and of the Mineralogical Society during 1920-42; also he was a managing trustee of the Geologists Association and of the Mineralogical Society. He was also honorary treasurer and vice-chairman of the Metropolitan District Nursing Association, with which he had been connected as a member of the Executive Committee since 1920. He was president of the Mineralogical Society during 1942-45, and at the time of his death he was its foreign secretary; he was also a vice-president of the Geological Society.

To his many friends in London, it must have seemed that Ashcroft's whole life was devoted to the financial affairs of these societies; but he was first and foremost a mineralogist, and his lasting memorial in the years to come will be the two superb collections of minerals which he had presented, or has now bequeathed, to the British Museum (Natural History), documented with an accuracy which few others would have had the patience and knowledge to achieve.

Ashcroft went from Rugby to Magdalen College, Oxford, in 1897, and gained a first in honours chemistry in 1901. He worked at Tübingen in 1901 and later at University College, London, in the Department of Organic Chemistry, and published a paper in the *Journal of the Chemical Society* in 1907. At Oxford he had also studied mineralogy under Miers, from whom, like so many others, he acquired an interest in minerals which decided the main lines of his future work. Ill-health prevented him from undertaking any full-time work; but Ashcroft could not be idle and he devoted himself to the study and collection of minerals, working partly in the Mineral Department of the British Museum and partly in the Chemistry Department of University College, London, where J. Norman Collie, himself a fair mineralogist, was professor. At first specializing in zeolites, Ashcroft brought together in the course of ten years or so a notable collection of these minerals from all over the world. In 1914 he presented the bulk of this collection to the British Museum, retaining only his Irish specimens, intending to continue publishing accounts of these when time allowed. It was well after the conclusion of peace, in 1920, that Ashcroft turned his attention to the minerals of the Swiss Alps. Here he set out not merely to acquire fine specimens, but also to record the exact localities where each was found and to collect representative specimens of all the minerals associated in each locality, thus bringing together all the data for a complete study of the distribution and paragenesis of the minerals. Carrying a heavy camera, hammers and chisels, he went round the recently worked localities with the mineral collectors on his annual visit to Switzerland, collecting, noting and photographing. He was an expert photographer and his catalogue is profusely illustrated by photographs of his own taking. Many of these were used to illustrate "Die Mineralien der Schweizeralpen" by Niggli, Koenigsberger and Parker, with whom Ashcroft collaborated. Others appear as plates in Arthur Holmes's "Principles of Physical Geology".

It was an education to accompany Ashcroft on one of these visits to the Alps and to see him at work. He had gained the affection of mineralogists and mineral collectors all over Switzerland, and if they were sorry to see their best specimens being taken to London year after year, they forgave him for the big kind-hearted enthusiast that he was. His collecting trips were usually followed by a holiday with his family. He had married in 1904 Constance Muriel, daughter of J. C. Im Thurn, and had two sons and

two daughters. He was devoted to his family and very proud of his grandsons, and they were all devoted to him.

He had many friends among mineralogists at home and abroad. He was a member of the Swiss Mineralogical Society and of the Museums Association as well as of the other societies mentioned, and he was a charter member of the Mineralogical Society of America.

W. CAMPBELL SMITH

Mr. Edward Heawood

8/6

MR. EDWARD HEAWOOD, emeritus librarian of the Royal Geographical Society, died on April 30, in his eighty-fifth year.

Heawood was attracted to geography through an early interest in natural history, and the great narratives of exploration. After taking his degree in classics at Cambridge, he received instruction in surveying and other field studies at the Royal Geographical Society, and spent two years in India working on a settlement scheme among the Santals in the Bengal Duars. On his return, he joined the staff of the Society, assisting with the newly established *Geographical Journal* and in the library. On the retirement of Dr. H. R. Mill in 1901, he succeeded him as librarian, an appointment which he held until 1934. During these years the Society's Library expanded considerably under his guidance, particularly in its collections of foreign geographical periodicals and of early geographical texts and atlases. His extensive knowledge of the literature of geography, aided by an exceptional memory, was readily placed at the disposal of students.

His special interest was at first in African geography and in the history of exploration generally. His "History of Geographical Discovery in the 17th and 18th Centuries", published in 1912, is a careful and comprehensive study which remains the best general guide to that period. This line of study led naturally to that of the cartographic sources, to which his attention was increasingly given, until he had established a widely recognized reputation as an authority. Most of his work is to be found in the *Geographical Journal*, in numerous notes and reviews as well as in longer papers, but two important memoirs appeared as separate publications of the Royal Geographical Society: "The Map of the World on Mercator's Projection by Jodocus Hondius, 1608" (1927) and "English County Maps in the Collection of the R.G.S." (1932). A further development of this work, which was perhaps his most individual contribution, was his extensive study of water-marks used by paper-makers, which threw much light on the sources and distribution of paper, in addition to its use in dating maps and other documents. He concentrated upon marks on paper used in England, filling in the gap left by Briquet and other Continental writers. His first article, in the *Geographical Journal* of May 1924, was followed by others in *The Library* of 1930, 1931 and 1948. On the day of his death he had been at work on an index to a selection of his tracings of marks, which is to be published in Holland.

Heawood received the Research Medal of the Royal Scottish Geographical Society in 1933, and in the following year the Victoria Medal of the Royal Geographical Society. For many years he was treasurer of the Hakluyt Society, and had been recorder of Section E (Geography) of the British Association.

G. R. CRONE