

He received many honours: he was elected to the fellowship of the Royal Society in 1937; and was a Fellow of University College. He was well known abroad; he was an honorary member of the Polish Chemical Society, a corresponding member of the Patronato "Alfonso el Sabio", Madrid (1959), and a member of the Joint Services Mission to the United States and Canada in 1948.

C. E. H. BAWN

Prof. A. J. H. Goodwin

ASTLEY JOHN HILARY GOODWIN was born in Pietermaritzburg on December 27, 1900, and died on December 5, 1959, after a long illness. The son of Canon W. A. Goodwin, he was educated at St. John's College, Johannesburg, and at the University of Cambridge, where he graduated in archaeology. At the age of twenty-three he joined the staff of the University of Cape Town, serving there until his death. He was appointed associate professor in 1954 in recognition of his academic achievements and original work.

From the sixties of the nineteenth century, collectors had amassed considerable quantities of stone implements from large numbers of sites in southern Africa. Goodwin, on his return from Cambridge, first applied his mind to the problem of the systematic classification and chronological arrangement of this material and soon realized the need for a terminology that would be more applicable to the southern African facts than the European one hitherto accepted. He envisaged a subdivision of the Stone Age into three—Earlier, Middle and Later—each of which embraced a number of cultures and their variations. Collaboration with van Riet Lowe and Neville Jones led to the foundations of South African prehistoric classification being laid and to the elaboration of conjoint ideas in "The Stone Age Cultures of South Africa". This contained basic systematic descriptions and has been used as the foundation for prehistoric studies in both South and East Africa.

Goodwin stressed the need for a strictly scientific approach to field exploration and to the drawing of conclusions. His method of approach is to be found in his handbook entitled "Method in Prehistory". His own field-work was intensive and marked by meticulous accuracy of observation, whether it was concerned with the excavation of caves and shelters or with the examination of sequences of styles in rock engravings. Mainly undertaken within the confines of the Cape Province, his original field observations were supplemented by visits to many critical sites in other parts of Africa; and he excavated and studied important more recent archaeological sites in Nigeria on the invitation of the Government of that country.

Goodwin's methodical and lively mind embraced many cultural interests and made him a good organizer. He took a leading part in founding the South African Archaeological Society, was its secretary for a number of years, edited its *Bulletin*, and at the time of his death was its president. With A. L. du Toit he was enthusiastic in founding the Athenæum Trust, which provided a 'home' for the scientific and cultural societies, the headquarters of which are in Cape Town. For some years he served as the honorary general secretary of the Royal Society of South Africa and on its council and, again in the year of his death, was elected to its presidency. Whatever task of this nature he was called upon to perform, he

carried it out with quiet unobtrusive natural efficiency and forthrightness; what he had to say was said quietly, succinctly and directly. Discussion with him was a pleasure, but acrimonious discussion was impossible. To all those who had contact with him he was "John".

Our late colleague is survived by his widow, a son and a daughter.
S. H. HAUGHTON

Prof. C. J. Bakker

PROF. C. J. BAKKER, whose death in an aeroplane accident in New York occurred on April 23, was on his way to attend a meeting of the American Physical Society in Washington. He had been invited to address the Society on recent researches at CERN and particularly on the successful operation of the 25-GeV. proton synchrotron.

Cornelis Jan Bakker was born in 1904 and studied physics under Zeeman in Amsterdam. After taking his doctorate (*cum laude*) in 1931 for original research on the Zeeman effect in the spectra of the noble gases, he spent a year in London at the Imperial College of Science and Technology continuing his work in spectroscopy. In the following year he joined the scientific staff of Philips, Eindhoven, where he worked on the physical problems of radio communications. His interests soon turned to nuclear physics and during the War, in collaboration with Prof. Heyn, he designed the Philips cyclotron. In 1946, he succeeded Gorter as professor of physics and director of the Zeeman Laboratory of the University of Amsterdam. He also became director of the Institute of Nuclear Physics, the focal point of Dutch nuclear research sponsored by Fundamental Onderzoek der Materie, by the City of Amsterdam and by Philips. He was a member of the Royal Netherlands Academy of Sciences.

In 1951, Prof. Bakker was invited by Prof. Auger, director of the Unesco Department of Natural Science, to be one of the eight experts charged with drawing up plans for the future European Organization for Nuclear Research (CERN).

At the first session of the Council of CERN during May 5–8, 1952, Prof. Bakker was appointed a member of the directorate and director of the Synchro-Cyclotron Division. On July 1, 1955, he became deputy director-general of CERN, succeeding Prof. Felix Bloch as director-general on September 1, 1955.

During the years 1955–60 CERN has grown from an idea put forward by a few European scientists to one of the best-equipped laboratories for high-energy nuclear physics research in the world. In 1957 the CERN 600-MeV. synchro-cyclotron was commissioned, and since that time it has been in full use as a nuclear physics research tool. More recently, at the end of 1959, the 25-GeV. proton-synchrotron came into operation at CERN.

In June 1957, Prof. Bakker received an honorary doctorate from the University of Geneva, and in April 1960 the Queen of the Netherlands awarded him the high honour of "Ridder in de orde van de Nederlandse Leeuw". His death took place before the official ceremony at which this award was to have been given.

Prof. Bakker believed firmly in European collaboration in science, and CERN, which is a unique and successful example of such collaboration, was inspired by his devoted leadership. His sudden death is a tragic loss to his wife and children, to CERN and to international scientific collaboration.

J. B. ADAMS