William Osler and Medical Education

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William Osler, at the age of thirty-nine, went to Baltimore to occupy his third chair of medicine at the new Johns Hopkins University in 1889. The building of the medical school was delayed because of the depreciation of the railroad stock with which Mr Hopkins had endowed the university, but Osler spent the waiting time profitably by writing his great textbook, *The Principles and Practice of Medicine*, which was published in 1892.

The book was brilliantly successful, and the first edition of 23,000 copies was sold. The Medical School was opened in 1893 and the first clinical students entered the wards in 1895. Great men, whose names are still honoured in international medical education, were concerned with the foundation of the School—Daniel C. Gilman, the first President of the University, John S. Billings, his adviser in medical school policy and the founder of the *Index Medicus*, and William H. Welch, the first full-time professor of pathology in the United States and later to be, for thirty-two years, the president of the Board of Scientific Directors of the Rockefeller Institute. These three were making plans for the organisation of the School and Teaching Hospital before Osler was appointed. They had decided that the hospital was to be organised on the pattern of German university clinics—each clinic having its own wards, laboratories and out-patients, in the sole charge of the professor who was served by a staff of whole-time assistants and residents. These plans had Osler’s enthusiastic approval, and in the first few years after his arrival a programme of resident training was evolved.

Although bedside teaching had long been the basis of clinical training in Britain, medical students in the U.S.A. had not been allowed to enter the wards. Osler was determined that this should be changed. When he left Baltimore, twelve years later, he claimed that ‘Never before in the history of this country have medical students lived and worked in the hospital as part of its machinery, as an essential part of the work in the wards... they were important aids without which the work could not be done efficiently. I desire no other epitaph—no hurry about it I may say—than that I taught students in the wards’.

These were revolutionary changes in undergraduate medical education which were to be copied in every first-class school in the U.S.A. When
Abraham Flexner gave evidence in 1911 before the Haldane Commission on Medical Education in the University of London, he extolled the organisation of the Johns Hopkins as a model for British medical schools.

The chief architects of its success as a clinical teaching school were Welch and Osler, but with them the names of Halsted, the surgeon, and Kelly, the gynaecologist, four men of genius, are permanently associated. Osler’s spirit, his enthusiasm, his generosity and his erudition, made the Johns Hopkins the symbol of all that was best in the world of medical education and practice.

THE INFLUENCE OF WILLIAM OSLER

One problem teases the mind of anyone who today studies the life and work of William Osler. It is 55 years since he died, yet the memory of his personality and achievement stands out with greater clarity and effect than does that of any other contemporary physician. In the nineteenth century there were greater medical scientists than he, more powerful protectors of the public health, and finer medical historians and bibliographers, but of none of these does the image persist with so much brilliance. His contemporaries rightly acclaimed him as the greatest physician of his time.

Two distinguished surgeons, on whose student lives Osler made a lasting impression, have written about him recently. Wilder Penfield wrote that Osler ‘had given to students, doctors and patients alike, a delightful example—the unassuming physician, gay, understanding, scholarly’. Sir Geoffrey Keynes said, in the first of the College’s Osler Orations, ‘that the influence of a man, when he himself is gone, is impalpable and elusive and is impossible to convey except in words’. Words there are in plenty to explain the continuing influence of William Osler. Books are still being written about him, honorific lectures are regularly delivered throughout the world and many societies in several countries bear his name.

Dr C. G. Roland produced in 1972 an annotated edition of Osler’s address, ‘The Master-Word in Medicine’, originally delivered in the University of Toronto in 1903. It is one of the best known of what Dr Roland well calls Osler’s inspirational addresses. Osler’s master-word, his professional open-sesame, was work, and most of us would agree that work is still a professional sine qua non. Harvey Cushing wrote of this address: ‘Any student incapable of being uplifted by an exhortation of this kind is beyond the pale’. Although ‘uplift’ and ‘exhortation’ are not the vogue words of 1975, this judgement indicates that there is much more in this lecture than an invocation to hard labour. It is, in fact, Osler’s comprehensive guide to doctors who would seek to live useful and happy professional lives. Edith G. Reid wrote that a stranger listening to this address in the company of Osler’s students might have
exclaimed: ‘Who could live up to that standard?’ and the students would have replied: ‘The Chief does!’ Dr Roland wrote: ‘I believe that this benignly humanistic attitude stressing the supremacy of sheer good manners and good
taste in dealing with one's fellow man—whether patient, colleague, acquaintance or passing stranger—urgently needs copying in our time'. Students and teachers who take the opportunity of reading this characteristic address of Osler's will be able to decide whether some valuable quality is missing from their curriculum and from their present attitudes. They may assess, too, how far Osler's advice is applicable to the present generation.

Osler, in his address 'Teacher and Student', gave the students of the University of Minnesota four admirable objectives, the Art of Detachment, the Virtue of Method, the Quality of Thoroughness, and the Grace of Humility. System and thoroughness, the second and third objectives, are qualities every teacher tries to inculcate in his students, both by example and precept. They are the basis of scientific learning and of the clinical method. The first quality, the art of detachment, tells us something about Osler himself, and exposes the time-limited value of advice given to students on their moral and social behaviour. Osler did not marry until he was forty-two, in the same year that he delivered this address. In it he defined the art of detachment as 'the faculty of isolating yourselves from the pursuits and pleasures incident to youth'. Apprenticeship to the guild required a period of celibacy, during which young men, he said on another occasion, 'should put their emotions on ice'. There was to be no dalliance with 'Amaryllis in the shade', and 'they should beware the tangles of Neaera's hair'. These attitudes require neither explanation nor defence. They were characteristic of the social standards proclaimed and practised by the Victorian professional classes. Sexual control was the current gospel and late marriage one of its consequences.

The keys to Osler's success as a clinical teacher were his love of teaching, his affection for students, and his enthusiasm for medicine as an advancing art and science, with a glorious future and a fascinating past. His 'firm', to use the English word, was a happy heirarchy, and he gave all his students access to his generous friendship. On Saturday evenings they were invited to supper. In Montreal and Philadelphia beer and tobacco were provided with the food, and in Baltimore oysters were added to the menu. When the meal was finished, Osler led the talk to patients seen during the week, and produced books and articles relative to their problems, together with some illustrations taken from the history of medicine. Maude Abbott, later a great pathologist, related that at the end of one of these parties in Baltimore he turned to her and said: 'I wonder whether you realise what an opportunity you have. That McGill Museum is a great place. As soon as you get home, look up the British Medical Journal for 1893, and read the article by Mr Jonathan Hutchinson on "A Clinical Museum",' and so, she said, 'he gently dropped a seed which dominated all my future work'.
His old students declared him to have been a unique teacher—a man of sparkling humour and warm friendliness, who sustained an affectionate personal interest in each student. He had the rare capacity of bringing liveliness to the dull mind, confidence to the shy, and enthusiasm to those who lacked interest.

TEACHING OF THE HISTORY OF MEDICINE

Osler taught the history of medicine out of a knowledge that was both broad and deep, with a profound conviction of its value in the teaching of medical students, and with infectious enthusiasm. He frequently quoted Thomas Fuller’s epigram: ‘History not only maketh things past present, but enableth one to make a rational conjecture of things to come’. He related one simple method of teaching medical history in the British Medical Journal of 1902. He instanced a student in the clinic presenting a patient with exophthalmic goitre and at the end of the presentation, Osler would ask, ‘Who was Graves? Who was Parry?’ Ignorance admitted, the student would be told (told, not asked—the three-generation gap) to bring their original articles to next week’s clinic and to give a ten-minute talk on the authors. Modern teachers may enquire whether time spent in this way is not wasted, since there is, for example, so much valuable information to be given to the students on the diagnosis and treatment of thyrotoxicosis.

This is an important question which is fundamental to the definition of the objectives of medical education. My reply must be summary and brief. ‘History maketh things past present’; by returning to the original descriptions of disease, clinical pictures are etched more deeply on the memory of the student. He is provided with an historical, social and geographical setting for his immediate experiences—clinical or scientific. He is given a story, not of uninterrupted progress in the art and science of medicine, but of advance, arrest and, sometimes, of recession. He traces the growth of medical ideals, first, in personal service to the patient, then in the prevention of disease, and finally, in bringing health to communities. He learns that the great masters of medicine ‘though dead, are yet speaking’.

When Osler was collecting the great library which became his McGill monument, he called himself a bio-bibliographer. He read the books, he learnt what the great masters had done and written, he understood their achievements, and he knew their way of life—how they lived and how they felt. In all his activities Osler found a key which fitted a human lock. One of the best ways of ensuring that the medical technologist, whose activities are increasingly important to mankind, is also an educated and understanding personal doctor is to teach him the history of medicine as a student.
Osler thought that medical and scientific history should be taught by all teachers within the ambit of their own subjects. This is the ideal method, and it might well have been a practical proposition in Osler's day, but it is, alas, no longer so. Dr Cotton, benefactor of the College and founder of this Oration, ensured the continued teaching of medical history at McGill by endowing a chair of the History of Medicine in the University.

THE THEORY AND PRACTICE OF MEDICAL EDUCATION
Osler anticipated much of our educational theory and practice. In a few instances his ideas, though now accepted by many teachers, have not yet found complete expression in medical courses.

As was the British method, he put his students into the wards to learn by doing, and they also took part in the instruction of their fellows, learning by teaching. He was the first medical teacher in England to suggest the formation of small teacher-student discussion groups, and the first to use the word 'seminar' to describe them. In an inaugural address at St Mary's Hospital in 1907 he said: 'I wish we could introduce, in the place of systematic medicine lectures, what is known in Germany as a seminar, in which at a meeting of students and teachers special literature is discussed and special articles read'. A generation or two was to pass before this educational method reached our medical schools.

Later in the same address he said: 'Few are really competent to teach students the art of medicine. We need a school of medical pedagogy in which young men, aspiring to the position of teachers, can be taught proper methods. We have the position that any man is considered good enough to be a teacher'. Sixty-five years later the Committee of Vice-Chancellors recommended that all university teachers should have a course of training in educational methods.

Osler was especially concerned that students should be taught how and what to read, and the proper use of libraries. He wrote: 'There should be in connexion with every library a corps of instructors in the art of reading, who would, as a labour of love, teach the young idea how to read'. If this was the dream of an idealist, it was also the conviction of a superb university teacher who had learnt how narrow was the way to scientific scholarship and understanding and how few there were who found it. Many doctors, indeed, did not read sufficiently for the adequate practice of general medicine. 'It is astonishing', said Osler 'with how little reading a doctor can practice medicine, but it is not astonishing how badly he may do it... To study the phenomena of disease without books is to sail an uncharted sea'.

Osler lacked most of the teaching aids that are now available. It happens that in the neighbourhood of his boyhood home at Dundas, a new and
progressive medical school has been founded in McMaster University at Hamilton, Ontario. Neufeld and Spaulding, working in the department of medicine in this school, have reported on the use of these new learning resources in the teaching of medical undergraduates, including a wide range of mechanical aids, problem 'boxes' with audio-tapes and audio-visual tapes, and 'simulated' patients. Their final conclusion on these new learning methods was that 'the physician should be helped to develop those resources which are readily available and which may well be the most effective. These include his own critical thinking ability, his patients as an educational stimulus and his personal or hospital library'. These are Oslerian objectives in medical education and, although Osler no longer walks in Dundas, it is apparent that his spirit still survives in Hamilton. He would have been interested in the teaching of abnormal neurological signs to normal Hamilton housewives for demonstration to students and examinees—the so-called 'simulated' patients.

ASSESSMENTS AND EXAMINATIONS

Osler proposed a rational and humane method of examination which is now being introduced into some of our schools and which is called 'continuing assessment'. 'Let all who teach examine', he wrote, 'let education and examination go hand in hand. Let the day's work tell from the moment a student enters the school... At the end, the formal tests should be but an amplification, an extension, and an inclusion of the scores of examinations which have been part of the routine of his life'.

He also defended the use of young teachers as examiners: 'They see more of the students, come into closer contact with them, and are better able to judge of the quality of their work than the professor, and much more than any outside examiner'.

Osler abominated formal examinations; he particularly disliked the severe trials to which candidates were subjected in Britain, ordeals conducted, he thought, more in the Chinese tradition and far removed from the Greek spirit that was his educational ideal. He condemned such examinations because they interfered with the student's disinterested pursuit of knowledge, because they were not an integral part of the learning process and because the failure rates were so high. He deplored most vigorously the evils of the higher professional examinations.

Among the remedies he suggested was that in examinations for such higher diplomas the candidates should be required to produce evidence of work done and research completed, and on the quality of this work success in the examination should largely depend. He might well have considered misguided the intense efforts that are now being made by colleges and universities to ensure
that their examinations are conducted with impeccable accuracy. In doubtful cases his inclination would always have been towards mercy rather than to the use of the fallible scales and the ruthless sword.

CONTINUING EDUCATION
William Osler was the apostle of continuing education, the first and the greatest. That education was a life-long business was a recurring theme in many of his addresses. The perpetual student had the opportunity of sharing in the advances made by the army of research workers who were on their way to occupy the kingdom of Hygeia. Even the rankers in so glorious an army should accept, as a welcome obligation, laborious days and studious nights. Reasonable financial rewards would in time be theirs—twenty years to be served for cakes and ale—but the pilgrim’s true satisfaction lay in knowledge gained, in service rendered and in professional standards maintained and enhanced.

The methods to be employed in continuing education were those that had been learnt in the teaching hospital; the careful examination of patients and the study of books and journals. But the acceptance by the practising doctor of complete personal responsibility for the well-being of patients demanded a new and total dedication. The patients’ records, immaculately kept as in the wards, were to be placed in three categories—clear cases, doubtful cases, and mistakes. This ‘self-audit’ was to be conducted without self-deception and with no shrinking from the truth. These records were to be regularly mulled over as fresh patient problems emerged and as new knowledge was acquired, and every five years were to be taken to the teaching hospital whence the ardent young practitioner would repair for his six months of ‘quinquennial brain-dusting’!

‘What about the wife and babies, if you have them? Leave them! Heavy as are your responsibilities to those nearest and dearest, they are outweighed by the responsibility to yourself, the profession and the public.’ This injunction to subordinate the claims of family life to professional responsibilities was made in his farewell address to American and Canadian students, delivered in 1905. Osler was well aware that this disciplined life would be too difficult for some of the young men he was addressing. Some would fail because of intellectual inertia, and some because of professional prosperity too early attained, others would be diverted by incompatible social or political aspirations. Some, like Lydgate in George Eliot’s Middlemarch, would fail because they had married the wrong woman. Of these dangers, and of the many other lions that lay in the path of successful continuing education, Osler gave explicit warning. He had no doubt that continuing education was essential to the well-doing of all doctors, and he called upon general practitioners, specialists and teachers to
follow the student way of life. Looking with hindsight over the intervening 70 years, we can find no recognition in this address that specialists and teachers had incentives and opportunities for continuing education which, apart from the meetings of the county medical society, the general practitioners were largely denied.

For teachers and consultants continuing study was an essential requirement and educational opportunities were not lacking. Hospital facilities were expanding and patients were plentiful. Daily association with specialist colleagues and the regular meetings of professional societies provided for them an easily accessible continuing education.

The table of the general practitioner was not so generously spread, nor were there for him comparable incentives, as the two following quotations from the same lecture show:

‘The family doctor is the man behind the gun, who does our effective work. That his life is hard and exacting; that he is underpaid and overworked; that he has little time for study and less for recreation—these are the blows which may give finer temper to his steel and bring out the nobler elements in his character.’

If these sentiments seem a little too idealistic and the rewards a little too meagre we reach, six pages later, a more reassuring destination—

‘In a good agricultural district or in a small town if you handle your resources aright, take good care of your habits, and your money, and devoting part of your energies to the support of societies, you may reach a position in the community of which any man may be proud.’

We can now recognise that, although Osler in this address was calling the general practitioner to the student life of continuing education, the rewards he described were those to be obtained by any dedicated personal doctor working in a community. Nevertheless, incentives such as these were sufficient to maintain a high standard of performance and intellectual endeavour in a majority of family doctors. In the less fortunately placed practitioners, these attitudes were slowly eroded by the lack of educational opportunities and by a reduction of incentives. Recognition of these declining standards and an analysis of the causes grew slowly so that the two notable developments which, in Britain, have reversed these trends are matters of recent history. The first was the establishment of the College of General Practitioners, now the Royal College, and the second was the development of the Postgraduate Centres. Both have had a primary concern with postgraduate and continuing education. The wonderfully rapid growth of the Postgraduate Centres has changed
the British medical scene dramatically. They are becoming colleges of continuing medical education and, in the care of their deans, the clinical tutors, have already made possible the realisation of the Oslerian ideal of the student general practitioner. Opportunities for postgraduate education are now as readily available for the general practitioner as they are for the consultant. How obsolete has become the concept of a ‘quinquennial brain-dusting’ in the present context of a Postgraduate Centre not many miles away from the doctor’s place of practice with a skillfully designed educational programme adapted to the needs of a diverse membership!

If Osier returned today he would be enthusiastic in his praise for the libraries in the Centres. When he visited a county hospital, either in the U.K. or in the States, he would ask first to be taken to the library, and too often he found it ‘in a dull, dark, cold, dusty and uninviting room’. Most of the Postgraduate Centre libraries are housed in attractive buildings and served by a knowledgeable and welcoming staff. We may imagine Osier saying, when appraising the educational opportunities provided by the Centres, that although they had not completely removed the ‘hill of difficulty’, nor drained altogether the ‘slough of despond’ they had greatly eased the journey of the medical pilgrims in the ‘delectable mountains’ of continuing education.

**Conclusion**

I have chosen in this Oration to consider only one aspect of Osler’s greatness—as a clinical teacher and medical educationist. I have sought to show that many of his original ideas are in accord with our present thinking. Osler was an idealist. He was wholly devoted to our great profession and his first teaching objective was to encourage in his students an equal dedication. His theory and practice in medical education were inspired by the same idealism, and yet were little, if at all, removed from practical realities.

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