated attacks of apparently catarrhal appendicitis, so severe that both had been threatened with operation. Removal of the kidney trouble appears to have cured the appendix condition in both. Edebohls shows that the traction of a descending kidney leads to pressure on the superior mesenteric vein, where it crosses the duodenum, giving rise to a passive venous congestion of the cæcum and appendix, thus predisposing to the condition of chronic degenerative changes in the latter organ. W. J. Martin¹⁰ also believes that a right moveable kidney is a "most frequent cause of appendicitis," and claims that in 200 consecutive cases of appendicitis he found a moveable kidney in 36.5 per cent.

That glycosuria is more or less dependent at times on a moveable kidney is demonstrated by the results of fixation of the kidney. If one thinks of the close proximity of the duodenum to the pancreas, the duct of which would be influenced by the same conditions as those acting on the common bile duct, and the result of kidney traction on the descending

portion of the duodenum, it is easy to see that degenerative and inflammatory changes of various kinds might be induced here by a moveable kidney.

A. Gilbert and Lereboullet⁴ have reported cases of glycosuria, one showing 10 per cent. sugar, and associated with moveable kidney and evidently directly due to this, as the urine was free from sugar after nephropexy was done. In two of these the liver was hypertrophic, in the other it was enlarged, probably from tuberculosis. Jonathan Hutchinson, Jr., also quotes a case of temporary glycosuria, amounting to eight grains of sugar to the ounce, completely cured by fixing the kidney.

Of the nervous manifestations all grades are frequently seen, from neuralgia of an intercostal and lumbar type to acute paroxysms of pelvic pain and sciatica. The association between various functional neuroses and hysterias and moveable kidney is only too well known to every practitioner and unfortunately here, as in epilepsy, we may remove the original exciting cause—the moveable kidney—yet the nervous disorder goes on much as before. Earlier operation is called for in such instances, I think. The close connexion of the various abdominal sympathetic nerve centres explains the remote reflexes produced by an alteration in the relationship of one of them, viz., the renal plexus. The aortic, hypogastric, ovarian and uterine plexuses are often responsible for the various pains experienced by the unhappy owners of a wandering kidney. In this way the frequent exacerbation of symptoms during a menstrual period in a patient with a floating kidney may be explained. Goelet¹¹ draws attention to the large number of cases applying for relief for pelvic troubles who are relieved of their symptoms on wearing a proper kidney belt or after nephropexy. He explains the congestive conditions of the pelvic viscera as due to interference with the ovarian vein by a low lying kidney. Riedel, Morris, Edebohls and others also emphasize the importance in gynæcological cases of a careful examination of the position of the kidneys.

In this paper I have used synonymously the terms "moveable," "wandering" and "floating," as applied to the kidney. I had to do so, because writers do not agree upon a definition of these terms. Of course the more moveable the kidney becomes the more likely it would be to produce the symptoms I have referred to. As regards these terms, see Morris, "Surgical Diseases of the Kidney and Ureter." Vol. 1, p. 95. I am much indebted to my clinical assistant, Dr. C. K. P. Henry, for valuable assistance, in the preparation of this paper.

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MICROPTHALMUS: PERSISTENT PUPILLARY MEMBRANE:
ANTERIOR SYNECHIA AND CENTRAL OPACITY OF
THE CORNEA.

BY

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Cases of persistent pupillary membrane are far from rare, but the conditions found in the case which I report are decidedly uncommon.

The patient, a young man of 26 years of age, first came to me in order to have his left eye straightened, the eye at this time deviating upwards and inwards. On close inspection of the eye I found the following conditions:—

The eye ball itself was of the microphthalmic type, being 24 millimetres in diameter in its horizontal meridian. A rather dense gray opacity occupied the central portion of the cornea extending in all directions to within about 2 mms. of the edge of the cornea, which peripheral portion of the cornea was quite clear. The cornea measured 10 mm. in the vertical diameter and 11 in the horizontal, and the opacity measured 5 mm. vertically and 6 horizontally, there being 2 mm. of clear cornea around the opacity. The opacity was densest towards the central and lower portions and thinned off towards the superior edge. It was not evenly gray but had numerous small areas of lesser density, producing rather the effect of mesh work. The periphery of the opacity was irregular in shape there being numerous little projections from the edge of the opacity: from these, little strands of grayish tissue extended backwards to the subjacent iris to which they became adherent in the region of the *circulus iridis minor*. There were about 10 of these strands extending from the lower and inner portion of the opacity and two or three from the upper and inner, there were none attached to the upper and outer portion of the opacity. Where these strands became adherent to the cornea they sometimes spread out as it were into several roots or branches, other strands could be seen lying over the iris, which projected loosely out over the pupillary edge.

The pupil was active to light and accommodation. The lens was clear. Owing to the position of the opacity it was difficult to get any view of the fundus; however, after dilating the pupil with homatropin I was able to get a fairly clear view of the disc and surrounding retina. The disc was very white and atrophic looking and in addition it was deeply cupped. The vessels were forced over to the nasal side and it had all the appearances of a case of simple glaucoma, with which the field of vision coincided. The vision was limited to counting fingers at a distance of 12 inches to the temporal side of the field, but to the nasal side of the field there was little or no vision; colours could also be perceived (except green), in the temporal side of the field. The cornea over the opacity was quite regular, smooth and glistening, the opacity being distinctly limited to its posterior layers. No alteration of vision had been noted for years. The tension was normal. This condition had existed from birth, there had never been any inflammation of the eye. The right eye was normal in every respect.

There are two explanations as to the origin of this condition, one being that the pupillary membrane in the foetus had become adherent to the posterior surface of the cornea as the result of an inflammation. It has been supposed that in some cases there has been an intrauterine corneal inflammation with or without perforation, and with a temporary obliteration of the anterior chamber which caused the synechia, but it certainly does not account for all cases. There have been a few reported, in which like mine, there has been no sign of such perforation, and a large piece of persistent pupillary membrane attached the iris to the cornea.

Secondly, defective development is due to the posterior layers of the cornea and the pupillary membrane being of the same embryonic origin, when the anterior chamber had begun to form in foetal life; separation of these two membranes had not taken place at the centre. Also, according to Trencher Collin's theory, which I will later describe, this membrane may block the canal of Schlemm and the filtration angle of the anterior chamber, thereby producing a condition of simple glaucoma, which may progress to a certain stage and then come to a stand still.

The embryological explanation of the condition we have before us cannot be better described than in the words of Dr. Trencher Collins. According to him, before the appearance of the iris in the foetal eye, that portion of the epiblast which forms the lens is cut off from the cuticular epiblast by the ingrowth of the mesoblast. This mesoblast is divided into two layers, the posterior forming the anterior fibro-

vascular sheath and the anterior forming the substantia propria of the cornea and Descemet's membrane. At this time there is no anterior chamber and the lens is separated from the cornea by the anterior fibro-vascular sheath alone, which is in contact with both. As the iris grows out from the ciliary body it carries in front of it the prolongation of the posterior fibro-vascular sheath, which goes to join the anterior, which insinuates itself beneath the anterior sheath and raises it up from the surface of the lens. The sheath ultimately becomes united to the iris, whose anterior layer it forms, while that portion filling the pupil beyond the edge of the iris takes the name of pupillary membrane. As the eye grows this membrane normally stretches and splits up, finally disappearing, but occasionally it remains in part persistent and may be seen proceeding from the corona of the iris to the lens capsule and then to the back of the cornea. When the aqueous is secreted the lens begins to flatten, the cornea and the iris separate unless there should be a failure of the normal complete absorption of the bands between them.

Cases are reported in which adhesions passed between the iris and the ligamentum pectinatum, in others the adhesions were rather nearer the periphery of the iris and were adherent to the back of the cornea, which was perfectly clear. In others the iris was adherent in its upper part to a clear cornea and in some posterior synechia also existed, but there was no round celled infiltration in any part of the uvea and the anterior fibro-vascular sheath here appears to have been unable to separate from the cornea.

Collins explains the improvement that occurs in some cases with advancing age by the hypothesis that the ligamentum pectinatum appeared to have been stretched by the growing eye until the angle had become widely open. This would explain in the present case the existence of the simple glaucoma and also the fact of its having remained partial. In other cases in which there has been less power of the globe to retain its natural dimensions under pressure, there would be buphthalmia.

Hippel holds that the inflammatory theory accounts for most cases, for since we have a perfectly formed iris, the failure of separation of the mesoderm into its two layers cannot be considered; however, in the cases which he mentions and were observed by Nossius, the opacities were situated at the periphery of the cornea over the iris, while in mine the opacity occupied the centre of the cornea.

Stationary corneal opacities are quite frequent in microphthalmic eyes, and vary in form, some being peripheral and sickle-shaped, but

more frequent than these, are those in which there is congenital parenchymatous diffuse gray white opacity, which sometimes covers the entire cornea, giving it a porcelain-like appearance, which may be sometimes limited to the central portion of the cornea. Almost invariably in these cases there is a certain degree of clearing up of the opacity beginning at the periphery and extending towards the centre, which occasionally may be complete. In quite a number of these cases the cornea was at the onset found to be enlarged and distended not unlike keratoconus or keratoglobus, after the cessation of the disease processes lying at the bottom of this trouble.

Hippel has found in a case which he describes that the cornea in time assumed a normal size and curvature with but a slight corneal opacity. In some cases this opacity can persist with much density, or finally permanent increase of tension may persist with an abnormally deep anterior chamber and excavation of the disc, being the condition of hydrophthalmus. These parenchymatous congenital corneal opacities exist in the posterior layers of the cornea only. If we have only a simple opacity, there is merely a lesion of the endothelium but with the enlargement and ectasia of the cornea there is likely an ulcer of the posterior surface of the cornea, this latter having been anatomically proven in one case. Hippel considers these opacities all to be due to an intra-uterine inflammation and not to defective development of the eye.

CASE OF CONGENITAL ABSENCE OF THE VAGINA AND UTERUS: ARTIFICIAL VAGINA: SUBSEQUENT OPERATION FOR APPENDICITIS.

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Montreal.

Miss S., 21 years of age, consulted me about a year ago, because she had never menstruated. She was engaged to be married, but thought it wiser to find out the cause of the amenorrhœa, before doing so. She was a healthy-looking girl, medium height, very good complexion, well developed bust, normal appearance of external genitals, soft voice—in fact there was nothing about her appearance or manner to indicate that she was different from any other woman of her age.

On examining her, I found that there was no appearance whatever of a vagina, although the greater and lesser lips and perineum appeared normal. I took steps to prepare for a rectal examination, and, a few

days later, this was made, when it appeared evident to me that there was not only no vagina, but no uterus either; but there was one ovary on the left side, and I thought I could feel a tube there. I was quite sure that there was no ovary and tube on the right side.

At her request, I informed her intended husband of her condition and of my intention to attempt to make an artificial vagina, of which, however, I was somewhat doubtful. He informed me that he wished to marry her, in spite of the defect.

She was admitted to the Samaritan Hospital 13 months ago, and, in the presence of several members of the staff, I carefully dissected the tissues lying between the rectum and bladder, taking care not to enter either of these organs, by having a sound in the bladder and a finger in the rectum. With the scalpel and my fingers, I pushed the bladder and rectum apart, there being nothing but cellular tissue between them, until my right index finger could be introduced to the distance of four inches. This space was packed with several yards of sublimated gauze which was changed from time to time. She made a good recovery from this little operation, and, before leaving, I had her wear a glass tube to keep the granulating surfaces apart.

She left the hospital in about three weeks' time and came occasionally to see me; when I found the artificial vagina smaller and shallower than at first. This operation, of course, did not help her fault of menstruation, and, soon after, she began to suffer a good deal with what I thought was menstrual pain. It was, however, worse on the right side; she also had some pain at the pit of the stomach, and occasionally would have bilious attacks, when she would feel nauseated. She was also subject to rather severe headaches. I thought most of the pains, of which she complained, were due to the efforts of nature to have a menstrual flow. She was suffering a little all last summer, especially from pain in the right side when she worked hard. This autumn, about the middle of November, she was taken very ill with pain and vomiting, and, at the same time had quite a very severe bleeding of the nose. She was so ill, in fact, that her mistress had to be up all night with her.

Next morning, when I was called, it was evident to me that she was suffering from appendicitis, and I at once sent her in the ambulance to the Samaritan Hospital, with the intention of removing the appendix at once, by a median incision, so that I might, at the same time, verify my diagnosis of a year ago that there was no uterus or vagina. On searching for the appendix the cæcum, the omentum and the small intestine were found, matted together in the appendix region: so that it was quite difficult to detach them during this proceeding. The hæmor-

rhage from the raw surfaces was very free, but was eventually stopped by the application of hot gauze sponges. At last the appendix was found, surrounded with pus, which was wiped away; but when the appendix was being dug out of its bed of adhesions, it came away in several pieces, without, at first, my being able to find its insertion into the cæcum. This latter was gone over several times, and, at last, a place was found a little thicker than the rest, and, on passing a probe along it, an opening was found, leading into the bowel. With the help of the probe and the fingers, this stump, about an inch long, was separated from the cæcum, and cut off even with the latter; the hole in the cæcum being treated as a bullet wound, with two layers of Lembert's sutures, the first taking in the muscular layer but not the mucous membrane, and the second covering over the first with peritoneum.

I was inclined to introduce a drainage-tube, on account of the large amount of raw surface, but by packing in some hot sponges, the oozing eventually stopped, and I decided to close up without drainage. Before closing it, however, I had a good opportunity of verifying the abnormal condition of the pelvic organs. There was no uterus or vagina, and no right tube and ovary, but the left ovary was normal in size and appearance, and the left tube was normal at its fimbriated end, but terminated at its proximal end in a little club-shaped knob. The arrangement of the peritoneal folds, which generally form the broad ligament, was worth noting. On the right side it came from the pelvis to the bladder and abdominal wall. On the left side, it formed an ordinary broad ligament, in which ran the tube, not transversely, but diagonally downwards, that is to say, the fimbriated end of the tube was at its usual level, but the uterine end ran down to where the vagina ought to have been, and ended there. There was no broad ligament on the right side.

There are a few points of interest in this case, the one of greatest practical importance being that this girl was under my observation several times, at intervals during the year from her first operation, complaining of bilious attacks and pains in the pelvis and pit of the stomach, and suffering from constipation, without my recognizing the presence of appendicitis.

The second point is the importance of examining any patient who has suffered from some long-standing abnormality of the menstrual function.

The third point was the profuse epistaxis, which, combined with the temperature of 102° and the pulse of 120, might easily have led a physician who saw the patient for the first time, to suspect typhoid fever, especially as there was marked tenderness in the right iliac region.

The fourth point is that, in appendicitis, the pain is often, at the beginning, situated in the epigastrium, and even in other parts of the abdomen, rather than at Macburney's point, where, however, it eventually ends up by locating itself.

The patient has made a very satisfactory recovery, her appetite and digestion being better at the end of a week than it had been for several years past.

AN UNUSUAL CASE OF THYROIDECTOMY.

BY

FRANCIS J. SHEPHERD, M.D., C.M.

Surgeon to the Montreal General Hospital.

The following case presents operative conditions which I have never met with before, and therefore I considered it sufficiently interesting to bring before this Society. The following is a short history of the case:—

Annie C., aged 38, unmarried, was sent to the Montreal General Hospital by Dr. Molson, November 23rd, 1904, for operation for greatly enlarged thyroid. Twelve years before she first noticed that her throat was somewhat enlarged, and that she had at times difficulty in swallowing. Since that time the throat has steadily increased in size, chiefly on the right side. Two years ago the growth of the tumour became much more rapid, and swallowing at times was very difficult. When she got excited, or over-exerted herself, she had difficulty in breathing—otherwise she was perfectly well.

On examination, both lobes of the thyroid gland were found to be enlarged and also the isthmus; the enlargement was greater on the right side. The whole swelling formed a tumour of firm consistence and smooth surface. In the base of each lateral portion a hard nodule could be felt. The tumour did not give one the impression of vascularity. Temperature and pulse were usually normal, the latter about 70. There was no appearance of exophthalmos. The chief reason for wishing operation was the difficulty in swallowing, and the occasional breathlessness on exertion. She seemed in perfect health, and all her organs, as far as could be made out, were normal.

Operation.—November 29th, 1904.—Anæsthetic of equal parts of ether and chloroform was used, and it was taken without any trouble. After the usual cleansing of the site of operation, an incision was made along the inner border of the right sternomastoid muscle for about five inches, and the gland was uncovered. The upper end of the right lobe,

which extended very much higher than normal, was exposed by extending the incision, and the superior thyroid artery was tied and cut. The next step was to deliver the right lobe. This, at first, could not be done, for it seemed adherent everywhere, and to a much greater extent than it appeared externally to be. The trachea, although not compressed, was shoved over to the left side, and the œsophagus, with the thyroid closely adherent to it, was lying outside the trachea. The right lobe was then, after severing all the adhesions, delivered and the recurrent nerve looked for. It was found imbedded in the gland, and had to be carefully separated; the inferior thyroid artery and middle thyroid veins were tied. The whole gland was removed in one mass without separating it at the isthmus, the left lobe being treated in an exactly similar way to the right through the same incision. The nerve on the left side was not clearly identified, though I was certain it was not cut.

The patient stood the long operation very well. After the gland was removed, the many adhesions gave rise to some bleeding, and many points were tied. As the wound was being closed, I noticed a sharp bleeding on the right side of the trachea, which I immediately arrested with Pean's forceps. At once the respiration, which had previously been quite quiet, became stridulous, and the face became congested, as if there was an obstruction to the breathing. The forceps were at once removed, and it was seen that the main nerve had not been interfered with. The breathing became somewhat better, and the wound was closed and dressed, and she was sent to her ward. The stridor of the breathing being still a feature, respirations 30, pulse 140, I gave directions to Dr. Campbell, the medical superintendent, that, if, in a quarter of an hour, she still had stridulous breathing and continued cyanosed, he was to do tracheotomy. This he did to the great relief of the patient and the ward. Before performing the tracheotomy the larynx was examined, and the cords were found to be spasmodically closed, and no intubation could be satisfactorily performed.

The next day the patient was very well, though she had difficulty in swallowing, and closure of the orifice of the tracheotomy tube by the finger caused complete cessation of respiration. Several attempts were made to examine the larynx, but failed, the parts being so sensitive. A week after the operation she could speak in a whisper, when a finger was placed on the opening of the tube. Eleven days after operation the tube was coughed out of the wound, and as she breathed quite well it was not reintroduced. From this time forward recovery was rapid, and as the wound closed she breathed without difficulty through the mouth, spoke plainly, with good though altered voice. About the 24th of December she was discharged apparently perfectly well.

On speaking about the case to Dr. Birkett, and discussing the cause of the condition which came on after operation, he suggested that perhaps one of the nerves was paralysed partially or wholly before operation, and that, probably, the nerve to the abductor muscles being caught by forceps, the adductus closed the rima glottidis. I sent her to Dr. Birkett for examination, and he found that the left cord was paralysed, and, from its rounded appearance, and for other reasons, he concluded that the paralysis was of long standing, also that the right cord had not yet completely recovered. This confirmed the surmise made soon after the operation. The position of the œsophagus also explained why swallowing was difficult.

There is no doubt that the left cord was paralysed at time of operation, and that the forceps at the end of the operation seized the nerve going to the abductor muscles, and caused a closure of the cords by the unopposed action of the adductor. It teaches us one lesson, that is, always to have the larynx examined before operation. I had a case of a woman quite recently where an operation had been performed on the left side three years ago, and the growth of the right thyroid had continued steadily until, when I saw her, she had stridulous breathing and great breathlessness on exertion. Laryngoscopic examination revealed a paralyzed left cord. In this case, not wishing to remove all the thyroid, and knowing that the left nerve was partially paralysed, after tying off the inferior thyroid artery, I delivered the tumour, tied the inferior thyroid artery, and then enucleated the diseased tissue, without any hæmorrhage, and without injuring the recurrent nerve. The shell of gland was replaced and the wound closed; by this means sufficient gland was preserved to avoid any risk of myxœdema, and there was no chance of injury to the nerve.

THE JUBILEE OF LARYNGOLOGY.

BY

H. S. BIRKETT, M.D.

Professor of Rhinology and Laryngology, McGill University; Rhinologist and Laryngologist, Royal Victoria Hospital, Montreal.

To-day in London there is being celebrated what one may regard as a unique occasion, namely, the Jubilee of Laryngology, and the one hundredth birthday of one who is, practically speaking, the inventor of the laryngoscope; and it occurred to me that a few words upon this subject might not only be of some little interest to you as regards the

* Read before the third and fourth year classes of the Medical Faculty of McGill University, 17th March, 1905.

history of the instrument, and of the man whose name is so intimately associated with its invention, but also appropriate to the occasion.

The idea of examining the cavities of the human body is of ancient date, but the development of it was slow, and the result imperfect. The first attempt was made by Philip Bozzini, of Frankfort, in 1807, who devised an instrument to examine the larynx. This instrument consisted of a tube divided in the centre into two compartments, one of which was a mirror, so placed as to reflect the light downwards. The object of this division was to transmit the rays of light from the illuminate source, and the other to receive the rays of light reflected from the examined object. It seems strange in these days that it was thought necessary to attempt to shut off the reflected rays in order to be able to see the part under examination.

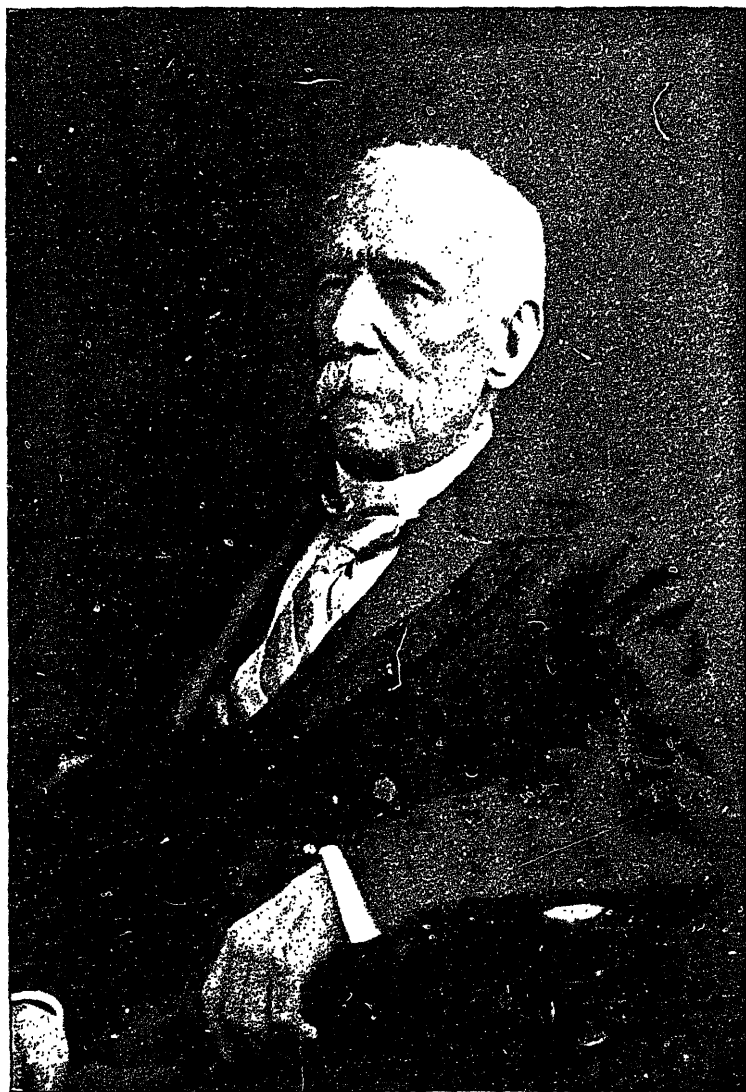
As John Stuart Mill truly said, "No art is complete unless another art, that of constructing the tools and fitting them for the purpose of the art, is embodied in it." So this invention became useless because of the want of the art of fitting it for the purpose it was hoped to attain.

In 1825 Cagniard de Latour, of the Academie des Sciences, by means of a little mirror and the aid of solar rays, made attempts to see the epiglottis and even the glottis, but unsuccessfully. Four years later, Benjamin Guy Babington presented to a meeting of the Hunterian Society an ingenious instrument for the examination of parts within the fauces not admitting of inspection by unaided sight. It consisted of an oblong piece of looking-glass set in silver-wire, with a long shank. The reflecting portion is placed against the palate, whilst the tongue is held down by a spatula, when the epiglottis and upper part of the larynx become visible in the glass. A strong light is required, and the instrument should be dipped in water so as to have a film of the fluid upon it when used, or the halitus of the breath renders it cloudy. The doctor proposed to call it the *Glottiscope*.

In the year 1832, Dr. Bennati, of Paris, used an instrument made by one of his patients, named Selligue, who was himself the subject of laryngeal tuberculosis. It consisted of a double-tubed speculum, one tube of which served to carry the light to the glottis, and the other to bring back to the eye the image of the glottis reflected in the mirror, placed at the guttural extremity of the instrument.

In the year 1838, M. Baumes exhibited, at the Medical Society of Lyons, a mirror about the size of a two-franc piece, which he described as being very useful for examining the posterior nares and larynx.

In the year 1840, Liston, in treating of oedematous tumours which obstruct the larynx, stated as follows:—"The existence of this swelling



HIS EXCELLENCY MANUEL GARCIA.

may often be ascertained by a careful examination with the fingers, and a view of the parts may sometimes be obtained by means of a speculum—such a glass as is used by dentists on a long stalk, previously dipped in hot water introduced with its reflecting surface downwards, and carried well into the fauces.”

In the year 1844, Dr. Warden, of Edinburgh, conceived the idea of employing a prism of flint glass for obtaining a view of the larynx.

In the year 1844, Mr. Avery, of London, invented a laryngoscope in principle very similar to that now in use. The reflector was attached to a frontal pad, and was retained in its place by two springs which passed over the operator's head to the occipital protuberance, where there was a counter-pad. There were two defects, however, in Avery's apparatus—the one was that the laryngeal mirror (instead of being fixed to a slender shank) was placed at the end of a speculum; the other, that instead of employing the reflector for receiving the rays from a lamp placed on the table or elsewhere, Avery used his large circular mirror for the purpose of increasing the luminous power of a candle held near the patient's mouth.

In the laryngoscope of Bozzini and Avery the lamp and the reflector are combined, whilst in the modern instrument they are separate. The laryngeal mirror of Bozzini and Avery was placed at the end of a speculum; Czermak's was a modification of the dentist's mirror. Mr. Avery's invention was not placed on record till some time after the modern laryngoscope had come into use.

This brings us to a period, 1854, when one whom we are here to honour, and whose name we revere, was brought to the notice of the medical profession. He will forever be associated in the history of laryngology as the inventor of the laryngoscope—Manuel Garcia.

Manuel Garcia was born in Madrid on the 17th of March in 1805. When still a child his family were driven from Spain by the Peninsular War, and for a time settled in Naples. There the elder Garcia studied the art of voice production, of which his son was to become so distinguished an exponent. He came of a musical family, his two sisters, Frau Malibrán and Frau Pauline Viardot-Garcia being the most noted singers in their day. The former died in 1836. The latter is still living, being 85 years of age, and enjoying remarkably good health. Young Garcia's fancy at first turned to the sea, but, in deference to his parent's wish, he was trained for the operatic stage. He made his first appearance in New York. It should be interesting to students of human longevity to learn that Manuel Garcia's physique proved inadequate to the strain imposed by the work of the stage. On his return to Europe,

therefore, he established himself in Paris as a teacher of singing, gaining in time so great a reputation that he was appointed a Professor in the Conservatoire. He has lived since 1850 in London where he trained many of the greatest singers of the last century; amongst those whose names may be mentioned are: Jenny Lind, Johanna Wagner, Bataille, Santley, Antoinette Sterling, Margaret Macintyre, Katherine Hayes, Agnes Larcom, the Misses Orridge, Thudichum, and of later date Marchesi and Julius Stockhausen.

The following is his own account of the invention which has been so fruitful of benefit to mankind in directions undreamed of by its true begetter:—"Never being thoroughly satisfied with my own teaching, I longed to see a healthy glottis exposed in the very act of singing; but how could the mysteries of an organ so well hidden be revealed? One day in the autumn of 1854 I was strolling in the Palais Royal, preoccupied with the ever-recurring wish, when suddenly I saw the two mirrors of the laryngoscope in their respective positions as if actually before my eyes. I went straight to Charriere, the surgical instrument maker, and, asking if he happened to possess a small mirror with a long handle, was supplied with a dentist's mirror. Returning home, I placed against the uvula the little mirror (which I heated with warm water and carefully dried), then flashing on its surface with a hand mirror a ray of sunlight I saw at once the glottis wide open before me, so fully exposed that I could see a portion of the trachea. From what I then witnessed, it was easy to conclude that the theory attributing to the glottis alone the power of engendering sound was confirmed, from which it followed that the different positions taken by the larynx in front of the throat have no action whatever in the formation of sound." The discovery was made in 1854, and in the following year Garcia presented a paper to the Royal Society of London, entitled "Physiological Observations on the Human Voice."

I shall read the following extract from his original paper so far as it concerns the topic under consideration:—"The pages which follow are intended to describe some observations made on the interior of the larynx during the act of singing. The method which I have adopted is very simple. It consists in placing a little mirror, fixed on a long handle suitably bent, in the throat of the person experimented on against the soft palate and uvula. The person ought to turn himself towards the sun, so that the luminous rays falling on the little mirror, may be reflected on the larynx. If the observer experiment on himself, he ought, by means of a second mirror, to receive the rays of the sun, and direct them on the mirror, which is placed against the uvula."

The paper which marks an epoch in the history of medicine seems to

have been received with Olympian indifference by the august body to which it was submitted, and for some time excited little interest in the scientific world outside. For years the laryngoscope was scoffed at by superior persons as a "physiological toy," and its application to medical practice was treated as a vain thing, and even looked at askance by self-constituted keepers of the professional conscience. Had it not been, indeed, for the proselytizing zeal of the distinguished physiologist, Czermak of Buda-Pesth, who visited the chief scientific centres of Europe as a missionary eager to spread what was in the literal as well as in the figurative sense a new light, there can be little doubt that Garcia's invention, like those of Bozzini, Babington and Avery before it, would have been allowed to perish of neglect.

In the year 1857, during the summer months, Professor Turck endeavoured to employ the laryngeal mirror in the wards of the General Hospital of Vienna. In the month of November of the same year Professor Czermak, of Buda-Pesth, commenced to work with laryngeal mirrors, and in a short time overcame all difficulties. Artificial light was substituted for the uncertain rays of the sun, the large ophthalmoscopic mirror of Rueta was used for concentrating the luminous rays, and mirrors were made of different sizes. Thus it was that Garcia's invention of the laryngeal mirror led Czermak to create the art of laryngoscopy.

While Czermak had remarked upon some pathological conditions, he attributed the first studies in this field to his pupil, Semeleder, who in 1858 published an account of some pathological conditions of the epiglottis and of the tongue. Störk, Turck and Gerhardt, in the same year and the next, began their numerous contributions to the literature of intra-laryngeal pathology. In this Turck was especially prolific. All these earlier works of Turck were in some form soon translated into French and English. Whatever may have been his merit as to the inception of the idea of laryngoscopy, he was foremost in the spread of the knowledge of diseases revealed by it.

For the most part his idea of pathology, especially pertaining to tuberculosis, conformed to the principles of Rokitanski. He described the appearances in lupus, diphtheria, syphilis, tumours and œdema of the larynx. Störk, in 1859, in an article on the technique of laryngoscopy spoke of making laryngeal applications of nitrate of silver with the aid of the laryngoscope. Thus early was the question which agitated Horace Green and his adversaries conclusively settled without controversy. Czermak also claimed to have made applications of caustics and other drugs to the larynx under the guidance of the laryngoscope as early as 1859.

The use of the laryngoscope quickly spread in the large cities of other lands. Morrel McKenzie had visited Czermak in 1859, and was in Vienna during the controversy between Czermak and Turck. On his return to London in 1860, in company with Gibbs, Professor James and others, he was foremost in the use of the laryngoscope and the study of the phenomena which it revealed, and in 1863 he obtained the Jackson prize of the Royal College of Surgeons for his essay on "The Pathology and Treatment of Laryngeal Disease," his brochure on "The Use of the Laryngoscope in Diseases of the Throat with an Appendix on Rhinoscopy" appearing in 1865.

C. Rauchfuss introduced into Russia the knowledge of laryngoscopy and intra-laryngeal operations. Czermak and Turck, as we have seen, published their first books in France in 1859 and 1860. In 1861 Moura had advanced far enough in the new art to publish a treatise on laryngoscopy, a second edition appearing in 1865. Czermak, besides his stay in Paris, also visited London, as did Turck. The former also visited many cities in Germany, and Tobold, in Berlin, in 1863 published his "Anleitung zur Laryngoskopie," in which he adopted the principle of fixing the reflecting mirror to a stand which was eventually modified into the present so-called Tobold's apparatus. The original idea of this, however, is to be found in Turck's papers.

Voltolini contributed much, by the originality of his diction and the fertility of his inventive powers, to the spread and advance of the art in Germany, especially as to naso-pharyngoscopy and the employment of the galvano-cautery. Post-rhinoscopy was at first eagerly pursued by Voltolini and Semeleder as an aid to the passage of the Eustachian catheter.

Strangenwald, Church, Krackowitzer, and John H. Douglas and Horace Green in 1861 reported the new art in America.

Louis Elsberg, of New York, published papers on the laryngoscope and laryngoscopic technique. The latter more than anyone else was active in drawing attention in America to the value of the new art, and for some time previous to these publications he had taught the technique in the University Medical College in New York. His attention had been attracted and his ardour stimulated by Czermak, who had sent him his book. These studies and observations he brought, in 1863, before the New York Academy of Medicine and the American Medical Association. He also thus early urged the value of topical applications to the larynx. Horace Green lived to see an instrument of precision prove, before the Academy of Medicine, the claims which he had advanced there so courageously and so tenaciously many years before, but he himself took

no active part in developing in his native country the art of laryngoscopy. He died in 1866.

It was several years after Elsbeg became active in the propagation of laryngology in America that others joined him. In 1866 J. Solis Cohen, of Philadelphia, began that long series of communications which have done so much to establish the specialty of laryngology in America, and to stimulate its steady advance for nearly forty years.

In the Medical Schools and Universities instruction was soon given in the art of laryngoscopy. Turck and Semelcer are recorded as giving instruction in Vienna in 1861, the former being created professor in 1864.

In other large cities as well as in Vienna, private and public instruction was soon to be easily obtained by the student. In 1861, Elsbeg had begun teaching laryngoscopy in New York, and in 1868, in the catalogue of the "Medical Department of New York," his name appears as Professor of Diseases of the Throat, but not until 1875 was laryngology included in the curriculum of the Harvard Medical School, and that of the New York College of Physicians and Surgeons. After this it soon became a department of nearly all the teaching medical institutions.

In 1862 Garcia was given the degree of M.D. by the University of Konigsberg *in honoris causa*.

To-day, additional honours are being laid upon this "Grand Old Man." The Royal Society of London, The Prussian Academy of Sciences, and the University of Konigsberg will congratulate him. The Musical Societies and his old pupils will honour him, and Laryngological Societies of many countries will salute him, there being representatives delegated for this purpose from the Berlin, South German, Vienna, French, Dutch, and Belgian Societies. The Spanish Government will congratulate him through the mouth of the representative at the Court of St. James', and I have reason to believe, from a letter recently received from my friend Sir Felix Semon, that notice will be taken of the unique event in other exalted quarters:

"From this introduction of the laryngoscope there has grown to be an orderly branch of medical science with its own special literature, instruction and teachers. With the passing years the work of Garcia has been seen in its true relations. Happily he has lived to see it fully appreciated, and has reaped the rewards of his labours amid the applause of his own day and generation.

"It is a pleasing thing to view the cordial relations which have always existed between him and the London profession. By it he has been, and still is, highly esteemed."

He remains to-day in the enjoyment of full health and strength, and

let us in conclusion extend our united hearty congratulations and good wishes to him.

I desire to acknowledge my indebtedness to the following sources from which I have derived my information, having quoted verbatim from many of them:—"The Laryngoscope," by Morrell MacKenzie; "Transactions of the Royal Society," Vols. 3, 7 and 34; "A History of Laryngology and Rhinology," by Jonathan Wright; "The British Medical Journal," "The New York Medical Record," and, finally, to my friend, Sir Felix Semon, for his interesting letters to me upon this subject, for the advance proof of his article which is to appear in the "Centralblatt für Laryngologie," and for his much appreciated kindness in sending me a photograph of Manuel Garcia. I also wish to express my indebtedness to Miss Charlton, Assistant Librarian of the Medical Library, for the assistance accorded me in the preparation of this address.

The legislature of the State of Washington, and the organized body of the profession of that State, are to be congratulated upon having secured the passage through both Houses of this most commendable bill, against the opposition of the newspapers and quack doctors of the State. It prohibits the publication or printing of any advertisement to cure genito-urinary diseases, to restore lost manhood, or to treat this class of disorders. The penalty is imprisonment from one to six months for the editor or owner of any paper or proprietor of any printing establishment who publishes such advertisements.—*Cleveland Medical Journal*.

Mr. W. Roger Williams, of Clifton, states that Bristol, with a population of 340,000, provides annually the large number of 140,000 with gratuitous medical relief. He estimates that some 40,000 persons in Bristol are annually in receipt of medical relief who cannot and ought not to plead poverty. He further states that if these undeserving crowds were eliminated the funds at present available for charitable medical purposes would be amply sufficient for all legitimate requirements.—*Bristol Medico-Chirurgical Journal*, March, 1905.

Dr. Bryce shows, in his last annual report, that, during the year 1903-1904, of 99,741 immigrants who landed at the ports of Quebec, Halifax and St. John, 1,835 were treated at the detention hospitals, or 1 in every 54; 274 immigrants were deported, or 1 in 363.—*Canadian Journal of Medicine and Surgery*.

This is 1905, and we're moving. No dead line for us.—*Medical Mirror*, St. Louis.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

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VOL. XXXIV.

MAY, 1905.

No. 5.

IMMIGRATION AND DISEASE.

Statistics from the Dermatological Department of the Montreal General Hospital for the past two or three years show a considerable increase in the number of cases of scabies and favus applying for relief. While a few scattered cases of scabies are met with every year, the number during the past autumn and winter has increased to such an extent that one is perhaps justified in looking upon the disease as epidemic at present. The epidemic, if we may be permitted to use the term, is confined very largely to recently arrived immigrants from central and southern Europe, the few cases which have appeared in other races being generally traceable to contact with the immigrant class in the cheap boarding houses and night lodgings frequented by these people.

Scabies, while a disgusting and dirty disease which we are better without, cannot be looked upon as a menace to the public health. It is not at all difficult to deal with, and yields readily to treatment, liberal use of soap and sulphur speedily effecting a cure. Favus, on the other hand, is most resistant to treatment, and when it occurs, as is usually the case

among those who have no prejudice against uncleanness and disease, unless they interfere with the bodily health and comfort, it is impossible to eradicate.

On looking over the statistics for the past ten years, one finds that the cases of favus reported from the hospital clinic have rarely exceeded three or four each year, except in 1901 and 1902, when the United States Government refused admission to persons suffering from this disease, and many immigrants passing through Montreal *en route* to the United States were stopped here and drifted into the clinic. Since then there has been an increase in the number of cases seen, and this is presumably accounted for by the fact that many of these people have made their homes in Montreal. During the past winter Montreal has had a large influx of Russian Jews, some ten thousand or more, mostly of men who have hurriedly left their country intending to have their families follow them later. From the number of these immigrants* who have applied at the various departments of the hospital for medical treatment, it is seen that a considerable proportion of them have suffered from favus, as they show unmistakable evidence of having had the disease, although it is now quiescent. As the active period of the malady is during childhood and adolescence, cases rarely appearing after fifteen years of age, it is greatly feared that unless some measures are taken by the Government to prevent its admission, we shall soon have an alarming increase in what is rightly looked upon as a loathsome disease. The United States authorities have seen fit to refuse admission to persons suffering from this disease, and their judgment is equally applicable to this country.

“Le BILL RODDICK.”

There is a paragraph in the April number of our contemporary, “L'Union Médicale du Canada,” which puzzles us, and must have given false ideas to the readers of that journal. It is there stated that “At the last meeting of the Société Médicale de Montréal the president of the medical students (we take it, of Laval University) came to ask the opinion of the members regarding an application of the students.” The application seems to have been—though this is not clearly stated—that the Laval students should join in a petition to the Federal Government to create a central board of examiners having the powers indicated in “Le Bill Roddick.” The paragraph suggests undoubtedly that McGill, i.e., the University, or at least the Medical Faculty of the same, has taken the unusual course of forwarding a petition to the students of another university asking for their signatures to a petition having an object opposed to the wishes of the teaching staff of that other university. Of

course, McGill has done nothing of the sort. Nevertheless, our French Canadian confrères have read into the terms of Dr. Roddick's Bill so much that is not there, so much undreamed of and unwished for by its author and his supporters in this province, that we imagine there are those who will swallow this and believe that McGill University has taken such a course. The only explanation that occurs to us is that some of the medical students of McGill have, through their president, or through their Medical Society, approached their confrères at Laval—an action on their part which would be quite natural and reasonable. That, however, would be a very different matter from what *L'Union Médicale* implies in its editorial; and were this what really occurred it ought to have been stated clearly.

HYGIENIC PROGRESS IN AUSTRALIA.

Among the most welcome of our exchanges is the "Australasian Medical Gazette," of Sydney. One can see in those columns the discussion of problems very like our own, and we are interested to see how keen appears to be the public spirit in which Canada's younger sister faces the numerous difficulties that beset a young land.

From the brief resume of the topics of the month, it is noticeable that the birth-rate of New South Wales increased $1\frac{1}{2}$ per thousand in a year, though it is yet 5 per thousand below the rate of ten years ago; doubtless special circumstances are to account for the high rate of 32 per thousand that then prevailed. Victoria and Tasmania have taken up the tuberculosis question, and in the former Premier Bent announces that the Government is dealing with the disease as a state question, and has set apart land for building a sanatorium for both curable and incurable cases; by the time this appears in print the institution will be in running order. Tasmania, though a step farther back in point of time, is instituting similar procedures.

Sydney is debating the problem of devoting a million dollars to a public abattoir, and the Board of Health is properly alive to the necessity of having thorough inspection of all the meat killed, of abolishing private abattoirs so that this inspection may be the more rigidly carried out, of stamping inspected carcasses, and of bringing all the large freezing establishments under central supervision in this particular. Finally, Brisbane has just passed through the throes of getting an infectious diseases hospital, and has apparently succeeded. None of these questions that vex our Australian brethren are foreign to ourselves, and both countries are building the foundations of structures that must last for

a long time, for none of these problems can cease to be problems for many decades to come. We wish them, and ourselves, a happy issue out of these troubles.

CANADIAN MEDICAL ASSOCIATION.

The thirty-eighth annual meeting of the *Canadian Medical Association* will be held at Halifax on the 22nd to the 25th of August, 1905. In the communication from the General Secretary announcing this event, two extracts from the constitution are given. These are:

A copy of every address, discourse, or paper read before the Association shall at once be handed to the General Secretary, and shall become the property of the Association, and shall be preserved with the other documents. Members desiring their papers to appear in any particular journal shall present a duplicate copy with the name of the journal marked thereon.

The success of these meetings depends upon the number and quality of the papers which are read as much as upon the liberality of the entertainment which is offered to visitors. A contributor quite properly desires publicity for his paper, even beyond the circle of hearers who may be present when it is read, and he may not be satisfied that it "shall be preserved with the other documents" of the Association. This laudable demand for publicity is recognized in the second clause, in which it is requested that "members desiring their papers to appear in any particular journal shall present a duplicate copy with the name of the journal marked thereon." The implication is that the paper shall not appear in any other journal than that indicated. The Association publishes no transactions, and the ownership and disposition of the paper rests with the author. Two years ago there was no regulation. The result was an unseemly scramble on the part of journals anxious to fill out the lean summer numbers, as we had occasion to remark at the time. Last year an agreement was reached that members should be left free to exercise the choice permitted to them by the constitution, and the results were, if anything, more unsatisfactory. Papers which were assigned exclusively to this Journal appeared elsewhere before and after our publication.

Most authors are of opinion that sufficient publicity is given to a paper if it appears in one general and one special journal, and this is our judgment, too. There are other journals more sweet-tempered which make no such exclusive rule, and if the views of authors are not respected by the Association, they will either decline to read papers, or retain the disposition of them entirely in their own hands. The success of the Association is bound up in this matter. The value of the meet-

ings will be much impaired if authors find that, through no fault of theirs, journals having an exclusive rule are compelled in self-defence to decline the publication of papers presented at the meetings.

Last July we had to record the death of Dr. Rollo Campbell, eldest son of Dr. F. W. Campbell, which occurred from typhoid fever on the 30th of May, 1904. Now, again, we have to mention the death of Dr. Campbell's only surviving son, Francis Wayland, which took place on the 17th of April, 1905, also from typhoid fever, in the thirtieth year of his age. At the same time we are obliged to admit that Dr. Campbell himself is extremely ill, and that his condition is such as to cause grave anxiety to his friends. To all who dwell in this afflicted household we make most respectful tender of sympathy.

Ten years ago the antitoxin treatment of diphtheria was begun by the Department of Health of Chicago. During the previous ten years there had been 13,566 deaths from diphtheria and croup reported to the Bureau of Vital Statistics, a yearly average of 1,356, and a proportion of 13.53 deaths in every ten thousand of the population. During the ten years ended with 1904 there were only 8,129 deaths reported, a yearly average of 812, and a proportion of less than 5 in every ten thousand of the population. These figures show a reduction of 5,437 in the actual number of deaths since the department began the antitoxin treatment. They show a relative reduction in proportion to increased population of nearly 64 per cent.; that is to say, if the ravages of diphtheria had not been checked by the use of antitoxin during the last 10 years there would have been 22,538 deaths instead of 8,129—a saving of 14,409 lives.

The Journal of the Sei-i-Kwai or Society for the Advancement of Medical Science in Japan publishes a short article dealing with shell wounds; the larger part of the journal is in Japanese, with, however, an index in the English language, and the article above mentioned is printed in English. It is evidently translated by a Japanese, and its faithfulness to our own diction is quite remarkable. A breath of unconscious humour refers to the speech centre as "the Broker's convolution." The case of Gavarvitch Plakaff is detailed fully as to injury, treatment, result and post-mortem examination. Shade of Napoleon Bonaparte! Wound the enemy with a fragment of a 10-inch shell, rescue him by "our Second Fleet," trephine his skull, treat his wound antiseptically, and finally, when dead, perform an autopsy on him. This is certainly

the scientist in his perfection! Meanwhile we suppose the little Plakaffs in a Siberian village cry and laugh and munch black bread just as unconsciously as if their father had not attained his little niche of fame in these columns and elsewhere.

DR. OSLER'S VISIT.

No one of Dr. Osler's friends, acquaintances or even interested auditors will have failed to feel on this occasion a keener regret than before, because his departure is, to McGill University and Montreal a thing not of the future, but of the past. Lately, through three months, he has been overpowered, it may be, by eulogy and the language of admiration; speaking between friends, Dr. Osler will understand what we mean when we say that we feel as if it were our right as a medical community to assure him of our affection, to assure him that his place is more in our hearts than in our heads, and that the removal of a master is not so much to us as the absence of a friend.

Dr. Osler made his farewell visit the occasion of two public speeches, the first before the Students' Medical Society, and the second an after-dinner speech at the banquet of the Undergraduates in Medicine. The same spirit to some extent pervaded both utterances, and the general idea was to magnify the importance and the dignity of studentship in its wide sense; the true spirit of inquiry after truth can not be unduly magnified, cannot be too earnestly desired, and never fails to add an increased lustre to the most exalted. It would be a fruitless task to set forth the details of these talks, for a great deal of their charm lies in the delivery, the happy turned phrase and the earnestness of purpose that makes Dr. Osler an appealing speaker.

In a wide circle of acquaintances and a large opportunity of influence, he has never failed to consistently preach his doctrines of the power of work, of the necessity of keeping the ideal in sight, and the good tidings that the gates of knowledge open, not only to the brilliant picklock, but to the repeated smiting of the besieger who will not be repulsed. These things we have heard before, but it becomes no one to say that they are repetitions, until he has laid them to heart and reduced them to practice; the gist of those speeches was far from new; we have even heard them before from the same lips, but as long as the lesson can yet be learned, until it is learned, it is Dr. Osler's duty to hammer it in by main force, and it is a duty he will probably fulfil again and again. If ever the glad time come, when these things will be the habit of most of us, nay, even of any considerable number of us, Dr. Osler will lay the old familiar articles of doctrine upon the shelf, and will point out an entirely new,

and, we doubt not, an infinitely higher set of ideals. Doubtless before this second lot is learned, our teacher will be, in years, an old man. In the meantime, we wish him no better fate than to continue fulfilling this same duty; no man can estimate how far-reaching is its result, and its very earnestness is an irresistible stimulus.

Reviews and Notices of Books.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. For Students and Practitioners. By HOBART AMORY HARE, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College Philadelphia. In one volume of 1,120 pages, 129 engravings, 10 full-page plates in colours and monochrome. Cloth, \$5.00 net. Lea Brothers & Co., Philadelphia and New York, 1905.

Professor Hare's position in the world of medicine is a guarantee of the quality of the work that is here under review, and it can be said that the book is well made, and that nearly all of it is just as it should be. In comparing it with other text-books of its kind, the particular points noticeable are that the author has made good use of much statistical material, and, as might be expected, has laid especial stress upon that part which deals with treatment.

The volume is illustrated, and the coloured plates are good and adequate, but the wood cuts in many cases are not, and it is doubtful if they add to the efficiency of the book. The cuts are not consistently selected, if one may use the term, for most of the articles are not accompanied by illustration. What is here stated does not apply to diagrams of the nervous system, which are always necessary to the average practitioner and to the student; the others form so comparatively small a part of the book that their absence would scarcely be noticed. In regard to usefulness, we contrast the full page figure on p. 615 illustrating varicose veins of the œsophagus with the little diagram on p. 503, showing the reserve energy of the heart in valvular disease, which we do not recollect having seen so well explained before.

It is a fair test of such a book to take a well-known disease; the article on pneumonia we find among diseases due to specific infection, and not under diseases of the lungs, where, however, broncho-pneumonia does appear. Why carry into present-day books the use of terms "croupous" and "catarrhal"; our own experience with students has been that these do not convey enough meaning to justify their use. It is difficult to say whether lobar pneumonia belongs most to the diseases of the respiratory tract or to general diseases, but it strikes us that the diseases of the

lungs without it look like a committee without a chairman. It is good to see that no essential difference is insisted upon in the effect, upon the individual air-sac, of the different infections; but it is doubtful if the division of pneumonia into the stages of red and grey hepatization serves any useful purpose, and it certainly obtains, in the student eye, an undeserved importance. In the general discussion upon the problems of tuberculosis, the author is dealing with so many debatable questions that he has good chances of exciting criticism, but we give Professor Hare credit for choosing, in a text-book for students, to be dogmatic and clear cut in his statement of belief.

A full list of tropical diseases is introduced, and these are dealt with in an excellent way—no one, so far as we notice, has been neglected, nor is any article of undue length; the authorities are cited up to the very present, and the relative importance of these diseases to a practitioner in America is stated.

Finally, there is one large part of this book which will specially appeal to its readers, viz., that devoted to treatment. It has not always been so in text-books of medicine, if one may trust the reviewers, and one feels here the author has felt most at home, that here, perhaps, in his own mind exists the reason for its publication; the full and practical suggestions as to therapeutics are beyond our personal ability to criticize, and we do not feel the need to attempt criticism, for these bear the mark of the painstaking, best efforts of the talented author, and into them he has woven years of careful observation and practice. In this regard above all others we feel sure that the practitioner will welcome Professor Hare's book as gladly as we personally have done, and when all is said, there is perhaps no part of a text-book that is so necessary or so capable of useful application as this.

GYNECOLOGY, MEDICAL AND SURGICAL.—By HENRY J. GARRIGUES, A.M., M.D., Gynecologist to St. Mark's Hospital, New York City, etc. Philadelphia and London. J. B. Lippincott Company, 1905.

Professor Garrigues in 1894 wrote "A Text-book of the Diseases of Women," "for general practitioners and students," a very commendable treatise. It is published by W. B. Saunders of Philadelphia and the third edition appeared four years ago.

There now appears by this author a "Gynecology" "particularly written for students in medical colleges and such general practitioners who desire to make themselves acquainted with the essentials of modern gynecology;" and the publisher is Lippincott. Beyond this fact there is little difference between the two books, save that in the later work

the illustrations are slightly more numerous and the abbreviated "gynecologic" has entirely supplanted "gynecological," the older and more sonorous adjective.

Professor Garrigues is also the author of "A Text-book of the Science and Art of Obstetrics," published by Lippincott in 1902. With reasonable expectation we may await the appearance of "A Text-book of Midwifery," and it would be only fair that Saunders should secure its publication.

Why ceaselessly multiply text-books? Certainly "Gynecology" fails to furnish an adequate answer. It is practically a duplicate of the older and somewhat larger "Diseases of Women," omitting only the chapters on anatomy and embryology, omissions which scarcely justify its existence as a separate publication.

As a book it adds another member to the already large family of American texts upon the subject and it possesses in marked degree the family-likeness, the family virtues and deficiencies. As usual the strong features are the mechanical ones, for the student or practitioner is sharply directed in whatever is provided of medical or surgical procedure. The diagnosis granted, the directions in treatment though by no means uniform in quality are sufficiently clear and succinct.

Twenty-three pages are devoted to the "diseases of the Rectum and Anus," and one cannot but wonder in reading the fifteen-line description of Kraske's operation, whether the desperate struggle to overtake this subject is worth the space allotted to it.

It is however, from the scientific aspect that the weaknesses are manifest. The lines of etiology, pathology, indications and choice of treatment, are seldom clearly or strongly drawn and these, we take it, are the first *essentials* of any medical text-book. While this particular book does not pre-suppose, it nevertheless fails to furnish certain definite knowledge both of the "physiology of disease" and the morbid conditions themselves; and particularly is this evident in the chapters which deal with the various neoplasms. Lawson Tait's long-lain ghost of the "Menstruating Fallopian Tubes" here again stalks abroad.

Still have we to wait in gynæcology the peer of Whitridge William's text-book in Obstetrics. The work of the publisher is here, as always in America, well done.

STUDIES IN THE PSYCHOLOGY OF SEXUAL SELECTION IN MAN. By HAVELOCK ELLIS. Pages 12-270. \$2.00, net. F. A. Davis Company, Publishers. Philadelphia.

This is another of those books which reveal how near the surface of

humanity lies the beast, and in doing so it comes perilously near being unclean. It will probably prove to be more attractive to obscene persons than trustworthy to the "physicians, lawyers and scientists," for whom it is designed. There is no doubt that, in sexual selection, human beings are guided to some extent by those attractions of touch, smell, hearing and vision, which find their full realization in the lower animals; but decent and civilized men do not make much of them when they talk together. Certainly Mr. Ellis is not restrained by any considerations of reticence or modesty; and an author who writes of bad morals is apt to do it with bad taste. This assumes, of course, that there is such a thing as bad morals in a considerable section of the human race, which is neither good nor bad when observed amongst other animals. There is evidence of much research on the part of the author, a keen perception of the more obscure facts of psychology, a large citation of authorities, who are chiefly foreign, as English investigators have never attained to any high degree of celebrity in this branch of science.

The case reports give to the book an appearance of authenticity; but in reality they are written by bad men who were conceited about their own defects. These nasty fellows were probably liars when they came to boast about their filthy amours; and glorying in their savagery seems more apparent than their devotion to truth. A physician—we do not speak of lawyers—could go through life very comfortably with such knowledge only of these subjects as is obtruded upon him in the course of his daily work, without the results of the profound investigations which are contained in this book.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY FOR 1905. A Yearly Digest, arranged, with critical comments, under the editorial charge of GEORGE M. GOULD, A.M., M.D. In two volumes. Volume I., including General Medicine; Volume II, General Surgery. 700 pages each, fully illustrated. W. B. Saunders & Co., 1905. J. A. Carveth & Co., Limited, 434 Yonge Street, Toronto. Per volume: Cloth, \$3.00; half Morocco, \$3.75.

These two volumes are the most formal of all the digests of medical science which appear. They are intended to be a record of progress during the year 1904, but many of the references, perhaps the greater number, are drawn from the records of 1903. This is unavoidable in view of the labour demanded in editing and publishing the work. A rather careful examination of the 1,400 pages shows that only five references are made to Canadian literature, two from Toronto and three from this Journal. These three references are to typhoid fever in the Royal Victoria Hospital, by C. K. Russell, 1903; to H. A. Lafleur's case of gastric syphilis, 1903, and to Louis Loeb's work on the coagulation

of the blood, 1903. No mention is made of anything which has been done in these parts during the past year, and some narrow-minded persons will think that is an imperfection in a work which is given out as a digest for 1904. On the other hand, this leisurely treatment has its advantages, for things look different a year after the event. Much of the "progress" in medicine is apparent rather than real, and a reading of these earlier discoveries confirms that view. The material which Dr. Gould and his fellow-workers have had to handle is enormous in its mass, and the wonder is that they have done so well.

PRACTICAL PEDIATRICS. By Dr. E. GRAETZER, Editor of the "Centralblatt Fur Kinderheilkunde" and the "Excerpta Medica." Authorized translation by HERMAN SHEFFIELD, M.D., New York. Pages 12-544. Price, \$3.00 net. F. A. Davis Company, 1914-16 Cherry Street, Philadelphia.

This small volume is intended, so the translator states, to be a miniature encyclopædia of the medical and surgical diseases of infancy and childhood. In so far as an enumeration, with in many cases the briefest description, of all the possible diseases and congenital defects of this period of life is concerned, it may be said to fulfil the claim. It was quite out of the question to include general medicine and surgery with all the specialties in this compass, and furnish much information on any one subject, but when it purports to be a "practical" guide to the practitioner as well, we venture to take a different view. There is a want of proportion in the amount of space devoted to the different subjects. Diseases which the average man never sees, and perhaps has never heard of, are described at length, while the common disorders of digestion are dismissed with a few lines. Probably fifty per cent. of the children's diseases seen by a general practitioner are disorders of the digestive system, yet the whole subject is dismissed with a little over two pages on "dyspepsia," and less than two on "enterics." On the other hand, we find "gastromalacia," "singultus," and "bulimia," together take up a page or more. The chapter on congenital malformations furnishes a very complete classified list of these abnormalities, a feature which is usually wanting in the smaller text-books on pediatrics.

THE PRACTICAL MEDICINE SERIES. Volume I., General Medicine; Volume II., General Surgery. The Year Book Publishers, Chicago. 1905.

This series is to comprise in ten volumes the year's progress in medicine and surgery, and is under the general direction of Gustavus P. Head, M.D. The editor of the present volume in surgery is John B.

Murphy, M.D., and in medicine, Frank Billings, M.D., and J. H. Salisbury, M.D. These books are not small. They contain respectively 347 and 545 pages, and sell at the remarkably low price of one dollar. In the volume on surgery we fail to note any mention of work which has been done in Montreal, and only short references to Canada as a whole. This series is published primarily for the general practitioner; at the same time the arrangements in several volumes enables those interested in special subjects to buy only the parts which they desire.

THE INTERNATIONAL MEDICAL ANNUAL: A Year Book of Treatment and Practitioner's Index. 1905. E. B. Treat & Company, 241 West 23rd Street, New York. Price, \$3.00.

This *Annual* is primarily intended as a work for rapid reference, but we venture to think that the practitioner who will read it through will be well repaid for his trouble, and that there is no speedier way of attaining an intimate acquaintance with the present position of medical knowledge. This passage is from the preface, and we are inclined to assent to its truth. The literature of the year has been examined most thoroughly, and nothing of importance has escaped detection. The plates and diagrams are singularly clear, and the work is a text-book as well as an annual.

MEDICAL PHILOLOGY. By L. M. GRIFFITHS, M.R.C.S., Eng. F. W. Arrowsmith, Quay Street, Bristol. 1905.

This little book has a fine flavour of learning. It contains a study of such words in the *promptorium parvulorum* and the *Catholicon Anglicum* as have a medical interest. The former was written about 1440, and the latter is an English-Latin word-book dating from 1483. A most entertaining account is given of such words as agnail, ache, ballocks, blear-eyed, bonschawe, dote, and it ends with elf. The editor hopes "to be able to find opportunity for continuing them through the rest of the alphabet." We also share in that hope.

THE PRINCIPLES AND PRACTICE OF ASEPSIS. By ARTHUR STYLES VALLACK, M.B., and Ch.M. (Sydney), L.M. (Rotunda), Surgeon to the Berrima District Hospital, New South Wales. Ballière, Tindall and Cox, London. 1905. Canadian Agents: J. A. Carveth & Co., Toronto; Chandler & Massey, Toronto.

This is an entirely sensible little book upon a subject of which too much cannot be heard. A method of sterilizing catgut by heat—boiling in turpentine—is described. Experimental evidence makes the book interesting.

EYE, EAR, NOSE AND THROAT NURSING. By A. EDWARD DAVIS, A.M., M.D., and BEAMAN DOUGLAS, M.D., New York. With 32 illustrations. Pages 16-318. \$1.25 net. F. A. Davis Company, 1914-16 Cherry Street, Philadelphia.

This book is a guide for the intelligent care and nursing of the various diseases of the eye, ear, nose and throat, and to instruct the nurse as to her exact duties during and following operations upon these organs. A nurse who would follow the directions given would leave nothing to be desired either by patient or by surgeon.

SAUNDERS' QUESTION COMPENDS: Essentials of the Practice of Medicine. Prepared especially for students of medicine. By WILLIAM R. WILLIAMS, M.D., Tutor in Therapeutics, Columbia University, New York. 461 pages. W. B. Saunders & Company. 1905. J. A. Carveth & Co., Limited, 434 Yonge Street, Toronto. \$1.75.

This little work for students preparing for examination will be a trusty aid. It contains a large amount of information in the least possible space.

Medical News.

MCGILL UNIVERSITY, FACULTY OF MEDICINE.

TENTH ANNUAL ANNOUNCEMENT, POST-GRADUATE COURSE, 1905.

The tenth regular course of instruction for post graduate students will be given by the Faculty of Medicine of McGill University during the month of June, 1905: The course will begin on Monday, June 5th, and will be carried on until Friday, June 30th.

This year it has been decided by the Faculty to depart somewhat from the lines upon which the course has been conducted in the past. The principle adopted in framing the work for this session is to make each course optional, attaching thereto a special fee. The applicant, after paying the initial registration fee, is entitled to select the course which seem to be best suited to his needs. The programme, speaking broadly, includes general clinics and special courses, the latter having been added this year, in order to meet the wishes of those who desire work along special lines.

In addition to stated special courses arranged if a sufficient number of men—three or more—desire special instructions in any one subdivision of a subject, they may secure it by applying to the head of the department concerned, or to the Registrar. A course will then be arranged according to their wishes, as far as is possible, and a special

fee will be charged. A registration fee of \$5 will be charged each student.

Courses will be given in Medicine, Dermatology, Diseases of Children, Neurology, Surgery, Gynaecology, Obstetrics, Ophthalmology and Otology, Rhinology and Laryngology, Hygiene and Bacteriology, Morbid Anatomy, Clinical Diagnosis by Laboratory Methods, and in Diagnosis by X-rays.

NOTRE DAME HOSPITAL.

During March 208 patients were admitted; 198 were discharged. Twenty-two deaths were registered, of which 13 happened within 48 hours after patients' entrance. In the outdoor department 2,086 patients were treated. The ambulance responded to 99 calls—54 for accidents, 34 for private cases and 11 were false or useless.

HOTEL-DIEU.

During the month ending 31st March, 1905, 478 patients were admitted, of whom 213 were female patients; discharged 123 men and 115 women; died, 4 men and 5 women. The ambulance was called out on an average twice a day for private cases.

The trustees of Johns Hopkins University and Hospital have appointed Dr. Lewellyn F. Barker to fill one vacancy caused by the resignation of Dr. Osler as Professor of Medicine. Dr. Barker has been Professor of anatomy and more lately of medicine at the Rush Medical School, Chicago. He is a graduate of Toronto Medical School in 1890, and was for some years at Johns Hopkins before going to Chicago. Dr. William S. Thayer, formerly Associate Professor of Medicine, has been appointed Professor of Clinical Medicine. He is a graduate of the Harvard Medical School, 1889. Dr. Barker is thirty-seven, and Dr. Thayer is forty years old.

Dr. Dagenais, chairman of the Health Committee, announces that the city's bacteriological laboratory is now fully equipped for work. The department is prepared to proceed with the examination of water and milk suspected of containing bacteria. Analysis will also be made in cases of suspected diphtheria, typhoid fever, tuberculosis and other infectious diseases.

There were 131 deaths from cerebrospinal meningitis reported in New York during the week ending April 1, an increase of 46 over the total for the previous week. In Cleveland 35 deaths have occurred from this

cause. The total number of deaths from the disease in Boston is so far 25 as against 14 for the corresponding period last year, and 37 for the entire year of 1904. Middletown, N.Y., and Lowell, Mass., are also showing numerous cases.

During the month of March 1,054 cases of typhoid fever, with 91 deaths, were reported to the health authorities in Philadelphia. In February there were 600 cases. The last week of March showed a falling off of seventy-five cases, the total being 231 new cases, as compared with 306 returned the week before. The fever is worst in the northeast section of the city, which is getting filtered water, and is less prevalent in the wards receiving unfiltered Schuylkill water.

The establishment of a new hospital in Quebec is being talked of. The new institution is for the Catholics of St. Jean Baptiste parish, and a number of leading physicians are at the head of the movement, and hope to bring it to a successful issue.

The twenty-fifth annual meeting of the Ontario Medical Association will be held in Toronto, in the New Medical Buildings, Queen's Park, June 6th, 7th and 8th, 1905.

A hospital for the treatment of patients suffering from measles in all probability will soon be erected in the vicinity of the Toronto Isolation Hospital.

Dr. L. A. Demers, who for the past four years was in charge of the medical clinics in the Notre Dame Hospital, resumed his lectures on the theory of medicine in Laval.

A farewell dinner to Dr. William Osler will be given at the Waldorf-Astoria in New York on the evening of May 2nd.

Owing to Dr. J. P. Rottot's illness, Dr. E. B. Benoit was called upon to take charge of the medical clinics in the Notre Dame Hospital.

Dr. John Herald, Professor of Medicine, Queen's University, Kingston, died on the 12th of April, at the Toronto General Hospital, where he had been under treatment for the results of chronic nephritis, from which he had been suffering for several years. Dr. Herald was born in Scotland in 1855, the son of Rev. John Herald, late Presbyterian minister at Dundas. He graduated at Queen's in arts in 1876, and in medicine 1884, and soon afterwards joined the staff of the college.

Dr. Cranston de St. Remy, of Kingston, died in St. Vincent Hospital, New York, on April 7th, after several weeks illness. He had been house surgeon for the past year in the Manhattan Eye and Ear Hospital. He graduated at Queen's Medical College in 1903, and served a year as a house surgeon in Kingston General Hospital.

Dr Alonzo W. Marston, of Hull, died on April 3rd, in the 58th year of his age.

Retrospect of Current Literature.

SURGERY.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

HIRSCHFELD. "A Hitherto Undescribed Phenomenon in Peroneal Palsies." *Berliner klinische Wochenschrift*, March 13th, 1905.

Hirschfeld in examining eleven cases of this affection observed a peculiarity affecting the power of dorsal flexion of the foot. Five of the cases were of peripheral palsy, including three instances of multiple neuritis, and of the others two were of myelitic and four of hemiplegic origin: "In studying the patient's muscular control it was found that with the knee extended the ability to flex the foot dorsally was much less than when the leg was flexed on the thigh, the difference in some cases being as great as 30 to 40 per cent. The author believes that the phenomenon is the result of the anatomical conditions under which the peroneal muscles functionate. Their action is always opposed by the muscles attached to the tendo Achillis, and this resistance, owing to the attachment of the gastrocnemius and plantaris to the femur is much greater when the leg is extended than when it is flexed. The observation has practical value in estimating variations in intensity of paralysis and in gauging the effect of treatment, as the power of dorsal flexion of the foot disappears last when the knee is flexed, and reappears first under the same conditions.

WILLIAM J. MORTON, M.D. "Radiotherapy and Surgery, with a Plea for Preoperative Radiations." *Medical Record*, March 25, 1905.

In a very interesting article the writer presents his views regarding the therapeutic value to be derived from the X-rays and radium treatment. So favourable have been his results, both as regards cure and absorption of infiltrated lymphatics, that he states that preoperative treatment should precede every operation for cancer with as much reason

and force as preoperative aseptic or antiseptic cleansing of the skin to be incised. Preoperative radiation, however, should be continued for not longer than six weeks unless there is evidence of an improvement, and the strength employed should be so regulated as to produce a mild dermatitis. The following facts are given to prove that radiotherapy can neutralize outlying infected areas: nothing is more common in the history of radiation than to see large areas of skin-infected carcinoma clear up, leaving a healthy skin: the early cure of recurrent cancer is cicatricial: by observation of the behaviour of cancer of the mucous membrane when under radiation, a distinct line of demarcation unfolds itself between the affected and sound mucous membrane, and by that sign affords a new indication to the surgeon to where to incise: by palpation of indurated lymphatics in breast cancer where absorption of the malignant induration may be visibly studied and verified by palpation. In conclusion, the paper claims that radiation treatment has a retarding effect upon the growth of some cancers, that it cures some cases, that it will increase the ratio of cures by operation (by its power of neutralizing outlying areas, and thus bringing the growth to be localized as in its beginnings), that for the same reason it transforms some inoperable cases into operable ones.

WARREN STONE BICHAM, M.D. "The Operative Treatment of Fractures in General." *The Post-Graduate*, March, 1905.

This important subject is considered under several headings. 1. The treatment of fractures in general. 2. Operative methods of approximating and fixing ends of fractured bones. 3. Bone grafting or implantation. 4. Operative treatment of simple fractures. 5. Operative treatment of delayed union, non-union and mal-union. 6. Operative treatment of compound comminuted and complicated fractures involving joints and of fracture-dislocations. 8. Operative treatment of separated epiphyses.

To summarize the status of fracture treatment, it may be said that the present treatment of fractures is in a transitional stage, and is now passing from the routine, hard and fast, prolonged splinting, which was in common use until a very short time ago, to the more rational methods of the present time, which include the use of passive movements and massage in conjunction with removable splints, and the practice of open incision in appropriate cases. With reference to the operative methods of approximating and fixing ends of fractured bones, the various mechanical measures are detailed, preference being given to kangaroo tendon or 40 day chromic gut. Silver wire is used only when there is

such a marked tendency to return of deformity, as in a spiral or long, oblique fracture, that a stronger retaining suture is required. The best method can only be determined when the parts are exposed, the best method being that which immobilizes most efficiently. The indications for bone grafting and various measures of procedure are given. There are now a sufficient number of authentic cases of extensive successful bone grafting from the lower animals to man to warrant the expectation that the technique of this operation will be rapidly elaborated, and the field of its usefulness greatly expanded. Several cases are cited in proof of this statement. The chief interest of the paper relates to the operative treatment of simple fractures. The position of the profession in Great Britain on this subject, as presented to the British Medical Association at their meeting in 1900, by Sir William H. Bennett, is referred to, showing that of those surgeons who had had such experience unqualified approval of operative treatment in simple fractures was expressed by only five per cent. Thirty per cent. favoured operation in special cases, while 65 per cent. disapproved of such treatment unless the cases were unmanageable without operation. The special objects obtained by and scope of operative measures are given, and certainly have much in their favour. The writer concludes that operative treatment is fully warranted, and should be unhesitatingly undertaken where the complete reduction of the fracture and retention of the ends of the bone in good apposition by simpler means are impossible; where complications otherwise irremediable exist; and is further warranted whenever it is considered that a distinct gain in time to the patient and increase in function of the part can be expected from open operation. The period of disability is considered by some surgeons to be lessened by one-third. If operative treatment be decided upon, it should be carried out immediately, but if this can not be done, some surgeons wait until a week has elapsed. In dealing with non-union, delayed union and mal-union, the open method has a very large field, and is deservedly becoming more and more popular. Where comminution is simple and not extensive, it may not particularly complicate the fracture, and in such cases the closed method may be adopted, otherwise the open is called for. In cases of fracture involving a joint, unless the ends can be accurately approximated and retained, the operative treatment should be employed, as the slightest irregularity upon the articular surface of a bone is apt to lead to impaired joint movement. Fracture-dislocations call for the open method, the dislocation being first reduced and the capsule sutured if torn, the ends of the bone then being approximated and held in position by internal fixation.

The separation of an epiphysis is in the majority of cases best treated by the open method. The X-ray does not help us very much in a diagnosis, as the epiphysis is transparent to these rays. The greatest diagnostic aid is gained by manipulation under anaesthesia. It is claimed that many of the so-called growing pains of young children are due to injury of or in the neighbourhood of the epiphysis, and that if the method advocated were done as a systematic procedure in such cases, there would not be so many deformed limbs and joints in orthopedic practice. A discussion on the paper is appended.

DR. ORAZIO SCHIFONE (Durante's clinic in Rome). "Concerning the Effect of Extensive Resections of the Skull and Dura Mater upon the Structure and Function of the Central Cortex." *Deut. Zeit. f. Chir.*, Nov., 1904.

Schifone's elaborate experiments on dogs, the nature of which is sufficiently indicated by the above title, are decidedly worthy of note from several points of view. The article is too long to abstract fully, but his conclusions, which follow, are comprehensive enough to answer.

1. Any large defect of the cranium and the dura mater is replaced, not by a new-bone formation, but by a thick and resistant fibrous tissue, causing firm adhesion of the scalp with the brain tissue.

2. These post-operative adhesions cause in the superficial layers in the cortex a series of changes affecting all the tissue-elements, the last phase of which is a destruction of a portion of the nerve elements and replacement by neuroglia.

3. In spite of these pathological adhesions and the consequent lesion of the cortex, there are never observed disturbances of motility, sensation, or nutrition in the animals, even after a long period.

4. The adhesions never give rise to Jacksonian epilepsy if wound-healing has occurred aseptically.

5. *Hernia cerebri* is never observed to follow the removal of large areas of the skull and dura, unless other mechanical or inflammatory causes come in to complicate matters, that is, increase of intracranial pressure, meningitis, or encephalitis.

6. Therefore, craniotomy, combined with removal of the dura, no matter how extensive, is not a dangerous operation, either in its immediate or its later results. Moreover, a large bone defect may remain covered only by soft tissues without fear of danger to the underlying brain, provided that the operation is carried out under the strictest asepsis. With regard to the possible development of Jacksonian epilepsy as a result of adhesions, it ought to be mentioned that the longest period Schifone left his dogs alive was nine months. While his experiments,

histologically, and with regard to disturbances of motion and sensation, are interesting, one can hardly accept them as having any strong clinical application to the question of Jacksonian epilepsy as a late result of adhesions.

THE TREATMENT OF APPENDICITIS.

Attention is drawn to the following papers, all of which appear in the *Boston Medical and Surgical Journal*, March 23, 1905.

C. A. Porter, M.D.—“Can we Wait for Localization when the General Peritoneal Cavity is Involved.”

Maurice H. Richardson, M.D.—“Remarks on Appendicitis.”

R. H. Fitz, M.D.—“Some Observations on Appendicitis.”

Francis B. Harrington, M.D.—“Choice of Method of Opening the Abdomen in Appendicitis.”

Herbert L. Burrell, M.D.—“Subphrenic Abscess as a Complication of Appendicitis.”

G. W. W. Brewster, M.D.—“Immediate Operation versus Delay in Acute Appendicitis.”

Thomas J. Monahan, M.D.—“The Bacteriology of General Peritonitis.”

William C. Quinby, M.D.—“The Results of Operative Treatment of General Peritonitis following Appendicitis, at the Massachusetts General Hospital, during the Past Five Years.”

These papers, along with the discussion which follows them, may be taken as representing the point of view regarding the treatment of appendicitis held by some of the leading surgeons in Boston. Although there are no very new points brought out, the first article is of more than ordinary interest, dealing as it does with a comparison between the plan of treatment advocated by Aschuer, and followed by many surgeons in the Middle and Western States, and that generally employed by those of the North Atlantic States and Canada.

DR. ERWIN STRANSKY. “Operation in Brain Syphilis.” *Centralbt. f. d. Grenzgeb. d. Med. u. Chir.*, 1905, Nos. 1 and 2.

Stransky, in an excellent article, gives us here a critical summary of the cases of cerebral syphilis which have been hitherto subjected to operation. The first question to be answered, however, is as to whether operation for such a condition is in any case justifiable. On this point the opinions of authoritative neurologists seem to be fairly unanimous. It is when they begin to discuss the proper length of time that should be given to medical treatment, the establishment of the indications which

should decide for operation, and the interpretation of results, that their views diverge, and diverge widely.

Speaking generally, the English school (MacEwen, Horsley, Gowers, Bramwell, Starr) are warm advocates of operation. Horsley, in particular, is rather sceptical as to the value of medical treatment in this localization of syphilis, and would limit it to a period not exceeding six weeks. With him stand Gowers, Kocher, Bruns, Schlesinger, Neumann and others. The opposite opinion is held by Oppenheim and v. Bergmann, who are optimistic as to the effect of internal treatment, and admit operation only in rare cases. Starr recommends a three months' cure, as an average. He, with Henschen and others, take up a middle position.

The views of Henschen and of Schlesinger are quoted at some length. To the former we owe, first of all, a summary of the various intracranial manifestations of lues, in which the question of operation may arise. These are: External and internal pachymeningitis, congenital and acquired hydrocephalus (in some cases due to underlying syphilis); cerebral hæmorrhage as a result of luetic arteritis; above all, however, gumma. "Operation," Henschen remarks, "is only to be thought of when, as is often the case with old sclerosing processes and the larger gummata, specific treatment fails. Even then, it is advisable only when an easily localized, circumscribed and accessible tumour is present. Should there, now, appear in addition the *indicatio vitalis*, operation is advisable. The contra indications, apart from what has just been stated might consist in marasmus, a coincident tabes or progressive paralysis, the appearance of bulbar symptoms, ophthalmoplegia, a basal localization (especially when bitemporal hemianopsia is present), and multiple foci." A conservative enough position, truly!

Stransky, from a consideration of the published cases, adopts a somewhat more liberal point of view. Of 18 cases reported, 15 were gummata and 3 specific pachymeningitis. Of the latter, two gave favourable results, while the other, after showing considerable improvement, died of intercurrent disease a month and a half later; the autopsy revealed a much more extensive pachymeningitis than had been removed, so that, doubtless, the good effect of operation would only have been transitory.

Of 14 cases of gummata, 9 showed cure or lasting improvement, while the result in five was *nil*, or worse. Of the latter, two could not be rightly localized before operation; in a third, the operation was undertaken as a last resort during status epilepticus; in the fourth, the con-

dition had been for six months a very grave one and localization was imperfect; the fifth case was one of gummatous meningo-encephalitis.

It can thus be seen that the unfavourable results in these cases must be set down to circumstances for which syphilis as syphilis could hardly be made responsible—uncertainty of localization, too long a duration or too advanced a stage of the process. On the other hand, the large number of successful cases teach us that when the tumour is localizable and accessible, and a specific "cure" fails, operation should not be delayed. The luetic nature of the growth in such cases, as opposed to other growths, should make no difference in considering the question of operation. As to the length of time which should be devoted to specific treatment, Stransky submits that it must vary widely, according to the case. There are those in which threatening symptoms forbid even Horsley's short limit; there are others in which it is possible and right to continue the treatment for the three months suggested by Allen Starr.

Oppenheim's dictum concerning operation for brain tumours in general, that "the physician should rather advise it than urge it," is also applicable to brain gunma, even when the expectation of success is greatest. The object of the review, or of the reviewer, is, not in the least to open a new field for surgical polypragmasia, but to demonstrate that syphilitic brain tumours are decidedly to be classed, under the before-mentioned limitations, among those in which operation offers favourable chances.

The question as to whether early removal of gummata or meningeal plaques is able to prevent epilepsy, or whether the excision of old luetic scars can cure the epilepsy of which they were the cause, it is as yet scarcely possible to decide.

An important side of the question, that of the purely sympathetic craniotomy for the relief of brain pressure due to syphilitic lesions, localizable or not, is merely glanced at in this review. Two of the cases cited would be in favour of such a procedure.

MEDICINE.

UNDER THE CHARGE OF JAMES STEWART, F. G. FINLEY, H. A. LAFLEUR AND
W. F. HAMILTON.

W. T. COUNCILMAN. *Journal of the American Medical Association*,
April 1, 1905.

Dr. Councilman describes the conditions of acute meningitis with more special reference to that form produced by the *Diplococcus intracellularis meningitidis*, which he believes is constantly occurring in a sporadic

form, aside from the not infrequent epidemic aggravations. The infecting organism, he states, is one of low vitality and incapable of a purely saprophytic existence. The statistics fail to give any adequate idea of the frequency of the infection in ordinary years. His experience, however, leads him to believe that with rare exceptions all cases of primary meningitis are due to this micro-organism, and that it would be impossible without sporadic infections to bridge over the interval between the epidemics. It is possible, too, that the germ may even inhabit the normal mucous membranes of the nose, for example, as has been shown in a few cases, where it produces a rhinitis, and infection of the meninges may take place through the lymphatics or by continuity of surface. We can only explain the epidemics of the disease, he says, either by an increase of virulence of the diplococcus or by a decrease in the tissues. The underlying causes of epidemics are unknown, and even atmospheric conditions can not be excluded. He discusses to some extent the relations of meningitis to pneumonia, as shown by the Massachusetts health statistics, and illustrates with a chart. Primary meningitis from the pneumococcus or staphylococcus is rare; secondary types are not so infrequent. The paper concludes with a description of the pathologic conditions in acute meningeal disease.

GINESTOUS. "Treatment of Phlyctenular Ophthalmia by the Yeast of the Beer." *Revue Française de Médecine et de Chirurgie*, March 20, 1905.

GINESTOUS has been making investigations in the treatment of phlyctenular ophthalmia. Such happy results have been obtained in the treatment by yeast of various affections due to the staphylococci, that he conceived the idea of applying this method to phlyctenular ophthalmia. The laboratory researches have shown that the staphylococcus aureus or albus is the micro-organism by far the most frequent in phlyctenulæ of the cornea. Ginestous being impressed by the uncertain results of the local application of the yeast, determined to administer it internally. It was given dry in a daily dose of four grammes, to an adult, in the form of wafers at the beginning of the two principal meals. Two grammes were given to a child. Since October, 1904, he has treated twenty-five patients by this method. In each case in which the yeast was given internally a very striking improvement took place in a short time. In certain cases the affection, which seemed rebellious to the ordinary local treatment, was cured by the addition of the yeast to the treatment. Ginestous believes that this method is of the utmost value in phlyctenular ophthalmia.

J. A. MILLER, M.D. "Nephritis Complicating Mumps." *Medical News*, April 1, 1905.

Dr. Miller calls attention to the lack of definite literature upon this complication of mumps. He reports one case the features of which are summarized as follows:—A case of acute exudative nephritis in the course of mild double parotitis, in a boy four years old, with a marked family predisposition to kidney disease, occurring in the twelfth day of the parotitis, which was further complicated on the eighteenth day by a moderately severe attack of measles. The measles exercised no influence upon the nephritis, which entirely disappeared in thirty-five days, and after several months had not recurred. A careful review of the literature has revealed reports of twenty-nine similar cases. In addition to these, several observers mention the occurrence of febrile albuminuria during mumps as not infrequent. The author presents the following conclusions:—(1) Acute nephritis complicating mumps may occur in either children or adults, and is much more frequent in males than in females. (2) The parotitis is usually double, mild in character, and the nephritis is more liable to occur during early convalescence. Exposure to cold may be a predisposing factor. (3) The nephritis is usually moderately severe, of less than one week's duration, and ending in complete recovery. Rarely it may develop into chronic nephritis, or it may be so severe as to cause death. (4) This complication of mumps is infrequent, but probably not as rare as usually considered. Febrile albuminuria is probably very common in mumps, but this, as well as more serious kidney lesions, is probably often overlooked. (5) Careful urine examinations should be made, and strict precautions against exposure should be taken, in all cases of mumps, both during the acute symptoms and during convalescence.

DURING. *Münchener medizinische Wochenschrift*, March 14, 1905.

Düring reviews various theories that have been promulgated to explain the therapeutic effect of mercury in syphilis, and says that so far at least they have led to but little definite information. The older view that the metal exerts a bactericidal or antiparasitic action is probably unfounded, for the amounts absorbed are far too small to be able to unfold a diffuse power of this sort. The more recent view is that of Schade, who, starting with the work of the synthetical chemists in the production of artificial indigo, has developed the subject of the catalytic action of the heavy metals as oxidizing agents. This action of mercury is shown by the blueing it produces in tincture of guaiac in the presence of resinified

oil of turpentine, or of peroxide of hydrogen. That this action is due to electrical changes is illustrated by the change of form manifested by a globule of the metal when placed in turpentine or in tincture of guaiac. In the first fluid it becomes a flattened mass which resembles melted lead and retains any shape that may be given it, while on transfer of the tincture it at once resumes its normal characteristics. The phenomenon is ascribed to a positive electrical charge in the one fluid and a negative one in the other. Schade believes that through its catalytic stimulating effect on the tissues, the mercury enables the latter to repair the damage caused by the syphilitic poison. The process is not one of antitoxin stimulation, as some authors have averred, but one of simple antagonism to the toxins.

F. CHOUPIN. "Renal Opothraphy." *Revue de Médecine*, Jan. and Feb., 1905.

Choupin, in a long article, gives his experiments and results in the procedure advocated by Renault for the treatment for nephritis, viz., feeding the patients on pigs' kidneys, macerated and uncooked. He uses the kidneys of young pigs, absolutely fresh, and not weighing over 160 grms., and gives two daily for about 10 days in the fortnight; the treatment is continued for long times, one of the cases being so fed for eleven months.

Under this treatment many cases are bettered in so remarkable a way as to suggest an antitoxic serum's action; in most cases of renal insufficiency diuresis is brought above, with lessening or disappearance of albumen, increase in urea and in chloride. The one case of Choupin's which had not increased diuresis was one of polyuria with nocturnal incontinence, and here the good fairy brought it about that the amount of urine dropped to normal. Better than these symptomatic effects is the general condition of the patient, who undergoes a "desintoxication"—a word which the English language cannot replace, but might with advantage adopt—which is evidenced by decrease of arterial hypertension, lessening dilatation of the heart, disappearance of œdema and generally increased well-being.

The well-established forms of treatment are not to be displaced, but supplemented, by this method, which the author states is not always without disadvantage, but is emphatically without danger. Exceptionally, gastric disturbance, with vomiting and diarrhœa, sweating, in which the perspiration has a urinous odour, itching, miliary or urticarial rashes may occur, but as a rule no trouble is experienced; the above happenings do not necessitate cessation of the treatment.

Charrier in the *Journal de Médecine de Bourdeaux*, Nov. 13, 20, and 27, 1904, reports five cases with good results, with no other treatment, and Page and Dardelin in the *Presse Médicale*, Dec. 21, 1904, report 18 cases, in 16 of which there was complete disappearance of albumen, with decided systemic improvement.

H. HOCHHAUS. "The Treatment of Pulmonary Hæmorrhages." *Deut. Med. Woch.*, February 2, 1905.

This author takes up the treatment usually accorded cases of this nature, both at the time of the occurrence, and to prevent recurrence. When a hæmorrhage happens, the patient should be put completely at rest, assured as to the outcome, and should have an icebag applied to the side of the chest concerned, or if this cannot be determined, to the heart region; ice may be given to suck, and *Ol. Terebinth.* in capsules, seven minims per dose. *Ext. Hydrastis*, minims ten to twenty, repeated twice, or *Lead Acetate*, grains three, every two hours, may be used. Hochhaus condemns the routine use of opium or morphine, unless there be cough so severe as to render liable the dislodging of a forming clot; a moderate cough, serving to expel the blood from the lungs, is not to be interfered with. The author favours the use of gelatine injections, 40 cc. of the warm ten per cent. solution being injected into the front of the thorax, or the outside of the upper arm; the pain following this may be checked by the icebag; *Adrenalin*, 1 in 1000 solution, or *Ergotin* may be used. In conclusion, the author speaks of a treatment which was much used formerly, viz., to tie a band around each of the limbs, so tightly as to prevent free return of blood by the veins; the limbs swell, become bluish, and the patient has a decided discomfort by the procedure; after one or two hours, if so long be necessary, the bands may be gradually loosened; and advocates, in addition, that strapping, by adhesive, of the side of the chest from which the hæmorrhage occurs will tend to keep the lung at rest and prevent recurrence.

Among therapeutic notes in recent literature are the following:—*Galewsky*, in *Münch. Med. Woch.*, March 14, 1905, has an article upon *Calomelol*, a soluble form of calomel; it is a grey powder, soluble in water up to about one in fifty, and its constitution is 75 per cent. calomel. Two years' experience lead the author to draw conclusions very favourable to it, especially to replace other forms of mercury that may be unsuitable even from idiosyncrasy; internally it may be given in doses of one and a half grain, and externally it is stated to be excellent for the eradication of *pediculi pubis*.

D. R. Brower, in the *Journal of the American Medical Association*, March 25, 1905, writes upon the treatment of idiopathic epilepsy. He states that the overuse of bromides is responsible for much epileptic insanity, and advises that the sodium salt be used in doses not larger than sixty grains daily.

Mahue, in *Berliner Klin. Woch.*, Feb. 27, 1905, reports a fatal case of Bismuth poisoning, where a ten per cent, bismuth ointment was used on superficial burns; the cause of death was impurity from admixture of lead and arsenic. It is suggested that such cases should be watched to notice any indications in the gums, mucous membrane of the mouth, the stools and the urine.

RETROSPECT OF LARYNGOLOGY.

The year of 1904 was not marked by any specially remarkable discovery in either ætiological or pathological conditions of the larynx, though the quality of the work done and the literature pertaining to this subject would indicate a steady advance in all directions.

As regards malignant disease of the larynx the importance of an early diagnosis has been emphasized by the fact that cases have been operated on in the early stages by thyrotomy with marked success, as the results obtained by Mr. Butler and Sir Felix Semon indicate.

The results are to say the least, very encouraging and the progress of time reveals the fact that there are few recurrences after the operation of thyrotomy and complete removal of the growth.

Thus Sir Felix Semon, in a lecture, delivered before the Section of Laryngology and Rhinology of the New York Academy of Medicine, November 4th, 1904, was able to say that of 20 cases of thyrotomy for undoubted malignant disease of the larynx between 1891 and 1904 there were 1 death, 2 doubtful recurrences and 17 lasting cures, bringing the percentage of successful cases in his own practice within that period up to 85 per cent.

His oldest case dates back to June 2nd, 1891, more than 13 years ago, and others are living who were operated on 12, 10 and 9 years ago. These results should convince even the most sceptical that this operation is immensely superior to the much more serious one of laryngectomy in early cases or where the disease is confined to the interior larynx. The X-rays and Finsen light have been quite extensively used in the treatment of malignant disease of the larynx but the results have been unsatisfactory, though in many cases they appear to have a marked effect in relieving pain.

Though efforts have been made to discover an agent that will prevent

the occurrence of cancer, these efforts have up to the present been unavailing.

As regards the treatment of tuberculosis of the larynx there is nothing especially new to report. The early diagnosis of pulmonary tuberculosis and suitable climatic treatment are valuable factors in the prophylaxis of laryngeal tuberculosis.

The application of the radium treatment has not been encouraging in its results and the X-rays in tuberculosis of the larynx is by no means a successful therapeutic measure, though in lupus it would appear that some cases have been treated successfully by this means.

Formalin has still its advocates as the most efficient method of treatment in the form of direct application, inhalations and even sprays, but there is by no means a consensus of opinion as to its beneficial effect. The operative treatment of tuberculosis of the larynx has received a good deal of attention, Lake of London still continuing his studies clinically and otherwise as to how far operative treatment is justified.

Apparently successful cases of removal of tuberculous growths in the larynx by thyrotomy have been reported.

Mr. Henrichi considers the operation of tracheotomy as a valuable curative measure in the treatment of laryngeal tuberculosis and reports 4 cases, 3 in children and 1, a pregnant woman, in which it was done with good results.

Dr. Dörendorf (Fränkel's *Archiv. f. Lar.*, 1904) has written an interesting paper on leprosy of the larynx, and cases of a rare nature have been reported, such as actinomycosis of the larynx (Dr. Henrichi, *Archiv., Inter., Lar., d'Ot., Rhin., Paris*, 1904). Spastic aphonia reported by Dr. Barth (Fränkel's *Archiv. für Laryng*, 1904), and laryngite dothiementérique, ulcero-nécrosante by Dr. Boulai (*Archiv., Inter., Lar., d'Ot., Rhin., Paris*, 1904).

As an interesting anatomical point Prof. Geronzi (*Archiv., Inter., Lar., d'Ot., Rhin., Paris*, 1904) has raised the question as to intra muscular nervous ganglia in certain intrinsic muscles of the larynx.

Dr. Marale, of Paris (*Archiv., Inter., Lar., d'Ot., Rhin., Paris*, 1904) contributes an article on the improvement of the voice in deaf mutes, and indicates the lines upon which future experiments by him are to be made.

Concerning benign neoplasms of the larynx, a most interesting discussion took place in the laryngological section of the British Medical Association at their July meeting on their aetiology, prognosis, and

treatment, Dr. Dundas Grant and Professor Rosenberg introducing the subject. The great advantage of endo-laryngeal methods were demonstrated. Though the aetiology and pathology are still somewhat obscure, the prospects of greater knowledge in this direction are good.

In the matter of instrumentation, progress has been made and although the use of the X-rays as a therapeutic measure is still in the experimental stage, as a diagnostic method they are being more and more resorted to and have been found to be of great value in the detection of foreign bodies in the upper air passages, especially when these foreign bodies could not be located by the usual means. The X-rays are also useful in the detection of mediastinal tumours pressing on the recurrent laryngeal nerves.

Another method for examining the upper air passages which is of great value, and consequently becoming more used is that of direct inspection.

This method owes its origin to Prof. Killian, of Freiburg, who has devised instruments to be used either intra-laryngeally or through an opening in the trachea. Dr. Alexander, of Berlin, who has been engaged in Prof. Killian's clinic, has contributed a valuable essay (*Fränkel's Archiv., f. Lar., 1904*) in which he has reviewed the history and supplied many new details of the advantages of direct inspection of the air passages.

Ingalls has some modifications in method, especially in illumination, that are of value. The use of the magnetic needle for the removal of foreign bodies from the upper air passages has not met with great success, two cases having been reported by Prota, in which the magnetic needle failed to remove the foreign body.

He demonstrated by subsequent experiments on dogs that the magnetic needle can be of use only when the foreign body is freely movable, and the needle can be brought near to it.

He considers it an uncertain method, but in suitable cases, a valuable adjunct to our armamentarium.

Improvements in sprays have been noted and there are good prospects of an electrically-driven pump replacing the more or less unsatisfactory water-driven pump at present so generally used for air receivers. Numerous other new instruments and modifications of old ones have been introduced, of more or less value.

In conclusion, as has been previously said, though nothing of a specially remarkable nature is to be recorded in the department of laryngology during the past year, the quality of the work has been good,

still it is to be hoped that more will be accomplished towards increasing our knowledge of the aetiology and pathology of laryngeal diseases, which from lack of sufficient experimental research is not as extensive as could be desired.

W. L. T.

PATHOLOGY.

UNDER THE CHARGE OF J. G. ADAMI.

A. A. PINTO. "The Gonococcus." *Jour. de Physiol. et Path.*, Nov. 15th, 1904, p. 1,058.

The similarity in appearance and culture of the meningococcus of Weichselbaum, and the gonococcus has been previously pointed out. Class observed that several cases of cerebro-spinal meningitis were complicated with blennorrhagia, and was disposed to conclude that the two microbes were the same; but experiments with the meningococcus proved that it would not infect the urethral canal in man.

Pinto began by inoculating rabbits with the gonococcus, and by passing it alternately through experimental animals and ascites broth, he was able to raise its virulence very markedly, so that from having to use 40 c.c. to 60 c.c. of a gonococcus culture to kill a rabbit, he now required only 0.00002 to 0.00005 c.c. This remarkable increased virulence was obtained with difficulty. However, the gonococcus with this pathogenicity now resembled very closely the meningococcus in the cultural, morphological and inoculation experiments, and Pinto concludes that he believes we have to do with two varieties of the same species of micro-organism.

MAJOR W. TURNER. "Pemphigus Contagiosus containing Leishman Bodies." *Jour. of the Royal Army Med. Corps*, 1905, IV., p. 319.

The author encountered several cases of pemphigus contagiosus among the British soldiers stationed at Multan (India). The disease is non-febrile, but highly contagious, and readily spreads to different parts of the body, by scratches being infected from the original sore. It is characterized by vesicles varying in size from a pinhead to an inch in diameter, but no inflammatory reaction accompanies the lesion. After rupture of the vesicle, however, the part may ulcerate, and if untreated, on examining scrapings from the base of the vesicle, the author was able to demonstrate Leishman bodies in great numbers. These bodies are oval, with a sharply defined outline and one end pointed, measuring $2-4\mu$ in length. The bodies appear identical with those discovered by Wright, in the "Oriental boil."

GULLAND and GOODALL. "Pernicious Anæmia; A Histological Study of 17 Cases." *Jour. of Pathology*, 1905, X., p. 125.

The paper comprises a post-mortem study of the different tissues and organs (excepting the nervous system) of 17 cases; 13 males and 4 females ranging in age from 25 to 61 years.

The histological findings in these cases can be summarized as follows:—*Stomach*—In 12 cases examined more or less atrophy of the mucosa was found. *Liver* showed in every case fatty and pigmentary changes, and in some there was central necrosis of the lobules. Large marrow cells were found in the liver acting as phagocytes, ingesting the red cells, while others contained the free pigment—hæmosiderin. Every liver gave the iron reaction. *Spleen* varied in appearance with the character of the cells preponderating in the pulp. Usually the organ showed congestion with normoblasts and megaloblasts present in varying numbers. Blood pigment was present in all organs which were tested for iron. *Kidney*—All cases showed catarrhal or interstitial nephritis, and ten gave the reaction for iron. *Hæmolymp Glands*—Destruction of the red blood cells was noted in the phagocytes. *Bone Marrow*—In all cases the red marrow was hypertrophied. The character of the cells differed in most cases, but blood destruction was common in all. Giant cells and eosinophiles were numerous in each case.

From their own finding, and those of others, the authors conclude that there is no direct evidence of this being a special disease of the intestinal tract, and that the changes noted in their cases in the stomach and intestine could be summed up as post-mortem change. The large amount of iron found in pernicious anæmia is one of the striking features of the disease, and this accumulation they regard as due to two factors—(a) storage, (b) hæmolysis. By far the greater part of this pigment in the liver—that in the portal zone—is simply stored up, the liver being the natural channel of excretion of broken-down hæmoglobin. This storage is not pathognomonic of pernicious anæmia. At the same time there is also a certain amount of destruction of red blood cells in the liver by the endothelial cells and phagocytes. Therefore, on the whole, the accumulation of iron is due partly to the destruction of weakly red cells and partly to the storing up of iron from hæmoglobin of red cells disintegrated in other parts. The spleen and hæmolymp glands show only an increased activity in disposing of broken down blood corpuscles. The bone marrow presents undue activity of red and white cell formation, the former of megaloblastic type. The authors point to this as being the essential seat of the disease, and the criterion is the finding of these bone marrow cells, the megaloblasts, in the blood. They believe that a toxin

is formed in some part of the body which acts on the bone marrow, interfering with the normoblastic blood formation, leading to megaloblastic cell production, and acting with negative chemiotaxis upon the leucocytes.

HEKTOEN. "Experimental Measles." *The Journal of Infectious Diseases*, 1905, Volume II., page 238.

Hektoen reports having successfully repeated the inoculation experiments of measles as made by Francis Home in Edinburgh in 1758. Home at this time hoped to accomplish by these experiments results similar to those obtained in vaccination against small-pox, and by giving an individual a mild attack of the disease to immunise him against future attacks. His inoculations, he reports, made with the blood of a patient with measles into abrasions on the arm of a healthy individual, proved successful in most of 15 cases. These experiments have been repeated by others, though the work was not carried on for practical purposes.

The author, Dr. Hektoen, obtained 4 c.c. of blood from a measles patient the day following the height of the rash. The blood was inoculated into two flasks of ascites broth and incubated at 37°C. No changes were apparently in the broth after 24 hours. Four c.c. of the fluid from one of the flasks was then inoculated subcutaneously into a healthy adult with the result that on the 13th day the temperature rose, and the following day the typical measles rash appeared. The course of the disease was typical, and was followed by a branny desquamation.

A second experiment was carried out in the same manner with different individuals from the first. The first symptom after inoculation was a rise of temperature on the 11th day with an eruption on the 14th. The patient was not seriously ill, and the recovery was prompt.

From this the author concludes that the virus of measles is in the blood some time at least during the first 30 hours of the eruption, and, further, that the virus retained its virulence for at least 24 hours in ascites broth.

DUDGEON. "Pathology of the Thymus Gland." *Jour. of Pathology*, 1905, X., p. 173.

Dudgeon points out that the Thymus gland is primarily an epithelial structure arising from the pharyngeal wall opposite the 3rd visceral cleft. It first appears as an alveolar gland, but later becomes invaded with connective tissue and lymphoid elements, which convert it into a lymph structure. The concentric corpuscles of Hassal are the remains of the epithelial tissue of the gland. The maximum development of the

gland is reached in the second year, and then it remains stationary till puberty, when the organ begins to atrophy. Accessory thymus glands are occasionally found, but absence of the thymus is rare. Observers are agreed on the infrequency of acute inflammatory processes in the thymus, and Dudgeon has seen only a single case. Tuberculosis of the gland he found in four cases, three of which were in conjunction with a generalized infection; the fourth case was one in which the tuberculous process was confined to the thorax. Though cases are reported, Dudgeon has not met with a case of primary tuberculous infection of the thymus. In regard to congenital syphilis of the thymus, it is a very rare affection, though Dubois and also Fürth claim to have met with such not infrequently.

Dudgeon describes atrophy of the thymus under two heads, (1) primary, (2) secondary atrophy. Under primary atrophies he groups the conditions found in marasmus, and diseases due to improper assimilation of food. Secondary atrophy of the thymus is a consequent to tuberculosis, chronic empyema and other wasting diseases. However, the histological changes are not markedly different in the two forms of atrophy, both being accompanied by a decrease in the lymphoid elements, with a secondary fibrosis. In short, atrophy of the thymus, primary or secondary, and wasting of the tissue in children go hand in hand. Whether there is any connexion between the changes in the thymus and lobular pneumonia, purpura and Grave's disease, the author will not say.

In sixteen cases of lymphatism, the thymus was considerably enlarged. The structure of the organ was found to be normal, except in one point—in that the eosinophile cells were much increased. "Sudden death" in cases of lymphatism he describes as due to (1) suffocation following tracheal pressure from the enlarged thymus, (2) intravascular clotting, due to a secretion of the thymus, (3) compression of the large blood-vessels of the neck. The author rather discounts the connexion between thymic asthma and laryngismus stridulus, nor does he throw any light on the supposed relation between the enlarged thymus and exophthalmic goitre.

Society Proceedings.

SOCIÉTÉ MÉDICALE DE MONTREAL.

Meeting 28th March, 1905.

DR. MERCIER, PRESIDENT, IN THE CHAIR.

At a preceding meeting a committee had been chosen to study the merits of Marmoreck's antituberculous serum and report. The proceedings of the committee's first meeting were made public, and Dr. Marien

asked the secretary if he had given out the report, which, as had been decided, should not be made public. Dr. A. Mercier, Secretary of the Committee, declared that he had no connexion with newspaper reports concerning the Committee's doings.

Dr. de Martigny presented pathological specimens—1. Cancer of the stomach; 2. Cancer of the rectum.

In case No. 1 patient died from aneuria; in case No. 2 Second's operation was performed, and the patient left the hospital on the 20th day apparently cured. Two months have elapsed, and no change has appeared in the patient's condition.

DR. MARIEN again made a plea that histological specimens of cases reported be presented at the same meeting.

DR. DUBE insisted upon the necessity of an early diagnosis in cancer, and advocated early operation.

DR. E. G. BENOIT read a paper entitled "La lutte contre la tuberculose." This article had been prepared for the *Sanitary Bulletin*, and was written rather for the public than for the profession. The hygienic treatment of tuberculosis was the chief character of the paper.

Drs. Lecavalier, Lesage, Dube, etc., shared in the discussion which followed, and the sanatorium question was well considered.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The twelfth regular meeting of the society was held Friday evening March 17th, Dr. J. A. Macdonald, president, in the chair.

THYROIDECTOMY.

Dr. F. J. Shepherd exhibited a living case upon which Thyroidectomy had been performed, followed by unusual symptoms after the operation. The report of this case appears at page 347.

A. E. GARROW, M.D.—I would like to ask Dr. Shepherd whether there was any marked deformity produced on the trachea. I saw a case operated on by Dr. Shepherd where there was compression laterally and at the same time a tight band ran beneath the trachea and there was here also difficulty in swallowing. In the cases I have seen there was no displacement of the oesophagus simply marked deformity of the larynx and there was associated also some peculiarity in speech, a sort of cracked voice.

DR. BIRKETT:—The case is one of very considerable interest particularly from a laryngological aspect. One cannot always depend upon the condition of the voice to be certain that a paralysis exists; it is quite possible for a non-paralysed cord to make such compensating move-

ment that the cords approximate sufficiently to produce a clear sound, and I strongly advocate the advisability of ascertaining the condition of the larynx and trachea in cases of enlargement before thyroidectomy. The reason for believing that the paralysis of the cord in this case was of old standing is that the cord was very much smaller than the non-paralysed cord, and it had the peculiar bowed aspect very characteristic of paralysis of long standing. When I saw this patient later on, the temporarily paralysed cord had considerably improved and I do not doubt that the nerve will gain its functions to a greater degree than at the present time.

DR. SHEPHERD:—There was no deformity of the trachea at all in this case, it was perfectly normal, only pushed to one side as was also the œsophagus. One case I had where the tumour had grown from between the trachea and the œsophagus, the trachea was pushed aside, and the œsophagus was in such a position that it was with difficulty recognized, running as it did to the left side of the tumour, it looked like a large muscle and narrowly escaped being clipped in the dissection. I think the œsophagus is very often displaced through enlargements, and this would account for the great difficulty in swallowing, which occurs in many cases.

MOVEABLE KIDNEY.

J. M. ELDER, M.D., read a paper upon some pathological conditions associated with Moveable Kidney. This paper appears on p. 334 of this number of the JOURNAL.

F. J. SHEPHERD, M.D.—I have listened with very much interest to this paper. We have all seen these cases of floating kidneys and the accompanying symptoms. I myself, have operated on the gall bladder for symptoms referable to this organ and found nothing the matter with it. In one case, while closing the incision, the patient coughed, and the right kidney almost popped out of the wound. I fixed the kidney and all the previous symptoms subsided. In this case the kidney interfered with the proper functions of the gall bladder and the bile ducts. We all know the position the right kidney bears to the duodenum and any displacement of it will of course influence the duodenum and this may account for the peculiar symptoms which occasionally exist. I think one ought to accept with a great deal of caution the statements made with regard to the tremendous effect floating kidney has on the surrounding tissues; floating kidneys are fairly common, and can be readily found if looked for and there is no doubt that many do not give rise to any symptoms whatever, and are discovered only by accident.

A. E. GARROW, M.D.—I agree with Dr. Elder in that I am not a

strong believer in the extensive abdominal disturbances produced by a moveable kidney. Routine examinations reveal this condition very frequently in patients who are not complaining either of genito-urinary disturbance or gastric disturbances in any form and I fail to see how a moveable kidney is capable of producing cholecystitis of such an extent as to produce adhesions between the gall bladder and the colon as well as with the duodenum. I think that experience teaches us that most of these cases are either the result of gastro-intestinal catarrh, secondary infection of the ducts, or an associated cholelithiasis and the treatment of the gall bladder condition either by drainage or the removal of stones is followed by prompt and satisfactory cure without interfering with the co-existing moveable kidney, I have operated frequently for this condition associated with moveable kidney and have secured a perfect recovery without interfering with the kidney itself. My experience also has led me to believe that many of the moveable kidneys which give rise to distressing symptoms are associated with chronic inflammatory changes in the fatty capsule and I have tested this in several cases by simply freeing the kidney from its adherent bands and dropping it into its fatty capsule gain without any stitching at all, to find that the patient's condition has been relieved, not only temporarily but also permanently. As to the relationship of the so-called frequent attacks of appendicitis with moveable kidney, and to the fact that no further attacks of appendicitis have occurred after operation for moveable kidney, is no further evidence of relation between cause and effect than that which we know frequently occurs when a patient for a certain period of time has repeated attacks of appendicitis which seem to disappear without any treatment at all. In the last 12 or 14 years I have met with several of these cases.

DR. ELDER has referred extensively to the literature of this subject and has drawn our attention to the many disturbances which may co-exist with the moveable kidney and while I think infection plays the important role in the production of cholelithiasis and appendicitis nevertheless, disturbances in the circulation produced in the way he has referred to, can certainly act as predisposing causes.

J. M. ELDER, M.D.—While this is not a subject about which one can make a dogmatic statement, I quite admit that a wandering kidney may very commonly co-exist with other conditions—a palpable kidney is not a wandering kidney by any means. But I maintain there are a large number of cases where recurring attacks of appendicitis may be cured by fixing the moveable kidney. With regard to the point raised by Dr. Garrow, that symptoms may be due to adhesions of the fatty capsule,

I may mention a very interesting case occurring in a young unmarried woman; I operated for a moveable kidney and found a cystic tumour with a distinct pedicle which was attached to the capsule of the right kidney. It was apparently a cyst of the Wolffian body, as the contents contained urea and it was the size and shape of a kidney. Here was a case of a right kidney which had never been moveable, to the capsule of which was attached this wandering cyst, and the patient had very definite appendical attacks, evidently due to the mechanical action of this cyst pressing upon the appendix very much as a moveable kidney would do. I do think that it is quite possible that the pulling on the duodenum and bile ducts, in a case of moveable kidney, might produce an obstruction and so set up pathological conditions of a grave nature in the gall-bladder.

HYPERTROPHY OF THE PROSTATE.

A. E. GARROW, M.D., read a paper upon the diagnosis and treatment of chronic hypertrophy of the Prostate.

F. J. SHEPHERD, M.D. I have listened with a great deal of interest to Dr. Garrow's paper and must congratulate him on his success though apparently in no one case has there been a perfect result except in the case with the large tumour. It was soon after McGill's paper came out that I did my first operation, that is suprapubically, in 1885 or 1886. The patient was a man of 45 years of age complaining of great frequency and pain during micturition; the urine was normal. I had no difficulty in performing the enucleation of the gland which was about the size of a walnut on each side of the urethra; there was a little hæmorrhage but not much; the spaces occupied by the tumour were filled with gauze. The operation was most successful and the man is still alive and perfectly well. Curiously enough the next two cases I had both died. They were old subjects with damaged kidneys; it is most important to select your cases and statistics show good results when this rule is followed—that is, operation performed before any grave disease of the genito-urinary system exists. It is well known that most of the fatal cases die not from the result of the operation but from the accompanying disturbance. I have had several cases where after the operation was performed the growth was found to be a cancer of the prostate. I have no doubt that the best operation is by way of the perineum though in many cases the suprapubic is advisable and especially where you have a bladder which is not diseased. In this country patients are not so eager for operation as they are across the border, we are a good deal more conservative, and cases do not offer so readily. In the case of an enlarged

prostate where a person has to get up half a dozen times a night and where, as the old saying has it, the water is hard to turn on and harder still to turn off, then I think it is time to interfere surgically. Many cases get up at night two or three times for years and it does not bother them, but when catheter life is demanded it is a very serious condition. I operated on a case last year where a man had used the catheter for 40 years, and he was nearly 80. I found he had a huge cancer excavating the posterior wall of the prostate and bladder. He died. The diverticulum case mentioned by Dr. Garrow is most interesting. There is a specimen in the pathological Museum of the McGill Medical Faculty of a small diverticulum of the bladder but nothing so large as this one would indicate. I reported a case some time ago of stone which I removed from a man 84 years of age. He was treated for enlarged prostate for years and also suffered from periodical attacks of cystitis. He had to get up in the night 5 or 6 times and in day time was not much better. On examining him and passing a sound I came upon a very large stone, after the removal of which he has had no further trouble.

J. M. ELDER, M.D.: Dr. Garrow in his paper stated that he had not had much success with the cystoscope. When I was last in London I made it my business to attend the clinics at St. Peter's hospital, especially those given by Mr. R. Harrison and Mr. P. J. Freyer, and while there what struck me was that the future of operations on the prostate would depend very largely on ability or otherwise of the operator to use the cystoscope; and I am more than ever convinced of that by my own limited work since. I had read Freyer's papers, and he gave me the impression that he had operated on pretty near all the prostates he came across and had got these wonderful results. But I found that at the clinic at St. Peter's Hospital out of a total of say 100 who were examined complaining of difficulty in micturition, one would be operated upon by him for enlarged prostate. I found that practically what he was doing was picking out the cases of adenoma of the prostate, very analogous to the condition found in other, and simply removing this tumour from the gland—a very different thing from excising the whole gland. The other cases of enlarged prostate were told to use a catheter. Again, out of 100, three were found to have cancer and were very properly excluded, and not operated upon at all, and this condition was demonstrated by the use of the cystoscope. I am therefore fairly convinced that the correct use of the cystoscope is the future guide to the operation. Most of the cystoscopes we have here are combined instruments, and are faulty. They use an instrument merely to give a good view of the field, and at the same time get in-

formation as to the character of the kidney, and you may see, and do see very well, the spurt of the urine from the ureter and are able to judge of the difference between the secretion of the two kidneys. I think that the suprapubic method is the method of the future and not the perineal operation.

A. E. GARROW, M.D. I am rather inclined to agree with Dr. Elder in connexion with the treatment of stout patients by the suprapubic method, however, a point that I would like to urge is this, that where the enlargement chiefly involves the lateral lobes I always choose the perineal route if necessary combined with the suprapubic opening because adenomatous masses are then so readily shelled out by the finger. On the other hand, if you are dealing with one of those enormous enlargements from the posterior and upper portion of the prostate, filling up practically one-third of the bladder I think it would be absolutely impossible by the perineal route to remove the whole of the mass and one can only gain access to it, by splitting the mucous membrane, for it seems to involve the trigone of the bladder. With respect to the use of the cystoscope in diagnosing these conditions, I have given it a very fair trial and should be very glad to continue if I could learn how to proceed in the examination successfully, particularly in those cases where the lateral lobes are of unequal size. I found it absolutely impossible to pass any form of cystoscope, even under an anæsthetic without drawing blood, no matter how carefully the instrument was lubricated, even with the application of a weak and finally a full strength solution of adrenalin chloride, except, of course, in those cases with a uniformly enlarged prostate in which you do not get deflection. With regard to the case mentioned by Dr. Shepherd, I expected to find obstruction due to the so-called median lobe enlargement, but the urethral orifice was apparently normal, and, on exploration, this diverticulum was discovered; it was not like an ordinary diverticulum due to separation of the muscular layers of the bladder wall with nothing but a thin mucous membrane and a little peritoneal connective tissue forming the sac, but a regular cavity with a firm rigid ring, almost cartilaginous and so extensive that I could not feel the bottom of the cavity. This had been filled with an antiseptic solution, 20 to 30 ounces, which continued to flow when the bladder was opened for a considerable time, and also explained the peculiar condition which was present while the patient's bladder was distended, viz., instead of being the ordinary pyriform swelling it presented a peculiar cordiform appearance which was very apparent.

The thirteenth regular meeting of the Society was held Friday evening, April 7th, Dr. J. A. Macdonald, President, in the chair.

GANGRENE OF FINGER.

E. W. Archibald, M.D., presented two living cases before the Society. One was that of a young German, who ran a needle into his finger. It became painful, and he was recommended to dip the finger in a supposed solution of carbolic acid every day, wrapping it up tightly after. This he did, and now some two weeks after the insertion of the needle he presents an extreme degree of gangrene of the finger. The carbolic acid "solution" was found to be almost a pure carbolic.

HYSTERICAL CONTRACTURE.

The second case was that of Hysterical Contracture (Lordosis) in a young man who had fallen from a telephone pole. He was under observation for a year and recovered, largely by suggestive treatment.

J. A. HUTCHISON, M.D.—This second case is interesting, especially so from a medico-legal point of view, and quite worthy of record for that reason alone. Some years ago I reported a case before this Society which was somewhat similar, the area effected being the cervical. The man had very definite fixation of the upper part of the muscles of the neck and shoulders, and remained in this condition for many months; there were evidently no nerve changes.

ABSENCE OF UTERUS AND VAGINA.

A. LAPHORN SMITH, M.D., reported a case of Absence of Uterus and Vagina in a female. The record appears at page 343.

W. W. CHIPMAN, M.D.—This case is an interesting one, and certainly is also a rare condition. One cannot say, however, that there was complete absence of the uterus, because, as I understand it, the left Fallopian tube, ending in a small knob, was present together with the left ovary. Of course, this condition, as many authorities state and as Dr. Smith has shown, is only diagnosable either at the time of operation or in the case of a post-mortem examination. But if you find a condition such as we have here, that is, one Fallopian tube, or sometimes even two, attached to the posterior wall of the bladder, frequently ending in a small knob, the condition is certainly one of arrested development. In cases such as these the sex is absolutely determined. The cases which are more frequent are those in which it is almost impossible to discern the sex: pseudo-hermaphroditism. They present points of extreme difficulty and extreme delicacy. Sir John Halliday Crume reported an instance of twins which had lived their lives till the age of 18 as girls, but when brought to him, after careful examination, they turned out to be boys.

They are now in Australia engaged in active life as boys. All such cases are extremely difficult to separate and diagnose, and in many cases much depends upon such diagnosis. In this case it is interesting to note the direction of the broad ligament, for it illustrates well the mode of development.

FRACTURES AS SEEN BY X-RAYS.

J. ALEX. HUTCHISON, M.D., gave a lantern demonstration of fractures as seen by the X-rays. Dr. Hutchison exhibited some 75 specimens of fractures of various kinds, particularly those of the upper and lower extremities. These were taken from the different clinics of the Montreal General Hospital from the time of the inception of X-ray methods. Dr. Hutchison stated that, in giving this demonstration, he wished to emphasize the difficulty often experienced in making a diagnosis from an X-ray plate, and it was often left to the operator to settle the question; so much depends upon the angle at which the rays strike the fracture, or a part of the bone.

He thanked Dr. Wesley Mills for permitting him to use his apparatus, and Drs. Ricker, Hill and Nelson for their assistance in arranging the plates.

G. P. GIRDWOOD, M.D.—Dr. Hutchison is to be congratulated upon his beautiful set of pictures. The skiagraphic room of the hospital receives a vast amount of material, but, so far as my experience goes, I would wish that surgeons who have charge of the cases would themselves attend the operation, to suggest and help in securing a picture under the best possible circumstances. The operator is very often expected to know and diagnose the condition of the injured limb, where the fracture is, what is the nature, and what would be the best point of view. As to the difficulty in the reading of these photographs, this can only be remedied by a thorough knowledge of anatomy, to begin with, and familiarity with every angle and curve. This can only be done by a first-class anatomist and surgeon.

KENNETH CAMERON, M.D.—We are all so dependent on the X-rays in cases of fracture that the present demonstration is most timely. There is one condition, however, in which the X-rays are not of much value, that is in separation of the epiphyses, especially from the lower end of the radius. I used to think this a rare condition, but during the last winter I have come across half a dozen in the young, which, clinically, have all the symptoms of a Colles' fracture. In looking at the skiagraphs of this condition, it struck me that there was blurring of the epiphyseal line in the fractured condition, which one did not find in the

normal. I would like to ask if Dr. Girdwood could diagnose separation of the epiphysis from the skiagraphs. Certainly, the ones I have seen could not be so diagnosed without the clinical signs.

DR. GIRDWOOD.—A great deal would depend upon the age of the child. If the epiphysis has commenced ossification, and is much displaced, you can see it, but if ossification has not set in, the cartilage would not show a shadow sufficient to be distinguished from the normal.

The fourteenth regular meeting of the Society was held Friday evening, April 21st. The following programme was submitted:—

LIVING CASES:—(1) Nasopharyngeal fibroma, James Bell, M. D.; (2) Chronic Suppurative Otitis Media and Mastoiditis. Healed case following radical operation, W. G. M. Byers, M. D.

CASE REPORT:—Hypernephroma of Kidney, James Bell, M. D.

PAPER:—Surgical treatment of Chronic Suppurative Otitis Media, with special reference to the radical operation. Illustrated by lantern slides, W. G. M. Byers, M. D.

With the deepest and most profound reverence, one may well say, Thank God! The Legislature has adjourned *sine die*!—*California State Journal of Medicine*, April, 1905.

Prof. Denuce (*Gaz. Hebdom des Sciences Méd de Bordeaux*, Dec. 25) has discovered a simple method of preventing vomiting after administration of chloroform—the administration of water before the anæsthetic is given.—*Medical Review*.

It may be emphatically laid down that ship-board life is the very worst possible method of applying open-air treatment for consumptives in the light of experience gained from modern sanatorium results.—*Inter-colonial Medical Journal of Australia*.

Mrs. Elizabeth Fleischman-Aschheim, one of our most expert radiographers, who has worked for all the hospitals and many physicians in this city, had to submit to amputation of her right arm recently as the result of the frequent exposures to the X-rays.—*Pacific Medical Journal*.