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An Address

ON

THE OVERGROWTH OF SPECIALISM.

DELIVERED TO THE ACADEMY OF MEDICINE IN TORONTO

BY

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I APPRECIATE very deeply the honour of being the first representative of the British Medical Association, since the affiliation between the British and the Canadian Medical Associations became an accomplished fact, to bring you our fraternal greeting and good wishes, and to address the members of our honoured profession in the great Dominion of Canada.

As I approached these shores I endeavoured to analyse my feelings. I found it difficult to realize that Ontario alone must be three or four times the size of the British Isles. As schoolboys we looked at our atlas and saw a map of England upon one page, and a map of North America upon another, but failed to grasp that vast difference of area of the two countries. Perhaps this was an early indication of our tendency in the old country to over-estimate our own importance. Nevertheless, we do realize when we arrive at years of discretion that we are too self-centred, and we feel the necessity of cultivating a broader outlook, and a contact with the vigorous youth and newer views of our younger brothers.

As an illustration of our insular habit of mind, I would quote a passage from the writings of one of your own countrymen, a writer of whom you may be justly proud—Robert Service. The extract in which he gives us the rebuke we truly deserve is from his book *The Trail of Ninety-Eight*. The scene is laid in Dawson City, Yukon. A tall, slim Englishman, talking to the hero of the story, says:

"How my old dad would stare, if I could have him in Dawson City for a day! He would never be able to get things just in focus any more. He would be knocked clean off the pivot on which he has revolved these thirty years! Seems to me, everyone is travelling on a pivot in the old country! It's no use trying to hammer it into their heads that there are more points of view than one! If you don't see things just as they see them, you are troubled with astigmatism!"

Here is the opportunity, in your vast and wonderful country, to readjust our convictions, and I thank you for helping to pull me off my pivot, and giving me the opportunity of seeing things from a new viewpoint.

Just as I was leaving the old country, the Council of the Royal College of Surgeons of England conferred upon me the honour of electing me a Fellow of their College. It is an honour of which I feel very proud, and I am deeply sensible of the distinction which it gives to me. My pleasure, however, has been very especially enhanced by the fact that I am sharing that honour with a Canadian, Professor Primrose of Toronto. I wish to extend to him my very hearty congratulations upon this recognition of his professional career; and to you, also, because he is one of your representatives in the great field of surgical science. I am sure you will forgive my insular prejudice when I say that I believe that it is one of the greatest surgical honours which can fall to the lot of any one of us; and in the years to come I shall always remember with much pride that my name had been associated with his.

THE NARROW SPHERE.

Your President has proposed to me that I should say something to-night about some views which I recently expressed in my Presidential Address at the Annual Meeting of the British Medical Association. On that occasion I suggested that the modern development of specialism is becoming so great and so absorbing that we are in danger of losing sight of the value of that wisdom which can only be obtained by a laborious study extended over much wider fields.

Specialism has become a necessity in our modern scheme of medical practice, but surely it behoves us to be careful lest our profession becomes nothing more than a community

of craftsmen, each in his own water-tight compartment with little or no general knowledge of the problems which lie outside it. There is a growing tendency—I am speaking of England—to think that special practice confines a man's usefulness in life to one narrow sphere. It is said, not infrequently, that a specialist is an individual who knows everything about his own particular subject, but nothing about anything else. That definition may be only a cynical gibe, but I cannot help thinking that it might become a sober truth, and I would urge that the attainment of a high degree of any ability can only be reached by those who realize that wide general knowledge must be the foundation upon which all professional eminence can be built. To be content to learn one thing, and one thing only, is surely a poor ambition. It may bring wealth and worldly success, but it very rarely brings real greatness. "Everything of something, but something of everything" is surely the motto which all of us should adopt.

In military service or in a great hospital, where large numbers of patients have to be healed, team work is essential. The cure of the patients is a matter of mass production. It is the only method by which a great output can be accomplished. We have learned that lesson from the great commercial enterprises in the world. There are thousands of human beings to-day who spend their lives in producing one important particular detail in the mechanism of some machine, or some process of manufacture. I have personal acquaintance with a man who earns a very handsome living in such an occupation. He can measure his work by a thousandth of an inch; but take him away from his one special employment, and you find him the dullest creature imaginable.

In the great iron and steel works in the city in which I was born there is a small group of men who earn large salaries by controlling the steam-hammers which forge the axles of locomotives and so forth. It is a great specialism, a craft which only a few possess. There appears to be a peculiar genius for this work, and I am told that it sometimes descends from father to son. The craftsmanship which these men display is wonderful, but take them away from their narrow specialism and you will find them very ordinary beings, devoid of any interest in the progress of knowledge outside their own sphere.

Not very long ago I met a personal acquaintance who is a great expert in the textile world. His name is known in America, Australia, and many other countries. He had been spending a fortnight away from home, and I asked him how he had enjoyed his holiday. He said it had been very dull. He had just wandered about, looking into the shop windows and reckoning up the cost of production of the materials displayed!

Specialism may be a great art, but it may be very soul-destroying. It may bring great wealth and notoriety, but it is a poor thing to live for, itself alone.

JOHN HUNTER: A CONTRAST.

A few months ago I enjoyed the privilege of attending the Hunterian Festival at the Royal College of Surgeons of England, and witnessed the large gathering of notabilities rise and drink in solemn silence to the immortal memory of John Hunter—an annual tribute which has been paid to his name for a hundred years. John Hunter was the very antithesis of modern specialism; a man who never neglected the opportunity to study any single object in nature lest he might miss some fragment of useful knowledge. What a wonderful life his was! He was a great surgeon, but surgery was only a very small item in an existence devoted

to the study of every problem in nature. Hunter began his dissections and preparation of museum specimens when he was 30 years of age. He died when he was 65 years old, but during those intervening thirty-five years he dissected and mounted upwards of five hundred specimens, illustrating the anatomy of innumerable types of invertebrate and vertebrate life, and he wrote manuscript descriptions of most of what he had done. During those thirty-five years he worked unceasingly to solve every problem in the animal and vegetable world, and his classical operation for aneurysm remains to-day as one of the most perfect deductions from scientific observation applied to a practical use.

Stephen Paget, in his *Life of John Hunter*, reproduces one of his letters, written to a friend in Africa a few months before his death.

"There could be no better example than this letter of the vehement energy of Hunter's life. In his old age, full of suffering, overworked, and close to death, he was yet writing to Africa for swallows, ostrich eggs, a camel, cuckoos, a young lion, everything connected with the bee tribe, chameleons, and any other beast or bird!"

While he was thus intensely intrigued with a burning desire for general knowledge, he was Surgeon-General to the Army, Inspector-General of Hospitals, Surgeon to St. George's Hospital, Surgeon Extraordinary to the King, and busily engaged in a great consulting surgical practice in London.

THE WIDER OUTLOOK.

At the same festival, when I listened to the speech of the President, Sir John Bland-Sutton, a speech full of wit, and a versatility which betrayed a lifelong devotion, not merely to the specialism of abdominal surgery, but to the study of comparative anatomy and zoology and the whole life-history of mankind, I realized that his specialism had only played a very small part in placing him in the proud position he occupies to-day. A great surgeon undoubtedly; but something much more than that—a man of wide scientific general knowledge, acquired by an endless study of human and animal life.

Only a few weeks later I was present at the funeral service of Sir Thomas Clifford Allbutt, Regius Professor of Physic in the University of Cambridge, who died in his eighty-ninth year, a great scholar, and full of honours. He began his career as a classical scholar at Caius College, Cambridge, and subsequently obtained first-class honours in natural science. Throughout his long life he never ceased to interest himself in any subject which might promote general knowledge. He introduced the clinical thermometer, which is used to-day throughout the whole world. In 1871 he emphasized the value of the ophthalmoscope in the diagnosis of cerebral and renal disease. In 1873 he read before the Royal Society his paper on the effects of exercise upon bodily temperature. He subsequently edited a *System of Medicine*, which is one of which the medical literature in any language might be justly proud; and his work upon blood pressure, and the effect of overstress upon the heart, is of great scientific value. It has been truly said of him that he was a charming speaker and a graceful writer. Faults of literary expression and logical arrangement vexed his soul. Truly a great physician; but something much more than that—a great scholar and scientist, and a very perfect English gentleman.

Is there any need for me to recall the life-work of such scientific giants as Pasteur, Lord Lister, or Sir William Macewen? Do we not remember them as great men, who toiled unceasingly to promote general knowledge? Great men who acquired profound wisdom in an unlimited field of study, never doubting that every fragment of general knowledge would find its place in our scientific progress. Not so very long before the late Sir William Macewen's death I was talking to him about the growth and shedding of the antlers of deer, a subject in which we were both interested, and one upon which he wrote a most absorbing book. Long after it has been forgotten that Macewen introduced osteotomy to cure genu valgum that book will remain as a record of truly scientific research. Do any of us to-day know anything about Lord Lister as a surgical "specialist"? His work as an operating surgeon is forgotten in the light of his labours in the wider fields of his researches. As an artist he is already forgotten; but as a scientific worker his name lives for ever.

WISDOM OR TECHNIQUE?

Is the modern trend of medical practice likely to produce such men as I have mentioned—men who were not merely craftsmen whose special ability dies with them, but scientific giants whose mental activities were directed along many avenues of observation and research? Is it not possible that we are all specializing too much, and reducing our individual usefulness to very narrow limits? The human body is a complex structure composed of many separate organs, but there is a vital interdependence amongst them which is essential for the maintenance of the whole. Is it really desirable that every man should train himself to confine his knowledge to only one narrow branch of medicine or surgery, and believe that a perfect technique can accomplish everything?

The President of the Medical Society of London recently vouched for the accuracy of the following anecdote.

A patient, worried with abdominal pain, and obsessed with the popular dread of appendicitis, consulted a specialist, who removed the appendix. The pain remained and she appealed to a gynaecologist, who removed the right ovary. The pain remained, and she appealed to someone who had a great reputation for gastric surgery, and she submitted to a gastro-enterostomy. But the pain remained. Nothing daunted, she went to one whom I may describe as a general surgeon. He opened the abdomen, but said that he found so much which wanted rectifying that he closed it again without doing anything. She has now been restored to good health by a little wise moral influence, and the sound knowledge of human nature of her doctor.

No man can become a good surgeon unless he is first a good physician. That saying is as true to-day as when Sir William Macewen first spoke it, and special knowledge and technique must always be subservient to the wisdom which can only be acquired by a wide study of human—yes, and animal—life. A man may be a perfect surgical artist, but never a great surgeon, unless he learns that even the most perfect technique is no excuse for bad judgement and lack of wisdom.

OPERATORS OR SURGEONS?

At the risk of becoming unpopular amongst my younger brethren, I am going to say that I am afraid that we are producing a generation of operators, and not surgeons. With the advent of perfect asepsis the respect for operative intervention has almost ceased to exist. Moreover, it has become the fashion to advocate the adoption of more and more radical procedures, in place of those which have given excellent results in the past. It is no longer sufficient to remove a patient's gall stones—his gall bladder must be removed as well. Gastro-enterostomy is being condemned as insufficient for simple gastric ulcer. A partial gastrectomy is now the operation of choice. If I remember rightly, this operation was first urged upon the ground that cancer is so often grafted upon long-standing simple ulcer, and I believe the risk of malignant incidence was placed at something more than 50 per cent. I have been at some pains to try to find a definite reason for this alarming statement, because I know that the occurrence of cancer after gastro-enterostomy for supposed simple ulcer is quite a rare event. Either the ulcers are only rarely malignant, therefore, or else gastro-enterostomy cures cancer. Latterly, however, the advocates of the more radical treatment have shifted their ground, and it is now stated that any lesser procedure than gastrectomy fails to cure. I suppose my experience of gastro-enterostomy may be regarded as small, because I have yet to perform my thousandth operation. Nevertheless, I can lay claim to some hundreds. Perhaps I have been especially favoured by fortune, but I do know that gastro-enterostomy for simple ulcer has been very successful in my hands; so much so that I could not possibly advocate the removal of half the stomach on account of a hypothetical risk of subsequent development of malignant disease. The same argument applies to cholecystectomy rather than cholecystotomy. I have performed some hundreds of the latter, but I cannot trace any case in which cancer developed subsequently; and I know from long observation that the risk of recurrence of gall stones is practically non-existent, so long as the cholecystotomy has been adequately performed. It has also been urged that total rather than subtotal hysterectomy should be practised for uterine fibroid, in order to prevent the possibility of the subsequent development of cancer in the cervix if it is left

behind. I recently inquired into the after-history of 250 cases of subtotal hysterectomy, but failed to find a single case of this unfortunate development. Incidentally, however, I learnt of a case of cancer in the vagina, which was said to have developed in the scar following a total hysterectomy. I commend that to all ardent advocates of extreme radical measures.

THE STEAM-HAMMER AND THE NUT.

When I was a very small boy I was taken to a great exhibition in the Old Cloth Hall in Leeds. It was not long after Nasmyth had invented the steam-hammer; and I still remember watching a man regulating a model of that wonderful invention. He was cracking Barcelona nuts with it! I was too young at that time to appreciate the wonderful scientific accuracy of the machine; but I do remember thinking that I could crack them equally well with my teeth.

What is the real reason for this modern desire to adopt extreme measures? It is the love of something new; the love of a great idea; and—yes, I am afraid that I must also add—the ambition for the notoriety of specialism: specialism as the lay public conceives it—a miraculous gift which enables a man to do something bigger, and incidentally more expensive, than his neighbour. The aseptic principle is a priceless asset in modern surgery, but I would ask you seriously to consider whether the modern ritual is not being overdone. It is not easy to draw the line between reasonable and extravagant methods, but surely there is much in the surgical practice of to-day which is purely theatrical. Moreover, our concentration upon technique is deadening our sense of the supreme importance of cultivating clinical wisdom and judgement; the shrewd estimate of the vital capacity of our patient, and the great principle that we should never forget that the greatest artist is he who does the least possible to secure the desired end.

THE ART OF SURGERY.

The art of painting and the art of surgery are very similar. There are artists who produce pictures by a few bold strokes of the brush or pencil. Their work captures the imagination, and it lives. There is also the artist who produces a picture full of minute detail. It is very beautiful and perfect, but before long it begins to pall, and sooner or later it ceases to attract. So is it with the art of surgery. The surgeon who can grasp essentials, and who is gifted with "vision," because he has viewed Nature from a broad standpoint, lives in the memory of future generations. His work remains because he has studied the great essentials of life. The other obtains a passing notoriety on account of his perfect technique. It is all very pretty, and attracts the eye for the moment, but it lacks that sterling quality which marks real genius. Genius is not a heaven-sent gift. It is the infinite capacity for work—a capacity for using our brains in the study of everything which enters into our existence.

If I may make an appeal to the embryo surgeons of to-day, I would beg them not to be narrow in their ambitions. I would ask them not to be counting up the worldly wealth that specialism may bring, but remember that the passing of an examination, however high its standard may be, and a year or two of special experience will never achieve greatness. Theatrical display of elaborate technique, and the noisy advertisement of the latest methods, will obtain notoriety, but chain them to a life of comparatively joyless work. I would tell them that while it is a great thing to be able to do something better than anyone else, it is a much greater thing to be known as a great scientific worker, who can bring to bear upon his special craft a knowledge of human nature and all those attributes which make men truly great. I would ask them to realize that if they work for the love of working in the first place, to work for the advancement of knowledge and the universal benefit of mankind, they will obtain a great recognition and an ultimate worldly success. I would commend to them the words of Thoreau when he says: "If a man advances confidently in the direction of his dreams, and endeavours to live the life which he has imagined, he will meet with a success unexpected in common hours."

A MEMORY OF ST. GEORGE'S DAY.

As I came to you across the sea, little more than half-way I recollected that it was the eve of St. George's Day—St. George, the patron saint of England—and my mind went back ten years to that twenty-second day of April in the year 1915, when Falkenhayn, the German commander, launched on the battlefields of France, before Ypres, his first poison-gas attack—that abomination which violated all moral codes, and to which our enemy resorted in order to break our line by torture when he could not break it by overcoming our courage. Ypres, the gateway to the northern coast of France, was in dire danger of falling before the enemy. Great Britain was threatened with starvation, the British Empire with ruin, and the whole world with catastrophe. When England was in such desperate straits, when the best French division of seasoned Africans, which formed part of the fighting line, broke and retreated in torture and terror, who was it who stood fast, and held the enemy back for nearly two whole days under the most appalling conditions ever experienced by any fighting force? It was the First Division of Canadian Volunteers, consisting of the Second Brigade under Brigadier Currie and the Third Brigade under Brigadier Turner. Can the old country ever forget the debt she owes to those men, or to those under General Alderson? Can we possibly forget such individual heroes as Major Kirkpatrick, who led the Fighting Tenth of Toronto; or Captain Straight, who by his courage and self-sacrifice inspired heroes to still greater efforts? In the story as written by Edward Wright we read:

"For a whole week the Canadians held the line that saved the Empire! When the main British relief came up at last, by forced marches, and went through the German barrage to take over the Canadian position there were scarcely more than two thousand Canadians remaining, out of the old division of twelve thousand strong! The British cheered themselves hoarse as they gripped the hands of those newly made veterans, whenever they got in touch with them. 'Canadians!' 'Canadians!' That was the British greeting when the weary, staggering, ragged two thousand went back through the German barrage to their rest billets!"

Another writer says:

"England has a thousand years of heroes before her eyes, and she thinks of them with pride! Canada has made her great tradition suddenly! Canada has become a great nation; great in territory, great in the boundless wealth of her cornfields, she only needed one thing—the glow of a great tradition."

May I quote again from your Canadian poet, Robert Service, some lines from "The Younger Son," written before the war:

If you leave the gloom of London, and you seek a distant land
Where all except the flag is strange and new,
There's a bronzed and stalwart fellow who will grip you by
the hand,

And greet you with a welcome warm and true;
For he's your younger brother, the one you sent away,
Because there wasn't room for him at home;
And now he's quite contented, and he's glad he didn't stay,
And he's building Britain's greatness o'er the foam.

You will find him toiling, toiling, in the north and in the west,
A child of nature, fearless, frank and free;
And the warmest heart that beats for you, is beating in his
breast,
And he sends you loyal greeting o'er the sea.

Then with the voice of the prophet he closes his poem with the lines:

You've a brother in the army, and another in the Church:
One of you is a diplomatic swell;
You've had the pick of everything, and left him in the lurch,
And yet I think he's doing very well.
I'm sure his life is happy, and he doesn't envy yours;
I know he loves the land his pluck has won;
And I fancy in the years unborn, while England's fame endures
She will come to bless with pride—THE YOUNGER SON!

Gentlemen, we have come to bless with pride the Younger Son. Canada has now a great tradition. The men of Canada, the hardy men of Canada, who went out into the great spaces of the earth, and made them fruitful, crossed the sea to us in our hour of need, and brought with them to Europe that matchless thing which lifts men to the height of heroes, and brings them very near to God. Once, at least, in the great war you saved the British Empire and its Allies, and you are bound to us for ever with bonds of gratitude and affection.