

FRANK ALEXANDER
PhD, DSc, MRCVS, FRCVPT

Frank Alexander was born on 18 March 1917, the son of Sydney Alexander, in Newtown, New Mills Cheshire, England, and attended Furness Vale Primary school, and then Buxton College School in Derbyshire from May 1927 to July 1935. He gained entry to the Royal (Dick) Veterinary College on the basis of the Northern Universities School Certificate. In December 1940 Frank Alexander gained his Membership of the Royal College of Veterinary Surgeons (MRCVS) by direct diploma before the Dick Vet College became an integral part of the University of Edinburgh in 1951. Consequently he did not hold a Bachelor's degree.

Soon after qualification, Frank Alexander entered the Department of Pharmacology, University of Edinburgh in the Medical Faculty to undertake his PhD. His studies were supported by a Research Studentship of the Agricultural Research Council in Animal Health and supervised initially by Professor A J Clark, FRS. The first part of his PhD involved a study of the pharmacokinetics of sulphanimide in sheep and was one of the earliest papers on veterinary pharmacokinetics. Interestingly Professor Clark, who had experience of the first world war as Medical Officer to the 8th Royal Sussex Pioneers, advised Frank Alexander not to be too hasty in joining the army. Sadly, in the middle of the PhD, Professor Clark had a torsion of the intestine from which he died. Professor Sir John H Gaddum FRS then took over as supervisor and Frank's PhD investigation switched to the study of histamine.

In January 1944 a PhD thesis entitled: "The distribution of Sulphonamides and the Study of Pharmacologically Active Substances Present in the Body" was successfully submitted. In February, the new Dr Alexander joined the army and was commissioned in the Royal Army Veterinary Corps in which he served first in the UK and then in the Middle East. After release from the Army in 1945, he was appointed to the Chair of Pharmacology in the American University of Beirut, Lebanon. Family reasons then brought him back to the UK, and, in 1947, he began research on the physiology of the equine digestive system at the Royal (Dick) Veterinary College. He was supported by the Agricultural Research Council and this work continued when he was appointed to the scientific staff of the Rowett Research Institute in 1950 in Aberdeen under the direction of Sir David Cuthbertson. Publications on the digestive system of the horse continued and in 1952 he was appointed Senior Lecturer in Veterinary Pharmacology at the "Dick Vet", which had then become part of the University of Edinburgh. Two years later, in 1954, he was awarded a DSc for a thesis: "An Experimental Study of the Digestive Tract of the Horse."

Frank Alexander was a strong-willed individual who believed in maintaining a high level of knowledge in his undergraduate students. As Senior Lecturer, he was responsible for the running of the Department of Veterinary Pharmacology at the "Dick Vet". Later, in 1968 he was elected to a Personal Chair in Veterinary Pharmacology at Edinburgh University. His inaugural lecture was entitled: "Materia Medica to Veterinary Pharmacology: A Transition". Records show that guests at the lecture included Professor Sir Michael Swann and Professor A Iggo, FRS.

Recognition outside the University for contributions to the advancement of veterinary science included election to the Royal Society of Edinburgh in 1961 and to a Distinguished Fellowship of the American College of Veterinary Pharmacology and Therapeutics in 1980. The British Equine Veterinary Association has honoured him twice: once when he was presented, in 1964, with the Association's postgraduate award for publications of outstanding merit in equine veterinary science; and again in 1968 when he was invited to deliver the Sir Frederick Smith Lecture. He also served on the British Veterinary Codex Actions and Uses Committee for the Pharmaceutical Society.

His research was conducted mostly on the horse and domesticated ruminants. He most often used Shetland geldings and sheep acquired locally. His research was relevant to the understanding of the physiology of, and pharmacological effects in, animals important to the general public. One of his driving aims was to investigate the nature of the condition "Grass Sickness" that affects and kills ponies and horses on pasture. The condition is associated with neurological disturbances of the gastro-intestinal tract and may be related to the action of a *Clostridium botulinum* toxin. He developed a system for recording the activity of equine gut that was more technically advanced than for the guinea-pig ileum preparation because it required perfusion with blood. He also worked on the equine respiratory system and on a condition known as "Broken-wind" or "Heaves". This condition is associated with an allergic reaction to mouldy hay and related to human asthma.

He published the results of his research in veterinary and other scientific research journals. His students had the benefit of his textbook *An Introduction to Veterinary Pharmacology* that was first published in 1960 and appeared in four editions. A Spanish language edition appeared in 1977. The concise nature of the text with its illustrations made it a popular and useful account for undergraduates.

In 1970 Frank Alexander was elected to the office of Dean, a position he held until 1974 a period when the veterinary undergraduate course at Edinburgh was being revised and rearranged. His knowledge of the veterinary educational requirements and the vocational objectives of the course facilitated the establishment of the revised curriculum. He also

contributed more widely to the veterinary profession, holding office in the Scottish Metropolitan Division of the British Veterinary Association and on the council of the national body. He represented Edinburgh University on the Council of the Royal College of Veterinary Surgeons.

Frank Alexander valued his membership of the Royal Society of Edinburgh along with that of the British Pharmacological Society and Physiological Society. He was able to use his scientific training to make new advances in the study of domestic animals and saw his subject change from *Materia Medica* to the Veterinary Pharmacology of today. He played a very important part in bringing this about. He retired in 1984 shortly before the death of his wife, Peggy Reddie, to whom he was devoted. He died peacefully on 4 March 1998, in Edinburgh, after a short illness. He had no children but was an uncle, grand uncle and great-grand uncle through his sister Joan. His brother had died of diphtheria, sadly much earlier, at the age of 11.

RICHARD MARTIN