

1927. *Pteronotus (Poropteron) zealandicus* (Hutton); Finlay Trans. N.Z. Inst. 57: 419, Pl. 11, fig. 56.
 1961. *Pterynotus (Poropteron) zealandicus* (Hutton); Fleming, Bull. Conchol. Sect. Auck. Mus. 17: 13-15, fig.

FIGURED TOPOTYPES: TM 3117, TM 3118 (apex), N.Z. Geological Survey.

This striking form is known only from the 18ft Tainui Shellbed (Shakespeare Group) of Wanganui district, classed in the Putikian Substage of the Castlecliffian, in which it is common, and as worn derived fossils on the west Wellington beaches. For some years the Putikian has been interpreted as a warm-water interglacial fauna (Fleming, 1952, 1955) but the relationships and provenance of *P. zealandicus*, evidently an immigrant, were not known. Recognition of a close ally now living at Norfolk Island shows that *zealandicus* survived in the subtropical zone to the north after its extermination in New Zealand, presumably in the earliest Haweran glacial phase which followed the Putikian. Probably this is also the area from which it came south to New Zealand. Curiously enough, the New Zealand Pleistocene population was larger and more elaborately ornamented than the surviving Norfolk Island form.

***Pterynotus (Pterochelus) zealandicus iredalei* Fleming n. subsp. (Plate 1, fig. 17)**

1961. *Pterynotus (Poropteron) aff. zealandicus* (Hutton); Fleming, Bull. Conchol. Sect. Auck. Inst. 17: 13-15, fig.

Similar to *P. z. zealandicus* (Hutton), but distinguished by more slender shell, less continuous variceal frill and upward curve of adapical tube. Elements of spiral and axial sculpture, spacing of varices, the closure of both adapical and abapical canals, disposition of spines on varices, and oval tube-like apertural extension essentially the same as in the New Zealand fossil. Foliaceous variceal frill, however, much less developed than in *zealandicus*, so that the spines project freely on outer lip of abapical canal. The long closed tube of the adapical canal curves regularly upwards in an apical direction, whereas in *zealandicus* it runs radially outward from the aperture and curves slightly backwards from the plane of the aperture. Colour white or faintly pink. Largest specimen two-thirds the normal height of *P. zealandicus*, but differences confirmed by examination of young of the latter species.

HEIGHT: 20 mm; width 10 mm (holotype TM 3119); height, 23 mm (largest paratype, TM 3120).

HOLOTYPE: TM 3119, paratype TM 3120, New Zealand Geological Survey.

LOCALITY: Norfolk Island (collected by Dr Hugh Marwick 1944, holotype and 4 paratypes); Norfolk Island (R. S. Bell and H. C. Quintal, 1913; Dom. Mus.).

The holotype and 4 paratypes are in the New Zealand Geological Survey, other paratypes in the Dominion Museum. Additional specimens have been examined in the Australian Museum, Sydney, where Mr T. Iredale had recognised their relationship with *P. zealandicus*.

Subgenus NOTHOTYPHIS nov.

TYPE SPECIES: *Pterynotus (Nothotyphis) norfolkensis* Fleming n. sp., Norfolk Island, Recent.

Small solid *Pterynotus* with closed siphonal and adapical canals, sculptured by broad rounded spiral cords on which are superposed fine intersecting spiral and radial threads, resulting in a trellised micro-texture. Siphonal canal short. Protoconch paucispiral with bulbous nucleus.