resolution of the structure of sirenin, the first plant sex hormone to be characterised. All over America there are mycologists of distinction who received their early inspiration from Ralph Emerson.

During the war years 1944–46 he served as microbiologist to the Emergency Rubber Project in the United States which led him temporarily into the field of thermophilic organisms, particularly fungi responsible for development of high temperatures in compost heaps. After the war, although Blastocladiales remained his main research area, he continued his war-time interest and with Dr Cooney was responsible for an important book *Thermophilic Fungi* published in 1964.

Ralph Emerson was much concerned with the basic causes of the student troubles on the Berkeley campus in the late sixties. In particular he felt it his duty to respond to his students' demands for relevance in mycological teaching. He immediately set to work to organise what he described as 'a running story of fungi and mankind with whatever minimum mycological technicalities had to be provided'. He devised a course that was both academically sound and excitingly relevant.

Ralph Emerson was a man of strong character and great personal charm. Not only was he a research worker of outstanding ability, but he also wrote and spoke with elegance and clarity. His enthusiasm for his subject and for the experimental approach was unbounded. His former students and mycologists throughout the world mourn the loss of an eminent scientist. Above all he was a very special kind of person. *C. T. Ingold*

David Zimmerman

It was with extreme regret that I heard of the sudden death of Dr David Zimmerman, who died on 10 November 1978 of haemorrhage following an injury to his eye by a tennis ball.

He came to England in the sixties with an MSc in physics from the University of Wisconsin and joined Dr Aitken in the Research Laboratory for Archaeology in the University of Oxford. Here he became one of the most productive research workers in the new field of thermoluminescent dating.

One of the factors which made absolute dating difficult was lack of homogeneity in the samples of ancient pottery to which it could best be applied. Dr Zimmerman developed a way of avoiding this problem by the separating out of grains in the sample which were small compared with the range of alpha particles and in which therefore a statistical uniformity could be expected.

After gaining a well-deserved D.Phil as a result of this work, he returned to the United States where he continued to work on thermoluminescent dating of pottery at Washington University, St. Louis. Here he explored the possibility of using the zircon inclusions which usually contain so much uranium and thorium as to be almost entirely unaffected by background radiations, which are often impossible to estimate accurately.

Dr Zimmerman had many interests outside physics which he applied with characteristic success; for example he obtained a Blue at Oxford for badminton and played tennis with enthusiasm (Intercollegiate-Caltech); it was tragic that this should have led to his death. He enjoyed walking and camping and was interested in piano music. He was forty years old at the time of his death and has left a wife, Joan who was a contemporary research worker in 'TL' at Oxford. During the last twelve months he had started a valuable newsletter *Ancient TL*. His death is a very great loss to the field of thermoluminescence as well as to his large number of friends.

J. H. Fremlin