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ADDITIONS TO THE MARINE MOLLUSCAN FAUNA
OF NEW ZEALAND.

By CHARLES HEDLEY, Conchologist.

(Figs. 14-25.)

An interesting parcel of raw dredgings and beach gatherings from the coast of New Zealand was received from Mr. Augustus Hamilton, Registrar of the University of Otago.

In presenting this material to the Trustees of the Australian Museum, Mr Hamilton expressed a wish that any novelties contained should be published. Hence the present article.

The Mollusca of New Zealand are difficult to identify because many species are still unfigured, of many the published definitions are insufficient for recognition and some appear to have been assigned to wrong genera. The collection here discussed contains several shells which I have been unable to place among named species, but which I refrain from publishing, lest by doing so existing names should be duplicated.

In the discovery of genera, either new to science or to New Zealand, I have felt on firmer ground.

On surveying the whole series it is evident that the fauna of the continental shelf of New Zealand is practically unknown. It also appears that the element common to New Zealand and Australia, hitherto calculated on the beach fauna, will be dis-

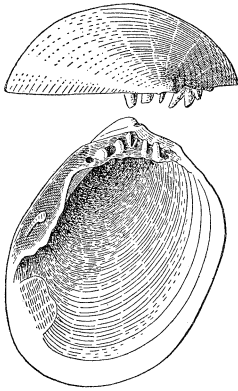
proportionately increased when the fauna of the continental shelf is taken into consideration.

I have to gratefully acknowledge valuable advice received from Mr. Henry Suter in relation to this subject.

PLEURODON MAORIANUS,¹ *sp. nov.*

(Fig. 14.)

Shell rather large for the genus, inflated, oval, very oblique, smooth or with a few incremental striae, umbo submedian.



Cardinal teeth, six; the first of the anterior series slender, the others erect and stout. The cardinal plate broad, undulate below, posteriorly produced in a long and broad lateral tooth, having distally a subsidiary tubercle. Length 2·5; height 3·25; diameter 1 mm.

The present is the first record of the genus in Australasia; the species nearest approaches the African shell figured and described by Smith under the name of *Nuculina ovalis*,²

Two valves (one presented to the Trustees) from 5 fathoms off Anchor Island, Dusky Sound, New Zealand

Fig. 14.

CYCLOPECTEN AVICULOIDES, *Smith*.

Pecten aviculoides, Smith, Chall. Rep., Zool., xiii., 1885, p. 305, pl. xxiii., f. 5, 5a.

A single specimen from Foveaux Straits answers exactly to the figure and description of Prince Edward Island examples. It adds a genus as well as a species to the New Zealand fauna.

CUNA DELTA, *Tate and May*, *sp.*

Carditella delta, Tate and May, Proc. Linn. Soc. N.S. Wales, xxvi., 1901, p. 434, pl. xxvii., f. 100, 101.

A series from Foveaux Straits and a couple from Dusky Sound are rather larger than Australian examples.³ This record adds a genus as well as a species to New Zealand.

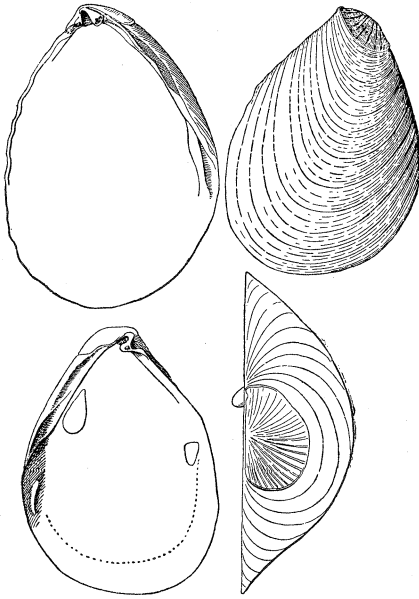
¹ Native of New Zealand.

² Smith—Chall. Rep., Zool., xiii., 1885, p. 230, pl. xix., f. 1-1b.

³ Dr. J. G. Jeffreys stated (*Ann. Mag. Nat. Hist.* (3), v., 1860, p. 200.) that some British shells diminish in size when they range into the Mediterranean.

VERTICIPRONUS,⁴ *gen. nov.*

A genus of the Carditidæ; valve small, smooth, capped by a flat prodissoconch; in each valve a single prominent cardinal and two distant posterior teeth.



Type.—*V. mytilus*.

It is with much doubt that this strange little shell is referred to the Carditidæ, from the other members of which the prodissoconch, dentition and lack of radial sculpture distinguish it. The prodissoconch alone suggested such genera as *Condylocardia* or *Philobrya*. From either the relation of the ligament to the hinge effectually sever it.

Fig. 15.

VERTICIPRONUS MYTILUS,⁵ *sp. nov.*

(Fig. 15.)

Shell small, rather solid, mytili-form equivalve, inequilateral, the anterior side longest, non-nacreous, smooth, except for faint growth lines, polished. Colour russet to fawn. Beak terminal, obliquely truncate, capped by a flat, subtrigonal, radially wrinkled, prodissoconch whose edges do not project. Lunule minute, indistinct. In each valve under the umbo, a single prominent cardinal tooth and deep socket, and at the posterior angle two oblique successive lamelliform lateral teeth. Interior ventral margin not crenulated. Pallial line entire, posterior adductor muscle high up, anterior small at about half the height of the shell.

⁴ *Vertex-pronus*—Prone-topped.

⁵ *Mytilus*—a mussel.

Height, 2·3 mm.; length, 1·6 mm.; depth of single valve, 0·7 mm.

Hab—Lyall Bay, near Wellington.

HOCHSTETTERIA TRAPEZINA, *Bernard*.

Hochstetteria trapezina, Bernard, Journ. de Conch., xlv., 1897, p. 18, pl. i., f. 7.

Myrina minuta, Smith, Proc. Malacol. Soc., iii., 1898, p. 24, f. 4.

A good series from Lyall Bay and one valve from Foveaux Straits answer in every way to Bernard's admirable description. An authentic specimen of *M. minuta*, Smith, from Lyttleton received from Mr. Suter, proves that name to be a synonym. It is curious that so complete a description as Bernard gave, does not insure a species against immediate renomination.

TAPES FABAGELLA, *Deshayes*.

Tapes fabagella, Desh., Conch. Icon., xiv., 1864, pl. xxx., f. 66.

Though originally described⁶ from New Zealand, this species has not been locally recognised and has finally been rejected⁷ as exotic. It is therefore important to note that a gathering from Island Bay, Cooks Straits, contains a series inseparable specifically from Australian examples.

CADULUS SPRETUS, *Tate and May*.

Cadulus spretus, Tate and May, Proc. Linn. Soc. N.S. Wales, xxvi., 1901, p. 420, pl. xxv., f. 52.

Two specimens from five fathoms off Anchor Island, Dusky Sound, add a species and a genus to the New Zealand fauna.

SCHISMOPE BEDDOMEI, *Petterd*.

Schismope beddomei, Tate and May, Proc. Linn. Soc. N.S. Wales, xxvi., 1901, p. 407, pl. xxiv., f. 24.

A specimen from Foveaux Straits appears to be indistinguishable from Australian examples. This species and genus have not been previously recorded from New Zealand.

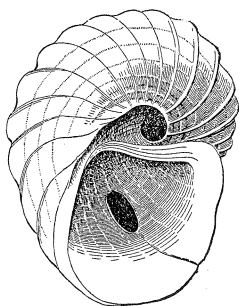
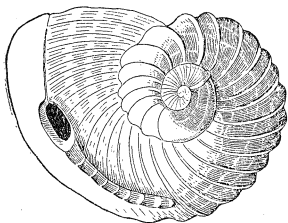
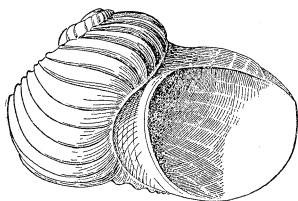
⁶ Deshayes—Proc. Zool. Soc., 1853, (1854), p. 10.

⁷ Suter—Trans. N.Z. Inst., xxxiv., 1901, (1902), p. 222.

SCHISMOPE BREVIS,⁸ *sp. nov.*

(Fig. 16.)

Shell turbinate, openly perforate, solid. Colour white. Whorls three, tabulate above, rounded below, last rapidly descending.



Protoconch of a whorl and a half, concluding with a prominent varix. Sculpture: distant longitudinal lamellate ribs cross the whorl from the suture to the umbilicus, their interstices contain raised spiral threads which grow coarser on approaching the umbilicus. Foramen large, distant from the margin, to which a furrow joins it. Fasciole extremity short, terminating half a whorl behind the aperture, bordered by keels and traversed by lamellæ, which correspond to the longitudinal ribs. Umbilicus narrow, deep, bordered with a raised edge. Aperture subquadrate, peristome entire, simple. Height, 0.94 mm.; major diam. 1.14 mm.; minor diam. 0.9 mm.

Hab.—Lyall Bay, near Wellington.

Fig. 16.

SCISSURELLA ROSEA,⁹ *sp. nov.*

(Fig. 17.)

Shell auriform, small, thin, translucent, narrowly perforate, spire slightly elevate. Colour, white with apex rose. Whorls

⁸ *Brevis*—Short.

⁹ *Roseus*—Rosy.

thruce, last spreading and flattened above, earlier rounded.

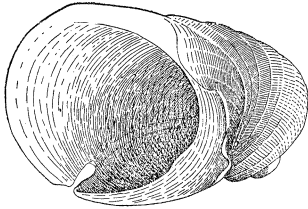


Fig. 17.

Protoconch delicately longitudinally ribbed. Slit deep, situated well above the periphery and leading to a fasciole which is not crossed by lamellae, but edged with low smooth keels and tapers to the termination half a whorl back. Sculpture: above close fine spiral threads, below sharp distant spiral keels, both crossed by faint growth lines. Aperture large, oblique, oval; columella concave, broad, extending a median lobe over the steep and narrow umbilicus. Height, 1.2; major diam. 1.35; minor diam. 0.7 mm.

This species is associated with *Incisura lyttletonensis*, to which it has a deceitful resemblance, but from which it is separable by being smaller, less solid, with elevated and coloured apex. None of a considerable series of *Incisura lyttletonensis* before me present any trace of colour. The character "rosea vel albida" attributed to that species in the original description was, perhaps, derived from examples of *S. rosea*.

Hab.—Lyll Bay, New Zealand.

INCISURA,¹⁰ *gen. nov.*

(Fig. 18.)

A genus of the Fissurellidæ, minute, spiral, smooth, with a slit on the right side. Type—*Scissurella lyttletonensis*, Smith.

When introducing this species Smith¹¹ laid stress on various eccentric characters, particularly the brevity of the slit and the

¹⁰ *Incisura*—A cutting into, a slit.

¹¹ Smith—Proc. Malacol. Soc., i., 1894, p. 57, pl. vii, f. 1-2.

absence of keels on either side of it. Not merely *Scissurella* but all its relations as distant as *Pleurotomaria*, have the slit fasciole edged on either side by an upturned rim. The absence of this is alone fatal to the ascription of the species in question to *Scissurella*. Other characters incompatible with *Scissurella* are the subterminal apex, the absence of spiral sculpture and the remarkable solidity of the shell. Judging from *Schismope* (which I have kept in captivity for weeks), *Scissurella* is as active a mollusc as any of the Trochidæ are. From the shell characters of *Incisura* I deduce it to be if not sessile, yet of sluggish habits. The broad hollow columella calls to mind that of *Navicella*, *Gundlachia* or *Zeidora* and indicates similar mode of life. The margins of the aperture are in one plane and present slight irregularities conformable to a base used as a constant perch.

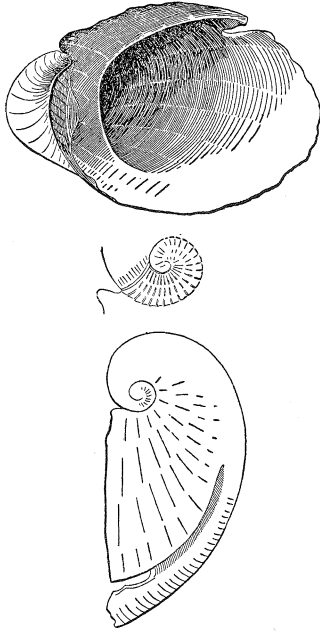


Fig. 18.

If it be demonstrated that *I. lyttletonensis* cannot be included in *Scissurella*, the necessity arises of finding for it a more suitable place in classification.

I now advance the hypothesis that *Incisura* is a member of the Fissurellidæ, in which development has been arrested, the usual subsequent metamorphoses have not been enacted and the larval characters have persisted in adult life.

Boutan¹² has traced the development of *Fissurella reticulata* and found that the apical fissure has resorbed the young shell, and that in the part so lost the growing shell passes in succession through an "emarginuliform" and a "rimuliform" stage before reaching maturity. Of the former he writes—"Les larves de la Fissurelle, parvenues, en effet, à cette période de leur développement, présentent tous les caractères d'une Emarginule mais d'une Emarginule asymétrique." By virtue of its asymmetry,

¹² Boutan—Arch. Zool. Exper., (2) iii, bis, 1., 1885, p. 102, pl. xlii, f. 5.

Incisura exactly represents the stage which, for want of a better analogue, Boutan has figured and described as "Emarginuliform."

For proof of the above hypothesis I rely on the following facts. Those features in which *Incisura* disagrees with *Scissurella* are characters which knit it to the Fissurellidæ; namely the short slit, the absence of fringes to the slit, the solidity of the shell, the subterminal apex and the perching habit. In aged examples of *Incisura* the slit is internally margined with callus, a strikingly fissurelloid feature. Amongst the adult Fissurellidæ the lack of sculpture and the asymmetrical slit appear at first incongruous characters. The asymmetrical condition of the slit occurs, however in the fossil shell *Loxotoma neocomiensis*, D'Orbigny,¹³ sp.

I find the protoconch to be delicately radiately ribbed.

Hab.—This species is fairly common in shell sand from Lyall Bay.

PUNCTURELLA DEMISSA,¹⁴ *sp. nov.*

(Fig. 19.)

Shell small, thin, but opaque, low arched, summit posterior, within the margin. Anterior slope gentle arched, posterior steep, straight. Nucleus persistent, set obliquely, exposing part of two spiral whorls. Colour white. Sculpture fine incremental threads, scarcely undulated by obsolete radial ribs. Aperture oblong, rather broader in front. Slit on the summit linear-lanceolate, more than three times longer than broad. The septum drawn down to a third of the length of the shell, completely screening the interior from the slit, thickened at the margin. Length 1.8, height 1.0, breadth 1.2 mm.

The comparative smoothness, persistent apex, narrow fissure and long septum, sufficiently characterise this minute species, which is the first of the genus to be recorded from New Zealand.¹⁵

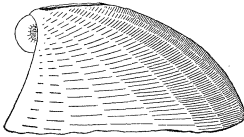


Fig. 19.

Hab.—Foveaux Straits.

LIOTIA POLYPLEURA,¹⁶ *sp. nov.*

(Fig. 20.)

Shell minute, thin, turbate, widely umbilicate, spire slightly

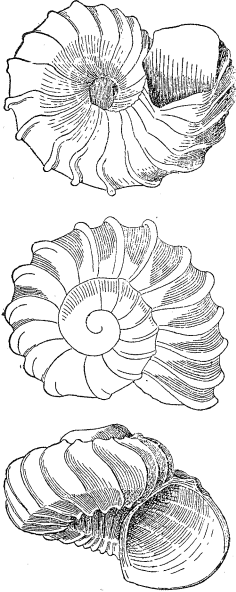
¹³ D'Orbigny—Pal. franç. Terr. Crét. ii., Gast., 1842. p. 392, pl. 234 f. 4.

¹⁴ *Demissus*—Hanging down.

¹⁵ Pilsbry conjectures (*Man. Conch.*, vii., 1890, p. 216) that *Fissurella rubiginosa*, Hutton, may prove to be a *Puncturella*.

¹⁶ Πλεῦρον—A rib, and πολυς—many.

elevate. Colour white. Whorls three, loosely coiled. Sculpture : on the last whorl about sixteen thick, prominent ribs cross the whorl, slender on leaving the suture, they slant forward thickening rapidly, but turning they descend the periphery perpendicularly, on the base they again bend and tapering rapidly curve into the umbilicus, the margin of which they crenulate. The interstices are smooth. On the penultimate the ribs gradually vanish, the first whorl and a half is smooth. Aperture subquadrate, almost free, peristome formed by one of the ribs. Height 0.6 mm.; major diam. 0.9 mm.; minor diam. 0.7 mm.



This species appears to be related to such Australian forms as *L. annulata*, Ten. Woods. The genus has not hitherto been known in New Zealand.

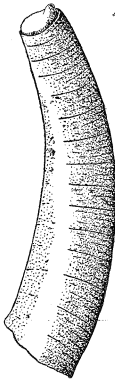
Hab.—Lyll Bay, near Wellington.

Fig. 20.

CÆCUM DIGITULUM,¹⁷ *sp. nov.*

(Fig. 21.)

Shell small, smooth save for very slight growth lines, thin, opaque, dull, white, slightly curved, tapering rapidly. Aperture circular, slightly everted. Septum subungulate. Length, 2.3; major diam., 0.5; minor diam., 0.3 mm.



The rapidity with which this species tapers is an unusual feature. The genus is an addition to the New Zealand fauna.

Hab.—Lyll Bay, near Wellington (type) and Foveaux Straits, (*A. Hamilton*); fossil in the Pliocene sands of Wanganui (*R. Murdoch*).

Fig. 21.

¹⁷ *Digitulus*—A little finger.

COUTHOUYIA CORRUGATA,¹⁸ *sp. nov.*

(Fig. 22.)

Shell fusiform, thin. Whorls four and a half, rounded, constricted at the sutures, last whorl finally free. Sculpture: numerous growth lines cross the whorl irregularly and assume the aspect of varices, the whorls are crossed by faint, shallow, close, spiral grooves. Aperture elliptical; peristome separated from the body whorl by a deep groove, thickened and reflected; columella broad and excavate. Length 2.58; breadth 1.55 mm.

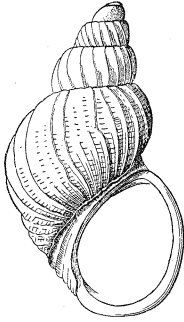


Fig. 22.

I submitted some specimens of this species to Mr. R. Murdoch of Wanganui, asking him to compare them with the fossil he described¹⁹ as *Lacuna exilis*. His answer (6. v. 1903) is as follows:—"I have carefully compared them with my *L. exilis*. I consider them a distinct species. *L. exilis* has the aperture much more broadly ovate, the anterior end of aperture not produced to any appreciable

extent, the posterior angle of the aperture much more widely separated from the adjoining whorl, also the angle of the aperture is rather more oblique to the axis of the shell. The body whorl has an almost uniform course to the anterior end of the aperture, this and its considerable more inflated form gives to the shell quite a distinct appearance, more strongly marked when viewed from above. The whorls are also a little more rounded. I took micrometer-eyepiece measurements of the apertures of—

Lacuna exilis. *Couthouyia gracilis.* *New. sp.*

Greatest length	34	58	25
Breadth	26	37	16

The above are proportional figures. This does not include the thickness of the wall or the produced anterior end of the Foveaux Straits species, that is the small portion which is flatly expanded. The number of whorls and sculpture is practically the same in the new species as in *L. exilis*. It is much more indistinct in the fossil, and can only be seen with careful oblique illumination, which is due to its condition as a fossil and it escaped my notice when describing it. I have no doubt whatever that it belongs to *Couthouyia*."

Hab.—Foveaux Straits.

¹⁸ *Corrugo*—To wrinkle up, corrugated.

¹⁹ Murdoch—Trans. N.Z. Inst., xxxii., 1899, p. 220, pl. xx., f. 3.

RISSOA SUTERI, sp. nov.

(Fig. 23.)

Shell small, ovate, imperforate, very solid, gradate. Colour white. Whorls four. Sculpture: the first and second whorls are smooth and rounded; the third is belted with two, the fourth with five broad spiral flat-topped bands, separated by deep sharp and equally broad interstices. The uppermost band of each whorl is the largest, thence to the base the others gradually diminish. Above the shoulder the concave surface slopes upwards to the suture, and a single small spiral thread interrupts this slope. Aperture oval, peristome much thickened, externally polygonal from the junction of the spiral ribs, internally duplicated by a small raised rim. Length, 1.78 mm.; breadth, 1.4 mm.

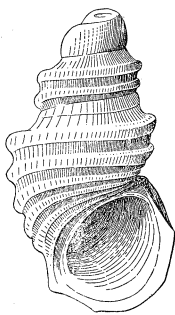


Fig. 23.

The heavy spiral sculpture sufficiently distinguishes this from the other New Zealand *Rissoæ*. It is named in honour of Mr. Henry Suter, the well known New Zealand Conchologist.

Hab.—Foveaux Straits.

EULIMA PAXILLUS,²⁰ sp. nov.

(Fig. 24.)

Shell small, short, straight, sub-cylindrical with a blunt apex, thin, colourless, semi-transparent, smooth and glossy. Whorls six, flattened, impressed at the sutures. The base of each whorl, seen indistinctly through the substance of the next, appears as an impressed line beneath the sutures. Aperture pyriform, columella broad, right insertion of the peristome far back. Length, 2.9 mm.; breadth, 0.86 mm.

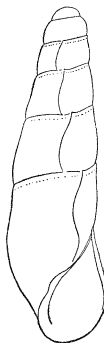


Fig. 24.

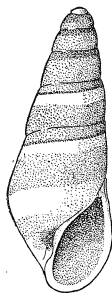
Mr. H. Suter informed me that this species is not known to him. None of the genus has before been reported from New Zealand.

²⁰ *Paxillus*—A little peg.

LEIOSTRACA MURDOCHI, *sp. nov.*

(Fig. 25.)

Shell small, sub-cylindrical, with blunt ends, thin, translucent, glossy. Whorls five, slightly tapering, last exceeding the rest.



Colour: pale brown below, darkening to chocolate above; on the last whorl is a broad peripheral and a narrow subsutural colourless band, the latter of which also re-appears on the penultimate, and is overlined by a chocolate thread; the peristome and a patch on the centre of the base are also chocolate. The apex is colourless. Sculpture: none, and no varices are apparent. The umbilical region is impressed but not perforate. Aperture oval, everted anteriorly; peristome a little thickened and expanded, ends united by a curved callus on the body whorl. Length, 2.6 mm.; breadth, 0.9 mm.

Mr. H. Suter informs me that he considers this species new. It is named in honour of Mr. R. Murdoch, of Wanganui, author of many valuable papers on the New Zealand Mollusca. *L. murdochi* is apparently the smallest of the genus and the first to be recorded from New Zealand.

Hab.—Foveaux Straits and Lyall Bay.

MITROMORPHA SUBSTRIATA, *Suter, sp.*

Daphnella substriata, Suter, Trans. N.Z. Inst., xxxi., 1899, p. 76, pl. iii., f. 6, 6a.

Specimens from the type locality, Foveaux Straits, and perhaps from the same parcel as the type, conform well to the figure and description. The transference of the species, which is indisputable, from *Daphnella* to *Mitromorpha*, adds a genus to the New Zealand fauna.