

*Cynthia pallida*, Heller (Pl. XVII. figs. 17–21).

*Cynthia pallida*, Heller, Beiträge zur nähern Kenntniss der Tunicaten, p. 14, Taf. iii. figs. 17, 18 (Sitzb. d. k. Akad. d. Wiss., Bd. lxxvii. Abth. 1, 1878).

*Cynthia pallida*, Herdman, Prelim. Rep., Proc. Roy. Soc. Edin., 1880–81, p. 60.

The external appearance of this species has been fully described by Heller, and the Challenger specimens agree well with that description. The branchial sac has eight folds upon each side. One specimen has nine. There are six internal longitudinal bars upon the side of a fold, and only three in the interspace. The transverse vessels are of two sizes placed alternately (Pl. XVII. fig. 17, *tr.* and *tr.*'). The meshes are square or slightly elongated transversely; they contain each six or seven stigmata, and are divided by a narrow horizontal membrane (*h.'m.*'). As noticed by Heller, there are curious elongated and fusiform calcareous spicules in the branchial sac (Pl. XVII. fig. 17, *sp.*) and mantle of this species, and smaller ones are present in the test. When Heller described this peculiarity in 1878, it was, I believe, the first time such a thing had been noticed. Two of the new species of *Cynthia* discovered by the Challenger expedition (*Cynthia complanata* and *Cynthia papietensis*) show similar spicules in the test, mantle, and branchial sac.

In the present species, the spicules of the branchial sac are chiefly in the wider transverse vessels, and the internal longitudinal bars. They are elongated, slender, and pointed at both ends. In the mantle (Pl. XVII. fig. 18, *sp.*) they are more crowded, and are shorter and stouter. When enlarged sufficiently, it is seen that they are minutely echinated all over (Pl. XVII. figs. 19 and 20), and that the pointed spines lie all in one direction, and are arranged in closely placed transverse rows.

The dorsal lamina is in the form of a series of long tapering languets, united at their bases by a narrow membrane which, like the vessels of the branchial sac, contains elongated fusiform spicules (Pl. XVII. fig. 21). The tentacles are of two sizes, eighteen larger and eighteen smaller being placed alternately.

The dorsal tubercle is small, and is usually transversely ovate in shape. In one specimen examined both horns were coiled inwards, while in another one horn turned in and the other out, forming spiral coils.

In the third part of the Preliminary Report, some small specimens from Tahiti were included under this species. I have since determined that they are distinct, and they will be described below under the name of *Cynthia papietensis*.

Of the specimens of *Cynthia pallida* in the collection, one is from Simon's Bay, Cape of Good Hope; depth, 10 to 20 fathoms; and two are from Kandavu, Fiji Islands.

*Cynthia papietensis*, n. sp. (Pl. XVII. figs. 10–16).

*External Appearance.*—The body is irregularly ovate or elliptical in shape; it is transversely elongated, and compressed laterally. The posterior end is wide and rounded; the