

Notes on New Zealand Mollusca.

No. 4.

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PLATES 20-25.

THE most interesting species noted in this paper is the fossil *Rhyssoplax* from Chatton. Though it is, of course, in a rather fragmentary condition, I think that all the eight valves, or portions of valves found, belonged to one individual, they all correspond so very well with each other. Should further and more perfect specimens be obtained, it might be advisable to create a new genus for it, but in the meantime the existing genus appears the best place for it.

For generous help with this paper I wish to express my thanks: to Dr. J. Marwick for advice and for the drawing of *Pallium kapitensis*, to Mr. A. W. B. Powell for the drawing of *Hipponyx inexpectata*, and to Miss J. K. Allan for the other drawings.

***Rhyssoplax Allan-Thomsoni* n. sp., Figs. 1-9.**

Shell, small, ovate, side slopes steep, slightly convex, sculptured.

Median Valves, lateral areas raised, well defined, with a shallow groove down centre crossed by about 9 horizontal growth lines corresponding to the growth lines on the pleural areas; below these are 2 or 3 more growth lines much further apart and irregularly spaced. Pleural areas: 9 narrow grooves crossed by 3 concentric narrow grooves on the anterior margin of valve.

Jugum, smooth, except for numerous pits, which may be due to weathering; slightly beaked, this is only to be seen on the 2nd valve.

Insertion plates fairly broad, anterior margin with a rib-like thickening just behind its edge.

Under a strong hand-lens the whole surface of the shell is seen to be minutely punctate by very shallow pits.

Head Valve, with about 20 narrow radial riblets crossed by 9 concentric growth lines. Valve erect, anterior slope steep, very slightly concave.

Tail Valve, rather imperfect, anterior portion and mucro appear to resemble pleural and jugal areas of median valves and the sculpture behind the nearly central mucro is similar to the head valve but much more weathered. Posterior slope slightly concave.

Interior-Head Valve, with 8 slits; so little of the articulamentum remains that there is only the merest hint of the insertion plate.

On the 2nd valve, however, the insertion plates are nearly perfect, and the jugal sinus shows traces of 3 denticulations; the rather strong valve callus is on the anterior margin of the lateral areas, curved and having a rather spoon-shaped depression posteriorly. There is 1 slit, and a very narrow lateral insertion plate.

Tail Valve, 9 slits, insertion plate must have been very narrow as now there is only a slightly thickened rim. The slits are extremely difficult to see and I am not quite certain whether there are 8 or 9.

Measurements: Length about 17 mm. width 7.5 mm.

Locality: Chatton, near Gore, Otago, N.Z.

Age: Oligocene.

Material: Holotype in the Dominion Museum.

Remarks: This species would seem to be referable to the genus *Rhyssoplax*. The solitary specimen was found in a gathering of fossils and matrix from Chatton, sent to the Dominion Museum by Mr. E. M. Christie.

The name of the late Director of the Dominion Museum is associated with this rare novelty in grateful acknowledgment of his unflinching kindness and help, as also of his keen interest in molluscan palaeontology.

While there is difference in sculpture this novelty may fairly be placed in the same group as *Rhyssoplax Aereus* (Reeve) and *R. Huttoni* (Suter).

As compared with *R. Aereus*, and *R. Huttoni*, *R. Allanthomsoni* has on the pleural areas narrow grooves with the intervening riblets about 3 times their width, the grooves extending the whole width of the area; in the other two species the upper grooves are quite short and nearly the same width as the riblets. In both the jugum is apparently smooth, but a strong hand-lens shows it to be minutely punctate and in *R. Huttoni* the wearing off of the surface of the tegumentum would probably leave a pitted surface very like the fossil.

Internally the median valves are very similar; on the 2nd valve of *R. Huttoni* the valve callus has a similar curve with a somewhat spoon-shaped depression posteriorly.

In both the recent species the sinus is finely denticulate, but in the fossil the 2nd valve, which is most nearly perfect, is rather worn, and the sinual denticulation not easily seen, but apparently there are only 3 teeth.

Callochiton Empleurus (Hutton), figs. 10-14.

Chiton empleurus Hutton, *Trans. N.Z. Inst.*, vol. 4, p. 178, 1872, *Callochiton empleurus* (Hutton): Suter *Man. N.Z. Moll.* p. 12, pl. 3, fig. 6, 1913. Mestayer, *Trans. N.Z. Inst.* vol. 53, p. 180, 1921; vol. 56, p. 583, pl. 100, fig. 1, (radula) 1926.

In "Notes on N.Z. Mollusca, No. 2," I stated: "The anterior valve has 14 very shallow, irregularly-spaced slits," but now I find that I had miscounted and that there are really 16 slits on the anterior valve.

The accompanying figures give profile and full-face view of the holotype, and the anterior, posterior, and portion of median valve, that I refer to above. Since the above notes were published two more badly-damaged specimens have been obtained from Foveaux Straits 15-20 fms.

Powellia Semireticulata (M. & S.) fig. 15.

Aclis semireticulata Murdoch and Suter, *Trans. N.Z. Inst.*, vol. 38, p. 294, pl. 24, figs. 33, 34, 1906, *Man. N.Z. Moll.* p. 326, pl. 16, fig. 5, 1913. *Powellia semireticulata* (M. & S.): Finlay *Trans. N.Z. Inst.*, vol. 57, p. 404, pl. 19, fig. 49, 1927.

In the last passage noted above, Dr. Finlay draws attention to the fact that the previous figures of this species emphasise the

sculpture far too much, and he gives a photograph of the holotype; however, his figure errs on the other side. Not knowing that he had photographed the holotype, I sent it to Miss J. K. Allan to be drawn. The sculpture shown on the last whorl requires a strong hand-lens to see it.

The original figures show a perfect shell while the holotype has the upper surface of the body whorl broken.

Hipponyx Inexpectata n. sp. (figs. 16-17).

Shell, small, circular, apex posterior, overhanging, posterior outline concave immediately below apex, becoming very slightly convex near the margin.

Sculpture, three strong concentric shelves, higher anteriorly than posteriorly, giving an uptilted appearance. The figure of the inside shows that the last shelf has below it the rudiments of a 3rd vertical. From the nucleus to the edge of first step there are a number of fine concentric striae.

Nucleus, minute, flat, with a shallow groove down the centre, which may, however, be due to extraneous growth.

Margin, entire, slightly irregular, under a strong hand-lens tiny nodules are visible, which are stronger posteriorly. Faint traces of these may also be seen immediately below the 2nd shelf.

Colour, pale cream, inside slightly darker on the margin, centre with what looks like an irregular white spatula, which extends to the posterior margin.

Measurements: Height 1 mm. Diameter 2×2.5 mm.

Locality, off Big King Island. Three Kings Islands, N.Z., 98 fms. Holotype in my collection.

Remarks: The specimen which Prof. J. A. Bartrum, (*Trans. N.Z. Inst.*, vol. 51, p. 104), recorded as *Hipponyx Antiquatus* L., and that which later Mr. A. W. B. Powell (*N.Z. Jour. Sci. Techn.*, vol. 6, p. 284), suggested was hardly specifically determinable as that species, seems to me really to belong to *Neojanacus*. I compared it with the genotype *N. perplexus* Suter, and superficially it agrees fairly well, allowing for heavier sculpture. Unfortunately it is gummed on card, but I hope to be able to move it and compare the muscle scars. Should it prove to be a new *Neojanacus*, *Hipponyx Inexpectata* will be the only New Zealand member of its genus. Since writing this Mr. Powell has told me that he has specimens of fossil *Hipponyx*; and he considers that Prof. J. A. Bartrum's specimen belongs to that genus. The muscle scars are too eroded to make out. The specific name was suggested by Mr. A. W. B. Powell, who considered it a *Hipponyx*; though the muscle scars cannot be made out.

Pallium Kapitiensis n. sp. figs. 18-19.

Valves, rather flattened; right valve: 4 strong broadly rounded folds with slight trace of a 5th near anterior edge; left valve: the 5th fold is much stronger on this valve.

Both valves covered with fine sharp radial riblets 89-90 on each valve, interstices vary slightly in width, but most are rather wider than the riblets. On the main folds the riblets show a tendency to be slightly stronger and coarser than elsewhere:

those on the left valve being slightly coarser than on the right, with a tendency towards bifurcating.

Valves closely covered with dense semi-microscopical growth striae, with irregular, more or less strongly marked rest periods. Apical parts polished, radial folds, riblets hardly showing.

Ears, unequal, posterior smaller, outline more concave. Right valve anterior ear 5 fairly strong ribs, marked off from valve by a well marked groove; ctenidium with 5 minute sharp teeth.

Posterior ear, 5 ribs crossed by fine growth lines several of which are so strong as to suggest their being rest periods. The posterior margins of both ears sharply denticulate by the growth lines. Left valve, anterior ear 4 ribs, also crossed by growth lines, byssal aperture and ctenidium, quite covered; junction with valve grooved.

Posterior ear with four primary radials the lower two much weaker; in each interstice is a fine thread and on the disc side of the lowest primary are two threads, near body of valve 3 rather fine threads.

Posterior margins of ears almost smooth, edges gaping posteriorly; closely appressed anteriorly, byssal opening small, on right valve only.

The shell appears to have lain on its right valve, probably on a sandy ground, as that valve is entirely free from extraneous growths, while there are remains of several small colonies on the left valve.

Colour, lemon yellow. A juvenile from near Hen and Chicken Island is pinkish orange.

*Umbo*s, minute, smooth, polished for first 2 mm.

Ligament, internal, a small resilium under the umbo, faint vertical numerous ridges below hinge line.

Interior of both valves slightly pearly especially along the pallial line. From the pallial line to the margins the radial threads show as fine grooves.

Muscle Scar, nearly round, sub-central.

Colour—right valve whitish, anterior margins tinged lemon yellow; left valve, inside of pallial line pale pinkish, anterior margin up to pallial line distinctly lemon yellow.

General outline triangular, with wavy convex anterior margin.

The main folds and sulci alternate; the folds on one valve fitting the sulci on the other.

Measurements: Length 31 mm. Breadth 35 mm. Thickness 9 mm. Hinge Line 21 mm.

Locality: Off Kapiti Island; taken out of the stomach of a blue cod, caught in about 3 fathoms, by Messrs. Watson Bros. of Waikanae, who kindly presented it to the Dominion Museum. Also a broken, and a juvenile specimen, from near Hen and Chicken Islands.

Remarks: This species is comparable with *Pallium convexum* (Q. & G.) as figured in voyage of "Astrolabe," the folding being very similar and the sculpture almost identical; but the radial riblets in *P. convexum* are broader and flatter, and at the same growth stage much fainter than *P. kapitiensis*. Also the posterior ear is smaller and joins the disc almost vertically, while in *P. kapitiensis* there is a distinct inwards curve.

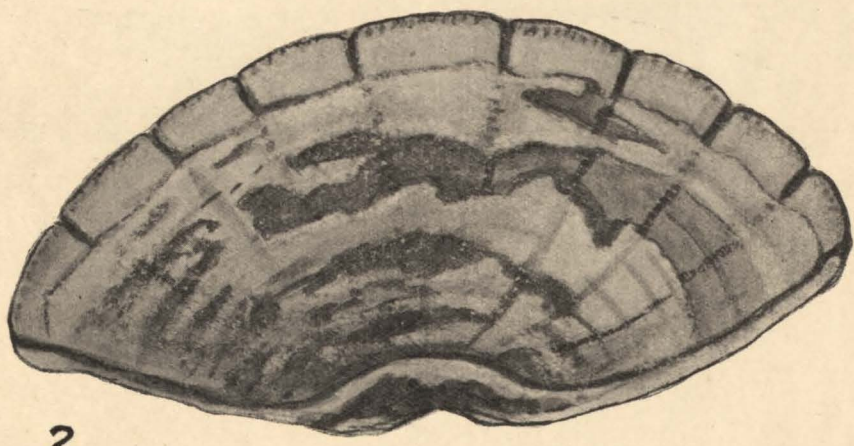
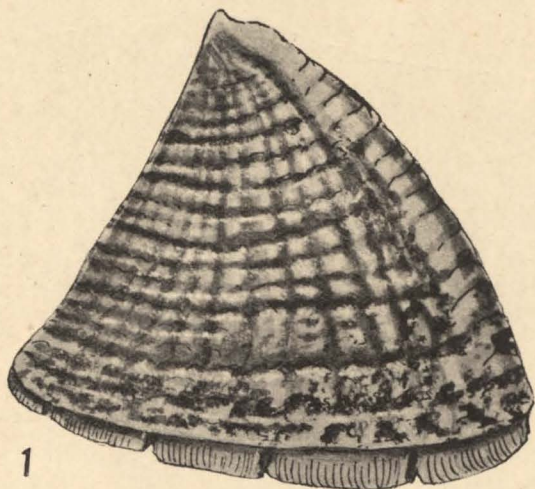
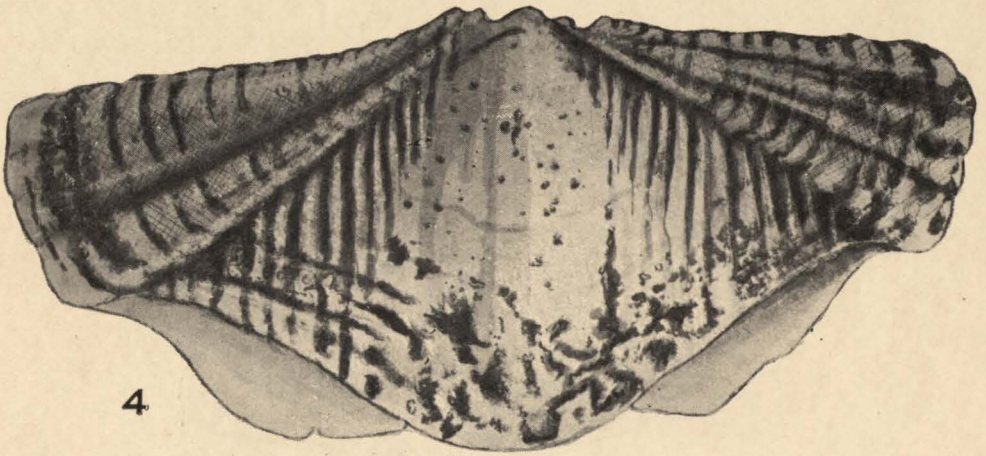
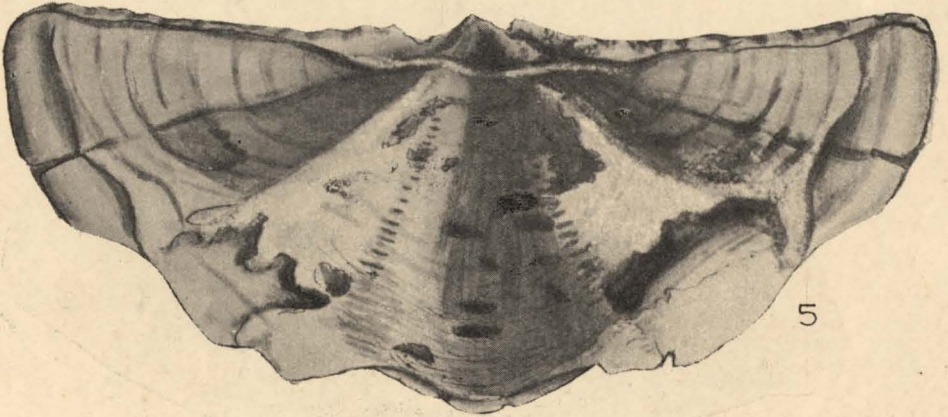


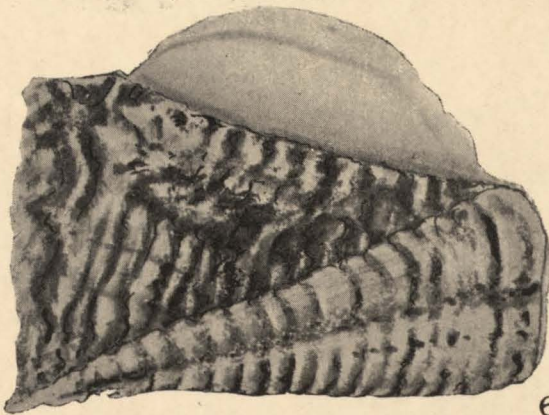
FIG. 1.—*Rhyssoplax Allan-Thomsoni* n.sp Holotype. Head valve profile.
 FIG. 2.—*Rhyssoplax Allan-Thomsoni* n.sp. Holotype. Head valve.
 FIG. 3.—*Rhyssoplax Allan-Thomsoni* n.sp Holotype. Head valve interior.



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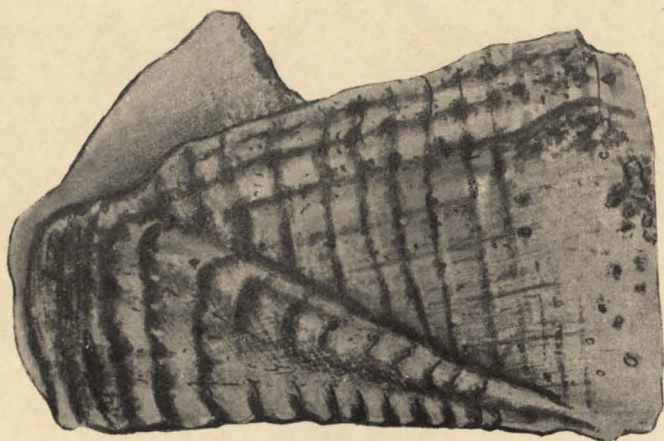


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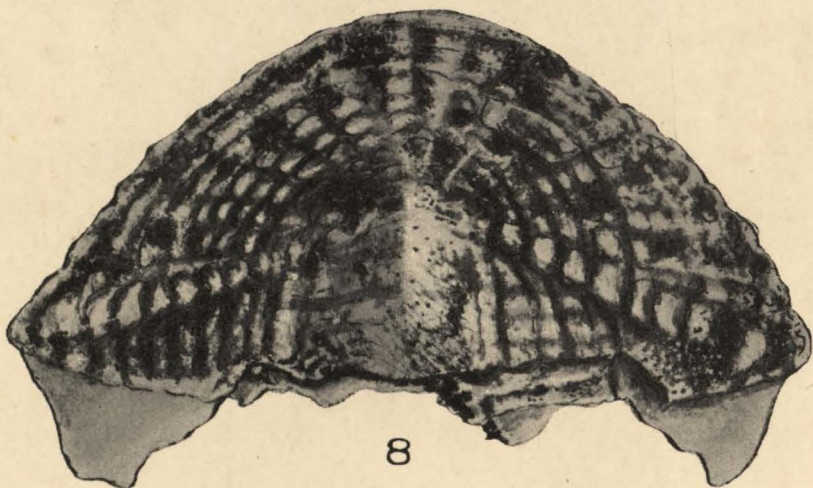


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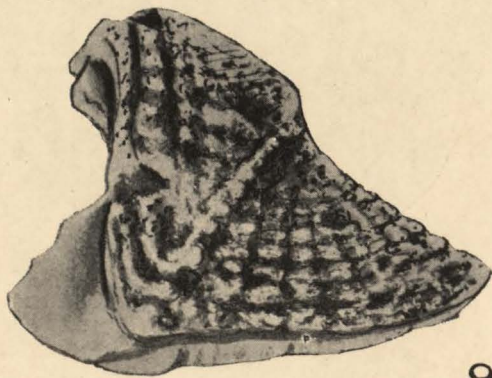
FIG. 4.—*Rhyssoplax Allan-Thomsoni* n.sp. Holotype. 2nd valve.
FIG. 5.—*Rhyssoplax Allan-Thomsoni* n.sp. Holotype. 2nd valve interior.
FIG. 6.—*Rhyssoplax Allan-Thomsoni* n.sp. Holotype. 4th valve right side.



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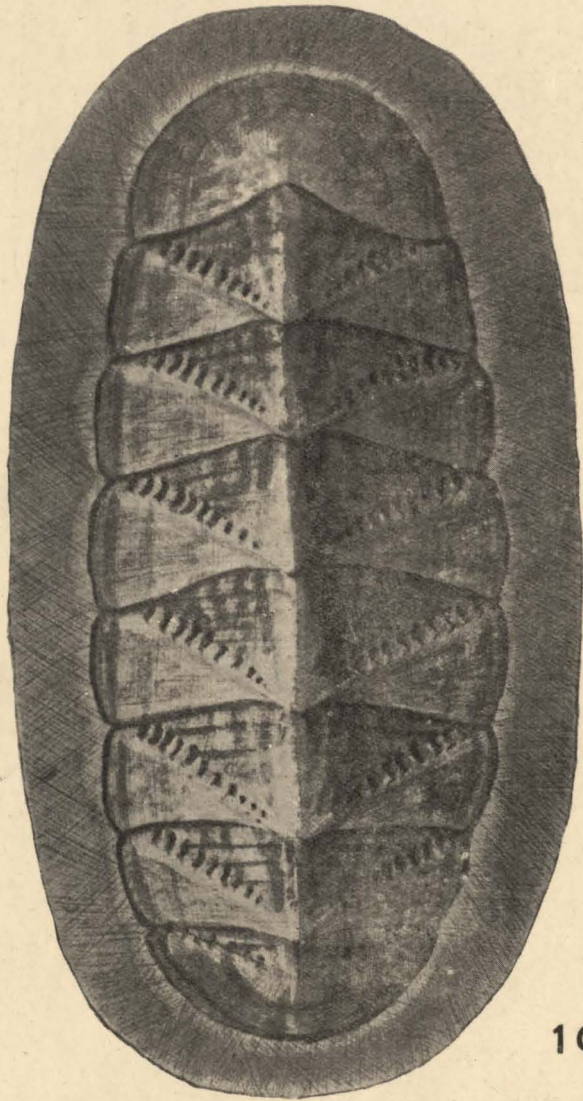


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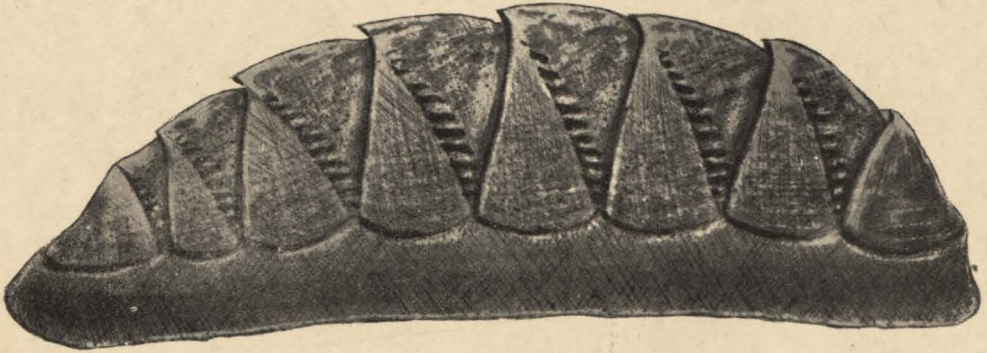
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FIG. 7.—*Rhyssoplax Allan-Thomsoni* n.sp. Holotype. 5th valve left side.
FIG. 8.—*Rhyssoplax Allan-Thomsoni* n.sp. Holotype. Tail valve.
FIG. 9.—*Rhyssoplax Allan-Thomsoni* n.sp. Holotype. Tail valve profile.



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FIG. 10.—*Callochiton Empleurus* (Hutton) Holotype.



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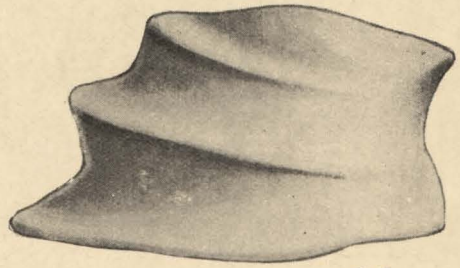


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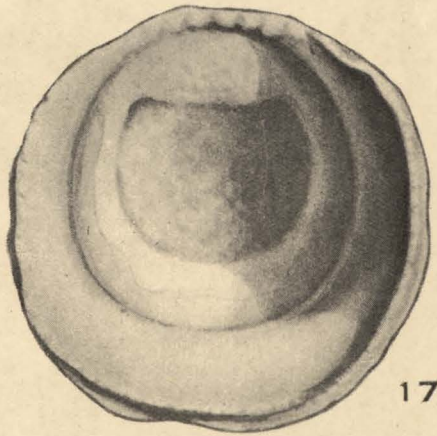
FIG. 11.—*Callochiton Empleurus* (Hutton) Holotype. Profile.
FIG. 12.—*Callochiton Empleurus* (Hutton) Holotype. Head valve.
FIG. 13.—*Callochiton Empleurus* (Hutton) Holotype. Tail valve.
FIG. 14.—*Callochiton Empleurus* (Hutton) Holotype. Median valve.



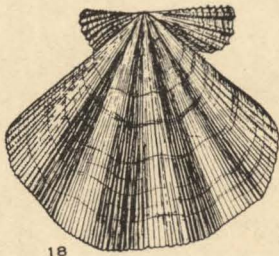
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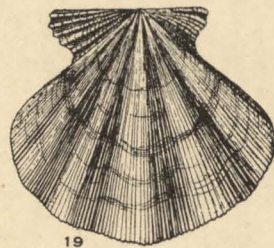
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FIG. 16.—*Hipponyx Inexpectata* n.sp. Holotype.
 FIG. 17.—*Hipponyx Inexpectata* n.sp. Holotype.
 FIG. 18.—*Pallium Kapitiensis* n.sp. Holotype. Right valve.
 FIG. 19.—*Pallium Kapitiensis* n.sp. Holotype. Left valve.
 FIG. 15.—*Powellia Semireticulata* (M. & S.) Holotype.