1918. "The Disintegration of Wolfram," a letter published in the *Mining and Scientific Press*, San Francisco, September, 1917, by myself; *The Ore Minerals of the Tavoy District*, by J. Morrow Campbell, published privately, but available from Messrs. Rowe & Co., Rangoon.

As far as I understand their published views, Dr. W. R. Jones supports the pneumatolytic theory of the origin of the deposits, while Mr. J. Morrow Campbell believes that highly siliceous water was the agent which leached tin and tungsten from the magma and at quite moderate temperatures deposited cassiterite, wolfram, and associated minerals in veins.

J. COGGIN BROWN,
Assistant Superintendent, Geological Survey of India.

TAVOY, BURMA.
October 1, 1918.

THE FAUNA AND FLORA OF THE GREAT ICE AGE.

SIR,—The remains of the past fauna and flora have frequently been utilized in supporting the theory of an Ice Age. But little justice has been done to this subject, although it has been maintained by some authorities that the geological history of both animals and plants furnish strong evidence in favour of an Ice Age. In Sir Henry Howorth's series of instructive articles in the GEOLOGICAL MAGAZINE of August, September, and October last he emphasizes some features in the past and present marine fauna of the Baltic which deserve very careful consideration. His remarks about *Yoldia* and its distribution apply with equal force to dozens of other species of marine organisms. The argument that because a species now lives at a certain depth in the Arctic Ocean it must have lived at the same depth during the Ice Age much further south is a fallacy, as Sir Henry Howorth points out. Although some forms of animal and plant life readily adapt themselves to changes of temperature in the course of their migrations most of them require for their existence and welfare a uniform temperature. The conclusions arrived at by Sir Henry Howorth are based on the conditions which obtain almost everywhere near the coasts of Europe at the present day. We may observe Arctic species thriving at considerable depths, while Southern species inhabit the shallow water of the same area. In elucidating the geological history of the Baltic these conclusions, with which I entirely agree, are of the highest importance.

R. F. SCHARFF.

NATIONAL MUSEUM, DUBLIN.
November 23, 1918.

OBITUARY.

JOHN DUER IRVING.

BORN AUGUST 18, 1874. DIED JULY 20, 1918.

JOHN DUER IRVING, the son of Professor R. D. Irving, of the University of Wisconsin, was educated at Columbia University, and

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after taking his degree he joined the United States Geological Survey, carrying out work in Dakota and Colorado in conjunction with Whitman Cross and S. F. Emmons. His most important Survey work was a memoir on the Leadville district of Colorado. In 1903 he was appointed professor of geology at the University of Wisconsin and afterwards at Lehigh University. In 1907 he became professor of economic geology at the Sheffield Scientific School at Yale. He was also editor of *Economic Geology* from its commencement in 1905 until his death. When the United States declared war he entered the Army, and soon left for France with the rank of captain. At first engaged in railroad work, he subsequently became instructor in a school of mining and engineering as applied to warfare. Hard work and unremitting attention to duty wore him out, and he succumbed to pneumonia following influenza, to the deep and lasting regret of all who knew him, both in the Army and in the scientific world.

MISCELLANEOUS.

On the Discovery of a Method of Arresting the Decomposition of Meteoric Irons, applied successfully to Meteorites in the British Museum (Natural History).

Henry Gadsdon (1861–1918), who died on December 2, aged 57 years, had been for over ten years employed at the Natural History Museum as french-polisher. He was an excellent workman of the best type, one who took pride in maintaining the high quality of his work. It is thanks to his aid that the problem of safeguarding the Meteoric Irons in the National Collections has—so it is hoped—been successfully solved. Every curator who has had such specimens under his care knows well the difficulty of preventing them from rusting. The chief agent in causing the mischief appears to be the unstable protochloride of iron—lawrencite—which immediately breaks down in the presence of damp. This substance is disseminated through certain specimens in extremely thin veins, and, since the change that takes place causes it to swell, such specimens are often found to be split across; further, as a result of the alteration of the lawrencite the nickel-iron alloy which is the principal constituent of the meteorite is attacked, and finally nothing is left of the specimen but a lump of rusty fragments and powder. By keeping the air in the case as dry as possible, the rate of attack may be slackened, but only slackened; the ultimate end is just as sure and inevitable. Varnishing the specimen is more effective, but this process completely spoils the specimen for exhibition purposes. Six years ago, in 1912, as the result of experiments made on pieces of steel exposed to the weather, it was thought that coating the meteorites with a thin, transparent film of shellac by the process of french-polishing might overcome the difficulty without sensibly interfering with the appearance of the specimens, and the Keeper of Minerals decided to have first those specimens which showed considerable signs of rusting treated in this