

the component tubes, those of two juxtaposed tubes meeting one another and inosculating in such a way as to suggest the conjugation of a *Zygnema* (fig. 1).

Hydrothecæ.—In all the Plumularidæ hydrothecæ are borne on special ramuli, which are usually disposed in pinnæ, and for which the convenient term *hydrocladium*, as proposed by Kirchenpauer, may be adopted. In a few species (Pl. IV. figs. 3, 4) hydrothecæ are also carried directly by the stem.

In the Eleutheroplea the margin of the hydrotheca is, with, so far as I know, only one exception,¹ invariably destitute of all trace of serration. The peculiar ridge which I have termed the "intrathecal ridge," and which constitutes a characteristic feature in the Statoplea, is never present in the Eleutheroplea.

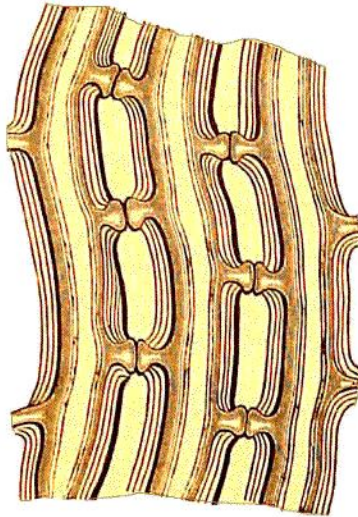


FIG. 1.—Longitudinal section of the polysiphonic stem of *Aglaophenia coarctata*, showing the lateral offsets through which the component tubes communicate with each other.

In the Statoplea the margin of the hydrotheca is in most instances deeply serrated (Pl. XI., &c.). In a few it presents only an indistinct crenation (Pl. XIV.), while in a few it is quite entire (Pl. XVII.). In almost every case there is present in the hydrotheca of the Statoplea a slightly projecting chitinous ridge (Pl. XI., &c.), which runs on the inner surface of the walls transversely from behind forwards, but with a more or less oblique direction, and which more or less completely encircles the cavity of the hydrotheca, thus forming an imperfect septum, which divides the hydrotheca into a proximal and a distal portion. This is the intrathecal ridge, which, as just said, is never present in the Eleutheroplea. In some species of Statoplea, what has the appearance of a similar ridge running from before backwards may be seen in the anterior portion of the hydrotheca (Pls. XV. and XVIII.). This, however, is only the optical expression of a fold in the walls of the hydrotheca.

¹ The exception here referred to is found in an Eleutheroplean Plumularidan not yet described. For an opportunity of examining it I am indebted to Miss Gatty: Among other very exceptional characters, the margin of the hydrotheca is here provided with a strong anterior mesial tooth, and with a strong lateral tooth on each side.