OBITUARIES

Mr. Henry Woods, F.R.S.

HENRY WOODS, who died on April 4 at Meldreth, near Cambridge, was the last survivor of the quartet (which included McKenny Hughes, Marr and Harker) who did much to enhance the reputation of the Cambridge school of geology more than half a century ago. Born in 1868, he began his academic career as a scholar of St. John's, and, after taking his degree in the Natural Sciences Tripos, was awarded the Harkness Scholarship in 1890. His first engagement was in curatorial duties in the Woodwardian Museum, and in connexion with this side of his work he produced two catalogues of fossils for the use of research workers and students in the Museum; and in 1893 the first edition of his now famous little book on palaeontology was published as one of the Cambridge Natural Science Manuals. Meanwhile, he was appointed in 1892 as demonstrator in palaeontology, a post which developed in 1900 into the University lectureship in palaeozoology; and he held this office until his retirement in 1934.

Although his first paper, published by the Geological Society in 1894, was concerned with the igneous rocks of the neighbourhood of Builth, Woods's work in the Museum, combined with his patient industry and meticulous care, had led him in the direction of systematic palaeontology, to which he was thereafter to devote himself. His first contribution to this subject, an account of the Mollusca of the Chalk Rock, directed attention to the presence in Great Britain of the *Reussianum* fauna. In order to become familiar with comparable material from European localities, Woods visited museums in Bohemia, Belgium, France and Germany. His attention was now directed more particularly to Cretaceous fossils, and he undertook to prepare a monograph of the Cretaceous Lamellibranchia of England, a group that was in special need of nomenclatural revision. This work, published in annual parts by the Palaeontographical Society, occupied him from 1899 until 1913. Two sections, the Inocerami and the Ostreidae, were by no means easy to deal with because of extensive variation and paucity of ornamentation, and the lack of precise details as to horizon and locality of historic specimens. In the case of the Inocerami, he was able to bring order out of confusion by recognizing phylogenetic series, and to correlate progressive modifications of the shell with geological horizons, with results that have proved of great use in stratigraphy. By a broad conception of species in the Ostreidae he reduced this group to workable order, and thus left the field open to any who might wish to engage in nomenclatural refinements.

While the monograph of the Cretaceous Lamellibranchia was in progress, former pupils and friends were sending him fresh material for determination and description, and as a result he produced well-illustrated memoirs on Cretaceous fossils from South Africa, Northern Nigeria and New Zealand and an account of some Tertiary fossils from Peru. In 1925 he began a monograph of the Fossil Macrurous Crustacea of England which was completed in seven annual parts and published by the Palaeontographical Society.

Woods was elected to the Royal Society in 1916. He was awarded the Lyell Medal and the Wollaston Medal by the Geological Society, and was an honorary member of the Yorkshire Philosophical Society and

of the Royal Society of New Zealand. Of a retiring disposition, he appeared to be diffident or even shy in his manner; but this was a modesty so natural that it tended to obscure decision and shrewdness. His work has been truly described as faithfully pursued for no private end; and he himself found lasting satisfaction in the knowledge that many whom he met as pupils remained as friends. To this may be added that many outside his circle of pupils had reason to regard him as a friend.

C. P. CHATWIN

Dr. E. H. Farmer, F.R.S.

ERNEST HAROLD FARMER died on April 13 at the age of sixty-two. He was born in Derbyshire, and graduated from University College, Nottingham, in 1911. After three years as a schoolmaster, he served in the First World War in the Loyal North Lancshires. A serious injury in 1917 incapacitated him for the next two years and left his right hand and arm permanently damaged—a disability against which he struggled so successfully that few realized its extent. Demobilized in 1919, he entered the Imperial College of Science and Technology, London, as a research student, and so commenced an association with the College which was to last for twenty years. He obtained the degree of D.Sc. in 1924, and in the same year was appointed to the teaching staff. He was elected a Fellow of the Royal Society in 1948.

Farmer's scientific work and interests were mainly concerned with olefin chemistry. His early work at the Imperial College, carried out in association with Thorpe and Ingold, was an investigation of the structural requirements for the formation and stability of certain cyclopropane derivatives. Associated problems, of synthesis and interpretation, led to a study of Michael-type reactions with conjugated compounds, and then to an extensive examination of the effects of reactant structure, solvent and temperature on addition reactions of conjugated dienes and trienes. The results showed clearly the inadequacy of Thiele's theory of reactivity in conjugated systems, and in particular that 1:2 addition is an independent process of no less general importance than 1:4 addition, although secondary factors often give the latter special prominence. The numerous and not obviously consistent observations could not be satisfactorily correlated at the time; but more recent theoretical developments now permit their significance to be appreciated. It was but a short further step to Diels-Alder and diene-diene reactions, and thus to an interest in hydrocarbon polymerization and high-molecular weight olefins generally. Several publications in the middle 1930's were concerned with the isolation and characterization of some less common natural esters of the paint drying-oil type.

Farmer's connexion with rubber chemistry dates from 1932, when he undertook to supervise some work on modified rubbers for the Rubber Growers' Association. In 1938 he resigned his academic appointment to accept the post of senior organic chemist in the newly-formed British Rubber Producers' Research Association, and the succeeding years yielded his most influential work. In the main this originated from his recognition that the key to the nature of autoxidative changes in non-conjugated olefins, including industrially important materials such as rubbers, drying oils, edible oils and fats, and petroleum products, lay in Criegee's demonstration that cyclohexene and oxygen combined to give