2. *Tentaculites.*—These are the only Primary "Pteropods" on which one might found arguments in favour of an apparent resemblance to the subgenus *Hyalocylix* of *Clio*. Their external surface, indeed, presents grooves or rather transverse rings. Nevertheless, the comparison of median longitudinal sections of a *Tentaculites* and a *Clio* shows at once that the resemblance is only superficial, and that in reality the two organisms are quite dissimilar in structure.

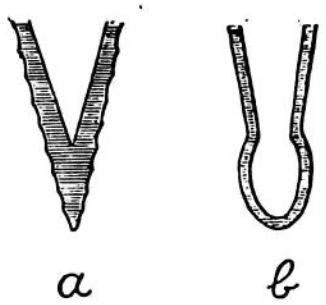

FIG. 5.—Longitudinal section of the apex, *a*, of *Tentaculites*, *b*, of *Clio*.

The Thecosomatous Pteropods such as *Clio* have a shell of almost constant thickness, and distended at the extremity (embryonic shell of Fol). *Tentaculites*, on the other hand, ends in a sharply pointed extremity, and the thickness of the shell gradually increases from the aperture towards the apex.[1]

In the same way the supposed Devonian *Cleodora* (= *Clio*), described by Ludwig,[2] has the apex like that of *Tentaculites*, and not at all like that of *Clio*.

Among the other Primary "Pteropods" three principal groups may be distinguished—(1) *Conularia*, (2) *Hyolithes*, (3) the Cymbuliidæ described by Ehrenberg, *Ecculiomphalus*, Portlock (= *Phanerotinus*, Sowerby; this was ranged by Bronn[3] among the Pteropods, but is really a Gastropod allied to the Solariidæ).

1. *Conularia.*—These differ from all the Thecosomatous Pteropoda hitherto known in their quadrangular shell and contracted aperture; even the structure of their shell separates them entirely from the Thecosomata. They have been placed along with these by d'Archiac and Verneuil, who, not being zoologists, were unacquainted with the organisation of the Pteropoda; and in consequence merely of this allocation all palæontologists have continued to class *Conularia* among the Pteropods.[4]

2. *Hyolithes.*—These are distinguished from all the Pteropoda by their triangular form, their partitions, and their operculum, which in no respect resembles that of any operculate Mollusc. I must also here allude to the case of *Calceola sandalina*, which was so long referred to the Brachiopoda, and which is only an operculate Polyp. Without committing myself to any opinion regarding *Hyolithes*, which I have not had the opportunity of studying personally, I may ask whether it may not be possible that this also is a species of operculate Polyp.

[1] Ludwig, Pteropoden aus dem Devon und Oligocän in Hessen und Nassau, *Palæontographica*, Bd. xi. pl. l. *3b*.

[2] *Ibid.* I must mention that the elongated Primary fossils with an initial dilatation resemble Dentaliidæ as much as if not more than Thecosomatous Pteropoda (compare M. Sars, Malakologiske Jagttagelser, *Forhandl. Vid. Selsk.*, 1864, pl. viii. figs. 49-51, and G. O. Sars, On some Remarkable Forms of Animal Life, &c., i. 1872, pl. iii. figs. 14, 15). Some similar Dentaliidæ have been found in the Challenger soundings. This would furnish an argument in favour of the views of Grobben, who regards the Scaphopoda as very primitive forms (Morphologische Studien, &c., *loc. cit.*).

[3] Die Klassen und Ordnungen des Thierreichs, Bd. iii. p. 646.

[4] Lindström (On the Silurian Gastropoda and Pteropoda of Gotland, *K. Svensk. Vetensk. Akad. Handl.*, Bd. xix. No. 6, p. 40) insists that the septa of *Conularia* furnish a proof of its Pteropod nature, whereas not one of the living Thecosomata has septa of this character.