Habitat.—Station 232, May 12, 1875; lat. 35° 11′ N., long. 139° 28′ E.; depth, 345 fathoms; bottom temperature, 41·1; green mud; a middle part of an individual.

Synapta challengeri, n. sp. (Pl. I. fig. 4).

Tentacles twelve, each with four digitations, the two inferior of which are smaller. Two ventral Polian vesicles. Madreporic canal single, dorsal. Cartilaginous ring absent. The anchors (Pl. I. fig. 4, *a*) from 0·24 to 0·33 mm. long, with some minute serrations on the flukes. The plates (Pl. I. fig. 4, *b*), from 0·18 to 0·23 mm. long, are oblong, comparatively small, very irregular, and as it were undeveloped; their holes have the margin smooth. The miliary granules (Pl. I. fig. 4, *c*), of very variable shape, are commonly oblong, and evidently belong to the muscular layers or to that part of the integument which borders on them. Integument is yellowish-white, and covered with minute papillæ. Length of the very narrow individual about 80 mm.

Habitat.—Station 174, August 3, 1874; lat. 19° 6′ S., long. 178° 14′ 20″ E.; depth, 140 fathoms; coral mud; two specimens.

Synapta incerta, Ludwig, and *Synapta dubia*, Semper, are forms nearly related to the species in question, but they differ from it in the shape of their miliary granules as well as in their calcareous plates being provided with a handle.

Synapta incerta, Ludwig, 1875, var. *variabilis*, nov. (Pl. I. fig. 5).

Habitat.—Japan, 8 to 50 fathoms; some more or less fragmentary individuals.

The only differences of importance to note between the specimen examined by me and the typical form concern the plates and the miliary granules. The plates (Pl. I. fig. 5) in the specimen obtained at Japan are not quite so regularly constructed, and the miliary granules are absent or oval, and never obtain the characteristic bracket-like form figured by Ludwig. Length of the anchors, 0·13 to 0·18 mm. Length of the plates, 0·1 to 0·12 mm. The flukes of the anchors with two to four minute serrations, and sometimes smooth. The body is very narrow, cylindrical. Length of the fragment about 72 mm. Tentacles twelve, with four rather long digitations, and a short obtuse middle knob. A single Polian vesicle present. Colour whitish, transparent, inclining to violet. It seems most probable that *Synapta dubia*, *incerta*, and *variabilis* represent varieties of one and the same species.

Synapta abyssicola, n. sp. (?) (Pl. I. fig. 11).

The plates (Pl. I. fig. 11, *b*) are almost circular and concave on their upward directed surface; for the most part they closely resemble those in *Synapta distincta*, v.