"On grinding away this very thin punctured wall, the septa are seen immediately within to be stout, equal, straight, and very equidistant, but in grinding a little farther in they are observed to become very regularly waved laterally, *exactly like the septa in the foraminiferous genus Fusulina.* So striking is this resemblance that it was not until after ascertaining from cross-sections that the fossil has not an involuted structure that I could get rid of the suspicion that it might be a type of *Foraminifera* allied to *Fusulina*, instead of an extraordinary coral.

"By grinding still farther in (to a depth of about 0.06 inch, in a specimen 0.34 inch in diameter), the lateral waving of the septa already mentioned is seen to be there suddenly and so strongly marked that they connect laterally in such a manner as to form a kind of complex inner wall between the great central cavity and the outer septate zone. This wall, however, does not completely isolate the septate outer zone from the central cavity, but is perforated by a series of round equal canals, very regularly placed, one within each of the lateral curves of the septa, so that those on the opposite sides of each septum alternate with exact regularity, as do those of each of the two rows within each interseptal space. These canals have no similarity to the minute punctures of the outer wall, being greatly larger and very differently arranged. They do not pass *directly* through the inner wall, but are directed obliquely upward and inward, so that as seen in transverse sections of the corallites they present the appearance of a double row of vesicles cut across.

"Both longitudinal and transverse sections show the large central cavity to be without any trace of septa or columella. From these sections I was likewise at first led to believe this central portion to be also an entirely open cavity or calice the whole length of each corallite, but on sending specimens to Professor Verrill he called my attention to some obscure appearances of transverse plates in one of the specimens cut longitudinally and requested me to cut others with the view of ascertaining whether or not these are plates. A longitudinal section of another specimen, however, when carefully polished, reveals no traces of proper transvere plates; but when examined by the aid of a strong magnifier it shows the whole interior to be occupied by a dense vesicular tissue, the walls of the vesicles being of extreme tenuity. This structure is seen in the interseptal spaces of the outer zone, as well as in the central cavity within.

"In regard to the affinities of so remarkable a type, it seems scarcely safe to express an opinion without a better series of specimens for study. Some of its internal characters, as suggested by Professor Verrill, would seem to indicate remote affinities to the *Cyathophyllidæ;* but its peculiar perforated outer wall would, on the other hand, appear to remove it from the primary division of corals including that family.

"I am therefore led to believe it a new genus, and most probably typical of a new family, in which opinion Professor Verrill concurs with me. For this genus I would propose the name *Ethmophyllum.*