

rather high, narrowly rounded radial ribs of narrowly triangular section, with occasional single interstitial riblets that may become as strong as the main ribs over the outer part of the valve. Interspaces about equal to the width of the ribs over the first part of the disc, about three times the width of the ribs over the last quarter of the disc. Interstices crossed by microscopic concentric lamellae that frequently finely nodulate the ribs. About 30 main ribs over the outer part of the disc of the holotype. Anterior ear bearing six ribs more closely spaced than on the disc and with more prominent concentric lamellae; posterior ear bearing three very narrow, widely spaced ribs. Resilifer deep and narrow, oblique, with the apex directed anteriorly.

Dimensions of holotype: Height, 22.8mm; length, 22.3mm.

LOCALITY: Cliffs half a mile east of Te Araroa, near East Cape, A. G. Beu and G. R. Wilson, 1963, holotype and two paratypes.

AGE: Kapitean (uppermost Miocene).

HOLOTYPE (VM346) and two paratypes (VM347 and VM348) in Geology Department, Victoria University of Wellington.

This species is similar to *C. consociata* (Smith) (figured by Dell, 1963: pl. 1, figs. 5–8), differing in the narrower ribs with wider and deeper interstices, the less frequent interstitial ribs, much lower and finer gemmae on the ribs, and the narrower, oblique resilifer.

The holotype is a right valve that has grown in some restricted habitat, so that it is deformed. It is the largest and most complete specimen yet collected.

Subgenus PHIALOPECTEN Marwick, 1928

1928. *Phialopecten* Marwick, Trans. N.Z. Inst. 58: 454.

Type Species (by original designation): *Pecten triphooki* Zittel, 1864, upper Pliocene and lowermost Pleistocene, New Zealand.

The lineage of *Phialopecten* has been the subject of intensive study in recent years, due to its great usefulness in stratigraphy of the Pliocene rocks of New Zealand. A single subspecies can be conveniently recognised in each of the three Pliocene stages, with a rare, small, *Chlamys*-like species in the Kapitean (uppermost Miocene). The forms are as follows:

Chlamys (*P.*) *triphooki triphooki* (Zittel), Waitotaran and basal Nukumaruan;

Chlamys (*P.*) *triphooki marwicki* n.subsp., Waipipian;

Chlamys (*P.*) *triphooki ongleyi* (Marwick), Opoitian;

Chlamys (*P.*) *tolagaensis* Marwick, Kapitean.

Boreham (1963) and Marwick (1965) recently discussed and figured the members of the genus. *C. (Phialopecten) accrementus* (Hutton) and *C. (Phialopecten) hilli* (Hutton) seem to be off the main line, and need not be considered here. Marwick (1965) described *P. ongleyi* and noted its relationship to *P. tolagaensis* and *P. triphooki*, but did not consider that the intermediate Waipipian form needed any designation other than *P. ongleyi-triphooki*. The Waipipian form is not only exceedingly useful in stratigraphy, but is also just as morphologically distinct as the others, and is considered to be worthy of recognition as a separate subspecies. The three younger members of the lineage are so similar that they are here accorded only subspecific rank.

Chlamys (*Phialopecten*) *triphooki marwicki* n.subsp. Pl. 1, Figs. 1, 6.

1963. *Phialopecten* aff. *triphooki*: Boreham, N.Z. Jl Geol. Geophys. 6(1): 22, figs. 6–8.

1965. *Phialopecten ongleyi-triphooki*: Marwick, Paleont. Bull. N.Z. geol. Surv. 39: 22, 66, 68, pl. 3, fig. 1; pl. 4, fig. 4.

Shell large, thick, little inflated, with no radial folds, right valve less inflated than left. Ears large, anterior a little larger than posterior, right anterior one with a comparatively shallow byssal notch. Sculpture of about 30 major radial ribs, with one rather large interstitial