

a uniform direction, viz., in that of the length of the branch on which it is situated towards the tip of the branch. It thus has a similar direction to that of the lids of the cyclo-systems in *Cryptohelia pudica*. In this latter genus, a stout process of calcareous matter, prolonged from the support of the lid, forms a prominent ridge on the wall of the upper chamber of the gastropore in a homologous situation (Pl. II. fig. 7). It seems probable, therefore, that this tongue-like process in *Astylus* represents either a rudiment of a lid like that of *Cryptohelia*, which in an ancestral form protected the mouths of the whole of the zooids of each system, but is in *Astylus* withdrawn deep into the central cavity of the system, so as to protect the gastrozoid only; or that the reverse is the case, and that the condition in *Cryptohelia* represents a further development of that seen in commencement in *Astylus*.

The separation of the gastropore into two chambers by a constriction is already foreshadowed in *Stylaster densicaulis*, as has been described, by the circlet of excrescences which there form a prominent zone in the gastropore above the level of the tip of the style (Pl. II. fig. 3, A).

The wall of the upper chamber of the gastropore in *Astylus subviridis* terminates below in a thin margin, and behind the wall a cavity, continuous with that of the lower chamber of the pore, runs up to communicate by offsets with the tubular portion of the dactylopores. This cavity, in the recent condition of the coral, lodges the main upward-directed canal offsets of the gastrozoid.

The lower chamber of the gastropore is a cavity with a rounded bottom, which is excavated within the substance of the branch supporting the pore system. The cavity communicates with the upper chamber by the horse-shoe shaped opening, and with the dactylopores as already described. With adjacent cyclo-systems it communicates by means of the axial canals of the branches. There is no trace of a style at the bottom of the gastropore.

Around the mouth of the gastropores the mouths of the dactylopores appear as elongate slit-like openings, radially directed towards the axis of the systems. The outer peripherally-placed margins of these slits are rounded, whilst internally the slits join the cavity of the gastropore. The pseudosepta intervening between the dactylopores are, in origin, double laminæ, as in *Stylaster densicaulis*, but in the present form appear as thin plates, which have so regular a radial arrangement and so wide an extent that they simulate the septa of Hexactinian corals more closely than do those of any other Stylasterid.

The inner extremities of the summit borders of the pseudosepta by their arrangement form a circular aperture leading to the cavity of the gastropore. There are from eighteen to twenty-one dactylopores in each cyclo-system. The upper wide slit-like chambers of the dactylopores are continued into small short tubular cavities below, as in *Stylaster densicaulis*; but these are entirely devoid of a style. The mouths of