Stichopus ocellatus n. sp.
Figs 6A-W, 7A-J, 8A-D, pl. 1C, E-G

SYNONYMY

Stichopus variegatus; FORBES *et al.*, 1999: 12, text fig. *Stichopus* sp1; RIZAL BOSS *et al.*, 1999: 38; ZULFIGAR *et al.*, 2001b: 364.

MATERIAL EXAMINED

IRSNB IG 28455/85, 23.x.96, Hansa Bay (Papua New Guinea), 18 m depth, on muddy black sand, day dive (holotype); IRSNB IG 28680/1, 12.ix.98, Pulau Besar (Malaysia), 2 m depth on white sand, day dive (paratype); IRSNB IG 26700/222, 10.xi.83, Hansa Bay (Papua New Guinea), 20 m depth on muddy black sand, day dive (one specimen); USMPPM/1, 11.iii.98, Pulau Besar (Malaysia), 4 m depth on sandy bottom, day dive (one specimen); USMPPM/15, 21.xi.99, Pulau Besar (Malaysia), 6 m depth on sandy bottom with sea grass, day dive (one specimen). A ten of specimens observed and photographed in Papua New Guinea and Malaysia.

TYPE LOCALITY

Hansa Bay (Madang Province, Papua New Guinea)

DESCRIPTION

- External anatomy: All the specimens observed were large. The ones collected measure from 290X90 to 330X75 mm. Colour of living specimens yellow-orange mottled with green-grey (pl. 1F) dorsally. Dominating colour can be the orange-yellow or the green-grey (pl. 1G). Large dorsal papillae white at the base and green-grey at the apex (pl. 1E). Small papillae green-grey with only a paler narrow ring at the base (pl. 1E). Ventrally yellow with green-brown tube feet. Colour in alcohol white-beige ventrally, light brown dorsally with the large, white papillae still visible. Ventral sole flat with tube feet only in the ambulacral areas: on 4-6 rows in the lateral ones and 10-12 in the central one. Tube feet are large (up to 10 mm long) with a prominent sucker (up to 1.5 mm across). Interambulacral areas narrow but well visible. Dorsal surface rounded with four rows of large, white papillae in a zigzag pattern (pl. 1C, F, G). The row of papillae at the edge between bivium and trivium sometimes reduced. Mouth ventral with 20 tentacles surrounded by a collar of papillae; anus terminal.
- Internal anatomy: Body wall thick (4-18 mm). Calcareous ring with large radial plates and narrow interradial plates (fig. 6A). Radial plates with a deep posterior notch. Tentacles ampullae very long (1/4 to 1/3 of body length). One Polian vesicle, ovoid, 1/10 of body length. One very long, contorted dorsal stone canal embedded in the dorsal mesentery and ending in a club shaped madreporic plate (fig. 6B). Gonads in two bundles, well developed, each made of seven tubes, undivided on the first 30 mm, then bearing small lateral tufts.
- Ossicles: In the dorsal body wall, tables (fig. 6E, G), 28-38 µm across, rosettes (fig. 6F, H), 20-40 µm long and C-shaped rods (fig. 6C, D), 155-175 µm long. Rosettes are much more abundant in the paratype (L=290 mm) than in the holotype (L=330 mm). A few S-shaped rods have been observed in the paratype but not in the holotype. Ossicles of ventral body wall (fig. 6J, K, L) very similar to those of dorsal body wall but with smaller C-shaped rods (40-75 µm long). At the base of the dorsal papillae tables (fig. 6N, P), rosettes (fig. 6Q, R) and C-shaped rods (fig. 6M). All of them are larger in the paratype than in the in the holotype: C-shaped rods *i.e.* are 60-110 µm long and 50-75 µm long, respectively. At the top of the dorsal papillae C-shaped rods (fig. 6S, V), tables, 25-50 µm across (fig. 6T, U), rosettes (fig. 6W), small rods and perforated plates (fig. 7A, B), and curved rods with variable central perforated process (fig. 7C, D). In the tube feet large

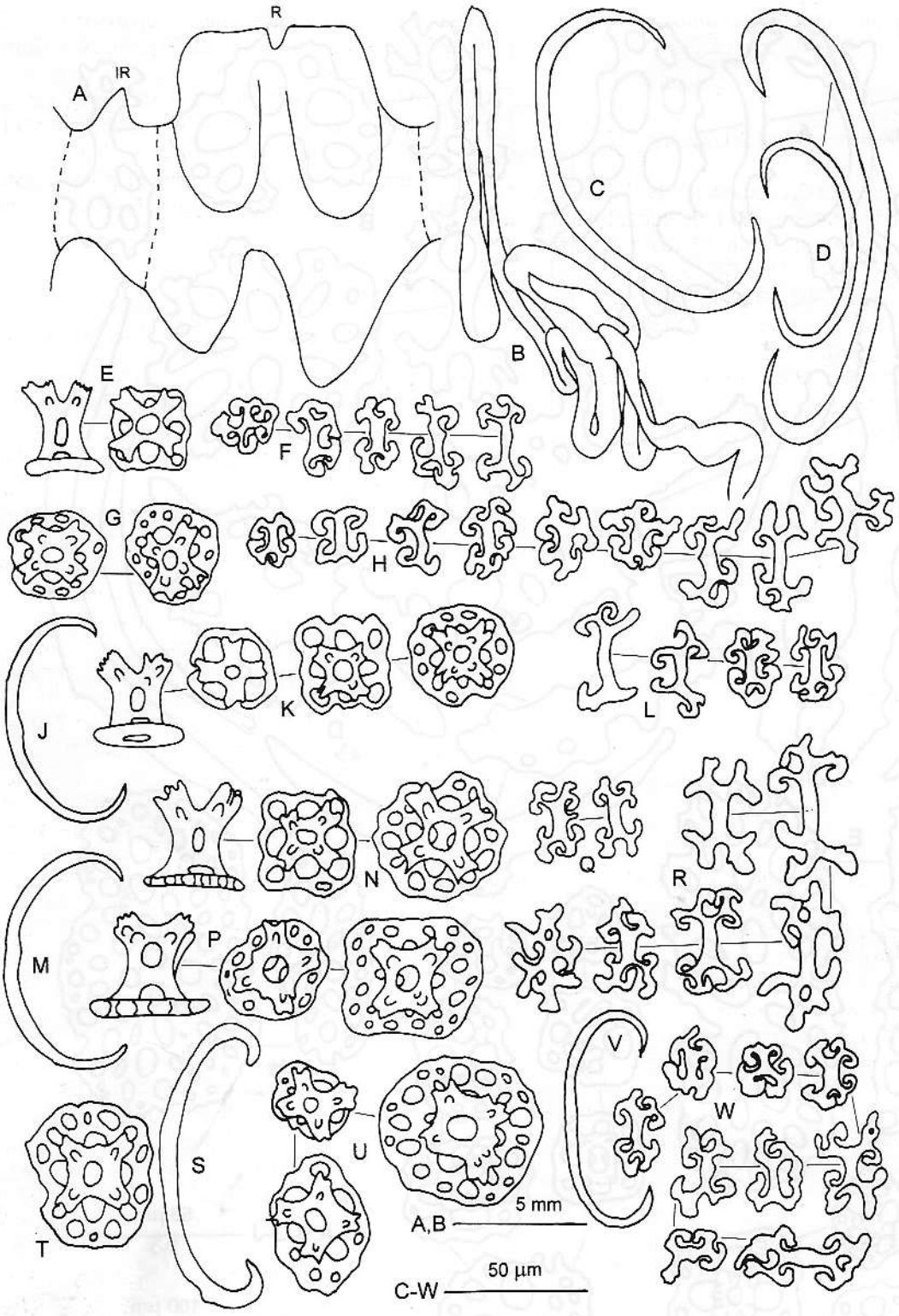

Fig. 6. *Stichopus ocellatus* n. sp. A: calcareous ring (r: radial plate; ir: interradial plate)(paratype); B: stone canal and madreporic plate (paratype); C: C-shaped rod of dorsal body wall (holotype); D: C-shaped rod of dorsal body wall (paratype); E: tables of dorsal body wall (holotype); F: rosettes of dorsal body wall (holotype); G: tables of dorsal body wall (paratype); H: rosettes of dorsal body wall (paratype); J: C-shaped rod of ventral body wall (holotype); K: tables of ventral body wall (holotype); L: rosettes of ventral body wall (holotype) ; M: C-shaped rod of the base of the dorsal papillae (holotype); N: tables of the base of the dorsal papillae (holotype); P: tables of the base of the dorsal papillae (paratype); Q: rosettes of the base of the dorsal papillae (holotype); S: C-shaped rod of the top of the dorsal papillae (holotype); T: tables of the top of the dorsal papillae (holotype); U: tables of the top of the dorsal papillae (paratype); V: C-shaped rod of the top of the dorsal papillae (paratype); W: rosettes of the top of the dorsal papillae (paratype).

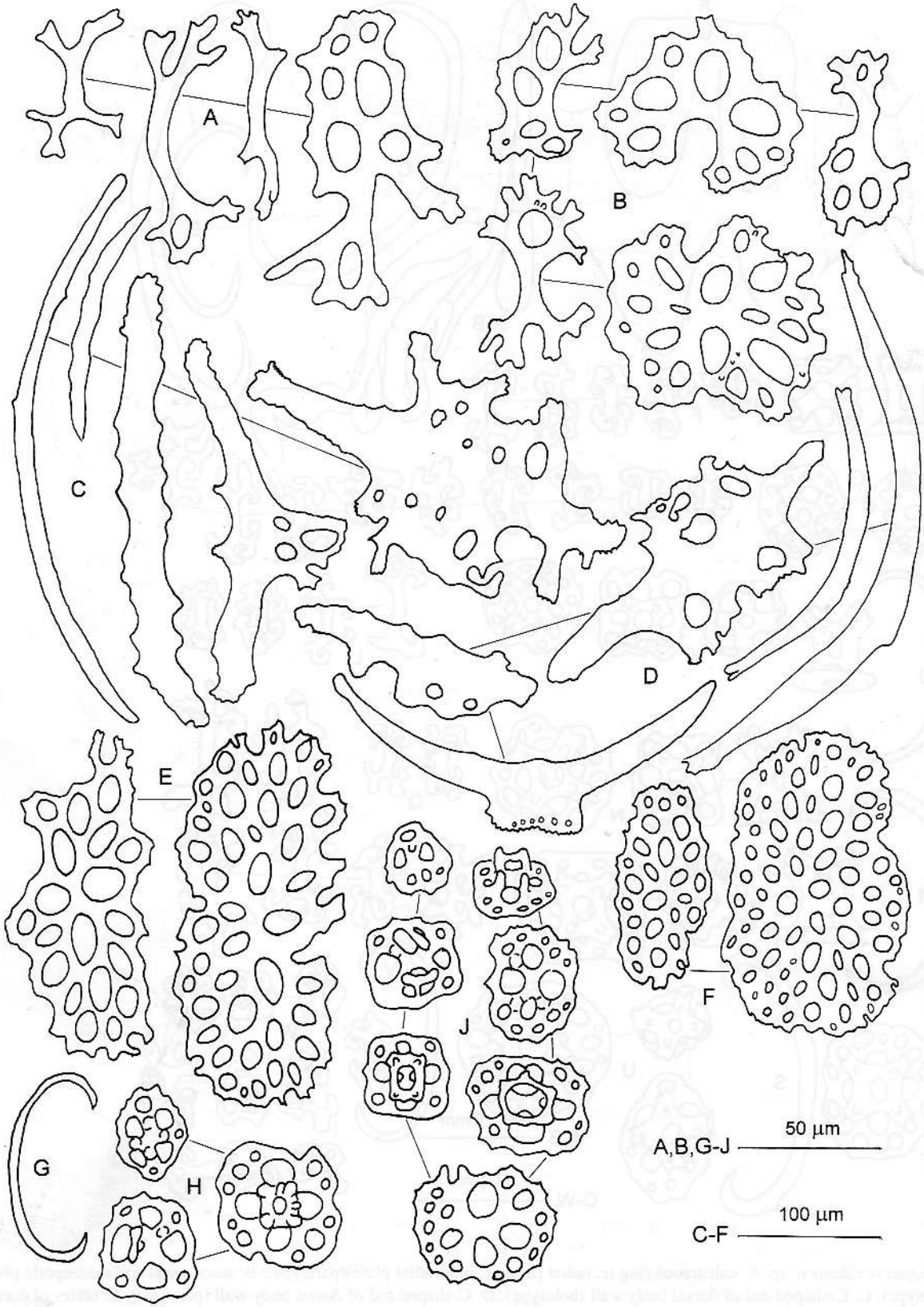

Fig. 7. *Stichopus ocellatus* n. sp. A: small rods and plates of the top of the dorsal papillae (holotype); B: plates of the top of the dorsal papillae (partype); C: large rods of the top of the dorsal papillae (holotype); D: large rods of the top of the dorsal papillae (paratype); E: large plates of the top of the tube feet (holotype); F: large plates of the top of the tube feet (paratype); G: C-shaped rod of the tube feet (holotype); H: tables of the tube feet (holotype); J: tables of the tube feet (paratype).

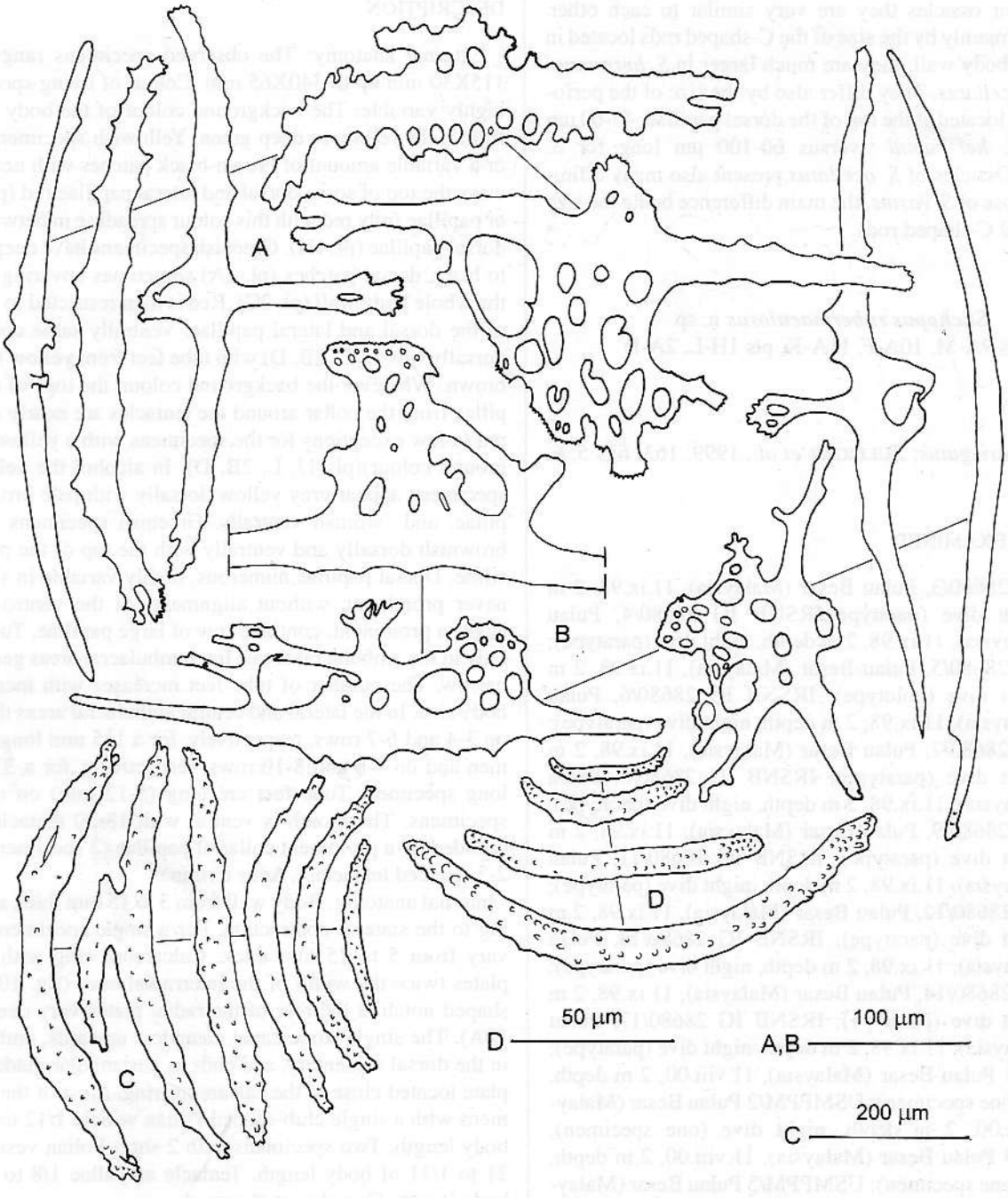

Fig. 8. *Stichopus ocellatus* n. sp. A: rods of the tube feet (holotype); B: rods of the tube feet (paratype); C-D: rods of the tentacles (holotype).

perforated plates (fig. 7E, F), 140-265 µm long, C-shaped rods (fig. 7G), 55-65 µm long, reduced tables (fig. 7H, J), 25-50 µm across and rods (Fig. 8A, B), smooth or spiny, 230-500 µm long, most of them with a large central perforated process. In the tentacles curved spiny rods, 40-600 µm long (fig. 8C, D).

DISTRIBUTION

Malaysia (Peninsula), Papua New Guinea (Hansa Bay)

ETYMOLOGY

ocellatus means with eye-like spots. It refers to the numerous white dorsal papillae looking like eye-like spots.

REMARKS

S. ocellatus n. sp. is very often associated with *S. herrmanni* as well in Malaysia as in Papua New Guinea (pl. 1C). Both species are very easy to distinguish in the field and no intermediary colour pattern have been observed up to now. Re-

garding their ossicles they are very similar to each other. They differ mainly by the size of the C-shaped rods located in the ventral body wall: they are much larger in *S. herrmanni* than in *S. ocellatus*. They differ also by the size of the perforated plates located at the top of the dorsal papillae: 45-60 µm long for *S. herrmanni* versus 60-100 µm long for *S. ocelllatus*. Ossicles of *S. ocellatus* present also many affinities with those of *S. vastus*, the main difference being the size of the dorsal C-shaped rods.