

## NOTICES OF MEMOIRS.

I.—ÉTUDE MICROGRAPHIQUE DU TUFFEAU À *CYPRINA PLANATA* DU NORD DE FRANCE ET DE LA BELGIQUE. DU RÔLE DES DIATOMÉES DANS LA FORMATION DE CE TUFFEAU (Notice préliminaire). Par M. L. CAYEUX, Préparateur de Géologie à la Faculté des Sciences de Lille. Annales de la Société géologique du Nord, t. xix. 1891, pp. 90-95.

THE Tuffeau described in this paper is a rock consisting of glauconitic sands agglutinated together by a siliceous cement, which is of not infrequent occurrence in the Sands of Landenian age in many localities in the North of France and in Belgium. The horizon of *Cyprina planata* appears to be slightly lower than that of the Thanet Sands of this country. In some places, near Lille for example, the rock is remarkably rich in zircon, tourmaline and rutile. The author has also discovered therein abundant remains of Diatoms and sponge-spicules; the former principally belong to the genera *Synedra*, *Coscinodiscus* and *Triceratium*, whilst the latter are chiefly of Monactinellid and Tetractinellid sponges. Sometimes the Diatoms prevail in the rock; at others the spicules. The silica forming the cement of the rock may be either in the condition of opal or chalcedony, and thus resembles the silica of the organisms. The author considers that this cementing silica has, in part, if not altogether, been derived from the remains of the diatoms and sponges. In a subsequent note in the same journal (p. 134) mention is made of the occurrence of Diatoms in the upper portion of the Ypresian of Flanders, thus on the horizon of the London Clay. From the character of the minerals in the Tuffeau and sands of the Lower Eocene, the author concludes (p. 265) that they have been primarily derived from the crystalline-schist series of rocks.

G. J. H.

II.—PALEOZOIC FOSSILS FROM KOTELNY ISLAND, NEW SIBERIA. By Baron EDUARD VON TOLL. Mémoires de l'Académie Impériale des Sciences de St.-Pétersbourg, vii<sup>e</sup> série, vol. xxxvii. No. 3, 1889.

THIS is the first portion of the Scientific Results of the Expedition sent out in 1885-6 by the Royal Academy of Sciences for the Exploration of Jana-Land and the New-Siberian Islands. Prefatory remarks (pages 1-9) give an account of the Expedition, its aim, progress, members, and helpers. A description of the fossiliferous Devonian strata of the West Coast of Kotelny Island (pages 10-13) precedes that of the fossils, which comprise 23 species and varieties of Brachiopods, 6 Corals, and 2 Stromatoporoids. Eight forms are peculiar to this region, and a table at p. 32 shows the distribution of the others in Siberia, West side of the Ural, Petchora-land, Rhine-land, North America, or China, in the upper division of the Middle-Devonian formation.

The Silurian fossils, chiefly from the gravel of the Ssrednjaja river, are 7 Brachiopods, 4 Trilobites, 6 Ostracodes (*Leperditia*), 12 Corals,

1 distinct (*Lagena*) and 5 indistinct sections of Foraminifera. The distribution of these species in the Upper-Silurian formations of Siberia, Estland and Oesel, Scandinavia, Britain, China, and America is shown in a table at p. 55. *Strophomena euglypha*, *Phacops quadri-lineata*, *Favosites Gotlandica*, *F. Forbesi*, *Alveolites Labechei*, *Heliolites interstinctus*, and *Halysites catenularia* have the widest range. Five quarto plates of numerous figures illustrate this interesting memoir.

T. R. J.

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R E V I E W S.

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I.—THE FAUNA OF THE LOWER CAMBRIAN OR OLENELLUS ZONE.  
By CHARLES DOOLITTLE WALCOTT, F.G.S., of the Smithsonian Institution, Washington, D.C., U.S.A. Extract from the Tenth Annual Report of the Director (1888-89). Washington, 1890 (issued 1891). U. S. Geological Survey. 4to. pp. 511-774, Plates xliiii.-xcviii.

THE publications of the Geological Survey of the United States of America have long been famous for their illustrations and their typography; for the vast amount of economic information they contain as regards the stratigraphical geology, the physical features, the agricultural and mineral resources contained in each State. Nor has science been neglected, for there are but few volumes, out of the long and splendid series already issued, which have not contained most valuable contributions to the palæontology of some group of organisms, or the fauna of some series of rocks. This is all the more honourable to the present Director, Major J. W. Powell, because it is an open secret that, *like Gallio*, "he cares for none of these things," and might, if ungenerously disposed, have placed great obstacles in the way of the progress of palæontology. We have now to thank him for enabling Mr. C. D. Walcott, the author of the memoir before us, to bring out in a suitable manner, one of the finest pieces of work which has issued from the Government Printing Office, Washington, already famous for its productions, so generously distributed by the United States Government to men of science all over the world.

The author, with the modesty of true merit, prefaces his work (pp. 516-524) with the names of some forty authors and over one hundred papers bearing upon Cambrian geology and palæontology. Mr. Walcott thus defines the title of his work:—

"A living fauna, as known to the zoologist, is the assemblage of animals embraced within a given geographic province or area, and includes all animal life associated on account of climate or physical boundaries. Some of the species may range from province to province and form a part of several faunas, while others are limited to a particular portion of some faunal area.

"In the study of the extinct faunas, buried in the rocks, the same general principles of classification prevail, with the added restriction of vertical or time range as defined by the progressive zoologic changes in the faunas.