

- Z. Autozooids.
- P.M. Protractor muscle.
- R.M. Retractor muscle.
- C. One of the canals of the transverse system.

Fig. 3. Diagrammatic representation of a transverse section across a polyp of *Heliopora cœrulea* decalcified, taken just below the mouth. The tips of four of the tentacles cut across are retained *in situ*; the other four tips had fallen out in the section from which the drawing was constructed.

- D. External layer of connective tissue cells.
- C. Layer of homogeneous connective tissue giving off a series of stout offsets (A), which pierce the layer (D) and project externally. Continuations of this same layer are seen to form the central plate of the mesenteries and a wall around the stomach.
- E.N. Endoderm lining the whole of the intermesenteric chambers.
- M. Mesenteries.
- R.M. Retractor muscles. The "Dorsalfach" of Kölliker lies below in the drawing, the "Ventralfach" above. The muscles are covered by the endoderm.
- T.T. Tentacles cut across.
- S. Stomach. B. Its muscular layer.

Fig. 4. Section parallel to the surface of *Heliopora cœrulea*, to show the relation of the hard parts to the soft.

- T.C, T.C and the similar oval spaces represent the tubular cavities of the cœnenchym cut across. The interspaces between these cavities are occupied by the hard tissue.

The hard tissue is fibrous in structure, the fibres radiating from a series of axes here seen cut across (C). Suture-like lines (S) occur occasionally where the peripheries of the various radiating systems join.

- D. Layer of connective tissue cells.
- C. Layer of homogeneous connective tissue.
- E.N. Endodermal layer.

Fig. 5. Polyp of *Heliopora cœrulea* and the immediately surrounding structures as viewed in a thick horizontal section from the outer surface.

The external ectodermal layer is not seen, being too transparent. The superficial projecting points of the hard tissue of the corallum being opaque, are shown shaded dark. Away from the calicle the points are arranged in parallel rows. All over the surface are seen the tops of the ramifications of the superficial system of canals or sinus (fig. 1, V, V); those immediately