

Challenges and Rewards

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Since leaving the School of Chemistry and Sydney in 1955, my life has been spent within academic organic chemistry. My experience started just as X-ray structure determination began to displace chemical structure elucidation, and synthesis of complex natural products became the cutting edge of organic chemistry. Chemistry in the 20th century established many keystones of modern medicine – the structure (and often the synthesis) of vitamins, hormones, polypeptides and proteins – and it is now interacting strongly and underpinning molecular biology and the mechanisms of drug action.

I left Sydney with a B.Sc. Honours and an M.Sc. degree and, like many young scientists of that period, I studied for my Ph.D. in England. An 1851 Scholarship took me to Cambridge, where my supervisors were Sir Alexander Todd and Malcolm Clark. The project was concerned with approaches to the synthesis of the corrin system of Vitamin B₁₂. After a postdoctoral year at MIT (Cambridge, Massachusetts), I returned to a lectureship at the School of General Studies, Australian National University.

In 1968 I moved to Monash University, Melbourne, and the greater part of my research career was spent at Monash. I retired as a professor in 1996.

Academic chemistry affords the opportunity to follow one's own bent (external grants permitting) and, in spite of my natural product background, I spent most of my research career exploring the high temperature (500–1100° C) chemistry of organic compounds using the technique of Flash Vacuum Pyrolysis. This produced exciting results involving transient organic species, and many synthetically useful procedures.

An interesting aspect of research chemistry is that it leads through related interests to friends and contact all over the world, and indeed academic chemistry offers many opportunities for travel. Outside Australia I have lived and worked in Cambridge (UK), Boston, Southampton, Oxford, Berkeley, Nijmegen (Netherlands) and Edinburgh and I have enjoyed holidays in Puerto Rico, Kenya, St Petersburg, Norway, Spain and other parts of Europe. And this list takes no account of conference trips.

Chemistry in the 21st Century offers an equal challenge and many rewards. Industrial chemistry is now less prominent in Australia, but there is strong growth of research-based pharmaceutical and biotechnology companies, all of which need chemists.

The challenge is there: what can you do in chemistry in the 21st Century?