manner from the outer shell; a fourth layer appears to exist in one example, but it is too obscure for study.

I find associated with the typical forms of Mr. Ford's *H. Emmonsi* shells that form a gradation between them and *H. communis*. The slightly convex dorsal side becomes flat and then slightly raised, as in *H. communis*. With a series of specimens, it is difficult to determine specific differences between them. Following the series towards the more rounded forms, we find that *H. impar* is readily reached. *H. communis* appears to be the central portion of a series uniting *H. impar* and *H. Emmonsi*. The most decided point of difference between *H. communis* and *H. Emmonsi* is the apical angle, that of *H. communis* being about 13° and that of *H. Emmonsi* about 8°. The two specimens I have before me of *H. communis* from Bic show only concentric striæ, as in *H. Emmonsi*.

H. communis var. *Emmonsi* is associated with *H. Americanus*, *H. communis*, *H. impar*, *Hyolithellus micans*, *Stenotheca rugosa*, &c.

The cross section of the tube is much like that of *H. teres* Barrande (Syst. Sil. Bohême, vol. iii, pl. x, fig. 4), except in the slightly convex ventral face.

Formation and locality.—Middle Cambrian. Even-bedded and conglomerate limestone on the ridge east of the city of Troy, New York.

HYOLITHES IMPAR Ford.

Plate xiv, figs. 1, 1*a*-*e*.

Hyolithes impar Ford, 1872. Amer. Jour. Sci., 3d ser., vol. iii, p. 419, figs. 1*a*, *b*, 2*a*, *b*.

Original description.—"The shells of this species are plump, elongate bodies, tapering to an acute point. The largest specimen obtained would, if perfect, be 1¾ inches in length. The usual length, however, is about 1¼ inches. The section is generally broadly and regularly oval, but in some specimens is rather more flattened on the ventral [dorsal] side than in the diagram of the one below given. Some specimens show a tendency to become keeled along the dorsum [ventrum], but this feature is rare and not well defined in any case. In an imperfect specimen 1.14 inches in length the rate of tapering on the ventral [dorsal] side is .10 of an inch in a distance of .60 of an inch. The width of the tube at the aperture is .32 and the depth .26 of an inch. In this specimen the lower [upper] lip projects beyond the limit of the dorsum [ventrum] .14 of an inch. The surface is ornamented with fine engirdling lines, which upon the ventral [dorsal] side curve gently forward, thence more sharply backward upon the sides until they reach a point at about the middle of the depth, where they are again deflected, and flow across the dorsum [ventrum] in uninterrupted, slightly forward-bending curves. There are also prominent subimbricating lines of growth, which give to some of the specimens an exceedingly rugose aspect.

"The operculum is of an oval form, irregularly convex externally, and