

giving off a branch for each side of the nearest stigma. These branches unite soon with the corresponding divisions of the two adjacent bands to form the original number of longitudinally running bundles, one for each interstigmatic vessel (Pl. XXI. fig. 11).

The tentacles are numerous and are closely placed (Pl. XXI. fig. 12); they differ greatly in size. The dorsal tubercle is large and rather prominent (Pl. XXI. fig. 12, *d.t.*); both horns are coiled in the same direction, to the right.

The polycarps are numerous on the inner surface of the mantle, and vary from one to three millimeters in length. Each is hermaphrodite, and has the ovary occupying the centre and the rounded base (Pl. XXI. fig. 13), while the elongated spermatie vesicles are arranged around the periphery, so as to enclose and partially conceal the ova. These vesicles are fusiform or pyriform (Pl. XXI. fig. 14, *t.v.*), and their ducts join to form two canals, one on each side, which finally unite into the single vas deferens (*v.d.*), which runs alongside the short and wide oviduct (Pl. XXI. fig. 13, *o.d.*), and opens with it on the terminal papilla of the polycarp.

This species was found by the Challenger expedition at Port Jackson, Australia, where several specimens were obtained, at depths ranging from 2 to 15 fathoms, as follows:—17th April 1874, 2 to 10 fathoms, 1 specimen; 20th April 1874, 6 fathoms, 5 specimens; 23rd April 1874, 6 to 15 fathoms, 4 specimens.

*Polycarpa tinctor*, Quoy and Gaimard (sp.) (Pl. XXI. figs. 1–6).

*Ascidia tinctor*, Quoy and Gaimard, Voyage de l'Astrolabe—Zoologie, tom. iii. p. 608, pl. xci. figs. 1 and 2.

I have identified this species, found in considerable quantity by the Challenger expedition at Port Jackson, with the *Ascidia tinctor* of Quoy and Gaimard, entirely from the external appearance, as depicted in the atlas of the voyage of the Astrolabe.

The characteristic appearance of the Challenger specimens is shown well on Pl. XXI., where figure 1 shows a large specimen from the left side, the projection at the right side of the upper (anterior) end containing the atrial siphon. Figure 2 represents another specimen from the right side, while figure 3 is from the front, and shows the two conspicuous, distinctly four-lobed apertures. The atrial is always more prominent than the branchial, and is placed nearly one-third of the way down.

The test is thin and membranous, and is in all cases entirely covered with a close coating of fine sand.

The mantle is very muscular, and is only attached to the test here and there. The muscle fibres form continuous outer circular and inner longitudinal coats over the whole body. The sphincters around the siphons are very strong, and there is a partial diaphragm at the base of the atrial siphon, fringed with twenty short pointed lobes.

The branchial sac (Pl. XXI. fig. 4) has four well-marked folds upon each side (*br.f.*), and each of them has about eight internal longitudinal bars, while there are about the