



Frank Macfarlane Burnet

Sir Frank Macfarlane Burnet was born in Traralgon, Victoria, in 1899. He received his medical degree in 1924 from the University of Melbourne and performed research (1925–27) at the Lister Institute of Preventive Medicine, London. After receiving his PhD from the University of London (1928), Burnet – usually known as Mac – became Assistant Director of the Walter and Eliza Hall Institute of Medical Research at Royal Melbourne Hospital. From 1944–65 he was Director of the Institute and Professor of Experimental Medicine at the University of Melbourne.

Burnet went on to conduct pioneering research on bacteriophages and viruses. His virology research resulted in significant discoveries concerning the nature and replication of viruses and their interaction with the immune system. As well as internationally significant contributions to the understanding of influenza virus, he carried out research on myxomatosis, Murray Valley encephalitis, toxic staphylococcal infection, polio, psittacosis, herpes simplex, poxviruses and Q fever.

Although Burnet's work in virology was important, his most significant achievements in science were made in immunology. His research into acquired immunological tolerance, for which he received the Nobel Prize in Physiology or Medicine in 1960, provided the experimental basis for inducing immune tolerance, thereby allowing the transplantation of solid organs. He was also a major contributor to the theory of clonal selection.

Burnet left the Walter and Eliza Hall Institute in 1965 but continued to work at the University of Melbourne until his official retirement in 1978. During his working life he wrote 31 books and monographs and over 500 scientific papers. Among Burnet's publications are *Viruses and Man* (1953), *Principles of Animal Virology* (1955), *The Clonal Selection Theory of Acquired Immunity* (1959), *Immunological Surveillance* (1970), and *Credo and Comment: A Scientist Reflects* (1979).

Burnet received many honours and distinctions and was the most highly decorated scientist to have worked in Australia. He was knighted in 1951 and received the Order of Merit in 1958. For his contributions to Australian science, he was made the first Australian of the Year in 1960, and a Knight of the Order of Australia in 1978. Also recognised internationally for his achievements, Burnet received numerous honorary doctorates, Fellowship of the Royal Society of London (1942), and many awards in addition to the Nobel Prize, including the Lasker Award, and the Royal Medal and Copley Medal from the Royal Society.

Burnet's nationalistic attitude and his decision to spend his career in Australia contributed to the development of science in this country and inspired future generations of Australian scientists. He was a founding member and later President (1965–69) of the Australian Academy of Science, and inaugural President of the Australian Society for Microbiology (1959–60).

After his death in 1985 Sir Frank Macfarlane Burnet was given a state funeral by the government of Australia. Along with the scope and quality of his research and an extensive publication record, Burnet's legacy is his success in establishing the reputation of Australian medical research worldwide.

Sources

Interview with Frank Fenner (12 September 2007). F. Fenner (ed.). *History of Microbiology in Australia. Nobel Lectures, Physiology or Medicine 1942–1962*. F. Fenner, Frank Macfarlane Burnet, *Historical Records of Australian Science*. *Bright Spars* biographical entry (accessed 8 January 2009). *History of Medicine, Dentistry & Health Sciences* biographical entry (accessed 8 January 2009). *Wikipedia* entry (accessed 9 January 2009).



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