

## MISCELLANEOUS

## BRITISH PETROGRAPHY.

IT may interest our petrological readers to learn that the remaining portion of Mr. Teall's admirable "British Petrography" is in the press, and will shortly appear. The issue in monthly parts, as originally contemplated by Mr. Teall, had, in consequence of an unforeseen contingency, to be discontinued. The firm of publishers that had undertaken to bring out the work became involved in financial difficulties, and ultimately failed, placing Mr. Teall in the remarkable predicament of having to purchase a portion of his own book. We are happy to be able to state that the work is now in good hands, namely, those of Messrs. Bemrose & Son, and is only awaiting the completion of a few of the plates, before being given to the scientific world. We must congratulate the author on having brought to a favourable conclusion an undertaking as comprehensive in design as it is thorough in execution. The 200 pages which have already appeared, replete with accurate and minute description, well furnished with references to original sources and illustrated by plates of surpassing beauty, have been sufficient to place the book in the front rank of petrographical literature, among such classic compeers as Fouqué and Lévy's "Minéralogie Micrographie," Rosenbusch's "Physiographie der Mineralien und Gesteine," and Zirkel's "Lehrbuch der Petrographie."

## OBITUARY.

## FERDINAND V. HAYDEN.

BORN SEPTEMBER, 1829; DIED 23RD DECEMBER, 1887.

DR. F. V. HAYDEN was born in Westfield, Mass., in 1829. He was a graduate of Oberlin College, Ohio, and received the degree of Doctor of Medicine from the Medical School of Albany, N.Y., in 1853. He was surgeon in the army during the civil war; and after it for seven years, he held the position of Professor of Mineralogy and Geology in the University of Pennsylvania.

But the larger part of his time, from 1853 to the close of 1878, an interval of twenty-six years, was spent in Rocky Mountain exploration, in which his special work was geological; and through his labours and the investigations of those associated with him, a wide extent of territory, until then little studied, was examined geologically and topographically. Coal-beds were found and a new coal-flora made known, new fossil Mammals, Reptilia, and Fishes, in great numbers, were collected and described, the stratigraphy and palæontology of the Cretaceous and Tertiary and the intermediate Laramie or Lignite beds were well investigated, and the Yellowstone Geyser region brought to notice and explored.

Dr. Hayden's personal work consisted in a general geological reconnaissance of the regions visited, the collection of fossils, which was the chief object of the earlier expeditions, and the supervision and direction of the surveying parties. He was the first to make known the facts as to the vast Tertiary lake-areas of the summit

region and eastern slopes of the Rocky Mountains, whence he drew the conclusion that the elevation of the mountains went on slowly through the whole Tertiary, commencing with the Laramie, which afforded some brackish-water fossils.

His first two expeditions were made in 1853 and 1855 to the Bad Lands on White River, in Dakota, that of 1853 at the expense of Professor James Hall. Large collections of remains of fossil mammals were brought home, besides numerous other species. His palæontological friend, Mr. F. B. Meek, was with him. In 1857 he accompanied Lieut. G. K. Warren's expedition, and made the discovery of the rich Niobrara Mammalian fauna, newer than the White River, and obtained a great number of specimens. In 1866 he visited the "Bad Lands," making collections for the Academy of Natural Sciences of Philadelphia. The mammalian remains obtained in these various expeditions, along with those gathered by Dr. John Evans in 1849 and 1853, and Mr. Culbertson 1850, were the materials used by Dr. Leidy for his great work on the Extinct Fauna of Dakota and Nebraska (1869).

During 1859 and 1860, Dr. Hayden was connected, as geologist, with Capt. Raynold's expedition to the headwaters of the Yellowstone and Missouri. In 1867, after the civil war, the series of government expeditions under his charge was begun that continued through the consecutive years to the close of 1878. By these expeditions his explorations became extended over large parts of Nebraska, Dakota, Colorado, Utah, Wyoming, Montana, New Mexico, and Kansas. The first appropriation was only 5000 dollars; but the later were more liberal, and besides his regular corps, a number of other scientists sometimes accompanied the exploration. Mr. Meek accompanied him, and through him large numbers of invertebrate species of the Cretaceous, Tertiary, Jurassic, and other formations were figured and described; and precision was thus given to the facts for success in laying down the subdivisions of these formations and mapping their distribution. After the death of Mr. Meek in December, 1876, his department passed under the charge of Dr. C. A. White. Mr. L. Lesquereux investigated, figured and described the fossil plants of the Laramie and other formations. Dr. Cope joined the expeditions of 1872 and 1873 and afterwards described the vertebrate fossils, collected in these and later years, in two quarto volumes.

The many volumes of the expedition, in 8vo. 4to. and the atlases, need not here be enumerated. Dr. Hayden had reason for feeling gratified with the great scientific results obtained by the expeditions under his charge, and the wonderful discoveries made concerning the ancient life of the continent, its vast mineral resources, and the successful mapping of its topographic features.

Since the expedition closed in June, 1879, Dr. Hayden has resided in Philadelphia.

Dr. Hayden was a member of the National Academy of Sciences, and received various honours from academies abroad. He was elected a Foreign Member of the Geological Society of London in 1879.—*Silliman's American Journal*.