

identify the species is by means of the muscular scars. This again is an extremely variable character, but the variations do not conceal the fact that there are two quite distinct forms. The left valve of *Anomia* has three muscular scars on the central disc; the uppermost, and the anterior or middle one, are byssal adductors, while the lowest or posterior is the adductor of the valves.

In the young *A. undata* the arrangement of these scars is much the same as that of *A. trigonopsis*—i.e., triangular, the uppermost being much larger than either of the others. In the adult *A. undata* the three impressions are arranged almost in a vertical line, and are crowded together. An elongated *A. trigonopsis*, such as the neotype figured by Suter (1915), often shows a somewhat similar arrangement, but the lower byssal adductor is still paired with the valve-adductor, and both are separated from the upper byssal adductor (see Plate 16, fig. 10). In fully-grown *A. undata* the valve-adductor is generally the largest; this is never so in the other species.

Suter's identifications, being based on the undulations, are unreliable; indeed, the true *A. undata* was generally classed by him as *A. huttoni*, which according to his usage comprised the smooth, circular shells.

The species does not appear to have existed in the Miocene; it is particularly common in the Petane clays at Maraekakaho, also at Nukumaru, while there is a Recent example in the Dominion Museum from an unknown locality.

***Lima mestayerae* n. sp.** (Plate 16, figs. 11, 12.)

Shell small, inequilateral; beaks elevated, distant, incurved, sharp, anterior end fairly straight and oblique above, rounded below; posterior end convex, flattened above; sculpture of 22 strong rounded radial ribs, with irregular scales and equal interstices in which are close regular scaly concentric ridges, which do not surmount ribs, submargin with about 8 somewhat irregular narrow ribs and strong growth-lines, posterior ear with 4 narrow ribs, ears small and inconspicuous; hinge-line with a well-marked tubercle on each side; ligamental area broadly triangular, high, with narrow concave triangular resilifer traversing middle; margins dentate

Holotype in collection of the New Zealand Geological Survey.

Height, 16 mm.; length, 14 mm.

Locality.—1096, clays below limestone, Esk Bridge, Petane.

Remarks.—Distinguished from *L. lima* by small size and greater number of ribs, 22 instead of 18. Compared with a young *L. lima* of the same size, the ears of *L. mestayerae* are much smaller, the shell is narrower and consequently the ribs also, while the ligamental area is a great deal higher. I am indebted to Miss Mestayer for the loan of Recent material for comparison.

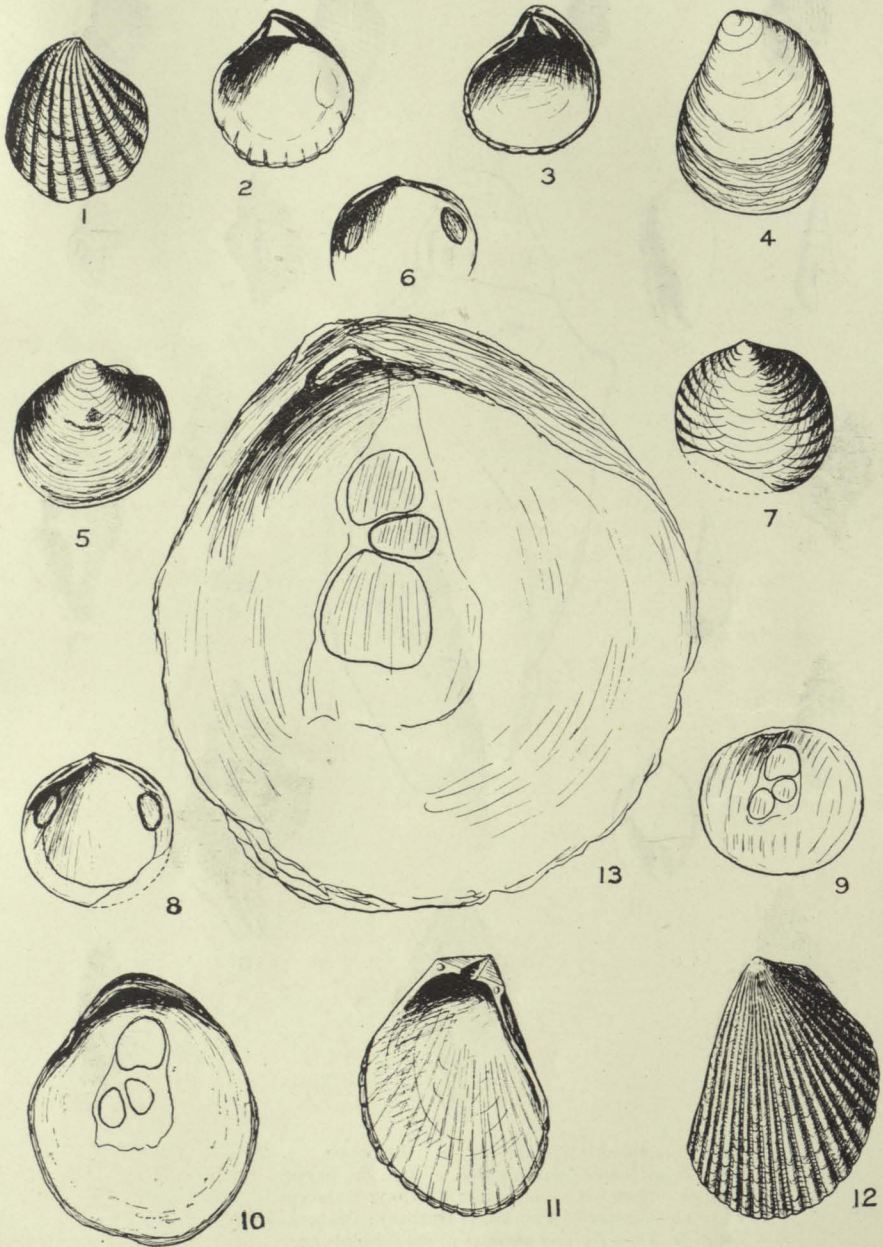
***Venericardia (Pleuromeris) marshalli* n. sp.** (Plate 16, figs. 1, 2.)

1906. *Venericardia corbis* Philippi: Suter, *Trans. N.Z. Inst.*, vol. 38, p. 317 (not of Philippi).

1913. *Venericardia corbis* Philippi: Suter, *Man. N.Z. Moll.*, p. 908, pl. 53, fig. 3 (not of Philippi).

1915. *Venericardia unidentata* (Basterot): Iredale, *Trans. N.Z. Inst.*, vol. 47, p. 487 (not of Basterot).

The identification of this New Zealand shell with *V. corbis*, a Pliocene and Recent species of the Mediterranean, was made by Dr. W. H. Dall, and was accepted by Suter (1906, p. 318). Such a distribution is in itself suspicious; and as, by good fortune, the Dominion Museum has a copy of Philippi's *Enumeratio Molluscorum Siciliae*, in which *V. corbis* is described,



FIGS. 1, 2.—*Venericardia marshalli* n. sp.: holotype.  $\times 4$ .  
 FIGS. 3, 4.—*Venericardia minima* n. sp.: holotype (fig. 3).  $\times 12$ .  
 FIG. 5.—*Lucinida dispar* (Hutton): holotype.  $\times 1$ .  
 FIGS. 6, 7, 8.—*Myllita finlayi* n. sp.: holotype (fig. 8).  $\times 4$ .  
 FIG. 9.—*Anomia undata* Hutton: interior of holotype.  $\times 1$ .  
 FIG. 10.—*Anomia trigonopsis* Hutton: specimen from Target Gully.  $\times 1$ .  
 FIGS. 11, 12.—*Lima mestayerae* n. sp.: holotype.  $\times 1$ .  
 FIG. 13.—*Anomia undata* Hutton (adult): Maraekakaho.  $\times 1$ .

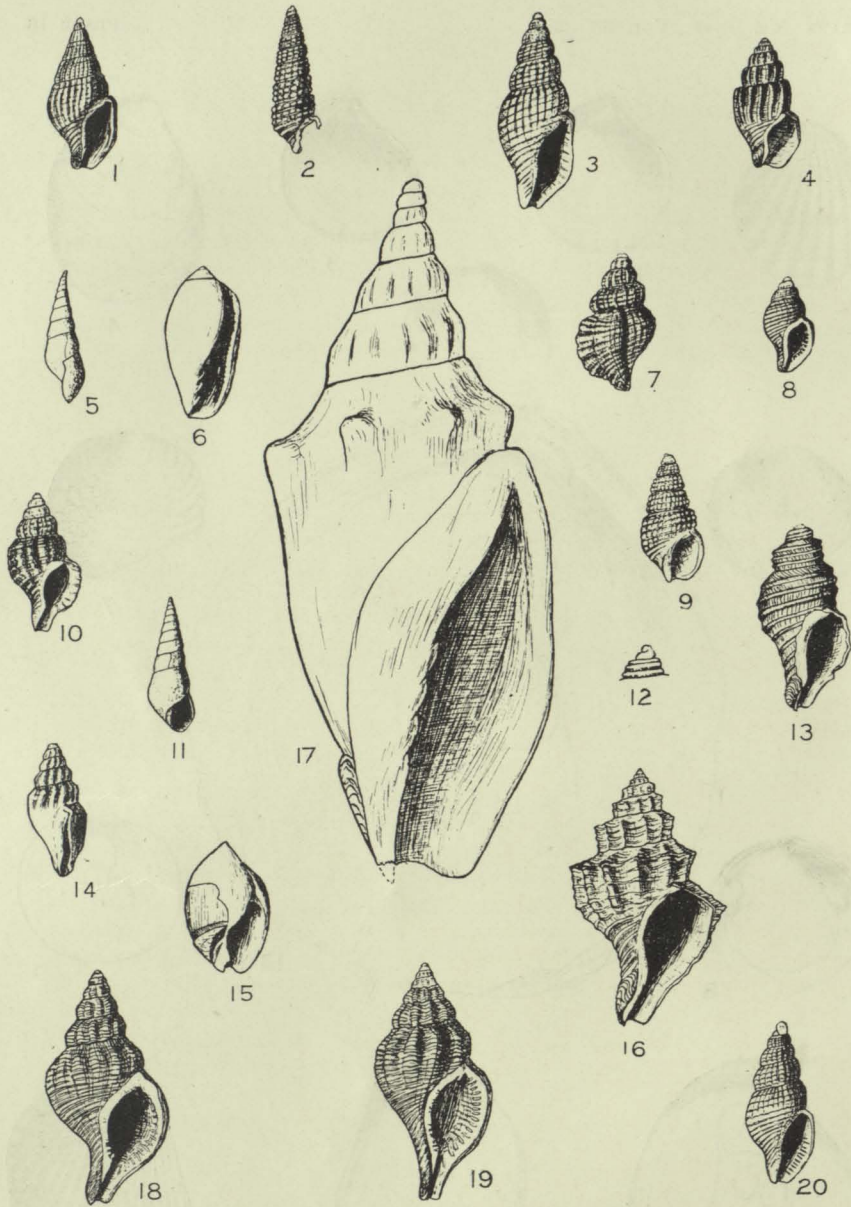


FIG. 1.—*Anachis speighti* n. sp.: holotype.  $\times 2$ .  
 FIG. 2.—*Ataxocerithium suteri* n. sp.: holotype.  $\times 1$ .  
 FIG. 3.—*Anachis pisaniopsis* (Hutton): holotype.  $\times 2$ .  
 FIG. 4.—*Cominella hamiltoni* (Hutton): Maraekakaho.  $\times 1$ .  
 FIGS. 5, 11.—*Eulima christyi* n. sp.: holotype.  $\times 1$ .  
 FIG. 6.—*Marginella brevespira* n. sp.: holotype.  $\times 2$ .  
 FIGS. 7, 10.—*Xymene oliveri* n. sp.: holotype.  $\times 2$ .  
 FIG. 8.—*Xymene drewi* (Hutton): lectotype.  $\times 1$ .  
 FIG. 9.—*Ataxocerithium tricingulatum* n. sp.: holotype.  $\times 2$ .  
 FIGS. 12, 13.—*Trophon murdochi* n. sp.: holotype.  $\times 1$ .  
 FIG. 14.—*Mangilia morgani* n. sp.: holotype.  $\times 1$ .  
 FIG. 15.—*Ancilla opima* n. sp.: holotype.  $\times 1$ .  
 FIG. 16.—*Aethocola taitae* n. sp.: holotype.  $\times 1$ .  
 FIG. 17.—*Alcithoe lutea* n. sp.: holotype.  $\times 1$ .  
 FIG. 18.—*Verconella dubia* n. sp.: holotype.  $\times 1$ .  
 FIG. 19.—*Verconella thomsoni* n. sp.: holotype.  $\times 1$ .  
 FIG. 20.—*Anachis cancellaria* (Hutton): holotype.  $\times 2$ .

a comparison could be made with the original figures and description. The figures show a shell without radial ribs. The short description reads, "striis transversis densis, undulatis, sulcis longitudinalibus obsoletis," while a fuller description below is, "transversim eleganter striata, et sulcis longitudinalibus distantibus parum profundis (interdum obsoletis) decussata." New Zealand specimens, when well preserved, have 11–12 strong somewhat nodular ribs, and so should be separated. There are also differences in shape.

As regards *V. unidentata*, Suter probably quoted this in his synonymy from information supplied by Dall, no date of publication being given in either case. Iredale accepted the synonymy, but pointed out the priority of *unidentata*; he does not appear to have compared New Zealand with European specimens. Cossmann and Peyrot (1912, p. 81) state that the two European species should be kept apart, for in *corbis* the concentric and in *unidentata* the radial ornamentation predominates. These radials are 20–22 in number, so it is surprising that the New Zealand shell with only half as many ribs should have been placed in the same species.

Types of *V. marshalli* (right valve) in the collection of the New Zealand Geological Survey.

Height, 5 mm.; length, 4.5 mm.

*Locality*.—Stewart Island (Recent). Kindly presented by the late Mr. R. Murdoch.

Subgenerically, this shell should go with *V. lutea* and *V. bollonsi* under *Pleuromeris*, and should not have been under *Miodontiscus* as classed by Suter.

*Venericardia* (*Miodontiscus*) *minima* n. sp. (Plate 16, figs. 3, 4.)

Shell minute, obliquely subtriangular, inequilateral; beaks extremely prominent, median, strongly curved; dorsal margin arched, descending rapidly; basal margin fairly regularly rounded, slightly flattened posteriorly; anterior end projecting, slightly longer than the posterior, convex below but deeply excavated under beaks, lunule not circumscribed, no escutcheon; hinge moderately strong; right valve with anterior and posterior cardinals obsolete, median strong, triangular, oblique, depressed in middle, there is a weak anterior lateral; left valve with two strong cardinals, anterior short, perpendicular, posterior long, curved, oblique; sculpture of obsolete narrow concentric folds, no radials; inner margins crenate.

Holotype (right valve) in collection of the New Zealand Geological Survey.

Height, 1.6 mm.; length, 1.5 mm.

*Locality*.—1098, blue clays, cutting in main road, Maraekakaho.

*Remarks*.—According to Dall's description (1903, p. 1409), *Miodontiscus* has the posterior right cardinal absent. In *V. minima* this tooth, though weak, is certainly present. The other characters agree well with this subgenus.

*Lucinida dispar* (Hutton). (Plate 16, fig. 5.)

1873. *Cyclina dispar* Hutton, *Cat. Tert. Moll.*, p. 22.

1914. *Dosima subrosea* (Gray): Suter, *N.Z. Geol. Surv. Pal. Bull. No. 2*, p. 9 (not of Gray).

1919. *Lucinida levifoliata* Marshall and Murdoch, *Trans. N.Z. Inst.*, vol. 51, p. 257, pl. 20, figs. 1, 2, 3, 4.

The type (and only) specimen is embedded in a hard matrix, so that the interior cannot be seen; but the exterior of the shell is of such

characteristic shape, with its peculiar expansion in front of the small deep lunule, that there can be no doubt that it is a *Lucinida*. Hutton classified the specimen under *Cyclina* because he mistook the anterior expansion for the lunule, and saw no line circumscribing it, while Suter's identification of it as *Dosinia subrosea* must have been based on a very perfunctory examination. The sculpture consists of fairly regular, spaced, low, concentric lamellae, more irregular distally, thus agreeing well with that of *L. levifoliata*.

Type locality, Hautapu Falls, Upper Rangitikei.

*Myllita finlayi* n. sp. (Plate 16, figs. 6, 7, 8.)

Shell very small, thin, circular in outline, little inflated; beaks median, inconspicuous; sculpture of very fine curved divaricate ribs, about 4 per millimetre, with their dorsal edges raised and somewhat roughened by irregularly-placed weak concentric growth-lines; hinge—right valve with a bifurcate cardinal under umbo and several minute tubercles posterior to it, double anterior and posterior lateral lamellae, anterior pair slightly stronger, left valve with one cardinal tooth and single anterior and posterior lamellae; muscular impressions subequal, raised; pallial line entire; interior faintly radially striate; margins smooth.

Holotype (right valve) in collection of the New Zealand Geological Survey.

Height, 5 mm.; length, 5 mm.; thickness (one valve), 1.25 mm.

*Locality*.—1102, sandy beds in blue clays below limestone, Maraekakaho Creek, three miles above mouth.

*Remarks*.—The generic location under *Myllita* is only provisional. The outline and ribbing are not the same as in that genus, but the whole group will be revised later. A closely related, unnamed species occurs at Castlecliff.

*Cerithidea perplexa* (Marshall and Murdoch).

1919. *Ataxocerithium perplexum* Marshall and Murdoch, *Trans. N.Z. Inst.*, vol. 54, p. 254, pl. 20, figs. 5, 6.

This shell is very closely related to the Recent *Cerithidea bicarinata* (Gray); indeed, it may not be worth specific recognition, as in the Recent species much of the surface is normally eroded, so all the details of sculpture cannot be made out. The two basal keels of *C. bicarinata* are represented in *C. perplexa*, as may be seen in Marshall and Murdoch's figure, but even in the best-preserved specimens they are obsolete. The whorls of the fossil are inclined to be flatter and the size somewhat larger than the Recent species, so perhaps it would be as well to retain both names. The generic position is under *Cerithidea* rather than *Ataxocerithium*, for the canal is very short and straight.

*Ataxocerithium tricingulatum* n. sp. (Plate 17, fig. 9.)

Shell small, turreted; spire twice as high as aperture, outlines straight; whorls 6, flat-sided, increasing regularly, body-whorl occupying half height of shell, convex, base contracted to short neck, protoconch broken off; sculpture of 3 strong equidistant spiral cords, crossed by 20 or more equally strong axial ribs, forming flattened gemmules at points of intersection, body-whorl with 3 additional strong spirals, lower two of which

are not reached by ribs; suture channelled; aperture oval, angled above, produced below into short oblique canal which does not appear to have been notched at base; outer lip thin, inner lip with callus; columella slightly excavated.

Holotype in collection of the New Zealand Geological Survey.

Height, 9 mm.; diameter, 4.5 mm.

*Locality.*—1063, shell-bed, Okawa Creek, Ngaruroro River.

*Remarks.*—Easily distinguished from *A. huttoni* (Cossmann) by its having only 3 spirals on the spire-whorls and 6 on the body.

*Ataxocerithium suteri* n. sp. (Plate 17, fig. 2.)

Shell of moderate size, heavy, subulate; spire over 3 times height of aperture; whorls flat, 9 remaining in holotype, apex broken in all cases, body-whorl rounded, not keeled, contracted quickly to short, straight neck; sculpture of 3 strong spirals, intersected by 15–17 somewhat broader ribs which form prominent oval flat gemmules at points of intersection, on body is a narrow spiral coming in between the two anterior ones, below line of suture are 3 other moniliform spirals, anterior one weak, below these are fine weak spiral threads on neck of canal; suture canalliculated by spirals, sometimes with edge of fourth one showing; aperture broken in all cases, but apparently ovate, slightly channelled above, produced below into very short twisted oblique canal which runs along truncation of columella; columella straight, obliquely truncated below with well-developed median plait and obsolete anterior one bounding truncation; inner lip with thick callus, which, however, does not always hide the strong basal spirals, giving the appearance of a fold or folds on parietal wall.

Holotype in collection of the New Zealand Geological Survey.

Height, 19 mm.; diameter, 6 mm.

*Locality.*—1063, shell-bed, Okawa Creek, Ngaruroro River.

*Remarks.*—Suter had marked similar specimens from locality 691, Petane, as *Newtoniella* n. sp.; but the plait on the columella in addition to the obsolete fold along the truncation seems to separate it from that genus, which according to Iredale (1915, p. 455) should be called *Cerithiella*.

*Eulima christyi* n. sp. (Plate 17, figs. 5, 11.)

Shell relatively large, imperforate, subulate, smooth and glossy, axis slightly curved above; spire high, conic; protoconch small, depressed, bulbous, of 2 smooth volutions; whorls 11 besides protoconch, with flattened sides, slightly swollen above suture, body-whorl large, subangled on joining base which is rapidly contracted and slightly convex; sculpture of sigmoid growth-lines, and obsolete varices of former apertures; aperture ovate, entire; outer lip thin, sinuous; inner lip with callus, definitely limited on base.

Holotype in collection of the New Zealand Geological Survey.

Height, 18 mm.; diameter, 5.5 mm.

*Locality.*—1089, blue clays, Okauawa Creek, Ngaruroro River.

*Remarks.*—Resembles *E. vegrandis*, but is much larger and comparatively a great deal broader.

Named in honour of Mr. C. Tait, of Maraekakaho, whose interest in the work and knowledge of the district were invaluable to the collectors.

*Verconella dubia* n. sp. (Plate 17, fig. 18.)

Shell of moderate size, very strong; spire less than aperture and canal; whorls 6 besides protoconch, subconvex, flattened below suture, body-whorl contracted quickly at base, with long neck twisted to left and backwards; protoconch of 2 smooth volutions, in shape of a flattened dome; sculpture of 10 strong but short axial ribs with equal interstices, extending from suture to suture on early shell, but later becoming shorter and not extending over base of body-whorl, spiral sculpture of 7 strong threads with weaker one filling each interstice, body-whorl with over 20 strong threads, also weaker ones between each pair; suture slightly undulating; aperture oval, lightly channelled above, produced below into long narrow canal very slightly sinused at end; outer lip lightly sinuous, antecurrent to suture, with sharp edge, but thickened and strongly toothed within; columella fairly long, somewhat concave above, twisted below at junction with neck; inner lip calloused, with strong denticle on parietal wall near suture, several weak ones scattered along its length and 2 or 3 stronger ones grouped together below.

Holotype in collection of the New Zealand Geological Survey.

Height, 30 mm.; diameter, 15.5 mm.

*Locality*.—1093, blue clays, Kikowhero Creek, Ngaruroro River.

*Remarks*.—The inner lip is the same as that of *Evarne striata* (Hutton), but the outer lip is thick and strongly dentate. Apart from the denticles round the aperture the shell resembles a *Verconella*, but a complete survey of the generic affinities would involve so many already-described species that it hardly comes within the scope of this paper. The ornamentation resembles that of *V. thomsoni*, but that species has a straighter canal.

*Verconella thomsoni* n. sp. (Plate 17, fig. 19.)

Shell of moderate size, heavy; spire less than aperture and canal; whorls 6 besides protoconch, convex, somewhat flattened below suture, body-whorl large, contracted fairly regularly to long neck which is very slightly twisted; protoconch a small flattened dome of 2 smooth whorls; sculpture of 11 strong axial ribs per whorl with equal interstices, reaching from suture to suture, but much stronger in middle, vanishing on base, spiral ornamentation of about 7 strong threads with weaker one in each of interstices, body-whorl with about 22 strong spirals, generally with weak one (sometimes 2 or 3) in interstices, the last 10 spirals on neck are weak and rendered somewhat scaly by growth-lines; suture undulating; aperture oval, channelled above, produced below into long narrow but slightly twisted canal, very shallowly sinused at end; outer lip sinuous, antecurrent to suture, with sharp edge, but much thickened and dentate within, most of denticles extending back within shell as lirae; columella slightly concave, angled at junction with canal; inner lip calloused, produced well along canal to sharp point and limited externally by definite margin, there is strong posterior parietal denticle, and 7 weaker ones below, bottom 4 grouped near base of columella.

Holotype in collection of the New Zealand Geological Survey.

Height, 31 mm.; diameter, 16 mm.

*Locality*.—1092, blue clays above Te Aute limestone, Maharakeke Road, one mile south of Pukeora Sanatorium, Waipukurau.

*Remarks*.—This species resembles *V. dubia* n. sp., but has a straighter canal and a shorter, broader spire. The generic position under *Verconella* is only provisional. Named in honour of Dr. J. A. Thomson, who collected at this locality.

*Aethocola taitae* n. sp. (Plate 17, fig. 16.)

Shell of moderate size, fusiform; spire gradate conic, equal to aperture and canal; whorls 7 strongly angled, body-whorl with subangled keel, then contracted quickly to neck which is twisted and has a well-marked fasciole; protoconch conoidal of about 4 smooth volutions; sculpture of neanic shell with about 6 smooth ribs with equal interstices before spiral ornamentation begins, 4 spirals then appear in interstices, after a little they surmount the ribs but are never as strong as them; first 2 conch-volutions convex, but from then onwards the shell is strongly shouldered with about 12 strong ribs with wider interstices; ribs are raised into sharp tubercles on shoulder-angle, but obsolete above that and die away on base of body-whorl, angulation takes place on second anterior spiral, so early whorls have 2 threads on shoulder, a stronger one on angle, and another strong one midway to suture below, there are finer secondaries in the broad interspaces, on later whorls secondaries increase in number and some become as strong as primaries, base of body-whorl has 8 strong well-spaced cords with many secondaries, finer spirals are reticulated by equally fine growth-lines; suture undulating; aperture oblique, angled above, produced below into fairly long wide open canal twisted backwards and deeply notched at base; outer lip thin and sharp, lirate within, antecurrent to suture; columella smooth, slightly arcuate; inner lip thin, not extending over base.

Holotype in collection of the New Zealand Geological Survey.

Height, 34 mm.; diameter, 18.5 mm.

*Locality.*—Blue clays below limestone, Kikowhero Creek, Ngaururoro River.

*Remarks.*—This shell was placed by Suter under *Siphonalia nodosa* (Martyn), and it is certainly closely related; probably it can be regarded as an ancestor. It differs from *nodosa* in having fewer and stronger ribs and tubercles, stronger spirals, and a flatter shoulder. Generic rank is here given to *Aethocola*, which Iredale (1915) set up as a subgenus of *Verconella*. The anterior canal is deeply notched at the base, so the genus belongs to the Buccinidae, while *Verconella*, which is not notched, belongs to the Chrysodomidae. Named in honour of Mrs. G. Tait, of Maraekakaho.

*Cominella hamiltoni* (Hutton). (Plate 17, fig. 4.)

1885. *Clathurella hamiltoni* Hutton, *Trans. N.Z. Inst.*, vol. 17, p. 316, pl. 18, fig. 7.

1893. *Clathurella hamiltoni* Hutton, *Macleay Mem. Vol.*, p. 52, pl. 7, fig. 35.

1915. *Cominella huttoni* Kobelt: Suter, *N.Z. Geol. Surv. Pal. Bull. No. 3*, p. 25 (not of Kobelt).

Shell small, broadly fusiform; spire slightly higher than aperture with canal; whorls 6, with high narrow shoulder, level with suture, body-whorl comparatively large, contracting fairly rapidly to short neck which is marked by a prominent fasciole; protoconch a flat dome of 2 smooth whorls (= tectiform, or "*en goute de suisse*," Cossmann, 1895, p. 12); sculpture—first conch-whorl with strong ribs curving forward on lower part of whorl, after first volution about 6 spiral threads appear, these surmount ribs and increase in number until there are about 12 on penultimate whorl with equal interstices, body-whorl with 20 of which anterior 8 are stronger than others, ribs number about 12 on spire-whorls and 15 on body, are very strong and, passing over narrow shoulder, reach suture above, but become weaker on base and then die out; suture undulating; aperture oval, channelled



abovē, and with short wide anterior canal bent to left and deeply notched; outer lip sharp, slightly sinuous, smooth within; columella slightly arcuate; inner lip calloused, produced along edge of canal and ending in sharp point.

Holotype in collection of the Canterbury Museum.

Height, 16 mm.; diameter, 9 mm.

Locality.—Clays below limestone, Petane.

Remarks.—This *Cominella* is a, very common one in the Petane clays of the Hawke's Bay District. By Suter it was identified as the Recent *C. quoyana* (A. Ad.) (= *huttoni* Kobelt), but it is easily distinguished by the strong narrow ribs persisting to the suture above, and the strong spiral threads with interstices of equal width.

*Trophon murdochi* n. sp. (Plate 17, figs. 12, 13.)

Shell small, fusiform; with turreted spire equal in height to aperture and canal; whorls 4 besides protoconch, early ones with flat shoulder, later ones convex but still flattened below suture, body-whorl about three-quarters total height, contracted gradually on base to form fairly long stout neck with slight twist to left and backwards and with moderate fasciole at base; protoconch proboscoidiform, of 2 smooth whorls, the first small and well tilted, the second increasing to a comparatively large size and coiled in axis of shell; sculpture—first conch-volution of much greater diameter than protoconch, so there is quickly developed a wide flat shoulder, which later becomes more sloping and relatively narrower, spiral sculpture of 3 strong cords with wider interstices, the lowest appears first on the conch-whorl, soon afterwards the middle one and then the top one at angle of shoulder, a fourth spiral appears in suture near aperture, while there is a weak one on shoulder of last two whorls, body with 8 strong spirals besides weak one on shoulder, whole surface covered with close fine sharp varices, stronger in interstices; suture well impressed; aperture oval, subangled above, produced below into fairly long twisted canal well notched at base; outer lip thin, slightly sinuous, as far as can be seen, smooth within; columella straight, smooth; inner lip smooth, ending a short way along canal.

Holotype in collection of the New Zealand Geological Survey.

Height, 13 mm.; diameter, 7 mm.

Locality.—1099, clays below limestone, road-cutting, Maraekakaho.

This species is easily distinguished from the other New Zealand examples of the subgenus by its fusiform shape and the number of spirals on the body-whorl.

*Xymene drewi* (Hutton). (Plate 17, fig. 8.)

1883. *Cominella drewi* Hutton, *Trans. N.Z. Inst.*, vol. 15, p. 410.

1893. *Pisania drewi* Hutton, *Macleay Mem. Vol.*, p. 42, pl. 6, fig. 13.

1915. *Euthria drewi* (Hutton): Suter, *N.Z. Geol. Surv. Pal. Bull. No. 3*, p. 23.

The type material consists of two specimens, the larger of which was selected by Suter as lectotype and wrongly called "holotype" by him. Hutton's measurements agree with neither, but he appears to have given the dimensions of the largest specimen he knew of in many cases, irrespective of his type material. The two specimens do not agree even generically: the larger one has a parietal tooth and two small ones at the base of the columella, being closely related to "*Tritonidea*" *compacta* Suter; the smaller one is what has generally been considered as *Euthria drewi*, and is the specimen figured in the *Macleay Memorial Volume*. It has therefore a

better claim to be considered the type of *E. drewi* than has the shell chosen by Suter. Further, in the original description Hutton says there are about 22 spirals on the body-whorl; Suter's lectotype has 12, while the smaller specimen figured below has 18.

Height, 13 mm.; diameter, 7 mm.

Generically this shell cannot be separated from *Xymene plebeius* (Hutton), from which it differs in the non-carination of the whorls.

***Xymene oliveri* n. sp.** (Plate 17, figs. 7, 10.)

1886. *Trophon crispus* Gould: Hutton, *Trans. N.Z. Inst.*, vol. 18, p. 347 (not of Gould).

1893. *Trophon crispus* Gould: Hutton, *Macleay Mem. Vol.*, p. 40, pl. 6, fig. 8 (not of Gould).

Shell small, fusiform, imperforate; spire acute, equal to aperture and canal; whorls 6, convex, body-whorl with a high blunt shoulder, base contracted fairly quickly to short slightly curved neck; protoconch broken in all specimens seen; sculpture on early whorls two strong spirals with weaker one above, later another cord appears just above suture, body-whorl with 11 cords, with slightly wider flat interstices, each whorl has about 15 axial ribs of a variciform nature as they are traversed longitudinally by sharp growth-lamellae which appear also in interstices, in addition a fairly prominent varix is sometimes present on body-whorl, marking a former aperture; suture well impressed; aperture oval, produced below into short oblique recurved canal very slightly notched at end; outer lip constricted suddenly to canal, varixed on outside with a sharp edge bevelled within and crenulate or denticulate; columella slightly arched, meeting canal in prominent angle; inner lip smooth, calloused, extending half-way along canal.

Holotype in Canterbury Museum.

Height, 9 mm.; diameter, 5 mm.

Locality.—Petane.

*Remarks.*—Hutton's classification of this shell under Gould's species, which belongs to Tierra del Fuego, was quite tentative. On both occasions quoted above he says that the New Zealand shell "may be distinct." Evidently he was judging from figures. It is most unlikely that the shells should be specifically the same, considering their distribution. An examination of Gould's description (1852) shows important differences, among which are "length nearly an inch . . . 8 or 9 prominent subangular varices." The New Zealand shell is less than half this length, and has about 15 variciform axials; it should therefore be regarded as a distinct species. Cossmann (1903, p. 54, footnote) changed *Trophon crispus* (Gould) to *Trophon gouldi*, giving as his reason, "Cette denomination fait double emploi avec celle d'un *Murex* bien antérieur, dans l'Éocène du Bassin de Paris; l'espèce néozélandaise doit donc recevoir un autre nom." Now, the shell in question was described originally (Gould, *Proc. Boston Soc. Nat. Hist.*, 3, p. 141, 1849) as *Fusus crispus*, so there is no justification for changing the specific name, as the Parisian shell is still retained under *Murex*. *T. gouldi* cannot, however, be applied to the New Zealand shell; it was definitely proposed as a substitute for *T. crispus*, and must be associated with that South American species.

***Anachis speighti* n. sp.** (Plate 17, fig. 1.)

Shell small, fusiform; spire straight, slightly higher than aperture; whorls 5 besides protoconch, with flat or slightly convex outlines, body-whorl more than half height of shell, with rounded base constricted to short

neck, which is bent slightly to left and backwards; protoconch elevated naticoid, of 2 smooth glassy whorls definitely marked by their texture from the neanic shell; suture impressed, bordered below; sculpture of about 20 strong axial ribs with narrower interstices extending from suture to suture but dying out on base, there are spiral grooves with wider interspaces which appear only in interstices of axials, 5 on penultimate and 4 on spire-whorls, on base the spiral interspaces are raised into rounded cords about 8 in number, spiral groove first below suture is generally stronger than the others, giving suture a bordered appearance; aperture rhomboidal, angled above, produced below into short wide canal, lightly notched at end; outer lip straight, sharp, thickened within with a few obsolete teeth; columella short and straight, with low oblique fold at junction with canal; inner lip smooth, with thin layer of callus ending in acute angle half-way down canal.

Holotype in the Canterbury Museum.

Height, 10.5 mm; diameter, 4.5 mm.

*Locality*.—Petane, clays below limestone.

*Remarks*.—This shell is not uncommon in the Petane clays, but was not separated by Hutton from *A. pisaniopsis*; the holotype was, indeed, among his syntypes of that species. *A. speighti* is easily separated from *A. pisaniopsis* and *A. cancellaria* by its stouter form, flat whorls, bordered suture, stronger axials especially on the body, and spiral grooves appearing only in the rib-interstices on the spire-whorls. Figures of the holotypes of *A. pisaniopsis* and *A. cancellaria* are given for comparison. (See Plate 17, figs. 3 and 20.)

*Alcithoe lutea* n. sp. (Plate 17, fig. 17.)

Shell large, ovato-fusiform; spire conic, two-thirds height of aperture; whorls 6, subangled about middle on spire, body-whorl with strong tuberculate keel, contracting very slowly to well-marked basal fasciole; protoconch bulbous, of about  $2\frac{1}{2}$  smooth volutions; sculpture—the early whorls have about 14 obsolete ribs slightly stronger at shoulder-angle, on penultimate and body-whorls these form strong rounded tubercles, about 7 on latter, there is no spiral sculpture; aperture high triangular, channelled above, broadly and deeply notched below; outer lip thickened, reflexed, ascending penultimate whorl, smooth within; columella inclined, with four strong oblique folds and sometimes a fifth weak posterior one; inner lip calloused, widely spread over base and canal.

Holotype in collection of the New Zealand Geological Survey.

Height, 92 mm.; diameter, 38 mm.

*Locality*.—Blue sandy clays, Okauawa Creek, Ngaruroro River.

*Remarks*.—This species is closely related to and is probably the direct ancestor of *Alcithoe arabica*, from which it is readily distinguished by its relatively much higher spire (two-thirds instead of one-half aperture), which gives the shell a different shape. There are also fewer and stronger tubercles on *A. lutea*, and the columella has generally 4, rarely 5, folds. *A. arabica* has generally 5, and often 6 or 7. *Alcithoe*, of which the genotype is *A. arabica*, was treated as a subgenus of *Fulgoraria* by Suter, following Cossmann; but since the protoconch of the former genus is not laterally coiled, as it is in the latter, *Alcithoe* should take generic rank, and replace *Fulgoraria* in New Zealand lists.

*Ancilla (Baryspira) opima* n. sp. (Plate 17, fig. 15.)

Shell small, strong, ovate; spire short and broad, with sharp apex; protoconch small, almost free from enamel; sculpture, spire, and upper

part of body-whorl covered with smooth, moderate callus; middle zone of body-whorl with growth-lines only, separated from basal limb by a comparatively narrow depression; aperture slightly oblique, oval, deeply notched below; outer lip convex, thickened above but thin below and with denticle opposite spiral depression; columella slightly concave, truncated below; inner lip calloused, with pad extending over parietal wall and nearly to protoconch.

Holotype in collection of the New Zealand Geological Survey.

Height, 16.5 mm.; diameter, 11 mm.

*Locality.*—1104, "Fossil Creek," west of Cottage Road, Maraekakaho.

*Remarks.*—This species was confused by Suter with *A. depressa* (Sowerby) because of its squatness, but it is comparatively much broader than that species.

*Marginella* (*Glabrella*) *brevespira* n. sp. (Plate 17, fig. 6.)

Shell relatively large, oval; spire inconspicuous; protoconch a large flattened dome; whorls 3 besides protoconch, with flat outlines on spire, but body-whorl plump and inflated; sculpture none, surface smooth and shining; aperture long, slightly wider below; outer lip thickened, varix ascending to top of penultimate whorl, inside obsoletely toothed; columella with 4 strong oblique folds, the lower two more oblique than the upper.

Holotype in collection of the New Zealand Geological Survey.

Height, 10 mm.; diameter, 5 mm.

*Locality.*—Sandy beds in blue clays below limestone, three miles above mouth of Maraekakaho Creek.

*Remarks.*—This shell is closely related to *M. kirki* Marwick, but may be distinguished by the plump convex outline of the body-whorl and the very short spire with flat sides.

*Mangilia* *morgani* n. sp. (Plate 17, fig. 14.)

Shell of moderate size, fusiform; spire slightly higher than aperture and canal; whorls 7, convex, protoconch broken off, later whorls with short sloping shoulder and blunt angle, base gradually contracted; sculpture of strong axial ribs and wide interstices passing from suture to suture, increasing from 8 to 12 on spire-whorls, becoming shorter and finally dying out on body, last seen on shoulder; spiral striae obsolete, sometimes more distinct on base; aperture ovate, produced below into short wide canal not notched anteriorly; outer lip expanded, with shallow sinus between shoulder-angle and suture; columella straight, with 2 insignificant folds; inner lip thin.

Holotype in collection of the New Zealand Geological Survey.

Height, 17 mm.; diameter, 8 mm. (a paratype is 19 mm. by 8 mm.).

*Locality.*—1063, shell-bed, Okawa Creek, Ngaruroro River.

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*Notes and Descriptions of New Zealand Lepidoptera.*

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[Read before the Wellington Philosophical Society, 30th September, 1921: received by Editor, 6th November, 1922; issued separately, 6th June, 1924.]

## CARADRINIDAE.

*Melanchra distracta* n. sp.

♀. 37 mm. Head and thorax mixed dark grey and white, with irregular oblique dark streaks. Palpi dark grey sprinkled white, terminal joint rather long. Abdomen pale fuscous. Forewings elongate-triangular, termen waved; grey suffusedly irrorated white, veins marked with interrupted blackish lines; first and second lines double, waved-dentate, blackish-grey, rather curved, second very strongly near costa; median shade rather curved, grey, on costa forming an oblique blackish streak, orbicular little marked, large, round, grey-whitish centred with grey suffusion, reniform trapezoidal, white, interior filled with whitish-grey, anterior edge subconvex, posterior concave; subterminal line indicated by an inwards-oblique streak of dark-fuscous suffusion from costa towards apex and a similar somewhat interrupted streak from termen beneath apex to dorsum before tornus, terminal area round these suffused whitish; black terminal interneural dots or marks: cilia grey slightly sprinkled white. Hindwings light fuscous, posterior half suffused rather dark grey; cilia fuscous, tips whitish-mixed.

Mount Ruapehu, 4,000 ft., in January (Hudson); one specimen. Perhaps nearest *cucullina*.

## HYDRIOMENIDAE.

*Venusia autocharis* n. sp.

♂♀. 28 mm. Head orange-ferruginous, a white frontal bar. Palpi, thorax, and abdomen ochreous-orange. Antennae white, pectinations light grey. Forewings somewhat elongate-triangular, termen bowed, oblique; ochreous-orange, towards costa tinged lilac, costal edge in ♂ anteriorly suffused dark grey and slightly speckled white; a slightly sinuate lilac-fuscous fascia from dorsum before middle to apex of wing; in ♂ a rather dark fuscous dot in middle of disc, and veins towards dorsum and termen somewhat tinged whitish and dotted with dark-fuscous suffusion: cilia orange, paler towards tips. Hindwings pale ochreous-yellowish, whitish-tinged in ♂, towards termen suffused light ochreous-orange; cilia as in forewings.

Mount Ruapehu, 4,000 ft., in January (Hudson); three specimens. Near *charidema*, but distinct.

## CRAMBIDAE.

*Diptychophora parorma* n. sp.

♂. 13-14 mm. Head ochreous-whitish. Palpi ochreous-whitish mixed with grey. Thorax whitish mixed with dark grey. Forewings with termen more oblique than in *elaina*; whitish, slightly sprinkled grey; base spotted with blackish-grey, then some blackish-grey irroration tinged with whitish-ochreous, followed by first line, which is irregular, black, angulated outwards in disc and inwards towards termen; an obscure curved rather broad median shade of grey suffusion mixed with whitish-ochreous, above