glabella of *Triarthrus* on the back, which proves its geological horizon. It has two specimens of *Cyathophycus* close together, nearly perfect at their bases and broken off at the height of about three inches. They are perfectly flattened and pyritized, which is also the condition of other fossils in these shales, with the exception of the graptolites, which seem to have resisted this kind of change.

The genus *Cyathophycus* was originally described by Walcott from specimens obtained at Trenton, Oneida Co., New York.¹ He regarded it as an alga, whence the termination ¹ Trans. Albany Instit., 1879.

"phycus," but subsequently, in the American Journal of Science, 1881, corrected this error, and referred it to the sponges. Hall (35th Regents' Report) properly places it with the reticulate sponges included in his family Dictyospongidae, but does not add much to Walcott's original description, to which the present specimens permit some additions to be made.

The specimens are perfectly flattened, but show distinct indications of the two sides of the originally conical form. The wall of the skeleton has evidently been thin and composed of slender bundles, each of a few long simple spicules, and increasing both by bifurcation and the introduction of new bundles, so as to preserve nearly the same distances in the wider parts of the cone. They are very regular in the lower part, where there are about nine principal, with some intermediate secondary bundles in a centimetre, but become more irregular toward the top. This may, however, be an effect of decay and crushing. At the base these bundles become thicker, and in a specimen from the original New York locality, kindly lent to me by Mr. Ami, I have observed that they become expanded and converted into somewhat short clavate root spicules. This is, however, not apparent in Mr. Miller's specimens, which may have been broken off at the surface of the mud.

The vertical bundles are crossed at right angles by horizontal spicules much less regularly arranged, but dividing the surface into rectangular meshes. These are slightly