

*Stichopus japonicus*, var. *typicus*, nov. (Pl. VIII. fig. 2).

*Habitat*.—Japan, May 1875; two specimens.

The two specimens brought home by the Challenger Expedition have each a length of 220 mm., thus being much larger than the previously known forms described by Selenka and von Marenzeller. In consequence of the existence of some differences I prefer for the present to consider the Challenger specimens as a variety, though it is most probable that they represent the older and more fully developed forms of *Stichopus japonicus*, a supposition confirmed not only from the greater size, but also from the presence of well-developed genital bundles on each side of the dorsal mesentery; neither Selenka nor von Marenzeller found the reproductive organs developed.

The colour is reddish or brownish-grey, lighter on the ventral surface. The tops of the dorsal papillæ are light, in one individual almost whitish. Even the sucking-disks of the pedicels are light coloured. The largest processes attain a length of about 15 mm., and a breadth at the base of 8 mm. or more, and their arrangement agrees with that described by von Marenzeller. The small dorsal papillæ, scattered among the larger, seem to be rather numerous.

The rather long, slender genital tubes are several times branched, and form two bundles not very thick, one on each side of the dorsal mesentery. The Cuvierian organs seem to be absent. A single Polian vesicle and madreporic canal are present. The calcareous ring is peculiar not only in that the ventral interradial pieces are smaller than the dorsal, but especially in that the dorsal radial pieces (Pl. VIII. fig. 2, *f*) are provided with rather considerable posterior prolongations, which, on the contrary, is not the case with the ventral radial pieces (Pl. VIII. fig. 2, *g*). Thus, when examining only the ventral part of the calcareous ring, one cannot get any exact idea of its true conformation. *Stichopus japonicus*, var. *typicus*, is not the only form that I have seen with such an asymmetrical calcareous ring.

The calcareous deposits consist of tables alone, but comparatively few of them are fully developed, by far the greater part presenting themselves under the shape of perforated disks with the margin very uneven or spinous, and with no spine or a very poorly developed one (Pl. VIII. fig. 2, *d*). The largest of these disks measure about 0.05 mm. in diameter. The rare complete tables are smaller and larger, composed of a rounded perforated disk with smooth margin and a spire built up of mostly four rods and one or more transverse beams (Pl. VIII. fig. 2, *a, b, c*). The spire often terminates in four longer or shorter teeth. The larger tables measure about 0.05 mm. in height, and their disks have a diameter of 0.05 mm. There are also to be found tables with a spire composed of only two rods. The dorsal papillæ are strengthened by numerous smooth or spinous, curved rods, and, besides, by elongated, bilateral, perforated, button-like plates with the holes arranged in two longitudinal rows (Pl. VIII. fig. 2, *e*). The pedicels are

almost destitute of such plates and rods, or provided with very few. I also found two or three smooth buttons with six holes, but these probably belong to another animal.

The specimens of *Stichopus japonicus* described as types seem to have the disks of the incomplete tables smooth.

*Stichopus haytiensis*, Semper, 1868 (?) (Pl. VII. fig. 5).

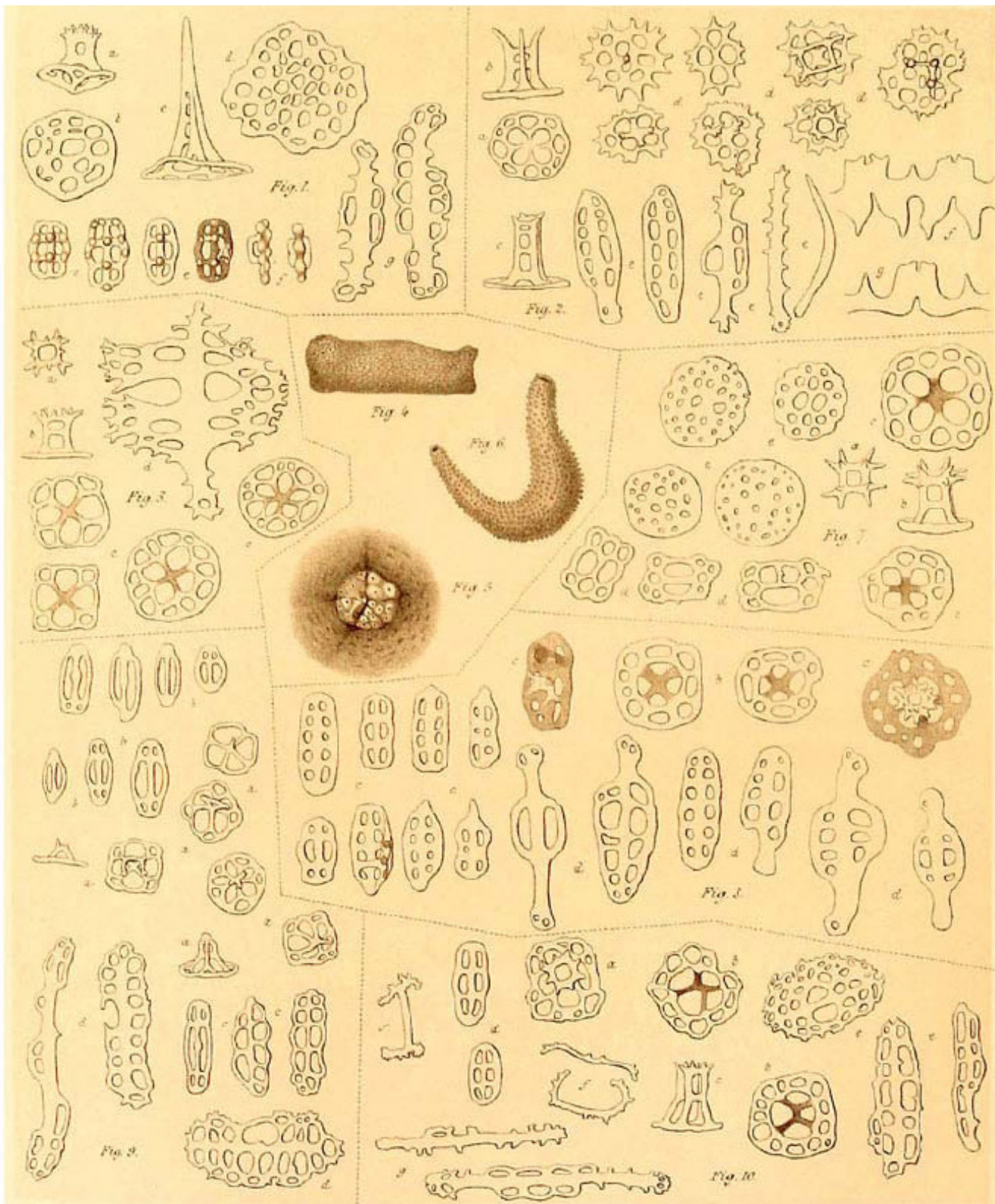
*Habitat*.—Bermuda; a single incomplete individual.

Having examined only a single specimen, which is very contracted and deformed, I cannot be fully certain of the exactness of my determination. The ventral pedicels are disposed in three longitudinal series; Semper mentions five such series. The arrangement of the dorsal ambulacral appendages is not fully known; I only find a row of larger conical prominences along each side of the body, but I must leave it undecided whether the remaining prominences (=papillæ) are disposed in rows or not. The tentacles are twenty, of unequal size. The colour is darkish chocolate-brown, lighter on the ventral surface. All the internal organs are spoiled, excepting the calcareous ring, which is peculiar in having its radial pieces bifurcated posteriorly; the respective pieces do not seem to be of equal size. The calcareous deposits consist of very thinly scattered C-shaped bodies, about 0.05 mm. long (Pl. VII. fig. 5, *f*), and very numerous crowded tables (Pl. VII. fig. 5, *a*, *b*, *c*), with the disk mostly pierced by a larger central hole surrounded by a ring of smaller holes; the margins of these disks are often more or less uneven, but never spinous. The spire of the tables has a single transverse beam, and terminates regularly in twelve teeth or spines; sometimes, however, the top of the spire is provided with more spines. The tables are about 0.044 mm. high. In the pedicels and dorsal processes the disks of the tables are often reduced to a simple calcareous ring, combining the bases of the four rods which constitute the spire (Pl. VII. fig. 5, *d*). The ventral as well as dorsal ambulacral appendages are strengthened by numerous transverse, simple, or branched irregular rods. Semper does not mention anything about the characteristic shape of the calcareous ring (Pl. VII. fig. 5, *e*) which is present in the animal brought home from Bermuda, wherefore it is possible that this form, on account of this peculiarity, represents a new variety.

*Stichopus variegatus*, Semper, 1868 (Pl. VII. fig. 7).

*Habitat*.—Zebu Reefs (Philippine Islands); a single specimen.

The very contracted and deformed individual is doubtless a young form, its length in the contracted state being only about 120 mm. The colour is yellowish-grey inclining to brownish, lighter on the ventral surface. There are twenty yellowish



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1. HOLOTHURIA SPINIFERA. s. sp. 2. STICHOPUS JAPONICUS var. TYPICUS. n. 3. STICHOPUS SORDIDUS. s. sp.  
 4. PSOLUS INCERTUS. n. sp. 5. PHYLLOPHORUS INCOMPERTUS. s. sp. 6. THYONE RECURVATA. s. sp. 7. HOLOTHURIA AFRICANA. n. sp.