

also the 'backbone reflexion' in the 'cross- $\beta$ ' position on the meridian. Many diagrams of this kind have been obtained by Rudall in his studies of super-contraction in the k-m-e-f group, particularly in epidermin, and this finding above all leaves little room for doubt that we are dealing with fundamentally the same molecular mechanism all the way from flagella to muscle.

This does not mean, however, that the detailed activation process need be the same in every case. Weibull's analyses of flagella, which show incidentally that they are not nucleo-protein, reveal practically no cystine, thereby indicating at least one striking difference from the muscle protein, myosin.

## OBITUARIES

### Prof. Lawrence Crawford

LAWRENCE CRAWFORD was born in Glasgow on March 14, 1867. He was educated at Glasgow High School, where he was a prizeman and medallist, and at the University of Glasgow, where he won the Metcalfe, Muir and Ferguson bursaries and obtained the degree of B.Sc. in 1886.

In 1887 he entered King's College, Cambridge, where he was a scholar and exhibitioner. There he won the Glynn and Richards Prizes and obtained first classes in Parts I and II of the Mathematical Tripos, being ranked fifth wrangler in 1891. In 1892 he received an 'honourable mention' for the Smith's Prize and in 1893 he was made a Fellow of the College. For five years he lectured in mathematics at Mason College, Birmingham. In 1899 he was awarded the degree of D.Sc. of the University of Glasgow and in the same year was appointed to the chair of pure mathematics in the South African College, Cape Town.

With the exception of the late Sir Carruthers Beattie, first principal of the University, no man did more than Crawford to bring about the changes which have since taken place. At his arrival, the College was one of the six constituent colleges of the University of the Cape of Good Hope. It had about two hundred students and eleven professors with five assistants. At the time of his death on April 4 of this year, the University of Cape Town had more than four thousand students, and the staff, full-time and part-time, numbered some five hundred.

Crawford was in turn secretary to the Senate, vice-chairman of Senate, member of the College Council, and member of the University Council from its foundation in 1918 continuously until his death. He was more than once for short periods acting principal of the University, and as recently as 1949 acting chairman of Council. He was a member of the South African Philosophical Society and of the South African Association for the Advancement of Science. Of the latter he was president in 1915-16. He was a Foundation Fellow and member of the Council of the Royal Society of South Africa, served as treasurer from the inception of the Society in 1908 until 1936, and as president from 1936 until 1941.

Crawford retired from his chair at the age of seventy, but the sphere of his interests became, if possible, even wider. Always a lover of music, he was a staunch supporter of the municipal orchestra, and for the last six years of his life served on the Cape Town City Council. He died suddenly while returning from a public meeting.

In 1903 he married Miss Annie Spilhaus, who, with his three sons and two daughters, survives him.  
S. SKEWES

### Prof. Jan Hirschler

THE death occurred on January 3 at Gdansk-Wrzeszcz of Prof. Jan Hirschler, the well-known Polish cytologist.

Hirschler was a professor at the University of Lwow, and I believe was a pupil of F. Meves. He is known in Great Britain particularly for his work on the germ cells of Mollusca, Ascidia, Nematoda, Insecta and the cytoplasm of Protozoa. He it was who first described the Golgi apparatus of sponges and sporozoans, and his studies on the oogenesis of ascidians, the development of Mollusca, and the spermatogenesis of moths, established his reputation. He alone gave satisfactory accounts of the fusome in invertebrate spermatogenesis.

During the Second World War, Hirschler fled from Poland as the Russians approached, and left Germany for Austria when the Russian armies overran Eastern Germany. He practically starved in Vienna, efforts by a friend to send him money proving abortive. He left Austria in 1948, where he lived for a time in great poverty in a refugee camp. In January 1950, after his return to Poland, he obtained employment in the Institute of Tropical Medicine at Gdansk Academy. His last work was on the fusome, three of his papers being still unpublished. While most of his researches were done alone, he published a few papers with his wife Zofia, and with Dr. L. Monné.

Cytologists will look forward to the publication of his work on the fusome. J. BRONTË GATENBY

### Sir Cyril Ashford, K.B.E., C.B., M.V.O.

By the death on April 29 of Sir Cyril Ashford, the Royal Naval College, Dartmouth, loses its first headmaster and the Science Masters' Association its first treasurer and secretary. Ashford was educated at St. Edward's School, Birmingham, and Trinity College, Cambridge. Before his headmastership of Dartmouth (1905-27) Ashford had taught science at Clifton and at Harrow. During his career he had seen the Science Masters' Association become, from small beginnings, a great and influential body, and he himself had notably contributed to this advance. By 1937, when he became its president, he had lived to see the attitude of authority towards science in education pass from contemptuous tolerance to one of respect for its vital importance; and he had done much to bring about the change. For, against much opposition and after many battles, he revolutionized the science teaching at Harrow, created the science sides of two great schools (Osborne and Dartmouth), wrote text-books and articles (the last of these when he was aged eighty-three) and, above all, inspired younger men with his missionary zeal. Among these were Archer Vassall, C. L. Bryant and A. W. Siddons, all prominent members of the Science Masters' Association. His presidential address was delivered in the troubled and critical days of 1938. He urged teachers not to crystallize schemes of study but to nurture a dynamical attitude towards them, and ever strive for a presentation of science fitting for the future citizens of a great nation. His death deprives us of a science master of the finest type. G. FOWLES