OBITUARIES

Mr. J. J. Shaw. C.B.E.

THE death on May 23 of Mr. John Johnson Shaw at the age of seventy-four severs yet another link with the pioneers of the study of earthquakes in Great Britain.

J. J. Shaw was born at Gornal, near Dudley, educated at King Edward's School, Birmingham, and then apprenticed to an engineer. During the latter part of his engineering studies, he designed some gas and some steam pumps, and although he soon forsook his engineering to become a pawnbroker, he never lost his love for engineering. It was in the year 1908 that he read a newspaper article on the recording of earthquakes, and this encouraged him to visit Dr. John Milne, who, having retired from his professorship at Tokyo Imperial University, had settled in the Isle of Wight and set up a seismological observatory there. John Milne and J. J. Shaw became friends, and Shaw, on returning home, set up his first seismograph, which included as components an old treacle tin as drum, a wheat straw as pointer and a driving mechanism taken from an old German clock costing 1*s*. 11*d*. This instrument recorded some violent, world-shaking earthquakes, including the Messina earthquake of December 28, 1908, and with this early success and John Milne's encouragement, Shaw set about improving his instrument. The task became a life study, and in each Milne-Shaw seismograph made under Shaw's personal supervision some improvement on the previous one was embodied. Milne–Shaw seismographs are now working in many observatories throughout the world and are excellent for recording strong distant earthquakes.

Microseisms are now thought to be largely due to storms at sea. They gave ever-recurring trouble to the early observers, and Shaw suggested that data concerning them could best be obtained by the use of the tripartite seismograph station (British Association Seismological Committee Report, 1920), a method which in the hands of Father J. E. Ramírez at St. Louis, U.S.A., and later workers has given such good results.

Shaw, like John Milne, never lost an opportunity to make a friend for seismology. He fitted an electric bell to the seismograph system at his home in West Bromwich, so that he could be ready with instrumental results when any newspaper reporter rang him up about an earthquake. Reporters were often surprised at his perpetual cheerfulness over the telephone at any time of the day or night, and at the fact that his seismograph and his reference files often gave earlier information than their own telephone systems. A few years before the Second World War, Shaw was particularly pleased to set up one of his instruments in Selfridges Store in London, so that any passer-by could see an earthquake being recorded should one occur at the instant he happened to be near the instrument. This instrument was suspended from one of the main structural steel pillars of the building, and since the steel went deep into the ground the pendulum recorded waves from distant earthquakes but was unaffected by street traffic or the movement of people in the store. This instrument is now in the Science Museum at South Kensington.

Shaw first became a member of the British Association Seismological Committee in 1914, probably having been proposed by his friend John Milne just prior to the latter's death in July 1913. John Milne had been honorary secretary of the Committee for many years, and Prof. J. Perry had taken over the duties of secretary as a temporary measure on John Milne's death. At Manchester on September 8, 1915, Prof. Perry resigned the secretaryship and J. J. Shaw took over. He continued as honorary secretary until July 26, 1946, and was a member of the Committee until his death. As a member of the Seismological Committee of the British Section of the International Union of Geodesy and Geophysics, J. J. Shaw took part in many international meetings and established a world-wide reputation as an instrumental seismologist. He was also a popular scientific lecturer of considerable renown in the Birmingham district, having an infectious enthusiasm for popular science in general and instrumental seismology in particular; being a kindly, forthright man, he made many friends. He was made C.B.E. in 1931, and awarded an honorary M.Sc. by the University of Birmingham a year later.

Mr. Shaw had suffered from knee trouble for some years, and on May 22 one leg was amputated; the operation was successful, but he had a relapse and died the next day. He will be missed by many people not only in his home town and district, but also by a wide circle of friends and acquaintances throughout the world. His son, Mr. Harold V. Shaw, is expected to continue the observatory.

ERNEST TILLOTSON

Dr. J. M. Dalziel

DR. J. M. DALZIEL, whose death was recently reported, was educated in Edinburgh and spent the first years of his career in South China as a medical missionary with the English Presbyterian Mission. His interest in natural history was evident even then. He eventually transferred to the West African Medical Service, where his work during many years took him to all the British West African Colonies. His greatest love was for Northern Nigeria in general, and the Hausas in particular. He was a good Hausa scholar, and also had a considerable knowledge of Fulani. He was a keen observer, and collected a number of new species, especially of Northern Nigerian plants, although he collected animals as well, and recorded their vernacular names. He tried to record the vernacular names and the uses of every plant he encountered, and his field notes were always most thorough and painstaking. His Hausa names of plants, with scientific equivalents, and often with derivations of the names, were published in 1916 as "A Hausa Botanical Vocabulary", an invaluable work, unfortunately now out of print, and in which the majority of the information given is still accurate. During that period Dalziel helped, with his field notes, in J. H. Holland's monumental "Useful Plants of Nigeria".

In zoology Dalziel was a keen bird watcher, as his little booklet "Bird Life round Accra" testifies. He also collected insects of importance as vectors in tropical medicine, and presented his carefully prepared specimens to the University of Edinburgh.

On his retirement from the West African Medical Service, Sir Arthur Hill, then director of the Royal Botanic Gardens at Kew, secured his services to help Dr. J. Hutchinson in the production of the "Flora of West Tropical Africa", a work which occupied the years 1923–36. It was a fortunate choice, for Hutchinson had a great knowledge of the African

material in the Kew Herbarium, and Dalziel had a wide field knowledge in West Africa.

But it was the appendix to this flora, entitled "The Useful Plants of West Tropical Africa" (1937), which came to be Dalziel's *magnum opus*. The amount of information and local names he collected was amazing; there were 10,000 vernacular names from Nigeria alone. His information covered all the West African Colonies, including much information from the French West African Colonies. His thorough recording of the medicinal uses, for example, could only be done effectively at that stage by one who, like Dalziel, combined a thorough knowledge of both the plant life and the tropical diseases of the area, together with the necessary persistence and thoroughness in recording his own observations and those supplied to him by others. His correspondence during these many years of compilation must have been immense, and his critical faculty in dealing with it adequately must have been exceptional.

His work is a sound basis for all future work on the uses of West African plants, and he quotes all the authorities he used. This work was his main scientific work, done with endless care, at financial loss to himself, and with inadequate recognition in his life-time. Dalziel has put into the hands of educated Africans, as well as into those of European research workers, the requisite means for further research in the subject, which is of vital importance for the future welfare of West Africans themselves. In his work of recording the medicinal uses in particular, he has laid a foundation on which those of us who follow him can build with confidence.

F. R. Irvine

Mr. G. L. Overton

Mr. George Leonard Overton, who had been keeper of the Department of Air and Water Transport at the Science Museum during 1926–35, died at his home in London on May 15. Born at Coventry on May 18, 1875, he was educated at Bradford Technical College and passed to the Royal College of Science, London, where in 1897 he graduated in physics and for a year held the post of assistant in the Astronomical Department.

In 1898 Overton was appointed to the then South Kensington Museum by competitive examination—in which he figured with high distinction—and was concerned with the presentation of various scientific subjects, notably time measurement, which for him was a hobby as well as a serious study. He was a fellow of the British Horological Institute and of the Physical Society, and in 1922 published a book on clocks and watches.

Overton had the analytical type of mind that is appropriate to museum work. He was a purist; not only in choice of words, but also in all matters pertaining to the restoration and preservation of exhibits. His regard for accuracy was so great that it tended to limit his output; but the official publications of which he was the author evinced a standard of precision rare even in technical literature.

A serious operation during the latter years of his service handicapped him, but it made his admirable custodianship of the collections for which he was responsible even more praiseworthy. He was one of the very few officers surviving who constituted the higher technical staff of the Science Museum on its separation from the Victoria and Albert Museum in 1909 and inception as a separate entity. The tradition so ably established by Overton and his contemporaries is the foundation upon which that national museum of science and industry is to-day erected. All who knew him, admired his knowledge, and experienced the kindness and generosity of his personal relationship, will deeply regret his passing.

M. J. B. Davy

NEWS and VIEWS

Royal Society of London: New Foreign Members

On May 27, Prof. D. W. Bronk, Prof. L. E. J. Brouwer, Prof. M. J. G. C. Caullery and Prof. L. C. Pauling were elected foreign members of the Royal Society of London.

Prof. D. W. Bronk is known not only for his own researches in biophysics but also as the director of the Eldridge Reeves Foundation for Medical Physics since its foundation in 1929. This Foundation forms a part of the University of Pennsylvania, and has acquired an international reputation under his direction and become a flourishing centre of research under his genial and skilled guidance and produced many distinguished pupils. In his own work, his early physical training shows in the precision and definition which he has brought to many biological problems. His particular contributions have been on electrical phenomena in nerve, following his work with Adrian in 1929 on the mode of discharge of impulses by motor nerve cells; he elucidated the functions of the carotid sinus and brought light to many problems of sensory physiology and of synaptic transmission. His work during the War was concerned with many applications of science to the Services, especially those relating to night vision. He was indefatigable in travelling to theatres of war and across the Atlantic as a co-ordinator of research between the laboratory and the field.

L. E. J. Brouwer, professor of mathematics in the University of Amsterdam, may be regarded, along with Cantor and Poincaré, as one of the founders of modern topology if only on account of his proof in 1911 that dimensionality is a topological invariant. Brouwer's life work has, however, been concerned with a theory of the nature of mathematics, which he put forward in its first state in 1907. This theory, known as intuitionism, denies in particular the universality of the law of the excluded middle, and has aroused much controversy.

Prof. Maurice Caullery is the most distinguished of French zoologists. During his long and active career, his students have included many of the present holders of zoological chairs in France and many other well-known biologists, including some in Great Britain. Until 1939, he held the chair of biology at the Sorbonne. He is a member of the Institut de France, member of the Belgian Royal Academy, foreign member of the American Academy of Arts and Sciences, LL.D. of St. Andrews, and has been exchange professor of Harvard University. He was president of the Société de Zoologie and of the Société de Biologie of France. He is president of