

Habitat

Sandbank or wreck nearby (collector's note).

Remarks

The UCT specimen (SAM-A27941) was described by Thandar (1984), in his thesis, as *H. (T.) notabilis* Ludwig, 1875 but, regrettably, due to inaccurate cutting and pasting, its description was transposed with that of *H. (T.) pseudonotabilis* sp. nov. (see below), initially described in the thesis as *H. (T.) maculosa*. Dr Rowe, who examined the original description and slides, was quick to realize that the specimen represented *H. (T.) maculosa* and this was independently verified by Drs. Massin and Samyn (pers. comm.), who had the opportunity to examine the complete specimen. The present material resembles the holotype of *H. maculosa* in its colouration, scattered papilliform podia, presence of Cuvierian tubules and in the typical spicules. It, however, differs in the form of its calcareous ring and the presence of four kinds of tables. The radial plates of the calcareous ring of the holotype are illustrated as being prolonged posteriorly beyond the level of the interradial plates to form rudimentary posterior bifurcations. In the present specimen, however, although rudimentary bifurcations are present, no conspicuous posterior prolongations of the radial plates are evident. Cherbonnier's figure (1988:571), on the other hand, shows no bifurcation of the radial plates. Further, only one form of table is described for the holotype but since the other forms are not common they could have been overlooked. Cherbonnier (1988) also studied a specimen (identified as *H. maculosa* by Dr Heding) from Inhaca Island (Mozambique), received from the Copenhagen Museum, and comments that it is identical to his Madagascar material. The current Inhaca specimen, wrongly identified as *H. impatiens*, is robust, 220 x 75 mm with a similar composition of spicules.

Holothuria (Theelothuria) duoturriforma sp. nov.

Figure 17

Diagnosis

Perhaps a small species, type 40 mm. Colour, in alcohol, white with scattered dark blotches. Podia minute, papilliform, scattered. Papillose collar evident. Anus encircled by five clusters of papillae. Tentacles ?20, whitish. Cuvierian tubules absent. Spicules of body wall tables and buttons. Tables of two sizes: either with a large disc (42–81 µm) of the *Mesothuria* type and a tall spire (42–68 µm) with 2–3 cross-bars or a small disc (39–65 µm) and a short spire (26–39 µm) with usually a single cross-bar, smaller type usually at bases of podia. Buttons restricted to bases of podia and anal region, elongated or oval (45–77 µm, mean 65 µm), with 3–4 pairs of holes and few knobs.

Etymology

The specific name refers to the two types of tables found in the body wall.

Type

SAM-A27942.

Type locality

Off Lala Nek, KZN, South Africa, 72 m.

Material examined

Holotype only, NMDP, St. ZD 6, off Lala Nek (27° 13.0 ' S, 32° 49.7 ' E), 72 m, 7 vi 1990.

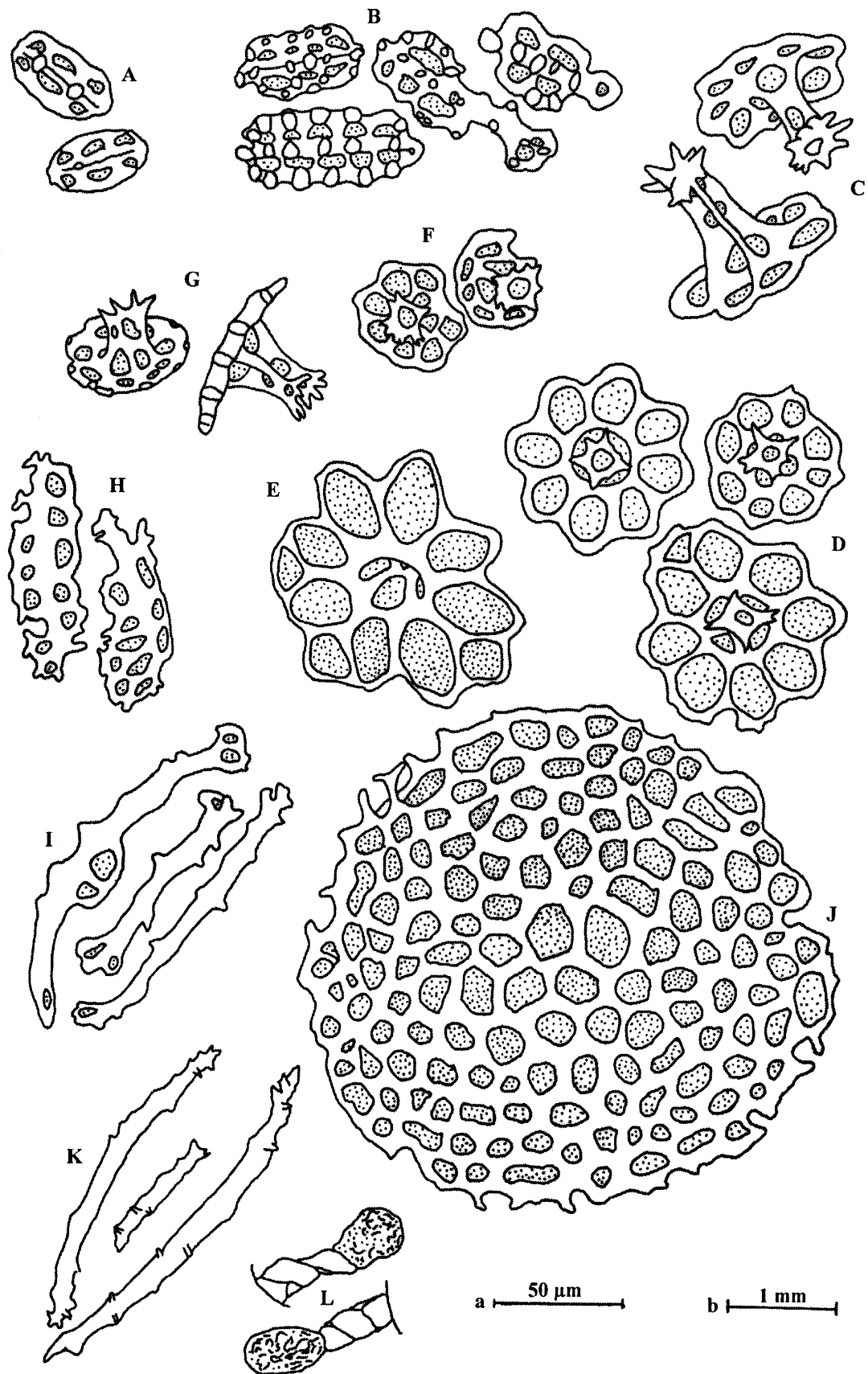


FIGURE 17. *Holothuria (Theelothuria) duoturriforma* sp. nov. Holotype. SAM-A27942. A. buttons from base of podium; B. knobbed podial buttons; C. large body wall tables from side; D. large body wall tables; E. large body wall table from beneath; F. small tables; G. small tables from side; H. podial plates; I. podial rods; J. ventral end-plate; K. tentacles rods; L. madreporite (different views). (A–K scale a; L scale b)

Description

Specimen small, poorly preserved, eviscerated, most of gut and associated structures lost. Body form sub-cylindrical, dorsal surface arched, ventral flattened but not much so. Anterior end slightly broader than posterior end. Length 40 mm, width in mid-body 9 mm. Colour, in alcohol, white with dark scattered blotches. Mouth anterior, sub-ventral; anus terminal. Podia minute, papilliform, slightly longer ventrally, scattered but with some indication of arrangement in bands. Papillose collar evident. Anus encircled by five clusters of 3–4 papillae per cluster. Tentacles ?18, small, white to slightly beige in colour. Body wall 1 mm thick, gelatinous, smooth.

Calcareous ring damaged; radial plates squarish, as long as wide, with an anterior notch and some evidence of posterior bifurcations; interradial plates small, triangular, projecting slightly beyond anterior border of radial plates. Tentacle ampullae short; Polian vesicle single, sac-like; stone canal short, free, slightly twisted, terminating in an oval, globular, well-calcified madreporite (Figure 17L). Gonad and alimentary canal lost. Right respiratory tree shorter, reaching only half body length, both trees well branched, united at base. Cuvierian tubules absent.

Spicules of body wall comprise tables and buttons. Tables of two sizes: either with a large disc (42–81 μm , mean 59 μm) and a tall spire (42–68 μm , mean 53 μm) (Figure 17C–E), or a small disc (39–65 μm , mean 54 μm) and a short spire (26–39 μm , mean 32 μm) (Figure 17 F), smaller type common at bases of podia. Larger tables of *Mesothuria* type, disc with mostly undulating or occasionally spinose rim, pierced by usually eight large, oval holes, and sometimes with one or more smaller holes outside the larger ones, spire with 2–3 cross-bars, terminating in a ring of several teeth. Smaller table discs somewhat circular, also with about eight marginal holes but a short spire with usually a single cross-bar, margin of disc sometimes turned up giving a cup and saucer appearance to table in lateral view; occasionally tables reduced to button-like discs. Buttons (Figure 17A) rare, restricted to bases of podia and anal region, elongate or oval (45–77 μm , mean 65 μm), usually with 3–5 pairs of holes and several knobs, the latter either restricted to the central shaft or to margins or both; buttons sometimes reduced to just two pairs of central holes. Podial deposits comprise small tables, buttons, perforated rods often developed as smooth plates, and end-plates. Podial tables (Figure 17G) similar to the smaller type from body wall; podial buttons (45–78 μm mean 65 μm), usually heavily knobbed (Figure 17B), with 2–5 pairs of holes; rods (71–113 μm , mean 91 μm), straight or slightly curved (Figure 17I), with 1–2 holes at ends and/or in the middle; plates with usually irregular margins and 5–10 pairs of holes (Figure 17H); end-plates of two sizes, small ones about 148 μm , large ones (Figure 17J) about 187 μm , both with large central holes and smaller peripheral ones but some peripheral holes often as large as central holes. Tentacle with slightly curved, non-perforated rods (39–142 μm , mean 71 μm), usually with slightly spinose margins (Figure 17K). Cloacal and longitudinal muscles without spicules.

Distribution

Known only from type locality.

Habitat

Slightly muddy sand, pennatulids.

Remarks

Of the 14 nominal and one indeterminate species currently classified in the subgenus *Theelothuria*, the present specimen comes close to *H. (T.) squamifera* Semper, 1868 from the Philippines and the Red Sea and *H. (T.) asperita* Cherbonnier & Féral, 1984 from New Caledonia. However, it is not identical to either of the two species. It differs from the former in the height of the table spires, fewer cross-bars to the spires, larger size of the holes on the discs and more nodular buttons, of especially the podia. It differs from *H. (T.) asperita* in the absence of smooth buttons, the larger size of the holes of the discs of the larger tables and the nature of

the table crowns. There is also some resemblance of the new species to *H. (Platyperona) insolita* Cherbonnier, 1988 from Madagascar, especially in the type of tables, their two sizes, and the rarity of buttons. However, Cherbonnier illustrates only smooth buttons with a median optical discontinuity from the anal region of his specimen as well as some minute plates and pseudobuttons. Some reduced tables of the new species resemble those of *H. (T.) klunzingeri* Lampert, 1885 and *H. (T.) notabilis* Ludwig, 1875 but there are gross differences, most notably in the absence of tall-pillared tables in both *H. (T.) klunzingeri* and *H. (T.) notabilis*, suspected by Panning (1935) to be conspecific. It is noteworthy that there are no tack-like tables in the body wall and podia of the new species and although the larger tables are of the synallactid-type, they resemble those of the genus *Mesothuria* rather than those of *Synallactes*.

***Holothuria (Theelothuria) pseudonotabilis* sp. nov.**

Figure 18

Diagnosis

Perhaps a small species, holotype 59 mm long. Colour, in alcohol, an admixture of browns, dorsum with eight pairs of dark blotches, whitish areas around bases of scattered tubefeet. Cuvierian tubules present. Body wall tables few, of three types: commonest type with circular to subcircular, slightly spinose to smooth disc (40–75 µm), low spire (20–50 µm) terminating in ring of about six blunt teeth, rarely rim knobbed or tables modified to fenestrated spheres; second type commoner than third and of *Mesothuria* type with smooth disc (ca. 60 µm) with 6–7 large marginal holes and spire terminating in compact, often tripartite cluster of teeth; third type rare, disc oblong, up to 100 µm, with 2–3 series of holes, smaller marginally. Buttons numerous, slightly knobbed, 30–60 µm, holes often occluded.

Etymology

The new species is so named as it was initially thought to represent *H. notabilis* Ludwig.

Type

SAM-A27943; Inhaca Island, Mozambique, vi. 1971, B. Kensley.

Type locality

Inhaca Island, Mozambique.

Material examined

Holotype only.

Description

Specimen small, badly contracted, 59 x 30 mm; cylindrical, tapering slightly at both ends. Colour, in alcohol, an admixture of browns, paler ventrally; dorsum with eight pairs of dark blotches, whitish areas around bases of podia. Mouth terminal, tentacles 18, short, with light brown disc, 2 mm in diameter. Collar not evident. Anal papillae unequal, in five groups. Podia as scattered tubefeet, shorter dorsally, papilliform posteriorly. Calcareous ring (Figure 18N) high, radial plates longer than wide, with deep anterior ampullary notch and posterior slightly prolonged beyond level of interradial plates to form rudimentary bifurcations; interradial plates half the length of radial plates but just as broad with anterior, median tooth-like projection and deeply concave posterior margin. Polian vesicle single, short, midventral. Stone canal short, free, situated slightly to left of mesentery; madreporite well calcified, pyriform (Figure 18M). Right respiratory tree longer but left more profusely branched, both uniting before opening into cloaca. Gonad as single tuft of branched