

PSEUDOSTICHOPUS PROPINQUUS, new species.

Plate LXXI, figs. 3, 3a-b; Plate LXXII, figs. 2, 2a; Plate LXXIII, fig. 3; Plate LXXIV, fig. 1; Plate LXXVI, figs. 3, 3a-b.

Contour of body as viewed from above or below rather broadly elliptical; ventral surface slightly arched, dorsal surface decidedly so. Mouth directed ventrally, but terminal. Anus in a prominent vertical furrow at extremity of body; more ventral than dorsal. Anal furrow, caused by the body growing caudad on either side of anus, forming two prominent mammillated processes. Tentacles 18 (to 20?) with small circular peltate crowns; entirely retracted. Ambulacral appendages for the most part very inconspicuous and small, in the form of minute pedicels (?) and papillæ scattered along ambulacra; those of either ventro-lateral ambulacrum most prominent on account of a single irregular row of small mammiform tubercles extending from caudal process forward, and connecting with series of opposite side in front of mouth. In addition, minute, thread-like papillæ are scattered on either side of these tubercles which are capped by very slender pedicels or papillæ; and a very few are to be found in mid-ventral region; papillæ of dorsal ambulacra very slender, long, and thread-like; apparently not regularly arranged. Perisome devoid of any calcareous deposits; no supporting rods or terminal plates in ambulacral appendages. Walls of gonad and respiratory trees contain branched rods. Body wall translucent, rather thin except along either edge, which is thickened by a subcutaneous jelly-like substance, forming a sort of rim to the body. More or less mud, sponge spicules, and foraminifera cling to integument, especially on ventral surface. Color in alcohol, translucent whitish. Length of largest specimen, about 50 mm.; width, about 25 mm.

Locality.—Station 3866, northeast approach to Pailolo Channel, between Maui and Molokai islands, 283 to 284 fathoms, gray mud, fine sand; bottom temperature 43.8°; 2 specimens.

Type.—Cat. No. 21217, U.S.N.M.

On account of the tentacles being entirely retracted, as well as small, it is difficult to compute the number exactly; 18 were found, but it is entirely probable the number is as high as 20. Crowns of tentacles are of the usual aspidochirot form. The mouth is decidedly ventral when tentacles are retracted. It is encircled in front (but not caudad) by the continuous series of small tubercular papilliform processes which mark the ventro-lateral ambulacra. Each of these processes is surmounted by one or sometimes two slender papillæ. When retracted partially they resemble pedicels. There appear to be numerous pedicels also, however, as determined by microscopic examination. The absence of any terminal plate in the ambulacral appendages as well as their small size renders any distinction rather risky. In the smaller specimen I was able to make out a number of very small papilliform pedicels along mid-ventral region, where the longitudinal muscle shows through body wall in larger example, but in the latter only a very few exceedingly minute pedicels are discoverable. Scattered along either side of the more prominent ventro-lateral pedicels and papillæ are numerous smaller very inconspicuous ones, to be seen readily only with a bright light and a strong glass. No regular arrangement can be made out. Along the two dorsal ambulacra are scattered a few long, very slender papillæ, which appear to form a double row in the anterior portion, at least. Some of these papillæ are very thread-like. On account of the difficulty in seeing them it is impossible to give a thoroughly accurate account of their arrangement. A few in anterior portion of body, just behind the supraoral collar, are larger than the rest.

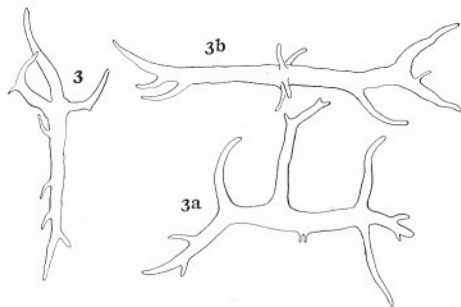
The calcareous ring is a trifle variable and irregular. The dorsal radial pieces seem a trifle heavier than ventral and differ slightly in shape. The component pieces are delicate and readily injured. The form is seen better by figures (Plate LXXII, figs. 2, 2a) than description, both dorsal and ventral being shown. Some radial pieces have a slightly more deeply excavated posterior margin, but, as a rule, it is shallow (fig. 2a). Polian vesicle single. Madreporic canal minute, running forward in dorsal mesentery below genital duct; no madreporite was discovered. Ring canal large; proximal portion of radial canals large. No tentacle ampullæ, except mere rudiments. Gonad consists of about ten unbranched slender tubes on either side of dorsal mesentery, which is more or less perforated in this region. Eggs are fairly well developed, so this specimen is probably mature. Respiratory trees, two, springing from a common base. Longitudinal muscles form a single cylindrical band along each radius. Intestine large, gorged with mud and sand.

The only calcareous deposits are those contained in walls of gonad and respiratory tree. They are irregular branched rods, smooth

except for an occasional spine. No two are exactly alike. Those of gonad are apparently larger than those of respiratory tree. The former measure from about 0.09 mm. up to 0.22 mm., while the latter seldom exceed 0.12 mm. in length. Rarely a small rod is unbranched. The figures will give a good idea of typical shapes.

This species is probably closely related to *Pseudostichopus mollis* Théel. It differs, apparently, in having a row of small but fairly conspicuous wart-like processes forming an inconspicuous fringe, as shown in the figure. The calcareous ring is of a slightly different form, and the calcareous deposits of genital and respiratory tubes are more branched and smaller. The dimensions may vary with age, however. The dimensions given by Ludwig^a are about twice as great as those attained by deposits in this species. The internal organs are much as described by Théel and Ludwig for *mollis*. This species differs, by the presence of the deposits, from *Pseudostichopus trachus* Sluiter and *Pseudostichopus pustulosus* Sluiter from the East Indian region. *Pseudostichopus occulatus* von Marenzeller from the region of the Azores resembles this form in its deposits, but differs in the outer character of form, distribution of ambulacral appendages, etc., as well as in the presence of end plates in pedicels and deposits around the anus.

^aMem. Mus. Comp. Zool., XVII, No. 3, 1894, p. 12.



3. *Pseudostichopus propinquus*. Deposits from wall of respiratory tree. 3a-b.
Same, $\times 400$.

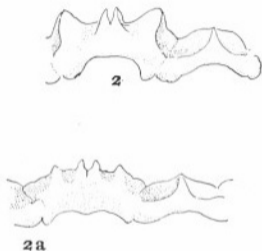
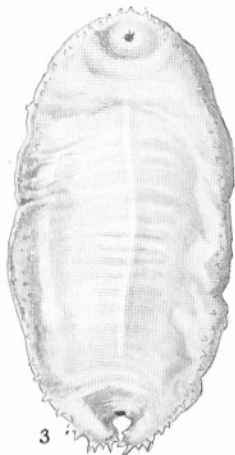


Fig. 2. *Pseudostichopus propinquus*. Calcareous ring, one of the dorsal radial and interradial pieces. 2a. Ventral radial and interradial pieces.



3. *Pseudostichopus propinquus*. Ventral view, $\times 1$.

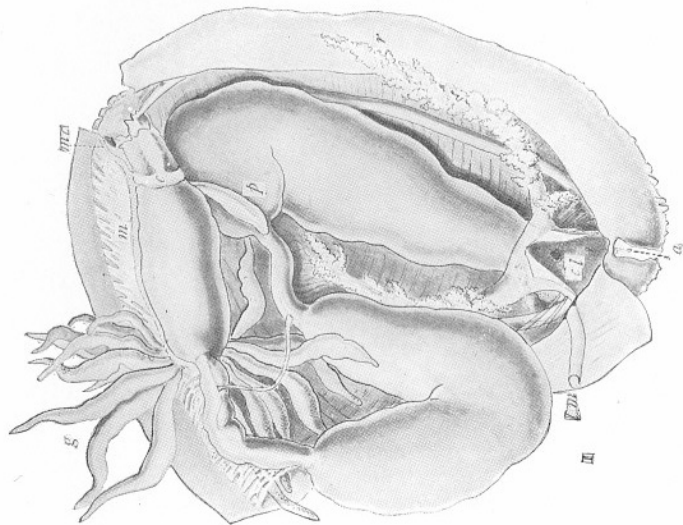
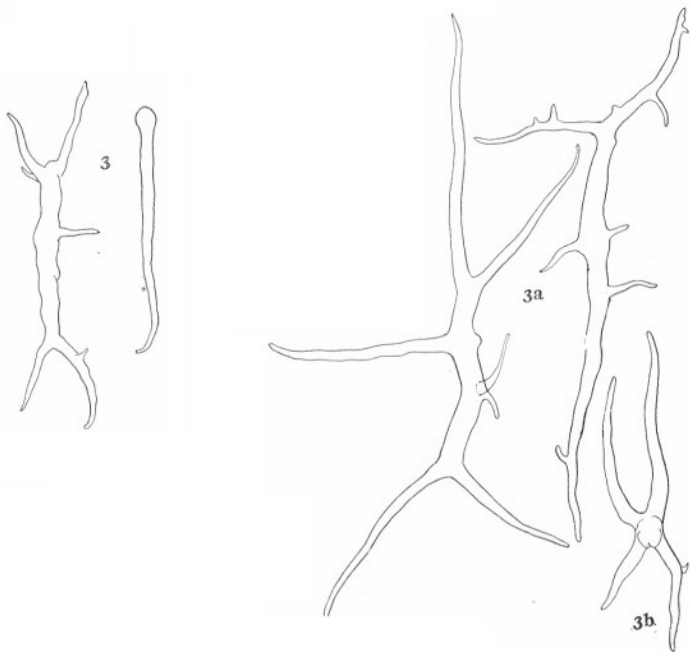


Fig. 1. *Pseudostichopus propinquus*. Dissected from above to show alimentary canal, anal aperture (*a*), ring canal (*c*), cloacal cavity (*cl*), gonad (*g*), longitudinal muscle bands (*lm*), dorsal mesentery (*m*), madreporic canal (*mc*), Polian vesicle (*p*), respiratory trees (*r*). $\times 1\frac{1}{3}$.



3. *Pseudostichopus propinquus*. 3a-3b. Rods from wall of gonad. $\times 400$.