Ian Campbell Roddie
1928–2011
Ian Roddie was Chairman of the Committee of The Physiological Society from 1986 to 1988, a Sherrington Lecturer and an Honorary Member from 1998.

His introduction to physiology came in the second year of his medical studies and was strengthened when he took an intercalated BSc in Physiology (First class honours, 1950) in the early years of David Greenfield’s outstanding contribution as head of Physiology in Queen’s University, Belfast. After qualification he returned to Physiology, working under David Greenfield in the actively advancing field of human circulatory physiology to obtain an MD with gold medal (1957), and just five years later DSc. When Professor Greenfield vacated the chair in 1964, it was a natural progression for Ian to become Dunville Professor of Physiology at Queen’s at the age of 35.

Ian led research in three major areas related to the circulation – effects of mental stress, thermoregulation and circulation of lymph. The papers he published (largely in The Journal of Physiology) were classics which are still widely quoted some 50 years later.

The stimuli for mental stress were originally ingenious and tailored to be alarming to the individual subject. When the Head of Department (democratically) volunteered to be a subject, there were background mutterings at the appropriate moment of a fire that had just broken out in an adjoining room. However, in due course it was found that a series of questions in mental arithmetic produced similar physiological responses and this sanitized version was subsequently used over the years. It was so reliable that it could be demonstrated to a random volunteer in a class tutorial about venous occlusion plethysmography.

The studies on thermoregulation included assessment of sweating by having subjects lie on a couch whose weight (together with that of the subject) was constantly and extremely accurately recorded. In thermoneutral conditions the record showed a steady small loss of weight due largely to insensible loss of water from lungs and skin. With active sweating induced by heating, or by mental stress, the rate of loss of weight increased markedly and the effects could be studied in relation to their physiological control mechanisms.

The circulation of lymph was studied in both isolated lymphatics and in vivo. It was shown clearly that lymphatics with their multiple valves behave like multi-chambered hearts, sucking in tissue fluid and pumping it proximally towards the neck veins.

All this work was shared not only with junior colleagues working for a doctoral degree, but also with many medical, dental and science undergraduates whom he provided with original research projects in their final honours BSc year. The talented, meticulous, fundamental, but ‘fun’ approach to research spilled over into day-to-day lectures to undergraduates, who greatly appreciated his lucid, no-nonsense communication of principles which would stand them in good stead in subsequent professional careers. Ian’s involvement in basic physiological education was also reflected in his contribution to textbooks and a multiple choice publication which ran to six editions from 1971 to 2004. In collaborating with him in this (from the days when original hand-written texts would be laboriously typed and retyped by secretaries to later international email exchanges) it was very satisfying to argue the merits of sentence A versus sentence B and end up with a much better and briefer sentence C.

Ian’s scientific precision was also much in demand for administrative posts, including Dean of the Faculty of Medicine and Pro Vice Chancellor at Queen’s University, Belfast, and member of the General Medical Council, the General Dental Council and the Medical Research Council. He took a keen interest in separating the precious metal from the dross in the changing fashions of educational methods and assessments, and was external examiner in many universities in the British Isles and abroad. He examined for many years in the Fellowship examinations of the Royal Colleges of Surgeons.

After retiring early from Queen’s, he spent further years abroad, initially as Visiting Professor at the Chinese University of Hong Kong and then as Medical Director and Head of Medical Education in Jeddah. Latterly his influence extended worldwide, particularly in developing countries, when he advised the World Bank, the Asian Development Bank and various governments and institutions in some 30 countries, from Guatemala to Vietnam, and from Poland to South Africa.

His many contributions were recognized nationally when he became Commander of the Order of the British Empire.

He took great delight in his family, who were particularly supportive of him in his final months battling prostatic cancer. Typically, at this stage he sent a final ‘circular email letter’ to friends, informing us that his condition had now reached the palliative stage. In true physiological fashion he described objectively the effects, and positive aspects, of the various features of his illness and how he coped. He referred particularly to the support of family and it was good that they were able to be present as he passed peacefully away.

I would like to thank his daughter Mary for copies of his CV and publications, including some 70 original research articles, and for the photo; also Professor Mike Joyner of the Mayo Clinic for a transatlantic perspective.

William F. M. Wallace
Professor Emeritus of Applied Physiology, Belfast