Sefton D. Hamann

Sefton Davidson Hamann was born in Christchurch, New Zealand, on 8 January 1921. He studied for a BSc in chemistry and physics at Canterbury College. This was interrupted by his voluntary service in the Royal NZ Navy from August 1941 to February 1946. He was seconded to the NZ DSIR for 18 months to carry out research on microwave radar and spent short intervals at the (then) CSIR Radiophysics Laboratory in Sydney.

He gained an MSc with First Class Honours from the University of New Zealand in 1947 and his PhD from Manchester University in 1949.

He must have enjoyed his experiences in Sydney because in 1948 he wrote to Dr Ian Wark, the Chief of the CSIR Division of Industrial Chemistry, asking if there were going to be positions available at the end of 1949. Wark got Dr Keith Sutherland to interview him in London and he was duly appointed to a position in Sydney commencing 5 January 1950.

He was rapidly promoted within CSIRO and was invited to take the position of Chief of the Division of Physical Chemistry in 1960. He was Chief of the Division of Applied Chemistry 1966-74 and Chairman of the Applied Chemistry Laboratories until 1978. He was a post-retirement Fellow 1983-99.

He was elected FRACI in 1964, awarded the 1969 H.G. Smith Medal and elected a FAA in 1966. An indication of his international standing was the invitation to present a paper on 'Properties of electrolyte solutions at high temperatures and pressures' at the 1979 Nobel Symposium.

His book *Physico-chemical effects of pressure* was published in 1957 and is still being cited 50 years later. This book was a comprehensive survey and analysis of the effects of pressure on volume, phase changes, viscosity and diffusion, dielectric and optical properties and chemical kinetics. His view at the time was that all the theory required to understand the physico-chemical effects of pressure had not been developed. He spent much of his scientific career developing and testing that theory.

A meeting was held on Monday 9 April 1968 at the Reserve Bank of Australia's Melbourne office that would change the course of Sefton's career as well as the careers of many other CSIRO scientists. The then Governor of the bank, Dr H.C. 'Nugget' Coombs, called the meeting of his top note-printing staff and seven of Australia's top scientists to discuss ways of devising techniques to produce notes which would be difficult to counterfeit.

Of the seven scientists present, only Sefton stayed with the project to its conclusion.

Dr David Solomon was invited to the second meeting which was held in Thredbo, 15-16 June 1968, and so commenced a long and exciting collaboration that resulted in the release of

the $10 commemorative note in 1988 and the conversion of all our banknotes to a polymer substrate by the mid 1990s.

Sefton concentrated his work on diffraction gratings and moire patterns, as security devices. A 'Captain Cook' diffraction grating was incorporated in the 1988 banknote.

As the project developed, it became clear that a technique for measuring the durability of the new notes was needed. Of the many that were tried, none was as reliable as having Sefton put the note in his pocket with his keys and coins as he made his way home from Fishermens Bend on the bus and via the pub.

Sefton Hamann was one of Australia's great scientists and his published work will remain as a fine legacy.

He is survived by his son Conrad, daughter-in-law Christine and two grandchildren.

T.H. Spurling FRACI CChem