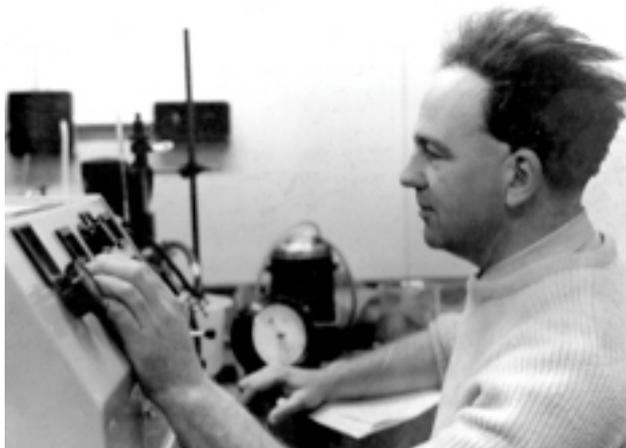


Peter Martin Brabazon Walker



Peter Walker had a distinguished career within the University of Edinburgh and also with the Medical Research Council, becoming the founding Director of a MRC unit in Edinburgh which developed pioneering work in molecular biology. He was born in Kenya in 1922, where his parents were coffee farmers. Sent to Britain for education, he was effectively brought up by his grandparents, leaving school just at the outbreak of WW2. University had to be postponed and he joined Smith's Aircraft Instruments as an apprentice. This was a reserved occupation during the war and Walker became a highly skilled craftsman toolmaker; these skills and a love of fine machinery remained throughout his life. They were put to great effect both in his scientific career and for another life-long enthusiasm, railways and their reconstruction in model form.

His family moved to Cambridge after the war and Peter went up to Trinity College to take a natural science tripos in botany and zoology. On graduating he got an MRC research studentship to work in Sir John Randall's Biophysics Unit at King's College, London. This was both a key time and a key place in the history of biology. At King's, Maurice Wilkins and Rosie Franklin were using X-ray crystallography to elucidate the structure of DNA whilst back in Cambridge, eagerly watching their results, were Francis Crick and Jim Watson. It seems certain that this atmosphere of new discoveries in the making influenced Peter's own scientific development and he moved easily into the newly born field of molecular biology. At King's he had already begun to build a refined piece of scientific machinery - a recording microdensitometer. Even though the elucidation of DNA's structure still lay ahead, it was known to be the genetic material. Walker's machine measured accurately the amount of DNA in single cells and, by frequency analysis at different stages of the cell cycle, it was possible to identify at what stage in cell division the genetic information itself doubled. This work he subsequently published with J.M. Mitchison. He later moved to Edinburgh in 1958 as an MRC Research Fellow, where Michael Swann and Murdoch Mitchison were building up a cellular/molecular group in the University's Zoology department.

He arrived with his wife Violet and three children to occupy a Georgian house in Lasswade near Edinburgh, where the family inherited a most beautiful garden, a source of great pleasure and an opportunity for some creative redesigning. They were wonderful hosts there, the family was young - it was here that their fourth child was born - and many of us will particularly remember huge bonfires and fireworks on November 5th.

Peter moved from his Fellowship to join the academic staff as a Reader and was promoted to the Chair of Natural History in 1966 when Michael Swann resigned to become University Principal. He shared with Murdoch Mitchison the duties of running a growing department covering a very wide range of teaching and research. Still supported by the MRC, he built up a group working on nucleic acids and himself embarked on designing and constructing a large and more sophisticated densitometer for quantitative measurements on single cells but never completed it. At this time Peter was most often to be found in the Department's new and very well-equipped workshop where a highly-skilled technician ruled with a rod of iron. Nobody except Peter was allowed to use the machinery in its inner sanctum - one craftsman recognising the calibre of another!

In the decade following determination of DNA's structure, molecular biology began exponential growth. (Edinburgh's own Department of that name, headed by Martin Pollock, was one of the first in the world.) At this time, Peter began some pioneering collaborative work with Anne McClaren (at that time working in Edinburgh's Genetics Department) using new techniques which stabilised denatured DNA in single-stranded fragments in agar plates. Having set up a plate with DNA from one species of rodent, they then measured the degree to which these bound to form duplex structures with DNA from another species when this was added. Such duplexes would reveal base sequences in common between the species, and thus yielded some of the first evidence relating genetic structure to phylogeny. In fact it might be seen as an early form of DNA fingerprinting, albeit at a far less detailed level. That came later when the MRC invited Peter to head up a new mammalian genome unit which was built close to the main zoology laboratories. Here he attracted some brilliant staff members, several of whom have gone on to become leaders in the field. One of these, Ed Southern, points out that an important contribution was then made to the 'junk' DNA debate by showing that the amount and sequence of satellite DNAs differed sharply between closely related species. This revealed that a large amount

of the DNA could not have a protein coding function. Peter retired in 1980, but for a number of years was very active on MRC committees and those of the Imperial Cancer Research Fund.

By this time the family had moved to Perthshire, first to a large house inherited from Peter's aunt with huge grounds in which he built an amazing 7 ¼" railway track on which to run his beautiful ¼ scale Talylyn steam locomotive, lovingly built over years in various workshops and helped to completion by the persistent urging of his first grandson! This railway has been taken over and extended by a neighbour who bought the house which had become out of scale for Peter and Violet once the children had left home. Typically, Peter turned to house construction and was much involved with the building of a smaller house in the grounds, incorporating an already existing cottage and, needless to say, including a large workshop overflowing with machine tools. Sadly, Violet died in 1985 soon after this was finished and Peter subsequently remarried, 'inheriting' two of his new wife Joan's children, with later their own daughter. Soon their house incorporated a second workshop for Joan's own work.

Peter usually had some big practical project on the go, often involving family members who were pressed, more or less willingly, into service in diverse semi-skilled capacities! Latterly he undertook major editing work which led to new, and much praised editions of Chamber's Dictionary of Science & Technology. This task was particularly well-suited to his very broad knowledge of science and engineering. He took to the advanced use of computers for writing, illustrating and editing with the same facility which he had developed for mechanical engineering.

Overall, Peter seemed effortlessly to combine biology with engineering, horticulture, photography and knowledge of a very wide range of literature. Then, of course, there were always the railways - making models, railway history, with the Highland Line in the 1870s a speciality, and travelling on the more exotic lines when he had the chance. He loved Australia, where one of his daughters now lives, and it was only ill health which prevented a recent project to enjoy the last link on the Ghan line which opened for passengers in 2004, finally completing the Adelaide to Darwin railway. He was a stimulating colleague in the University, a great friend and equally splendid company on a hill walk in the Highlands or around the dinner table at his different homes.

We are grateful to Anne McClaren, Ed Southern and Maurice Shepherd (Peter's son-in-law) for help with this obituary.

Aubrey Manning and Murdoch Mitchison

Peter Martin Brabazon Walker CBE, BA(Cantab), PhD(London). Born 1 May 1922, elected FRSE 6 March 1967, died 16 January 2006.