Labidodemas spineum sp. nov.
(figures 12A–N, 13A–G; map 4)

Name-bearing type. Holotype NHM 1974.12.3.42.43 (L = 125 mm); paratype NHM 1974.12.3.42.43 (L = 112 mm).

Type locality. Low Island, Great Barrier Reef, Australia.

Material examined. Australia (Low Island, Great Barrier Reef), 1973, sand flat (LWM), coll. P. Gibbs, NHM 1974.12.3.42.43 under the name *L. semperianum* (holotype and paratype).

Diagnosis. Medium-sized species; 20 short tentacles. Ribbon-like calcareous ring. Tables, buttons and rods present in body wall and tube feet. Buttons and rods spiny. Tables with quadrangular or triangular disc, with low spire without cross beam, crown irregular.

Description. The holotype is 125 × 11–14 mm and the paratype 112 × 8–11 mm. Body cylindrical, worm-like, tapering anteriorly. Colour in alcohol white-beige with both extremities brown; tube feet same colour as body wall. Mouth and anus terminal. Mouth surrounded by 20 short tentacles; anus wide, surrounded by five groups of paired papillae. Ventrally, tube feet restricted to ambulacra; lateral ambulacra with one row of tube feet in a zigzag pattern, median ambulacrum with two rows of tube feet. Dorsally, tube feet present in ambulacral and interambulacral areas, small, arranged in about five to six rows.

Calcareous ring ribbon-like (figure 12A) with large quadrangular radial plates and narrow interradial plates with short anterior projection. Radial plate with small anterior notch and indentation for insertion of longitudinal muscle. Two Polian vesicles, the larger one-seventh of body length. Single stone canal. Tentacle

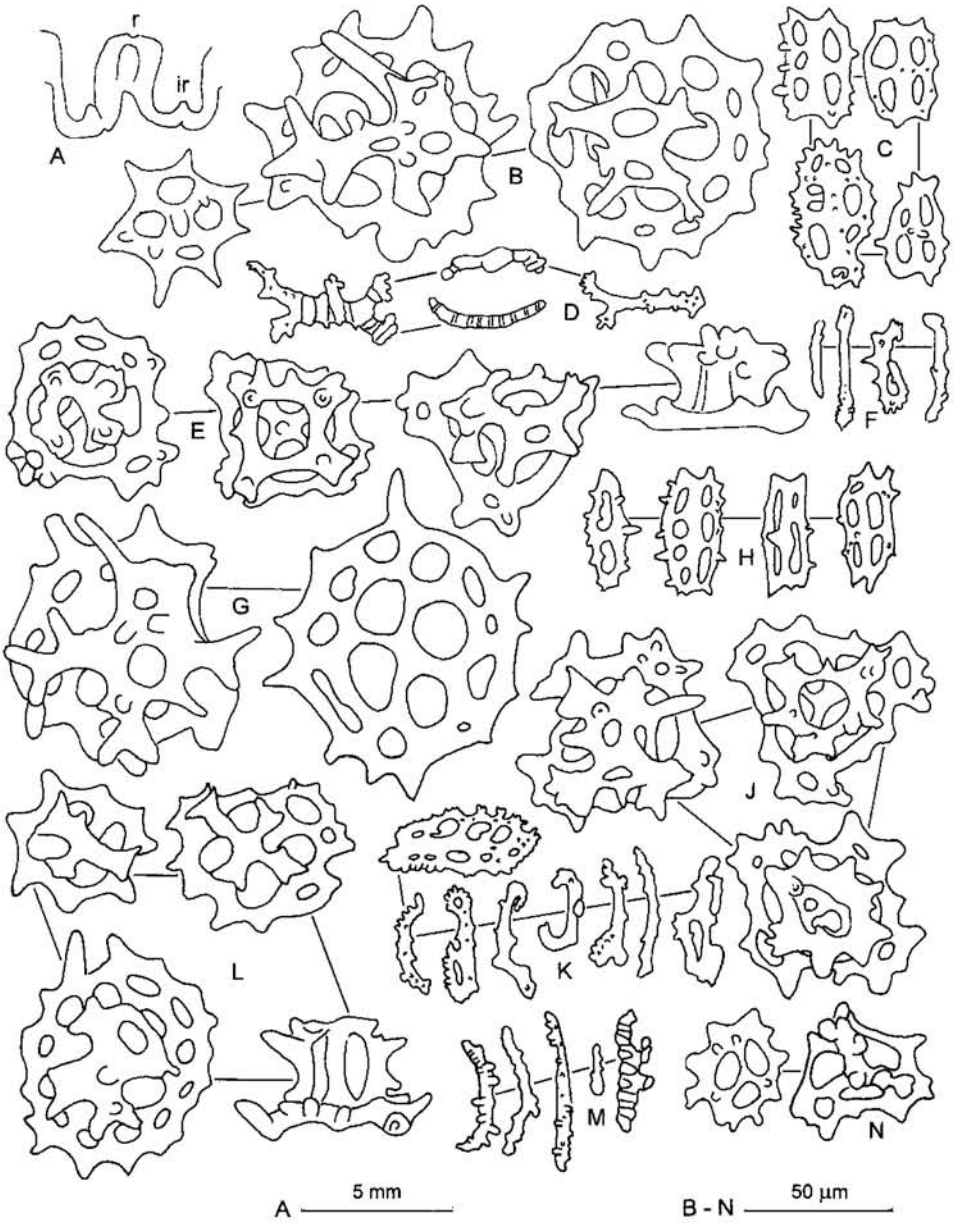

FIG. 12. *Labidodemas spineum* sp. nov. (A) Calcareous ring (r, radial plate; ir, interradial plate) (holotype); (B) tables of dorsal body wall (holotype); (C) buttons of dorsal body wall (holotype); (D) rods of dorsal body wall (holotype); (E) tables of dorsal body wall (paratype); (F) rods of dorsal body wall (paratype); (G) tables of ventral body wall (holotype); (H) buttons of ventral body wall (holotype); (J) tables of ventral body wall (paratype); (K) rods and buttons of ventral body wall (paratype); (L) tables of dorsal tube feet (holotype); (M) rods of dorsal tube feet (holotype); (N) tables of dorsal tube feet (paratype). Scale bar: 5 mm (A); 50 μm (B–M).

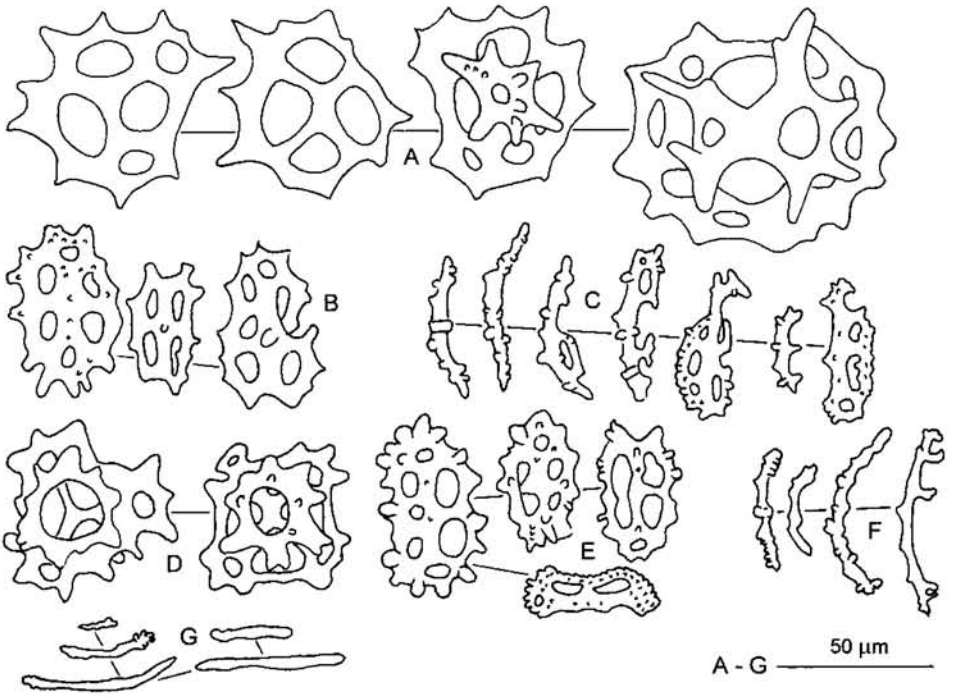

FIG. 13. *Labidodemas spineum* sp. nov. (A) Tables of ventral tube feet (holotype); (B) buttons of ventral tube feet (holotype); (C) rods and pseudo-buttons of ventral tube feet (holotype); (D) tables of ventral tube feet (paratype); (E) buttons of ventral tube feet (paratype); (F) rods of ventral tube feet (paratype); (G) rods of the tentacles (holotype). Scale bar: 50 μm (A–G).

ampullae very short (1 mm long); tube feet ampullae visible on inner side of body wall. Specimens partly eviscerated (gonad, part of intestine and left respiratory tree missing). Presence/absence of Cuvierian tubules could not be ascertained because specimens are partly eviscerated. Segment of digestive tract still present, filled with rough coral sand.

Ossicles. Both dorsal and ventral body wall with tables, rods and buttons. Dorsally, tables irregular with a spiny quadrangular disc (figure 12B) (very often triangular in the paratype; figure 12E), 50–80 μm across, perforated by four large central holes and 4–10 peripheral ones; four short pillars without cross beam, ending in a crown of spines (figure 12B, E), often irregular (figure 12B). Spire low (figure 12E). Tables of ventral body wall similar to dorsal tables (figure 12G, J) in size and shape, but sometimes reduced to disc only (figure 12G). Buttons spiny (figure 12C, H, K), 35–50 μm long, with two to four pairs of holes; rods short, 30–35 μm long, often spiny (figure 12D, F, K), either straight or C-shaped. Some ossicles intermediate between rods and buttons (figure 12H, K). Tube feet with ossicles similar to those of body wall. Tables 45–85 μm across (figures 12L, N, 13A, D), often reduced to disc only (figure 13A). Buttons 45–55 μm long (figure 13B, E), rare or absent in dorsal tube feet. Rods spiny, 30–60 μm long (figures 12M, 13C, F), sometimes branching at extremities (figure 13F). Some ossicles (pseudo-buttons) with intermediate stages between buttons and rods

(figure 13C). End plate of dorsal tube feet 125 μm across. In tentacles small rods, 10–50 μm long (figure 13G).

Etymology. The name *spineum*, Latin, means spiny and refers to the numerous spines covering the buttons and the rods from the body wall and the tube feet.

Ecology. No data currently available.

Geographical distribution (see map 4). Only known from the type locality.

Comments. Rods and buttons are similar in holotype and paratype but the tables are quite different. In the holotype, seen from above, they are *rugosum*-like whereas in the paratype they are *pertinax*-like. The tables of *L. spineum* differ from those of *L. rugosum* by the very low spire without cross beam and from those of *L. pertinax* by a more irregular crown of spines and the triangular shape of some discs. *Labidodemas spineum* is very easy to separate from all the other *Labidodemas* spp. because it is the only species with spiny buttons and rods in the body wall.