The fossil plants include large silicified trunks of trees, probably Sequoias, and many species, 90 to 100 in all, about 40 of which have already been described by Lesquereux, besides some flowers with long stamens. The assemblage of plants indicates, according to Lesquereux, a climate like that of the northern shores of the Gulf of Mexico; of fishes, according to Cope, of latitude 35°; of insects, according to Scudder, a still warmer climate.

The age of the deposits is referred by the most recent and best authorities to the later Eocene or early Miocene.

The insects are soon to be described by Mr. Scudder in a quarto volume and illustrated by a large number of plates.—*Amer. Journ. Sci.* Nov. 1881, p. 409.

On the Nature of Cyathophycus. By C. D. Walcott.

This genus was originally described by me under the impression that the form was an alga of a peculiar appearance *. On reading the observations of Prof. R. P. Whitfield on the nature of *Dictyophyton* and its affinities to certain sponges †, it was instantly suggested that *Cyathophycus* was probably a member of the same group. A special effort was made to obtain perfectly preserved specimens of the genus, and with such success that the reticulate structure mentioned in the original description was found to be formed of a horizontal and perpendicular series of narrow bands crossing each other at right angles so as to form a network with rectangular interspaces, the narrow bands being formed of thread-like spicula resting on, or one against the other. The spicula differ in size; some are filiform, while others are stronger and more prominent; and all appear to be replaced by pyrite, as in the Devonian specimens studied by Principal Dawson and Professor Whitfield. Through the kindness of Professor Whitfield I have had the opportunity of examining the specimens referred to by him, and now have little doubt that the Utica slate form belongs to the same class, although probably differing generically from the Devonian species, and is an earlier representative of this interesting group of sponges.

Cyathophycus reticulatus presents a beautiful appearance when a large number of specimens are flattened out on a slab of the dark slate. Each individual lies free from its associates; and the striking resemblance to *Euplectella* is seen at a glance, although the convex summit of the latter genus is absent, and the margin curves over and downward on the inside to a considerable distance at least; how far is yet unknown. The cylindrical forms vary in length from 10 to 350 millim., and the spheroidal species, *C. subsphæricus*, from 3 to 60 millim. in diameter, each species preserving the rounded rim of the circular aperture at the summit.—*Amer. Journ. Sci.* Nov. 1881, p. 394.

* Trans. Albany Institute, vol. x. 1879.

† Amer. Journ. Science, xxii. July & Aug. 1881; and pp. 167, 237 of the present volume of the 'Annals.'