

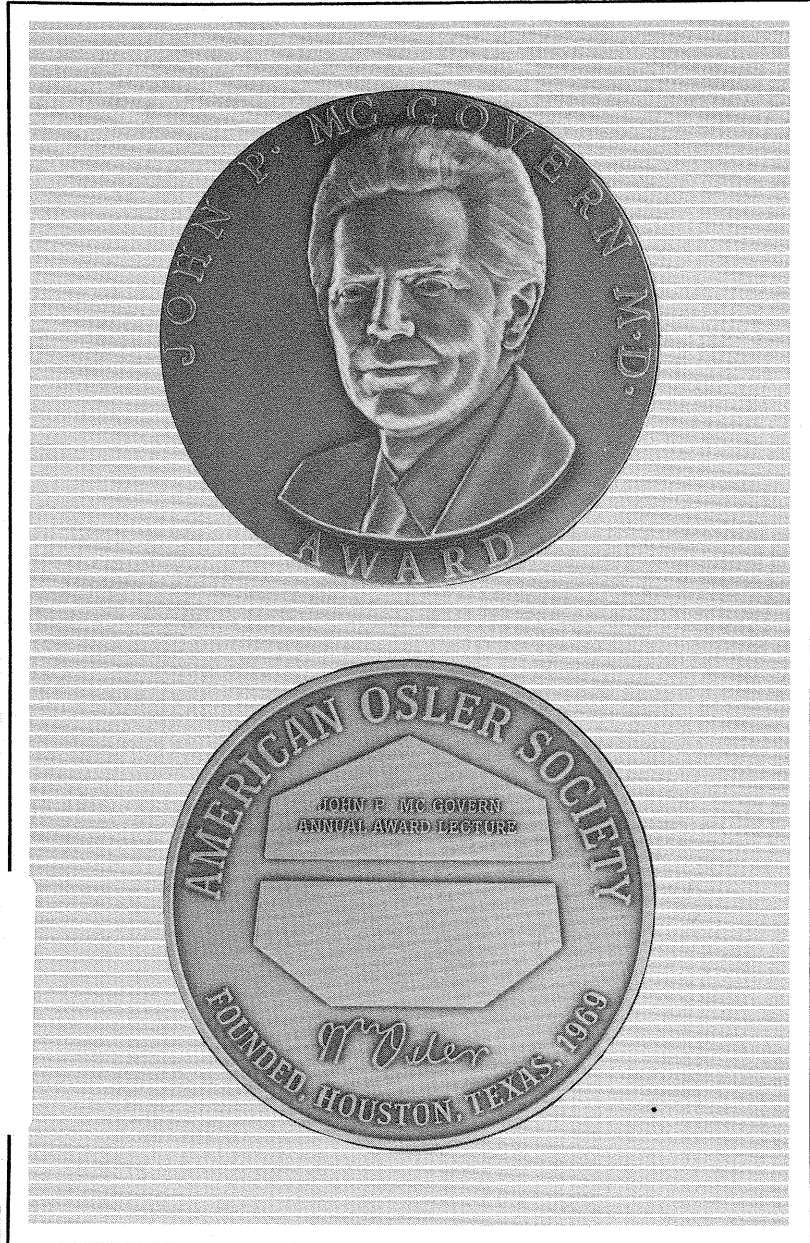
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American Osler Society, Inc. - John P. McGovern Award Lectureship

'THE LEAVEN OF SCIENCE'

OSLER AND MEDICAL RESEARCH

David Hamilton





AMERICAN OSLER SOCIETY, INC.

JOHN P. MCGOVERN AWARD LECTURESHIPS

1. *Our Lords, The Sick* presented by Albert R. Jonsen, Ph.D., April 12, 1986, in San Francisco, California.
2. *To Humane Medicine: Back Door or Front Door?* presented by Edward J. Huth, M.D., April 29, 1987, in Philadelphia, Pennsylvania.
3. *Medicine and the Comic Spirit* presented by Joanne Trautmann Banks, May 3, 1988, in New Orleans, Louisiana.
4. *The 'Open Arms' Reviving: Can we Rekindle the Osler Flame?* presented by Lord Walton, April 26, 1989, in Birmingham, Alabama.
5. *Rx: Hope* presented by E. A. Vastyan, May 8, 1990 in Baltimore, Maryland.
6. *Osler's Gamble and Ours: The Meanings of Contemporary History* presented by Daniel M. Fox, April 10, 1991, in New Orleans, Louisiana.
7. *From Doctor to Nurse with Love In a Molecular Age* presented by William C. Beck, March 26, 1992, in San Diego, California.
8. *The Heroic Physician In Literature: Can The Tradition Continue?* presented by Anne Hudson Jones, May 12, 1993, in Louisville, Kentucky.
9. *'The Leaven of Science': Osler and Medical Research* presented by David Hamilton, May 10, 1994, London and Oxford, England.

Cover—Obverse and reverse sides of John P. McGovern Award Lectureship commemorative medal which is presented to each annual lecturer.

The Ninth
JOHN P. MCGOVERN AWARD LECTURE



'THE LEAVEN OF SCIENCE'
OSLER AND MEDICAL RESEARCH

By

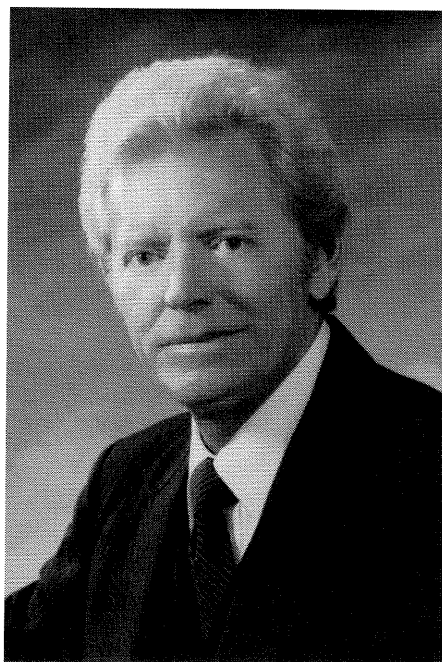
David Hamilton

INVERCLYDE ROYAL TRUST
GREENOCK, SCOTLAND



Delivered 10 May 1994
at the Twenty-Fourth Annual Meeting of the
AMERICAN OSLER SOCIETY
London and Oxford, England

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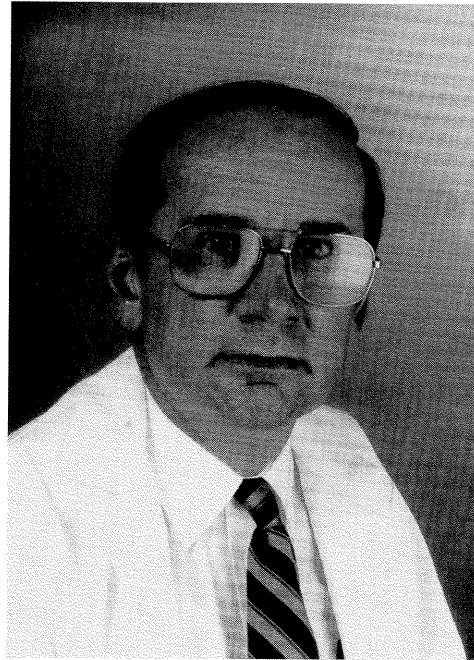


JOHN P. MCGOVERN, M.D.

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JOHN P. McGOVERN AWARD LECTURESHIP

THROUGH the generosity of the John P. McGovern Foundation to the American Osler Society, a John P. McGovern Award Lectureship was established in 1986. The lectureship makes possible an annual presentation of a paper dedicated to the general areas of Sir William Osler's interests in the interface between the humanities and the sciences – in particular, medicine, literature, philosophy, and history. The lectureship is awarded to a leader of wide reputation who is selected by a special committee of the Society and is especially significant in that it also stands as a commemoration of Doctor McGovern's own long-standing interest in and contributions to Osleriana.



DAVID HAMILTON

DAVID HAMILTON

David Hamilton trained in surgery including research in immunology under Sir Peter Medawar at Mill Hill, London. He was then surgeon at the Western Infirmary in Glasgow, with a special interest in organ transplantation.

In 1983/84 he spent time at the Wellcome Unit for the History of Medicine at Oxford, and after returning to Scotland became surgeon at the Accident Unit at Inverclyde Royal Hospital, Greenock.

In addition to his numerous scientific publications, he is author of *The Healers: A History of Medicine in Scotland* (1981), and *The Monkey Gland Affair* (1983) an account of testis transplantation in the 1920s. He is a book collector, and in addition to his holdings relevant to Scottish medicine and surgery, he has a large library of books on golf.

Mr. Hamilton runs his own private press - The Partick Press - which uses traditional letterpress printing. Under this imprint he prints and publishes his own writings on the history of golf in Scotland.

He lives in Kilmacolm with his wife and three children.



When we survey William Osler's remarkable abilities and acknowledge his skills as a clinician, author, teacher, historian, bibliophile and bibliographer there is however a moment's delay in adding 'researcher' to this list. But after this hesitation, we immediately recall his considerable list of publications, which are now sought individually. He spent time in the pathology laboratory, a place which at that time, was the powerhouse for medical innovation. Infectious disease was then dominant, as the headings for his textbook show, and the pathology/bacteriology laboratory was the center of research. His personal studies were rewarded by having left behind at least two eponymous diseases, and claims to a third.

Nor should we look to Osler or his contemporaries for any advance in therapeutics. His was a time of therapeutic stagnation. He himself pronounced that only iodine, iron, mercury, quinine, and digitalis were essential, adding cocaine later. There was little movement in the pharmacopoeia in his life time. It was still enough to be a naturalist, an observer of the experiments of nature, and Osler did this characteristically well. Perhaps it was his conviction that a man's best research days are over by the

age of forty, and his own pursuit of other matters thereafter, that make us forget his involvement when young in the pursuit of medical progress.

But there remains a nagging doubt. Here and there in his works Osler expresses some reservations about the role of medical research. What I would suggest to you to resolve this paradox is that while Osler did everything in his power to assist the progress of medicine, it was his view that there were limits to what research could achieve in the larger world. His view, I think was that the doctor's life's work was not one to be dominated by research, nor did he approve of some of those who did so. Research was to be a 'leaven' - an addition introduced into the mix of medical practice - but only needed in small quantities, and certainly not to be taken on its own.

Osler and Research

I propose to examine Osler's support of medical research. I will deal in detail with his period in Oxford from 1908, after leaving Hopkins, until his death in 1919. This will fit with your presence in England, and may illuminate, even for the most ardent students of Osler's career, some less well-known facets. There has been recent scholarly interest in the early support of medical research in the London hospitals, notably studies of the early academic teaching units in London, and in the early days of MRC - the British Medical Research Council, our equivalent of the NIH. It is fascinating to discover Osler's role in these events, a part played fairly inconspicuously, but as you will see a vital one.

Let us first demonstrate his commitment of medical research. It is easily done. After a visit to Germany, he saw what was possible and he wrote to August Hoch back at Hopkins in 1890:

The presence in every [German] medical center of a class of men devoted to scientific work gives a totally different aspect to professional aspiration. While with us - and in England - the young man may start with an ardent desire to devote his life to science, he is soon dragged into the mill of practice, and at forty years of age 'the guinea stamp' is on all of his work . . . we sadly miss the leaven which such a class would bring into our professional life.

This total commitment to medical science is striking, as is his apparent support of the full-time system, a controversy to which we will return. We can now follow Osler's links with medical science while in England.

Osler came to Oxford in 1905. At one level he declared that his great wish in life was to be close to the great libraries in Britain and to have *The [London] Times* on his breakfast table each morning. His first years were spent in pleasant uninvolvedness with wider matters. He continued to collect and buy and visit book shops and dealers. There were many pleasant chores - lectures to British Medical Association branches, worthy prize-givings, social visits to social gatherings such as the Cowes regatta, and jaunts to the Scottish Highlands to the castle of the Lovats at Inverness. Even public issues seemed ephemeral - he was involved briefly with a Royal Commission into the use of vivisection in research, but the anti-vivisectionist lobby failed to change established practice much and the matter dropped from public view.

New Challenges

But thereafter Osler slowly became drawn into the public events of the time. Close to home, the Oxford University Press had, surprisingly, no medical book list. Osler as a Regent to the Press encouraged such projects, and soon he and they had started what was to be one of the world's great medical journals - *The Quarterly Journal of Medicine*.

Another important issue of the time was dissatisfaction with health care in Britain. There was concern about the level of health of the ordinary people, not unconnected with the Boer War and the military defeat in South Africa, where the average British soldier was much inferior in physique to the enemy. The provision for health care was brought forward by Lloyd George's Liberal Government in 1911. Osler was not only a supporter of the Liberal Party but had spoken once at least at a political meeting, sharing the platform with a local candidate. It would have been quite in character for Osler to have advised the Government on this matter. I have no direct evidence for this, but one curious matter has the Osler stamp. In the legislation for health insurance there was particular emphasis on treatment and prevention of tuberculosis, a favorite of Osler's. This famous legislation, eventually to evolve to become our British National Health Service, was rushed and incomplete because of pressure of other events, and in this may have been the perfect opportunity for the opportunist Osler. Even more interesting is that in the section on the management of TB in the new health scheme, there is a provision for funding research into tuberculosis. This remarkable little bottom slice was to grow and grow. It was the first government money for any research, and was allowed to grow, eventually becoming the grant for a new Medical Research Council, responsible for the entire British bio-

medical research effort, then and now. I labor this point to suggest that not only did Osler have a hand in the beginnings of our health service, but if I am right, (and he wrote or inspired or induced Thomas Clifford Allbutt, Regius Professor at Cambridge, who was also an advisor to the government, to write the little section about his favourite disease), then Osler, also had a hand in the foundation of our Medical Research Council.

Important though this was, it was one other issue which was soon to have Osler back in the thick of medical matters and public debate, a matter which was much to his heart and was only brought to a completion shortly before his death. There was great discontent about the hospitals in London, not for the first time nor the last, as you will hear on your travels this week. There were too many hospitals, too many doctors, and the standards, particularly of teaching, could be poor. A great Royal Commission was set up, one of the last of these great Victorian investigations, and Osler was invited to give evidence to it. These commissions, now gone, were a notable part of British life, and allowed serious-minded persons to advise governments on important non-urgent matters. The publication of the Reports was also on a grand scale, since not only the detailed conclusions and proposals were printed, but the verbatim evidence was also published. Osler's experience in Canada and America were vital to the enquiry and he vigorously championed his view, based on the experience at Hopkins.

Osler gave his evidence in 1911, and prefaced it with his views as given in an article to the Northumberland and Durham Medical Society shortly before. The Commission then questioned him on these views. It is the only record of Osler speaking extempore. Not quite the only one: he gave similar evidence to the Commission on Vivisection, as Cushing noticed in his biography. Osler's prose is concise

and crisp, and not without humor. When asked about the obstacles to his scheme for the London hospitals, he had this exchange with the Chairman, Lord Haldane of Clone:

Haldane asks Osler

Q11.432. Now the next point I come to is the practical possibilities [of the London units].

How far is it practical?

Osler: I think there is only one difficulty.

Haldane: Money?

Osler: Money.

RCUE 1911

Osler's proposals were to reduce the number of teaching units in London and join them to the University, thus replacing the master/junior apprentice system prevailing at the time. His innovation was the salaried middle grade doctors and his scheme for these units was familiar from Hopkins.

Osler's 'University Unit', about 100 beds

-Head/Professor

-Senior Assistants (salaried, full-time)

-House Physician/Surgeon

-Out-patient Clinic Assistants

plus

-Laboratory Assistant/research

The units were to have about one hundred beds. The additions, the novelties for Britain, were the introduction of the salaried full-time assistants between the existing master and lowly pupil, and the introduction of the laboratory assistants. The crucial debate was about the role of the head of the department - the professor, We are perhaps

surprised that Osler did not propose full-time heads of the units, but instead part-time posts only - mornings only. Osler is associated with the full-time debate, but it is sometimes forgotten that he did not support early proposals for full-time heads of departments. I think this was an entirely pragmatic approach at the time. He often spoke of the 'Utopian idea' that a head of a unit could be found who would be happy taking a salary only. Osler knew that a successful doctor at that time would always be one sought out by rich clients, ready to pay the fees appropriate to their wealth, and Osler was pessimistic that a group of London doctors could be found to give up the chance of private practice and take full-time salaried positions. The situation in Germany was returned to time and time again. Carl Harko von Noorden in Vienna seems to have been the most popular specialist of the time.

Osler replies to Haldane:

11421. *Osler:* When a man gets a reputation such as von Noorden has had in recent years it is very difficult for him to be kept away from people who seek him.

Haldane: You have to reckon with the millionaires?

Osler: Yes. It [full-time work] is quite impossible.

Osler had a private reservation about full-time heads of departments in any case. He thought that after forty that personal innovation was declining, and that the head's role was in general supervision rather than executive action. Indeed we see that his hope for research lay in the under-forty; the hopes for London lay with the salaried assistants. The units were to be in five of the twelve London teaching

hospitals then existing, and all teaching and staffed by the apprentice system.

Medical and Surgical units

Board of Education proposals 1919/1920

St. Bartholomew's

St. Thomas's

University College

The London Hospital

The Royal Free

The Royal Commission finished its work and published in 1911. But the prospect of war prevented any further implementation of the proposals, and Osler had to await his chance.

World War I

But the War gave Osler a further set of opportunities touching on research and medical progress. The prospect of a war distressed Osler, and was to bring him personal tragedy, but he agreed it was a necessary one. He had hoped that such barbarism was being eliminated in civilized countries.

But it was a time of opportunity for him, He was ahead of his time and a great supporter of government initiatives. In an unguarded moment he blurted out:

[There is] in certain quarters an invincible prejudice against State aid. It is an academic obsession, peculiarly insular and Anglican. There are no grounds whatever for this distrust . . . in the field of infections practically all the first-class discoveries have been made by men in official harness, such as

Griffith Evans, [Patrick] Manson, [Ronald] Ross, [David] Bruce, [William Boog] Leishman and others. The debt of the profession is one-hundred fold greater to the Local Government Board for its researches in preventative medicine than to all our universities combined.

Osler RSM May 1918

In a nation at war, practical decisions need to be taken quickly by men of opinion and influence. Osler was in the inner councils of the establishment. We see his informal powerful circle - Lord Haldane, Sir George Newman, General Sir Alfred Keogh, and Sir Walter M. Fletcher, secretary of the now-growing Medical Research Council. He memoed and lobbied for schemes which were desirable in peacetime and would succeed in the war, and a remarkable number they were. I list them:

Osler Projects

Post-graduate Education
Army Medical Records
History of the War
Statistical Returns
Specialist Hospitals
Reform of London Medical Schools
Medical Research Council

The war offered remarkable opportunities. The collectivism of war places higher priority on the community and public good. The health of the ordinary members of the armed forces is a priority. The doctors in the military are salaried, practising without payment or fees on the basis of need. For the young doctors in World War I the need for post-graduate education was self-evident: large numbers

of young men were in the army medical services, and had unfamiliar problems to deal with - infectious diseases, and multiple trauma unseen in civilian life. The need for education above and beyond the student level was obvious. The presence of many North American units with time available and the challenge of the war gave the necessary environment. Osler organized much informal teaching during the war, and in 1919 set up the first meeting of the Post-graduate Medical Association. Another of Osler's projects was the keeping of good medical records, case studies which followed the military patient through different centers, though self-evident now, it was not then. War offers opportunities for study of disease over prolonged periods in the young, fit, and locatable. Follow-up of disease was uncommon in civilian society then, and here was the chance. Osler lobbied the army, and the now-growing MRC was able to fund this novelty. Civilian medical practice was to follow. He even managed to encourage preparation for a medical history of the war, even when the war was hardly started. He knew that Britain had done little or nothing in the way of compiling a medical history from earlier campaigns in the Crimea and South Africa. From his antiquarian interests, he was familiar with the remarkable medical history of the Civil War in America. He urged the War Office to set up a Medical History of the War, and the consulting editors were chosen with Osler himself involved.

Special Hospitals

Osler's unerring instinct for what would work led him to lobby for specialist hospitals. This topic had been a favorite with him earlier at the Royal Commission.

Osler to Haldane:

Q11.475. *Osler:* Several of the large Paris hospitals now assign certain wards to certain subjects; to stomach diseases and heart diseases.

Haldane: Your idea would be to have special clinics in each of those departments? It would seem to me at first blush to mean a very great rearrangement in the distribution of teaching in London.

Osler: Undoubtedly.

RCUE 1911

The medical profession's instinct was always to resist these subdivisions, but Osler saw opportunities in the war for specialist study of heart research and went for it, encouraging what was known then as the Mount Vernon Heart Hospital .

The War Office however, strongly discouraged any idea of setting apart hospitals for special complaints. It seemed hopeless, but finally Osler, Sir Thomas Clifford Allbutt, Sir James Mackenzie the cardiologist, and Sir Walter Morley Fletcher together bearded Keogh in his den; and 'this did the trick'.

Osler to Thayer 1916

We have started a big Army Heart Hospital [Hampstead]. Allbutt, Mackenzie and I have had the selection of staff and have been put in control as active consultants . . . [Thomas]

Lewis has one [clinic], [Sir John] Parkinson and [Jonathan C.] Meakins (of Montreal) the other and we hope to be able to get [Frances] Fraser for the 4th.

Hospital Reform

It was only at the end of the war that the earlier schemes for London hospitals resurfaced, and all concern moved towards implementing the Royal Commission proposals, namely medical and surgical units in selected hospitals, Osler now 70 years old, was unwell and perhaps aware that he had little time left.

Osler to Newman 1919

I had hoped to be able to come up tomorrow, but I am so hoarse that I think it would be safer not to. I have written to [Sir William S.] McCormick [University Grants Committee] urging that the committee approve of the immediate formation of clinical units at Bart's, the London, University College and St. Thomas's. The Royal Free people should also be encouraged to proceed at once.

Osler died shortly afterwards in December 1919. Most of his wartime schemes prospered after his death. Post-graduate education flourished, record keeping and follow-up of cases became the norm, The Medical Research Council grew and grew. But his main exploit failed - the establishment of proper medical and surgical units with research interests in London. The London Hospital Units faltered from the first. Some appointments were made, but some directors pulled out immediately. There were muddles

about money and control, and supporters like the MRC pulled out. The hospital units at the London teaching hospitals were almost all failures, and eventually dispersed. Only at University College did the desired type of Unit emerge under Thomas Lewis. But Lewis was an unusual man, and probably had enough private income to allow himself to be uninterested in medical practice. It was in Scotland and elsewhere that the university departments were to emerge and in London it was at Hammersmith, under Frances Fraser, one of Osler's heart men, that the first viable post-graduate departments and research hospitals arose.

The Aftermath

Osler's skills as negotiator and fixer were missed. Matters became even worse in the 1920s. The MRC turned against support of any medical research by the doctors. One of Osler's circle, Sir Walter Morley Fletcher, now Secretary of the MRC, brought in a strict policy to give funds entirely to support basic science, arguing that from that source only came future medical advances. The failure of the London units was used to justify this policy. This rift between the scientists and clinicians widened and became public. Lords Moynihan and Dawson, eminent clinicians, openly attacked the MRC in 1933, and the MRC retaliated in trying to thwart clinical research fund-raising, notably by the cancer charities.

The archives of the time show many bitter exchanges between the doctors and the scientists and MRC, in the struggle for the scarce resources. Fletcher attempted to prevent the setting up of the British Empire Cancer Campaign. He wrote that the research was too difficult for doctors:

a committee of eminent clinicians will be perfectly useless . . . If these men really want to help they ought to preach in season and out of season to their rich clients and to the general public the essential importance of maintained work along the line and not only in particular frontal attacks . . .

No one in the 1920s had emerged with Osler's skills; his diplomacy was sorely missed.

Going back to the original question of Osler's attitude to medical research, there is no doubt that he actively supported medical research and development and sought to set up mechanisms whereby the best teachers and researchers were encouraged and given their opportunity in their prime to use their talents. I think he considered that research was crucial, but had its limits. In his address 'The Leaven of Science', he pointed out that science could achieve much but had little impact on the eternal role of the doctor as a personal advisor. Nor, he thought, did science have much influence on the higher or lower achievements of the human race. By this he meant that in the matter of sense and sensibility and the arts, scientific advance changed little. He had a second reservation about the worship of scientific progress, it had not made much impact on the worse of human emotions, and did not in particular seem to soften the aggression of nations. Scientists in Germany had spoken out openly in favor of a war to come, and they had made the ghastly chemical weapons used. Science, Osler considered, had no influence on the best and worst of human endeavor.

In summary, Osler had high aims for the medical profession and indeed for mankind. For Osler, science within medicine was but a 'leaven' for the maturation of the

practice of medicine, but was not the main stuff. It was a useful addition, but not essential for the profession in its ancient and essential role - that of comforter, healer, and friend.

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