Historical

PAST AND PRESENT

ADDRESS IN SURGERY

BY

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Delivered before the Canadian Medical Association at the forty-eighth annual meeting, Montreal, June 15th, 1917

Reprinted from THE CANADIAN MEDICAL ASSOCIATION JOURNAL, *August, 1917*

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WHEN asked to deliver the address in surgery to the Canadian Medical Association, my first impulse was to refuse, for I had for some three years given up surgical practice and felt the task ought to be undertaken by some younger man in active work who was more *au courant* with the surgical problems of the day. However, I was overruled, and not wishing at this time of great patriotic endeavour to relegate the office to outsiders, I consented to do my best and address you to-day.

It has always been my opinion that our Canadian national societies should, at their annual meetings, take stock of the knowledge acquired in the special departments of science they represent, so that the papers read should be an index of the progress of that science the society is interested in. Now this applies to Medicine as well as to other departments of science and I contend that our meetings should not be made use of for strangers to display their knowledge and cleverness, and often to play to the gallery, but that we should rely on our own members for papers and contributions and so be an index of our own vitality. We are passing out of the colonial and dependent stage and are becoming one of the sister nations of the great empire of Great and Greater Britain.

In 1874–5, when I was in Vienna and filling up my papers for the *Politzei*, I wrote in "Dominion of Canada" as the country I hailed from, but so little was the country known at that time that my papers were returned with the query: "Was it not the Island of Candia I meant?" I said, "No, it was Canada," and it took

three months before an investigation satisfied the authorities that there was such a country as Canada and I was given leave to reside in Vienna. Again, when in London as a student, placards were posted on the church doors by order of the Privy Council, stating that information had been received from Ontario, the *Capital of Canada*, that the potato bug had arrived and warning the people of England against its introduction into that country.

Now in the fiftieth year of the formation of our nation how different is the picture! Since the war began the name "Canadian" has quite a distinctive significance apart from "American". How often have Canadians and Americans been synonymous terms, even with our fellow subjects in Great Britain. But now since the deeds of our soldiers have been so illustrious on the battle fields of Flanders and France, all the world knows the "Canadians" and never again will we be confused with our neighbours across the line. Not only have the Canadian soldiers given us a distinctive place in the eyes of the world, but our Canadian hospitals and ambulances and Canadian surgeons and physicians in France by their splendid work have also written their names on the tablets of history and have become a separate entity. We are not now classified as Americans, but as Canadians. This is a very great advantage to all of us and will in future make us more self reliant and make us believe more in ourselves and tend to form a school of medicine of which we can all be proud, and teach us to draw less heavily on the knowledge furnished by others, not Canadians. Now in this connexion, why should we not have our Royal Colleges of Surgeons and Physicians affiliated with those of Great Britain which we respect and reverence so much. Why should we be dependent on the Americans for our titles as surgeons or physicians? Why should not we have F.R.C.S.&P. of Canada after our names? Some years ago this Association nominated a committee to look into this matter, but like so many other committees it has never reported.

My view of surgery extends back for many years, to pre-antiseptic days, and I esteem it a great privilege that I saw the birth, growth, and triumph of the principles of antiseptic surgery. It has been a wonderful experience and no one who has not lived through this period can fully appreciate the vast changes and advantages it introduced to the great benefit of all mankind. The only analagous epoch-making discovery was that of anæsthesia. Pre-anæsthetic and anæsthetic times were comparable somewhat to pre-antiseptic and antiseptic times. In my student days the

older surgeons were all of the pre-anæsthetic period and one was amazed at their dexterity and celerity in operating, for time was an object when they learned to operate. Of course the range of operations was limited to amputations, lithotomy (lateral), the removal of external tumours, the ligature of arteries, and occasionally the trephining of depressed fractures of the skull. Not only were these men most skilful and rapid operators but they were first-class practical anatomists and were never uncertain in the use of the knife: the timid and ignorant operator was eliminated by the conditions which then existed.

How different is the surgery of to-day; no cavity is free from the successful intrusion of the surgeon and many purely medical regions have been transferred to him entirely. What rapid strides surgery has made and how difficult it is for the ordinary man to keep abreast of its rapid progress! No one can now, as formerly, be efficient in the whole range of surgery, so there are many subdivisions and specialties. This does not always make for the broadening of the surgeon but it makes him perhaps more efficient in special lines. I see a large book has been published lately on the diseases of the umbilicus.

The advent of *x*-rays was another most important and epoch-making discovery, and how useful it has been in the present war!

This war has brought antiseptic as contrasted with aseptic surgery to its own again, and how much more efficient has the army medical service been as compared with previous wars, even though in this great Armageddon high explosive shells, liquid fire, and poisonous gas are used! How complete the arrangements for removing the wounded, getting them rapidly to operating centres, etc., etc. I have of late seen several cases of multiple wounds of the intestines from shrapnel returned to the military convalescent hospitals here in good health and able to do ordinary work. It is remarkable what comparatively good results have been obtained in the field of abdominal surgery. For a good many years it has been the custom of surgeons in civil hospitals to operate without delay in penetrating wounds of the abdomen, but until the present war gunshot wounds of the abdomen received in the field of battle were treated expectantly; now army surgeons are advocating, where possible, immediate operation. Dr. Abadie has published a book on this subject called "Les Blessures de l'Abdomen", and has collected 713 cases treated by expectant treatment with 77 per cent. of a mortality, and 688 cases treated by operation with a mortality of 64 per cent. He advocates early laparotomy in penetrating wounds of the abdomen

and that operating facilities should be as close to the trenches as possible, suggesting operating rooms on wheels which can be moved easily. He prefers chloroform as an anæsthetic and for four or five days that nothing be given by the mouth, but that four or five litres of fluid should be passed daily into the bowels by the drop method. He also advises that the patent should be kept under the influence of morphia.

In the March 10th number of the *British Medical Journal* there is a series of articles by army surgeons on penetrating wounds of the abdomen which is well worth reading and from the satisfactory results obtained in apparently desperate cases they deserve to be congratulated for their good work. In stomach wounds without other injuries, more than half recover if early operation is possible. In cases of uncomplicated wounds of the small intestines, seen early, the recoveries are often 100 per cent.; in other wounds of the intestines, suitable for operation, 30 per cent. recovered. These statistics agree with Major Archibald's experience as described in an article in a recent number of the *Journal of the Canadian Medical Association*. Wounds of the large intestine are more fatal owing to the greater risk of infection. On the whole, however, the chances of recovery after wounds of the abdominal hollow viscera are better than in cases of compound fracture of the thigh.

This is certainly a most encouraging report and means a great advance in the treatment of gunshot wounds of the abdomen. I have seen several cases of multiple gunshot wounds of the intestines as I said before, returned here to our military convalescent hospitals, which have been operated on successfully close to the front, and this is a great step forward, and although not so life-saving as the prevention of typhoid, yet shows the wonderful progress of battlefield surgery.

A method of disinfecting wounds has been devised by Carrel in which Dakin's solution, the hypochlorite of sodium, is used. The object of Carrel's method of disinfection is, of course, to render a wound sterile so that the antiseptic used comes in contact with every part of the wound, and "that the antiseptic is maintained in suitable concentration throughout the entire wound and that this constant strength is maintained for a prolonged period. If these conditions are fulfilled every wound will show its response to the treatment by the diminution and disappearance of its micro-organisms (Lyle). The wound should first be thoroughly disinfected and all shell fragments, clothing, dirt, etc., removed before the

apparatus devised by Carrel is used, so as to keep up a continuous application of the antiseptic. In the wounds treated by this method there is no redness, tenderness or induration at the edges; they heal rapidly, and on schedule time--for flesh wounds fourteen days, compound fractures twenty-eight to thirty days. The necessity of amputation for infection is abolished and suppuration disappears. Many patients have quite supple scars and the gravity of severe mutilations is so much reduced that men are returned to the front who otherwise would be crippled for life.

So you see antiseptics are coming into their own again, although the old antiseptics have not proved entirely satisfactory in septic wounds produced in this present war; for there is so much destruction of tissue and such deep infection that ordinary antiseptics do not seem to be sufficient. Of course free incision and the removal of foreign bodies are of great help, but some chemical is needed to cleanse the wounds and destroy germs. Most antiseptics, such as phenol, alcohol, Dakin's solution, hydrogen peroxide, iodine, etc., etc., while killing the bacteria destroy the cells and so prepare a nidus for flesh infection. Browning and his co-workers, Gulbransen, Kennaway and Thornton,* of the Bland-Sutton Institute, have sh wn that bactericidal substances must have a great potency against all organisms in the presence of proteid materials such as serum; it must be stimulating to granulations; it should have no deleterious effect upon phagocytosis, no irritant action on delicate tissues, such as mucus membranes, and no toxic effect on the most highly specialized cells. They found that in all known antiseptics the bactericidal potency in watery solutions is diminished when the medium is wholly or partially serum. They also found that a number of acridine dyes have an enhanced bactericidal power in the presence of serum; the compound diamino-methyl-acridinium chloride, which the authors call "flavine", is the best; twenty times more powerful than corrosive sublimate, and eight hundred more so than carbolic acid or chloramine under the same conditions. The tryphenylmethane compounds, especially brilliant green and crystal violet, are very active as regards cocci, but towards B. coli their bactericidal value is considerably lower than flavine. Flavine is much less detrimental to the process of phagocytosis and less harmful to the tissues than other substances, hence a much higher concentration can be employed without harming the tissues or interfering with the natural defensive mechanism, and it is more rapid in its action.

British Medical Journal, January 20th, 1917.

Brilliant green comes next in efficiency in these respects. No doubt many other antiseptics will be evolved before this war is over, of more value than those we have placed such reliance on in the past, and often used blindly without knowing how well or efficiently they acted. However, the last word has not yet been said on antiseptics.

These are not the only problems the war is helping us to solve: there are many others, such as, how to cope with the terrible gas gangrene which is at times so prevalent; the cause of shock, which has puzzled us for so many years, and about which there is such a diversity of opinion as to its nature and prevention. In war surgery what is most dreaded is shock, for until it is overcome the surgeon cannot successfully operate. H. H. Dale and P. P. Laidlaw, of the British Medical Research Committee, have lately been investigating this subject.* By injecting a poison called histamine profound shock is produced, profound fall in blood pressure and a loss of about one half the plasma of the blood in five minutes. This is due to the passage into the tissues and lymph spaces of all the constituents of blood plasma—in fact a large part of the blood disappears, the veins are empty and the capillaries have lost their tone; although the heart beats fairly strongly there is no pulsation in the arteries. Many causes produce like effects, such as the toxæmia from gas gangrene, bacillary dysentery; there the fluid is lost by excretion. Similarly shock is produced by intestinal obstruction, post operative shock, without hæmorrhage, extensive burns, etc. As to treatment—prevention is advocated. Hæmorrhage predisposes to shock, also fatigue, exposure and starvation. It is also suggested that free saline purgation before operation and abstinence from food and water may also predispose. Free supply of fluid by infusion of saline into the rectum or subcutaneous tissues must be undertaken before operation. The only drug of any use is pituitary extract, for it causes a prolonged and general contraction of the arterioles and so diminishes the total capacity of the circulatory system with the effect that deficient blood pressure is diminished. Adrenalin, the effect of which is very transitory, is objected to and intravenous injection of hypertonic saline is advocated, as used in cholera. The paper, of which I have given such a short summary, is well worth reading and brings us another step forward in solving the problem of the nature and prevention of shock.

All praise for the great work the surgeons and physicians are

British Medical Journal, March 24th, 1917.

doing at the front, and behind it! How self-sacrificing has been their work, and how many we know have given up their lives for the cause in the performance of their duty behind the firing line, attending the wounded and helping them at the risk of their own lives! Rewards are given to those who successfully escape the dreadful slaughter, but after all the best are often taken and where are their rewards? Merely in the memory of those they have left behind.

What good work the physicians have done in preventing typhoid, tetanus, etc.! The sanitary arrangements of all areas occupied by the British are almost perfect and the cleansing and drainage of villages occupied by them is wonderful to see.

On this side of the water we also have to do war work and those wounded and invalided soldiers who are weekly being sent over to us give us cause for much thought. Not only have large hospitals to be provided for them, but we have to act as foster-fathers to those soldiers who have become more or less incapacitated, and to endeavour by treatment to restore them as far as possible to normal conditions, and to reëducate them so that they may earn a living and not be a burden to the community. This the Military Hospitals Commission is doing as far as its opportunities and equipment enables it to do. Vocational training and reëducation will go on for some time after the war so that Canada will for some years be reminded of the great struggle by the presence among us of many of its victims.

Many strange things happen in this vocational training and reëducation; many have discovered that they have tendencies and predilections and ability for certain forms of work which were hitherto unknown to them. In one case a poorly educated French Canadian, who had been a plasterer, lost a leg and whilst attending the educational classes developed a wonderful talent for drafting and he is now employed in a large establishment as a draftsman at a very respectable salary. Carpenters have been developed, also mechanics, who previously had no notion of their tendency in that direction. Many who could read and write with difficulty have become proficient and others in addition have taken to arithmetic and book-keeping. Others, less intelligent, have been satisfied to learn to be time-keepers, etc.

The Military Hospitals Commission have established in Toronto an artificial leg factory where the lightest and best types of leg can be made and fitted; in consequence our legless soldiers are sent to Toronto to be properly fitted with artificial limbs and

whilst there, and waiting, they are given vocational training in any branch of work they have an aptitude for, which work they can continue after their discharge. The government has provided that whilst discharged men are learning a trade their families are provided for until their work becomes remunerative.*

I see that in the early part of this year there was a great controversy in the *British Medical Journal* about the relationship between the surgeon and the physician; that the surgeon was overpaid in his mere mechanical or handicraft work, whilst the physician, who looked down on hand work, for the superior brain power put into his diagnosis and opinion, was very poorly paid. Sir Clifford Allbutt, in an interesting letter, points out that down to the 12th Century the physician and surgeon was combined in one person, instancing Hippocrates, the Great Alexandrians, Galen, and the great school of Bologna. In the next century the division between surgery and internal medicine became complete when the University of Paris excluded from its degree all who worked with their hands; then it was, as Burdon Sanderson said, that "Medicine lost its scientific arm". This example of Paris blighted other universities, such as Oxford, Cambridge, Montpelier, and Toulouse. As the writer of the letter says: "Thus medicine obliterated herself and dried into the husks which were mocked at by Petrarch, Rabelais and Molière." Even forty or fifty years ago, or later, no surgery or surgical certificates were required for the M.D. degree of Cambridge. It is absurd to separate entirely these two great branches of medicine and every surgeon ought to be somewhat of a physician and the physician somewhat of a surgeon; or at least know enough to call in a surgeon in time. As a rule surgeons and physicians work harmoniously together and should be like man and wife, each depending somewhat on the other and determined to bear and forebear. An old saw says:

> A single doctor like a sculler plies,
> The patient lingers and then slowly dies.
> But two physicians like a pair of oars,
> Shall waft him swiftly to the Stygian shores.

If there had been a surgeon and a physician in this consultation the result above referred to would probably not have happened.

Now as to the fees of surgeons. Many people think they are

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*In the near future the Commission intend to establish other artificial limb factories in the other great centres for at present the Toronto establishment cannot keep up with the demand.

sometimes exorbitant and it seems to me that in some cases in the country to the south the surgeon has been out for spoil. Fees as large as $25,000 and more have been charged, basing the charge on the income of the patient. Now, I have always felt that this was commercializing the profession and that no operation was worth such an amount, a fair and reasonable fee up to $1,000 for the rich and a graduation downwards for those less able to pay seems to me fair, and I personally have no regrets in my past career as to excessive charges. I know of cases where the patient, or the husband, has had to sell household goods to pay the surgeon. Such things should not be and surgeons before long will have, if they have not already acquired it, the reputation of lawyers. A lawyer is described by Lord Brougham as, "A legal gentleman who rescues your estate from your enemies and keeps it for himself." I am well aware that many times the surgeon is underpaid, or not paid at all, but that is no excuse for the use of Robin Hood methods.

The multiplication of medical journals, good, bad, and indifferent, is another feature of development in the last forty years. Formerly nobody wrote unless they had something to say, but now every man is solicited to write and cannot apparently succeed without much advertising. Undigested articles see light, and crude theories are enunciated as truths. Work half done or badly done is reported for fear some one will get ahead of them. The consequence is there is a mass of purely ephemeral literature which does no good to anybody, except perhaps temporarily to the writer. A new remedy is discovered, everybody rushes into print and recites their experiences before the remedy has had time to be tested. Douglas Jerrold said once to a young man who burned to have himself in print: "Be advised by me young man, don't take down the shutters until there is something in the window." How many are those who have anything to show in the window after the shutters are taken down? "Oh that mine enemy would write a book," said the Psalmist. Now every medical man who is anybody does write a book, and although it may be condemned by a few, if well advertised it is read by the many. I heard a medical publisher say once that he did not care who wrote the book if he published it he could sell it, not on its merits but on his fulsome and oft repeated recommendation. The younger the practitioner as a rule the more he writes. Encyclopædias and systems are written or compiled by very young men having plenty of time, but as they get older they write less, but what they write is more worth reading, and by experience they learn how little they formerly knew, though posing

as authorities. In time they become more critical of their own work and hence produce less. However, this premature work was not without benefit for the training they got and the amount they learned in preparing articles did them much good and prepared them for the riper work they produced later on.

Before closing this rather fragmentary address, I should like to say a few words on a subject about which I wrote many years ago, viz: Medical and Surgery quackery. A new phase has opened up during the past few years,—the desire on the part of the quacks to be legalized and the wish of many members of the various legislatures to aid them in this object. In Ontario, irregulars, such as osteopaths, chiropractors, etc., are trying to get an Act passed to legalize them and put them on a par with the regular profession and are finding support amongst supposedly educated and cultivated people. A commission, appointed over a year ago, has been investigating their claims and those of the regular profession, with no definite result as yet. That a commission was appointed shows the tendency of the times. It is extraordinary; notwithstanding all our education and supposed higher civilization, how quackery flourishes. In fact it is the upper classes of society who patronize quacks. "Imagination," says Bacon, "is next akin to a miracle working faith," for imaginary diseases are cured by the imagination. Man is a dupable animal; there is scarcely any one who may not, like a trout, be taken with tickling (Southey). The cures are mostly in those cases where no organic change exists, but that they have taught something I won't deny, for in cases of stiff joints with fibrous ankylosis or fibrous adhesions after traumatism, they often do good, but in many cases when serious lesions exist great harm can be done. I saw one case of ulcer of the stomach which had been rubbed for some time by an osteopath and who at last becoming alarmed at the condition of the patient sent him to a surgeon for operation. A perforation of the stomach was found and there was general peritonitis, accelerated, no doubt, by the vigorous treatment of the osteopath. The patient of course died. It is curious how now-a-days (although there have been bone-setters from time immemorial) that the modern quack treats mostly surgical cases; replaces a supposed bone out of place, reduces a dislocated spine, or rubs out a tumour—all more or less surgical. Now if such men are legalized, as they are in some states of the Union, then there is no further use for carrying on the work of various licensing bodies called colleges of physicians and surgeons. Let us have free trade in medicine and the best man will always

come out on top. There is one notable instance where the bone-setter put the profession in the right way—the reduction of the dislocated hip by manipulation, which was practised for generations by a family living in one of the New England states. They transmitted the secret from father to son and Dr. H. R. Bigelow of Boston, hearing this, investigated and found that there was something in it and by a series of dissections of the hip joint proved that the resistance to reduction was caused by the tension of the ilio-femoral ligament and when this was relaxed by flexion and the limb rotated, the bone slipped into place. This much we are indebted to the bone-setter who accidentally found out this fact without knowing the reason. They have also taught us that the manipulation of joints after injury is better than the enforcement of rigidity, which was advised by the older surgeons.

There seems to be almost in every body a vein of superstition and credulity against which argument is useless and which education does not seem to eradicate. Perhaps what Oliver Wendell Homes said about these people is the best advice: "Ephraim is wedded to his idols, let him alone." Another has said many years ago: "The final, though distant extinction of quackery is to be hoped for, it forms a fragment of the final triumph of reason and virtue which is the secret consolation of every philanthropist."