RICHARD SAUNDERS
MD(Edin), MB, ChB(Edin), FRMS

Dr Richard Lorraine de Chasteney Holbourne Saunders died December 21, 1995 at his home in West Jeddore, Nova Scotia. He was predeceased by his wife, Dr Sarah Cameron (Moya). Both had roots in the Highlands of Scotland. Richard was born to Col F A Saunders FRCS and Mrs Lucy Saunders (née Meiklejohn), on the 29th of May, 1908, at Grahamstown, Cape Province, Union of South Africa. He received his undergraduate education there. His medical education began at Rhodes University, after which he attended Edinburgh University, graduating in 1932 with MB, ChB. He earned a postgraduate degree of MD for work on Spina Bifida in 1940.

He came to Canada in 1937, and was appointed Associate Professor of Anatomy at Dalhousie under Professor D Mainland. He was promoted to Assistant Professor of Anatomy in 1942 and in 1947 was made Director of the Department of Medical Museums. He was then appointed Professor of Pathological Anatomy in 1948 and in 1949 he became Campbell Professor Anatomy and Head of the Department of Anatomy. [He was elected FRSE in 1946.]

He was a warm, friendly and extremely talented teacher. He could 'turn his hand' to all sorts of activities and could hold the attention of an audience. He was an artist with chalk and was ambidextrous, a most useful attribute for orienting students to the many paired structures of the human body. He was not pompous. If the audience was diverted from his narrative, the students' attention might be regained by an unannounced demonstration of sleight of hand. On social occasions he might favour his friends with a description of a foreign country illustrated with a photographic colour slide. An accomplished painter in oils and watercolours, he was a former member of the board of governors of the Nova Scotia College of Art. He founded the Anatomy Museum situated in the Tupper Building which bears his name and built up the Physiology Museum at Dalhousie. He designed the Dalhousie Mace and Coat of Arms and was consultant for the revised Nova Scotia Anatomy Act and the Human Tissue Act of 1964. He received international acclaim for his pioneering work on the medical, especially neurological, applications of X-ray and electron microscopy. His research in this field was undertaken at Dalhousie and at Cavendish Laboratory, University of Cambridge, England, the Montreal Neurological Institute, Instituto Rocha Cabral, Lisbon, Portugal, Radcliffe Infirmary, Oxford, England and Bowman-Grey Medical School, Winston, NC. He was, most recently, consultant in multifocal radiology for the cerebro-vascular project of the National Institutes of Health, Washington, DC.

He had to build an anatomy department from the ground up and this required pragmatic solutions to problems ranging from walls and floors in desperate need of paint to prevention of deterioration of cadavers. He saw how Anatomy could be taught by the application of the latest technological developments. Indeed his interest in new applications became the centre of his research. For example, in 1946, help from the Mackle Foundation allowed the introduction of standard radiographic equipment into the Anatomy Department. In 1954 he introduced contact microradiology to the University. In 1953 he worked in England with a Nuffield grant, on fine focus X-ray tubes. In 1956-57 he was at Cambridge University to assist in the building and testing of an X-ray microscope. In 1958, he reported on the value of low resolution electron microscopy. In 1959, he was determining the value of high resolution electron microscopy. 1965 found him studying high voltage X-ray for projection microscopy. In 1968, he introduced scanning electron microscopy to Dalhousie under a Federal health grant. His articles appeared in the best medical journals and he contributed chapters in anatomical texts.

In 1967, he capped his achievements in X-ray investigations with a presentation to the Canadian Symposium on Applied Spectroscopy. The title was *Studies with a New High Voltage X-ray Microscope (XMPJ) Coupled to an X-Ray Sensitive Vidicon*. Historically, problems facing the experimenter included (a) limited knowledge of deep microscopic intracranial blood vessels because histological sections destroyed the vessel integrity and (b) direct observation by optical microscopy was limited because of the short depth of focus of these devices. These problems were partially overcome by a low voltage X-ray microscope, but it was incapable of penetrating denser tissues. His proposed solution was to build a high voltage microscope (50-60 KV) with a multi-element system transmission target (anode).

He was successful in building the complex device he required and found that he could demonstrate very small blood vessels by combining direct X-ray magnification and electronic magnification. Detecting the X-ray images with an X-ray sensitive television camera was another major accomplishment. His ability to produce three dimensional images by the use of stereoscopy did not only produce information about the vascular structure, but showed the vessels in relation to one another - 'early virtual reality'. His ability to produce these images in very brief exposure times enabled him to study vessel characteristics in both dead and live samples.

Surviving is his son, Alastair Corston de Cusance Maxwell, Dartmouth.

J F L WOODBURY

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