

Genus ETHMOPHYLLUM Meek.

- Ethmophyllum* Meek, 1868. Amer. Jour. Sci. and Arts, 2d ser., vol. xlv, p. 62.
Archæocyathus Meek, 1868. Amer. Jour. Sci. and Arts, 2d ser., vol. xlvi, p. 144.
Archæocyathellus Ford, 1873. Amer. Jour. Sci. and Arts, 3d ser., vol. v, p. 213. Generic name proposed at end of description of *Archæocyathus ? Rensselaericus*.
Protocyathus Ford, 1878. Amer. Jour. Sci. and Arts, 3d ser., vol. xv, p. 124.

The original description of the genus by Mr. Meek is descriptive of the species rather than of the genus, as the latter embraces several species that vary in details. Mr. Meek's description will be found under *Ethmophyllum Whitneyi*, the type of the genus.

As now understood, the genus may be defined as follows: Body of sponge simple, elongate, cup-shaped, turbinate, clavate or cylindro-conical, curved or straight, vertically ribbed or lobed or concentrically corrugated, or both combined. Cup deep, sometimes more or less filled by a vesicular growth on the inner wall. Both surfaces with more or less numerous round or oval pores in vertical and horizontal rows that cross each other obliquely or at right angles. The pores usually penetrate through the walls; some may terminate in cul-de-sacs. Outer and inner walls united by transverse vertical septa that originate on the outer wall and extend inward, ultimately joining the inner wall. Septa usually poriferous, but sometimes no openings can be detected. Thin dissepiments may or may not cross the spaces between the septa. Septa 6 to 112 in number, as now known. Inner wall with or without a vesicular growth extending into the central cup. The series of septa and walls may be repeated again and again, or show only one series. Skeleton made up of fine branching spiculæ in one species (*E. Minganensis*), and undetermined in others, owing, probably, to the replacement of the parts by calcite.

Mr. Billings, in proposing the genus *Archæocyathus*, evidently included this type, but at the same time he included another generic form, *A. Atlanticus*, and followed the generic description with that species. The generic description is also more applicable to *A. Atlanticus*. (Geology of Vermont, vol. ii, 1861, p. 944.) The second species, *A. Minganensis*, is now placed under *Ethmophyllum*, and *A. Atlanticus* is taken as the type of the genus *Archæocyathus*, although Mr. Billings, in subsequent publications, evidently considered it a secondary species; inasmuch as he did not redefine the genus and as another generic name is needed to include one of the two genera placed under *Archæocyathus*, I prefer to limit the latter to its type species and use Mr. Meek's genus for the other, and thus avoid placing *Ethmophyllum* as a synonym of *Archæocyathus* and creating a new genus to include *A. Atlanticus*.

Archæocyathellus Ford, 1873, is generically identical with *Ethmophyllum*. Mr. Ford distinguished the latter genus by its straight form, longitudinally-ribbed exterior, and remarkable poriferous system. I find all these characters in *E. Whitneyi* and also the characters of *E. profundum*.