

Holothuria (Selenkothuria) perrieri sp. n. (Fig. III)

Diagnosis: Large species with both ends directed dorsally. Colour a dark greyish-brown tending to be almost black; sucking discs green. Pedicels short, scattered, more numerous ventrally and only slightly papilliform dorsally. Calcareous ring stout, radials twice the length of the interradials and several times as broad. Stone canal and madreporite free. Polian vesicle single. Cuvierian organs of short tubules in few tufts. Integumentary spicules in the form of straight, zigzag or irregular, never curved, flat, non-perforated rods provided with numerous, weakly developed spines giving the rods a characteristic serrated appearance; tables absent. Pedicels with large end plates but no supporting rods. Tentacles with straight, flat rods provided with slightly stronger spines.

Description: Holotype large, robust, subcylindrical, with both ends directed slightly upwards, body rather stout in the middle and bluntly tapering at both ends. Length along the trivium 210 mm; greatest diameter 44 mm; anterior and posterior ends more or less of the same diameter. Colour, a very dark greyish-brown tending to be almost black; dorsal surface a little lighter than ventral; sucking discs of pedicels

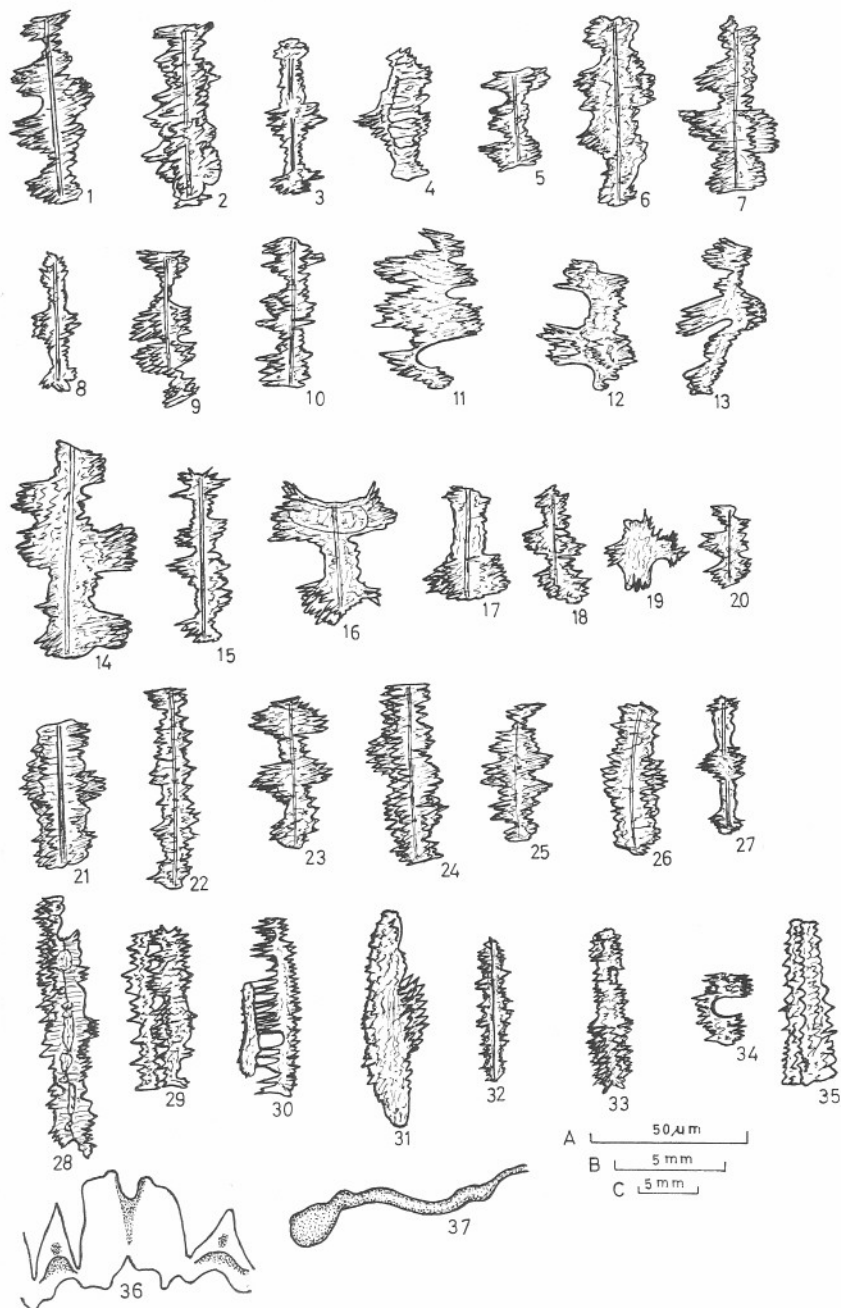


Fig. III. Spicules of *Holothuria perrieri* sp. n. 1-27. Spinous rods from integument. 28-35. Same from tentacles. 36. A radial and two interradial pieces of the calcareous ring. 37. Madreporic body and part of stone canal. (1-35, scale A, 36, scale B, 37, scale C.)

bright green. Body wall tough, leathery, and smooth. Mouth terminal, without evidence of a distinct collar. Tentacles 18, black and distinctly peltate. Anus also terminal and encircled by haphazardly arranged papillae. No marked distinction between the dorsal and ventral surfaces. Pedicels scattered throughout the body but more numerous and longer ventrally but never arranged in distinct rows nor crowded to form a creeping sole, only slightly papilliform dorsally; supporting rods absent, sucking discs provided with large end plates.

Calcareous ring stout; radial pieces (Fig. III, 36) notched both anteriorly and posteriorly and about twice as long and several times as broad as the interradians; interradian pieces small, triangular, and sharply projecting anteriorly. Tentacular ampullae well developed. Polian vesicle single, elongated and midventral; stone canal free and elongated, reaching about two thirds the length of the Polian vesicle; madreporite (Fig. III, 37) only slightly calcified, and also free from the dorsal mesentery. Alimentary canal and haemal system typical of the genus. Respiratory trees well branched, right one longer, extending to the level of the calcareous ring. Cuvierian organs in three tufts of short, white, unbranched tubules attached to the base of the left respiratory tree. Gonad in a single tuft of yellow, branched tubules on left side of dorsal mesentery, new tufts occur anteriorly on the stolon as short, narrow tubules.

Tables absent, integumentary deposits only in the form of straight or irregular, never curved, non-perforated spinous rods (Fig. III, 1-27), numerous but never present in a dense layer; rods remarkably flat, with rough surfaces and provided with numerous weakly developed spines along the edges giving them a characteristic serrated appearance. Some rods may be zigzag or shaped like 'wiggle-nails' with both ends serrated while others are either T-shaped with only the ends of the arms provided with spines or straight with strongly developed spines at their ends and the middle. Tentacles supported by spicules (Fig. III, 28-35) similar to those of the integument but narrower and more strongly spined, and showing a peculiar arrangement in pairs, members of each pair appear fused; rods with straight, uniformly developed elongated spines on only one margin take the form of combs.

Holotype: In the Natal Museum, Pietermaritzburg, South Africa. Holotype No. 1604.

Type Locality: Perriers Rock, south of Cape Vidal, Natal.

Habitat: The holotype was found firmly attached in a narrow sand-filled crevice on the shoreward side of a huge wave-washed rock at the high water mark.

Remarks: In colour, form, and structure this new species superficially resembles *H. parva* of the west Indian Ocean and *H. lubrica* of the east Pacific. It differs from *H. parva* in its large size, in the absence of distinct papillae and the occurrence of pedicels all round its body, and in the form and small size of its spicules. In *H. perrieri* the rods are remarkably flat and always non-perforated while in *H. parva* they are apparently stout and very often provided with holes along the sides. The most obvious difference, however, lies in the degree and nature of the spines of the rods. In *H. parva* the rods are usually provided with relatively few but comparatively strongly developed spines which project rather prominently from the surface. In *H. perrieri*, on the other hand, the spines are numerous, weakly developed, and not prominent. Except for the presence of spines, the surface of the rods of *H. parva* are smooth while those

of *H. perrieri* are rough. Tables are totally lacking in *H. perrieri* while at least a few incomplete ones were observed in the outer integument of three out of four individuals of *H. parva*.

The specimen was also sent to Prof. Cherbonnier, who has since informed me that it might represent a variety of *H. parva*. However, since both forms occur in more or less the same locality and habitat and yet show certain fundamental differences indicated above, I feel a specific separation is desirable.

DISCUSSION

Holothuria perrieri shows a far greater degree of resemblance to the east Pacific *H. lubrica* than to *H. parva*. This is evident in the size, coloration, distribution of pedicels, absence of conspicuous dorsal papillae, degree of spinosity of the rods, and the complete absence of tables. However, the more one compares the rods of *H. perrieri* with the descriptions and figures given for those of *H. lubrica* the more one feels that they are distinctly different. The rods of the new species are straight and considerably flattened, and the spines are so weakly developed that the spicules can be more aptly termed serrated rather than spinous. Moreover, the spicules of *H. lubrica* are stout, curved, and often show the development of a third arm and the presence of perforations (Caso 1954; Deichmann 1958; Rowe 1969). These are not present in the new species. In addition, the rods of the new species are provided with rough surfaces which, together with the spines, give them a characteristic appearance that is rather difficult to interpret. Finally, the tentacular rods of this new species show a peculiar paired arrangement. Such an arrangement has not been reported for the tentacular rods of *H. lubrica*. The dark variety of *H. lubrica* has been reported by Deichmann (1958) to possess ventral feet with sulphur-coloured discs. My specimen, also a dark form, shows bright greenish discs to the pedicels of both the dorsal and ventral surfaces.

H. lubrica is not known, with certainty, to occur in the Indo-West Pacific and according to Deichmann (1958) older reports of the species from this region refer to *H. parva* and *H. moebii*. The latter species ranges from Mauritius to southern Japan and is characterized by spicules with a finely spinulated surface, a small hole in each end and numerous stone canals (Deichmann 1958). *H. perrieri* is also distinct from *H. glaberrima* of the West Indies, which possesses delicate curved rods with indistinct spines and generally a hole at each end (Deichmann 1958).

One wonders whether such spicules as described and illustrated for this species are a normal occurrence but until more individuals are found and examined I feel obliged to name this specimen. It may be argued that this new species merely represents a variety or subspecies of *H. lubrica* showing differences that can be interpreted as variations in members of the same species taken from such widely separated localities as the east Pacific coast and the west Indian Ocean. I am, however, convinced that the differences in the character of the spicules are such that specific separation of the South African form is valid. More material in the future will possibly indicate that the variations in the nature of the spicules of this new species are of a distinctly different type than those reported for *H. lubrica*.