speculation. But at the same time it behoves all those concerned in its guidance, or responsible for the instruction of those who are to become its members, to bear in mind its position as one of the main supports of the tripod of learning, as one of the great factors in the intellectual progress of humanity; being well assured that it cannot sacrifice any portion of its intellectual elevation and dignity without a corresponding sacrifice of its truest and most practical usefulness.

ADDRESS IN SURGERY

BY

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At the Annual Meeting of the British Medical Association held at Nottingham, July, 1892.

ON SYNTHESIS IN SURGERY.

Surgical Unrest.—Surgical Diseases in Canada.—Surgery among the Aborigines.—Hospitals in Canada.—Specialisation and its Dangers.—Necessity of Synthesis as a Corrective.—A Plea for Liberal Education as a Preliminary to Medical Study.

THE feelings with which I rise to address so large and so distinguished an audience are a strange alloy of regret that I must needs fall short of my own desires; of confusion at finding that those to whom the same post of honourable duty has been entrusted in past years have left no branch of surgery untouched; and more than all, of dread lest my beloved Canada should suffer in your estimation at the hands of one who wants, not the will, but the power to do her justice on this momentous occasion.

Permit me, in my country's name, to thank you in all sincerity for the compliment paid to her in inviting one of her children to your shores, and in assigning to him a position of such honour in your deliberations—a position hitherto reserved for the most eminent of your own land—a land teeming with all that is great and noble in our art. Let me assure you that Canada is not unmindful of this fresh token of your regard. She is, as you well know, most firmly attached to the parent State; she glories in your past, she is deeply interested in your future; your glory is her glory; your future is her future; and she is grateful for any thought of her in your councils, especially where science is concerned, and where the common good of mankind is the object.

It was the desire, on our part, to be in closer touch with you which made it possible, last year, for that able and indefatigable worker, Mr. Ernest Hart, to successfully establish those more intimate relations which now so happily exist between members of our profession in the parent State and in the Canadian Dominion. Mr. Hart passed quickly from Vancouver to Quebec, and at his touch Branches sprang as quickly into existence as beacon fires were once lit on the summits of your Welsh hills.

Coming, as I do, to the very apex of surgical art from the wide circumference of its base beyond the seas, it might appear bold were I to attempt, as we sometimes do in Canada, to pass in review the advances in our art during a certain period. There we are accustomed to glean from the United Kingdom, France, Germany, and other countries, the best fruits of their workers, and to place them before the profession, stamped, for the most part already, with the mark of your and of their approbation. But that would here be dangerous, for an address of that nature—however carefully prepared, nicely adjusted, thoroughly combed down, complete and fashioned in all its parts, when leaving the western hemisphere, might, on its arrival here, be found to be wanting in the most recent of its important features—features with which you, in the meantime, might have become familiar—for the advances in our art excel in speed, sometimes, the swiftness of ocean travel.

It has been found by some of my predecessors in this rostrum that the advances in surgery have been so great and so important that to follow them at all closely in their many ramifications would be impossible. This difficulty seems to

have occurred to my immediate predecessor—the learned Edinburgh surgeon—and, in his admirable address, he turned at once, and for relief as it were, to surgical rest. But the rest, aptly termed surgical, for which Professor Chiene, following Mr. Hilton, had secured so much attention was objective. It seems to me that with this much needed surgical rest there runs *pari passu* a surgical unrest which is subjective, and which will be my text for a moment.

On this the eastern side of the Atlantic, where, in every branch of commerce, in every trade and handicraft, in every liberal art, in every learned profession, the lines which divide the work to be done by each are, for the most part, clearly and distinctly traced, the ceaseless agitation of life is marvellous, and would seem to favour the view long ago expressed by De Quincey that solitude was, even in his time, becoming a visionary idea in this country. Yet to me, a visitor, it appears life here is calm, quiet, placid when compared with that on the western continent. Here there is time for easy and familiar intercourse; there it is grudgingly given. Here you leisurely perform the functions necessary for the repair of wasted tissue, and the reception of food, recreation and sleep have each their due time allotted to them; there they are unduly curtailed as things which might be realised and converted into currency. This state of unrest everywhere—but especially in the western world—is not favourable to the surgeon, the full capabilities of whose intellect are not unfolded without sufficient occasional leisure and thought and retirement, all of which are, in some measure, denied to him in our new and over-active world. With you, as with us—but, as it seems to me, not so much with you as with us—the average surgeon of to-day is less a man of thought than a man of action. He is constantly liable to disturbance, either from the particular character of his calling, or from the agitation of all around him, of which he soon partakes. He is made to eschew the more meditative habits which would the better fit him to weigh well and to adopt or reject what should be adopted or rejected, without reference to authority, or without being swayed by the influence, not always safe and reliable, of superiority of position or of condition.

Perhaps, at no time in the history of our art have the facilities been greater everywhere than they are at present of arriving at conclusions which may not be sound, and of being misled by representations which may not be strictly true. In the few intellectual centres, in ancient times, opinion was gradually formed in solitude. It advanced in regular progression, and from mouth to mouth, as it were. To-day, with steam and electricity and the wondrous and unceasing development therefrom of vast physical agencies, men are brought nearer to each other. Truth, to-day, travels with the speed of lightning; but error also, and with like rapidity. Opinion, formed in large centres, acts especially on the imagination of those around, and more powerfully still, perhaps, of those at a distance. It does not always convince, but it impresses, and, to quote the words of a classical writer, it has the force of authority rather than of reason; and concurrence in it is not always an intelligent decision, but a more or less blind submission. Our minds are often misled by misrepresentations, and they remain misled till other and truer representations put them right again.

Surgical opinion, in an especial manner, is at first, and for some time, what seems to be thought by every one in general, and by some one, or perhaps no one, in particular. An opinion hurriedly expressed by eminent, or even prominent, or perhaps only self-beguiled authority is adopted; it is propagated; it becomes the opinion of the general body, and although we may have resisted the influence of the individual authority in the first instance, we finally succumb to the voice of that general body of which we are constituents—each part having, without perceiving it, perhaps, done its share in diffusing truth, it may be in extending error.

The views on surgical questions, expressed ere they have been fully considered; hasty reports of surgical cases, and premature records of surgical operations—especially if the operations have been bold and novel—when published within a few days of their performance, are often misleading. Had the publication of so-called successful cases in medical journals for its sole object the elicitation of truth, error in time would be of small moment.

The haste in publishing enables the operator to scatter re-

ports of his "triumphs" broadcast over the land as a bid for further subjects for his skill. Is the journalist quite blameless in facilitating the premature publication of cases which had, it is true, left the hands of the surgeon or the surgical ward of a hospital, but only to terminate fatally in the hands of a medical practitioner, or in a medical ward from the direct, though perhaps not immediate, result of surgical interference? Would that the tutelary deity who is supposed to preside over medical journalism might so ordain that there should be a little less hurry, a little less zeal in taking the public partially into one's confidence, and in publishing successes while they are yet problematical.

In every part of Great Britain error is quickly overtaken and corrected; not so in Canada—a country so vast that portions of it are nearer to Great Britain, and to France, and to Germany than they are to other portions of its own vast Dominion; and whence London or Paris or Vienna may be reached in less time than Toronto or Montreal. Errors reaching such distant and inaccessible portions of the world survive to do their mischief long after they have ceased to delude the minds of men in the larger centres.

In the steadily-increasing number of medical journals all over the world—some of them established in the interests of the public; some in the interests of the profession; some in the interests of a medical school; and not a few in the interests of some nostrum retailed for profit—in all these kinds and qualities America has her share. The exact number published it is difficult to arrive at.

The medical library in connection with the Surgeon-General's Office at Washington, which, under the able guidance of that marvellous worker, Dr. Billings, is unique in extent and completeness, receives 700 medical journals of all sorts a year. Of these, 30 are devoted to dentistry (15 of them from the United States); 38 to pharmacy (8 of these from the United States); 32 to veterinary medicine (2 from the United States); 22 to homœopathy (14 of these from the United States); 9 are eclectic, and all 9 are from the United States—leaving 121 for regular medicine for the United States. Journals on popular medicine are not included in the foregoing list. Some of the journals referred to are conducted with great ability, while a few reach a high level of excellence. Not infrequently, in articles inelegantly written and quaintly expressed, the mechanical genius of the people is conspicuously shown in a manner to command the attention of those more favourably circumstanced. Readers of the journals of both hemispheres have occasionally noticed in yours a greater precision in reporting cases and in stating facts than is generally met with in the western world. You do not so often indulge in unknown quantities, while dates and other circumstances are stated with greater fulness. I have noticed the same features in your discussions. An absence of that precision in America must not, however, be allowed to take from the value of a statement or a report. It is due in great measure to the hurry and unrest, the variety of fatiguing work a surgeon is called upon to do, and the difficulty, even in cities, of having properly qualified clinical assistance. Outside of hospitals there are well-qualified nurses for the rich—their services are beyond the reach of the poor—and they append the temperature and pulse chart; but beyond this there is often no further record till the case is finally summed up by the surgeon, when the details of treatment are added.

Men of action who have left, and are leaving the impress of their intellect in the more practical departments of our art are often obliged to search in their visiting list or their day-book, where the more methodical and leisurely arrangement of your work enables you to be more precise.

Sometimes the facts are drawn from memory and, for all that is essential, correctly drawn, though dates and other precise circumstances are often wanting. It is from this hurried manner of reporting cases that doubt is sometimes felt of their credibility when given without reference to minor parts which are not considered essential to their truth. The older members of this Association can recall how the statement was received from America, some years ago, that a crowbar had been driven through a man's skull without killing him, and how brain matter had been found adherent to the strong bar of iron at a distance of many feet. The number of feet was not given (I cannot give it now) but the statement nevertheless was true, even without the lesser detail of distance.

Some of you will remember how little disposed many were to believe that a sponge probang, charged with solution of nitrate of silver, could be got beyond that watchful sentinel, the epiglottis, and be applied to the larynx. Who doubts it now? The same may be said of Sayre's assertion, discredited at the time, that after excision of the bones of the hip or knee, the joint could be so arranged that the little patient might be borne from one place to another without discomfort and without injury. Many of you have seen Sayre's work.

Were I disposed to dwell on American surgery I could greatly multiply instances of this kind, but that is not my purpose. I shall merely add that it must be apparent to readers on this side of the Atlantic and to those who have visited the western hemisphere, that the American surgeon arrives, in his own way, and with marvellous celerity at the chief points in a case—at its gist, its essence so to speak—by a process which may not be strictly logical, but which is rather of the nature of an intuitive intellectual judgment or perception. He seems to recognise truth, or something he takes to be truth, without the necessity of any elaborate process of ratiocination. This marked quality in the American mind renders him prone to eclecticism, not alone in medicine and surgery, but in philosophy, and even sometimes in matters of theology.

Though the principles of our art are independent of nationality there are conditions peculiar to the different parts of the earth's surface which must be taken into account by surgeons and which to a greater or less degree modify practice. The relatively greater freedom from death which Valentine Mott, more than half a century ago, claimed for surgical operations performed in New York and Philadelphia, I claim, and more advisedly claim, for operations performed in the larger cities of Canada. The inflammations which sometimes follow surgical procedures with us are indeed accentuated, and are marked by much elevation of temperature; but the character of those inflammatory processes is of a simple sthenic type, and not of that irritable form which so often perplexes hospital surgeons in the larger centres of Europe.

The climate of Canada has much to do with this. In many parts of Great Britain mortality, from all causes, increases with the decrease of temperature; with us the reverse is the case. Our winter season, with the temperature of St. Petersburg, is the healthiest; spring and autumn come next in salubrity; while the largest mortality is in July and August, when the temperature is that of the same months in Paris. At certain seasons the atmosphere is so dry that the meat of the buffalo and the red deer, when cut into strips and dried in the open air, may be reduced to powder, forming the pemmican which often alone sustains the aborigine in his wanderings. When you add to this condition of climate the simple frugal habits of the people—well fed, well clothed, well housed—living in a land where, as in Longfellow's Acadie, "the richest are poor, and the poorest live in abundance," you have a sturdy energetic race displaying much power of resiliency when their injuries demand the intervention of the surgeon.

It is, moreover, a people subject to few ailments, and these are of a sthenic inflammatory type. Thorough acclimatisation is found to confer additional immunities. Those who can count the greater number of generations born in Canada are the healthier, while those undergoing the process of acclimatisation do not suffer in the processive state. These remarks do not apply to the descendants of the aborigines who have been allied to the whites. The inflammatory affections met with in the Metis, whether of the French with the Huron or Iroquois, or of the Scotch with the Cree, are for the most part of a strumous type, presenting but few of the characteristics of those affections in either of the unmixed races.

Aneurysms are not common in Canada; chronic rheumatic arthritis is seldom met with; rickets, which the Germans still love to call, yet they cannot say why, the "Englische Krankheit," is scarce; strumous ophthalmia, which is so constantly seen in the hospitals of Vienna, London, and Glasgow is not frequent; and in cancer, especially of the breast, the glandular system is not generally primarily affected, affording thereby a fairer chance of freedom from early recurrence of this disease. (I allude to this disease advisedly, as I observe that some of your more distinguished surgeons recommend removal of the axillary glands in all cases of scirrhus of the breast—advice which, from my experience in Canada, I am not disposed to follow.)

There are no surgical diseases in Canada which have not their counterpart in every portion of Europe—two alone excepted. When, in the words of Milton,

the parching air
Burns fore, and cold performs the effect of fire,

frostbites are met with (among the non-acclimatised chiefly); and when snow covers the land, the *mal de raquette* is complained of by those who suddenly, and without preparation, are called upon to make long and hurried journeys on snow shoes.

It is true that, on the eastern coast of New Brunswick in Canada, a few lepers are met with in the lazaretto there; but the disease is not indigenous to the soil. Nearly a hundred years ago two shipwrecked sailors were cast ashore at a place called Tracadie. They were the subjects of leprosy. A French-Canadian woman gave them shelter. In washing their linen she contracted that pitiless disease, and transmitted it to her children. These marrying, a small colony of lepers was formed. The number was at one time about seventy, but is now diminished to twenty-two, who are under the care of the sisters of charity from the Hôtel Dieu Hospital of Montreal. But outside the walls of the lazaretto there is no disease peculiar to the country.

In connection with this subject I may perhaps be permitted to quote the words I wrote some years ago, when dealing with this subject, in a work on the climate of Canada: "In considering the few diseases which, in Canada, afflict humanity, we have reason to be thankful to the All-Powerful Controller of the seasons as of our fate, that in separating us from the great branch of the European family, and in placing us where there are indeed no majestic ruins scattered around to prove past greatness or add to present interest, He has prepared for us a land where we may not only live in peace with all men, but in the assurance that no noxious exhalation will imprint its morbid impress on our countenance; that no pestilential effluvia will enter our nostrils; that no serpent will instil its fatal poison into our veins; that with our breath we shall draw no plague into our blood; and that, though He exposes us to much heat in our short summers and to a temperature in winter which pinches us till we cry out 'This is no flattery,' yet through our intelligence He keeps us in health, comfort, and safety. More than once during my professional career I have endeavoured to map out one single disease or form of disease which we might claim as peculiarly our own, but so far I cannot boast of having made the discovery."

As acclimatisation effects certain changes, it affords also certain immunities from which those not similarly circumstanced cannot expect to benefit. The acclimatised bear injuries well. Living in a simple primitive state, they require only occasional aid from the surgeon, and even less from the physician. Colonists, in thinly settled districts, sometimes send long distances for surgical aid in cases of hernia or dislocation. The *ramacheur*, or *rebouteur*, as he is styled, who is supposed to have an intuitive knowledge of broken bones, and how best to replace them, is often in requisition. In dislocations, however, these irregular practitioners are less fortunate. And although their practice is invariably to find a small bone out of joint, which they incontinently proceed to reduce with an audible snap (of their own hidden thumb and finger, be it added), they do not attempt to reduce dislocations of the larger joints.

I once had a case of dislocation of the hip of fourteen weeks' standing brought to me a distance of fifteen hundred miles. It took six weeks of that time, after the *rebouteur* had done with the sufferer, for the patient to reach Montreal in a box like a closely-fitting coffin. The padding was so perfect that movement of either limb or body was thoroughly prevented during a rough journey.

Domestic surgery in civilised countries might in some things learn a little from the primitive methods of our aborigines. Take as an instance the treatment of the newborn infant. The yielding abdominal walls are never compressed by an unyielding bandage, and the young bird in its nest is not more comfortable than the Indian babe unencumbered by swaddling clothes. As the varied movements of respiration are not impeded, the infant cries but seldom. It never suffers from local troubles as the children of the whites often do. The urine is carried beyond the infant's person, if a male, by

an ingenious mechanical support which directs the stream. Feculent matter is received into dry moss, which is to be found, in large quantities, in every wigwam where there is an infant.

If, in the depths of the forest, an Indian breaks his leg or arm, splints of softest material are at once improvised. Straight branches are cut, of uniform length and thickness. These are lined with down-like moss, or scrapings or shavings of wood; or with fine twigs interlaid with leaves, if in summer; or with the curled-up leaves of the evergreen cedar or hemlock, if in winter; and the whole is surrounded with withes of willow or osier, or young birch. Occasionally it is the soft but sufficiently unyielding bark of the poplar or the basswood. Sometimes, when near the marshy margin of our lakes or rivers, the wounded limb is afforded support with wild hay, or reeds of uniform length and thickness.

To carry a patient to his wigwam, or to an encampment, a stretcher is quickly made of four young saplings, interwoven at their upper ends, and on this elastic springy couch the injured man is borne away by his companions. When there are but two persons, and an accident happens to one of them, two young trees of birch or beech, or hickory are used. Their tops are allowed to remain to aid in diminishing the jolting caused by the inequalities of the ground. No London carriage maker ever constructed a spring which could better accomplish the purpose. A couple of cross bars preserve the saplings in position, and the bark of the elm or birch cut into broad bands, and joined to either side, forms an even bed. In this way an injured man is brought by his companion to a settlement, and often it has been found, on arrival, that the fractured bones are firmly united, and the limb is whole again. This is effected in less time than with the whites, for the reparative powers of these children of the forest are remarkable. In their plenitude of health, osseous matter is poured out in large quantity, and firm union is soon effected.

[Dr. Hingston here showed the femur of an aborigine in which the osseous matter was so abundant as not only to unite the fracture, but to form a bed on which the tuberosity of the ischium was made to rest.]

The reparative power of the aborigines, when injured, is equalled by the wonderful stoicism with which they bear injuries, and inflict upon themselves severest torture. They are accustomed to cut into abscesses with pointed flint; they light up a fire at a distance from the affected part (our counter-irritation); they amputate limbs with their hunting knives, checking the hæmorrhage with heated stones, as surgeons were accustomed to do, in Europe, in the time of Ambroise Paré; and sometimes they amputate their own limbs with more *sans froid* than many young surgeons will display when operating on others. The stumps of limbs amputated in this primitive manner are well formed, for neatness is the characteristic of all the Indians' handiwork.

The aborigines are familiar with, and practise extensively, the use of warm fomentations. In every tribe, their old women are credited with the possession of a knowledge of local bathing with hot water, and of medicated decoctions. The herbs they use are known to a privileged few, and enhance the consideration in which their possessors are held.

The Turkish bath, in a simpler, but not less effective form, is well known to them. If one of their tribe suffers from fever, or from the effects of long exposure to cold, a steam bath is readily improvised. The tent of deer skin is tightly closed; the patient is placed in one corner; heated stones are put near him, and on these water is poured till the confined air is saturated with vapour. Any degree of heat and any degree of moisture can be obtained in this way. Europeans often avail themselves of this powerful sudatory when suffering from rheumatism.

The aborigines have their herbs—a few, not many. They have their emetics and laxatives, astringents and emollients—all of which are proffered to the suffering without fee or reward.

The "Indian teas," "Indian balsams," and other Indian "cure-alls"—the virtues of which it sometimes takes columns of the daily journals to chronicle—are not theirs. To the white man is left this species of deception. The necromancing *medicine man* doubtless practises deception, but he is, in turn, impressed by the energy of his own incantations; and

failure, on his part, to cure, exposes him to personal danger. This hurried allusion to the red man seems to me as if chanting his sad funeral dirge. He has been associated with a flora passing, nay, that has passed away. He represents a race much older than the races which have supplanted him, for did he not occupy this land ages before the Aryan race left its Asiatic home? He has, indeed, been supplanted in Canada, but he has been tenderly dealt with by us, as a minor, and with all a minor's rights. Treaties with him have always been honourably adhered to, and we have never qualified him (as he has been qualified by writers south of us), as useless lumber to be got out of the way.

In many parts of Canada, as in other countries not yet wholly covered by the flowing tide of civilisation, practitioners have to cope with difficulties unknown to those whose lines are cast in less primitive places. Now and then the surgeon of practical trend of mind has opportunity to turn that quality, essential in a new country, to advantage. I could in illustration relate many instances, but shall confine myself to one or two. My predecessor in the surgical clinic, the late Dr. Munro, an eminently practical surgeon, was travelling in a wild part of the country when he was asked to see a man suffering from retention of urine. Munro had no catheter with him; many miles interposed between him and an instrument, and the roads were well-nigh impassable. He looked around the log cabin for something wherewith to enter the bladder, but saw nothing. He noticed, however, that the floor was cleanly swept, and that implied the use of a broom. He asked to see the broom. A corn broom was brought to him, and with it he soon entered the man's bladder. How? some will ask. With the handle? No. With the corn tops? No. He had noticed that the corn tops were bound to the handle with wire; this he quickly unrolled; made a loop at the free end; and as he unrolled he straightened the wire by putting his foot into the loop; bent a piece, gave the doubled end a slight curve, and passed it easily into the bladder. The free ends which remained without the body separated somewhat, and the pent up fluid passed between them.

[Dr. Hingston here showed the ingenious contrivance of a country practitioner, near Montreal, for enlarging an opening in the chest wall, which the inventor called a "thoracoretrotome." Both blades cut equally on withdrawing the instrument, yet presented no cutting edge on entering.]

It is not always that the devices which were found to be successful in an emergency are put aside for something which might be better though not so primitive. Some years ago I was present at a meeting of a medical society, not in Canada, it is true, but in one of the more western of the United States. A gentleman from one of the large centres had exhibited an instrument for removing foreign bodies from the nose. He extolled its advantages, was applauded, and everything promised well. I noticed, however, a smile on the faces of many present, when a small nervous man advanced somewhat briskly to the platform. I wish I could give you anything like a faithful sketch of his manner. His style was sharp, his language terse, and personal pronouns were used most sparingly. He commenced somewhat in this fashion: "Mr. President,—Much obliged to the gentleman from the city. Long distance for him to come to show us this instrument; long distance for us out here to send for one. Now, when called to see a child with a cherry or any other kind of stone, or a pea, or a bean, or a bead, or a button in his nose, not going to send all the way to the great city for this instrument, and for the Professor to come with it—for that's what it means. Can do without both. Wherever there's a boy with something in his nose that has no business to be there, there is sure to be a woman in the neighbourhood, and wherever there's a woman there's sure to be a hairpin. Now, with the boy and his nose and something in it and the woman and her hairpin and a live doctor and his jack-knife, nothing more is wanted. With the jack-knife half open, bend the double end, coax this bent end along the roof of the nose, raise the wrist a little, and withdraw with the bent end well down, and if one of the child's toys is there it's sure to come. Would'nt give that instrument (he had made one while addressing us) for the instrument of the gentleman from the great city, and it don't cost as much money. There's not enough of *that* in the backwoods for the Professor."

To return from this digression. Although allusion has been freely made to the primitive manner in which surgery is sometimes practised in Canada, it would be an error to conclude that such is by any means its general state. In the larger Canadian cities surgery, in every department, is pretty much what it is in the more favoured centres of Europe. There is, with us, as much refinement in diagnosis; as much dexterity and courage in performing surgical operations; and as much nicety in the technique. All the cavities of the body—brain, chest, and abdomen—have been explored, and the diseased organs operated upon. Canada follows Europe closely, very closely, in all her work. She has had the boldness—may she be pardoned! to precede Europe in some departments of surgery. The tongue and lower jaw were first removed together in Canada; the innominate and the gluteal arteries were first ligatured there; and the credit of the first nephrectomy, which writers give so generally to Germany, belongs also to that country. But why should Canada be in any way behind? The better classes of her students, not content with receiving instruction in their own medical schools, pass one, two, and sometimes many years in Europe before commencing the practice of their profession in Canada. London, Dublin, Edinburgh, Paris, Vienna, Berlin are never without a contingent of young Canadian graduates, and, as you well know, many of our medical practitioners periodically visit Europe to add to their stock of acquisitions and to renew the zest and relish of professional labour.

The medical schools of the country are modelled after your own. Their reputation for honest work is not unknown to you. The curriculum of medical studies is uniform and uniformly thorough.

In our universities, while the Chancellor is invested with jurisdiction over the members of the university, he has not the power to confer degrees in course upon anyone whose name is not furnished to him by one of the Faculties. Degrees in medicine are conferred upon certificate of the Dean or Master of the Faculty, stating that the candidate has been examined and found to be qualified.

In this respect our universities—Protestant as well as Catholic—are formed much on the model of the ancient University of Dublin, for which Clement V gave a brief in the beginning of the fourteenth century. In all our medical schools clinical instruction holds a most important place. Hospitals are numerous, and the material at the disposal of the teacher is abundant.

The erection of hospitals has in later years been, with us, the work of individual effort and of private subscription. Hospitals are met with in all large cities in Canada, and sometimes even in the smaller towns. The last hospital erected in Montreal—the Victoria—is the munificent gift of two of her citizens. The first hospital—the Hotel Dieu—is the outcome of female love and heroism. The history of the latter is so strange, so unique, that I may be pardoned if I allude to it at length. When Jacques Cartier returned to France, after his discovery of Canada, the news of his exploit travelled over France as quickly as was then possible. A French girl, described as young and beautiful, became impressed with the thought that the newly-found country should be the scene of her labours. She succeeded after a time, in fitting out a small barque, with money furnished by a Madame Bullion, and, with twelve sailors, crossed the Atlantic in the spring of 1641. The sea voyage to Quebec occupied three months—it can now be accomplished in one-fifteenth of that time. The journey from Quebec to Montreal by the St. Lawrence, which can now be performed in a night, then occupied eight days. Miss Mance's barque came to anchor at a projecting point off the island of Montreal, then called Hochelaga. Hochelaga was, at that time, the *chef-lieu* of the war-like Hurons. They looked with amazement at the advent of pale-faced men and one pale-faced woman—for she was alone of her sex. They soon recovered from their surprise, however, and it was necessary for the colonists to throw up for their protection, as quickly as possible, wooden palisades on the land or rear approach; the big canoe, as the barque was styled, was a sufficiently imposing defence in front. If a colonist ventured beyond the palisades to gather fruit or berries, or to cut wood, he ran the risk of being pierced with arrows. Half of the

first colonists perished in this manner, and Miss Mance was obliged to return to France in 1649, bringing back with her other recruits; and again in 1658, leaving France with twenty male and female recruits, half of whom died on the voyage of a form of plague. In their attacks on this small force some of the red men were wounded in return, and, when deserted by their comrades, they were brought within the palisades to what they and their tribe considered certain death—according to their own custom in warfare. They soon found the hospital to be a place of woman's tenderest solicitude. When the red man's wounds were healed a repast of dog's meat was prepared for him, and he was permitted to rejoin his tribe to tell what the pale-faced maiden had done for him. It need not surprise us to be told that in the presence of such devotion the warlike Huron soon forgot his ferocity.

A few years later it was necessary for the small colony to move a few hundred yards inland. Word went throughout the Huron Camp, and, before the hour of departure, the aborigines had strewn the ground with leaves and the branches of trees and with wild flowers, saying the earth was not fit to receive the tread of these women. In this way our first hospital was established, and in this way the light of Christianity was brought to the island of Montreal. Here is how the hospital has been sustained. Miss Mance had obtained from the French King a deed of gift in perpetuity of the small piece of land where she had landed, which, at that time, was valueless. It became, however, in the course of years, the centre of the village of Montreal, and eventually the commercial city clustered around it. A century and a third ago, when Canada passed from the rule of France to that of Great Britain, respect was paid by the conqueror to the rights originally conferred by the French King, and the hospital, which at first had but the aborigines for inmates, continued to receive within its walls, as colonisation went on, persons of every succeeding nationality. For upwards of a hundred and fifty years after its foundation it, alone, afforded asylum to the sick and wounded of Montreal and westward. How many from these shores, when sick and disabled, have there received maternal care! How many of your children, in that then far-off land, had the pillow of death smoothed for them there, and without fee or pecuniary reward! And the same continues to this day; for the property preserved to those religious ladies by a wise conqueror, has, without municipal aid or Governmental patronage, but with economy, sufficed for the wants of the institution.

Between the foundation of this, our first, and the Victoria our last, hospital, other hospitals have been erected—chiefly the Montreal General Hospital, the Western, and the Notre Dame; and all that generosity on the part of the public, and zeal and ability on the part of the staff, can effect, are prodigally bestowed. Hospitals, some of them on a large scale, are now met with from the city of Quebec, where the oldest in Canada exists, to Manitoba, the most recent.

In my desire to place before you—and the occasion is so rare—a sketch of what relates to professional life in your greatest colony, I fear I am being beguiled beyond the reasonable and the considerate. I shall turn, and for a few moments, to that in which you in the Old World, and we in the New, have a common interest—the division of professional work. I should much wish to follow the various workers in their recent labours, and to include in general propositions the special work in which they are severally engaged. But the past few years have been so fruitful in bold and daring enterprise; surgery, both in its conservative and in its operative aspects, has made such amazing strides, that the task would be beyond the powers of anyone, even if time permitted. Yet the crude impressions of one *ultra mare* may, possibly, not be without interest to you.

There was a time, not yet in the far past, when the human body, in its entirety, came within the scope and purview of the medical practitioner. As the knowledge of cause and effect in medicine became more fully understood; as facts were multiplied and methodically arranged; as the art of healing became so fully developed as almost to permit it to substitute its precepts, and rules, and directions for those principles which are fundamental, and which belong alone to science; and especially, when morbid anatomy opened a new, and practically inexhaustible field of inquiry, many men gave themselves up, almost exclusively, to a particular branch or section of medical knowledge, and pursued it with such zeal

and ardour—not always, perhaps, for the sake of knowledge, but sometimes (let us hope not often) for the sake of its productive application—that to synthetise and unite again under a common head parts which had been segregated, now seems to be almost impossible, even were it advisable, and for two chief reasons:

1. When, in our profession, men of energy devote themselves to any branch of knowledge, and apply their minds thereto with continued attention, they cease to realise that, beyond and around them, there are other branches of our art which are of the same origin, which partake of the same nature, and which cannot be divorced from each other without mutual injury.

2. Although reputed pre-eminence in one department of surgery is admittedly a hindrance to advancement in any other department of the same art; and although pre-eminence narrows the horizon around the worker, and limits the scope and extent of his work; the one so cribbed and confined within those narrow limits, and who obtains pre-eminence within those limits, wins distinction and success more surely and more easily than one not so restricted. "The very narrowness of a man's claims," says a classical writer, "by making them definite and appreciable, is an advantage. The advantage lies in doing a thing which has a name, an appreciable name, and the narrower is the art, the more appreciable are the degrees of merit in that art." One so restricted, provided he excel in his narrow sphere, "will find himself a privileged man in comparison with the philosopher, or the very largest and amplest intellect that ever nature endowed or education expanded."

Now-a-days it is difficult for men, even of superior intellect, and of liberal knowledge, to avoid being drifted away into one or other of the narrow rivulets leading from, or flowing out of the general mainstream of surgery, and becoming so absorbed in the pursuit of partial truth as not to perceive that it is wanting in many parts; that it is incomplete, unfinished, and defective, and can only obtain wholeness when facts are arranged, and when phenomena, however distinct they may appear to be, are brought under a common law. No separate department of surgery, when isolated from its surroundings for the purpose of inquiry can, of itself, become an art. I cannot emphasise this too strongly. It is only when the mode of reticulation of a part with parts around it is understood, that any particular or special object of pursuit in surgery can hope to be dignified with that name. Each part, each division, each subdivision—in a word, each speciality—is as the separate clauses in a sentence, which are essentially "architectural parts, aiding, relieving, supporting each other." As an illustration, let me take, for a moment, the real or fancied disturbances of the functions of certain organs often considered to be the most important of all the organs, compared to which, in the minds of some, the rest of the body (female I mean) is a mere appendage. In many places men have been bold, and in some places—notably in America—even reckless, in taking liberties with them, removing them, sometimes, as if they were of themselves particular or distinct entities, unconnected with, or uncontrolled by, and having little relation to, a thinking faculty of mind which readily receives impressions, which is easily affected by sensations, and which is quickly disturbed by emotions and passions. Has not quackery gained, has not poor woman lost, and has not our profession suffered in honour and dignity, by the refusal or neglect of the surgeon to seek for parallelisms and comparisons in other departments of the art? or perhaps, as it sometimes happens with uninformed minds, by the inability to consider any question by a process of mental abstraction, without which science—that is to say, knowledge of laws and principles, and the interdependence of truths—does not exist.

Is it not the tendency of many other departments or segments of our art to take a part for the whole, and to give to that part a width, an extent, to dwarf into littleness the limit or exterior line of all other departments? Gentlemen: The exclusion of what is cognate diminishes the value of what is accepted in direct ratio to the value of what is excluded. As the process of analysis has gone on till we can scarcely expect to see it greatly extended, it may occur, it has occurred, to many to ask: Is it not time to hark back upon our course, and to see if—in the interests of the public as well as of our art—a more general synthetising is not desirable, when the approximation of parts which have been divided, and

which have been recently kept so much asunder, should not be aimed at?

As long ago as the second decade of the present century, honest John Abernethy, in his remarkably practical essay on the Constitutional Origin and Treatment of Local Diseases, said an evil seemed to him to have arisen from the artificial division of the healing art into the medical and surgical departments. This division, says he, "has caused the attention of the physician and the surgeon to be too exclusively directed to these diseases, which custom has arbitrarily allotted to their care." But medicine, then, was one, and surgery was one. What would Abernethy say to-day, when each section of the human body is apportioned and allotted, and when, paradoxical as it may seem, each part is considered to be greater than the whole?

Whether such specialisation is a mixed or an unmixed good—and I shall not stop to discuss the question—it is the fact that the art of surgery is becoming more and still more divided into an ever-increasing number for special or particular branches of study or pursuit, each branch having its respective province or domain, which, it cannot be denied, is sometimes kept more distinct by an exaggerated estimate of its importance. Yet each must ever remain cognate to, and in close relationship with, every other department of the art, for there are no limits or boundaries to those various departments, and a seemingly intimate acquaintance with one, and a total nescience of others, are crass ignorance of all; for "all are but parts of one stupendous whole," as the poet puts it.

I hope this will not be understood, by anyone, as an expression of a desire to interfere with the pursuit of any particular course, however narrow it may appear to some, however vast to others. My desire is to *extend* the horizon of each, not to narrow it, by showing that all branches of our art are cognate to each other. So long as there is division of labour, there must, indeed, be division of thought; but the narrow limits and boundaries which it is sought to establish must ever be prejudicial. Part is intimately connected with part, and a full knowledge of the functions of any part, and of its derangements, can be had only by those who have a general knowledge of the disposition and arrangement of other parts, and their countless and never-ending relations to one another in that wonderfully-constructed whole—this body which we inhabit.

In view of what has been said, I am impelled to ask: Has the candidate for admission to the study of surgery that mental outfit which would enable him to weigh well the facts and circumstances as they will be presented to him in professional life? Or is it not too frequently the case that his memory has been loaded—overloaded—with material, for the most part ill-digested, but with a minimum of knowledge worthy to be called liberal; and perhaps, withal, with an almost total lack of the power of logical inference which is, as it were, the compass which guides the reason amid the treacherous currents of error to the truth? Memory, however retentive, and stored with facts however great in number, never, alone, in our profession, raised its possessor above mediocrity and maintained him there, save when the science of causes and principles was understood, and when philosophy could be invoked wherewith to analyse facts and to place them in relation to other facts which an irrational eye could not see, and which the unphilosophic mind could not understand. Of course I speak not, here, of genius, which is trammelled by no law save that which belongs to genius.

Never, perhaps, in the history of surgery has the necessity been greater than it is at present to furnish those who are to devote themselves to a cultivation of the art with an adequate mental outfit, to enable them to decide what surgical ailments are from their relations to other phenomena, and to recognise the "consent of the whole constitution with its parts and parts with other parts which may appear to be remote, but which can never be considered quite separately and without reference to an unfailing sympathy—continuous, contiguous, or remote." Accompanying each part or section of the art in its remotest, most intimate penetral, the facts there gathered, the phenomena there observed, are but segments or fragments of greater parts—of larger phenomena—which the logical mind alone can fairly interpret; for it, alone, can apprehend those facts and phenomena in their various bearings

and relations, in their "strong connections, nice dependencies."

It is urged by those who know not, or who value but little, the advantages which a liberal education confers on its possessor, that it is remote from the use and tenour—the needs and occupations of life—and can be well dispensed with; that its utility is not apparent; that its profitableness is questionable. Looking at the question from a mere financial aspect—and that aspect obtrudes itself nowadays into every question—it may be admitted that a liberal education may be fruitless in money-getting; it may be inconvenient at times, when men wish to be untrammelled in their interpretation of the duties of life, or may wish to act without reference to any standard of efficiency, or even of dignity. Such, however, can never be the point of view of the members of a profession which, though perhaps somewhat fallen from its high estate in these days of tradesmanlike arts, still claims to be considered "liberal."

Physicians and surgeons have, in every country, and in every age, been amongst the most learned and the best informed. To-day the difficulty of preserving that distinction is greater than it formerly was. Education, at one time the privilege of the few, is now the possession of the many; and while the separation of professions and the division of labour tend to the perfection of art, according to Dr. Copleston, the same learned authority adds: "But, although the art itself is advanced by this concentration of mind in its service, the individual who is confined to it goes back." Is not the conviction sometimes forced upon us that he was right?

It may seem strange to some of you that, coming from a country where schools are thought to be sparsely established, and schoolmasters not always easily procured, I should not wish to have the status of classical education lowered. On the contrary, we in Canada would say to you in Europe: Elevate the standard of classical attainments, and we raise it with you. Require from aspirants to professional honours that most extensive and varied knowledge which, for want of a better term we call liberal, and we, too, shall demand it. (And here, let me say, I mean by the term liberal knowledge, not classical alone, but something more than classical, though never without it.) Acting independently, every few years, as circumstances permit, we demand more and more of candidates who desire admission to the study of medicine. Within the last two months the Legislature of the Province of Quebec has, to English, French, Latin, geography, history, arithmetic, algebra, geometry, *belles lettres*, and physics, added philosophy, which, with us, always embraces logic and mental or moral ethics. This is a step in advance of many countries. As that science of sciences "includes, locates, and connects, and uses all kinds and modes of knowledge," it will do much to hold together and keep under control every branch of our noble profession, whose members have, in every age, been amongst the most cultivated, and whose social influence—used commonly for good—it is beyond the power of man to measure.

AN ADDRESS

DELIVERED AT THE OPENING OF

THE SECTION OF MEDICINE.

At the Annual Meeting of the British Medical Association held at Nottingham, July, 1892.

By W. H. RANSOM, M.D., F.R.S., F.R.C.P.,
Consulting Physician to the General Hospital, Nottingham.

ON SOME DISEASES OF PLANTS COMPARED WITH THOSE OF MAN.

As it has been the custom for Presidents of Sections to deliver an address, I have made an endeavour to conform to the usage, and have put into a connected form some of the results of a long though desultory study of diseases of plants seen from the point of view of the student of medicine, to whom nothing can be foreign which touches upon perturbations in the organic world. As the subject is wide I must leave out much, and treat of that which remains as an outline sketch only. I have no pretensions to be considered a