

*Stichopus quadrifasciatus* spec. nov.  
(figs 55a-r, 56a-k, 112b, c)

Material.— IRSNB IG.28251/32 (paratype), Panikiang S, 30.viii.94, reef flat; IRSNB IG.28251/131 (paratype), Samalona NW, 21.ix.-94, 12 m depth, under coral slabs; RMNH Ech. 6088 (paratype), Samalona NW, 21.ix.-94, 8 m depth, under coral slabs, a scale worm creeping on body wall, four eulimid gastropods attach to the mouth inside the tentacle crown and one 97 mm long *Carapus* spec. in the cloaca; IRSNB IG.28251/193 (holotype), Kudingareng Keke S, 28.ix.94, reef flat.

Description.— Holotype 155 × 40 mm, paratypes 91 × 24, 125 × 40 and 45 × 23 mm. Colour yellow-grey with 4 large transversal, black-grey bands (fig. 112b). Tip of the dorsal papillae brown to red (fig. 112c), dorsal papillae white; in alcohol completely white. Dorsal papillae scattered, highly variable in size, without alignment except along the zone between bivium and trivium. Body flattened with mouth ventral an anus terminal to subdorsal. Mouth with 19-20 tentacles surrounded by a collar of papillae united by a web; collar of the holotype 7 mm height; tentacles small, yellowish with large, flat extremities. Tube feet along the ambulacra; lateral ones with 3-4 rows of tube feet, central one with 5-6 rows; only a few tube feet in the interambulacra; juvenile (45 mm long) with only one row of tube feet in the lateral ambulacra and 2 rows in the central one; each row in a zig-zag pattern. Skin firm, granulous, rough to the touch.

Calcareous ring composed of large radial and narrow interradial pieces (fig. 55a). Dorsal radial piece with a deep posterior slit, V-shaped in the holotype (fig. 55b) but more narrow in smaller specimens (fig. 55a); anteriorly, radial pieces with a central notch and two lateral teeth (fig. 55a). One Polian vesicle (10% of body length) and one long, contorted stone canal, going upwards and ending in a large circular madreporic plate, 2-3 mm across (fig. 55b), located close to the median dorsal interradial piece. Tentacle ampullae medium size (10-13% of body length). Gonads in 2 bundles, one on each side of the dorsal mesentery; no gonads in the juvenile.

Body wall ossicles rosettes, tables and C-shaped rods; rosettes 20-35 μm long (figs 27c, g, l) abundant to very abundant dorsally, very rare to absent ventrally. Table discs 35-50 μm in diameter; edge of the disc undulating, smooth or spinose; disc perforated by 4 large central holes and 0-16 small peripheral ones; 4 pillars forming the spire united by one cross beam and ending in a crown of spine making a Maltese cross when seen from above (figs 55d, e); tables rare to abundant dorsally, always

Fig. 55. *Stichopus quadrifasciatus* spec. nov. a: calcareous ring (IR: interradial piece; R: radial piece) (paratype L=125 mm; IRSNB IG.28251/131); b: stone canal and madreporic plate (holotype; IRSNB IG.28251/193); c: rosettes from dorsal body wall (holotype; IRSNB IG.28251/193); d: tables from dorsal body wall (holotype; IRSNB IG.28251/193); e: tables of ventral body wall (holotype; IRSNB IG.28251/193); f: tables from dorsal body wall (paratype L=45 mm; RMNH Ech. 6088); g: rosettes from ventral body wall (holotype; IRSNB IG.28251/193); h: C-shaped rods from dorsal body wall (holotype; IRSNB IG.28251/193); j: C-shaped rods from ventral body wall (holotype; IRSNB IG.28251/193); k: C-shaped rods from dorsal body wall (paratype L=45 mm; RMNH Ech. 6088); l: rosettes from dorsal body wall (L=45 mm; RMNH Ech. 6088); m: tables from ventral body wall (paratype L=45 mm; RMNH Ech. 6088); n: tube foot tables (holotype; IRSNB IG.28251/193); p: C-shaped rods from tube feet (paratype L=45 mm; RMNH Ech. 6088); q: tube foot rods (holotype; IRSNB IG.28251/193); r: perforated plates from tube feet (holotype; IRSNB IG.28251/193).

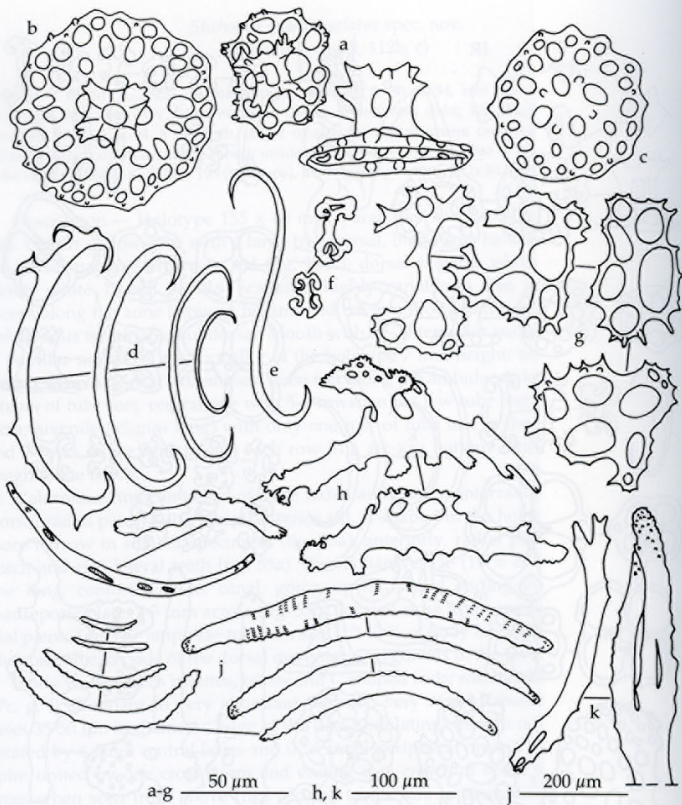
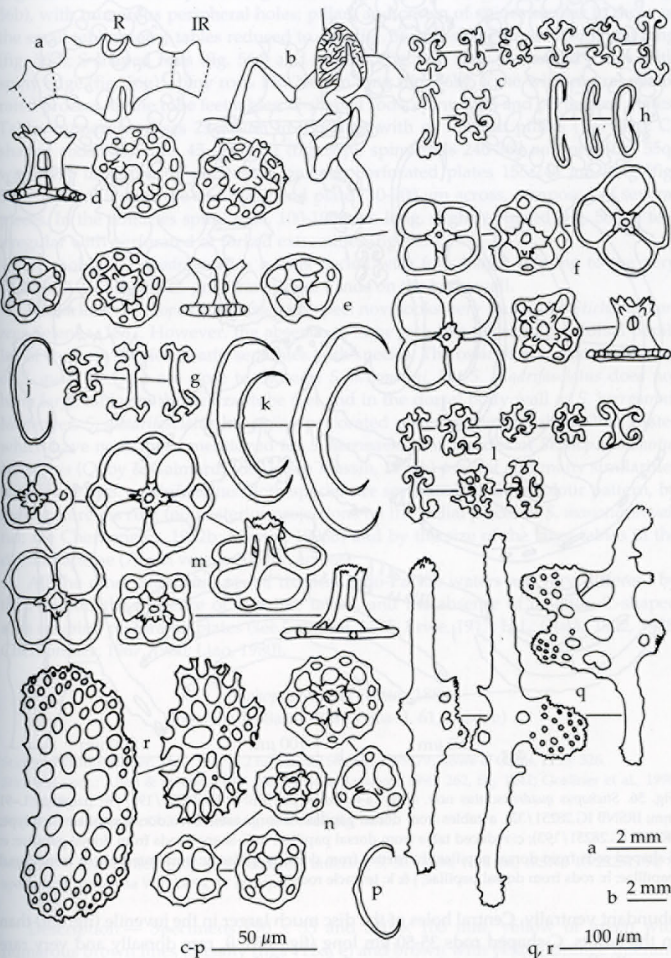


Fig. 56. *Stichopus quadrifasciatus* spec. nov. (a-h: holotype; IRSNB IG.28251/193; j-k: paratype L=91 mm; IRSNB IG.28251/32). a: tables from dorsal papillae; b: large table from dorsal papillae (holotype; IRSNB IG.28251/193); c: reduced table from dorsal papillae; d: C-shaped rods from dorsal papillae; e: S-shaped rods from dorsal papillae; f: rosettes from dorsal papillae; g: perforated plates from dorsal papillae; h: rods from dorsal papillae; j & k: tentacle rods.

abundant ventrally. Central holes of the disc much larger in the juvenile (fig. 55f) than in the adults. C-shaped rods 35-50 μm long (figs 55h, j), rare dorsally and very rare ventrally or entirely absent; juvenile with large C-shaped rods, 50-100 μm long (fig. 55k) located dorsally. In the dorsal papillae tables, C- and S-shaped rods, rosettes, perforated plates and spiny rods. Tables similar to those of the body wall with the

edge of the disc more spinose (fig. 56a); a few large tables, diameter 80-100 μm (fig. 56b), with numerous peripheral holes; pillars and crown of spines similar to those of the small tables; some tables reduced to disc (fig. 56c); C-shaped rods 50-135 μm long (fig. 56d); S-shaped rods (fig. 56e) and rosettes (fig. 56f) rare; perforated plates with spiny edge (fig. 56g); spiny rods 150-280 μm long (fig. 56h), some with central perforated process. In the tube feet tables, C-shaped rods, spiny rods and perforated plates. Tables numerous, discs 25-50 μm in diameter with or without pillars (fig. 55n); C-shaped rods very rare, 45 μm long (fig. 55p); spiny rods 240-360 μm long (fig. 55q) with very large central perforated process; perforated plates 155-240 μm long (fig. 55r), located close to the end plate; end plate 750-900 μm across, composed of several pieces. In the tentacles spiny rods, 100-1000 μm long, slightly curved (fig. 56j); a few irregular with perforated or forked extremities (fig. 56k).

Etymology.— *quadrifasciatus* means circled with four bands referring to the very characteristic four black-grey transversal bands on the body wall.

Remarks.— *Stichopus quadrifasciatus* spec. nov. looks very much like *Stichopus herrnensis* Selenka, 1867. However, the absence of large tack-like tables in the dorsal papillae of the new species clearly separates both species. The ossicles and calcareous ring of *S. quadrifasciatus* are close to those of *S. herrnensis*, but *S. quadrifasciatus* does not have large tables in the ventral tube feet and in the dorsal body wall as *S. herrnensis*. Moreover, *S. quadrifasciatus* has spiny perforated plates in the dorsal papillae, plates which have never been mentioned for *S. herrnensis*. The ossicles of *Stichopus monotuberculatus* (Quoy & Gaimard, 1833) (see Massin, 1996b) present also many similarities with those of *S. quadrifasciatus*. Both species are separated by their colour pattern, by their calcareous ring (no posterior projections on the radial pieces of *S. monotuberculatus*; see Cherbonnier, 1952b; Massin, 1996b) and by the size of the large tables in the dorsal papillae (70 μm versus 100 μm across).

All the other *Stichopus* spp. of tropical Indo-Pacific waters are very different by their colour, the presence of tack-like tables, and the absence of rosettes, C-shaped rods or spiny perforated plates (see Lampert, 1885; Erwe, 1913; H.L. Clark, 1922, 1938; Cherbonnier, 1967, 1980; Liao, 1980).

b



1 cm

c



2 cm