

## HELIOPORIDÆ—I, II.

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*Note.*—Both plates illustrate the structure of *Heliopora cœrulea* and *Sarcophyton* sp. All the drawings, with the exception of figs. 10 and 11, Plate II., are by the author. Figs. 10 and 11, Plate II., are by Dr J. J. Wild.

### PLATE I.

Fig. 1. Schematic representation of a section vertical to the surface of *Heliopora cœrulea*, showing the relations of the hard to the soft parts: the hard parts are coloured dark. In the centre is seen in section a fully-developed sexually mature-polyp in a retracted condition. The calcareous calicle in which it is contained is closed beneath by the tabula (CT), and the walls of the calicle are continued above into points (P) projecting above the general surface of the coral, the section being supposed to be so carried as to pass through two of the calcareous projections which surround the calicle.

Closely applied to the surfaces of the calcareous tissue, and lining its cavities everywhere, is a layer of spindle-shaped connective tissue cells, between which and the layer of endodermal cells is an interval occupied by transparent homogeneous connective tissue.

The external layer of ectoderm (E) covering the whole surface of the coral is seen to be continuous with that covering the exterior of the tentacles (here, from the introversion of those organs, appearing as their interior), whilst the endodermal layer (EN) covers their interior. The tentacle on the right side of the drawing is represented as having its tip cut off so as to display the full extent of the retractor muscle, and in order to show the position of the ovum (O). At the bottom of the atrium, *i.e.*, the central canal leading from the mouth and tentacles to the exterior, and formed by the deep retraction of the animal, are shown the mouths of the tubes formed by the introversion of two tentacles as they appear when looked directly into. Their lumen is cruciform.

On the right hand side of the figure three tubular cavities (TC, TC, TC), forming the so-called cœnenchym, are represented, lined by their soft tissues, composed of the same three layers which compose the lining of the calicle. Two of the tubes communicate above, over their lateral wall, by one of the