

an open orifice which is usually very oblique. In some very rare cases (Pl. VIII. figs. 4-7, and Pl. XIX. figs. 1-3) the lateral nematophores are absent.

In a singular and beautiful species (*Acanthocladium huxleyi*, Pl. IX.) contained in the Challenger collection, the hydrocladia become towards the dorsal extremities of the branches atrophied, lose their hydrothecæ, and are converted into spine-like appendages, which carry from base to apex two longitudinal alternate series of minute cup-shaped nematophores (Pl. XX. fig. 3).

b. *Cauline nematophores*.—These are usually small, cup-shaped bodies, situated on various parts of the hydrocaulus, with the cavity of which they communicate. They are generally disposed in linear series (Pl. XVII.) on the main stem and principal branches, and often form definite symmetrical groups of two at the points where the hydrocladia spring from the stem. Though quite different from the moveable nematophores of the Eleutheroplea,—being seated on a wide base which fixes them to the stem,—they would seem to be in many cases easily detached.

c. *Gonosomal nematophores*.—The system of nematophores attains in the gonosome of the Phylactocarpal Statoplea a remarkable development. The characteristic denticles which are found on the margins of the leaflets, which combine to form the walls of the corbula (Pls. XI. and XII.) in *Aglaophenia*, are only slightly modified nematophores. These denticles are tubular with a terminal orifice, and their cavity is in communication with that of the leaflet, while this opens into the common basal rachis of the corbula. In most cases a nematophore is specially developed at the base of each leaflet in the form of a spur. In one remarkable form (Pl. XX. fig. 6) branching chitinous ridges are developed on the walls of the corbula, and enclose cup-shaped nematophores in bifurcations of their branches.

But nematophores are largely developed not only in the corbula, but in the other forms of Phylactocarp, where they constitute a very characteristic feature. They occur in such cases along the branches of the Phylactocarp, or along the common basal rachis, and are usually present in the form of denticles or cup-shaped bodies, arranged in two opposite or alternate series. In *Lytocarpus spectabilis* (Pl. XV.) they are in the form of a pair of stout opposite spines on every internode of the phylactocarpal rachis, and are each provided with a terminal aperture and also with a lateral aperture close to the base (fig. 5). In *Lytocarpus racemifera* (Pl. XIII.) there is, in addition to the pair of opposite spine-like nematophores on each internode, an azygous spine on the front of the internode (figs. 4-6). A similar azygous spine-like nematophore is in *Lytocarpus spectabilis* carried by that internode of the rachis which supports a gonangium (fig. 2, p. 44).