

# NEW ZEALAND MOLLUSCAN SYSTEMATICS WITH DESCRIPTIONS OF NEW SPECIES

## PART 8

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*Abstract.* In this part, an Australian genus and species new to the New Zealand fauna is added, with the recording of *Myochama tasmanica* from Parengarenga Harbour; a new species of *Pterochelus* is described; the upper Pleistocene *Thracia vegrandis* is found to be represented in the Recent fauna; seven species mostly of tropical Indo-Pacific origin are added to our Recent fauna, along with five others on an at present tentative basis; four species previously recorded as new to the fauna are now found to be firmly established; and the paper concludes with some nomenclatural notes.

(A) *A genus and species of Australian origin new to the New Zealand fauna*

Family MYOCHAMIDAE

Genus **Myochama** Stutchbury, 1830

Type species (monotypy) *M. anomioides* Stutchbury, 1830.

Shell inequivalve, sessile, attached by the right valve, and modified in form and in sculpture by the surface of attachment.

**Myochama tasmanica** (Tenison Woods, 1877)

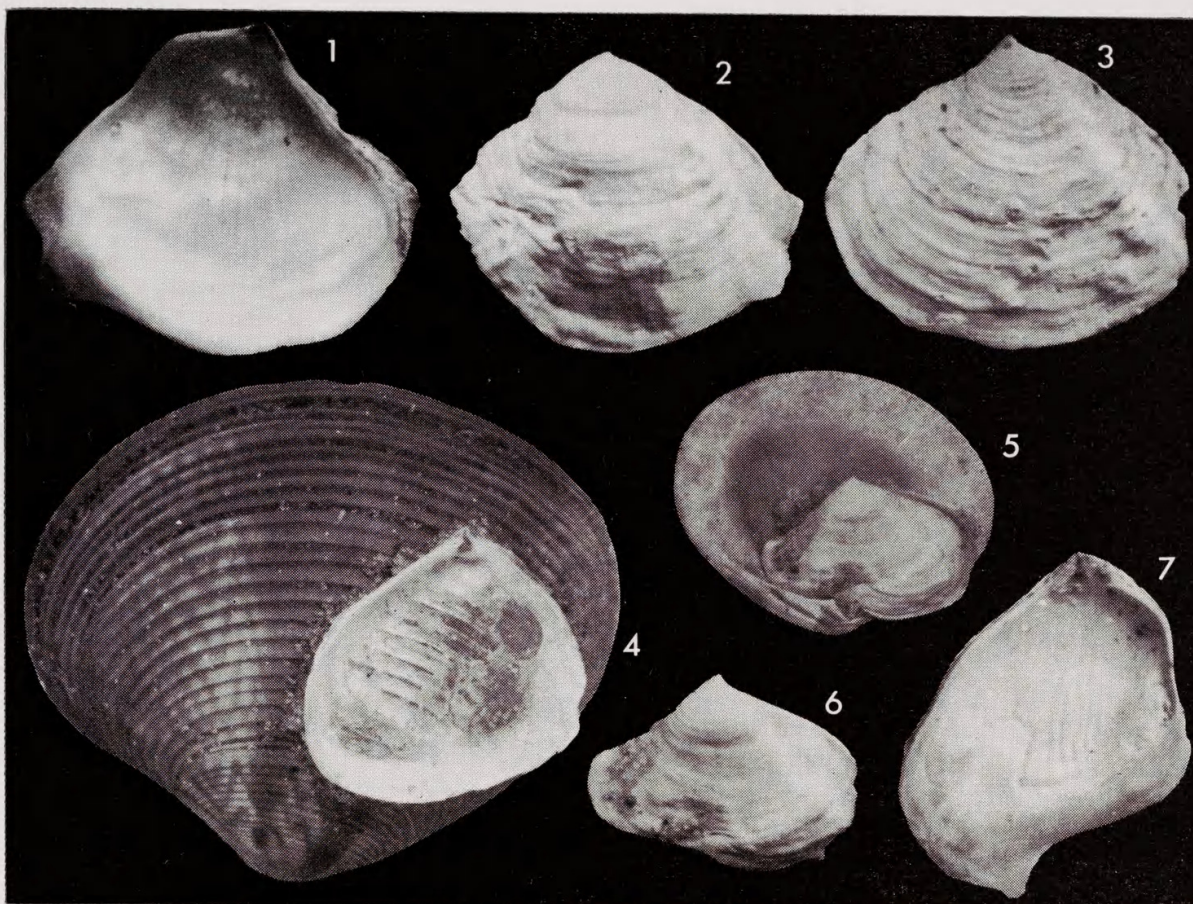
(Figs. 1-8)

1877 *Gouldia tasmanica* Tenison Woods, Proc. R. Soc. Tasmania (for 1876): 160.

1901 *Myochama tasmanica* (Tenison Woods); Tate & May, Proc. Linn. Soc. N.S.W. 26: 461, fig. 13.

Adult shell of very irregular shape and proportions, 9-14 mm in width. Nepionic part of shell regularly trigonal, with small posteriorly inclined beaks, 3.2-6.75 mm in width, sculptured with strong rather widely spaced rounded concentric ridges, occasionally anastomosing. After this stage the shell takes on all manner of shapes, induced by the surface to which it becomes adherent; the concentric sculpture loses any semblance of regularity and flattens out into haphazard growth lines and folds. The free left valve has a weak posterior ridge that terminates in a slight squarish truncation. Pallial sinus of moderate depth. Internal surface of left valve, within the pallial line deeply scored by irregular radial grooves; right valve without radial grooves, but reproducing the surface irregularities and sculpture of the host shell. Hinge with a deep narrow wedge-shaped resilifer, flanked by irregular ridges confluent with the hinge-plate. Colour of exterior dull white; interior slightly pearly. The shell appears to be bi-convex up to 5 mm in length, but no free-living juveniles were obtained in the Parengarenga dredgings. The Tasmanian holotype is a free-living nepionic shell, 3.0 mm wide by 2.5 mm high, and matched that stage in the Parengarenga adults.





Figs. 1-7. *Myochama tasmanica* (Tenison Woods), Parengarenga Harbour, 5.48-7.31 m; size range 9-14 mm. 1, 2, 3, 6 & 7. Left valves. 4. Right valve attached to exterior of *Tawera spissa*. 5. Complete shell attached to interior of *Tawera spissa* valve.

*Measurements in mm of Parengarenga shells —*

Adult width	adult height	nepionic width	nepionic height
14.0	11.7	3.20	2.75
13.0	11.0	—	—
12.0	7.0	5.00	3.70
11.0	10.5	6.75	5.00
9.0	12.2	—	—

TYPE LOCALITY. Southern Tasmania. "Parasitic on *Pectens* in channel", W. L. May, *An Illustr. Index of Tasmanian Shells*, pl. 5, fig. 11.

*New Zealand locality.* Parengarenga Harbour, Northland, 3-4 fathoms (5.48-7.31 m) on coarse shelly bottom, attached to the exterior of living and the interior of dead *Tawera spissa*, or rarely on the inside of *Paphies australis* valves; dredged on several occasions by Messrs Hunt Seelye, Graham Clifford and Norman Gardner.

The writer is indebted to Mrs N. Gardner for the gift of two specimens of the Parengarenga shell for the Auckland Museum and also for the opportunity of studying all of the material collected.



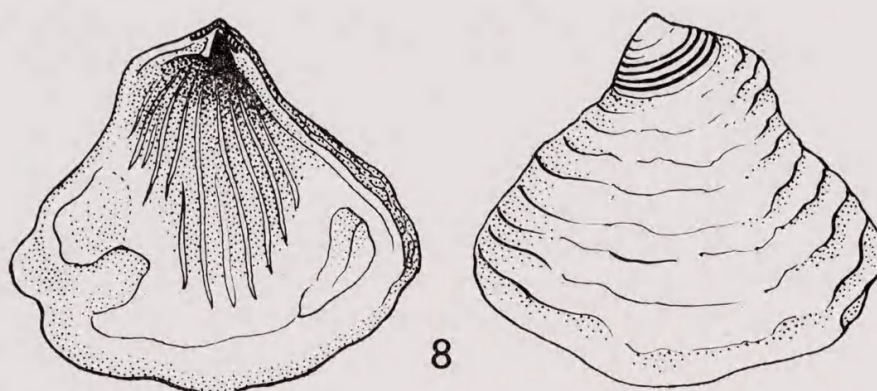


Fig. 8. *Myochama tasmanica* (Tenison Woods), Parengarenga Harbour, 5.48-7.31 m. Left valve; interior, showing radial grooves; exterior, showing regularly corrugated nupionic part of shell, followed by irregular adult growth.

(B) *A new species of Pterochelus*

Family MURICIDAE

Genus **Pterochelus** Jousseaume, 1880

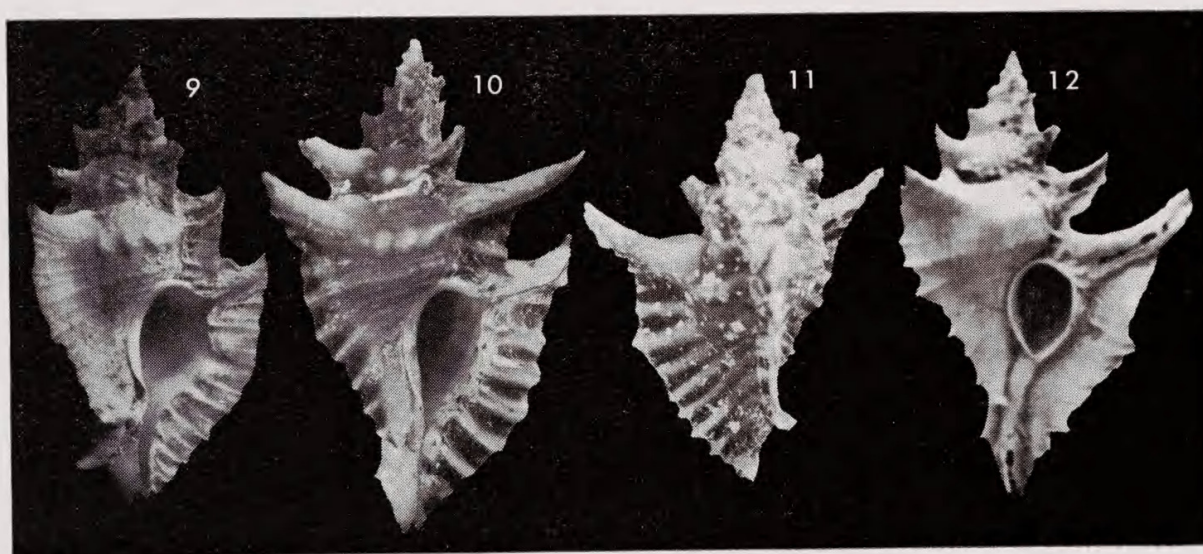
Type (original designation) *Murex acanthopterus* Lamarck.

(Synonyms *Alipurpura* Fischer, 1884. Type (OD) *M. acanthopterus* Lamk. and *Prototyphis* Ponder, 1972. Type (OD) *Typhis angasi* Crosse, 1863).

**Pterochelus paupereques** sp. n.

(Figs. 10, 11)

1971 *Pterynotus* (*Pterochelus*) *zealandicus* (non Hutton 1873), Powell, Rec. Auckland Inst. Mus. 8: 218, figs. 10, 11.



Figs. 9-12. 9. *Pterochelus eos* (Hutton, 1873), Long Beach, Russell; 30 x 16 mm. 10, 11. *Pterochelus paupereques* sp. n. 10. Poor Knights Islands, 9-18 m; 31.75 x 19.75 mm, Holotype. 11. Reef off Henry Island, Whangaruru, 6 m. 12. *Pterochelus zealandicus* (Hutton, 1873), Castlecliff, Wanganui, upper Pleistocene; 31 x 22 mm.



This is the species erroneously attributed to *Pterynotus zealandicus* (Hutton) (Powell 1971, 1.c.p.218). Incidentally Hutton's upper Pleistocene species has been recorded Recent upon the basis of an authentic living example dredged in Cook Strait, 9-10 miles (14.48-16.09 km) north of Cape Farewell in 45-52 fathoms (76.81-95.10 m) (Dell and Fleming 1964, Rec. Dominion Mus. 5 (9): 63-72).

The species *paupereques* resembles *eos* (Fig. 9) in having the peristome interrupted both by the anterior canal and the hollow shoulder spine, and also in the presence of shoulder nodes, but differs from *eos* in its broadly triangulate body-whorl, and long, up-curved, open, shoulder spine. The shell coloration varies from light brown, with reddish-brown spiral streaks, to bright salmon-pink, with dark reddish-brown patches in the hollows of the axial lamellae. The animal is cream coloured, deepening to bright yellow towards the foot. The cephalic tentacles are moderately long, rather sharply pointed, and ledged on the outer side, with a conspicuous black pigmented eye, situated at about one-third back from the tip.

In *zealandicus* (Fig. 12) both the anterior canal and the shoulder spine are closed in the adult, the aperture is entire with a raised rim, and there are no shoulder nodes between the varices, which are broad lamellose flanges.

TYPE LOCALITY. Poor Knights Islands, taken alive at 9-18 m (holotype); also reef off Henry Island, Whangaruru, 6 m, taken alive by Mr W. Palmer of Whangarei.

*Holotype*. Auckland Institute and Museum No. TM—1343; height 31.75 mm, width 19.75 mm, presented by Mr W. Palmer.

(C) *A Pleistocene Thracia now admitted to the Recent fauna*

Family THRACIIDAE

Genus **Thracia** Sowerby, 1823

**Thracia vegrandis** Marshall & Murdoch, 1919

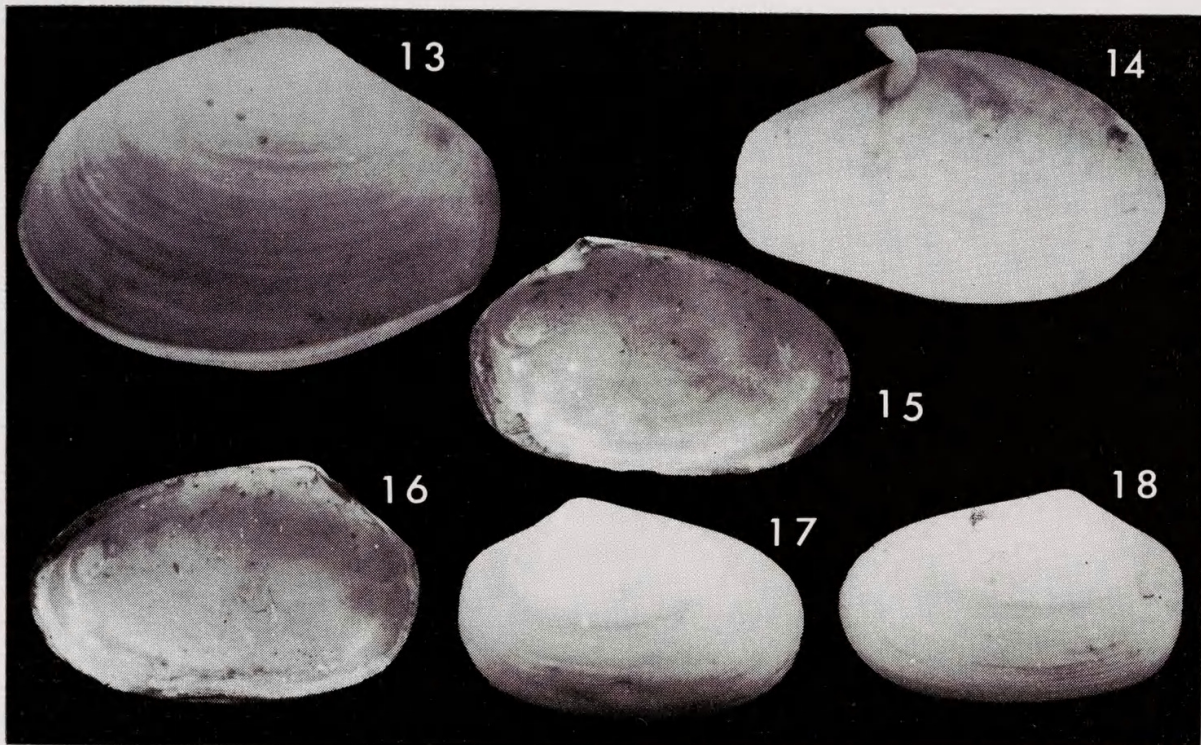
(Figs. 15-18)

1919 *Thracia vegrandis* Marshall & Murdoch, Trans. Proc. N.Z. Inst. 51: 258.

This species, originally described from the Castlecliffian upper Pleistocene of Wanganui, is now claimed to be common as a Recent shell at the following localities. *Localities*. North Island; off Gannet Island, west coast, 30 fathoms (54.86 m). South Island; Negara Island, Queen Charlotte Sound, 5 fathoms (9.14 m); Tahunanui Beach, Nelson.

The species *vegrandis* is easily distinguished from the more widely dispersed *Thracia* (*Hunkydora*) *australis novozelandica* (Reeve, 1859) (Figs. 13, 14) by its smaller adult size, elongated shape with sub-parallel dorsal and ventral margins, and in particular by the minute crescentic lithodesma, only 1.2 mm long in a shell 15 mm in length. In *novozelandica* the lithodesma is angularly boomerang-shaped and proportionately very large, being 6.5 mm long in a shell 28.5 mm in length. Incidentally *Hunkydora* Fleming, 1948, is here referred back to the Thraciidae from the Myochamidae, where it was placed by Fleming.





Figs. 13-18. 13, 14. *Thracia (Hunkydora) australica novozelandica* (Reeve, 1859), Paterson Inlet, 23.77 m, Stewart Island; 21 x 32 mm (note very large lithodesma 7 mm in length). 15-18. *Thracia (Thracia) vegrandis* Marshall & Murdoch, 1919, Tahunanui Beach, Nelson; 13 x 20 mm (lithodesma only 1.2 mm in length).

(D) *New records mainly of tropical Indo-Pacific origin*

#### Family NATICIDAE

##### ***Polinices melanostomoides*** (Quoy & Gaimard, 1833)

1833 *Natica melanostomoides* Quoy & Gaimard, Voy. Astrolabe 2: 229.

1971 *Polinices (Mammilla) melanostomoides* (Quoy & Gaimard); Cernohorsky, Rec. Auckland Inst. Mus. 8: 199, figs. 66, 67.

*Localities.* One dead shell inhabited by a hermit crab, on mud-flat at Te Hapua, Parengarenga Harbour (K. Hipkins, Feb. 1972); another in likewise condition on sandy flat at entrance to Te Kao Channel, Parengarenga Harbour (A.W.B.P. April, 1972); also one empty shell cast ashore at Rarawa Beach, Northland (K. Hipkins, 1972).

#### Family TONNIDAE

##### Genus ***Eudolium*** Dall, 1889

Type (monotypy) *Dolium crosseanum* Monterosato, 1869.

##### ***Eudolium* cf. *pyriforme*** (Sowerby, 1914)

1914 *Dolium pyriforme* Sowerby, Ann. Mag. Nat. Hist. 14: 37.

The writer has seen a large empty shell, almost certainly of this species, that was obtained in the Doubtless Bay area, Northland, from crayfish-pots operated by a



Mangonui fisherman. The shell was in a good state of preservation, but another fisherman in the area is said to have a live taken example.

The species *pyriforme* occurs in Japan from Choshi to Honshu in 100-200 m, and is also known to occur in northern Australia. This is the first Recent record for the genus in New Zealand, but a Miocene fossil species is known from Pakaurangi Point, Kaipara (Beu 1970, Trans. R. Soc. N.Z., Earth Sci. 7 (8): 127).

#### Family CARINARIIDAE

##### Genus **Cardiapoda** d'Orbigny, 1836

Type (SD, Gray, 1847) *C. pedunculata* = *Pterotrachea placenta* Lesson, 1830.

##### **Cardiapoda placenta** (Lesson, 1830)

1830 *Pterotrachea placenta* Lesson, Voy. "Coquille" Zool. 2 (1): 253.

1965 *Cardiapoda placenta* (Lesson); Coan, "Veliger" 8 (1): 37-38.

*Localities.* North Island; from surface tow-netting off Cape Brett, Northland, by Mr N. Boustead, 1970-72; two shells, detached from the animal, but in a fresh condition. The species is widely distributed in the warmer waters of the Atlantic and Pacific Oceans. A new record for New Zealand.

The animal resembles *Carinaria* but has the visceral sac more posterior, and the shell is minute, no more than 2 mm in diameter, spiral, subglobose, brownish cartilaginous, and has a bilobed extension of the peristome that resembles an eye-shade.

#### Family FASCIOLARIIDAE

##### Genus **Fasciolaria** Lamarck, 1799

##### Subgenus **Pleuroploca** Fischer, 1884

##### **Fasciolaria (Pleuroploca) filamentosa** (Röding, 1798)

1798 *Fusus filamentosus* Röding, Mus. Bolten 2: 118.

A half-grown example, 78 mm in height, of this well known Indo-Pacific shell was obtained recently from a crayfish-pot in the vicinity of North Cape.

#### Family MURICIDAE

##### Genus **Morula** Schumacher, 1817

##### Subgenus **Neothais** Iredale, 1912

Type (original designation) *Purpura smithi* Brazier, 1889.

##### **Morula (Neothais) chaidea** (Duclos, 1832)

1832 *Purpura chaidea* Duclos, Ann. Sci. Nat. 26 (101): 106.

1915 *Neothais chaidea* (Duclos); Oliver, Trans. Proc. N.Z. Inst. 47: 536.



An immature living example of this species was taken in a rock pool at Merita Bay, Rangiawhia Peninsula, Northland, by Mr Hunt Seelye in 1972, and makes a new record for New Zealand. The recorded range for this species was Queensland, New Caledonia, New South Wales, Lord Howe, Norfolk and Kermadec Islands.

### Family LIMIDAE

#### Genus **Limaria** Link, 1807

Type (SD, Winckworth) *Lima inflata* (non Gmelin) = *Ostrea tuberculata* Olivi, 1792.

#### **Limaria orientalis** (Adams & Reeve, 1850)

1850 *Lima orientalis* Adams & Reeve, Zool. Samarang (7): 75.

1926 *Lima marwicki* Powell, Rec. Canterbury Mus. 3 (1): 48.

1973 *Limaria orientalis* (Adams & Reeve); Willan, "Poirieria" 7 (1): 15.

1973 *Limaria orientalis* (Adams & Reeve); Willis, "Poirieria" 7 (1): 13.

This species was unknown in the New Zealand Recent fauna prior to the summer of 1972, after which a very considerable invasion appears to have taken place along the Northland east coast, from Leigh to Takapuna, Colville Passage, 10-12 fathoms (18.29-21.95 m) inside empty horse-mussel shells (Willis 1973, l.c.), and down the outer coast of Coromandel Peninsula to at least Mercury Bay.

At many locations, Wenderholm near Waiwera for instance, the species occurs between tides in shallow rock pools, nestling in small clumps of *Corallina* algae fringing loose boulders.

This recent invasion is probably one of several previous ones that were apparently short lived, for *orientalis* seems to be inseparable from the upper Pleistocene *Lima marwicki* Powell, 1926, of Castlecliff, Wanganui. Also, a damaged valve from the Miocene of Target Gully, Oamaru, seems to be the same species also.

Previously the Recent range of *orientalis* was considered to be Japan, Philippine Islands (type locality), New Hebrides (Willan 1973), New South Wales, Victoria and South Australia.

### Family SEMELIDAE

#### Genus **Theora** H. Adams & A. Adams, 1843

Type (SD, Stoliczka, 1871) *Neaera lata* Hinds, 1843.

#### Subgenus **Endopleura** A. Adams, 1864

Type (monotypy) *Theora lubrica* Gould, 1861.

#### **Theora (Endopleura) lubrica** Gould, 1861

1861 *Theora lubrica* Gould, Proc. Boston Soc. Nat. Hist. 8: 24.

1973 *Theora* sp., Gardner, "Poirieria" 7 (1): 13.



Early in 1972 this Japanese species made a sudden appearance in many Northland east coast locations, ranging from the Bay of Islands to the upper reaches of Auckland Harbour. Dr F. Climo first informed me of the occurrence of this species in shallow water soft mud at the Bay of Islands, and at about the same time Mr R. C. Willan found it living in sticky low-tidal mud at Tutukaka. Since then the species has turned up as living colonies at many localities around Auckland. Its occurrence in fair numbers on the mud flat near the Auckland Harbour Bridge toll plaza raises a possibility that the introduction could have been associated with the harbour bridge extensions carried out by a Japanese firm, that towed prefabricated sections from Japan to the site on huge barges, but this suggested mode of introduction for the species could hardly account for the Bay of Islands and Tutukaka occurrences.

(E) *Tentative new records of tropical Indo-Pacific origin*

#### Family STOMATELLIDAE

##### **Stomatia phymotis** Helbling, 1779

1779 *Stomatia phymotis* Helbling, Abh. Privatges. Böhm. 4: 124.

An empty shell in a good state of preservation, of this well-known but rather uncommon Indo-Pacific species, was found in a rock pool near Te Araroa, East Cape, by Mrs R. E. Duffy in 1972. The location is remote from habitations, but nevertheless further evidence is required before admitting this species as a member of the New Zealand fauna.

#### Family TONNIDAE

##### **Tonna perdx** (Linnaeus, 1758)

1758 *Buccinum perdx* Linnaeus, Syst. Nat. ed. 10: 734.

1973 *Tonna perdx* (Linnaeus); Gardner, "Poirieria" 7 (2): 42.

Two small examples in fairly fresh condition, one with portions of the animal attached, and some shell fragments, of this well-known tropical Indo-Pacific species, were cast ashore on beaches between the Bay of Islands and North Cape, during the past two or three years.

##### **Malea pomum** (Linnaeus, 1758)

1758 *Buccinum pomum* Linnaeus, Syst. Nat. ed. 10: 735.

1973 *Malea pomum* (Linnaeus); Gardner, "Poirieria" 7 (2): 42.

A reasonably fresh example of this well-known tropical Indo-Pacific species was picked up last year at Great Exhibition Bay, Northland, by Mr Hunt Seelye of Pukenui, Houhora.

#### Family MURICIDAE

##### **Rapana venosa** (Valenciennes, 1846)

1846 *Purpura venosa* Valenciennes, Voy. "Venus": pl. 7, fig. 1.

1861 *Rapana thomasiana* Crosse, J. de Conchyl. 9: 176, 268.



Two fully adult examples of this species, the normal range of which is Japan, Korea and North China, were taken in crayfish-pots, 12 miles (19.31 km) west of Cape Maria van Diemen in approximately 48 fathoms (87.78 m), one by Mr C. Wedding in 1971 and the other by Mr P. Wedding in 1972.

#### Family TURRIDAE

##### **Lophiotoma abbreviata** (Reeve, 1843)

1843 *Pleurotoma abbreviata* Reeve, Conch. Iconica 1: pl. 10, fig. 86.

1973 *Lophiotoma* "*brevicordata*" (sic) = *abbreviata* (Reeve); "*Poirieria*" 7 (1): 4.

One well preserved example of this tropical Indo-Pacific reef shell, dredged in shallow water at Deep Water Cove, Bay of Islands, by Mr & Mrs Max Hancock, of Whangarei.

(F) *Previously recorded species now considered established in New Zealand*

#### Family CYPRAEIDAE

##### **Lyncina vitellus** (Linnaeus, 1758)

1858 *Cypraea vitellus* Linnaeus, Syst. Nat., ed. 10: 721.

1967 *Lyncina vitellus* (Linnaeus), Powell, Rec. Auckland Inst. Mus. 6 (3): 185.

1973 *Cypraea vitellus* Linnaeus; K. Grange, "*Poirieria*" 7 (1): 3.

Since the original record of a living example of this well-known tropical Indo-Pacific cowry in 90 feet (27.43 m) at the Poor Knights Islands (Powell 1967, l.c.), two well preserved examples have been taken at Goat Island Beach, Leigh, Hauraki Gulf, another at Tutukaka, Northland, as well as recognisable fragments washed up near Whangaroa.

#### Family BURSIDAE

##### **Bursa bubo lissostoma** E. A. Smith, 1914

1914 *Bursa* (*Tutufa*) *rubeta* var. *lissostoma* E. A. Smith, J. of Conch. 24: 230, pl. 4, fig. 3.

1967 *Tutufa bufo* (Röding, 1798); Powell, Rec. Auckland Inst. Mus. 6 (3): 189, pl. 36, fig. 8.

The original New Zealand record of this Indo-Pacific species (Powell 1967, l.c.) was based upon a living adult example, 140.5 mm in height, taken at the Poor Knights Islands at a depth of 150 feet (45.72 m). Since then another living adult was found at low water on a sandy flat near the entrance to the Te Kao Channel, Parengarenga Harbour. Also quite a number of well preserved shells have been taken from crayfish-pots in the Doubtless Bay and North Cape areas, as well as others cast ashore on northern beaches.

#### Family FASCIOLARIIDAE

##### **Fusinus genticus** (Iredale, 1936)

1936 *Colus genticus* Iredale, Rec. Aust. Mus. 19: 316.

1967 *Fusinus genticus* (Iredale); Powell, Rec. Auckland Inst. Mus. 6 (3): 194.



Since the original records of this eastern Australian species in Northland east coast waters, based upon shells inhabited by hermit-crabs, and taken from crayfish-pots, a number of living examples were cast ashore on Northland beaches during the latter half of last year. Also a fine large living example, 156 mm in height, and with the yellowish pile-like periostracum intact, was obtained by Mr W. Palmer in 120 feet (36.58 m) at the Poor Knights Islands. This specimen was presented to the Auckland Museum by Mr Palmer; the animal was orange-red to scarlet, covered all over with small white spots.

#### Family TEREBRIDAE

##### ***Terebra circumcincta*** Deshayes, 1857

1857 *Terebra circumcincta* Deshayes, J. de Conchyl. 6: 77, pl. 3, fig. 9.

1971 *Terebra circumcincta* Deshayes; Powell, Rec. Auckland Inst. Mus. 8: 225, fig. 26.

1973 *Terebra circumcincta* Deshayes; Gardner, "Poirieria" 6 (6): 118.

Since the recording of two living examples of this species, taken by shallow water dredging in the Bay of Islands (Powell 1971, l.c.), a number of living examples have been dredged in the same area by Mr G. Clifford.

(G) *Nomenclatural and other notes*

#### Family TROCHIDAE

*Diloma nigerrima* (Gmelin, 1791), based upon Chemnitz, Conch. Cab. 5: 185, fig. 3597, from "Oceano Australi" = New Zealand, makes *Zediloma digna* Finlay, 1927, an absolute synonym. Finlay and others were under the false impression that Gmelin's species was exclusively South American.

*Diloma (Fractarmilla) zelandica* (Quoy & Gaimard, 1834) replaces the well known name *Trochus atrovirens* Philippi, 1851. Philippi's species was wrongly assigned previously to the synonymy of *Melagraphia aethiops* (Gmelin, 1791).

*Diloma (Fractarmilla) subrostrata novazelandiae* (Anton, 1839), based upon Chemnitz Conch. Cab. 5: fig. 1850, replaces *Zediloma (Fractarmilla) corrosa zebrina* Powell, 1946.

*Diloma (Fractarmilla) bicanaliculata* (Dunker, 1844), in Philippi, Abb. Conch. 1 (8): 189, pl. 5, fig. 4, replaces *Monodonta lugubris* (non Gmelin, 1791), Suter, 1913, p. 119. Gmelin's *Trochus lugubris* was based upon Chemnitz, Conch. Cab. 5: pl. 165, fig. 1571, which is identical with *Melagraphia aethiops* (Gmelin, 1791).

*Maurea selecta* (Dillwyn, 1817). Dillwyn's *Trochus selectus* is an earlier name for *Trochus cunninghami* Griffith & Pidgeon, 1833.

In a concurrent paper Mr W. O. Cernohorsky ("Type specimens of Mollusca in the University Zoological Museum, Copenhagen", this volume) gives a more detailed account of the synonymy, as well as remarks concerned with the actual type specimens, of the above five species.



*Zetela* Finlay, 1927, is here considered of no higher status than a subgenus of *Solariella* Searles Wood, 1842.

*Spectamen* Iredale, 1924, replaces *Zeminolia* Finlay, 1927; personal communication from Dr F. Climo, who examined the type of Finlay's genus and found the radula to be identical with that of Iredale's *Spectamen*, as figured by the present writer, 1930. Trans. Proc. N.Z. Inst. 60: 535, textfig.

*Talopena* Iredale, 1918, is considered to be a better location for *Trochus carmesina* Webster, 1908, than *Thoristella* Iredale, 1915. This is on account of a distinct cleft near the top of pillar, which feature is foreign to *Thoristella*.





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