TRANSACTIONS
OF THE
ROYAL SOCIETY OF NEW ZEALAND

ZOOLOGY

VOL. 8 NO. 21 APRIL 12, 1967

Descriptions of Six New Species of Land Snails from the Far North of New Zealand

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[*Received by the Editor, 25 July 1966.*]

Abstract

THE area at the northern extremity of the North Island supports a considerable and diverse land snail fauna of which about 30% are endemic to the area.

While the larger species are comparatively well known the smallest members have been overlooked.

Six new species from bush remnants at Cape Reinga and Spirits Bay are described. Two of these are operculates of the genus *Cytora,* two belong to the Flammulinidae in the genera *Thalassohelix* and *Allodiscus* respectively. The remaining two are endodontids which are assigned to *Egestula.*

A list of the microscopic species encountered while investigating this fauna is appended.

INTRODUCTION

THE sandy isthmus of the Ninety Mile Beach gives way, north of the Parengarenga Harbour, to a series of high coastal ridges extending from Cape Reinga in the west, to Waikuku and North Cape in the east. The area is referred to in this paper as the Northern Block. The high coastal ridge running from Cape Reinga to Pandora appears to support by far the largest concentration of minute snails.

Close investigation of this snail population has revealed the presence of a number of new species. These will almost certainly prove to be restricted to the Northern Block, in fact, even here, intensive leaf mould sampling indicates a restricted dispersal, for none has shown up in samplings from pockets of bush which still remain east of Unuwhao.

Family CYCLOPHORIDAE

Genus CYTORA Kobelt, 1902

Cytora hispida n.sp. Fig. 1.

Shell small, reddish brown, of six whorls including a protoconch of two smooth whorls. Spire a little more than twice the height of aperture, outlines of whorls convex. Sculpture consists of strong oblique retractive membranous riblets running from suture to suture and around to the umbilical region. These riblets spaced at seven to nine per mm are produced into hairlike processes up to four per riblet on the penultimate and eight on the body whorl.

Published by the Royal Society of New Zealand, c/o Victoria University of Wellington, P.O. Box 196, Wellington.

The hairs are erect and inclined somewhat towards the apex of shell, those just below the suture of the body whorl being more prominent, projecting at times up to 0.2mm from the outline of whorl. Interstices weakly punctate. Suture impressed. Aperture lunate, outer lip evenly rounded, columella slightly oblique, reflexed and almost covering the perforation.

Diameter 1.75mm. Height 3.5mm.

RADULA: Very similar to that of *C. tepakiensis* n.sp.

HOLOTYPE: Presented to Auckland Museum, paratypes in Auckland and Dominion Museums.

HABITAT: Taputaputa Bay, near Cape Reinga in small bush remnant. (Holotype), Pandora –4–65; Waterfall Gully, Spirits Bay –1–65. N. Gardner.

This species is similar in outline and probably related to *C. aranea* Powell, which occupies territory south of Ahipara down to just south of Hokianga Harbour. It is readily distinguished by the more numerous ribs, the presence of bristles and the weakly punctate interstitial sculpture which in *aranea* is of fine irregular spiral wrinkles. *C. hispida* n.sp. shows a decided preference for scrub on bush fringes where it occurs in considerable numbers under low fern and grasses.

Cytora tepakiensis n.sp. Fig. 2.

Shell small, dark brown, shiny, of six whorls including a protoconch of two and a half whorls. Outlines moderately convex. Spire twice the height of aperture. Post embryonic whorls with oblique retractive silky riblets, 12 to 14 per mm on body whorl, irregularly spaced and running from suture to suture and thence to umbilicus. The relative strength of these riblets is very uneven, some become thickened, enlarged and lamellose at the sutures where they bridge the whorls with a plate-like process. Suture impressed. Interstices with fine spiral striae. Aperture lunate, outer lip rounded, columella slightly oblique, reflexed and almost covering the perforation. There is a weak glaze on the parietal wall.

Diameter 2.0mm. Height 3.75mm.

RADULA: Centrals with five bluntly rounded cusps, of dumb-bell shape, evenly rounded on upper edge and a little constricted at the base. Laterals similar, but produced on inner margin, with four cusps, three well developed and a weaker one on outer margin. Inner marginal more produced on inner side, taller, with five cusps, the innermost two strongest. Outer marginals tall, curved inwards and prehensile, with four sharp cusps facing towards centre. Base with thin lamella.

HOLOTYPE: Presented to Auckland Museum, paratypes in Auckland and Dominion Museums.

HABITAT: Taputaputa Bay, near Cape Reinga in small bush remnant. (Holotype), Pandora –4–65; Waterfall Gully, Spirits Bay –1–65. N. Gardner.

This species has the membranous processes and spiral striae of *C. fasciata* Suter, but is smaller, with a taller outline, a smooth silky appearance and a nearly closed perforation.

Family FLAMMULINIDAE

Genus THALASSOHELIX Pilsbry, 1892

Thalassohelix minuta n.sp. Figs. 3 and 4.

Shell very small for genus, depressed turbiniform of four and a half whorls. Protoconch of one and a half weakly pitted whorls. Succeeding whorls with fine spirals. The body whorl has in addition low rounded spiral ridges, weak on the earlier whorls, but prominent on the last, where five above and eight below are of the greatest strength. Weak axial ribs spaced

at 7 to 8 per mm produce at the points of intersection with spiral ridges, a short stubbly bristle, which is usually directed back from the direction of aperture. Suture impressed. Colour fulvous with radiating streaks of reddish brown running from suture to suture and around to the umbilical region. Aperture lunate, outer lip evenly rounded, columella short and slightly reflexed. Umbilicus one-fifth of diameter of shell, deep, showing previous whorls.

Diameter 2.5mm. Height 1.0mm.

RADULA: (5 + 17) + 1 + (17 + 5). Central unicuspid, small, with wide base. Laterals with blunt short endocone and mesocone. The innermost endocone a little larger and rather narrow. The base hardly wider than the upper edge. Marginals broader, nearly square with sharp endocone and mesocone, the latter a little larger, followed by a tiny ectocone. About five marginals.

HOLOTYPE: Presented to Auckland Museum, paratypes in Auckland and Dominion Museums.

HABITAT: Taputaputa Bay, near Cape Reinga in small bush remnant (Holotype) –1–65; Pandora –4–65. N. Gardner. (Leaf mould samples.)

Obviously related to *T. ziczag* (Gould) and probably replacing this species which has not so far been recorded from the Northern Block. This is by far the smallest member of the genus so far recorded.

Genus ALLODISCUS Pilsbry, 1892

Allodiscus basilirata n.sp. Figs. 5 and 6.

Shell small depressed turbinate, of five whorls including a protoconch of one and a half which is quite strongly spirally striated. Spire two-thirds height of aperture. Post embryonic whorls with fine riblets, 28 to 30 per mm on body whorl, rather straight above the periphery, but a little flexed below. Interstices punctate. Strong spirals are present around the umbilical depression, the most prominent being within and on the brink of the perforation. From there they decrease in strength and fade out half way to the periphery. Suture impressed. Colour fulvous, with straight radiating streaks of reddish brown changing to a spiralling pattern below. Aperture lunate, outer lip evenly rounded. Columella short and reflexed. Umbilicus one-fifth of diameter of shell.

Diameter 2.0mm. Height .75mm.

HOLOTYPE: Presented to Auckland Museum, paratype in Dominion Museum.

HABITAT: Taputaputa Bay, near Cape Reinga in open bush. (Holotype) –8–65; Pandora –4–65. N. Gardner.

Somewhat resembles the uncommon *A. adriana* (Hutton) which also occurs within its range. The major differences are the smaller size (about half the norm for *adriana*), closer riblets, the strong basal spirals and the wider umbilicus.

This is apparently a rare shell and no live examples were secured in leaf mould samples. It most likely lives in pockets of leaf mould caught in epiphytes.

Family CHAROPIDAE

Genus EGESTULA Iredale, 1915.

Egestula pandora n.sp. Figs. 7 and 8.

Shell small, moderately depressed, of five and a half whorls. Protoconch spirally lirate, of one and a half whorls. Post embryonic whorls with raised sharp retractive axial riblets spaced at four or five per mm, flexuous at the periphery. There is a shallow sinus on outer lip near suture. Interstices with distinct rounded thread-like spirals, showing at their strongest on the body whorl near the aperture. These spirals are crossed by very weak growth lines.

Colour horny, with bands of reddish brown down to the periphery, but lacking on the base. The early whorls are practically flat, the penultimate slopes down and the body whorl sags and is coiled in tightly. Suture impressed. Aperture lunate. Columella short and vertical. Umbilicus wide, one-third of diameter of shell and showing the previous whorls.

Diameter 4.0mm. Height 1.75mm.

RADULA: (4 + 6) + 1 + (6 + 4). Centrals tricuspid, the mesocone large and acute, outer cusps weakly developed. Width of base equal to height. Laterals (No. 2) oblong, with larger and broader mesocone flanked by small sharp ectocone and endocone of equal size. Lateral No. 3 a little smaller with an increase in the outer cusps. Marginal (No. 7) with a wide base and the three cusps slightly oblique, the ectocone a little smaller. Outer marginals with reduced cusps, oblique and situated on innermost half of tooth.

HOLOTYPE: Presented to Auckland Museum, paratypes in Auckland and Dominion Museums.

HABITAT: Taputaputa Bay, near Cape Reinga in open bush (Holotype) –4–65; Pandora –4–65; Kahuroanaki –4–66. N. Gardner.

Although lacking the diaphanous processes at the periphery which are a feature of *E. egesta* (Gray), the spirally lirate protoconch of *pandora* n.sp. suggests a closer relationship to *egesta* than to *gaza* Suter from the Three Kings.

Egestula egesta was nowhere in evidence and this new species may have replaced it on the Northern Block.

Egestula charopiformis n.sp. Figs. 9 and 10.

Shell small, subdiscoidal, of five whorls. Protoconch of one and a half weakly pitted whorls. Sculpture consists of very fine spirals on the first whorl of the teleoconch, followed by irregularly spaced, raised flexuous axial ribs, 4 to 5 per mm which are slightly retractive at the suture, sloping forward near the periphery and straightening up again on base where they are much weaker. In some instances they fade out after passing the periphery. Between these raised ribs there are fine growth lines of 16 to 18 per mm. Interstices with fine threadlike spirals prominent on the upper surface, but lacking on base. There is a shallow sinus in outer lip near suture. The body whorl sags and is pulled in tightly. In outline it is somewhat subangled, evenly rounded at the sutural region then sloping down and outwards so that the actual periphery is well down on the body whorl. Columella oblique, peristome reflexed. Aperture lunate, a little constricted at the top. Colour reddish brown with some whitish bands or flashes radiating out on upper surface. Base uniformly red brown. Umbilicus one-third of diameter of shell.

Diameter 2.5mm. Height 1.0mm.

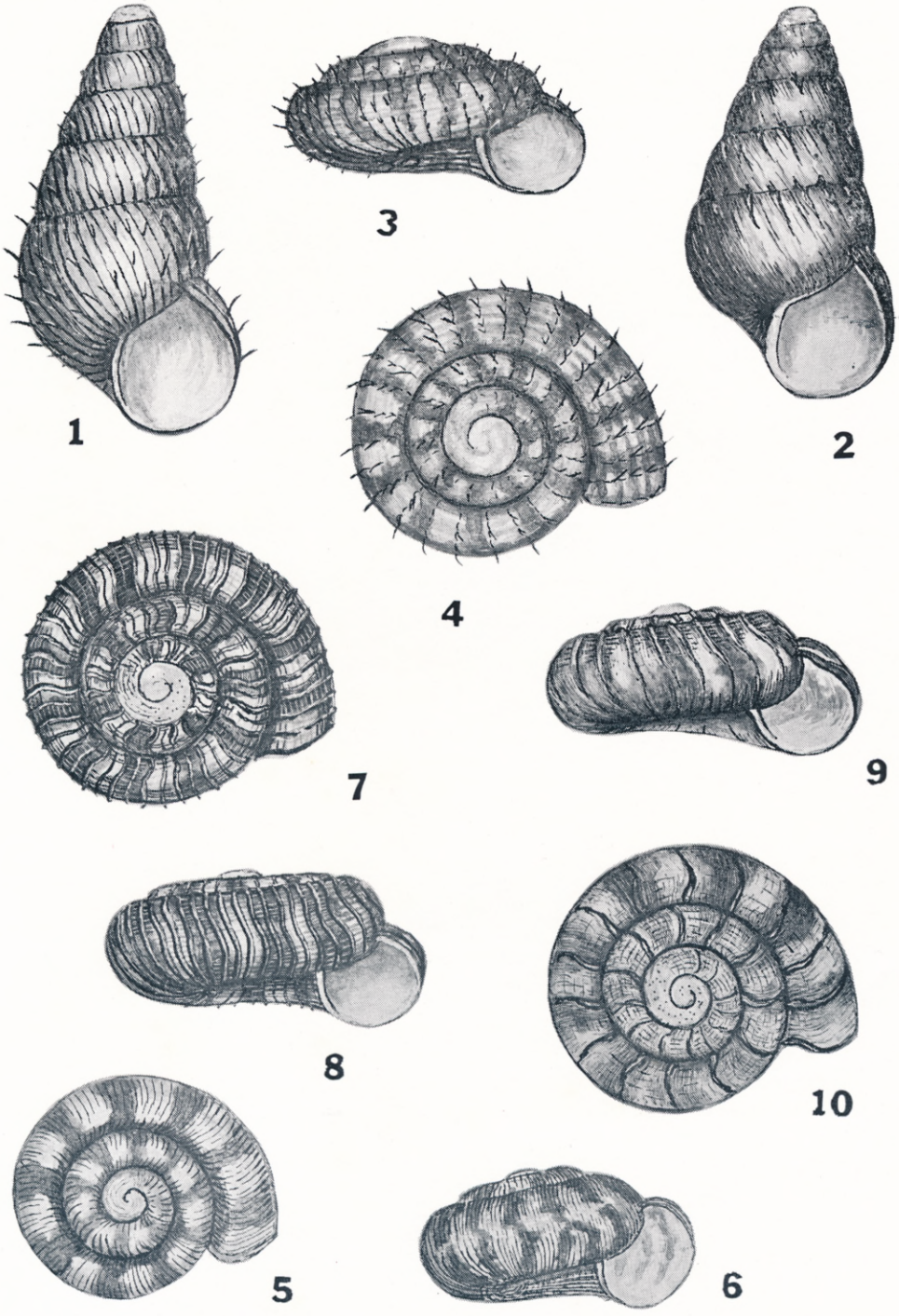
HOLOTYPE: Presented to Auckland Museum, paratypes in Auckland and Dominion Museums.

HABITAT: Taputaputa Bay, near Cape Reinga in open bush. (Holotype) –4–65; Pandora –8–65. N. Gardner.

This species possesses features of both *Charopa* and *Egestula* but until the radula is examined it seems best placed in *Egestula* when the presence of spirals on the first whorls of the depressed teleoconch, the shallow apertural sinus and distinct spirals on upper surface together with the drooping and tightly coiled body whorl, are considered.

DISCUSSION

As no previous basic list of the small land snails from this area is available and in view of the precarious position of some of the small bush remnants, it seems worthwhile to record the species encountered.



FIGS. 1.—*Cytora hispida* n.sp. 1.75mm x 3.5mm. 2: *Cytora tepakiensis* n.sp. 2.0mm x 3.75mm. 3 and 4: *Thalassohelix minuta* n.sp. 2.5mm x 1.0mm. 5 and 6: *Allodiscus basilirata* n.sp. 2.0mm x 0.75mm. 7 and 8: *Egestula pandora* n.sp. 4.0mm x 1.75mm. 9 and 10: *Egestula charopiformis* n.sp. 2.4mm x 1.0mm.

(The larger species of the genera *Placostylus, Paryphanta* and *Rhytida* are omitted.) The species considered endemic are indicated by the symbol "E".

Omphalorissa purchasi (Pfeiffer)
Cytora ampla Powell E.
Cytora hispida n.sp. E.
Cytora septentrionale (Suter)
Cytora tepakiensis n.sp. E.
Liarea aupouria aupouria Powell E.
Liarea aupouria tara Powell E.
Thalassohelix minuta n.sp. E.
Allodiscus adriana (Hutton)
Allodiscus basilirata n.sp. E.
Serpho kivi (Gray)
Serpho matthewsi Suter
Therasiella celinde (Gray)
Therasiella tamora (Hutton)
Phenacohelix tholoides (Suter)
Flammulina perdita (Hutton)
Flammulina costulata (Hutton)
Ptychodon tau (Pfeiffer)
Charopa anguicula (Reeve)
Charopa ochra (Webster)
Egestula charopiformis n.sp. E.
Egestula pandora n.sp. E.
Fectola buccinella (Reeve)
Subfectola caputspinulae (Reeve)
Mocella cogitata Iredale
Phrixgnathus erigone (Gray)
Phrixgnathus mariae (Gray)
Phrixgnathus serratocostata Webster
Phrixgnathus sp.
Paralaoma lateumbilicata (Suter)
Tornatellinops novoseelandica (Pfeiffer)
Delos jeffreysiana (Pfeiffer)
Delouagapia cordelia (Hutton)
Papusuccinea archeyi (Powell)
Athoracophorus bitentaculatus (Q. and G.)

Suter (1913) recorded some species based on material collected by C. Cooper prior to 1907 and Powell (1947, 1950, 1951, 1954) has described a number of new species.

Two species listed by Suter as occurring near North Cape have not turned up again. They are *Therasia decidua* (Pfeiffer) and *Ptychodon varicosa* (Pfeiffer). If they still exist it must be in a very restricted area as little bush now remains here. *Suteria ide* (Gray), so widespread and numerous in the rest of Northland, was not encountered at all, nor is it known from Three Kings Islands. While *Delos jeffreysiana* (Pfeiffer) has been recorded by Suter in his Manual as occurring at Cape Reinga the actual specimens which are in the Suter Collection were subsequently re-identified by Powell (1952 p. 167) as being *Delouagapia cordelia* (Hutton). *Delos jeffreysiana* does in fact occur, not uncommonly from Cape Reinga through to Unuwhao, at times together with *Delouagapia*.

Acknowledgments

Grateful acknowledgment is made to Dr R. K. Dell, Dominion Museum, and Dr A. W. B. Powell, Auckland Museum, for helpful criticism and encouragement, also to W. F. Ponder, Auckland University, for preparation of radulae.

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