

Sides of test strongly arched, test scarcely sunken toward peristome. The tuberculation is as described by Mortensen (1921), coarse, with secondary tubercles of small size, with no regular arrangement. Primary tubercles form a regular singles series in each column; they are distinctly crenulate (Pl. V, fig. 1). The pores are, as usual, in slightly oblique arcs of three.

The rediscovery of this species is of considerable interest, but of special importance is the fact that there are distinct epistromal ridges in ambis and interambis. Mortensen (1921) made no mention of this, although the epistroma is rather conspicuous on an 8mm h.d. specimen, and Mortensen has material of the same size at his disposal. The larger specimen in the present collection is badly eroded, and no traces of epistroma can be found. Epistroma is best developed adorally, where it takes the form of ridges radiating from the primary tubercles toward the adjacent secondary tubercles (Pl. V, fig. 1), together with some ridges which run between the secondary tubercles. Small "tubercles" are also to be seen on the epistromal ridges.

Particularly in the interambis the areoles of the primary tubercles are separated by low ridges, such as are found adorally in *Pseudechinus novaezealandiae*. These ridges are not developed in the ambis. The test is light green, apart from the poriferous areas which are white. The tubercles are also light green. The species is aptly named, as in the smaller specimen the green varies considerably in shade, giving a mottled effect.

Only *P. albocinctus* (Hutton) and *P. variegatus* Mortensen have distinctly crenulate tubercles. Fell (1962) gives an account of the epistroma in *P. flemingi* Fell, *P. albocinctus* (Hutton) and *P. novaezealandiae* (Mortensen). Recent investigations by the writer (in press) show that epistroma is also present in the Magellanic species *P. magellanicus* (Philippi). Including the present species, five of the eleven species of *Pseudechinus* are known to have epistroma, at least in their young stages. It is expected that eventually all *Pseudechinus* species will be found to possess this important temnopleuroid character.

Mortensen (1921) stated that *P. variegatus* is most closely related to *P. albocinctus* on the basis of the crenulation of tubercles and similarities in their pedicellariae. Later, Mortensen (1943) contended that the species is related to *P. huttoni*, but differs in its more dense tuberculation, its size, and colour.

The type specimen of *P. variegatus* was collected from off Three Kings Islands, 65 fathoms (117 metres), and 10 miles NW of Cape Maria van Diemen, 50 fathoms (90 metres). A further two specimens were taken from west of Cuvier Island (near Auckland, New Zealand) in 35 fathoms (63 metres) (Mortensen, 1921). The present locality, approximately 20 miles north of Three Kings Is., does not affect the known distribution of the species. The depth of this station (792–810 metres) is very great compared with the depths from which the other material of the species is known, and it may be suggested that the dead tests were carried into deep water from the shelf. It is possible, however, that the species may live at that depth, as *Pseudechinus magellanicus* ranges from 0–820 metres, while *P. marionis* (Mortensen) occurs in 100–3,000 metres.

Tripneustes gratilla (Linnaeus)

Tripneustes gratilla Mortensen, 1943, p. 500, figs. 306–307, Pls. XXXIII, figs. 1–3, XXXIV, figs. 2–6, XXV, figs. 3–4, XXVII, figs. 1–2, 4–10, XXXVIII, figs. 1–4, LVI, fig. 11. (Complete synonymy.)

Material Examined: Station 107 (Raoul Island), west side of Meyer Island, shore collection, 2 specimens.