ALEXANDER STUART DOUGLAS

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Professor Stuart Douglas, Physician, Scientist and Haematologist died on 15 November aged 77 years. He was born in Elgin on 2 October 1921.

He achieved international acclaim for his work in elucidating the mechanisms of normal blood coagulation, the causation of abnormal bleeding and the various abnormalities which cause thrombosis. He played a key role in Medical Research Council committees which investigated the value of anticoagulants in preventing the recurrence of myocardial infarction and later with the Maryland Medical Research Institute where he investigated the role of antiplatelet agents in the prevention of recurrence of stroke and myocardial infarction. This work set the scene for modern management of these problems.

Alexander Stuart Douglas was from a humble crofting background and was educated at Elgin Academy and then at Glasgow University - graduating BSc (1941) and MB ChB (with commendation) 1944. After his training positions in medicine and surgery, he served in the Royal Army Medical Corps (1945 - 1948) mainly in Palestine during a period of civil unrest. He was promoted to the rank of Major and "Mentioned in Despatches".

His interest in blood coagulation began in 1951 when he won a Medical Research Council Fellowship to work at the Blood Coagulation Research Unit in Oxford in collaboration with Dr R G Macfarlane (later Professor and FRS) and Dr Rosemary Biggs. Here he developed a test to further elucidate the complex mechanisms of the normal pathways of blood coagulation (the thromboplastin generation test). This resulted in the finding that "haemophilia" could Be divided into two distinct types. The second type was called Christmas disease after the first patient (the publication was in the Christmas issue of the *Lancet*, which confused many people!).

On return to Glasgow in 1953, he became a lecturer in medicine with Professor L J Davies and subsequently with Professor E McGirr. He then continued his interest in general medicine in which he took an equal share with his NHS colleagues. He developed a reputation as an "early bird" and many junior staff were caught out by his early morning rounds which were conducted with meticulous attention to clinical detail - no stone was left unturned. During this time he built up the specialty of clinical haematology which gradually extended into a laboratory base with the growing technical advances in blood cell processing. Many trainee haematologists went through this system and now run haematology laboratories and clinical services around the world.

His first love however was in the highly specialised research area of blood coagulation. He established and ran a clinical and diagnostic service for patients with bleeding disorders (haemophilia, Christmas disease and von Willebrand's disease). He was in great demand from colleagues who were extremely challenged by patients bleeding in their wards. Often he was able to sort these out by reference to the family history as he had an encyclopaedic knowledge of the family trees of "his" bleeders. He kept meticulous notes of all patients he saw and investigated - many with undefined abnormalities in the coagulation mechanism. Nothing pleased him more than when an advance in coagulation knowledge could be applied to "his" families in retrospect.

These were exciting times in the evolution of knowledge of haemophilia treatment as the availability of plasma concentrates of factors 8 and 9 became a clinical reality. The availability and the possibility of making factor 8 concentrates locally came about with the development of the "cryoprecipitation" method. In an early experiment, Dr John Davidson and I bled each other of a pint of blood - made the cryoprecipitates - mixed them and infused the "soup" into a moderately affected haemophilic patient requiring removal of a toenail. No bleeding at all was recorded after surgery. From such small beginnings evolved the concept of comprehensive haemophilia care in which Smart Douglas played a central role.

The second area in which he was deeply involved was with inhibitors of fibrinolysis - the mechanism by which the haemostatic plug is digested. He argued correctly that such therapy would alter the balance of clot formation/dissolution in haemophilia. As a result of his work, antifibrinolytics such as aminocaproic acid and tranexamic acid became standard therapy following dental extraction in haemophilia and this is now the accepted international clinical practice.

The other major area of research, both clinical and laboratory, was into the causes and treatment of thrombolysis. In this he worked with the multi-talented George MacNicol whose special interest was in the development of agents to activate the process of thrombolysis. In the early 1960s, our attempts to show the benefit of thrombolysis following acute myocardial infarction came to nothing as therapy was given too late. This was an exciting time for the team and laid the foundations of modern therapy for heart and stroke disease.

By his own admission one of the most exciting periods of his life was a secondment in 1965 to set up the new Faculty of Medicine in Nairobi. That this was achieved is a lasting tribute to his zeal and diligence. He overcame unbelievable hurdles of downright opposition, distrust, jealousy and antagonism to make it work, to get a teaching programme underway to an equivalent UK standard and to start a research base with Graham Turpie (now Professor of Medicine in McMaster University, Ontario, Canada) and myself as the research trainees. A series of quality clinical and laboratory papers were subsequently produced from this small beginning.

On becoming Regius Professor in Aberdeen in 1970, he not only continued his work on bleeding and thrombosis but with great foresight encouraged research and development in the study of "Offshore Medicine" with the establishment of an

Institute of Environmental and Offshore Medicine of which he was a Director. His work was recognised by the award of Fellowship of the three Royal Colleges of Physicians (Glasgow, Edinburgh, London), Fellowship of the American College of Physicians, Fellowship of the Royal Society of Edinburgh (1993) and uniquely by Membership of the American Association of Physicians. Even in his retirement from his Chair in 1985, his love of research continued and he was to be found every day in the University working on his new interest of the seasonality of various medical conditions. He published 23 peer-reviewed papers on this topic and wrote the definitive textbook *Seasonal Variations in Health and Disease* with Dr T M Allan.

He was a man of great modesty and always played down his achievements and accomplishments. He was well-liked and respected as a scientist and clinician. He took a particular interest in training young scientists and clinicians and his lasting memorial is the large number of "his" young men and women who now occupy senior academic and clinical positions round the world.

He is survived by his wife Christine, two children and three grandchildren.

CHARLES D FORBES