

## DESCRIPTION OF THE MIDDLE CAMBRIAN FAUNA.

### FUCOIDAL REMAINS, TRAILS OF ANNELIDS, ETC.

Mr. Billings described two species referred to the Algæ from the Georgia Group, *Palæophycus incipiens* and *P. congregatus* (Geology of Vermont, vol. ii, pp. 943, 944). Prof. Jules Marcou mentions the presence of a species of *Oldhamia* (Bull. Soc. Géol. de France, 3<sup>e</sup> sér., t. ix, p. 25, 1881); but after examining the specimen labeled by Professor Marcou, and now in the Museum of Comparative Zoölogy at Cambridge, Mass., and also examining great quantities of the shales at Parker's quarry, it seems that the so-called *Oldhamia* is the result of frost and water action, and is not of organic origin. The *Chondrites* spoken of by Prof. Marcou, and so labeled in the Museum of Comparative Zoölogy, owes its origin to fine rootlets penetrating between the layers of shales and staining them. Worm trails and borings are not of infrequent occurrence in the Georgia Group, but with the exception of a species of *Cruziana*, found east of Highgate Springs, and one in Nevada, and, possibly, the two species of *Palæophycus* described by Mr. Billings, nothing else that can be referred to the Algæ is known to me.

Dr. E. Emmons described a number of trails and doubtful fucoids from the "black flags and slates" of Rensselaer and Washington Counties, New York, and Waterville, Maine, which he considered to be from the Taconic System. Owing to their doubtful zoölogic character and the insufficient data upon which many of the species are referred to the Upper Taconic, I have omitted them from the present study, and will not include them in the fauna until collections are made from the typical localities and their stratigraphic horizon is determined.

When revising the Upper Cambrian faunas, I expect to illustrate the trails and fucoids of the Cambrian System, and will then discuss more fully those of the Middle Cambrian.

### SPONGIÆ.

#### Genus ARCHÆOCYATHUS Billings.

*Archæocyathus* Billings, 1861. Pamphlet; Geology of Vermont, vol. ii, p. 944; Pal. Foss., vol. i, p. 3 and p. 354.

*Original description.*— "Turbinate, simple or aggregate; cup deep. The internal structure, so far as can be made out, consists of an inner wall, constituting the inner surface of the cup, and an external wall or