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## ADAPTATION AND TUBERCULOSIS.\*

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ON 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 micrococcus, a minute rounded or lance-head shaped organism that hunts,

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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 connection 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 adaptation. When first the diplococci began to grow in the lungs they did so because the tissues could not neutralize 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 neutralize 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 anyone 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 located 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 neutralizing 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 utilize 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 gen-

eral 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 neutralize, 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 in to 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 diseases.

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 portions like our own Canada. We contributed, as it were, from the marrow of one of our 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 sign 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 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 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 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 anti-toxic substance and thus aid the local resistance. I put this purpose 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 anti-toxines, 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 area of the 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 marked, 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 be well 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 on 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 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 extraordinary 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 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 entrance 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 for 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 bacteriologist 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 bac-

teriological methods in the conduct of warfare, sending bacteriologists with each division, which has had the wisdom to recognize that *le General Microbe* would be for her a far more powerful ally than Czar Nicholas's *General 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 the 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 teaspoonfuls.

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 understood, 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.

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At the quarterly meeting of the governors of the Notre Dame Hospital held recently, Dr. Albert Demers was appointed medical superintendent of the hospital in place of Dr. F. A. Fleury, who has resigned. Dr. Fleury, intends to leave for Paris on June 29. He will spend two years on the continent studying diseases of the eye, ear, throat and nose.

## INFLAMMATIONS OF THE NASAL MUCOUS MEMBRANE.

By PERRY G. GOLDSMITH, M.D., C.M., Belleville,

Fellow of the British and American Laryngological Association, Laryngologist of the National Sanitarium Association.

ON considering the inflammatory conditions of the mucous membrane of the nose, we are reminded that the ordinary characteristics of inflammation are somewhat modified here, owing to the special type of vascular arrangement, and, also to the fact that, an equal amount of swelling and hypersecretion within the narrow nasal fossae occasions symptomatic disturbance.

(1) *Acute Rhinitis*.—The reason that chills of even moderate severity produce the common complaint of cold in the head, is to no small degree due to some hyperæmiæ and hypersensibility of the nasal mucous membrane, with or without some structural changes. Constant repetition of these vaso-motor disturbances within the nose may in itself render the membrane each time more vulnerable. If we would only consider the rhinitis as but a manifestation of a disturbance of the equilibrium of the heart and vaso-motor centres, we would find ourselves looking elsewhere than the nose for the real seat of the trouble. There is no doubt whatever but that auto-intoxication plays a very important role in this disease, and it is sometimes spoken of as the uric acid dyscrasia. Grayson says 99 per cent. eat too much and exercise too little, they are indolent, soft and overweight. These people are subjects of what, for lack of a better term, we call lithaemia, and it is to this general condition, much more than to any local abnormality within the nose itself, that their repeated attacks of coryza are due. Coryzas in these people, therefore, may be regarded as neither more or less than nasal signals of systemic poisoning. This systemic poison may, however, be present, and if the nose be healthy, but very slight inflammatory disturbance ensue. In a nose, structurally imperfect and, therefore, more vulnerable, the coryza may be marked. Inflammatory manifestations within the nose are also seen as premonitory symptoms in certain diseases, as measles, pertussis, scarlet fever, diphtheria, syphilis, etc.

*Treatment*.—From what has been said regarding the systemic poisoning in these cases it will naturally follow that the treatment should be directed to the elimination of these toxic irritants. Local treatment, directed to the nose, is a secondary consideration. Free catharsis should be one of the first measures adopted. Calomel, gr.  $\frac{1}{2}$ , and podophyllin, gr. 1-12, taken every hour, will be quite effectual. Mineral water, such as Apenta, or Hunyadi, should be taken every morning until the attack subsides. Vigorous exercise, such as boxing, club swinging, dancing, etc., will do more to palliate and shorten the attack than all the quinine,

Dovers powders, or hot drinks one could use. Very little food should be given, but an abundance of water allowed. In cases where it is desirable for public or social reasons, some remedy to lessen the acrid rhinorrhoea may have to be used. Tablets containing quinine, ammon. chlor., camphor, ext. belladonna fol. ext. opii, gr.  $\frac{1}{2}$  each, will be found of real value, but not for continual use; because as the rhinitis is subsiding the secretion becomes thicker and tablets, such as these, will really increase the consistence of the nasal secretion and render it more difficult to expel. The diathetic factor may be met by using soda salicyl, soda bicarb., and vin. colchici sem., in repeated small doses.

*Local treatment.*—We are able to afford a great deal of comfort to our coryza patients by some form of local treatment. The nose may be first sprayed with a one or two per cent. sol. of cocaine and, after the turgescient mucous membrane has retracted somewhat, a mild alkaline spray, such as borol, 1 in 6, may be used to flush out the nose and nasopharynx. Adrenalin chloride sol. 1 in 8,000, may now be sprayed into the nose to accentuate and prolong the effect of the cocaine. Strong solutions of adrenalin chloride do harm. Various oil sprays will now be not only grateful but protective. Two per cent. camphor menthol in oil will act well. In those cases where the turbinates are slow to regain their normal size and the secretion remains thick and excessive the use of Boulton's solution will hasten the reparative process. This solution is made by mixing acid carbol. (cryst) grs. xxiii; tr. iodin. co., m. Lx; glycerine,  $\bar{z}$ iss in two ounces of distilled water. This solution is then placed in a water bath at 100 degrees, in a tightly corked bottle until colorless. It is then filtered and is ready for use. In those cases where there are repeated attacks of coryza on very slight provocation, one frequently finds some structural defect within the nose requiring attention. These cases will be greatly helped if care is exercised in correcting any vices, regulating clothing and ventilation. Excessive use of alcohol and tobacco must be stopped. Occasionally it is necessary to touch the mucous membrane covering the interior turbinate with chromic acid to excite the desired contractibility.

Massaging of the mucous membrane of the inferior turbinate by brisk rubbing with an oily solution on a cotton tipped probe will afford decided relief in those cases where the vascular tone is slow in returning.

(2) *Chronic Rhinitis.*—Various terms have been applied to the different kinds of rhinitis which designate the leading pathological changes found. It is not intended to speak separately of simple chronic rhinitis, chronic rhinitis, intumescent rhinitis, hyperplastic rhinitis, purulent rhinitis, atrophic rhinitis, or hypertrophic rhinitis; but rather to state how cases of chronic inflammation of the nasal mucous membrane may be

generally managed, with a few remarks on such additional measures a special type of rhinitis may demand.

Repeated attacks of acute rhinitis frequently lead to a chronic inflammatory condition of the nasal mucous membrane which causes some, though possibly slight, inconvenience, such as nasal obstruction or increased secretion. Very frequently such cases are found in those whose constitutional state is below par, or whose eliminative organs do not properly perform their functions. Many patients complain of obstruction only when in hot rooms or at night in bed, when one nostril or the other depending on the side lain on, becomes obstructed—the so-called *intumescent* or *periodic rhinitis*. Here we find, probably not actual hypertrophy of tissue, but rather a lack of tone or dilated condition of the vascular plexus beneath the inferior turbinal mucous membrane. Another class of patients complains of constant obstruction in the nose, nasal and post nasal discharge. Here we find marked hypertrophy of tissue carrying the inferior turbinal, anterior end of the middle turbinal and the septal tubercle. All cases of rhinitis are aggravated and, in fact, may be kept up by irregularities of the nasal septum, or some accessory sinus disease. It is of very great importance in treating these cases that a searching inquiry should be made into the habits and mode of living of each patient. Too much alcohol or tobacco may keep up the nasal irritation or be the primary cause.

Gastric irritation, constipation, want of proper exercise and ill-ventilated rooms play a part, and frequently a very material one in causing or keeping up the pathological process.

*Treatment.*—There are various means of reducing the chronic turgescence of the turbinal tissues. In those cases where we find the turbinated bodies swollen though reducible with cocaine on a probe, and in which the obstruction is periodic and frequently during sleep, we may pin the tissues down very nicely by means of the cautery. A fine, galvanocautery point, plunged deeply into the turbinal tissue and the current turned on for a few seconds, may, by creating an inflammatory condition within the plexus of veins, so lessen the blood supply that there is little subsequent tendency to vascular engorgement. The resulting cicatrix assists in pinning down the mucous membrane; or the cautery point may be gently drawn along the convex border of the turbinated body. After throwing off a small slough, cicatricial tissue forms and lessens the size of the turbinal body. Chromic acid may also be used, but, its action is very severe and it is difficult to limit its application. It has, however, many warm advocates, and in selected cases is of great value. A small V-shaped piece of tissue, base outward, i.e. toward the septum, may be removed which will give a nice result with a minimum loss of mucous membrane.

There are, however, a few cases in which we find not only thickening over the bone, but enlargement of the bone itself. Repeated cauterizations produce but little effect. Such cases are admirably adapted for partial turbinectomy. Some rhinologists unhesitatingly condemn any such operation, but I am firmly convinced that the operation is a very valuable aid in these cases, and one which gives a permanent and satisfactory result. Some advise the submucous injection of various caustics, such as zinc chloride; but I have had no experience with them. Massage of the turbinated body with a cotton-tipped probe has given me very nice results when the hypertrophied tissue was slight in amount.

In cases where we have accessory sinus disease, septal ridges, or spurs with defective post-nasal drainage, attention to these parts will generally correct the turbinal enlargement. The cold snare is valuable when the mucous membrane is very lax and can be engaged in the loop. One must not think that the possession of a cautery point is an essential feature in all cases of hypertrophic rhinitis. The cases are comparatively few that require its use, a point too few practitioners seem to pay attention to. There need be no after treatment in cases where the cautery has been used, beyond the use of a mild oil spray, such as menthol, with or without camphor and eucalyptus, in liquid vaseline.

Occasionally we find hypertrophic spots on the septum and floor of the nose, which may require light cauterization. Care must here be taken that the cauterization is quite superficial, in order that no necrosis of bone follow. Hypertrophy of the mucous membrane, covering the anterior end of the middle turbinal, is commonly found associated with disease of the antrum and ethmoid cells. Amputation of the tissue with Grünwald's forceps and snare gives prompt results. When the hypertrophy of the inferior turbinal is confined to the posterior extremity of the bone, the cold snare may readily engage it through the nose. A secondary hemorrhage is in these cases not infrequent.

(3) *Atrophic Rhinitis*.—The treatment of cases of atrophic rhinitis is one that has given rhinologists a great deal of worry. The two symptoms most complained of are the odor and the discharge. Cases vary greatly, some having a very penetrating odor, while others have but slight smell though a great deal of crusts. There is no doubt that many of these cases are at least associated with, or, caused by accessory sinus disease. This should be looked for and treated if found. We may, however, find evidences of old but healed sinus mischief.

In order to get rid of the odor, we must thoroughly douche the nasal cavity. A solution of sodii sulphatis, 2 per cent., or sodii carb., 2 per cent., will most effectually dissolve and clear out the debris, careful inspection by anterior rhinoscopy should then follow, and any remaining crusts removed by forceps. The nares may now be sprayed thoroughly

with alphasone, or a weak solution of hydrogen peroxide, followed by the alkaline solution to clear any remaining debris. Careful inspection should now be made for any small ulcers which are not infrequently present, and these should be touched lightly with phenol. A spray of zinc complete the treatment.

For patients use at home an alkaline douche for repeated use is necessary, grs. V in  $\bar{5}i$ ; followed by a camphor-menthol application will be found that some such mixture as the following will, in most cases, control the odor and be at the same time sufficiently stimulating: Iodine, grs. viii; pot. iod., gr. xvi; zinci sulpho-carb.,  $\bar{7}ss$ ; creoline, m  $xlv$ ; aq. ad.,  $\bar{5}vi$ . This may be followed by an oil spray to keep the parts softer and lessen the tendency to the formation of hard crusts. Stewart Lowe has found great benefit following the use of Burchough's & Wellcome's tabloids of mucine and soda bicarb. Some cases are benefited by the use of submucous injections of paraffin. Careful attention to the toilet of the nose daily will make those cases quite comfortable. It must be impressed on the patient that he must make up his mind to do so for years. It will be found best to occasionally change the irrigating lotions. General constitutional treatment is essential in those whose general health is below par.

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## BROKE IN THE WARS; HOW THE WOUNDED JAPANESE ARE CARED FOR.

By J. GORDON SMITH,

*Correspondent for the London Morning Post with General Oku's Army.*

ON a dull-grey morning I stood before Shinbashi station and watched the wounded arriving in Tokio; also gun-carriages, limbers, horses, and other trophies of war. There was more interest displayed by the throng which jostled me about the trophies than the wounded. The governmental practice is to send each batch of broken men to the divisional headquarters. These, whom I saw, were two officers and three hundred and forty-one men of the Imperial Guards of Tokio. About three months ago these men were entrained at night and went away without flare of trumpet, without any demonstration, steaming away under cover of darkness to land at night by the light of hundreds of torches on Korea's shores. Now they have returned with equal lack of demonstration.

Their home-coming was a sad sight. Under a leaden sky, on a dull, grey, depressing day they came from the train quietly and with no more show than if they had been a party of farm laborers returning from the rice fields south of the city. A great crowd was at the station but there

was no welcoming shout. All was done in the most dispassionate business-like way. The majority walked more or less briskly from the platform carrying their goods pack in blankets and in haversacks slung from their shoulders; the greater number were smoking cigarettes. Some were limping, their hands on the shoulders of others. A comparative few were carried on stretchers. Hundreds of 'kurumaya' with their little two-wheeled 'jinrikishkas' (literally translated, 'man-power cars') were standing in lines before the porch of the railway terminus, and, one by one, they were called by an officer of the medical corps to have a returned soldier seated in their little passenger carts. From the goods platform some Russian gun-carriages, three big horses—seeming large in comparison with the small Japanese ponies—some gun-limbers and ammunition wagons, and other trophies of the battle of the Yalu, were dragged out. The line of 'jinrikishkas' fell in behind.

It was a procession of strange contrasts. The silent people by the roadsides saw the spoils of war they prized so much—the Japanese are very fond of the display of trophies such as these—and they were pleased. The gun-carriages passed; the limbers rolled by. Behind were coolies with mushroomlike hats and blue blouses, jogging on with the wounded. The red crosses on their white canvas kimono and hats, such as those of pastry-cooks, were not needed to manifest the other side of war—the seamy side. One after another the broken soldiers were trundled past the onlookers, many bare-headed, many with white hospital cap worn over their yellow braided regimental cap, the hospital kimono over their foreign cut uniforms; all with crimson blankets slung from their left shoulders, in striking contrast with the white garments. Some had their heads bandaged, others had arms or legs bound in lint. The brown faces all had a pallor; they were a pitiable sight.

The procession was a long one, stretched out over a mile. Hundreds stood on the streets, not crowding in any place other than at the station, but in an almost continual line on each side of the roadways, each person absolutely silent. The soldiers themselves seemed to take little interest in their surroundings, looking at the landmarks about them with indifference. The sentinels at the gates of the Russian legation; the officials at the windows of the War and Naval Departmental buildings, all else they saw on the way, had, seemingly, no interest to them. The old fellow with great smoked glasses giving him the appearance of a sage, who paid the 'kurumayas' at the hill-top, giving each coolie a ten sen piece and two sens—which allotment by the War Department for the transport of the sick and wounded were arranged in little piles on a big tray; the War Minister who drove past, his uniform glittering, in his carriage from the General Staff office, the 'gogai-runners' rushing by the little carts clanging their bells and shouting the name of the newspapers whose extras

they sold; none of these things had, as far as one could see, any interest to the wounded man. They were impassive.

The Eyu Hospital of the medical corps stands on the brow of a hill, not a stone's throw from the General Staff office, where the generals were sitting at a board of strategy devising new battles that would make more wounded even as the 'jinrikishkas' were rolled into the yard. Across the roadway from the ponderous gate which swings from two great beams joined by an equally massive beam overhead is the moat, beyond is the old stone wall of the feudal days with its overhanging trees hiding the palace buildings. The Tenshi Sama, for whom the men who had been injured in battle had gone to fight, and were eager to fight again, lived beyond that wall.

The hospital is a one-storied structure, square as a box other than for the wide porch, the curved roof of which, with a sweep, tiling, carvings and scrolled panels as pretty as those of a temple, gives the building a picturesque effect. Without this porch with its central panel of a sixteen-leafed chrysanthemum—the crest of the Tenshi Sama—the building would be a barren looking barn; with it the place is picturesque and pleasing. On the afternoon of that grey day when the several unfortunates broke in the war were squatted on the stones and grassy banks of the drive-ways as a spectacled doctor read the roll, the picturesqueness of the place was increased. The wounded squatting about added much to the effect.

All were kept sitting before the hospital entrance for nearly two hours. Everything was done with a system that was remarkably complete, often too complete, for regulations are sometimes carried to an absurd limit. The soldiers had all been landed at the hospital entrance and the doctor was calling the roll while assistants booked the names, when carts came with further supplies of hospital clothes. "Rikishkas" arrived with more doctors, and then came many carts, drawn by horses and oxen, bringing heaped loads of wooden bunks, the peculiar box-like sleeping places of Japanese soldiers in garrison. Three hundred and forty one beds were moved into the almost bare rooms of the hospital by night-fall, and meanwhile the sick and wounded sat outside conversing with each other and smoking cigarettes, exhibiting bullets from Russian rifles and telling and retelling the story of the battles for the benefit of the men of the medical staff—and telling also of the disappointment each man felt at not being allowed to remain at the front. Some spoke emphatically of wrong done them in ordering their return. They were aggrieved for they felt that they were still fit to fight. Those who had practically recovered during the voyage home in the hospital ship had petitioned to be permitted to return even when en route home; all longed to be back.



I will long remember the scene, it was very impressive. There was so much to be seen in the faces of the men who sat there, expressions of indifference, of fatigue, of hope, of sorrow—all the emotions were there displayed, but held well in check, for a Japanese will ever mask sorrow with gladness if others watch. This is the way with all. I saw a mother and brother greet a wounded soldier amidst the throng who sat before the hospital. His hand was bandaged, his arm swollen, and his face was as pallid as a brown complexion can show pallor. Yet he smiled, his white teeth showing. There were no tears in his eyes, and no outburst of joy, no emotional display of any kind marked the coming of those he loved. The old woman, with a well-worn grey kimona bound close about her, shuffled over the pebbles with her high "geta," and her other son, the carpenter—the tradesman has a mark of his guild shown by the great ideographs monogrammed on the back of his coat—walked behind her. Neither displayed any feelings; the other soldiers were sitting by and it is not in public that the emotions are to be displayed. The soldier must not be shamed before his fellows. The calm exterior must mask the feelings, no matter what one does behind the paper-screened walls of the home. So the soldier beat his back, bowing ceremoniously, and the mother and brother bowed equally low and with equal form. They spoke in polite commonplace words as they greeted each other, and bowing again separated. Imagine if possible an Anglo-Saxon mother receiving a wounded son without even a hand clasp. Yet that is the Japanese custom. Many were received by friends and relations as I watched with lack of emotional display. It is this seemingly restrained manner which the Japanese adopt in public, when whatever one feels, the indications of the feelings must be suppressed, that has given the foreign observer the impression that the Japanese are undemonstrative in their affections; that they lack emotion. But this is not so. In public the Japanese is undemonstrative. One would never think of showing any affection in public; that is for the home. And so, all who came to visit the wounded—people came and went until dusk—were received with ceremony. Meanwhile, the doctor who stood behind the table, placed on the steps on the entrance and heaped high with books and cards—there was a card for each man—called the soldiers one by one, and, with a parting bow and hurriedly spoken "Sayonara," each man hurried into the building. There the pharmacutists were busy distributing the medicines the doctors prescribed. It was nightfall before all were housed, and, as one of the dispensers informed me, it was morning before the work of attending to the reception of the men was completed. The doctors did not even have time to prepare afternoon tea for the volunteer nurses who had come from England and America; they did not have time to attend to the social requirements these ladies sought for many days. In time, though,

they were able to send many of these men who came to them from the front, back again to fight for the Emperor—and for Japan.

I visited the hospitals of Tokio where the "men broke in the wars" were being treated before I left for the front to join General Oku's army, and my experiences impressed me with the fact that the Japanese army surgeons are demonstrating to the satisfaction of medical men sent to Japan by various nations to study their methods of dealing with the sick and wounded that more men recover from wounds when operations are not performed than otherwise. With the armies of Japan now in the field the surgeons are operating in very few cases; in no case do they operate until the second day, and then only in cases of extreme urgency. In the main, the wounds of those shot in the field are dressed antiseptically by the surgeons at the front and the dressings are not removed until such time as the soldiers are brought to a hospital where the conditions are perfect for the treatment of the wounded. Even then, there are few operations. The wounds are bathed with an antiseptic washing, and then, as an American army surgeon whom I met at Sekijuji, or Red Cross Hospital, he said "they let the Lord do the rest—and He does it."

At both hospitals, the Riju Byoin, or military hospital and the Sekijuji, or Red Cross Hospital, I saw how successful indeed was the Japanese method of treating the wounded. The high percentage of recoveries in comparison with the records of other armies in past campaigns is convincing that this policy of "laissez faire" adopted by the Japanese military doctors is accomplishing wonderful results. Both hospitals are single-storied buildings with long narrow wards, windows and rows of beds on either side; the ventilation is excellently arranged and everything is spotlessly clean and sweet smelling. There are no bad odours. The percentage of recoveries was remarkable. I saw a large number of wounded who had perforating wounds in the chest going through the pleural cavity, yet not a case of pleurisy resulted. I also came in contact with some six cases of perforating wounds that passed through the abdominal cavity and out of the back, and, although the wounds were received not more than five or six weeks before, some of the men were sitting up in bed; two were walking about convalescent and complaining of the delay in permitting them to return to the front. True, the worst cases were probably not seen in the hospitals of Tokio. The men sent there, I understand, are selected from the cases brought to the southern depots by the hospital ships. But, nevertheless, the results secured by the surgeons are remarkable. The wounds I saw were nearly all clear perforations, and, unlike some bullet wounds I have seen, the orifice of exit was no larger, nor less clear than the orifice of entrance. There was no suppuration. I saw a bullet taken from a man's jaw and the jacket was perfect. The bullet had evidently been spent when it struck the soldier

and had been stopped on striking the lower bone of the jaw. It differed little in size from the bullet used by the Japanese and was a smooth, pointed, compound metal-jacketed ball. The doctor who accompanied me, offered the bullet to me, but the soldier was emphatic in his suggestions; he wanted the bullet as a souvenir and I gave it to him.

There were some remarkable cases. One soldier with whom I spoke, aided by an interpreter, had been struck by a bullet just under the left eye, where the orifice was plainly visible, and the bullet had passed through the sphenoid bone and perforated the tissue, coming out below the scapula of his right shoulder. His only suffering was from slight paralysis of his right arm due to the fact that the bullet had broken one of the nerve tissues. And, although not more than forty-five days had elapsed the soldier was able to tell of how he had been shot when charging with his comrade on the Russian position at Hohmatung. A more remarkable case seen at the military hospital was that of a man who had received a bullet in the forehead which had come out at the back of his head, both orifices being plainly shown, and he not only lived, but was sitting up in bed able to tell of his wound. He gives the credit of his recovery to a talisman in the shape of a samisen string which a geisha had tied about his waist. Another soldier received a bullet under his chin and left the top of his head; yet he was recovering. If the orifices made by the bullet were not so plain it would have been difficult to believe that possible. It seemingly is. The little spectacled doctor pointed out many instances in his text books; some of which were printed in English, some in German.

I met Surgeon-Major L. L. Seaman, of the U. S. Volunteers, at the Sekijuji-sha Byoin, and as we left to get into our 'jinrikishkas' he said to me, "After what I have seen I would hesitate to operate on a single case at the front." The feature of the Japanese surgeons' work is that he leaves the wound alone; there are few operations, indeed, almost none at all. Of course there are some cases and such things where the knife is used, but it is used no more than is absolutely necessary. The "first aiding" dressing of the Japanese is very simple, and when it is placed on the wound by the surgeon at the front it is not touched again until a hospital is reached. The wounds are usually aseptic. Some times the wounds are jagged, the detachment of the jacket or introduction of foreign matter, cloth, button, etc., or the impingement or ricochet of the bullet being responsible for such wounds. These are in the minority, though, for the greater number of wounds I saw in Japanese soldiers—and I saw hundreds in the field—had very minute orifices, those of entrance and exit being hardly distinguishable from each other in appearance. The Japanese believe it is far better to bandage a wound properly and avoid infection than to risk danger by an operation under such con-

ditions as prevail in the field. The Japanese are ever apt pupils and they are following well the examples set by Lister and Pasteur, to whom military surgery owes its greatest debt, and the Mikado's surgeons held that the soldier who falls on the battlefield from the effect of a ball passing through any but a vital part of his anatomy and who has a "first aid" bandage promptly applied and is then transported to a general hospital where the Röntgen ray and the principles of asepsis and antiseptics can be utilized, has a far greater chance of recovery than when his wounds are treated on the field. In the war between the United States and Spain, the United States forces had 95.1 per cent. recoveries, while 4.9 per cent. died as a result of following these conservative methods. The Japanese have even better results.

While with General Oku in Manchuria I saw much of the work of the Japanese surgeons. They have much to do in keeping the armies under their charge up to the highest standard of health so that in the emergency of battle the soldiers may be fitted to do their duty. The surgeons are also sanitary engineers, and they select the sites for camps, arrange camp drainage, locate latrines, and inspect all water supplies. It is the rule of the Japanese armies in the field to send a corps of medical experts in advance of the army, and, before the army pitches camp, every water supply in the vicinity, every well, has been chemically analyzed. Placards are placed at all places where there is water. Some of the placards read "This water is good," others, "This water is bad" and still others "this water should not be used unless it is boiled for half an hour." These precautions and the good ration in use prevents intestinal troubles and there are few cases of intestinal affections.

While I am on the subject of hospitals a few words regarding the Japanese Red Cross Society might not be without interest. The Red Cross Society in Japan is an outcome of the Hakuaisha (Society of Benevolence) founded during the Satsums rebellion, the great civil war 1877. At the close of the rebellion the society was constituted a permanent organization, and, when Japan recognized the Geneva Convention, the Society of Benevolence procured a connection with the international committee at Geneva and was merged into the Red Cross Society of Japan. Now the society has over 800,000 members. An Imperial Prince is the honorary president and a Princess of the Blood head of the ladies' committee. H.I.M. the Empress is a constant visitor and patron of the hospitals of the society. Barons Ishiguro and Hashimoto, prominent Japanese medical men, are among the moving spirits of the society. The headquarters is the capital, and consists of a number of buildings for central offices and storerooms. One room, elegantly furnished, is set apart for the use of the Empress or Emperor, and in this room are excellent full length oil paintings of their majesties. The society's hospital,

the Sekijuji-sha Byoin, situated in Shibuya suburb, has 230 beds ordinarily, but more have been put in to accommodate the wounded that have arrived there. The Empress, who is a frequent visitor, has a room set apart for her at the hospital. The nurses, all gowned in white with an odd high-crowned cap, number two hundred and sixty in all. The store-rooms are large warehouse buildings each laden with an enormous reserve supply of hospital stores, stacks of lanterns, canteens, uniforms, blankets, litters, trains of ambulance, cots, dressing material, etc. The society is the richest in the world. Within two days it can load a hospital ship or a hospital train in readiness for the front. There is not the slightest confusion, the system being excellent. The nurses are all under military control. Two hospital ships are owned by the society, the Kakuai Maru and Kosai Maru. In peace time they are leased to the Nippon Yusen Kaisha as passenger vessels. Now they are engaged in carrying the sick and wounded back to Japan from the front.

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### FOOD FOR THE HEALTHY ADULT.

By W. J. WILSON, M.D., Physician, Toronto Western Hospital.

**T**HERE is no food or combination of foods which one can say is the best for the healthy adult. The old adage "What is one man's meat is another man's poison," has a foundation in fact. What is proper food for one man will often not agree with his neighbor, and this without any accounting for the difference. There are so many factors to be considered one can scarcely make comparisons, not only between individuals, but even between nations.

Each race and nationality has its own special dietary, adopted from the experience of centuries and the force of environment. The Esquimo, the Nubian Arab, the Pampas Indians, the Fuejians and the inhabitants of Northern Norway, live almost exclusively on animal food; while in Southern Spain and India, we find pure vegetarianism. The Chinese and Japanese live largely on rice, but to this add eggs, fish, fruits and vegetables. In Ireland and Scotland fine specimens of the race are reared on potatoes and oatmeal respectively, with a rather limited supply of proteids and fats in the shape of milk.

All foods, whether animal or vegetable, are divisible into proteids, hydrocarbons, carbohydrates, salts, acids, water and flavors; and, whether we are meat eaters or vegetarians from necessity, we partake of at least two of these classes. The Esquimo, for example, has proteids and fats or hydrocarbons in the fish and animals he kills and from these also he receives his only supply of salts. The vegetarian finds his proteids in the various legumins, fats in such as the olive, and salts and acids in the various fruits.

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\*Read before the Toronto Medical Society.

In the temperate zones a mixed diet is the rule, the amounts and proportions varying with the individual. Laboring men, especially out of doors, can eat a total amount of food and, especially of meat, which would be excessive for the man of sedentary habits. This is due to the better oxidation in the outdoor worker. Irrespective of occupation, people differ very much in the amounts consumed, some eating three large meals per day with lunches between, others two meals, while some have only one large meal.

Where three meals are taken, especially with lunches, time is not given for the stomach and duodenum to empty themselves between the meals. Where only one meal is taken, the danger is over distention of the stomach. There is a growing impression that we could live on less meat than we do, and also that many of us habitually eat more food of all kinds than is necessary for the requirements of the system. This matter is, of course, regulated by the individual for himself; and only comes under our notice when something goes wrong. We should take as comprehensive a view of the case as possible; not only considering present conditions, but weighing the evidence of family history, and advising our patient so that he may avoid the dangers of over feeding on the one hand, and underfeeding, or injudicious feeding, on the other.

We know that certain families are prone to develop Bright's disease or arterio-sclerosis and, as a result, die from apoplexy. Is this due to something inherent in the tissues of the individual—an incident unavoidable in his life history, or do these people bring these diseases on themselves through habits of eating common to the family? We are inclined in some cases at least, to favor the latter conclusion. All peoples have adopted dietaries which seem well suited to their needs, and on which we cannot improve. These natural diets, as we may call them, have been evolved partly from the accumulated experience of the ages; and in part, from some peculiar relation between the needs of the system and the selective appetite of the individual. Nature, again, has made some wonderful provisions for our maintenance. In the Arctics, where hydrocarbons are required to keep up the body heat, the food supply is fats and proteids. The fat is exactly what is required for body fuel, and the proteids, which play such an important part in the absorption and utilization of oxygen, even under certain circumstances can be transformed into fats.

In the tropics, where the heat producing foods are not required, we have in abundance the acid fruits and vegetables with the legumens to take the place of meats, in the climate where meats keep badly.

Again, if we look at the composition of the various articles of diet, we find the proximate principles of food mixed in varying proportions in them all. For example, in the potato, which we look upon as a starchy food, we find 1.79 of nitrogenous matter, .16 of fat, to 20.56 of starch. In rice we have from 3 per cent. to 7.5 per cent. of nitrogenous matter.

In wheat, 12.42 of nitrogenous matter to 67 or 68 per cent. of starch. In beans, peas and lentils, we find from 22 to 24 per cent. of proteids, and 1.72 to 2.25 per cent. of fats. From these figures we conclude that, whether we be meat eaters or vegetarians, we of necessity partake of both proteids and fats. We find also that the vegetable proteids and fats are mixed with indigestible cellulose and are more difficult of digestion than the animal foods. In other words, the animal has assimilated the proteids and fat from the vegetable kingdom and presents them to us ready for easy assimilation. In the vegetable diet the indigestible cellulose forms more or less of a bulk in the intestinal contents, and aids in stimulating peristalsis. Advantage is taken of this in the so-called whole wheat bread.

The vegetable eater has a large amount of water in his food. This with the cellulose, forms a bulk of faeces; and the gases, formed through the fermentative processes incident to this kind of diet, keeps his bowels more fluid than they would be on the more digestible and less bulky animal foods.

Haig maintains that vegetables aid in the elimination of uric acid. If this be correct they would be the diet for those who are of the uric acid diathesis. It seems to us, however, that no matter what form of diet we adopt, it is important not to eat more than the system requires, and also that what we do eat should be prepared in the best possible manner.

A hopeful sign of the times is the interest at present being taken in cooking, and the number of institutions where cooking is now taught. This is a step in the right direction. It is most important for the health, development and well-being of a country that every young woman be taught how to cook, not rich pastry, but plain meat and vegetables with simple digestible deserts. It is unfortunately very rare to find a cook who understands the principle of her work. She will *boil* your egg till the albumin is tough, leathery and indigestible; serve your boiled potatoes, wet and soggy; make your toast so that the centre of it is like new bread; or make a pie with an undercrust wet and not fit for food. This kind of thing we grumble about during our summer outings, and at many of our best summer hotels where good wages are paid to cooks.

If cooking were put on a scientific basis and a mixed diet of meat, bread, rice, vegetables and cereals served, so as to produce a relish, the individual appetite could be depended upon in health, for the proportions of the various foods taken. The same proportions would not be taken each and every day; but on the whole, the results would average so as to supply the individual wants in a satisfactory manner. The foods, advertised as "new foods" and "pure foods" are often convenient as a change, but have neither the food value, nor digestibility indicated in their advertisements. In this, as in prepared foods for infants, it is better one should know how to prepare all the necessary foods at home.

## HYPERNEPHROMA OF THE KIDNEY.\*

By JAMES BELL, M.D.,

Professor of Clinical Surgery, McGill University; Surgeon to the Royal Victoria Hospital,  
Montreal.

WHEN you did me the honor some weeks ago to invite me to read a paper before your Society I gladly accepted the invitation and promised to send the title of the paper within a few days. When, however, I began to consider the matter I found it was not so easy to decide upon a subject. I realized that I could not come before you with some of the well-worn subjects which had been recently fully discussed in the journals, nor could I be excused for selecting a subject in which I had not had some considerable personal experience. In this dilemma a series of obscure and difficult cases of kidney surgery which I was compelled to deal with, decided the question for me. I have, therefore, chosen the subject, *Hypernephroma of the Kidney*, because in the first place it is a comparatively new subject, or at least the term is a comparatively new one; secondly, while the clinical history of hypernephroma is fairly constant, its pathology is very variable, making diagnosis and prognosis both difficult and uncertain, and thirdly it seems to me that a further study of these tumors from a clinical standpoint is essential in order that some clinical classification may be made possible, as up to the present time no such classification has been made. Finally, two, perhaps not very important circumstances influenced me strongly in this direction,—first, I am indebted to you, Mr. President, for having worked out the pathology of one of my cases a few years ago, and second, I had occasion very recently to operate on a case which was so typical in its clinical history and its gross morbid anatomy that I could not resist the temptation to bring it before you for demonstration.

There is probably no organ in the body which presents so many difficult surgical problems as the kidney. The typical forms of calculous and tubercular disease of the kidney are perhaps not more difficult of diagnosis and treatment than the average surgical conditions, but with these exceptions, and perhaps the exception of secondary infections the other surgical condition of the kidney are often very puzzling indeed. I refer especially to those conditions characterized by haematuria of renal origin, painful conditions of the kidney, and tumor formation.

I have employed the term hypernephroma, (not without many misgivings), as the title of this communication, because it seems to be applicable to a larger number of kidney tumors than any other of the many kindred terms which are employed by pathologists to designate such neoplasms. As you are aware, the many terms applied by pathologists

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to kidney tumors are derived from the interpretation of the histological appearance of the tissue of the tumor, which is generally coupled with a theory of its origin. Thus we have these tumors described as *Lipomata*, *Adenomata*, *Sarcomata*, *Adenosarcomata*, *Myxomata*, *Endotheliomata*, and various other combinations and qualifications, such as Struma Lipomatodes, Struma Sarcomatodes, and so forth, and the same tumor examined by different pathologists would often be described under quite different names, according to the interpretation of the tissue and the theory of origin of each investigator. This fact is fully illustrated in the six cases which I shall have occasion to refer to in this paper and which I believe are all true hypernephromata. In these six cases we find the following pathological diagnosis: Adenoma, Lipoma, Hypernephroma, Meso-thelioma, Angio-meso-thelioma, and Struma Sarcomatodes Suprarenalis Aberrans.

The difficulty in finding a term which would be properly applicable to this large class of tumors, which seems to be distinct from the ordinary sarcomata and carcinomata of the kidney, lies in the fact already mentioned that all the terms at present employed have been derived from the interpretation of histological appearances, coupled with theories of origin, and there is so much diversity of opinion among pathologists on these points that it seems hopeless to look to them for any substantial foundation for such a term. Hypernephroma is a term which was applied by Birch Hirschfeld in 1896 to a class of tumors which were thought to have their origin in the tissues of the suprarenal gland, either in the gland itself or in the so-called "rests" of adenal tissue. Grawitz, in 1883 had promulgated the theory that a large number of kidney tumors had their origin in the suprarenal gland tissue. He especially included tumors which had previously been called renal lipomata and he gave to this class the name Struma Lipomatodes Aberratæ Renis. These tumors have since been very generally described as "Grawitz" tumors. Grawitz pointed out certain points of similarity among fatty tumors of the kidney and attempted to bring them all into one class. He recognized that their chief points of resemblance lay in their macroscopical appearance, their position and clinical course and that they varied much in their histological characters. He stated that he often, *but not always*, found the histological appearances to resemble to some extent the adrenal cortex and he, as a working theory, ascribed their origin to misplaced portions of adrenal tissue. The term Hypernephroma has now superseded the somewhat cumbrous term of Grawitz and it means both etymologically and in the sense in which it was used by Birch Hirschfeld, and since then by others, tumors which show evidence of having originated in adrenal tissue and it cannot of course therefore be properly applied to any other form of tumor.

But some of these tumors are very small and some grow very slowly, and some undergo degeneration, while others are very malignant and grow very rapidly, and probably some are at first non-malignant and become malignant later on. Again, it may not always be possible to demonstrate that a given tumor has originated in adrenal tissue, even when such is the case, and besides, diagnosis, to be of practical value, must be made before operation or autopsy? A careful consideration of the subject has led me to the conclusion that these tumors are much less rare than has generally been thought, and at all events that we find, clinically, a class of tumors of the kidney characterised by pain and hæmaturia, as early symptoms and tumor development which may be slow or rapid. They may be benign or malignant, sometimes ending in degeneration when non-malignant and sometimes suddenly developing evidences of malignancy. Anatomically they are encapsuled and contain much fat, when not too far advanced in malignancy; they spread secondarily by blood vessels, and never by the lymphatics (or only very rarely); in these respects differing from ordinary cancerous growths, as was pointed out by Bilotz many years ago. It is to these tumors as a class, (which class corresponds to that described by Grawitz pathologically), to which I have ventured to apply the term Hypernephroma, as a clinical diagnosis, believing, that probably most of them could be shown to conform to the essential histological characters, while admitting that perhaps in some, demonstration might be impossible owing to alterations in the tissue by degeneration, &c.

The six cases to which I wish to refer very briefly arrange themselves into three subseries: (1) Cases 1 and 6 are either non-malignant, or at least the characters of malignancy had not developed prior to operation. They were not adherent to surrounding structures nor were there any evidence of metastases. They were both also slow-growing.

Case 1 was a French-Canadian woman aged 39, who was admitted to the Montreal General Hospital on September 15th, 1890, suffering from irregular fever, exhausting foetid diarrhœa and copious night sweats, with a large tumor in the right lumbar and hypochondriac region. She had a marked tubercular history and was the mother of seven healthy children ranging in age from 14 months to 23 years. Early in 1886 she had had symptoms which caused her to think that she was pregnant; soon after, she had pains in the right inguinal region and hæmaturia and discovered a small tumor about the size of a hen's egg in the right lumbar region of the abdomen. She remained in good health however until December, 1898, when she became feverish and lost flesh. Septicæmic symptoms then developed and continued till she came to hospital. After examination the tumor was thought to have some causal relation to the septicæmia and was removed through an abdominal incision on October 4th, 1890. The tumor had a horribly persistent fœcal odor when opened.

The patient died 16 hours after operation, apparently from septicæmia, as there was nothing in the operation to account for her death. This tumor, which had a central cavity, the result of degeneration, was very carefully studied by the late Prof. Wyatt Johnson, who called it an Alveolar Sarcoma. Duration of symptoms  $4\frac{1}{2}$  years.

Case 6—Mrs. A. D., aged 37, first noticed a tumor in the right side just below the costal border two years before operation, when she was three months pregnant with her last child. There never was any hæmaturia or any alteration in the urine although there was some frequency of micturition at one period. There were slight pains and a certain point in the tumor was slightly tender. The tumor was removed transperitoneally on the 19th of January, 1905, and the patient has made an uneventful recovery. This tumor has not yet been fully studied, Prof. Adami believes it to be a lipoma, but Dr. Keenan and others think that it may yet be shown to be a true hypernephroma; at any rate it may safely be classed as a "Grawitz tumor." The duration of symptoms was two years.

These two cases are practically identical in clinical history and in the gross appearances of the tumor, except that in the first case degeneration had begun in the centre of the tumor and in the second case there had been no hæmaturia.

In the second subseries, (Cases 2 and 5), the clinical history seems to show a premalignant period of about five years in each case with a sudden and rapid development of malignancy; at any rate in each of these cases there were symptoms of hæmaturia and pain for as much as five years before the tumor was discovered or the health was seriously impaired. The tumor would probably have been discovered in each of these cases had it been looked for as in each case it was as large as a full-term foetal head when discovered and did not grow rapidly while under observation.

Case 2.—J. J., aged 50, had an attack of left renal colic in 1893 followed next day by what was thought to have been the spontaneous passage of a small calculus (although it was not demonstrated), and hæmaturia which lasted for a week. In November, 1897 he had another attack of left renal colic but did not observe anything to indicate the passage of a stone. Hæmaturia persisted for two weeks and he then remained quite well until January, 1898, when he slipped and fell on the street; this fall was followed by pain in the left loin and hæmaturia, which lasted about two weeks. On the 11th of April, 1898, he had a severe attack of pain in the left loin, while in bed at night, which was again looked upon as renal colic and was relieved by a hypodermic injection of morphia. Pain and hæmaturia persisted for about a week. Early in February the patient had discovered the tumor but he did not pay any attention to it.

It was then, according to his account, as large as it was on his admission to the hospital—about the size of a cocoanut. On admission to hospital on May 1st, 1898, the urine was normal, except for a few leucocytes discovered microscopically. On the 4th of May the kidney was exposed by a loin incision and opened with the expectation of discovering and removing a calculus. On incising the kidney, however, a large quantity of grumous material was removed which was at first thought to be altered blood clot. There was no evidence of calculus or of pus. Twelve days later the kidney was removed through an abdominal incision and the patient made a good recovery but recurrence in the cicatrix took place in 3 or 4 months and the patient died in July, 1899. There was no autopsy. The diagnosis of the kidney tumor was *Struma Sarcomatodes Suprarenalis Aberrans*.

Case 5.—H. R. B., aged 59, was admitted to the Royal Victoria Hospital, May 30th, 1904. He had had slight dull pain in the left loin at intervals, especially after exertion, for the past five years. In December, 1903, he began to suffer from attacks of nausea and vomiting after eating. In January, 1904, he had the first hæmaturia, a very bad attack in which he says that he lost three quarts of blood; he had also had five or six attacks since but none of them so severe as the first one. Since January he had had some frequency of micturition and had noticed a whitish deposit in the urine. The patient was very weak and ill with a large smooth tumor in the left loin and hypochondrium, as large as a full-term foetal head. The urine was acid, sp. gr. 1020, and contained some albumin and a slight deposit of mucous and pus as well as numerous red blood cells microscopically. An exploratory operation was performed on the 9th of June, but no attempt was made to remove the tumor. The patient died a few hours later. From the autopsy report I take the following statements: "The left kidney weighed 960 grammes, showed endothelioma with secondary growths in right kidney, lung and pleura, also thrombosis of the interior vena cava." Subsequent microscopical examination, however, has I believe led to a definite diagnosis of hypernephroma.

In the third subseries there is evidence of greater malignancy and probably of malignancy from the very outset.

CASE 3.—A. C. D., aged 27, was admitted to the Royal Victoria Hospital March 3rd, 1903. The first symptoms began in this case in June, 1902, with sudden severe pain in the right loin and hypochondrium. The pain and tenderness continued and the patient soon began to lose weight and practically was incapacitated for work from the very onset of the symptoms. There were no urinary symptoms and on admission the urine was normal. Exploratory operation was performed on the 3rd of

March and the patient died on the 12th. The autopsy showed hypernephroma of the right kidney and suprarenal capsule and direct extension into the inferior vena cava and renal artery a large secondary growth in the liver multiple small secondary growths in the lungs, and thrombosis of the inferior vena cava and its branches.

CASE 4.—C. S., aged 4, was admitted to the Royal Victoria Hospital December 1st, 1903, with a large tumor of the right kidney. This child had been well till the previous March or April. From that time his mother had thought that he was not quite well but he had had no definite symptoms until September 20th when he fell across a door-step striking himself a severe blow across the right side of the abdomen. The tumor was then discovered by his mother and described by her as a "ridge" extending round the side, and apparently quite large. The tumor increased steadily in size till the patient came to hospital. He never had at any time hæmaturia or other urinary symptoms and on admission his urine was normal. An exploratory operation was performed on the 10th of December, but the tumor was found to be inoperable. On the 13th of December the patient was again anæsthetised and the tumor incised and 28 oz. of grumous contents resembling altered blood clot removed. The child died the next day. Autopsy discovered multiple tumors of the left kidney, but no secondary growths. Pathological diagnosis: Meso-thelioma of the right kidney, Multiple Meso-thelioma of the left kidney.

In these two cases there never was any hæmaturia, but it is not at all remarkable that hæmaturia should be absent in some cases as when it occurs it is ascribed to invasion of blood vessels by the new growth; neither is it remarkable that in all these cases the urine was practically normal as the new growth simply pushes aside the kidney structure in the less malignant types and in the earlier stages of growths; and arrests secretion entirely, in the more advanced malignant forms.

There were therefore in this series three degrees of malignancy; in two cases there was no malignancy, or only latent malignancy; in two others a latent malignancy for five years in each case and in the remaining two cases very active malignancy from the first appearance of symptoms. A general study of these cases and more especially of the very various modes of termination, leads one to ask whether the series may not be extended in both directions? For example, when malignancy does not appear and degeneration occurs, as has been demonstrated in a certain number of cases, is it not possible that the result may be ultimately a large cyst of the kidney? Such sacs of fluid are frequently met with and are generally diagnosed as chronic hydronephrosis, even where operation has demonstrated a patent ureter, the absence of any evidence of past or present obstruction and a large sac of fluid which possesses none of the special

characters of urine. With your permission I will mention very briefly two cases of this kind:

Case A.—Mrs. L. B., a healthy, well nourished woman of 41, came under observation June 7th, 1903, with a sinus in the right loin. The first trouble noticed had been temporary retention of urine eight years previously, followed by some almost continuous discomfort about the side. In February, 1903, an ovarian tumor was diagnosed and operation was undertaken for its removal. When the sac was found to have its origin in the kidney; operation for its removal was abandoned and it was drained through the loin. The sinus persisted and discharged large quantities of fluid. The sac was removed through a loin incision on the 11th of June, 1903, and the patient made a good recovery. The ureter was patent where cut across; the proximal part being lost in the tumor wall. There was no calculus or other evidence of obstruction.

CASE B.—Mrs. I., aged 44, came under observation on March 4th, 1905, with a large tumor in the right loin and hypochondrium. It was diagnosed as hydronephrosis. She was a healthy woman, the mother of three children. At 18 years of age she had had a sudden severe attack of pain in the right side which lasted a couple of hours and ever since she had had from time to time similar attacks of pain in the right side and occasionally some frequency of micturition. There had never been any blood in the urine and the urine on admission was quite normal. On the 16th of March, the tumor was exposed by a loin incision and 60 oz. of dark fluid was withdrawn through a trocar. The sac was then removed and the ureter was found to be patent and apparently normal, the relations of its proximal end to the sac could not be traced. There was no calculus or other evidence of obstruction. On examination the fluid was found to be alkaline and to possess none of the characters of urine. It was thought to be altered blood. The wall of the sac showed an advanced grade of fibrosis.

These two cases appear to me to illustrate a gradual cyst formation in the kidney, the process beginning with definite pain from which the patient continued to suffer more or less throughout the entire history. There was neither ureteral nor renal obstruction and the history suggests to me that probably the primary condition was a small non-malignant "Grawitz" tumor which instead of becoming malignant degenerated and became a syst. I could quote several other similar cases from my own experience, but even if time permitted no good purpose would be served by doing so.

At the other end of the series we have hæmaturia,, usually one of the first symptoms of hypernephroma of the kidney and a symptom which it is often impossible to explain or account for. The following are brief notes of two such cases:

Case I.—W. L. C., aged 42, came under observation on the 12th of May, 1904. He had always enjoyed good health until December, 1903, when he felt "run down." In February, 1904, after an attack of trembling and nervousness, hæmaturia began and persisted without intermission until operation. He had no urinary or general symptoms and was constantly tender below the left costal border, although the kidney was not definitely palpable. On the 14th of May the kidney was exposed and delivered through a loin incision and nothing abnormal detected. It was incised along the convex border and the ureter catheterised. The incision in the kidney was closed by cat gut suture, the kidney returned and the parietal wound closed. The patient made an uninterrupted recovery and the urine improved from day to day until five days after operation it was perfectly normal and continued so while he remained under observation and to the best of my knowledge continues perfectly normal still.

Case II.—Miss E. D., aged 34, came under observation November 6th, 1904, with a history of an attack of grippe in March, 1903, with aching pains in the lumbar region which lasted for about a month. In March, 1904, she had a similar attack which lasted a few days only, but the pain returned again in May and continued till the end of August. Early in September she caught cold and for a couple of days was troubled with a frequent desire to micturate. On the 22nd she first noticed blood in the urine and from that time it continued bloody until operation on November 30th and she had attacks of pain which were thought to indicate the presence of calculus in the kidney. There was also slight, but definite tenderness over the right kidney which was palpable. The kidney was exposed by a loin incision, delivered through the wound and carefully examined. No evidence of stone was found, nor anything abnormal, except a small pale area on the convex border, in the upper pole of the organ, a portion of which was excised for microscopical examination with negative result. The kidney was split from end to end and the calyces explored. The patency of the ureter was demonstrated with the ureteral catheter. The kidney incision was closed by cat gut sutures and the kidney fixed to the parietes in its normal situation and the parietal wound closed. The patient continued to pass bloody urine and on the 4th of December, four days after operation she had a very severe hæmorrhage per urethram. Moderate hæmorrhages persisted and on the 22nd of December the kidney was excised. On examination it showed a large necrotic area at the site of the pale area already mentioned and some small necrotic areas throughout the organ, but there was no evidence of new growth. (There are other interesting features about this case but they do not concern us in the present discussion.)

I have now presented very brief reports of ten cases, six of which are, in my opinion, "Grawitz" tumors, if not strictly speaking hyperneph-

romata, (a class which I believe includes the great majority of all kidney neoplasms). Placed in three subseries they illustrate a gradation in development from the slow-growing, non-malignant, (or only potentially malignant), to the rapid growing and very malignant types. Two other cases are kidney cysts which from their clinical history and pathological examination seem to have resulted from a degenerative process in the kidney substance independent of obstruction to the overflow of the urine. Knowing as we do that the non-malignant "Grawitz" tumors sometimes undergo degeneration, may these cysts not have been produced in this way; just as we find brain cysts which we believe to have had their origin in blood clot which had been effused many months or years previously? The two others are cases of hæmaturia in which the kidney was carefully examined and no lesion found to account for the bleeding. May these, therefore, on the other hand not be due to the very early stages of development of such tumors in which further progress is sometimes arrested, instead of proceeding to tumor formation or degeneration and cyst formation?

Such is the theory Mr. President which I venture to suggest. There are many interesting points which offer themselves for discussion in this connection, such as early diagnosis and early operation (before the period of malignancy, early growths in other organs, etc.), but as I have already, I fear, wearied you with details in support of this theory I will not further trespass on your good nature.

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## MELANCHOLIA VERSUS OVARIAN CYSTOMA.

By ERNEST A. HALL, M.D., Victoria, B.C.

"The saddest chapter in the history of disease—insanity—probably the greatest curse of civilized life."—*Oster*.

SINCE my last report in the *American Journal of Surgery, and Gynecology*, which contained deductions from the examination of one hundred and twenty-five females who were victims of "mental disease," I have examined four additional cases, three of which were submitted to operative treatment. In no case had a pelvic examination been made subsequently to the development of the mental trouble. In all cases distinct pelvic lesions were found. In one there was a large parovarian cyst containing two gallons of fluid; in another, a cervical polypus and myometritis; in a third, perineal rupture; and in a fourth an ovarian cyst. The post-operative course has been satisfactory in the three cases, but in one the recovery was so remarkable that a brief history would not be out of place.



Case No. 126.—Mrs. —, aged 37, good heredity, three children. She had had no serious illness after the birth of last child, four months previous to my examination, when she developed pelvic abscess, which was opened externally. During convalescence she gave manifestations of alteration in general demeanor, becoming careless of home attachments and domestic responsibilities. Definite delusions with melancholia developed to such an extent that the question of removal to the hospital for the insane was discussed. She came under the care of Dr. Frank Hall, with whom I examined the case. We found an ovarian cyst as large as an orange, with slight pelvic adhesions. After considerable delay, Dr. Frank Hall was granted the privilege of operating, removing tumor and both appendages. Upon recovery from the anæsthetic, the patient showed marked mental improvement and, within a week, had lost all delusions and depression, and has continued well.

The saddest chapter in the treatment of insanity has been the tardiness of the profession to apply to these cases of so-called mental disease the simple principles of modern surgery.

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A. Sheldon, *British Medical Journal*, December 17, 1904, advocates a posterior or lumbar incision in certain appendicitis operations. In this method a vertical incision exposing the quadratus lumborum is made along the outer border of the latissimus dorsi, and extending in an upward direction from the crest of the ilium. The second incision is made transversely close to the iliac crest, through the lumbar fascia and the transversalis, exposing the parietal peritoneum directly over the ascending colon and caecum. It is stated that in cases of suppurative appendicitis the abscess, except in some very rare forms, is in direct contact with the caecum, and can be opened more quickly and with less difficulty and danger through a posterior incision than by any other route. The abscess is by this method opened in the most dependent part, and the infected area is reached and treated without free exposure of the omentum or small intestine. In instances of the common and serious complication of retroperitoneal infection drainage is much more efficiently established through a posterior than through an anterior incision. With the posterior incision there is less risk, it is held, of post-operative hernia. The author has practiced this method in fifty-eight cases, and has found no disadvantages in it.

## CURRENT CANADIAN MEDICAL LITERATURE.

The Canadian Practitioner, May, 1905.

### NEUROLOGY AND THE PREVENTION OF INSANITY IN THE POOR.

Such is the title of Dr. Campbell Meyers' address at the Toronto Clinical Society. He agrees with those who think that advances in neurology must be made along the lines of clinical observation rather than along those of physiology and pathology. He goes on to deal with that portion of neurology known as neurasthenia or incipient insanity. He thinks that a better term would be cerebraesthesia for that class of cases where the mental symptoms predominate. This condition is one of much importance as its proper treatment is the means of preventing many cases of insanity, which would be as great a blessing as the prevention of tuberculosis. From an economic point of view the prevention of insanity among the poor is of great importance, as so many of these cases linger so long in the asylums that the expense to the state becomes very great. He contends that acute mania and melancholia can in a large majority of cases be prevented by proper measures, if these are taken sufficiently early.

Dr. Meyers dwells at some length on the great sufferings of these patients. Their misery is frequently very intense, and anything that can be done to alleviate this state of mind is in the interests of humanity as well as a means of preventing a very serious after break-down. He cites a case where the patient stated that his suffering from the nervous condition was severer than from a fracture of his femur which he afterwards sustained.

It is claimed in the address that students do not receive sufficient education and clinical experience on such cases. They receive instruction on the fully formed types of insanity, and have good books on mental alienation, but the incipient stage, the condition if ill defined neurasthenia, or cerebraesthesia, is overlooked. He goes into practice with an inadequate knowledge of such cases and how important they are, and too often comes to look upon these patients as whimsical or fanciful and gives them but little real attention. The end is often very disastrous.

There is a strong prejudice in the mind of the public against sending a person to the asylum, and this is in part due to the historical traditions

in connection with the former harsh treatment of the insane. The important direction in which improvement must come is in a better education of the student on the border line where disease of the nervous system is likely to merge into insanity. The idea is too prevalent that there is a chasm between the practice of medicine and the treatment of insanity. Another mistake is in not frequently enough recognizing that insanity is brain disease with mental symptoms.

Three suggestions are offered: To admit incipient cases and neurasthenia into the asylums without certificate, to establish psychopathic hospitals for nervous cases such as neurasthenia, and to have special wards for such cases in the hospitals. The third suggestion is the one favored, as it would enable medical students and nurses to become familiar with such cases and the best methods of treatment. This plan has been tried with the most happy results in Glasgow. In Germany this has been carried to a much greater length and there are many psychiatric clinics. In the United States, France, Italy, Austria and Switzerland it has been found to work well where tried. By this method a very large percentage of cures could be effected in cases that would otherwise likely pass over the border line and become insane.

#### TOXAEMIA OF PREGNANCY.

Dr. Kennedy McLwraith, of Toronto, read a paper under this caption, dealing with his experience in twenty-three cases of eclampsia. Premonitory symptoms occurred in every one of the cases. These symptoms were headache, oedema, vertigo, drowsiness, ringing in the ears, albuminuria, visual defects, high tension pulse, severe epigastric pain, jaundice and haemorrhage from the gums. Of these symptoms oedema was noted in 13, headache in 12, albuminuria in 9, and high tension pulse in 5.

The treatment is based on the view that the convulsions are due to a toxæmia. If the patient is conscious give 5 grains of colomel, washed down with two ounces of a saturated solution of magnesium sulphate. The patient is now anaesthetized and one pint of sterile normal saline injected under each breast. An enema of one ounce of saturated of mag. sulph., two ounces of glycerine, and three ounces of water is given as high up as possible. As the patient comes out of the anaesthetic, a hypodermic injection of morphia sulph. grain  $\frac{1}{2}$  is given. Chloral hydroate per rectum and grain 1-4 morphia sulph. are given every two hours alternately, as may be required, but not more than three grains of morphia should be given in twenty-four hours. If the patient is unconscious the same treatment is followed, except that the medicines by the mouth cannot be administered.

It is remarked that the convulsions may cease when the bowels are going to move. This is likely due to the exudate of serum into them relieving the system of toxins. *Veratrum viride* has proved useful. In one case of post-partum convulsions that would not yield to any other method of treatment, a hypodermic injection of 20 minims of the fluid ext. was immediately effectual. This remedy should only be used when the tension is high and the pulse strong. An injection of 5 to 10 minims three times a day would be safer.

If all these methods fail, and if labor should be accomplished and if labor is in progress and the cervix taken up, it should always be proceeded with. In cases where the cervix is not taken up, it may be dilated manually. In all cases water should be given, and, if unconscious, by the bowels.

With regard to the use of chloroform, the writer warns the profession regarding its danger. During the clonic stage of the convulsions, the patient may get too much of it. In all cases, oxygen is urgently needed, and chloroform prevents the blood getting oxygen. The only use chloroform should be put to is to break the series of convulsions while other means are effecting elimination.

Profound coma, a rapid feeble pulse, or a pulse of high tension are of bad omen. When the circulatory balance is well maintained and consciousness is regained between the convulsions the outlook is better. Care should be given pregnant women, and more attention paid to the condition of the kidneys and eliminatory channels generally than is the case too frequently.

## HOME TREATMENT OF PULMONARY TUBERCULOSIS.

Dr. Edward Playter continues the discussion of this important topic from a previous issue. He again emphasizes the importance of chest expansion. It is of the utmost moment that all the healthy lung be increased in breathing capacity, in order that more oxygen be obtained. Unless this chest expansion can be secured, cases in the second and third stages cannot recover. In beginning the necessary chest exercises care, however, is necessary.

Cough may be lessened, though never stopped, by inhaling some simple essential oil, or soothing medicament, such as eucalyptus, menthol, tr. benzoini co., etc. The simplest form of inhaler is a small bottle with two glass tubes passing through the cork, one of the tubes dipping into the liquid.

Intra laryngeal injections are helpful. Oil of cinnamon, creasote, iodoform, etc., in proper strengths may be used for this purpose. Ozoniz-

ed air has been tried by the writer to some extent, but the results have not been very encouraging.

The morning tonic bath is of much value in treating consumptives. It promotes healthy, vigorous action of the skin and assists in preventing taking cold. It must not be too cool to prevent good after-reaction. After a time the patient can bear a lower temperature. The general conditions of the patient should be the guides and not the temperature of the body. The inunction of cod liver oil at night is recommended. Every organ in the body must be put in the best condition possible. In early cases little else may be required than more oxygen with rest, and the use of some counter irritation as the inunction of iodine. No two cases can be treated alike, and special attention must be given to each patient.

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The Dominion Medical Monthly, April, 1905.

### COCAINE ANAESTHESIA.

Dr. Ingersoll Olmsted, of Hamilton, contributes an address upon this subject. When in Berlin in 1894, Dr. Olmsted visited Schleich's clinic and saw him do major operations under infiltration of the tissues by very weak solutions. During the past few years the writer or the paper has used weak solutions of cocaine in a variety of operations, and with satisfactory results. Local anaesthesia is useful for those cases where a general anaesthetic is contraindicated, and it avoids the unpleasant after effects of bronchitis or pneumonia that may follow the inhalation of an anaesthetic. At first much too strong solutions were employed and poisoning sometimes resulted. It can be used in patients that could not bear a general anaesthetic.

Considerable emphasis is laid upon the method of giving the injections to insist that they should be intradermal and not hypodermic. It has been found that weak solutions produce anaesthesia as well as strong solutions. The solutions should be isotonic, that is, its specific gravity and freezing point should be the same as the tissues. Plain water injected causes pain, whereas normal saline solution does not do so.

To avoid the toxic effects of cocaine some tried other drugs, and B eucaïne was used. It has nearly as marked analgesic properties, but the effects passed rather quickly. This can be avoided by adding some adrenalin, which contracts the small vessels, retaining the cocaine or eucaïne longer in the part. Barker's formula is as follows:

Distilled water ... ..	100 c. .c. m. (3½ ounces).
B eucaïne ... ..	0.2 gram. (3 grains).
Sodium Chloride ... ..	0.8 gram. (12 grains).
1 pro mille adrenalin chloride .....	m. 10.

The whole quantity may be used at one operation, and even twice as much has been used without toxic effects. Dr. Barker waits for thirty minutes after the injections before he operates. Dr. Olmsted has used the B eucaïne, but prefers the weak cocaine solution.

Schleich's solution is :—

Cocaine hydrochloratis ... ..	0.1 gram.
Morphinæ hydrochloratis ... ..	0.02 gram.
Sodii chloridi ... ..	0.2 gram.
Aquae destil. ad. ... ..	100 c. cm.

If a few drops of a cocaine solution be injected into a nerve, the part supplied by the nerve is rendered analgesic. Advantage has been taken of this fact in performing the operation for hernia, by injecting the ilio-hypogastric, the ilio-inguinal, and the genito-crural nerves. The peritoneum will require to be infiltrated, as it is usually very sensitive.

Abdominal operations can be performed under local anaesthesia by cocaine. In doing these operations the tissues must be handled gently or there may be a good deal of pain caused. In breaking up adhesions and in tying vessels, it is well to infiltrate a little of the solution. The parietal layer of the peritoneum is very sensitive and requires special attention to be rendered analgesic.

This form of anaesthesia is particularly useful in operations about the neck. For operations on the larynx a five per cent. cocaine and antipyrin and one per cent. carbolic acid solution to paint the mucous membrane with will render the parts analgesic and allay cough. A hypodermic injection of morphia a short time before the operation is helpful.

Cocaine solutions will stand sufficient boiling to render them sterile. Dr. Olmsted has performed sixty major operations under local anaesthesia, including gastro-enterostomy, enterostomy, suprapubic cystotomy, colotomy, appendicetomy, hernia, ileus, exploratory laparotomy, partial laryngectomy, goitres and tumors of the neck.

#### LYMPHO-SARCOMA.

Dr. Beverly Milner reported this case to the Ontario Medical Association. The doctor believes in a radical operation, if it can be done

sufficiently early in the disease to be likely to prove thorough. The patient, whose case was reported, was 19 years of age. The disease began in the left supra-clavicular glands. The glands were removed by operation on 7th January, 1904. Diseased glands found in the mediastinal space at the time of the operation. The microscope revealed a large round-celled sarcoma. Coley's fluid was employed daily and the x-ray every second day. The Coley's fluid was increased from two minims to sixteen minims by the hypodermic method. The x-ray treatments lasted 15 minutes. The glands in the chest continued to enlarge and others became affected. Coley's fluid was finally discontinued; but the x-ray treatment was kept up every alternate day.

The treatment was changed to quinine internally and the x-ray externally. Quinine bisulphate was given in 15 grain doses an hour before the raying. The raying was done by means of a very high vacuum tube at a distance of three feet, and an exposure of 45 minutes. Under this treatment there was considerable improvement in the condition of the glands and the patient's general state. A pericarditis developed and the patient died.

The history of this case showed that Coley's fluid had no effect on the disease, or at least not of any beneficial nature. The raying as at first used was also of no value. Benefit was obtained from the combined treatment with quinine and the x-rays.

Burns should be avoided as much as possible, as they delay the treatment. With the aid of quinine fluorescence the danger of burns is very slight and the patient may have daily exposures of 45 minutes safely.

#### HYSTERECTOMY FOR FIBROID TUMOR OF THE UTERUS.

Dr. A. Laphorn-Smith reports an interesting case of hysterectomy for a uterine fibroid. Although the condition of the patient was greatly reduced from excessive haemorrhages, it was decided to attempt the removal of the uterus. Dr. Laphorn-Smith takes a serious view of these tumors. Formerly they were treated on the expectant plan or with drugs and electricity, but opinion has been changing of recent years, and they are now much more frequently removed. He does not believe in waiting for the menopause which in these cases does not come as expected. In cases where the flow does cease, the health suffers from the presence of the tumor and the pressure it gives rise to, so that these women usually die comparatively young. Further, in some cases these tumors become malignant.

The tubes and ovaries ought to be removed also. The reason for this is that in nearly every case of fibroid tumor of the uterus, these structures are also diseased in various ways.

It is strongly urged that fibroids should be removed while they are small and as early in their history as possible, before the woman's health is run down by haemorrhages, before troublesome adhesions are formed, and before the kidneys become diseased through pressure. If this course were adopted the mortality would be very low, the writer having had only one death in forty operations.

In the case, the subject of these remarks, the operation took half an hour and the patient made a good recovery.

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The Montreal Medical Journal, April, 1905.

### REGENERATION OF THE AXONES OF SPINAL NEURONES IN MAN.

Such is the title of the paper by Dr. D. A. Shirres. His paper is based to a great extent upon personal observation. He remarks that the opinion is pretty generally held that the axones do not regenerate, and that experiments on monkeys, dogs, etc., have failed to show that regeneration takes place. Quite recently Dr. James Coillier in *Brain* states that immediate suture of the spinal cord proves that regeneration is possible. Sir William Gowers is referred to as also mentioning a case where there was complete motor paraplegia, and that after a time there was considerable restoration of function. When the patient died some years afterwards, sections of the cord went to show that some regeneration of the axones had taken place. The reason is advanced that regeneration in the spinal neurones is prevented because they have no neurolemma sheath. Further, as these cases of transverse myelitis, or crush injuries to the cord have been regarded as very serious, but little has been for them surgically. The pressure may be removed, but if the cord is found to have been divided no attempt has been made to restore its continuity. In many cases operation has been deferred too long.

In some cases the pressure upon the cord may have been of only momentary duration, and no coarse changes are visible, but there must be some marked changes as there is paralysis. In other cases the pressure may have lasted a week or more. In the majority of cases of fracture dislocation and pressure in the cord, there is motor and sensory paralysis with increased reflexes. Dr. Shirres thinks that in these cases there is not transverse division of the cord, and that when such is the case there



is flaccid paralysis with loss of the reflexes, motion and sensation. In some instances of injury to the cord the reflexes may be at first retained, but later on lost owing to the extension of blood clot or such like to the lumbar enlargement and thus involve the lower neurones. In this way a paraplegia which at first retained the deep reflexes may become flaccid, with loss of the reflexes and atrophy of the muscles. The cell bodies of the neurones must receive nourishment and stimulation or they will undergo degeneration. Electricity is a valuable means of supplying the requisite stimulation by the employment of needle-electrodes placed in the muscles or nerves.

"The order of appearance of the motor and sensory paralysis in progressive lesions is practically constant in the large majority of cases. They are motor paresis and spasticity, increase of the reflexes, anaesthesia below with local hyperaesthesia, sphincter paralysis, thermo-anaesthesia, followed by flaccidity with loss of the deep reflexes, progressive lowering of the faradic excitability, muscular wasting and loss of the sphincter tone. Pain and temperature are always earlier affected, and to a greater extent than sensibility to touch."

A very interesting case is reported. The patient was 48 years of age, and was brought into the Montreal General Hospital in the spring of 1902 suffering from a fracture dislocation of the 9th and 10th dorsal vertebrae. He was put under the care of Dr. G. E. Armstrong. The writer saw the case with him. There were found complete loss of motion and sensation, flaccid paralysis, loss of superficial and deep reflexes, and bladder and rectal retention. Twenty-four hours after the injury, Dr. Armstrong cut down upon the cord and found that it was completely severed and the portions separated by at least half an inch. The case was regarded as hopeless. The lower portion of the cord and the motor roots from it were tested, and found to respond well to the electric current. This proved the lumbar enlargement was not injured. At the end of six months there was no return of the reflexes nor any sign of spasticity. This very clearly proved the view held by Bastian and some others that total transverse lesion destroyed the reflexes, and caused flaccid paralysis, and that the loss of the knee jerk and the flaccid state is due to removal of the higher centres and not to any concomitant injury of the lumbar enlargement.

At the end of eleven months, the cord was cut down upon again, when it was found that its two portions were separated by one and a half inches. The dura mater was opened and three inches of the spinal cord of a dog inserted. A few fine stitches united the pia-arachnoid of the one to the other. The dura mater was then closed, the patient making a good recovery from the operation. The fifth week after the operation the patient could recognize flatus in the lower portion of the abdomen.

Six days later he could feel the passage of a catheter, and ten days later could inform the orderly that the bowels were going to move. About the same time he began to feel the sensation of pins and needles in his feet, and in two months from the operation he could describe sensations up to the knees. There was slight reaction restored in the muscles to percussion. An abscess formed in the right kidney causing the death of the patient.

A very careful study was made of the cord. There was the typical ascending degeneration in the upper portion of the cord in the columns of Goll and Burdach and in the direct cerebellar tracts and in Gower's tract. In the substance lying between the portions of the cord there were fibres found and uniting with the cord above and below. There were clear indications of regeneration. He does not assert that the dog's cord caused the improvement, but the nerve fibres were present uniting the two segments of the cord. A number of pathologists who saw the specimens were of the opinion that regeneration was taking place. This paper is one of very great interest and marks a stage in the onward progress of neurology, as it goes a long way towards establishing two important facts. That complete destruction of the cord causes loss of the reflexes and a flaccid condition of the muscles, without their being a coincident injury to the lumbar enlargement; and that regeneration of spinal axones can occur.

### CAESAREAN SECTION.

Dr. H. L. Reddy has a paper based on six cases of Caesarean section. The usual preparatory treatment for a laparotomy was adopted, and the anaesthetic used in all cases was alcohol, chloroform and ether. The incision was made in the middle line, from two and a half inches above to three and a half inches below the umbilicus. A 10 per cent. solution of gelatine stopped all bleeding. The left flank was well depressed and pressure over the right side of the fundus aided by one hand over the fundus uteri, brought the uterus outside the abdominal cavity. The bowels were kept back by means of hot towels, and the uterus was covered by the same. The uterus was then opened from the level of the Fallopian tubes down to the contractile ring, or an incision of six inches. The wall of the uterus was cut through rapidly, and in five cases also the placenta. The bleeding was not severe in any case. The presenting part of the child was seized and it was delivered, the cord being clamped and cut. Aseptic ergot was injected subcutaneously into the buttock and the Esmarch bandage relaxed. The uterus at once contracted and there was no difficulty in removing the placenta and membranes, except in one case.

The os was ascertained to be patent for drainage, and the opening in the uterus was closed by interrupted sutures one-quarter inch apart of No. 4 braided silk. Lambert sutures were used to bring the peritoneum together. The peritoneal cavity was dried out and filled with saline solution. The abdominal wound was closed by three layers of sutures, a continuous cat-gut for the peritoneum, interrupted silk for the musculo-aponeurotic tissues, and interrupted silkworm or horse hair for the skin.

In any case where it was thought necessary to render the patient sterile the Fallopian tubes were tied in two places and cut between.

In the first case both mother and child were saved and did well. In the second case the child did well, but the mother, who was very delicate, died of heart failure on the third day. In the third case, the mother made an excellent recovery, but the child died on the twenty-third day. The fourth case did well, the mother being able to nurse her child, when both left the hospital. The fifth case was also satisfactory to mother and child, both doing well. Case six was favorable to both mother and child. Only one case was not rendered sterile by trying the Fallopian tubes. In one case the membranes were very adherent and difficult of removal.

Under absolute causes, the writer mentions tumors that obstruct the descent of the child, and contracted pelvis, varying from three to three and a half inches. Relative causes for section may be found in very protracted labor. As the death rate should be nil to both mother and child, Caesarean section should not be left as the *dernier ressort* that is too often the case.

## EMPHYEMA OF THE FRONTAL AND ETHMOIDAL CAVITIES.

Dr. Robert H. Craig reports a case of empyema in these cavities. He removed the anterior half of the middle turbinal and freely opened the ethmoidal bulla and anterior group of cells. The cavity was curetted and flushed with an antiseptic solution. A few days later the frontal sinus was opened. An incision was made in the interfrontal furrow, and a small button of bone removed, midway between the supra-orbital notch and the midline. The cavity was found to contain granulation tissue. It was curetted and flushed with 1 in 5,000 bi-chloride solution, and then swabbed with bi-chloride of zinc, 40 grains to the ounce. The naso-frontal duct was enlarged and curetted and a gauze drainage inserted. At the end of two weeks the naso-frontal duct was enlarged to secure very free drainage as the progress of the case was not satisfactory under antiseptic solutions daily. The case recovered in one month. The writer recommends that in empyema of the frontal sinus free drainage be es-

tablished between the nasal and frontal cavities, before the external route be resorted to. All growths in the way should be removed, and the excision of the anterior half of the middle turbinal will facilitate the treatment of the naso-frontal duct.

### INJURIES TO THE HEAD AND FACE FROM FORCEPS.

Dr. Ridley Mackenzie describes three cases of children, in whom injuries had occurred from the use of forceps during labor. These children died in the hospital and, therefore, autopsies were possible. In the first case there was a large purplish swelling, not tense nor pulsating, over the parietal region. There was fracture of the skull, but no injury to the brain. The tumor was due to haematoma of the pericranium. The second case presented two tumors over each parietal eminence. The autopsy showed that these were haematomata of the pericranium, but there were no fractures nor injuries to the brain. The third case presented a large swelling over the right side of the head. There were paralysis and wasting of the muscles of the right side, and conjunctivitis and keratitis. The autopsy revealed a pericranial haematoma and an underlapping of the right parietal bone. The facial nerve was flattened, no injury of the brain was noticed.

The injuries usually met with after the forceps are "intracranial effusions of blood, paralysis of the facial nerve, depression and fissure of the skull, pericranial haematoma, laceration of the scalp, injuries to the eyes, ears, nose and mouth."

To favor the absorption of haematomata cold and pressure should be employed. If the blood has not absorbed by ten days, the tumor should be opened and drained. Fractures are left alone, and injury to the facial nerve treated by time, electricity and protection of the eye.

### HYDROSALPINX, A CASE REPORT

Dr. F. A. L. Lockhart reports this case from the Montreal General Hospital. The patient was 22 years of age. She came into the hospital complaining of weakness, vomiting after eating, and of being sore all over her stomach. Four years ago some abdominal operation performed for pelvic trouble, but the exact nature of this could not be ascertained. The tube was reached through an abdominal opening. On removal its wall

was found to be very thin and tense and enormously distended with fluid. At its largest part it measured 13 by 15 inches. The pedicle measured 2 by 8 inches.

### JOHN HUNTER.

This is the subject of Dr. W. W. Chipman's article. He covers the main points in the life of the man who may be truly called the founder of scientific surgery. John Hunter's was a remarkable career. He was endued by nature with rare gifts and he allowed none of many talents to remain dormant. The sixty-five given to John Hunter from 1728 to 1793 were eventful years for surgery and science in general. His vast collection contained 14,000 specimens and had cost him over £70,000. For this he had always slaved and sacrificed and kept himself poor. It was bought by Pitt for £15,000 and handed over to the College of Surgeons.

Hunter's day began at six in the morning. He worked at his dissections till nine, when he had breakfast. He then saw patients till noon. From then till four he spent on his rounds or at the hospital, returning for dinner. He now took an hours sleep and spent the rest of the day making notes and observations of his cases, preparing and delivering lectures, and reading till one or two in the morning.

He was a voluminous writer and among these may be mentioned "The Natural History of the Human Teeth," "A Description of the Situation of the Testis in the Foetus and its Descent into the Vesiculae Seminales," "On the Structure of the Placenta," "Observations on Digestion," "On the Color of the Pigmentum Negrum of Different Animals," "The Use of the Oblique Muscles," "A Description of the Nerves which Supply the Organ of Smelling," "A Description of some Branches of the Fifth Nerve," "A Treatise on Venereal Diseases," "Observations on Certain Parts of the Animal Economy," "A Treatise on Blood, Inflammation and Gun-shot Wounds."

Hunter will ever be remembered by his work on the Treatment of Aneurism by Proximal Ligature, his work on phlebitis, intussusception, gun-shot wounds, feeding through a stomach tube, and healing by first intention. The surgery of the middle ages was a trade; Paré, Petit and Pott converted it into an art; but Hunter elevated it into a science. Hunter was a great philosopher. He was the first to teach and practise surgery as a branch of the science of life. He placed surgery on a firm scientific basis. Indeed, all medicine is richer because of the life work of John Hunter. Sixty-six years after his death his remains were removed from St. Martin to the Abbey, the worthy resting place of Britain's wor-

of whom he ranks as one of the greatest. The Royal College of Surgeons placed over his grave in the Abbey a tablet recording "its admiration of his genius as a gifted interpreter of the divine power and wisdom at work in the law of organic life, and its grateful veneration for his services to mankind as the Founder of Scientific Surgery"

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The Maritime Medical News, April, 1905.

### DUALITY OF MIND.

This is the title of Dr. Geo. L. Corbet's address. His paper is based to some extent on the practice of psycho-therapy as he saw it carried out by Dr. Sahler, of Kingston, N.Y. He points out that a working hypothesis is requisite in the studying of scientific subjects. The views of Mesmer, Dod, Braid, The Nancy School, The Paris School, etc., are referred to. The researches of Liebault and Bernheim are stated as the best theory yet advanced to explain the working of our mental processes. This hypothesis briefly stated is that man's mental organization is dual in its nature. Man has an objective and a subjective mind. The subjective mind is amenable to control by suggestion. The subjective mind is incapable of inductive reasoning. The objective mind takes cognizance of the objective world, and its media of observation are the five senses. It is the outgrowth of man's physical necessities and is the guide in his struggles with his environments. Its highest function is reasoning. The subjective mind takes cognizance of its environments by means independent of the senses, or in other words it perceives by intuition. It is the seat of the emotions and the storehouse of memory. It performs its highest functions when the objective senses are in abeyance. The objective mind appears to be a function of the brain, while the subjective mind is a distinct entity, possessing independent powers and functions.

The objective mind in its normal condition is not controllable against reason, positive knowledge, or the evidence of the senses by the suggestion of another. The subjective mind, in the hypnotic state is amenable to such suggestions from another. These two minds are separate and possess separate powers and functions. It follows that the subjective mind is amenable to suggestions from the objective mind as well as from the mind of another person, and the condition of auto-suggestion is established. The objective mind is capable of deductive and inductive and of analytical and synthetical reasoning, while the subjective mind is incapable of inductive reasoning. The subjective mind cannot reason from facts to principles but only from principles to facts.

These two minds should be developed harmoniously. If the subjective mind usurps control reason is dethroned. In cases where the objective mind is deranged, wrong suggestions are made to the subjective mind and various mental states, such as that of the mono-maniac result. When the subjective mind becomes active and the objective is in abeyance, such instances as those of wonderful memory occur, where a person will speak in a language not supposed to have been learned. The highest equal development of the two minds constitutes genius.

It is the influence of one or other of these minds over the other of these minds or upon the body that explains the problems of suggestion and auto-suggestion. These theories of man's mental nature seem to explain all the conditions.

### THE RESIDIUM.

George W. T. Irving has a very carefully prepared paper upon the important subject of the lower grades of humanity in civilized communities. These he calls the poor, the unfit, and criminal; incapables in a word, or those who, for some reason, have been forced down in the struggle for an existence.

The two great factors in the production of the submerged are heredity and environment. The first fixes the organic characteristics of the individual, the latter affects modifications in that heredity. Heredity furnishes the elements of character derived from the parent; environment all the conditions after birth that help to shape our careers. It is necessary to try to fix the share of each of these in the causation of the pauper and the criminal. This residuum or lower grade must be recognized as a diseased portion of mankind.

A distinction is drawn between poverty and pauperism. The person should not be called a pauper so long as he maintains himself, however, poor he may be. When he gives up the struggle and throws himself on the charity of others he becomes a pauper. The evil effects of overcrowding are considered at some length. By it the health is impaired and the earning power reduced thereby. This leads to other disastrous consequences, such as drink and crime.

It has been noticed lately that a large percentage of those seeking admission into the British Army were rejected because they did not measure up to the required standard. Insufficient food, overcrowding and wrong methods of living account for this degeneration in the race. The duty of the state is to take these matters into consideration, and devise ways of lessening the numbers who sink into the grade of paupers and criminals by controlling their causes.

# CURRENT MEDICAL LITERATURE

## MEDICINE.

Under the charge of A. J. MACKENZIE, B.A., M.B., Toronto.

### THE TREATMENT OF CHRONIC RENAL DISEASE.

Sir John W. Moore gives as the prime causes in the production of chronic parenchymatous nephritis, intemperance and exposure to cold and wet. The cases of chronic interstitial nephritis are usually the result of chronic plumbism in house painters and plumbers, while alcoholism also plays its part. Treatment of chronic kidney disease should proceed on three main lines, viz., dietetic, eliminative, and cardiac. The kidney should be kept flushed by soft water. Nitrogenous food should be given sparingly, but the patient must not be allowed to suffer the pangs of starvation or waste for want of it. Milk is well borne in many cases, as are the lighter animal broths. When patients dislike a "slop-diet," white meats and white fish may be allowed. Copious draughts of soft water will assist elimination through the kidneys. Special attention must also be paid to the skin, bowels, and lungs. The open air treatment is indispensable in dealing effectively with chronic renal disease. Overexertion should be avoided, however. The physical state of the heart and circulation is the paramount factor in the prognosis of chronic renal disease. The indications for treatment are to strengthen and aid the left ventricle in its work, to relieve tension in the right ventricle, and to bring high arterial tension down toward the normal. Digitalis is the best cardiac tonic. If an iodide is given with it, the objection of increased arterial tension caused by the digitalis alone may be met. If the drug is given with effervescent citrate of caffeine, it will not nauseate. A full dose of a saline laxative will relieve the pressure on the right ventricle. Arterial tension, if very high, must be gradually reduced by laxatives, the various nitrites, the iodides, and a restricted diet. The writer speaks, in closing, of the administration of macerated pork kidneys. Excellent results have been claimed for this method of treatment, but the writer has had no very definite or satisfactory experience with it. He urges physicians never to despair in a case of chronic nephritis, for recovery is not impossible.—*The Dublin Journal of Medical Science.*



APLASTIC ANAEMIA ASSOCIATED WITH LYMPHOID  
HYPERPLASIA OF THE BONE-MARROW.

In *The Johns Hopkins Hospital Bulletin*, April, Dr. Blumer reports a case comparable to those Ehrlich described in 1888, as aplastic anaemia, though it is atypical in many respects. As the name indicates there is a lack of evidence in the blood of any attempt on the part of the bone-marrow to compensate for the loss of blood corpuscles; the picture presented by the peripheral blood is that of a progressive loss of red corpuscles, without any marked variation in the size or shape of the cells, and without the presence of nucleated reds. The case reported is of a peculiar type in which the bone-marrow shows, instead of the simple aplasia that would be expected, a hyperplasia of the mononuclear elements; but was complicated by the fact that only in some regions was this hyperplasia present. An explanation founded on the hyperplasia also as suggested by Senator, is that the lymphoid cells, which have undergone hyperplasia, represent the parent cells from which are derived both the red cells and granular leucocytes. It is plain that if these cells fail to go through their normal cycle of existence and, instead, undergo proliferation unchanged, neither red cells nor granular leucocytes would be produced.

The case reported was a laborer, who was admitted to the hospital suffering from general weakness and shortness of breath. He had suffered from haemorrhages from the rectum and attacks of vomiting for over a year. He was well developed and moderately well nourished, with a yellow pallor, and showing little else except a slight enlargement of the lymph-nodes. The blood showed a few macrocytes, a moderate number of microcytes and a poikilocytosis. Occasional red cells showed granular degeneration and nucleation; the prevailing type of leucocyte was the small mononuclear, and 80 per cent. of these were typical lymphocytes. Temperature ranged over 100 degrees F.

The patient died thirteen days after admission, and an autopsy was performed three hours after. The lungs showed marked emphysema, and some areas of oedema, hyperaemia, and consolidation, the fatal termination being due to broncho-pneumonia. The lymph-nodes were slightly enlarged and dark red in color. The bone-marrow, in the upper part of the right tibia, was yellow and fatty. Histologically, many of the organs showed atrophy and degeneration. The marrow from the tibia consisted almost entirely of fat, that from the lower end of the femur and from the vertebrae showed marked lymphoid hyperplasia with an almost complete absence of nucleated reds and granular leucocytes.

## SURGERY.

Under the charge of H. A. BEATTY, M.D., M.R.C.S., Eng.  
 Chief Surgeon Canadian Pacific Railway, Ontario Division : Surgeon Toronto Western Hospital.

## THE ABUSE OF THE CYSTOSCOPE IN PROSTATIC DISEASE.

In the *Medical Times*, January, 1905, G. Frank Lydston states that in certain posterior median enlargements and where prostatic overgrowths are jutting into the cavity of the bladder the use of the cystoscope is essential to establish the diagnosis, but where the symptoms of prostatic obstruction are apparently typical and the catheter demonstrates a marked increase in the length and a change in the form of the prostatic urethra with the presence of residual urine, the cystoscope, even in some of the exceptional cases, is unnecessary and unequivocally dangerous.

Lydston formulates the following rules in regard to the use of the cystoscope in cases of prostatic obstruction:—

1. That when the diagnosis of prostatic obstruction is clear, the indication for radical operation is also clear, the application of this statement being modified only by the conditions governing the individual case.

2. Any exploration of the bladder which is unnecessary to the establishment of a practical working diagnosis is not only useless, but exceedingly dangerous.

3. Cystoscopy is especially dangerous, and where not absolutely necessary, is especially to be avoided because of the traumatism, and subsequent danger of infection which the insertion of the instrument necessitates, and the frequent necessity of anaesthesia with prolonged exploration of the bladder.

4. The use of the cystoscope, especially when anaesthesia is employed, rapidly compounds the immediate danger to the patient, and the subsequent danger of operative procedures.

5. A properly performed radical operation is much less dangerous than a cystoscopic exploration.

6. The use of the cystoscope rarely accomplishes more than the gratification of the curiosity of the operator in the establishment of refinements of diagnosis.

7. So far as the diagnosis of stone is concerned, the use of the cystoscope is superfluous. Whether the presence of stone be established or not, a radical operation for the removal of the prostate is necessary. The stone can be removed at the same time.

8. There are exceptional cases of posterior median obstruction and of prostatic overgrowths at the neck of the bladder in which the cystoscope is necessary. These cases are safer for exploration than the orthodox type of prostatic obstruction, but even in them diagnosis can usually be established without the cystoscope, and where this can be done the use of that instrument should be avoided.

## THE SURGICAL TREATMENT OF GOITRE.

In the *Kansas City Medical Record*, February, 1905, E. Von Quast discusses the above subject. The procedure and the operation depend entirely upon the condition of the patient and the class of goitre present. It is essential that the operator should have full knowledge of the anatomy of the region, and the operation should be performed with the utmost care.

Of the various operations suggested, extirpation with perfect technic and asepsis has given the best results. Enucleation does not require such exact technic but is more dangerous on account of the increased tendency to hæmorrhage and recurrence. In order to obtain the best results, the following rules should be observed:—

First—All antiseptics should be avoided, but a perfect asepsis in the preparation of the field and details of the operation carried out.

Second—Great care in the selection of the anaesthetic. Kocher and Roux used local cocaine anaesthesia, and only the ether air mixture in nervous and excitable patients and with healthy heart and lungs; they attribute the excellent results partially to this, thus avoiding the dangers of suffocation in the earlier stages of anaesthesia, like nausea and vomiting which is one of the disagreeable consequences of the general anaesthetic, and so liable to produce venous congestion, especially aspiration or deglutition pneumonia.

Third—Large incisions in correct lines, such as Kocher's symmetrical collar incisions, which leave the least objectionable scar and allow an inspection of the goitre. In some cases a left or right angular incision is preferred for the better exposure of the goitre.

Fourth—Careful ligation of all main arteries and veins—as the arteriæ and venæ thyroïdiæ, superior and inferior, and imæ and venæ accessoriæ. Thus alone can we succeed in removing the goitre with the least amount of loss of blood during the operation, carefully guarding against injury of the recurrent laryngeal nerve and secondary hæmorrhage.

Fifth—All the muscles and other divisions, especially the thyroids, should be carefully protected against injury, because the neck would be badly scarred by subsequent atrophy. The incisions between the muscles should be vertical. If necessary, separate the muscles from their upper insertion and reattach after the removal of the goitre.

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## GYNÆCOLOGY.

Under the charge of S. M. HAY, M.D., C.M., Gynecologist Toronto Western Hospital; Consulting Surgeon Toronto Orthopedic Hospital.

## PREGNANCY COMPLICATED BY TUMORS OF THE UTERUS.

Dr. D. S. Fairchild, *An. of Gyn. and Ped.*, November, 1904, says that the dangers from tumors of the uterus complicating pregnancy may arise during gestation, labor, and after delivery. Treatment will vary during pregnancy according to the stage of gestation and the surgeon will be required to determine on either a conservative course, abortion, or supra-vaginal hysterectomy. Individual conditions and circumstances must be considered in every case before reaching a conclusion. If there is reason to suspect that the tumor is undergoing degenerative changes or suffering from a torsion of the pedicle hysterectomy should not be delayed. But these accidents are not common.

The discovery of a tumor complicating pregnancy is no certain indication for an operative procedure of any kind, but a watchful care should be observed and when it is found in the first four months that the uterus cannot rise in the abdominal cavity or that an abortion is imminent the abortion should be left to nature or a supra-vaginal hysterectomy done, but an abortion should not be induced.

Unless grave pressure symptoms are produced by the uterus rising in the abdominal cavity no interference should be made. With such symptoms a supra-vaginal hysterectomy may be made.

If cervical tumors threaten to interfere with delivery the question of removing them may be considered at about the seventh month.

In most cases the patient will go on to labor and be treated according to indications present at the time. Such cases may be delivered spontaneously or require a Caesarean section or a Poro operation.

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#### GYNÆCOLOGICAL SUPERSTITIONS.

At the recent meeting of the Pan-American Medical Congress at Panama, Dr. Lucy Waite, of Chicago, read a paper on this subject, declaring them to be hard to overthrow. One of the first superstitions is that the uterus has a normal position. It has not, but may lie in any position. A second is that retrodeviation of the uterus is the cause of constipation. This is not so, as it cannot be proved either by dissection or examination. She has analyzed 500 cases, but could not trace constipation to posture of the uterus alone; the uterus was found in antero-position in 60 per cent., in retroposition in 40 per cent.; of the antero-

positions, 52 per cent. gave a history of constipation, while 48 per cent. did not; of the retropositions, 66 per cent complained of chronic constipation, and 32 per cent. had normal bowel movements. The third is that backache is a symptom of retrodeviation. She regards this as nonsense, as 1,000 cases examined disproved that superstition. The fourth that flexion or stenosis is the cause of dysmenorrhœa. This is not so, nor is childbirth the only cure. Of 300 cases where the question was asked: "Have you had more or less pain since the birth of your children?" the answer of 135 was, "more pain," of 89 "less pain," and of 76 "no difference." Some of these 76 had no pain before or since childbearing. Of the 135, some had no pain before childbearing. Many women had suffered worse after childbirth than before. She believes that the mania for operating in certain cases ought to be checked on the death of these superstitions.

## OBSTETRICS AND DISEASES OF CHILDREN.

Under the charge of D. J. EVANS, M.D., Lecturer in Obstetrics, Medical Faculty,  
McGill University, Montreal.

### GLYCOSURIA IN PREGNANCY.

J. M. Jackson and J. R. Torbert, *Boston Medical and Surgical Journal*, February 9, 1905, give short histories of four cases of glycosuria in pregnancy. Three were primipara and one a multipara. In one labor was induced, while the others went to full term. In the first case the amount of sugar never reached one per cent, and the patient's general condition was good. Labor was normal. In the second case labor was induced at the 6th month on account of peritonitis and there being four per cent. of sugar present. These both disappeared soon after the uterus was emptied. In the third case four per cent. of sugar but no symptoms were present. She was put on strict diabetic diet, and in one month was sugar free. Labor was slow, accompanied by high tension pulse and headache. Inertia set in and the os was dilated and forceps applied, the head being low in the pelvis. The placenta was adherent and was removed piecemeal. One hour later collapse set in and the patient died.

The fourth case was delivered by pedalic version on account of hæmorrhage. Shock followed delivery and the patient died in coma.

The authors give a review of the literature and conclude that a temporary glycosuria frequently exists during the later months of pregnancy, which is usually due to glucose or lactose and is physiological and does not interfere in any way with the pregnancy.

Where glycosuria exists due to glucose in variable amounts, associat-

ed with other symptoms of diabetes, and when diacetic acid or acetone appears in the urine the interruption of pregnancy is advisable in the interest of the mother.

Anaesthetics should be avoided in these cases on account of the tendency to sudden collapse.

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#### VAGINAL CAESAREAN SECTION.

Simon Strauss, *Med. Record*, March 18, 1905, after citing the objections to abdominal caesarean section, gives the following technique for the performance of the vaginal operation:—

“The patient is anaesthetized and disinfected, as for vaginal hysterectomy, the cervix is grasped with two vulsella forceps and steadied, and a longitudinal incision is made in the anterior vaginal wall from 2 to 3 c.m. below the meatus urinarius and extended as far as the external os. The bladder is then peeled off from the cervix and lower uterine segment, and an incision is made in the middle line from the external os up to the peritoneal reflection, but the peritoneal cavity is not opened. The two vulsella forceps have meanwhile been removed, and two stout sutures are introduced to steady the uterus, one on each side of the anterior incision. An incision is now made in the posterior vaginal wall, about 3 c.m. from the external os, and Douglas’ cul-de-sac is peeled from the posterior wall of the lower uterine segment without opening the peritoneal cavity. The cervix is then incised posteriorly, from the external os about 4 c.m. in length. The membrane are then seen to protrude, a foot is grasped, version is performed and the child extracted. After delivery, the cord is cut short and a large pad introduced to keep the field clear for repairing the uterine wall. The placenta is expressed or piecemeal removed. The incisions in the uterus should be closed with interrupted sutures, and the vaginal wall closed with continuous sutures.” The uterus should not be packed till after the placenta has been expressed, as has been recommended by Dührssen.

The case reported by the author was operated upon for cicatricial stenosis of the cervix. Though the case was septic at the time of operation, hence precluding the possibility of successful operation by the abdominal route, she made an uneventful recovery in two weeks.

The operation can be completed in from 10 to 20 minutes, hence it is indicated in cases of eclampsia with rigid cervix.

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## OPHTHALMOLOGY AND OTOLOGY.

Under the charge of G. STERLING RYERSON, M.D., C.M., Professor of Ophthalmology and Otolaryngology, Medical Faculty, University of Toronto.

## THE EARLY TREATMENT OF STRABISMUS.

In the *Virginia Medical Semi-Monthly* for February 24th, 1905, Dr. Oscar Wilkinson, of Washington, D.C., discusses the modern methods of dealing with squint. He says that the works of modern oculists have so modified our ideas of strabismus that to-day we enter upon its treatment with the same confidence, in cases seen early, as the surgeon goes to a case of simple fracture. The scientific method was introduced by Donders and Helmholtz in 1860, and perfected by others. The pernicious advice of many general practitioners to "wait and the child will outgrow it" could not fail to have evil results, and to this day exerts its influence upon the laity. "I hope that the day for such advice has passed," writes the doctor, "and that these cases will be sent to the specialist at the very beginning of their trouble." To-day the early treatment of strabismus is so successful and devoid of evil results that the man who advises his patients to neglect treatment does them an irreparable injury. If these cases are not seen until they are eight or ten years old, they are more or less amblyopic in the deviating eye and often without the power of central fixation. In early cases we get absolutely perfect results and without operation. What is the result of waiting? Granting that the deviation does at times decrease as the child advances in age, cures are not possible, so far as vision is concerned, in delayed cases. If the family physician will but make it clear to the parents that, if these little sufferers are taken early to the oculist, an operation will probably be avoided, it will be of great benefit to them. Holthouse found that 92 per cent. of cases seen early improved, and that 60 per cent. were cured by glasses alone. St. John Roosa believes that convergent squint depends almost wholly upon hypermetropia. Reber's statistics show that the average age at which squint appears is three years, and the average age at which they apply for treatment is seven years in private practice, and much later in hospital practice. Worth has shown that there is strong hereditary tendency to squint, and that out of 1,373 cases, 711, or 51 per cent., were hereditary. Jenson gives the percentage as high as 70. There is such a thing as spontaneous cure of squint, but they are very rare.

The first thing to be done is to paralyze the accommodation thoroughly by the use of atropine and correct the refractive error. The second step is to attend to the child's general health. The systematic exercises with prisms is often of great use by strengthening the muscles developing binocular vision.

## THE DIAGNOSIS OF CEREBELLAR ABSCESS SECONDARY TO OTITIS MEDIA.

H. B. Robinson, F.R.C.S., in *The Antiseptic* for April, reports the case of a boy, aged 13, was admitted to St. Thomas' Hospital on May 27. Since an attack of measles, eight years before, he had had a foetid discharge from the left ear. For three weeks he had had pain in the ear and head. The discharge had stopped and there had been incessant vomiting and obstinate constipation. For the last two days he had been very drowsy. He had got rapidly thinner since the onset of his illness. On admission he complained of pain in the head which could not be specially localized. There was tenderness behind the left ear with some oedema over the mastoid but no discharge. The membrana tympani was destroyed and the tympanum was filled with granulations. The pupils were equal, reacting to light and to accommodation, the vessels of the fundi were rather full and tortuous, the edges of the discs were blurred, and the discs themselves were slightly swollen. The grip of the left hand was weaker than that of the right; the left knee-jerk was increased but the plantar reflexes were equal and normal. He tended to curl up on the right side.

A curved incision was made behind the pinna and this was drawn well forwards with a gauze retractor passed through the meatus. The mastoid antrum was opened with a gouge and pus escaped; the posterior wall of the meatus was taken away and the antrum and tympanum were freely thrown into one. The pus appeared to come from the posterior part of the antrum and from the groove for the lateral sinus. The groove was opened up and the sinus was exposed but this was not the source of the pus. In so doing the sinus was lightly lacerated and blood welled up freely, showing no thrombosis. The bleeding was easily controlled by gauze pressure. Further exploration showed that the pus was coming through the posterior wall of the antrum itself, just in front of the sigmoid sinus and it ran away freely on introducing the pus seeker. The opening in the bone was further enlarged when the underlying dura mater was seen perforated and the escaping pus pulsated a little and was very foul-smelling. A silver drainage tube was passed into the abscess cavity and packed round with gauze.

After the operation the temperature fell from 102.4 degrees to 99 degrees, and the patient was drowsy. On the 29th the morning temperature was normal, and there was nystagmus from left to right in both eyes. On the 31st he was conscious though somewhat dull; the nystagmus movements were of less frequency. On June 4 he was still somewhat apathetic and showed slight incoordination in finer movements, such as trying to button his jacket. On the 9th his mental condition was



improved; speech was indistinct; some nystagmus was still present; and the left arm was a little weaker than the right. On the 15th there was still perceptible weakness of the left arm, the nystagmus was almost gone, and both knee-jerks were rather feeble, but the left arm was the more forcible. Recovery followed.

The important points in the case are the evidence which enables cerebellar abscess to be diagnosed, and the drainage through the mastoid in front of the sigmoid sinus. The symptoms pointing to cerebellar abscess were weakness of the left upper extremity and increase of the left patellar tendon reflex on the same side as the lesion, and the tendency to curl himself up on the right side—on the opposite side to the lesion. These symptoms, with others, have resulted from the experimental removal of one lateral lobe of the cerebellum, as demonstrated by Luciani and Risien Russell, which observations have been confirmed clinically, especially in a case reported by Dr. T. D. Acland and Mr. C. A. Ballance. The weakness of the upper extremity on the same side as the supposed brain lesion would at once arrest attention and suggest its origin. Luciani considers this the result of the abscess cutting off from the opposite cerebral hemisphere the reinforced influence of the lateral lobe of the cerebellum. The fibres thus involved pass through the superior cerebellar peduncles, and an abscess in any part of the cerebellum which did not involve the course of these fibres should not produce the symptoms. The fibres of the superior peduncles are particularly related with the dentate nucleus, some being connected with its cells while others pass through it on their way from the cerebellar cortex. Should the lesion involve this portion of the cortex or the region of the dentate nucleus, there may be weakness of the upper limb or of both limbs on the same side as the lesion. It appears that the lesion must be deeply placed to the inner and front part of the lateral lobe, and in the present case the abscess was certainly in front and also deeply placed from the distance the tube went in. In some cases there is weakness of the lower limb on the same side as the lesion, but less than that of the upper.

The increase of the patellar tendon reflex on the same side as the lesion is also explained by the weakening of the cerebral influence. The tendency to curl up on the opposite side was noticed by Risien Russell in monkeys after removal of one lateral lobe, and clinically in cases described by Ballance, Deanesly, and Gamgee. Conjugate deviation of the eyes to the opposite side is not recorded, although it may have existed. It was obtained experimentally by Risien Russell and noticed in Acland and Ballance's case. Nystagmus was not noticed until the second day after the operation, and the movements were away from the lesions;

they should be to it. Perhaps it was due to some injury of the external semicircular canal at the operation.

## X-RAY THERAPY AND SKIAGRAPHY.

Under the charge of JOHN McMASTER, B.A., M.D., C.M., Toronto.

### THE PRESENT STATUS OF ROENTGEN RAY THERAPY.

R. H. Boggs says that much experience is necessary in applying the x-rays in order to get the therapeutic effect, as the various mechanical guides to the dosage are not always reliable. The use of the fluoroscope involves a good deal of risk to the operator even if but infrequently employed, while it is really practically useless except for the purpose of testing tubes and making minor examinations, and gives such untrustworthy results that it should be discarded. Sufficient evidence has accumulated to give the x-rays a place in the treatment of all forms of tuberculosis. While a large number of skin diseases are benefited by the application of the rays it is advisable to treat only the most obstinate in this manner, as trivial affections can be relieved by other measures with less expense to the patient. The author concludes by saying: (1) that the wide difference of opinion as to the value of the rays is largely due to the manner in which they are applied; (2) that if the best interests of our patients are to be considered, the rays must be given a place as a therapeutic agent. (3) that injury to the operators from the rays during the past two years has been due to thoughtlessness or lack of familiarity with what is going on in the x-ray world; (4) that in applying the rays it is essential to know the quality as well as the quantity of the rays absorbed, and that this must be varied to suit each individual case; (5) that unless the operator has had a wide experience in the treatment of carcinoma, he should always consult a surgeon in each case, as it is certainly by the combination of surgery and x-ray that the best results are to be obtained.—*Medical Record*, May 6, 1905.

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### PROTECTION FROM ROENTGEN-RAY INJURIES.

C. L. Leonard, Philadelphia, *Journal A. M. A.*, May 6, calls attention to the serious risk that x-ray operators undergo, especially if they follow the practice advised of testing the qualities of the rays on their hands with the fluorescent screen. The only practical method is to limit their radiated field by covering the Crookes tube. For this purpose he uses a pasteboard box a little wider than the diameter of the tube and covered with x-ray lead foil a little heavier than the ordinary tea lead. This extends two inches below the bottom of the box, and can be ad-

justed so as to limit the field to any extent required. It is not necessary to cover the anode end, and the box is held on a bracket over the portion of the body to be treated; if a very small field is required, a local shield may also be employed. He thinks probably some effects are due to the strong induction field surrounding the coil which, especially in large hospitals, should be kept in another room, but with the controlling apparatus within the operator's reach. For the dermatitis of the operator's hands, he advises twice daily soaking in very warm water and scrubbing with Eichhoff's superfatted resorcin soap, followed by inunction of lanolin containing half an ounce or boric acid and a dram of resorcin to the ounce. For the acute erythema of x-ray treatment, he employs a stearate of zinc powder with 10 per cent. ichthyol, which he thinks acts as a prophylactic against severe burns. This should not be confused with stearate of zinc ointment, which may do harm.

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#### UNIVERSAL CELESTIAL RADIO-ACTIVITY.

This subject was discussed recently by Prof. Monroe B. Snyder, director of the Philadelphia Observatory, before the American Philosophical Society. He has discovered radium in the solar photosphere, and radium emanations in the solar corona and in the auroral streamers of the earth. He also found that radium and its emanation, the latter identical with coronium, were widely and correlatively distributed in stars, nebulae and very probably comets. Radio-activity is a transformation of one element of higher atomic weight into another of lower atomic weight, with the release of light vibrations of characteristic intensities and wave lengths. Ramsay, Rutherford and Soddy had demonstrated the reality of such terrestrial transformation and had established, on physical and chemical evidence, that radium was actually transformed into "radium emanation" and thence further into helium. Doon discovered the emanation of radium, as sharply distinguished from the three classes of rays emitted by this "element." Ramsay had accomplished the exceedingly difficult task of observing the spectrum of this radium emanation; and this was the starting point of Snyder's investigation. It seemed to the latter that Ramsay had apparently exhausted the list of discoverable gases and that this element of radium emanation would have interesting relations to stellar spectra. (The trend of chemical science to-day seems to be to find all "elements" to be but varieties of one fundamental element, one primal form of matter. Sir Oliver Lodge sets this forth). With the help of the researches published by Hartmann, of the Astro-physical observatory at Potsdam, Snyder identified radium emanation with fine coronal lines, and particularly with the coronal material discovered by Young and Harkness during the total solar eclipse of 1869, and thence called coro-

nium; he identified five of the lines of the radium emanation with Vogel's best determined lines of the aurora; he also made identification with the bright lines of Campbell's stars, in the spectra of the nebula; and, finally, at least a dozen positive identifications of radium lines with the dark absorption lines of the fourth type stars, as observed by Hale of the Yerkes Observatory. —*The Medical Times*.

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#### THE THERAPEUTIC USE OF THE X-RAYS.

First referring to his early articles on the subject, W. A. Pusey, Chicago, gives *Journal A. M. A.*, May 13, the results of his later experience with the x-ray. In some disorders, such as hypertrichosis and lupus erythematosus, the results have not equalled expectations: in some others, such as tubercular glands and joints and deep sinuses, the results have been variable, though with some marked successes. The value of the x-rays has been most markedly demonstrated in sycosis, tinea, acne, rosacea, lupus vulgaris, blastomycosis, cutaneous carcinomata and senile keratoses. The value of the x-rays has also been shown in hyperidrosis, inflammatory dermatoses, pruritus, nevi, keloid, sarcoma and as a prophylactic after operation for malignant disease. In some other conditions, abdominal tuberculosis, actinomycosis, mixed tumors of the parotid, there has been apparent benefit from the x-rays, but Pusey does not feel inclined, from his experience, to make any very positive generalizations. In the deeper situated cancers, as might be expected, the treatment is less hopeful, though palliation may be hoped for and some surprisingly good results are reported. In conclusion, Dr. Pusey gives his latest experience with pseudoleukemia, leukemia, and goiter. In the former he has repeatedly seen clearing up of the glands, but in the only case he has been able to follow up there have been repeated recurrences. In true leukemia he has seen like good effects as regards disappearance of the enlarged glands, but generally without any corresponding improvement in the condition of the blood. One remarkable successful apparent cure is reported, the blood examination revealing normal conditions and the patient apparently well. In some small parenchymatous goiters he has seen reduction in size of the tumor, but in most of his cases no benefit was observed.

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## EDITORIAL.

### HIPPOCRATES.

Hippocrates has been justly termed "The Father of Medicine." He was born in Cos in the year 460 B.C., and died at Larissa in Thessaly. Various statements are given as to his age, but it seems that the most reliable authority would fix it at about 100 years. He belonged to the family of the Asclepiadæ and was believed to be the seventeenth in direct descent from Aesculapius. He studied medicine under his father, Heracclides, and philosophy under Gorgias. He travelled a great deal and practised at Athens, Thrace, Thessaly and Delos. The statements made by some ancient writers derogatory to his character may be dismissed, as his own writings go to show that he was a man of the highest integrity. Further, he was held in the utmost veneration by the Athenians, which go to prove his unblemished character.

He was the first to cast superstition aside and to base the practice of medicine on rational principles and inductive philosophy. He lived at a time of remarkable intellectual development; for Greek life and thought was then influenced by such men as Socrates, Plato, Sophocles, Aeschylus, Herodotus, Thucydides and Euripides. Democritus, the master of the doctrine of atoms, was one of his teachers. He strongly abhorred the resort to charms and incantations. He was a very faithful recorder of natural phenomena and in this way gained a most intimate knowledge of the clinical features of disease. He was a true naturalist and completely separated his study and practice from priestcraft. He also was anxious to separate medicine from philosophy, lest mysticism and theory should obscure the results obtained from observation. Though he regarded, as the Greeks of his day did, a religious element in disease, yet he held that all disease must be treated by natural methods. He was a powerful advocate of the importance of a true conception of the *vis medicatrix naturæ* in the treatment of disease; but held that the best results could only be had after much experience in the management of diseases as they are met with in the individual.

While he attached great importance to experience, he did not believe in blind empiricism. Strongly as he urged the natural powers to make for recovery, he did not stand idly by and trust to expectant treatment alone.

He advocated judicious intervention. He taught "the support of enfeebled and coercion of outrageous nature." He employed strong remedies, and blood-letting and cupping were made use of by him, though he says care should be taken in resorting to them. He attached very much importance to diet and regimen and sanitary principles, and many of his axioms are accepted even to-day. His treatise on Air, Water and Places is the earliest work extant on public health.

He was a very acute observer as shown by his work on Prognostics. Here we meet with many keen criticisms on the progress of disease and the signs and symptoms that enable one to form a judgment as to the probable ending of the case. Hippocrates in his teachings on the value of succussion, as a means of determining the presence of fluid in the thorax, laid the foundation for the practice of auscultation. Indeed, it was from this source that Laennec derived the principle which he so ably worked out, and he admits that Hippocrates had practised immediate auscultation. His description of the facial appearance of the dying remains unrivaled, and every physician speaks of the "facies Hippocratica."

In surgery he has left some very shrewd observations on injuries to the head, on the use of the trephine, on dislocations, and on fractures. On luxations he is more complete than Boyer or, perhaps, even Dupuytren. He very clearly drew a distinction between external and internal diseases and injuries. Spinal curvature was recognized by him as caused by trauma, or from some internal condition of faulty health, and that with this form of the disease tubercles were often present in the lungs. The first principles of asepsis and antiseptics are found in his writings, as he urges that poultices should only be placed round a wound and not over it, and that, unless water is very pure, it should be boiled before it is used on wounds. He advocates the employment of wine and balsams in the wounds. He advocates the employment of wine and balsams in the treatment of foul wounds. In this we see the employment of simulating and antiseptic agents. The dressings were to be of new material and the operator's hands and nails were to be thoroughly cleansed. Puerperal fever was regarded as the same as wound fever. He recognized that injury to the temporal region caused paralysis on the opposite side: and he taught, in paralysis from injury to the spinal region, incontinence of urine and faeces augured a fatal termination of the case.

The following works may be accepted as quite genuine. On Ancient Medicine, The Prognostics, The Aphorisms, The Epidemics, On Regimen in Acute Diseases, On Airs, Water, and Places, On the Articulations, On Fractures, The Instruments of Reduction, The Physician's Surgery, On Injuries of the Head, The Oath, and The Law. There are many other writings that, though not by him, are from his immediate pupils, and give us much more of his teachings regarding diseases and injuries.

In physiology and pathology, he was a humoralist. No real physiology or pathology in his day existed, but he had a broad idea of function and its perversion in disease. He was dominated by a rational and scientific spirit. When viewed in the light of his times and that of subsequent history, the life and writings of Hippocrates command our highest regard; and, indeed, justify us in claiming for him the first place among the masters of medicine.

The Hippocratic oath is a remarkable code of ethics, and is here given in full: "I swear by Apollo the Physician, by Aesculapius, by Hygeia, Panacea, and all the gods and goddesses, that, according to my ability and judgment, I will keep this oath and stipulation; to reckon him who teaches me this art equally dear to me with my parents; to look upon his offspring upon the same footing as my own brothers, and to teach them this art, if they shall wish to learn it, without fee or stipulation; and that by precept, lecture, and every other mode of instruction I will impart a knowledge of this art to my own sons, to those of my teachers, and to the disciples bound by a stipulation and oath according to the law of medicine, but to no others. I will follow that system of regimen which, according to my best judgment, I consider best for my patients, and abstain from whatever is injurious. I will give no deadly medicine to anyone if asked; nor suggest any such counsel. Furthermore, I will not give to a woman an instrument to procure abortion. With purity and holiness will I pass my life and practise my art. I will not cut a person who is suffering with stone, but will leave this to be done by those who are practitioners of such work. Into whatever house I enter I will go for the advantage of the sick, and will abstain from every voluntary act of mischief and corruption, and, further, from the seduction of females or males, bond or free. Whatever in connection with my professional practice, or not in connection with it, I may see or hear, I will not divulge, holding that all such things should be kept secret. While I continue to keep this oath inviolate, may it be granted me to enjoy life and the practice of my art, respected always by all men; but should I break through and violate this oath, may the reverse be my lot." This takes a second place only to the golden rule laid down by the greatest of all teachers.

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#### CHANCELLOR SIR JOHN BOYD ON CHRISTIAN SCIENCE.

In opening the court his lordship recited to the grand jury the facts in the case of Mrs. Goodfellow, a Christian Scientist, charged with manslaughter. He told the grand jury that if the patient who died under the treatment elected to be treated by that system in preference to the treatment of the medical doctors, it was the unfortunate's own fault.

"But whatever your conclusions may be on that subject," said his lordship, "it is important, to my mind, to recommend you strongly to consider this, whether some precaution should not be taken against this sort of thing in the future that exists in this unlimited sort of way.

"What I mean is this: Here is a class of people who are exempt from the laws of the land in their dealings with the sick; they claim that their system of Christian Science is one of religion as well as a system of therapeutics. This is very well, so far as it is a system of religion; they are tolerated; they are free to exercise their religious beliefs in any way they please, so long as they do no harm to the general commonwealth. But when they claim to have a system of therapeutics—of healing—of dealing with disease—is it right that they should be exempt from the laws of the country? What I mean is this: They don't know anything about disease. These persons, who are called healers, are of no standing in particular. You may take a waiter in a hotel, or a barber, and, after giving him a course or seven or eight lectures by Mrs. Eddy or some of those trained under her teaching, that person is qualified to charge \$2 or \$3 for a treatment of this nature. Part of this treatment is to read the Lord's Prayer with a spiritual interpretation of Mrs. Eddy, which Principal Sheraton says so confounds it that Our Blessed Master Himself would hardly understand His Own prayer.

"The law as it stands at present says they are not practising medicine. They do not diagnose disease. They make no difference between typhoid fever, toothache, headache, smallpox, or any of the infectious diseases; all are treated in the same silent way by an appeal to the mental condition of the patient that he is not suffering from any disease. I myself have a conviction that this lad might have been saved if he had been where means for the proper treatment of this kind of disease could have been afforded him. I myself have come through this kind of disease, and I know the value of doctor's treatment. Even although they may not give many drugs, their care, their attention to symptoms, their noting every change of the pulse, enables them at the critical moment to apply remedies, slight though they may be, which turn the patient from the path of death to the path of life."

The above words of Sir John Boyd will commend themselves to every medical practitioner. Long and earnestly the medical profession has called out against this crazy fad, known as Christian Science—and science hides her face at this use of the word. But so long as the protest came from the ranks of the medical profession, there was slow response; for the answer came back from many quarters, "This is jealousy." When, however, so eminent a jurist and well known citizen as Sir John Boyd speaks out in such strong words there is hope that something may be done.



Be it understood in all that the medical profession has said or written upon this subject, it has not been seeking its own protection, but that of the public. In this matter the attitude of the profession has ever been the same as it has been with regard to smallpox, or other infectious diseases, or in the matter of the advance of the sanitary condition of the people. The only way that this fad can be ended is by securing the requisite amendment to the statutes. People who hold that there is no such thing as disease, pain, or infection should not be allowed to take charge of the sick and imperil their lives, or well-being. But there is something that the medical profession can do to secure so desirable an object as the suppression of these people. Doctors can discuss this subject in a full and fair manner with the members of the legislature from their respective ridings. In this way the Legislature can be made to see the wisdom, nay more, the necessity of doing something to prevent these so-called scientists attending the sick and imposing upon the ignorant their insane views of disease and its treatment. Public inertia is hard to move, but the history of the world shows that it can be moved. Let this be an instance where history repeats itself. *Sera nunquam est ad bonos mores via.*

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THE DRINKING HABIT AND CRIME.

In our issue for May we dealt with the use of alcohol as a therapeutic agent in medicine and surgery; and quoted from high authority to the effect that it occupies a much lower position as a remedy, a stimulant and a food, in the professional estimation, than it did, even a few years ago. We now take the liberty of quoting the following from *The Pioneer* which shows the increase in the consumption of alcoholic beverages in this country; and, with this increase, an increase in crime.

“There has been of recent years an enormous increase in the quantity of spirituous liquors consumed by the people of Canada. The fiscal year for which the returns concerning the manufacture and consumption of alcoholic liquors are compiled, ends on the 30th day of June. The total quantities of intoxicating beverages entered for consumption per capita of our population for the last six years were as follows. The figures are for gallons :

Year.	Spirits.	Beer.	Wine.	Total.
1899 ... ..	.661	3.995	.086	4.742
1900 ... ..	.701	4.364	.085	5.150
1901 ... ..	.765	4.737	.100	5.602
1902 ... ..	.796	5.102	.090	5.988

1903 ... ..	.870	4.712	.096	5.678
Total ... ..	3.793	22.910	.457	27.160
Yearly Average...	.759	4.582	.091	5.432
1904 ... ..	.952	4.918	.096	5.966

“The total increase in consumption of alcohol is better shown by setting out what would be the equivalent in proof spirits of all the intoxicating liquors drunk. This is done by reckoning beer as containing 5 per cent. of alcohol and wine 15 per cent. Estimating both according to the convenient and sufficiently accurate assumption that proof spirits contain 50 per cent., and adding the quantities of spirits consumed, we obtain the following table, the figures as before representing gallons per capita :

Year.	Total liquor consumed.	Equivalent in proof spirits.
1899 ... ..	4.742	1.096
1900 ... ..	5.150	1.102
1901 ... ..	5.602	1.269
1902 ... ..	5.988	1.333
1903 ... ..	5.678	1.369
Total.....	27.160	6.159
Average ... ..	5.432	1.232
1904 ... ..	5.966	1.521

This shows for 1904 a consumption of alcohol 40 per cent. greater than that of 1899, and about 23 per cent. greater than the average for the five years ending in 1903.

“The criminal year ending September 30, 1903, includes three months of the fiscal year ending June 30, 1904. We do not, however, propose at present to deal with special years, so much as with the general tendency that the figures show. The criminal statistics for the year ending September 30, 1904, have not yet been published. We therefore use the last available report, which is for 1903. It shows the following as the number of convictions made for drunkenness, and for all offences, including drunkenness :

Year.	for Drunkenness. Convictions	for all offences. Convictions
1898 ... ..	11,259	38,206
1899 ... ..	11,090	38,710
1900 ... ..	12,215	41,654
1901 ... ..	12,727	42,148
1902 ... ..	13,324	43,536
	<hr/>	<hr/>
Total ... ..	60,615	204,254
	<hr/>	<hr/>
Average ... ..	12,123	40,851
	<hr/>	<hr/>
1903 ... ..	16,532	50,404

“The increase in convictions for all offences in 1903 over the average for the preceding years was nearly 25 per cent., and the increase in convictions for drunkenness was over 36 per cent. The comparison between these increases and the increase in the consumption of intoxicants will be found interesting and instructive.

“The relation between drinking and crime is so generally admitted that neither arguments nor statistics need be cited in its support. Public opinion generally will endorse at least the estimate made by so experienced an observer and so cautious a speaker as the late Sir Oliver Mowat, who stated in the Legislature his conviction that at least 75 per cent. of all the crime and pauperism that afflicted society is the result of the drink evil.

“The convictions for all offences in 1903 were: Ontario, 21,996; Quebec, 9,944; Nova Scotia, 4,906; New Brunswick, 2,433; Manitoba, 3,063; Northwest Territories, 4,022; British Columbia, 3,602; Prince Edward Island, 438.

“For drunkenness there were in 1903: Ontario, 5,043; Quebec, 2,931; Nova Scotia, 2,726; New Brunswick, 1,458; Manitoba, 1,466; Northwest Territories, 1,278; British Columbia, 1,356; Prince Edward Island, 274.

“Everywhere there is an increase of crime in the period under review. Quebec, which has 448 municipalities without a retail license, and Prince Edward Island, in which there is prohibition, show a decrease in the convictions for drunkenness, but, as the writer puts it, “everywhere else the increase in drunkenness and in crime of all kinds is so great as to be almost discouraging.”

Sir William Jenner taught that the first object of medicine was to prevent disease. We have not read history aright if it has not been to the effect that one of the great objects of the medical profession has also

been to raise the social standard and lessen all forms of crime. Not long ago the *British Medical Journal* contended that the time had come when the medical profession should form well-defined views upon the use of alcohol as a beverage. At the present moment a strong committee is at work on the subject of the teaching of hygiene and temperance in the public schools. Sir William Broadbent and Sir Victor Horsley grace the committee.

In addition to the long lists of crimes due to the consumption of alcohol in some form, we must add also long sick and mortality lists, such as nervous diseases, cirrhosis of the liver, and chronic granular kidney,

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### ADAPTATION AND TUBERCULOSIS.

We commend to the careful consideration of our readers Professor Adami's address on the above subject. He illustrates what he has to say by a wealth of references to other pathological processes which very materially enhances the value of his remarks on tuberculosis.

It appears from what he says that the human organism possesses the power to a very considerable extent of producing immunity in the case of tuberculosis. This is shown by the numerous instances of recovery. Were it not for the fact that immunity can be acquired all who became infected with the bacilli of tuberculosis would die. The organism, therefore, can produce an antitoxin, a circumstance that is proven by the clumping of the tubercle bacilli when brought in contact with the blood serum from a tubercular patient.

Another thought thrown out in the address of much practical importance is that real source of infection is from one person to another, and not from cattle to man. He does not deny the possibility of this, but contends that it is an infrequent occurrence. He also lays stress upon the fact the bacilli may become very virulent under favorable conditions.

With regard to treatment much stress is laid on the necessity of maintaining the health to its highest level. In this way the cells of the body are in their best condition to cope with the toxins of the disease and react to these toxins by producing antitoxins, establishing immunity and leading to improvement or possible cure. This lies at the foundation of all the modern plans of treatment by fresh air, sunlight, and good nourishment.

It is interesting to note what is said regarding the Japanese cattle, which appear to be immune to the disease. Consumption is quite common among the Japanese. It would, therefore, appear evident that it is not contracted from milk or meat, nor do the cattle take the disease from man in that country.

## PUBLIC HEALTH IN INDIA.

In that vast portion of the British Empire known as India, there are vast and difficult problems of a sanitary character before the government for solution.

One of the most prominent of these is the disposal of sewage. The densely peopled cities in India run the sewage into the rivers, and, in this way, a very serious state of pollution has taken place, resulting in the spread of much disease. At the present time the government is busily engaged upon the question of septic tanks and the best methods of disposing of the sewage of the cities. But the peculiarities of the rain fall in India renders it very difficult to establish systems of drainage or septic tanks. Much, however, is being done, and efforts are being made to render Calcutta a fairly sanitary city.

Cholera, the plague, tetanus, and the bites of venomous reptiles are among the leading causes of mortality. In Calcutta the death rate averages 35 per 1,000. In the above city there are 30 deaths from cholera, 120 from the plague, and 20 from tetanus weekly; or about one-fourth of all the deaths.

One of the leading concerns of the government and the people is the extermination of the enormous number of rats which infest the country everywhere. Efforts are being made to destroy the rats, and, in this way, lessen the ravages of the plague. It is highly important that these rodents be destroyed before they become infected, otherwise their destruction seems to favor the spread of the disease. In 1904, the plague caused 1,034,787 deaths.

Vaccination is fairly well enforced, about one person in every twenty of the population being vaccinated annually. The scruples against the operation are giving way, and the course of the authorities made easier. About 98 per cent. of primary, and 78 per cent. of secondary vaccinations are successful.

As proof of the adage that "there is nothing new under the sun" it may be mentioned that some books on medicine, dating as far back as the sixth century, state that malaria is caused by the mosquito. Many varieties of both the mosquito and the disease are mentioned. It looks as if Laveran might yet be unhorsed by some of these early East Indian scientists.

Hospitals are being established in many parts of India. The better educated native men and women are trained in these and become very useful as attendants on the sick. These hospitals thus fulfill a double function—caring for the sick and acting as educators.

The government of India has taken active steps to bring to time the manufacturers of impure spirits, and to control the sale of poisonous or adulterated liquors.

## THE ANCIENT EXISTENCE OF SYPHILIS.

A good deal has been written upon the existence of syphilis among the ancients, and where the disease came from in the first instances. It has been held by some that the disease existed in America and the old world long prior to the crossing of the Atlantic Ocean. Another set of writers urge that the disease was imported into Europe after the discovery of America by Columbus. On the other hand there are those who contend that the disease was brought to America from Europe.

In France many skeletons have been found, which the highest authorities have declared show the unmistakable evidence of syphilis. The skeletons belong to the stone age, and are undoubtedly as far back in history as the early Roman period.

Chinese writings place the existence of syphilis at a very remote date, as early indeed as 2,000 B. C. There are not wanting strong grounds for thinking that the disease prevailed among the Greeks and Romans in the days of their greatest prosperity. Skulls of a very remote time obtained in Peru clearly point out that syphilis was not unknown there. And there are indications of a credible nature that make it quite clear that the druids were acquainted with it.

It is thus quite evident that syphilis is not only a widely spread disease, but one that dates from very early times. From time to time, it has appeared in history to have assumed a very violent form. This occurred in Europe shortly after the discovery of America. Such a phenomenon may be due to the disease being rendered much more active by the type of it as it existed in America being taken to Europe.

The value of mercury in the treatment of the disease was also known to the ancients.

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THE ONTARIO MEDICAL ASSOCIATION.

The Ontario Medical Association will begin its twenty-fifth annual meeting on the morning of Tuesday, June the 6th, under the presidency of Dr. Wm. Burt, of Paris.

A program full of papers of an exceedingly interesting character has been secured through the efforts of the energetic committee on papers. Beside the large number of local men who will participate, the committee feels itself honored in being able to announce papers to be read by two men from across the line who have distinguished themselves in their special fields of work, Dr. A. J. Ochsner, of Chicago, the eminent surgeon, and Dr. W. B. Pritchard, of New York, the neurologist associated with the Post-Graduate Hospital of that city.

The committee on arrangements will provide for a few hours of entertainment to relieve the strenuous program. This will take the form of a tea at the Ontario Medical Library on Tuesday afternoon at which the men from outside the city will be able to see the newly acquired home of the library and have an opportunity for a social hour together. On Wednesday evening an informal gathering will be held in the Biological Buildings at which pleasurable entertainment of a scientific and social character will be provided, taking the place of the burdensome luncheon which has heretofore held sway. Friends from the province are requested to bring their wives along with them and help the city men with their ladies make this a most enjoyable evening. The proceedings will be quite informal and it is not desired that any one bring his dress suit to adorn the occasion.

The fact that the post-graduate course of the medical faculty and the meeting of the executive health officers of the province immediately precede these sessions should ensure the largest attendance in our history. Even though that seems assured the value of these sessions to the younger practitioner should not be forgotten and should ensure a large attendance of young men.

Any association which, through a quarter century of existence, has steadily striven for absolute fairness and justice, as between man and man, for high professional ideals and the well-being of society, has in it the elements of perpetual strength and deserves the support of every man especially of the younger men who will most be profited by the conditions which the society has been largely effectual in securing.

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#### THE PURE MILK LEAGUE OF MONTREAL.

His Excellency, Lord Grey, was present at the meeting of the Pure Milk League of Montreal which was held at Laval University.

Dr. Blackader, who presided, welcomed their Excellencies and thanked them for the interest displayed in this most important work. He went on to say that last year the league took an organized form, although in a private way it had been carried on for four years. The infant mortality of Montreal was particularly large and a matter of concern to every thoughtful citizen. It was caused mainly by impure milk and improper feeding at an age of active growth, when everything depended upon the child's diet. No artificially fed baby could be kept for any length of time without cow's milk, but even when pure this was hard to digest. The minimum bacteria in milk fit for infants' nourishment was 30,000 per cubic centimetre, while the best samples of Montreal milk showed 300,-

000, sometimes 5,000,000. Dr. Blackader cited the beneficial results attained in Buffalo and Rochester by the work of the Pure Milk League in these cities. In Rochester the infant mortality in 1903, was reduced by 40 per cent. as a result mainly of the improved milk supply.

Dr. Dagenais, speaking in both French and English, gave some interesting details of the work done by the Health Committee to improve the milk used in Montreal. He explained the necessity of having all the milk cans coming into the city from outlying districts properly sealed, so that they could not be opened until they reached their destination. It was not an uncommon occurrence, said Dr. Dagenais, for railway employees to open the cans as they lay at the way stations and sample the contents. The necessity for certified dairies was urgent, and the Health Committee, with time and patience, would succeed in educating the farmers to their importance.

Dr. Dubé, vice-president of the league, gave an account of its work during the past year. There had been three dispensaries, one of which had been kept open 261 days, and which had supplied milk to 226 babies. The infant mortality in this district had only reached 10.8 per cent. while in other portions of the city it was 37.9. The expenses of the league were unfortunately one-third more than the income, and the work was naturally somewhat hampered for want of funds.

Prof. Robertson, ex-Commissioner of Agriculture, spoke in favor of a wider education of the farmers to the need of a pure water supply on the farms, because of the need of cleanliness in dairy work. He advised the employment of an inspector, or instructor, to go out among the dairy farmers to instruct them in correct methods.

Lord Grey briefly cited the efforts of Seybold Rowntree in England, in establishing a dairy farm where pure milk was distributed to mothers for their infants, and pointed to the dairy farm outside Ottawa as a hygienic and scientific institution. He said that absolutely pure milk should always command a higher price than a doubtful supply, and mentioned that in the districts about York, England, 50 per cent. more was willingly paid for milk sold by certified dairies.

Sir William Hingston, at the close of the meeting, moved a vote of thanks to their Excellencies for their presence at the meeting and their active interest in the league.

At a meeting of the finance committee of Montreal an increase of \$500 to the original grant of \$500 was voted to the Pure Milk League; and this with the additional subscriptions received, will put the league in a much better financial state than it was last year.

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## CANADIAN MEDICAL ASSOCIATION.

As we have already announced, the thirty-eighth annual meeting of the Canadian Medical Association, will take place this year in Halifax, under the presidency of Dr. John Stewart of that city, who along with his executive committee, and programme and committee of arrangements, are ardently working for the complete success of this meeting, the first which has been held in Halifax since 1881, when the number present just numbered fifty-three. If an united effort be put forth by the vice-presidents and local secretaries in the different provinces, especially in Nova Scotia, Prince Edward Island, New Brunswick, Quebec, and Ontario, there should be a largely attended meeting. There are indications that Montreal and Toronto are both going to send down good contingents. Daily there are additions to the list of contributors, whose names we will publish in a later issue. This year all delegates will travel on the usual standard convention certificate plan, which means that every delegate when purchasing single first class fare to Halifax, must get from the ticket agent a standard convention certificate for himself, his wife or daughters if they accompany him. Delegates will kindly bear in mind that they do not have to get any special certificate from the general secretary. If fifty are present holding standard convention certificates, all will be returned free to Montreal. Montrealers will, as well as delegates from Quebec, be returned for single fare. If there are 300 present holding these standard convention certificates, all will be returned free to their original starting point. This applies to all parts of Ontario, Manitoba, the Northwest Territories and British Columbia. Delegates from points west of Port Arthur, will not be allowed to use the upper lake routes when travelling by this certificate plan, in either direction. In all cases return transportation *must* be arranged for at Halifax. The usual time limit for conventions will be allowed for points east of Port Arthur, namely, three days before and three days after the meeting. Our readers will kindly extend this information as much as possible and those who intend contributing papers and being present, are requested to notify the general secretary, Dr. George Elliott, 203 Beverley St., Toronto, without delay. No arrangements can be secured for return via Boston or New York after the meeting; and those desiring to be routed thus, should ask for tourists' tickets. Arrangements are in progress for completion about the end of May, for boat trip Toronto or Kingston to Montreal or Quebec via the Richelieu and Ontario Navigation Company's line.

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## THE TRIAL OF THE CHRISTIAN SCIENTISTS.

In the case of the death of Wallace Goodfellow the grand jury made the following recommendation :

"We believe that the matters involved are of sufficient importance to warrant a recommendation to the Ontario Legislature that an enquiry be made into the whole matter, so that the law may be made explicit as to the rights of all parties concerned."

After a full and thorough trial, the counsel for the defendants presented his arguments to the jury.

Mr. DuVernet, in the course of a vehement reply, laid stress on the danger which would result if Christian Scientists were allowed to practise their doctrines without reference to the law. Christian Scientists held, he said, that a person with smallpox had not a disease. It was a delusion. Suppose that person went out in that condition and mixed with other people. If it were allowed it would lead to sickness and death and plague in the community. Mr. DuVernet commented on the attitude of Mrs. Stewart, who, holding the opinions she did, yet admitted she sent for a doctor when her child was born. Further, that when Mrs. Stewart's husband was in his last illness three doctors were called in. It appeared that these people, when rich, did not take the risk of losing those near and dear to them, but when others less well off were concerned they were not so particular. Mr. DuVernet referred to the fifth chapter of St. Luke and the 31st verse in answer to Mrs. Stewart's contention that there was nothing in the Bible about doctors. This verse reads, "They that are whole need not a physician, but they that are sick." Christian Science treatment, he said, was not recognized by the law.

Mr. Justice Magee, in his charge to the jury, said the question for them to decide was, did these defendants conspire to deprive Wallace Goodfellow of the necessaries of life? And it was for them to decide what the "necessaries" were under the circumstances.

Speaking of Christian Science, his lordship said that, though cures have been brought about by Christian Science, there was no case where the mind had cured actual organic disease, such as smallpox, or cancer. No doubt, the mind had a certain influence over the body, and when the mind was at rest that condition gave nature a chance to throw off disease. He asked the jury to consider the difference in the evidence of Mrs. Stewart and that of Dr. Johnson. He described the ulcers on the intestines and the other symptoms. Did she know anything of these? If not, how could she hope to cure them? "Would you believe," his lordship asked, "that by thinking you could drive away an ulcer? Does that appeal to your common sense? Have these people shown evidence of such or-

dinary human care and knowledge as to relieve them from liability to the law? But, though this is a serious question for you, the chief question is, Did they conspire?"

After rehearsing the facts as brought out in the evidence, his lordship told the jury that the defendants' affection or their belief that they were acting for the best would be no justification. He told the jury to look at the case in the light of common sense. It was an important case, he said, important to the defendants and important to the public.

After an absence of three hours and a quarter the jury engaged in trying the case against the four Christian Scientists—Mrs. Sarah Goodfellow, Mrs. Isabella Grant, Mrs. Elizabeth See and William Brundette—returned into court with a verdict of "guilty of conspiracy" against all the defendants.

Mr. Cassels, K.C., on behalf of the defendants, applied for arrest of judgment until after the stated case had been heard. Justice Magee thereupon postponed judgment until the 30th of June, and agreed to accept the defendants' own recognizances of \$500 each to appear on that date. The maximum sentence on such a charge is seven years' imprisonment.

During the trial some very remarkable statements were made by those who believe in Christian Science. The essence of these is to the effect that disease has no existence if one only thinks that it has not, and disease can be treated by the absent and silent method.

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## PERSONAL AND NEWS ITEMS.

Dr. George Chene, of Windsor, and Dr. G. W. Robinson, of Scarborough, were recently appointed house surgeons of St. Mary's Hospital, Detroit, for two years. Dr. Chene is a graduate of Toronto University. The medical and surgical staff of St. Mary's is now entirely Canadian, Dr. McLean, head surgeon, being a native of St. Mary's and Dr. McIntyre, assistant, of Forest.

Dr. Walker, of Thessalon, will shortly move to St. Ignace, Mich., where the doctor will practice his profession.

The engagement is announced of Miss Olga V. Ball, daughter of J. H. Ball, M.A., to Dr. James A. Cowper, both of Welland. The marriage will take place in June.

Dr. W. T. Wilson has been transferred from the London to the Hamilton Insane Asylum. Dr. Wilson has been in London since November. His place will be taken for a while by Dr. St. Charles, a relieving physician, who is now in Orillia.

Dr. McNaughton, who has disposed of his practice and residence to Dr. Burns, will be in Brussels from Wednesday noon until Saturday noon of each week, for some months, to assist Dr. Burns in his work.

Dr. Leonard Mylks, son of Mr. and Mrs. Mylks, of Glenmore, who has been for some months on the house surgeon staff of Winnipeg General Hospital, has left that institution to look after a practice in Wolseley, Assa., for the summer months.

Dr. Neil J. McLean has returned to Winnipeg from Europe, where he has spent the past year in the hospitals of London and Berlin.

Dr. and Mrs. S. G. Story left Montreal on the Allan Line turbine steamer *Victorian* on May 12th and will spend a few months in Great Britain.

Dr. McTavish is now established in the practice of medicine in Altona. He bought out the practice of Dr. Meek, who has gone to Baltimore, Maryland.

Dr. Duff, who has been associated here with Dr. J. E. Wilkinson, of Petrolea, for the past year and a half, left a short time ago to visit at his home near Toronto. He then proposes going to the Northwest. He was tendered a farewell supper by his young companions at the Tecumseh house, there being about twenty present.

Dr. C. J. Stewart, of Calgary, Liberal candidate in the recent Dominion election, and one of the most popular young men in the west, was married very quietly to Miss Hattie Ethel Bucklaus, of Toronto. The wedding took place in Calgary and was performed by the Rev. Dr. McRae.

Dr. Macdougall King, who for some time past has been on the medical staff of the large hospital connected with the Copper Queen Consolidated Mining Company, Bisbee, Ariz., and engaged in a general practice there, is at present on a visit to Toronto, and is staying with his parents, Mr. and Mrs. John King, 4 Grange Road. Dr. King was formerly on the medical staff of Denver University, Colorado.

Dr. Sargent, who for thirteen years has successfully practised his profession at Springbrook, left recently for his new home in Colborne, having purchased the practice of Dr. Douglas. Dr. Sargent has deservedly won the highest esteem of a wide circle of friends, not only as patients, but among the members of the profession. The best wishes of all are that the doctor will have as many true friends in Colborne and vicinity as he had in and around Springbrook and Stirling.

The tenth regular course of instruction for post-graduate students 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 season is to make each course optional, thereto a special fee. The applicant, after paying the initial registration fee, is entitled to select the courses 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.

The Western Hospital, Montreal, is about to begin work upon a new wing which is to cost about \$50,000. This wing is the first of a series of buildings which, when completed, will form a new hospital, the present building being used as a nurses' home. The cost of the improvements will be about \$200,000, but they will not be attempted at one time as the funds do not warrant such action. The need of increased accommodation is felt by the staff, as a large number of public and private patients have recently been refused admission.

Dr. J. T. Duncan, of Toronto, has gone to Britain for a three month's trip.

The annual convocation of the University of Toronto will take place on the 9th June, at 2.30 p.m. There will be a garden party later in the afternoon, and a dinner in the evening.

A meeting of the medical practitioners was held at Regina on May 16th and a medical society was formed and the following officers were elected. President, Dr. Low; vice-president, Dr. Thompson; sec.-treas., Dr. Black; and a council consisting of three, Drs. Seymour, Bell and Charlton. It is the intention of making this a branch of the British Medical Association and calling it the Regina Branch of the British Medical Association.

## OBITUARY.

### FRANCIS WAYLAND CAMPBELL, M.D.

Dr. F. W. Campbell, 1006 Sherbrooke Street, Montreal, died on 4th May, after an illness of many months.

His death is peculiarly sad. Not a year ago his eldest son, Dr. Rollo Campbell, died quite suddenly, and while Dr. Campbell, senior, was lying

on his death bed a week ago another son, Mr. F. W. Campbell, succumbed to pneumonia, and owing to the doctor's weak condition, he was not told of his youngest son's decease.

A picturesque personality was removed from our midst when death overtook Dr. Francis Wayland Campbell at the age of sixty-eight. The deceased gentleman was a life-long resident of Montreal, and had taken an active part in the stirring days of half a century ago, both in the city and in military operations. Although an exceedingly busy and capable physician, he devoted much of his life to military work, joining the Prince of Wales Rifles in 1860, and served through the Fenian troubles of 1866 and 1870 as surgeon. Always interested in literary work, and an excellent writer himself, Dr. Campbell wrote what is regarded as the most valuable history extant of these military operations. This was first delivered in lecture form at Montreal Military Institute, but, at the request of his brother officers, was later elaborated and published in pamphlet form.

In his younger days Dr. Campbell was a man of powerful physique and dauntless courage, which at one time almost led to an early closing of his career, during an election, but luckily succeeded in getting away with his life.

Military work was the ruling interest of Dr. Campbell's life, outside his professional duties. An old-time member and ex-president of the Montreal Military Institute, he was a frequent habitue of their quarters, and delighted both himself and his friends with his copious fund of anecdotes of his experiences in the more strenuous days of his youth. He was always to the fore when military matters were under discussion, and one of his last public appearances was at a very large meeting of Montreal officers, called a few months ago to discuss the question of a military school for Montreal. On this occasion Dr. Campbell made a speech, warmly advocating the establishment of the school, and favoring the LaFontaine Park site.

In his younger days Dr. Campbell had taken a lively interest in field sports, especially lacrosse, of which he was a liberal patron, although he never played to any extent.

A man of wide attainments, a most genial disposition, and an excellent speaker, Dr. Campbell was greatly beloved by a very large circle of friends who will sincerely mourn his untimely decease. For untimely his death was, despite the fact that he had almost attained the allotted three score and ten years. Some three years ago while driving with his coachman, he was run into by a street car and was very severely injured, his coachman also being badly hurt. He was laid up for a long time as a result of the accident, and never completely recovered his health; his death was undoubtedly hastened by this cause.

Francis Wayland Campbell, M.D., was born in Montreal, Nov. 5, 1837, and was the son of the late Rollo Campbell, formerly publisher of the Montreal Daily Pilot. He received his early education at the city public schools, and at a youthful age entered McGill medical school. Previous to joining the university he had studied for a short time with the late Dr. Jas. Crawford. At McGill he made rapid progress under the watchful eye of his talented and skilled namesake, the late Dr. George W. Campbell, and Dean of the Faculty, Dr. Holmes. The deceased graduated in 1860, receiving his M.D. degree, and shortly after he proceeded to make a tour of the large hospitals of Great Britain and Ireland, and the continent. The following year he passed a most successful examination before the Royal College of Physicians of London, and later on was elected a member of the Royal Medical Society of Edinburgh and of the Microscopic Club. He returned to Canada in the autumn of 1861 and at once began the practice of his profession, and in a short time built up a large clientele. In 1872 he assisted in founding the medical faculty. University of Bishop's College, Lennoxville, and became its first registrar. Subsequently for ten years he was professor of physiology and then was elected dean of the faculty, a position he held at the time of his death. He also held the chair of practice of medicine. Dr. Campbell was, for ten years, secretary of the College of Physicians and Surgeons of Quebec. He was physician to the Montreal General and Western Hospitals, besides being medical officer of the New York Life Insurance Co., and chief medical officer of the Citizens' Insurance Company of Canada. He was one of the editors of the *Canadian Medical Journal*, 1864-1872, when he established the *Canadian Medical Record*, of which he remained editor for over thirty years.

Dr. Campbell was gazetted assistant-surgeon of the First Battalion Prince of Wales Rifle Regiment in 1860; was promoted surgeon in 1866 and retained that rank till 1883, when he was appointed surgeon-major of the Royal Regiment of Canadian Infantry, (permanent corps), attached to the company stationed at St. Johns, Que. He was on active service at Hemmingford and Ormstown, during the Fenian raid of 1866, and at St. Johns and Pigeon Hill during the raid of 1870. He received a medal and clasps for the Fenian raids and was also awarded the Colonial Long Service decoration for officers by the Imperial Government. In 1894 he established the V.R.I. Magazine and became its first editor.

The degree of D.C.L. was conferred on him by Lennoxville in 1895. Dr. Campbell was a member of the Montreal Military Institute, of which he was for two years president, and of St. James' Club. He was a past master of Victoria Lodge of Free Masons. In 1861 he married Miss Agnes Stuart Rodger, of Greenock, Scotland.

## BOOK REVIEWS.

## WELCH &amp; SCHAMBERG ON ACUTE CONTAGIOUS DISEASES.

Welch & Schamberg on Acute Contagious Diseases. A Treatise on Acute Contagious Diseases by William M. Welch, M.D., Consulting Physician to the Municipal Hospital for Contagious and Infectious Diseases; Diagnostician to the Bureau of Health, etc., Philadelphia, and Jay F. Schamberg, A.B., M.D., Professor of Dermatology and of Infectious Eruptive Diseases, Philadelphia Polyclinic; Consulting Physician to the Municipal Hospital for Contagious and Infectious Diseases, and Assistant Diagnostician to the Philadelphia Bureau of Health, etc. In one very handsome octavo volume of 781 pages, illustrated with 109 engravings and 61 full-page plates. Cloth, \$5.00 net; leather, \$6.00 net; half morocco, \$6.50 net. Lea Brothers & Co., Publishers, Philadelphia and New York, 1905.

The authors, from years of faithful study and abundant clinical experience, are peculiarly well equipped to furnish precisely the practical information which the every-day physician needs, and they have succeeded in presenting this knowledge fully and clearly in a style of diction which makes reading a pleasure as well as a profit. The Philadelphia Municipal Hospital offers almost unlimited opportunities for the consideration of contagious diseases, and the work is based upon the personal study of the many patients who come daily under the charge of the authors; thus there have been studied nearly ten thousand cases of each of smallpox, scarlet fever and diphtheria in addition to the very many cases of the other diseases discussed, such as vaccinia, measles, chicken pox, rubella, typhus fever, etc. Diagnosis and symptoms are given the thorough attention they deserve, and as the volume is intended primarily to be a practical guide to the practitioner who may not have had the advantage of a large clinical experience in this field, treatment both medicinal and non-medicinal, hygienic measures, disinfection, etc., are all covered with careful complete details. In illustrations the book is rich indeed; the pictures alone are easily worth the price of the book; the material was abundant and beautifully clear photographs of patients in the successive stages of the various diseases are used wherever the text can be made clearer thereby. It is a work which will find a readily accessible place on the shelves of every practising physician.

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DISEASES OF THE BLOOD.

Diseases of the Blood (*Anemia, Chloresis, Leukemia, Pseudoleukemia*). By Dr. P. Ehrlich, of Frankfort-on-the-Main; Dr. A. Lazarus, of Charlottenburg; Dr. K. von Noorden, of Frankfort-on-the-Main; and Dr. Felix Pinkus, of Berlin. Entire volume edited, with additions, by Alfred Stengel, M.D., Professor of Clinical Medicine, University of Pennsylvania. Octavo volume of 714 pages, fully illustrated. Philadelphia and London: W. B. Saunders & Company, 1905. Cloth, \$5.00 net; Half Morocco, \$6.00 net. Canadian agents, J. A. Carveth & Co., Limited, 434 Yonge St., Toronto.



This volume on Disease of the Blood is the ninth in Nothnagel's Practice to be published in English. It includes Anemia, Chlorosis, Leukemia, Chloroma, Pseudoleukemia, and each condition is treated so exhaustively and the theories discussed so carefully that the work will remain the last word on the several subjects for many years. Dr. Alfred Stengel, under whose excellent supervision the entire series is being issued, is also the individual editor of this volume. His wide experience and recognized ability as a clinician, and his valuable work concerning the histology, both normal and pathologic, of the blood, renders this volume of unusual interest. His additions are particularly frequent in the article on Anemia. When this series is completed—and the publishers assure us that the three remaining volumes will shortly appear—it will undoubtedly form the best practice of medicine in existence, expressing the opinions of the highest German and English speaking authorities.

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#### A REFERENCE HANDBOOK FOR NURSES.

A Reference to Handbook for Nurses. By Amanda K. Beck, of Chicago. 32mo volume of 150 pages. Philadelphia and London: W. B. Saunders & Company, 1905. Bound in flexible morocco, \$1.25 net. Canadian agents, J. A. Carveth & Co., Limited, 434 Yonge St., Toronto.

This little book contains information upon every question that comes to a nurse in her daily work, and embraces all the information that she requires to carry out any directions given by the physician; it includes also instructions for all emergencies that may arise before or between visits of the physician. It is of immense value to student nurses because it contains all the material they are expected to commit to memory from notes. Physicians, too, will find the book of value, because it contains exact details as to solutions, foods, dosage, poultices, applications, etc. There are also articles on bacteriology, massage, medical electricity, obstetrics, care of infants, and such information. The mechanical get-up of the book is both convenient and attractive. It is of a size to fit the pocket and is neatly bound in flexible morocco.

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#### A TEXT-BOOK OF MEDICAL CHEMISTRY AND TOXICOLOGY.

A Text-Book of Medical Chemistry and Toxicology. By James W. Holland, M.D., Professor of Medical Chemistry and Toxicology, and Dean, Jefferson Medical College, Philadelphia. Octavo volume of 600 pages, fully illustrated, including 8 plates in colors. Philadelphia and London: W. B. Saunders & Company, 1905. Cloth, \$3.00 net. Canadian agents, J. A. Carveth & Co., Limited, 434 Yonge St., Toronto.

Dr. Holland possesses the faculty of making even the most difficult and complicated chemical theories and formulæ easy and clear. This is probably due to his thirty-five years' of practical experience in teaching chemistry and medicine. Recognizing that to understand physiologic chemistry students must first be informed upon points not related to in most medical text-books the author has included in his work the latest views of equilibrium of equations, mass-action, cryoscopy, osmotic pressure, dissociation of salts into ions, the effects of ionization upon electric conductivity, and the relationship between purin bodies uric acid, and urea. Chemical substances he has treated from the standpoint of the medical student and physician, giving much more space to Toxicology than is given in any other text-book on chemistry. The chapters on the clinical chemistry of milk, gastric contents, and the urine, and that on water supply and filtration are full of practical information. Dr. Holland's work will undoubtedly be gladly received by the profession, presenting as it does the mature experience of a practical teacher.

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#### PROFESSOR ALLBUTT ON HISTORY OF MEDICINE AND SURGERY.

The Historical Relations of Medicine and Surgery to the end of the Sixteenth Century. An address delivered at the St. Louis Congress in 1904. By T. Clifford Albutt, M.A., M.D., Hon. M.D., Dub., Hon. LL.D., Glasg., Hon. D. Sc., Oxon Vic., F.R.C.S., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge, Fellow of Gonville and Caius College, Hon. Fellow Royal College of Physicians of Ireland, and of the New York Academy of Medicine. London: Macmillan and Co., New York: The Macmillan Company, 1905. Price, 2s. 6d.

This is a delightful resume of the history of medicine and surgery down to the end of the sixteenth century, especially where medicine and surgery touch each other. The steps which each of these branches of the healing art have taken, as they meander their ways through twenty-one long centuries, are beautifully told; and the story makes fascinating reading. It is interesting to note how at one time medicine would be in the ascendant, and how at another surgery would eclipse the rival sister. During these long centuries there was a groping—darkly enough—after the truth, and these gropings were often deeply enshrouded in mysticism and superstition. But discovery upon discovery and master mind followed master mind break through the night, scatter the clouds, and usher in the morning of modern medicine and surgery with its hopeful rays. The whole story is most charming—far more charming than any fairy tale—because it appeals equally to the imagination and is far more real. To know where we are, at the present day, it is well

to recall the way we have come; and the way from Hippocrates to modern medicine and surgery is long, hesitant, doubting, stumbling, backsliding, advancing, receding, despairing, hoping, finally conquering. We commend this little book by Professor Allbutt.

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#### PROF. ADAM WRIGHT'S WORK ON OBSTETRICS.

A Text-book of Obstetrics by Adam H. Wright, Professor of Obstetrics, University of Toronto; and Gynaecologist and Obstetrician to General Hospital, Toronto, Canada. With two hundred and twenty-four illustrations in the text. New York and London: D. Appleton and Company; Toronto. N. Morang. Price, \$4.50, net.

The advent of Professor Adam Wright's work on obstetrics has been looked forward to with much keenness and, indeed, with great hopes that it would fill a space still vacant amongst the many text-books extant on this subject; and now, after very careful perusal of the book, I am able to say that my hopes have been fully realized. The profession in Canada and, more especially, those in Ontario where the author is so well known as a competent teacher and experienced practitioner in midwifery, will, I trust, consider their library incomplete without a copy of so excellent and practical a work, as is now presented to them, on the all-important subject of obstetrics.

I trust it will also stimulate others of our Canadian physicians who have the taste and ability, to write on other matters medical. I have all along felt Canadian physicians were standing in their own light in not entering the field of medical literature, as we have a host of men who can edit works on medical subjects as capably as men in other places. The book is written in a clear, simple, but thoroughly practical style, up-to-date on all points, both in practice and theory, and yet so simple that he who reads can understand.

The first three chapters, dealing with the anatomy of the pelvis and the physiology of the embryo, in my opinion, might as well have been left out entirely, though the author only deals with them very lightly. It is customary in all text-books on obstetrics to take up these subjects and yet I could never see any reason for it. By the time the student is old enough in his medical course to attend lectures on midwifery, he has already studied these branches in previous years and is supposed to know them. It is simply an old practice being perpetuated. However, it in no way detracts from the other chapters which are so ably dealt with.

It is not expected that a reviewer of any work on medicine, while adopting the work as a whole, does not hold some personal views a little different from the author on some points in treatment.

The work is printed in excellent type, clear and easy to read. I hope this work, because of high standard and excellence, will become one of the recognized text-books, as it is admirably suited to the student's wants.

I heartily congratulate the author on the admirable work he has given us, and trust his efforts will meet that hearty response to which he is justly entitled.

J. ALGERNON TEMPLE.

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### GYNECOLOGY—MEDICAL AND SURGICAL.

By Henry J. Garrigues, A. M., M. D., Gynecologist to St. Mark's Hospital in New York City; Consulting Obstetric Surgeon to the New York Maternity Hospital; Consulting Physician to the New York Mother's Home and Maternity; Honorary Fellow of the American Gynecological Society. Honorary Fellow of the Obstetric Society of Edinburgh; Honorary Member of the College of Physicians of the German Dispensary; ex-President of the German Medical Society; formerly Professor of Gynecology and Obstetrics in the School for Clinical Medicine, and Professor of Obstetrics in the Post Graduate School and Hospital. With three hundred and forty-three illustrations.

Among the many valuable productions on this important subject, this concise work of 461 pages is destined to occupy an enviable position. It does not pretend to be an exhaustive treatise on gynecology, but is written chiefly for the student and general practitioner, and they will find in it a very valuable and reliable guide in the study and practice of this branch of their profession. The work throughout bears the imprint of a master hand of wide practical experience. The earlier chapters are very clear and definite in expression and cannot fail to be exceedingly helpful to the younger workers in the gynecological field. The concluding chapter on "Diseases of the Rectum and Anus" gives the work a much wider range of usefulness than is generally obtained in productions on this subject.

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### MISCELLANEOUS.

AN EXCELLENT GERMICIDE AND INTESTINAL ANTISEPTIC  
FOR TREATMENT OF TYPHOID FEVER, DYSENTERY,  
DIARRHEAS AND OTHER DISEASES OF BAC-  
TERIAL ORIGIN.

That Acetozone is a valuable germicide is demonstrated by its effects upon typhoid bacilli and cholera vibrios in river water. In their experimental work, Freer and Novy (contributions to Medical Research,

p 107) made the following tests: (a) A cylindrical glass-wool filter was prepared, and on it was placed a layer of Acetozone crystals, about three cm. thick. A bouillon suspension of typhoid bacilli passed once through this filter yielded a sterile filtrate, while control tubes gave the usual abundant growth. (b) A liter of tapwater was sterilized by heat, and when cold a suspension of cholera or typhoid germs added, the experiment being repeated several times. Ten or twenty milligrams (one-sixth to one-third grain) of Acetozone was added, and after thorough shaking portions of the liquid were taken out and planted in bouillon and agar which was plated. In each instance the cholera germs were destroyed completely in five minutes, and the typhoid germs in fifteen minutes, by the extremely small quantity of Acetozone used. From the above experiments the authors draw the conclusion that pathogenic organisms are destroyed by extremely small amounts of Acetozone. Therapeutically Acetozone is being very widely and successfully used in the treatment of typhoid fever, intestinal diseases, notably diarrhoea, dysentery, cholera, in gonorrhoea, suppurating wounds and infectious processes generally. It is prescribed in the saturated aqueous solution which is prepared by adding fifteen grains of Acetozone to a quart of water, shaking thoroughly, and setting aside for a couple of hours to hydrolize. Messrs. Parke, Davis & Co., who prepare Acetozone, are sending out printed matter to physicians containing reports of very gratifying results from the use of this interesting compound. Any physician who has not received a brochure can obtain one on request.

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## THE USE OF GLYCOZONE IN A FEW GYNECOLOGICAL CASES.

By C. H. POWELL, A.M., M.D., St. Louis, Mo.

Prof. Principles of Medicine and Clinical Medicine. Barnes Medical College. St. Louis, Mo.; Alternate Physician St. Louis City Hospital; Physician in Charge Oblate Sisters of Providence Hospital; Centenary Hospital, Department Diseases of the Chest, Etc.

(Abstract from *New England Medical Monthly*)

It is surprising how physicians fall into habits regarding the use of certain agents in their practice, and how loth they are to resort to something new. No doubt this fact exemplifies the maxim: "Be not the first by whom the new is tried, nor yet the last to lay the old aside." This saying, were it put into active practice, would interdict the use of any new drug or remedy, as from the very nature of things a leader must be acknowledged, and that leader would himself violate the above maxim. In the treatment of uterine and ovarine diseases the well-known glycerole of tannin tampon, or the use of glycerine and Goulard's solution, or

glycerine with other astringents, has been for years recognized and appreciated by gynecologists over the entire world. In the clinics solutions of these agents are ever at hand, and habitually are ensconced into the vaginal canal with very little regard as to the scientific results that will accrue. It has often occurred to the writer that many of the solutions used by gynecologists favored the development of bacilli, and no doubt contributed in no small degree to the lighting up of attacks of pelvic peritonitis so frequently encountered by gynecologists. Glycerine no doubt is without a peer in successfully treating a long range of diseases that afflict women, as the well-known hygroscopic qualities of the remedy bring about a local blood-letting from the hyperæmic structures which, when followed by hot douching, is usually relied upon to reduce many inflammatory complications of the uterus and its adnexa. Not being satisfied, for the reasons above given, with the usual formulæ of glycerine in gynecology, a sample bottle of glycozone which came to my desk several months ago, although not referred to in the treatment of diseases of women, appealed to me. Accordingly, in view of the highly oxygenated properties of the remedy, which I believed would necessarily possess bactericidal properties, I was induced to try glycozone in my gynecological practice; the results were so pronounced, and the beneficial influence of the remedy so decided and permanent, that I have for several months past persistently resorted to glycozone in preference to anything else in my local work. I will outline the following clinical cases as indicating its usefulness in the conditions stated :—

CASE I.—SUBINVOLUTION UTERI CONSEQUENT TO MISCARRIAGE.

Mrs. Ella McL., aged 28; suffered a miscarriage at the end of the fourth month, following a severe fall from her carriage. Ergot was used regularly to check a tendency to recurrent and continuous hemorrhage. Curettage was first employed, the uterus thoroughly washed out with carbolic solution, and then a cotton wool tampon of glycozone pure pushed up to the cervix uteri. The uterus at the time of the first application measured five and a half inches in depth, subinvolution of the organ being most marked. On the second day, the tampon was removed, and the uterus found to have become reduced in size at least one inch. This beneficial influence of the glycozone continued unremittingly thereafter until at the end of eight days the uterus measured but two and a half inches, and a cure of the patient was complete.

CASE II.—EROSION OF THE CERVIX RESEMBLING EPITHELOMA.

This case occurred in a married woman, aged 35, the mother of four children. The ulcer of the cervix had a most suspicious appearance,

involving the left half of the neck and passing upwards on the cervix proper; it was in size about as large as a ten cent piece. I concluded to try glycozone on the tampon for a few days. Encouraged by my success with glycozone I reapplied the agent, and soon discharged her, entirely cured of the formidable appearing ulcer.

CASE III.—GONORRHOEAL INFLAMMATION OF THE CERVIX UTERI, AND EXTENSION TO THE ENDOMETRIUM.

An examination with the speculum revealed considerable purulent secretion emanating from the vagina, and the blood vessels of the adjacent parts greatly congested; the cervix uteri was denuded over its entire circumference adjacent to the os of its epithelium, looked angry, and bled readily during the examination; also, from the uterine canal thick pus was freely emanating. A microscopical examination disclosed large numbers of gonococci. The vagina was first deluged with a hot bichloride solution one to three thousand, the uterine cavity was also cleansed with the solution. Following this procedure pure glycozone was injected into the uterus by instillation, and the same remedy freely applied on absorbent cotton to the entire vaginal walls and the cervix uteri, after which a cotton tampon saturated with glycozone was left in position. The vaginal gonorrhoea was quickly dissipated in three treatments, but it required three weeks to effect a cure of the disease that had invaded the endometrium.

CASE IV.—CERVICAL LACERATION FOLLOWING INSTRUMENTAL DELIVERY.

This lady, who was almost twenty years of age, whose pelvis was slightly kyphotic, gave me great difficulty in delivering her of a comparatively large child by means of forceps.

The cervix uteri lacerated from side to side. The rent was at once which upon examination I found emanated from the uterus which was sudinvoluted, over four inches deep, and no doubt resulted from the cervical rent. Glycozone was at once applied upon a wool tampon, and after about four such applications the disturbance was entirely eradicated.

CASE V.—RETROFLECTION UTERI, WITH PROLAPSUS OF THE OVARY IN DOUGLAS'S CUL DE SAC.

This patient, who was the mother of a large family of children, slipped one morning promptly aborting. The placenta was readily ex-

tracted but the fundus uteri was found a few days later to be in the posterior cul de sac. Readjustment of the prolapsed structures was attended with so much pain that it was deemed inadvisable to accelerate matters. Accordingly pure glycozone was pushed up in the posterior vaginal sac on a tampon, and left in situ over night. The following morning all tenderness had disappeared, and the patient being placed duced; a second tampon of the glycozone not only removed whatever tendency to hyperæmia resulted but likewise the tampon supported the in the genu pectoral position, the displaced organs were readily re-structures.

CASE VI.—CHRONIC ENDOMETRITIS WITH PROFUSE LEUCORRHOEA.

This case was one of long standing; and curettage had been twice performed, the old trouble invariably recurring. I concluded it would be a good case to test the instillation treatment of glycozone upon, and accordingly used this remedy alone in that manner, together with its local application upon the tampon to the cervix uteri. This lady improved at once and after the very first application. I had her under my care and re-applied the remedy for about two weeks all told; she not only recovered absolutely during the time stated, but over three months have now lapsed with not the slightest evidence of any recurrence of her former difficulty.

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ANTI-PHLOGISTINE V. POULTICES AND MUSTARD PLASTERS.

“So you have decided to get another physician.”

“I have,” answered Mrs. Cumrox; “the idea of his prescribing flaxseed poultices and mustard plasters for people as rich as we are!”—Ex.

Quite right. If he had been up-to-date, he would have used Anti-phlogistine, whether his patients were rich or poor.

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TREATMENT OF HAEMOPTYSIS.

Haemoptysis depends on a solution of continuity of the pulmonary vascular wall, and upon an intra-vascular pressure at the bleeding point which exceeds the extra-vascular pressure in the tissues. The first of these causes we cannot affect, the second has been treated by drugs causing pulmonary constriction; ergot, digitalis, adrenalin, etc., but without much success. The same result might be achieved by reducing the force of the heart, and aconite has been used with some success. Hare tried the use of a method of dilatation of the systemic arterioles by amylnitrite, causing, as it does, a fall of blood pressure; the result was very satisfactory.