

# Obituary

## Tom Leadbetter Cottrell

TOM LEADBETTER COTTRELL was born in Edinburgh on June 8, 1923, the son of Allin Cottrell, lecturer in technical chemistry in the University of Edinburgh, and Lily Cottrell, a well known Scottish artist from whom he derived his lifelong interest in art. Cottrell was educated at George Watson's College and at Edinburgh University, where he graduated with first class honours in chemistry in 1943. It is characteristic of the man that while still an undergraduate he worked on agar to gain insight into a line of research he had no intention of pursuing further. In the same year he obtained a position as research chemist with the Nobel Division of ICI and in 1948 was promoted to be head of the physical chemistry research section after a couple of years secondment at Oxford where he gained experience in the Physical Chemistry Laboratory with Dr Leslie Sutton.

Then followed a remarkable period in which Cottrell's interest in the problems he had encountered at Oxford and those engaging his attention at Stevenson resulted in the publication of some thirty papers in ten years. These covered a wide range of topics including the thermal decomposition of nitroalkanes, the heats of combustion of amine nitrates, an electron microscope study of crystal surfaces, as well as theoretical papers in quantum mechanics. These researches were recognized by the award, in 1952, of the Meldola Medal of the Royal Institute of Chemistry. He also found time to write his first book, *The Strengths of Chemical Bonds* (1954), a new edition of which is being prepared

by Dr W. V. Steele of Stirling University.

In 1958 Cottrell became personal assistant to Sir Ewart Smith in the ICI directorate in London, a stimulating and invaluable experience, and a year later he was appointed to the chair of chemistry in Edinburgh University, a rather surprising but imaginative appointment, for Cottrell had little or no experience as a university teacher. He entered into his new duties with characteristic enthusiasm, revised the syllabus in the light of modern developments, established a thriving research school, instituted an honours degree in chemical physics and introduced research on molecular beams under the direction of Dr Fluendy and Dr Lawley. He revived his interest in the spectrophone and, with Arnold Read, successfully overcame the formidable difficulties encountered to obtain results of fundamental importance. In this period he published some twenty papers and three more books, *Molecular Energy Transfer in Gases* (1961), *Dynamic Aspects of Molecular Energy States* (1966), and a small "popular" but stimulating *Chemistry* (1962, second edition 1968), which can be read with profit by novice and expert alike.

Cottrell's six years as professor ended in 1965 when he was appointed Principal and Vice-Chancellor of Stirling University. There can be no doubt that the imaginative and daring qualities he brought to his scientific problems were successfully applied to the foundation of a lively and vigorous institution of learning and research. He took a wide view of the function of a university and the McRobert Centre, the splendid playing fields, and the Outdoor Centre on

Loch Rannoch bear witness to his vision and foresight. Only in time will his achievements as first Principal be fully recognized.

The demands of administration did not prevent Cottrell maintaining his interest in research especially on electron impact spectroscopy, begun in Edinburgh and continued by Dr Isobel Walker, one of his former Edinburgh students and the first lecturer in chemistry to be appointed at Stirling. Just before he died he hoped to obtain sabbatical leave in 1973-74 and return for a spell of active research. This was not to be. The university has lost a brilliant and zestful leader and chemistry a bold pioneer who had the gift of spotting important and exciting problems and who tackled them no matter how difficult and daunting they might be. His main theme was the energy involved in chemical and physical processes and in particular the rate at which energy transfer occurs. He was unusually well equipped to deal with the theoretical aspects of his problems and he employed ingenious experimental techniques. The heavy calls on his time and his untimely death prevented him fulfilling himself as a scientist; but the wonder is that he accomplished so much.

Tom Cottrell was a buoyant personality with an engaging modesty, a keen sense of humour and an interest in literature, art and music. He wore his learning lightly, found relaxation in yachting and was strengthened in difficult times by a devoted wife. A crowded congregation at the memorial service in the Church of the Holy Rude in Stirling testified to the respect in which he was held.

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