Naturally, the main administration buildings, central and specialist libraries, the press and many working laboratories and institutes are in Madrid itself, comprising a remarkable block of modern well-constructed and expensively furnished buildings. Like the Department of Scientific and Industrial Research in Great Britain, the Higher Council provides funds for research to those who have graduated from a university, and annual prizes are given for outstanding work both in letters and in science. It is also the function of the Higher Council to advise the Minister of Education as to the award of any special prizes or life pensions for outstandingly meritorious work. One of Europe's most interesting of modern churches is the Church of the Holy Ghost, built by the Higher Council for Scientific Research in the Council Enclosure, to provide a spiritual home for all research workers, both Spanish and foreign. The Council also provides chapels in the neighbouring buildings, so that all teachers and students can make use of these during their working period.

Another interesting phase of the Higher Council's activities is to be found in the School of Ancillary Studies, in which a large staff is trained in such a way that "without entering deeply into theories, by means of a careful and practical apprenticeship they may become valuable helpers for scientific workers". British universities are in great need of the services of really skilled technicians such as glass-blowers, fine mechanics and experts in electronic circuits. It is no easy matter to obtain such valuable members of the scientific staff; and the steps which the Higher Council has taken in respect to this matter are well worth serious attention.

The foreword to the law founding the Higher Council expresses most clearly the intentions and ideas that led to its conception. "The state of divorce and discordance existing between speculative and experimental science must be terminated and the tree of science must be encouraged to develop harmoniously as a whole by avoiding the monstrous growth of some branches while others wither and die. A strong counter-weight must be found for the exaggerated and isolated specialization so prevalent in our time and the sciences must be made to regain their old sociability." A noble experiment: may it succeed.

ERIC K. RIDEAL

OBITUARIES

Dr. H. R. Mill

HUGH ROBERT MILL, distinguished geographer, meteorologist and author, died at Dormans Park, East Grinstead, on April 5, at the age of eighty-eight. He had an outstanding personality. He devoted his life mainly to the study of geography, especially of those aspects dealing with oceanography, the study of lakes, the flow of rivers, the Antarctic and rainfall. Born at Thurso, Caithness, in 1861, he became doctor of science of the University of Edinburgh, honorary doctor of laws of St. Andrews, fellow of the Royal Society of Edinburgh, honorary member of the Institution of Water Engineers and fellow or honorary member of a large number of British and foreign scientific societies.

After specializing in chemistry and physics at the University of Edinburgh, Mill became chemist and physicist in 1884 to the newly established Scottish Marine Station at Granton on the Firth of Forth.

This work renewed an early interest in geography, and he was appointed lecturer in physiography in the Heriot Watt College, Edinburgh. In 1891 he published a standard text-book on geography, introducing a more systematic and scientific treatment, with the attractive title "The Realm of Nature".

From 1892 until 1900 he was librarian to the Royal Geographical Society, where he found time to make the first systematic survey of the depths of English lakes. He became recorder of Section E (Geography) of the British Association (1893-99) and president in 1901, and attained an international reputation as a geographer. On the occasion of the Society's centenary he prepared, at the request of the Council, "The Record of the Royal Geographical Society, 1830-1930". In 1915 he received the Victoria Research Medal of the Society and was vice-president during 1927-31.

In 1901 Dr. Mill, to quote his own words, seized a proffered opportunity "to devote the rest of my working life to one small portion of the great problem of my earlier dreams: the detailed investigations of the control of rainfall distribution by the forms of the land". He became director of the British Rainfall Organization at 62 Camden Square, London, and editor of "British Rainfall" and *Symons's Meteorological Magazine*, until he retired in 1919, when the Organization was incorporated in the Meteorological Office. In 1910 he presented the whole of the accumulated rainfall records and property of the British Rainfall Organisation, acquired at his own expense, to be held in trust for the nation. During this period he applied his geographical knowledge and his experience to open up new lines of research, especially in map studies of rainfall, thereby advancing the scientific study of the rainfall distributions over Great Britain. He became the authority on British rainfall and was consulted by government departments and other bodies. He was honorary secretary of the Royal Meteorological Society during 1902-6 and president in 1907-8. The Society awarded him the Symons Memorial Medal in 1918 and the newly instituted Hugh Robert Mill Medal and Prize for research in rainfall just before his death.

Although widely travelled, Mill had never entered Antarctic regions. Throughout his life, however, he maintained personal friendships with the explorers and acquired an expert knowledge of Antarctic exploration. He wrote "The Siege of the South Pole" in 1905 and "The Life of Sir Ernest Shackleton" in 1923. Illustrative of his relationships with these explorers is a telegram to Dr. Mill from Shackleton in September 1916 from Punta Arenas on his return from the far South: "My grateful thanks for friendly article about expedition and for your consistent belief in me your friend Shackleton".

Both in his lectures and writings, Mill had a happy and fascinating manner of presenting and interpreting facts. He was a source of inspiration to many in the various spheres of work which occupied his full life. In spite of eyesight already failing in 1915, he maintained throughout his life a hopeful outlook and lively interest in all aspects of "the Realm of Nature".

J. GLASSPOOLE

Mr. J. B. Scrivenor, I.S.O.

JOHN BROOKE SCRIVENOR, the first geologist to start systematic geological mapping in Malaya, died peacefully in his sleep at his home in Bedford on April 21, at the age of seventy-three.

Scrivenor was educated at the King's School, Canterbury, and Hertford College, Oxford, and after a few years as a geologist with the Geological Survey of Great Britain he was appointed Government geologist, Federated Malay States, in 1903, on contract for three years. Actually he remained there for a total of twenty-eight years until his retirement in 1931 at the age of fifty-five. He very soon established a reputation as a sound geologist and as a very tough person who was prepared to tackle any journey, no matter how difficult the conditions, and who had a most scrupulous idea of his obligations to his employer, the Malayan Government. He was said indeed to have asked Government to reduce his salary because he thought he was being overpaid. The actual facts of this unusual affair were that 'J. B.' had fallen in love with his work and with the country, and, being afraid that Government did not intend to take him on permanently, he did his utmost to ensure that it should do so by offering to serve on permanent and pensionable terms at a salary less than his initial salary on contract. His offer was accepted. He married, and returned with his bride to resume his happy life of hard work in the tropics. In 1912, he enlarged his one-man department by engaging another geologist, to be followed shortly by a chemist, and in June 1914, by another geologist, the present writer.

Apart from his geology, Scrivenor was a very keen Volunteer. For two years of the First World War he was content to serve in Malaya as a sergeant in the Volunteers, after which, although he was now a middle-aged man with a wife and four children, he returned to the United Kingdom to join the Army, and he served in France as a signals officer in the Royal Engineers. He loved his life during this period as much as any other in his very busy career, and after the War he published a small book containing an account of his experiences. The copy which he later deposited in the library of the Kinta Club at Batu Gajah was much read by his many friends. He contributed many papers to various geological journals, and during his last few years as Director of Geological Survey, Federated Malay States, he wrote two important books, "The Geology of Malayan Ore Deposits" and "The Geology of Malaya", which give a most useful and readable account of Malayan geology as known at that time. During his final years in Malaya, he also published a reconnaissance geological map of the Peninsula, the culminating result of his own jungle work and of that of his colleagues.

After retirement, Scrivenor lived in Bedford and served for some time on the town council; but he also continued his researches in geology, and indeed he had just returned from Cornwall when he died. He was a most loyal and generous friend, and he leaves behind him many who owe him much.

E. S. WILLBOURN

Mr. J. W. Williamson

THE death on March 16 of Mr. J. W. Williamson, at the age of eighty-one, will be felt as a sad loss by his many friends. He had an unusually varied career. Being forced for financial reasons to abandon medical studies at the University of Edinburgh, he was for many years a schoolmaster. At the age of forty, however, he was able to spend two years at the then Royal College of Science, and obtained an honours B.Sc. degree. He then resumed schoolmastering, but

shortly before the First World War accepted a post as secretary to the Corporation of the Sons of the Clergy. In 1919 he became the first secretary to the Scientific Instruments Research Association. He remained in this post until he retired in 1936, and the present standing of the Association is due in no small measure to his efforts.

His work with the Association confirmed in Mr. Williamson a long-felt interest in the applications of science to industry, the importance of which was not so fully realized twenty-five years ago as it is to-day. He was given the opportunity of studying detailed applications in respect of two particular industries, namely, oil and railways. In 1927, at the request of the late Lord Cadman (then chairman of the Anglo-Persian Oil Company), he visited that Company's station in Persia, and, as a result, wrote "In a Persian Oil Field". A later visit to Persia, in 1938, provided him with the material for a second book concerning the company, but publication was delayed by the War. His lucid account of technological processes created such a favourable impression that he was invited by the late Lord Stamp to write a similar volume about the L.M.S. Railway. This, "A British Railway Behind the Scenes", was published in 1933. He wrote another book on railways, though in a more popular vein, called "Railways To-day", a second edition of which he was able to prepare just before his death. Another result of his interest in applied science was his connexion with the administration of the Imperial College of Science and Technology, on the governing board of which he was a representative. His assistance in the constitutional reorganisation of the College was of considerable value.

During his service with the Scientific Instrument Research Association, Mr. Williamson was called to the Bar as a member of Gray's Inn. His legal knowledge proved of great help in his work for both the Association and the Imperial College, and he published a number of papers on legal aspects of science.

In 1920 he married Helen Lee (*née* Chambers), a research botanist; she died in 1934, and he turned even more to their many friends, in whose company they had always delighted. With his varied experience Mr. Williamson combined great personal charm and a gift of imparting happiness to all who knew him.

C. A. CLEMMOW

Mr. F. Hope-Jones

THE death of Frank Hope-Jones on April 3 has taken from us an enthusiast; to everything in which he became interested during his long life of eighty-three years he applied an unbounded enthusiasm which did much to help on the project in hand.

Hope-Jones's primary interest was the application of electricity to horology, and the successful functioning of many hundreds of impulse or step-by-step propelled time installations is largely due to the application of the principles laid down and continuously championed by him, the first and foremost of which was the transmission of energy through the surfaces of the electric contact.

The free-pendulum clocks which his firm produced and installed at the Royal Observatory, Greenwich, and supplied to many other observatories scattered all over the world would probably never have come into existence had it not been for the foundation