

A. Former ; A', recent calicular cavity.

C, C. Tabulæ.

B. Portion of wall of tube cut parallel to its surface, in which a line of suture between the fibres of opposite systems composing it is to be observed.

D. Vertical canal.

P. Point of growing coral showing lines of successive growth.

The numbers 1, 1'; 2, 2'', &c., indicate the order in which the successive chambers were formed.

Fig. 6. Portion of the hard tissue forming the wall of a tube cavity of *Heliopora cœrulea*, from the same preparation as fig. 5, more highly magnified.

C. Axis.

B. Shaded band caused by the fact that part of the calcareous tissue is stained of a more intense blue than the remainder. A similar band is seen on the opposite side of the axis.

Fig. 7. *a, a* Two of the cells of the endoderm of *Heliopora cœrulea*; one of these with the contents undergoing fission.

*b'* Nematocyst of the same. *b* A form of nematocyst commonly to be observed in which the thread is partly protruded and curved in a loop, whilst one side of the cell is bulged in.

Fig. 8. Ovum of *Heliopora cœrulea* as attached to the mesentery.

Fig. 9. Diagram to show the growth of *Heliopora* by a process of successive buddings and developments of tabulæ.

A. The original calicle of the stock: A', A'', &c., successively formed chambers in continuation of this calicle; 1, 2, 3, successive lateral buds.

B. Formation of a new calicle. A short tube buds out, but the tubes on either side of it grow more quickly. Only the outer part of their walls continues to be developed; hence a wide circular cavity is formed with the original short tube at its bottom.

Fig. 10. Drawing by Dr J. J. Wild, Artist to the Challenger Expedition, of the rapidly growing tip of a frond of *Heliopora cœrulea*.

The young growing tubes of the cœnenchym are polygonal in area.

A A. Calicles in various stages of formation.

Fig. 11. By the same. A calicle nearly fully developed, as seen when looked directly into. The calicle is surrounded by irregular dentations, of which there are more than twelve. A circlet of cœnenchymal tubes is seen to join the cavity of the calicle below.