

## Obituary

### In Memoriam Fred Brown (1925–2004)

**F**red Brown FRS OBE, who was a major figure in virology for more than 50 years, died at the age of 79 on February 20<sup>th</sup> 2004. Fred was born and educated in the north of England and throughout his life he never failed to display his Lancastrian heritage. After a brilliant career at Burnley Grammar School, where he was not only School Captain but also Captain of Cricket and Football, he was educated at Manchester University where he studied chemistry and took a first class honours degree. His doctoral studies were in carbohydrate chemistry and his PhD thesis was entitled “Investigations into the chemical constitution and structure of some complex plant polysaccharides”. After receiving his PhD in 1948, Fred worked in Bristol University, the Hannah Research Institute in Scotland, and at the Christie Hospital in Manchester before moving in 1955 to what was to be his major career position in the Department of Biochemistry at the Animal Virus Research Institute in Pirbright, Surrey. He became the Head of the Biochemistry Department in 1964, and in 1980 became Deputy Director for Science of the Institute for a short period before leaving in 1983 to become Head of Virology Research and Development at Wellcome Biotechnology in Beckenham, Kent. He remained there until 1990, when he went to the USA to do his last research work on foot-and-mouth disease at the USDA Plum Island Animal Disease Center. He moved back to the UK just five weeks before he died.

Fred’s major contribution to virology was his leadership of studies to define the chemical structure and replication of foot-and-mouth disease virus, as well as some associated viruses which produce similar clinical pictures in cattle and pigs – vesicular stomatitis virus, vesicular exanthema of swine virus, and swine vesicular disease virus. When he started out, virtually nothing was known about the molecular biology of these viruses, but his work culminated in the determination of the crystal structure of foot-and-mouth disease virus, published in 1989. His scientific distinction was recognized by his election as a Fellow of the Royal Society in 1981, and in 1999 his service to British science was recognized with the award of an OBE.

Fred served as Editor-in-Chief of the Journal of General Virology from 1975 until 1980, and in recognition of his many contributions, the Society for General Microbiology made him an honorary member in 1991.

Fred was involved in the International Committee on Taxonomy of Viruses (ICTV) from 1968, when he joined the Rhabdovirus Study Group and later the Picornavirus Study Group. From 1981 to 1987 he was President of ICTV, and in 1982 he became a member of the IUMS Executive Board, serving as Vice-President from 1986 to 1990.



Fred was an inspiring leader, who always had time to help educate students in virology. He had a long association with Queen's University, Belfast, and was awarded a Doctor of Science (*honoris causa*) by the University in 1992. Though he spent the majority of his life working in a veterinary research institute, it is fair to say that he was not greatly enamored of the veterinary profession in general, so it must have been with some bemusement that he received an award as Honorary Diplomate of the American College of Veterinary Microbiologists in 1995, while he was working at Plum Island.

Fred's lifelong contributions to our understanding of foot-and-mouth disease virus will be remembered and quoted for many years to come, but for those of us who were privileged to know the man, to hear his strong views and convictions bluntly expressed, and also to receive words of encouragement that came directly from his warm inner spirit, his loss leaves a void that will be difficult or impossible to fill.

Respectfully submitted on behalf of the world's community of virologists,

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