

OBITUARIES.

ÉMILE BERTRAND (1844–1909).

Émile Bertrand was a Corresponding Member of the Crystallogical Society, becoming an Honorary Member of the Mineralogical Society with the amalgamation of the two societies in 1888. He was one of the founders of the French Mineralogical Society, and twice its president. Coming of a wealthy family, he spent some years in travel; and in 1869 he attended the Paris School of Mines, with 'une véritable passion pour la Minéralogie'. It was in 1872 that he commenced his series of researches in mineralogy, but unfortunately his brilliant scientific career was only too short. A bad state of health, which increased with years, ended in an almost complete loss of memory. Since 1888 only two papers have been published by him, the last being in 1897.

His work was two-sided in its character: he perfected instruments of research, and he used these instruments to advantage in determining the constants of minerals. Several improvements in the mineralogical microscope were made by him, one of which was the addition of the now well-known 'Bertrand lens' between the objective and the eye-piece for the purpose of showing interference-figures in convergent polarized light. He also designed a small, convenient form of refractometer. A large number of mineral species were re-examined, and it was his intention to pass in review all those which appeared doubtful. Friedelite was one of the species he discovered and described. His paper 'on the law of twinning and hemihedrism of leucophane' appeared in the Proceedings of the Crystallogical Society.

An obituary notice, written by Professor G. Wyrouboff, together with a portrait and list of papers, sixty-one in number, has appeared in *Bull. Soc. franç. Min.*, 1910, vol. xxxiii, pp. 117–124.

MARIA ARISTIDES BREZINA (1848–1909).

Dr. Aristides Brezina was elected an Honorary Member of our Society in 1895. He was born at Vienna on May 4, 1848, dying there after a long and severe illness on May 25, 1909. He entered the Royal Mineralogical Collection at Vienna (k. k. Hofmineralien-Kabinet) as a pupil at the age of fourteen, and as an assistant at the age of twenty; and when this collection was transferred to the new Natural History Museum

(k. k. naturhistorisches Hofmuseum) in 1889 he was appointed director of the mineralogical and petrographical division, from which post he retired in 1896. During a portion (1874–92) of this period he also acted as teacher of crystallography in the University of Vienna. Besides studying at Vienna, he had also studied crystallography at Berlin and Paris, and graduated at Tübingen in 1872.

Much of his earlier work related to the crystallography of minerals and artificial compounds; and he described as new species the minerals herregrundite, schneebergite, and strüverite. On the retirement of Professor Gustav Tschermak from the Mineral Cabinet in 1878 he took special charge of the extensive collection of meteorites, and he then commenced to devote himself with much zeal to the study of these bodies, more especially the meteoric irons. It is through his work in this direction that he is most widely known.

A fuller account of his life, together with a long list of his published works, is given by Dr. C. Hlawatsch in *Verh. geol. Reichsanstalt, Wien*, 1909, pp. 181–187.

FREDRIK JOHAN WIIK (1839–1909).

Professor F. J. Wiik, an Honorary Member of this Society since 1880, died at Helsingfors on June 15, 1909. He was born in that city on December 16, 1839, graduated in 1865, and in 1877 was appointed Professor of Geology and Mineralogy in the University of Helsingfors, retiring with the title of Emeritus-Professor in 1898. His published work is not voluminous and relates almost exclusively to the geology and the minerals of his native country, though in 1893 he also propounded an elaborate crystallo-chemical theory of the silicates. The mineral wiikite, named in his honour by his successor, Professor Wilhelm Ramsay, is remarkable in containing a larger quantity of the rare element scandium (Sc_2O_3 1.17 per cent.) than any other known mineral.

HILARY BAUERMAN (1833–1909).

Although not a member of our Society, Professor Bauerman was always interested in our science. He was the first student entered at 'The Government School of Mines and of Science applied to the Arts' (now the Royal School of Mines), and he afterwards spent three years at the Freiberg Mining Academy. In 1856 he was appointed assistant geologist on the Geological Survey of Great Britain, and in 1858 was a joint-author of a catalogue of the rock specimens in the Museum of