OBITUARIES

Mr. Will Hay

WILLIAM THOMPSON HAY, son of the late W. R. Hay, of Aberdeen, was born on December 6, 1888. As a lad, he was apprenticed as an engineer; but at the age of twenty-one left the workshop and went on the stage. Within ten years he had climbed to the top of the tree as a variety artiste and, as Will Hay, had become famous in the role of comic schoolmaster. During the next twenty years—the years between the two World Wars—he achieved great success in this character, and in the latter part of the period also took the leading role in many film comedies. In the summer of 1946 he had a serious illness from which he never completely recovered, and he died of a heart attack on April 18.

From an early period of his life, Hay had been keenly interested in astronomy, though he did not allow this to be generally known, either to his professional colleagues or to the public at large. He had, in fact, a dread of the use which might be made of such knowledge by certain sections of the Press, for he was deeply serious in his attachment to his chosen hobby and feared that it might come to be regarded as a sort of publicity 'stunt' to increase his popularity as a comedian. For the same reason he had hesitated to publish an elementary introduction to astronomy which he had written, and which later appeared under the title of "Through My Telescope", the name of the author being given as W. T. Hay.

On August 3, 1933, while observing Saturn with the 6-in. Cooke refractor mounted in his home-made observatory at Norbury, he detected a large white spot on the planet's equatorial zone. With a full realization of the rarity of such a phenomenon, he immediately made his discovery known to the astronomical world through the usual channels. The cat was now out of the bag, and Hay had the exasperating task of explaining to numerous reporters that even a comedian has a right to be serious in his private life.

In 1935 he moved to Hendon, where the few hours that he could spare from his professional work were divided between his observatory, where he made micrometrical measures of the positions of comets, and his workshop, where he made many useful pieces of accessory apparatus, both for himself and for his fellow amateur astronomers. A Blink microscope and several electrically driven chronographs were among the products of his mechanical skill, and he contributed papers on the construction of such apparatus to the British Astronomical Association, on the Council of which he served for a time. He had been a fellow of the Royal Astronomical Society since 1932, and made many friends among astronomers, both professional and amateur. He leaves a widow, a son and two daughters. W. H. STEAVENSON

Dr. J. A. Cushman

DR. JOSEPH AUGUSTINE CUSHMAN, who died at his home in Sharon, Massachusetts, on April 16, was one of the leading authorities on the Foraminifera. Born at Bridgewater, Massachusetts, in 1881, he was educated at Harvard University, where he obtained his doctorate of philosophy in 1909. During 1903–23 he was museum director of the Boston Society of Natural History. In 1923 he founded the now famous Cushman Laboratory for Foraminiferal Research, the first institute in the world devoted to the study of the Foraminifera. Dr. Cushman's drive and determination, and devotion to this natural order, were responsible for building up great collections of Foraminifera both fossil and recent from all over the world, consisting of more than 62,000 catalogued slides and an even greater number uncatalogued. Many type and figured specimens are incorporated, a great number of which have been described in the Laboratory's journal, *Contributions from the Cushman Laboratory for Foraminiferal Research*, which has been issued quarterly since 1925.

Dr. Cushman's text-book, "Foraminifera, their Classification and Economic Use", first published as a special publication of his Laboratory in 1928, has been issued in four editions, the last appearing only last year. This classic work soon became the standard text-book, invaluable both to the student and to petroleum companies who use Foraminifera as zone fossils in the stratigraphical correlation of cores. It was a new and revolutionary attempt in setting out genera in taxonomic and phylogenetic order, and is in itself an undying memorial to this great champion of Foraminifera. His total number of publications amounted to more than five hundred, some published alone and others jointly.

He was lecturer in micropalæontology at Harvard in 1926 and a consultant on Foraminifera to the United States Geological Survey since the same date. In 1930 he was appointed chairman to the Commission on Micropaleontology on the National Research Council.

Besides being a fellow of the American Academy of Arts and Sciences, of the American Geographical Society, and of the Geological Society of America, of which he was vice-president in 1938, he was a member of many societies, clubs and associations, including the Paleontological Society, of which he was president in 1937, and the American Association of Petroleum Geologists. He also became a member of the Society of Economic Paleontologists and Mineralogists, of which he was president for the year 1930–31, and edited the *Journal of Paleontology* during 1927–30. In 1937 the honorary degree of doctor of science was conferred upon him by Harvard University. In 1938 he was elected an honorary fellow of the Royal Microscopical Society in Great Britain.

Dr. Cushman has bequeathed his entire collections, library and catalogues to the Smithsonian Institution. They will eventually be transferred to the United States National Museum, where a room will be provided for what will be known as the Cushman Collection, and the work initiated by him on the Foraminifera will be continued there—a fitting memorial to this great student of the group.

C. D. OVEY

WE regret to announce the following deaths:

Dr. P. H. Cowell, F.R.S., formerly superintendent of the Nautical Almanac Office, on June 6, aged seventy-eight.

Prof. E. J. Garwood, F.R.S., emeritus professor of geology and mineralogy in the University of London, on June 12, aged eighty-five.

Prof. W. W. Hansen, professor of physics at Leland Stanford University, California, known for his work on the klystron and micro-wave electromagnetic radiation.

Mr. Philip Lake, formerly reader in geography in the University of Cambridge, on June 12, aged eighty-four.