

distal portion of the phylactocarp was curved over the gonangium and its supporting internode, while its lateral spines were all directed backwards away from the concavity of the curve.

The morphological significance of the phylactocarp is here sufficiently obvious. There can be no hesitation in recognising in it a modified hydrocladium, in which all the hydrothecæ, except that borne by the proximal internode, have been suppressed. It is also evident that the pair of lateral spines carried by every other internode represents the lateral nematophores of the suppressed hydrotheca. Except on the proximal or hydrotheca-bearing internode, and on that on which a gonangium is developed, no representative of the mesial nematophore is to be found. On the gonangium-bearing internode, however, a mesial spine is carried by the front of the internode, at a short distance behind the gonangium, and this plainly represents the mesial nematophore of the suppressed hydrotheca. The gonangium here takes precisely the place which would have been occupied by a hydrotheca had this been developed.

It may be a question whether the phylactocarps described above, which when examined were found destitute of gonangia, are provided with gonangia at other times, or whether they are really sterile ramuli, with some other physiological significance; at all events, the difference between them and those on which gonangia were present is very remarkable, and it is difficult to see how, after they have attained the form described, they could undergo such modification as would convert them into the fertile phylactocarp. The two forms, however, may be of different sexes, and be both equally destined to carry gonangia.

*Lytocarpus spectabilis* comes near to *Aglaophenia rostrata* of Kirchenpauer, a species which Kirchenpauer, who has not seen its gonosome, places in his section *Macrorhynchia*. The present species, however, is a much stronger form, and with longer hydrocladia. The hydrocladia, moreover, are alternate in *Lytocarpus spectabilis*, while in *Aglaophenia rostrata* they are described as opposite.

Dredged at Zamboanga, Philippines, 30th January 1875, from a depth of 10 fathoms; also at Station 186, Torres Strait, September 8, 1874; lat. 10° 30' S., long. 142° 18' E; depth, 8 fathoms; bottom, coral sand.

*Lytocarpus longicornis*, Busk, sp. (Pl. XIX. figs. 4-6).

*Plumularia longicornis*, Busk, Voyage of the "Rattlesnake," vol. i. p. 399, 1852.

*Trophosome*.—Colony attaining a height of about three inches; stem fascicled, irregularly branched, supporting closely set pinnately arranged alternate monosiphonic ramuli, which are themselves destitute of hydrothecæ, but give off all along their length the very short hydrothecæ-bearing ramuli, which are close set, alternate, about one-twentieth of