

*Holothuria hypamma*<sup>1</sup> sp. nov.

(Plate 38, Figures 20 to 24.)

Length 165 mm. (in life, about 250 mm.); diameter 35 mm. Body rather depressed, thickest near middle and tapering towards both ends. Tentacles 20, very short, the whole oral region being relatively quite small. Pedicels rather small, more or less numerous; only a few scattered on middle of ventral surface, and they are nearly wanting in mid-dorsal region; sometimes, but not always, the ventral surface is sharply set off from dorsal by an imaginary line along the sides, just below which the pedicels are more crowded than elsewhere; dorsal pedicels sometimes enlarged and papilliform, but mostly like ventral, except more tapering; the differences are distinguishable in life, but are very insignificant in preserved material. No anal teeth or conspicuous anal papillæ. Calcareous ring notably asymmetrical, the dorsal side, especially the two radial pieces, being very much stouter and better developed than the ventral; dorsal radial pieces about as high as wide, the anterior corners rounded, and the margin between them notched. Polian vessel single, long. Madreporic canal single, very small, only the tip free. No Cuvier's organs.

Calcareous deposits excessively numerous, so that the body-wall is hard, in two principal forms, tables and buttons. Tables (pl. 38, figs. 21-23) in a crowded outer layer, so stout and spiny or warty that they are well-nigh spherical, even distorted; disk-diameter about 0.070 to 0.080 mm.; height of spire somewhat less, but its diameter at top, which is thickly covered with stout teeth, about 0.040 mm.; lower surface of disk not flat as usual, but more or less markedly convex; upper side of disk and base of spire with many knobs and tubercles. Buttons (pl. 38, fig. 24) so crowded that there are about 9,000 to each cubic millimeter of skin; they typically have 3 pairs of holes and 12 spherical knobs on each surface, but very few are symmetrically developed; they range in length

<sup>1</sup> ὑπό = under + ἄμμος = sand, in reference to the manner of life.

from 0.050 to 0.100 mm., while the width is about half as much. Supporting rods of pedicels (pl. 38, fig. 20) not very abundant, but large, flat, branched, and perforated at the ends; terminal plates present. Supporting rods of tentacles not very abundant, nearly straight, rough or spiny at tips. Color in life white, with or without a brown tinge and two series of dark blotches on dorsal surface; sometimes with numerous small blackish spots; in alcohol the white becomes yellowish or brownish; tentacles pale yellowish or brownish; pedicels tipped with yellow. Surface of body commonly more or less covered with sand-grains, concealing the true color; these are apparently held by a cement-like mucus which does not release them readily even after death.

Holotype: M. C. Z. No. 1029; from under a rock-fragment, on southeastern reef-flat, Mer, Murray Islands, Torres Strait.

This holothurian is fairly common at Mer, and I also took a specimen at Green Island, Queensland, and at Hilo, Hawaii. A specimen from Port Galera, Mindoro, Philippine Islands, is in the Museum of Comparative Zoölogy. What seems to be the same species is common in the West Indies, and specimens are in the Museum of Comparative Zoölogy from Bermuda, Jamaica, and Tobago; but these West Indian specimens may perhaps represent a closely allied species. Whether allied or identical, the West Indian specimens, like those from Mer, were found buried in the sand under rock-fragments. They apparently live a very sedentary and usually subterranean life. Occasionally individuals are found closely attached to the under surface of rock-fragments where these are well buried in sand.

It is somewhat remarkable that so common and widespread a holothurian has not hitherto been described, but it has not been wholly overlooked, for specimens of *hypamma* occur in the type material of *Stichopus rigidus* Selenka in the Museum of Comparative Zoölogy. This species has long been considered a *Holothuria* rather than a *Stichopus*. It is superficially much like *hypamma*, but is easily distinguished by the buttons having 5 to 8 pairs of holes and the tables being small, with a peripheral circle of holes in a smooth disk, and having 8 supporting rods. Selenka obviously confused the two species, as he describes the tables of *rigida* but the buttons of *hypamma*. The name *rigida* is to be restricted to the form with distinct tables, and buttons having 5 to 8 pairs of holes. The type locality is the Society Islands.

#### *Holothuria immobilis*.

Semper. 1868. *Holothurien*, p. 90, pl. xxix; pl. xxx, figs. 27a, b.

Although this fine species is recorded from Mauritius, the Philippines, and Samoa, it is very little known. It was therefore an unexpected pleasure to find it at Mer, though we secured only a single specimen, found on the southeastern reef-flat. It agrees very well with Semper's description.

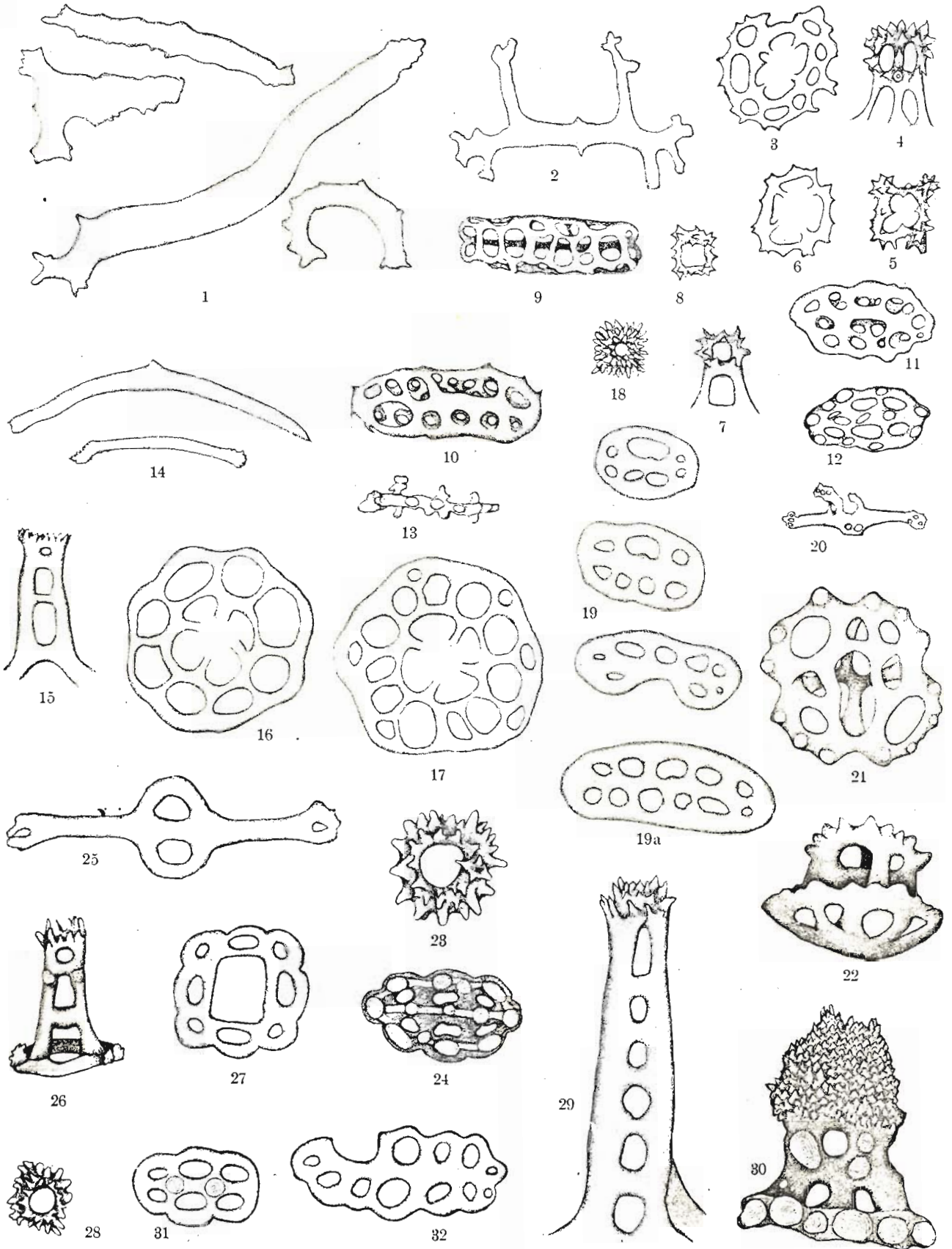
#### *Holothuria impatiens*.

*Fistularia impatiens* Forskål. 1775. *Desc. Anim.*, p. 121, pl. xxxix, fig. B.

*Holothuria impatiens* Gmelin. 1788. *Linn. Syst. Nat.*, ed. 13, p. 3142.

(Plate 19, Figures 3 and 5.)

Of all holothurians this is, I believe, the most perplexing to the systematist, for it displays a diversity of color most unusual in a holothurian, and there is also a lack of constancy in the development and distribution of papillæ that causes trouble. Moreover, it appears to have a tropicopolitan range, although there are considerable regions where it has not yet been taken. No critical comparative study has been made as yet of the calcareous particles in specimens from widely separated areas, nor is anything known of the growth-changes in the species. It is not at all improbable, therefore, that several perfectly distinct species are now united under the name *impatiens*.



ECHINODERMS FROM TORRES STRAITS.