In Memoriam

Physical chemists everywhere will be saddened by the death of Michael Clyne at the age of 44 after a painful illness borne with characteristic cheerfulness and fortitude.

Michael Arthur Alderson Clyne, who was a grandson of Melanie Klein, the child psychologist, was born in London on October 17, 1937, and was educated at Highgate School, winning an Open Scholarship to Trinity College, Cambridge, in 1956. At Cambridge he obtained a First Class in both parts of the Natural Sciences Tripos. In 1959 he commenced research with B. A. Thrush using discharge flow systems to study both the reactions of hydrogen, nitrogen and oxygen atoms and the mechanisms of afterglows. He was awarded his Ph.D. in 1962 and in the same year was elected to a research fellowship at Churchill College and turned his attention to electronic absorption spectroscopy as a method of studying free radicals in flow systems, starting with ClO. This led him to a lifelong interest in the reactions of halogen atoms and radicals.

In 1964 he was appointed to a lectureship at the newly established University of East Anglia, but moved 2 years later to a lectureship at Queen Mary College, London, where he was appointed a Reader in 1977.

Over this period of time Michael Clyne built up a highly successful research group which pioneered methods of using discharge flow systems to study a wide range of problems to which he applied much ingenuity and scientific insight. He was one of the first to recognize the value of mass spectrometry and of resonance absorption and fluorescence spectroscopy as measurement techniques. In the absorption and fluorescence studies, a windowless flow system for fluorine atom work and the avoidance of errors due to line broadening in resonance lamps by using them to excite atomic fluorescence, which provided the source for measurements of atomic concen-

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trations, give examples of his ingenuity. His work on the halogen afterglows and other chemiluminescence reactions, on the recombination of ClO radicals and on such unstable species as N_3, NCl, NF etc. reveal much ingenious chemistry, but his best known work in this area is undoubtedly his measurements of the rate coefficients of the Cl + O_3, O + ClO and NO + ClO reactions which provided a basis for the first estimate of stratospheric ozone depletion from continued release of halocarbons.

In recent years he turned his attention increasingly to the use of laser-induced fluorescence to study the spectra of diatomic molecules and the collisional behaviour and lifetimes of individual rotational levels in their excited states. His work on the halogens and interhalogen compounds and the identification of J-dependent predissociation processes was particularly interesting, as was his use of very high resolution laser excitation spectra to analyse the complicated spectra of the interhalogen compounds and to separate them from the spectra of the halogens.

It is neither practical nor desirable to give a detailed account of all the problems which he tackled and all the ingenious experimental techniques which he devised. These are described in over 140 papers. Suffice it to say that his ability, enthusiasm and dedication produced an exceptionally productive and close-knit research group which attracted many visitors from overseas. He will be remembered as a good friend and a stimulating colleague by physical chemists in many parts of the world, who extend their sympathy to his widow Lesley and their three children whose loss is so much greater than ours.

B. A. THRUSH