THE LEGACY OF RICHARD BURDON HALDANE
THE UNIVERSITY CLINICAL UNITS AND THEIR FUTURE

by

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Vice-Chancellor, Dean, Ladies and Gentlemen,

I am twice honoured today. Firstly I have been asked to declare the new Whitla Medical Building open. Secondly I have been invited to give this inaugural lecture.

When the Queen’s College of Belfast was established in 1848 there had already existed since 1810 the Belfast Academical Institution (Royal after 1831). The General Hospital had been built in Frederick Street in 1817, anatomy had teaching begun at Belfast Academical Institution (Inst.) in 1818, resident pupilships had started at the General Hospital in 1820, clinical lectures had started there in 1827 and an embryo Faculty of Medicine had been established at Inst. in 1835. So Queen’s started with a strong medical bias. Indeed in 1878, a quarter of a century after its foundation 51 per cent of its students were medical students, and even when I arrived in 1957 the idea that Queen’s was “a great Medical School with a University attached” still persisted.

At the beginning, as was usual in those days, the University staffed the preclinical departments. It was the physicians and surgeons of the General Hospital (later to be the Royal Victoria Hospital) and the Union Hospital (later to be the Belfast City Hospital) who were the clinical professors. They had their own practices, gave their time free to the hospital and worked as university clinical professors for a honorarium of £120 per annum. They were giants. In surgery, there was Alex Gordon who after 37 years in the chair was succeeded by John Sinclair who was also Professor of Surgery for 37 years. In Medicine there was Ferguson, Cumming (in the Chair 34 years) and Lindsay. In Obstetrics Burdon, Dill and Byers (33 years). The lectures in Medical Jurisprudence were given from 1848 to 1899, 51 years, by Prof. Hodges, the Professor of Agriculture—he was medically qualified but it does have a touch of the Guinness Book of Records about it.

To this distinguished professoriate came in 1890 at the age of 39 to the Chair in Materia Medica, William Whitla. The Chair had had three previous appointees. Thomas O’Meara was appointed in 1849 but resigned before the first session. H. A. Stewart was appointed aged 28. He was a surgeon at the General Hospital. He died nine years later of tuberculosis. J. S. Reid, Physician at the General Hospital and Medical Officer to the Belfast Union Fever Hospital was appointed in 1857. Although good no doubt on fevers, for cholera, typhoid and typhus were preva-
lent in Ireland at that time, he was an appallingly bad teacher. His classes were often in uproar, perhaps with some justification for one of his students later said "The hours spent attending the Materia Medica classes were the most inexpressibly dreary experience of my life".

The short dark portly Whitla had started his professional life as an apprentice in chemists' shops, first in his home town, Monaghan, and then with Wheeler and Whitaker, in Belfast, before qualifying at Queen's in 1873. He became a much beloved and a wise physician. He was knighted in 1902. He became an M.P., representing Queen's at Westminster, in 1919. Whitla brought new life and vigour to the Chair of Materia Medica. He was a brilliant lecturer. He was such a dramatic storyteller that he might have been an actor, and he was a great lover of the stage especially Shakespeare. To help his students (and himself) he wrote and published a great text book 'Materia Medica and Therapeutics'. It was to run through twelve editions and it was with the proceeds that he built, furnished and presented to the Ulster Medical Society the Whitla Medical Institute in College Square North.

Whitla wrote another famous book, his 'Dictionary of Treatment'. It was published simultaneously in the United Kingdom and the United States and the 8000 copies of the first edition in the U.K. sold so rapidly that 2000 copies had to be imported from the States. The Chinese edition was much prized by the author.

The Queen's Colleges when Whitla was appointed were not popular in Ireland. Let me remind you that Queen's was born in tempestuous times. In the 1830's and 1840's Ireland was, as always, troublesome and when Robert Peel took office in 1841 he and his home secretary tried to conciliate and solve some of the unhappy problems of the times by appointing a Commission on Land Tenure, and by establishing the Queen's Colleges at Cork, Galway (they looked at Limerick first) and Belfast. They were to be open to students of all persuasions and the idea was denounced by Peel's opponents as 'a gigantic scheme of godless education' which 'panders to everlasting damnation'. At the time Whitla was appointed the Colleges were still regarded as something patronisingly imposed by Peel and the English. In Belfast there was so little local and civic support that in 1901 President Hamilton created the 'Better Equipment Fund'. He did this not only to get funds but also to stimulate interest and concern for Queen's in the community and influential citizens were asked to sit on this committee with professors. Financially the appeal was only moderately successful. It took four years to reach £27,000, but included in that was £5,000 from Sir James Musgrave to endow the Chair of Pathology. Indeed Queen's was for many years the most financially poor university in the United Kingdom for it did not attract from the great industrial and commercial families of Northern Ireland the generous endowments which their contemporaries in English cities gave to other British Universities. There were, (and I am referring to the times up to 1946 when U.G.C. support first came to Queen's) only three major bequests. Henry Musgrave, who had endowed a Chair in Spanish in 1920, left £57,000 when he died a few years later. J. C. White a former Lord Mayor left £60,000, and Sir William Whitla when he died in 1933 left his house, Lennoxvale, and £35,000 to the University. His fortune, it is believed, was due to judicious investment in Burmah Oil at a time when his
contemporaries were naively investing in the County Down Railway Company, which was laying down 5' 6" guage lines for an express to run from Belfast to Ballnahinch!

It is therefore very right and proper that Queen's should honour the memory of Sir William Whitla by naming the Whitla Medical Building after him. It is a pleasure too, to record that Queen's has now honoured its promise to the Ulster Medical Society by including in the building accommodation for the Society for which Sir William in his time did so much. The Ulster Medical Society was founded in 1862 by the fusion of the Belfast Medical Society (founded 1806) and the Belfast Clinical and Pathological Society (founded 1853). The history of the Society has been recorded by Dr. Strain, and Professor D. A. D. Montgomery in his notable Presidential address last year gave an outline of the way in which it has enriched the intellectual life of the medical profession in Northern Ireland; I am sure that I speak for you all when I wish the Society an active, happy and long life in its new home.

The new building is to house the University Clinical Units of Therapeutics, Geriatrics, Oncology, Mental Health and Anaesthetics, so that it is appropriate that I should now pick up the main theme of my lecture. I wish to outline the development of university clinical units, give you my assessment of their achievements, discuss their difficulties and indicate how I believe they should develop in the future.

**The Haldane Commission**

On 24th February 1909 Edward VII entrusted 'our right trusty and beloved Councillor Richard Burden Haldane, Principle Secretary of State for War' and seven others with the Commission "to enquire into the working of the present organisation of the University of London". There is no need for me to rehearse the problems of London University at the turn of the century. It was a conglomorate of colleges and institutes of variable calibre, the University had no control on the quality of teachers appointed and there was in its Senate conflict between incompatible ideas of what constituted a university—some believing that training in a university under university teachers was the essence of university education, others that it sufficed if a university laid down a syllabus and gave its degrees on the results of examinations. I am concerned with the evidence given to the Commission about medical education in London, by Professor Starling, Abraham Flexner and Sir William Osler. All these three accepted that a university ought to be somewhere that learning takes place in an environment of research.

Professor Starling explained that in London, as here in Belfast, the medical schools were older than the university. They had grown up in the large hospitals of the metropolis with the physicians and surgeons teaching young men who walked the wards. In the second half of the nineteenth century, when it became clear that a doctor needed a grounding in chemistry and a competence in anatomy and physiology, appropriate teachers of chemistry, physiology and other subjects were employed as servants of the medical school to teach these subjects to their
students. The operative word is servants. They had little to say in the general programme of education, they were not treated as equals by the clinicians and there was no interplay between their scientific discipline and clinical medicine.

Abraham Flexner fresh from producing comprehensive reports of medical education in the United States of America, Canada and Europe criticised the clinicians. "No progress has been made of formulating the concept of a clinician in the sense of a pathologist or a physiologist". "Just because a man is an accomplished physician he is not necessarily a teacher". "He has no interaction with fundamental scientists and he lacks the time and training to bring to bear on a clinical problem, the artillery the chemists and the pharmacologists are forging". "Their hospitals may be well designed for the care of the sick but laboratories need to be extended and their staff reorganised if they are to give an education of university standard". Flexner's solution was to create a university hospital staffed with scientific clinicians devoted to teaching and research.

Sir William Osler agreed with these criticisms but said to the Commission "The problem is how to place a dozen or more teachers in every medical school in the same relationship to the University as a Professor of Physics or Physiology". Osler's solution was for the university to create university clinical units of medicine, surgery and obstetrics. He approved highly of the successful English apprentice system of clerking and dressing and explained how he had introduced this to Johns Hopkins Hospital, amalgamating what he thought best of the British and German educational systems. "The professor of clinical medicine is not a mere theorist any more than other men of science are. His science is the natural history of disease. The experiments he observes in the first instance are nature's experiments exemplified in the patients in his wards".

The Haldane Commission was profoundly impressed by this evidence and it recommended the establishment of university clinical units in three medical schools which were to be an integral part of London University and not merely affiliated colleges. In the event nothing happened, for a few months later "the lamps were going out all over Europe".

**University Clinical Units**

After the war the first university clinical units—a Chair of Medicine and a Chair of Surgery were created not in London, but at the newly founded Welsh National School of Medicine (Professors Kennedy and Sheen). Progress elsewhere was slow. Not only was it difficult to create chairs and insinuate them into long established medical schools, but suitably qualified men to take the chairs were hard to come by. Table I shows that by 1943, 30 years after Haldane's Report, there were in Britain still only 16 full time university clinical chairs. The Goodenough Report (1944) was given strong evidence in support of university clinical units by the staff of University College Hospital and by Sir Thomas Lewis—and indeed the Report was colloquially known as 'The gospel according to Gower Street'. As a result in the 25 years since the war, university clinical units have been established in all medical schools, London however lagging behind provincial schools. Here in Belfast, Professor Macafee was appointed to the
Chair in Obstetrics in 1945, Harold Rodgers to the Chair in Surgery in 1947, Graham Bull to Medicine in 1951. Queen’s was one of the first to establish a full time clinical university unit in Therapeutics, when I was appointed in 1957.

This remarkable British innovation of putting university clinical units into teaching hospitals where they work alongside non-university physicians and surgeons has worked in general with success—but the success has varied from school to school, and within a school from discipline to discipline. All who have worked in university clinical units are aware of their advantages and disadvantages.

**Advantages of University Clinical Units**

The first and greatest advantage in my personal opinion—and I have worked in a non-university research institute and I have visited hospitals in other countries established primarily for research—is that it has ensured that those who work in university clinical units have remained as deeply concerned as any other physicians working in the hospital about their patients—about the relief of suffering, about compassion and the relief of those who are “dis-eased”. Every clinical professor knows that the standing of his unit in his hospital depends on maintaining the highest standards of patient care and that long after our students have forgotten what we teach them—they remember our attitudes.

Secondly British university medical students have been able to continue to receive the benefits of medical clerking and surgical dressing that bring them close to patients. This they get from the non-university physicians and surgeons of the teaching hospital. The university clinical units although they can contribute to this, can never alone supply it.
Thirdly the work of the hospitals has benefited. There is no doubt that the ubiquitous presence of intelligent, alert, usually very critical medical students watching everything as we do, listening to everything we say, watching the reactions of our patients and their relatives, is a major factor in maintaining the quality of clinical practice. I for one would rather be seriously ill in a British teaching hospital than in any other hospital in the world.

There is a fourth advantage, hidden but important to the university. The system is much cheaper than running a university hospital.

*The Disadvantages of University Clinical Units*

Wherever university clinical units have been established there has been conflict, misunderstanding and resentment of varying degrees in three areas.

First, the physicians and surgeons of the teaching hospitals (the N.H.S. staff since 1948) have understandably been jealous of the university clinical units which have had, or used to have, more medical staff, more junior staff, more technicians, more secretaries, better laboratory facilities and better research opportunities than did N.H.S. units. Their staff had greater opportunity to achieve professional fame and more likelihood of appointment to national committees, although that is a dubious virtue.

Secondly, the staff of university clinical units have often felt they were not received as generously as they should have been and that their hospital colleagues did not appreciate that:

1) They have to maintain a clinical service of the same standard as the rest of the hospital.

2) They have to take the brunt of routine systemic teaching in their discipline and usually have to organise clinical teaching, which may be no easy task these days with a yearly intake of 160 students and 500 clinical students on the campus at any one time.

3) They have a duty to the University of prosecuting research and often of training non-medical as well as medical graduates for Ph.D. or M.Sc. degrees.

4) They have the obligation of managing and budgeting for their unit—academic staff, technicians, animal house staff, work shop staff, secretaries, and of purchasing capital equipment and expendables— with a budget which in a big unit may exceed £100,000. This is a chore which very few of our N.H.S. clinical colleagues have to bear.

Thirdly, there is often friction between university clinical units and the rest of the University. I remember many years ago my uncle making a scathing comment about a local business man, scion, apparently, of a well known Cardiff family. According to uncle his parentage was doubtful, he had been brought up in bad company and although called a gentleman, the only justification for this title was that it allowed him to enter the appropriate public convenience. That sums
up neatly the view only too often held, if not expressed, by the rest of a university about its faculty of medicine and especially its clinical units. To them the medical faculty is of doubtful scientific heritage, its occupation sordid, its education lacking in true scholarship and, worst of all, its clinical units expensive.

The medical faculty frequently finds that its problems are not understood by the rest of the university, and indeed it sometimes pays to keep it that way! The lack of insight of the other faculties would not matter except that the medical faculty has to fight it out with them to get its share of the U.G.C. money.

Despite these difficulties, the university clinical units, this remarkable innovation of the Haldane Commission, have made a major contribution to medical education in Britain, and also to medicine, for when they were first established these units did much to bring modern scientific methods to clinical medicine.

The Future of the University Clinical Units

Changes that have occurred in recent years

As I see it a number of important changes have occurred in the last thirty years.

1. The number of medical students has increased: instead of 60 it is now 160 or more who enter each medical school yearly.

2. The number of departments and specialities in a medical school and its teaching hospital—university departments and non-university departments—has increased. There may be 10 to 12 non-clinical departments (Table II) usually university departments and 15 to 20 clinical departments some

3. It is increasingly difficult to distinguish the university clinical units and the N.H.S. clinical units. The medical staff of both are now well versed in scientific method and they all strive not only to practice medicine but to
**TABLE III**

MEDICAL SCHOOL DEPARTMENTS  
CLINICAL — N. H. S. AND UNIVERSITY

| Medical School Department       | Paediatrics       | Geriatrics       |
|--------------------------------|-------------------|------------------|
| Clinical N.H.S. and University  | Obstetrics & Gynaecology | Surgery         |
| Medicine                        |                   |                  |
| Therapeutics                    |                   |                  |
| Neurology                       |                   |                  |
| Cardiology                      |                   |                  |
| Gastroenterolog                 |                   |                  |
| Nuclear Medicine                |                   |                  |
| Venereology                     |                   |                  |
| Endocrinology                   |                   |                  |
| Anaesthetics                    |                   |                  |
| Industrial Health               |                   |                  |
| Dermatology                     |                   | Psychiatry       |

advance it. I know that in Birmingham I am proud to have around me N.H.S. staff whose work and research is of international repute. The same happy state of affairs is true here in Belfast.

4. All major hospitals have become teaching hospitals. They teach their own junior staff. They make a major contribution to graduate education and, in Birmingham, they take our senior students as student house officers and give them excellent clinical experience.

5. Graduate education has been revolutionised. All graduates now have to work for a year in pre-registration house officers posts. Whatever career they wish to follow further training is demanded under the supervision of the Joint Committee for Higher Medical Training and its Specialist Advisory Committees.

*The new requirements of medical education*

It follows that the requirements of undergraduate medical education have changed. Medical faculties have paid lip service to this. They say that they do not now have to produce at graduation "the safe practising doctor" which was their aim in the nineteenth century. But their behaviour has not changed. It is still usual for students to be given a comprehensive but superficial and didactic training with transient contact with many if not most of the specialised departments shown in Tables II and III.

The aims of undergraduate education were well set out in the Todd Report 1968. They are to:

1. Demonstrate the application of science to medical practice.
2. Review modern knowledge of disease, its prevention and management.
3. Indicate future developments.
4. Give the student the opportunity to learn:
   Sound clinical methods
   The principals of treatment
   Correct attitudes to patients
   The ethics of medicine.

What the medical faculty now needs to do is to concentrate on principles. It is learning by students which matters not teaching—and our students need more time for reflection and discussion. More time needs to be given to criticising their thinking, their writing and their arguing. This is what is meant by university education. They should be learning in an environment of research. They do not all need the same comprehensive but superficial training. They need an opportunity to work in depth in a part of modern medicine and there is no reason why they should not be able to choose from a wide variety of options which the departments and specialities of a modern medical school and hospital are well able to offer.

The new organisation needed

I believe the faculty of medicine should take the control of undergraduate medical education away from Departments. It should be in the hands of a separate body—a School of Undergraduate Medical Education—with its own director and sub-directors who would be drawn in rotation from the staff of the various departments in the medical school. If I had to express any preference I would suggest as sub-directors a physiologist, a pathologist and a physician as being the three types of teachers whom I believe would build a medical education that was appropriate.

The new course needed

This school should organise a course which is unhurried, which ignores the primitive departmental wish to teach its own discipline, which gives ample time for self teaching and library work and which uses modern programmed learning techniques. This course must still give the student the clerking and dressing which Osler held in such high regard and, incidentally, in Birmingham now in the final year we have no systematic teaching at all but the clinical dressing and clerking of the earlier clinical years is supplemented by five ten-week periods of student house officer-ship.

I would like to see less superficial didactic teaching. Instead every student should be given more opportunity to work in depth. I would like students to work in depth by taking optional courses. Each year a student might be expected to complete some 12-15 options, clinical, scientific, epidemiological or laboratory based. There should be a large range of options from which to choose. No two students would do the same options. Some might be big options, the neuroanatomy of the midbrain for one day a week for three terms. Some might be small: one day a week for one term on bone growth or controlled therapeutic trials, the social problems of the aged or the life and times of the gonococcus. A few options should be non-medical, such as ‘The Twentieth Century Novel’, ‘Beethoven’s symphonies’ or ‘The nonsense of Teilhard de Chardin’.
The new organisation of the faculty

If a course of this sort is to be organised not by departments but by a school of undergraduate medical education then the faculty would have to be reorganised as it is shown in the Figure.

The Future Duties of Departments

This brings me to the future of departments and especially of the university clinical units. I do not see these changing greatly but I see important changes in emphasis. Their duties would be threefold:

1. Teaching
   a) They will contribute as requested by the School of Undergraduate Medicine in any common core course.
   b) They will teach small groups of students who come to the department to do options. Here they will teach in depth and staff from more than one department may contribute to the option.
   c) They will continue to train postgraduates and especially those who wish to prosecute research or intend to be teachers.

2. Clinical Service
   This is essential for the staff of clinical units, like medical students, wish to be doctors. The clinical duties must however not be too extensive so that the other duties of these clinical units can be undertaken.

3. Research
   Here it is important that university clinical units do not duplicate the sort of research which NHS units now do so well. I want to see the university clinical units making innovations and exploiting their unique position in the university in a way which we do not do at present.
a) By putting much more effort into interdisciplinary research such as:
   Pharmacology/genetics
   Biochemistry/cardiac muscle metabolism
   Endocrinology/immunology

b) Even more important—and even more neglected—by putting effort into inter-faculty research. The present boundaries of the faculty structure of a university need to be breached to bring to bear on medical problems the expertise in other faculties: in chemistry, economics, physics, psychology, engineering, transportation.

   My thesis is that university clinical departments would take on two new duties which are of the very essence of university life

1) Teaching and discussing current problems in depth with small groups of young men doing their options.

2) Developing a type of research which it is difficult if not often impossible for NHS units in hospitals to initiate and which would exploit their unique position inside the university.

CONCLUSION

I have in this lecture looked back into the past at the development of medicine as a University discipline and at the relationships between a medical school and its teaching hospital. I did this so that we might together look at the development of university clinical units, their achievements, their difficulties and how they may develop in the future.

Whatever the future holds it is my conviction that the medical school must aim at the university ideal which is ‘education in an environment of research’. Only if this is done can we train young people to handle not only the problems of today but the problems as yet unforeseen of the morrow. This was the vision of Richard Burdon Haldane. You do not need to be the Secretary of State for War to have such a vision. Similar visions have been seen by those who served on the Good-enough Committee, and the Todd Commission. It is in my opinion time that we listened to a message that was first given 63 years ago.

REFERENCE

Royal Commission (1910-1913) on University Education in London. Cd. 5911, 6717 and 6718. H.M.S.O. London.