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AN INDEX TO THE LAND SHELLS OF VICTORIA.

By J. C. Cox, M.D., and C. Hedley, F.L.S.

(Plates I., II., III.)

At the invitation of the Director of the National Museum, Melbourne, we have undertaken a brief survey of the land shells of Victoria. Material from the National Museum and from the private collection of Mr. J. A. Kershaw has been confided to us. We have also drawn upon the resources of the Cox collection and of the Australian Museum, Sydney. Previous studies on the Tasmanian land shells* by the late Mr. W. F. Petterd and one of us, formed a suitable introduction to the present task.

But little attention has yet been paid to the land mollusean fauna of the State. Recently Dr. T. S. Hall wrote, "As to our land and fresh water mollusca, again, we in Victoria are sadly in the dark. Collecting has been done in the south-west of the State, but the rest is a blank."† Although the search has not been exhaustive and several species doubtless await discovery, sufficient has been done to show that Victoria is poorer in land shells than other parts of Australia. Professor Tate, in discussing this remarkable paucity, suggested that "A deluge of igneous mass must have destroyed terrestrial forms of life over the greater part of the southern region of Victoria."‡

Probably the first conchologists to work in Victoria were the naturalists of the *Astrolabe*, who, in 1826, visited Western Port and found *Helicarion cuvieri* and *Succinea australis*. In 1868, but five species, including two lately collected by Mr. G. Masters, were recorded from Victoria, in Dr. Cox's *Monograph of Australian Land Shells*. A few more species have since been added by desultory collecting. In the earliest paper written exclusively on the molluses of Victoria, Mr. Maplestone observed the scarcity of land shells around Melbourne.§ In 1884, Professor Tate published a list and general discussion of the land shells. It was his intention to complete this preliminary statement by a more detailed study, but the increasing pressure of an active life gave him no further opportunity of resuming the subject.

An account of the land and freshwater mollusca of Castlemaine was more recently published by Mr. F. L. Billinghurst.||

During the preparation of this report, our friend the veteran conchologist, Mr. W. F. Petterd, passed away. He took a keen interest in the subject, and had generously assisted us with specimens and information.

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* Petterd and Hedley. *Rec. Austr. Mus.*, vii., 1909, pp. 283–304, pls. lxxxii.–lxxxvii.
† Hall. *Victorian Naturalist*, xxvi., 1910, p. 126.
‡ Tate. *Trans. Roy. Soc., S.A.*, iv., 1882, p. 74.
§ Maplestone. *Monthly Microscopical Journal*, viii., 1872, p. 53.
|| Billinghurst. *Victorian Naturalist*, x., 1893, p. 61.

All known Victorian species have now been illustrated, and the present index to the subject will enable students to identify them. But it is to be remembered that smaller and rarer species yet await discovery, and that the structure of some of the small forms also requires investigation.

GROUP HETERURETHRA.

Family Succineidæ.

Genus Succinea, Draparnaud, 1801.

Succinea australis, Ferussac.

Succinea australis, Ferussae, Tabl. Syst., II., 1821, *p.* 27.

Id., Quoy et Gaimard, voy. Astrolabe, Zool., II., 1832, *p.* 150, *pl. xiii., f.* 19–23.

Id., Tate, Trans. Roy. Soc., S.A., IV., 1882, *p.* 95.

Id., Billinghurst, Viet. Nat., X., 1893, *p.* 62.

Id., Petterd and Hedley, Ree. Austr. Mus., VII., 1909, *p.* 283.

Habitat.—Western Port (Astrolabe), Melbourne (Petterd), Castlemaine and Harcourt (Billinghurst), Stawell (Australian Museum), Frankston and Wimmera District (Kershaw).

GROUP SIGMURETHRA.

SUB-GROUP HOLOPODA.

Family Acavidæ.

Genus Panda, Albers, 1860.

Panda atomata, Gray, var. kershawi, Brazier.

Bulimus kershawi, Brazier, Proc. Zool. Soc., 1871, *p.* 641.

Id., Tate, Trans. Roy. Soc., S.A., IV., 1882, *p.* 75.

Panda atomata, var. kershawi, Hedley, Ree. Austr. Mus., II., 1892, *p.* 31, *pl. v., f.* 9.

Habitat.—Snowy River, Gippsland (W. Kershaw). The species is unknown between the Hunter and the Snowy rivers. This is the most remarkable instance of discontinuous distribution recorded among Australian land mollusca.

Family Helicidæ.

Genus Chloritis, Beck, 1837.

Chloritis victoriæ, Cox.

(Plate I., figs. 1, 2.)

Helix victoriæ, Cox, Monogr. Austr. Land Shells, 1868, *p.* 37, *pl. xii., f.* 5.

Helix brunonia, Johnston, Proc. Roy. Soc., Tasm., 1887, *p.* 75.

Chloritis brunonia, Petterd and Hedley, Ree. Austr. Mus., VII., 1909, *p.* 285, *pl. lxxxii., f.* 2, 3, 4.

After *Panda* and *Paryphanta*, this is the largest Victorian snail. When deprived of its characteristic bristly epidermis, it seems transformed into another species. It is obvious that this is what Professor Tate doubtfully recorded* from Fernshaw as *H. mansueta*, Pfr. The latter is a Queensland shell bearing a general resemblance to *C. victoriæ* in size, form, and colour. But *C. mansueta* may be distinguished in all stages of growth by the broader umbilicus and sparser bristles. Professor Tate's record (op. cit.) of *H. brevipila*, Pfr., from Melbourne is evidently again a misquotation for *C. victoriæ*. During the preparation of the *Revised Census of the Terrestrial Mollusca of Tasmania*, Mr. W. F. Petterd was not quite satisfied of the identity of *C. brunonia* with *C. victoriæ*. In the last letter we received from him, he had decided that they were the same. This decision is here adopted. The species seems to be common and widely distributed. We have received specimens from the following places:—Western Port (type locality, Masters and Petterd), Victorian Alps (French), Jan Juc (Kershaw), Forrest (Steel), Lorne (Pritchard), Loutit Bay (Kershaw), and Cape Otway (Petterd). Beyond Victoria it is only known from King Island, and from Mt. Kosciusko.

SUB-GROUP AGNATHOMORPHA.

Family Rhytididæ.

Genus Rhytida, Albers, 1860.

Rhytida ruga, Cox.

Helix ruga, Cox, in Legrand Coll., Monog. Tasm. Land Shells 1871, *sp.* 24, *pl. i., f.* 5.

Id., Tryon, Man. Conch., III., 1887, *p.* 264, *pl.* 37, *f.* 93–95.

Rhytida ruga, Mollendorff and Kobelt, Conch. Cab. Agnatha, 1903, *p.* 29, *pl. v., f.* 10–12.

Id., Petterd and Hedley, Rec. Austr. Mus., VII., 1909, *p.* 286.

Helix exoptata, Tate, Trans. Roy. Soc., S.A., IV., 1882, *p.* 75.

This species is generally distributed throughout the State. It was first recorded from Victoria by Mr. W. F. Petterd, who remarked that "specimens from the Dandenong Range, Victoria, are identical with those from the northern portion of this island"†, *i.e.*, Tasmania.

Professor Tate appears to have considered, on the contrary, that mainland shells should be specifically distinguished from the Tasmanian, and proposed to name the Victorian form, which he recorded from Sale, Cape Otway, and Fernshaw, as *Helix exoptata*, but he never published a formal description or noted differential characters.

The size principally distinguished *R. ruga* from its northern relations, and it may prove a dwarf of a widespread species which, in different parts of Australia, has received different names. We

* Tate. *Trans. Roy. Soc., S.A.*, iv., 1882, p. 75.

† Petterd. *Monogr. Tasm. Land Shells*, 1879, p. 7.

would suggest comparison with *Helix georgiana*, Quoy and Gaimard* from King George's Sound, Western Australia; with *Zonites walkeri*, Gray,† collected 70 miles from Fort Macquarie, New South Wales, in company with *P. atomata;* with *Helix capillacea*, Ferussac,‡ collected by Peron at Port Jackson, New South Wales; with *Nanina fricata*, Gould§, collected by Drayton in Illawarra, New South Wales; and with *Helix gawleri*, Brazier‖ from the Mount Lofty Range, South Australia.

Genus Paryphanta, Albers, 1850.

Paryphanta atramentaria, Shuttleworth.

Nanina atramentaria, Shuttleworth. Mittheil. Naturf. Gesell. Bern, 1852, *p.* 194.

Id., Fischer, Notitiae malacol., II., 1877, *p.* 5, *pl. i., f.* 2.

Helix atramentaria, Cox, Monogr. Austr. Land Shells, 1868, *p.* 5, *pl. iii., f.* 2.

Helicarion atramentaria, Ten. Woods, Proc. Linn. Soc., N.S.W., III., 1879, *p.* 124, *pl. xii., f.* 2, 2*a*.

Id., Tate, Trans. Roy. Soc., S.A., IV., 1882, *p.* 75.

Habitat.—Port Phillip (Shuttleworth), Mount Arnold and Bendigo (Cox), Fernshaw (Tate), and Dandenong Range (Tenison Woods).

Paryphanta compacta, sp. nov.

(Plate I., Figs. 3, 4, 5.)

Shell depressedly globose, narrowly perforate, thin, whorls four. Colour brown, deepening on the last whorl to black and on the second whorl passing into straw yellow. The epidermis, in which the colour resides, is thick and very glossy. Sculpture: On the earlier whorls are oblique wrinkles, on the later a few irregular growth lines occur. Suture deeply impressed. Spire slightly elevated, base well rounded, umbilicus a narrow perforation. Aperture very oblique, slightly descending above, sinuate at the periphery, left insertion a little reflected over the perforation. Margins united by a callus which within the throat is purple and finely granulated. This callous lining does not extend to the very edge of the aperture, but leaves a narrow epidermal margin.

Maj. diam., 24 mm., min. diam., 19 mm.; height, 17 mm.

Type presented to the Australian Museum by Dr. J. C. Cox, collected by Mr. A. D. Hardy in débris and rotten wood at Smithers Creek, Otway Ranges. Three other specimens collected by Mr. Kershaw at the Erskine Falls, Loutit Bay, differ by being smaller, namely:—Maj. diam., 20 mm.; min. diam, 15 mm.; height, 14 mm., and by the spire whorls being almost flat.

* Quoy et Gaimard. *Voy. Astrolabe, Zool.*, ii., 1832, p. 129, pl. x., f. 26–30. *Id.*, Ferussac et Deshayes, *Hist. Nat. Moll. Terr.* (no date), i., p. 88, pl. 84, f. 3–4. *Vitrea georgiana*, Smith, *Proc. Mal. Soc.*, i., 1894, p. 87.

† Gray. *Proc. Zool. Soc.*, 1834, p. 63.

‡ Ferussac. *Tabl. Syst.*, 1821, p. 40, *nom. nud. Id., Hist.*, pl. 82, f. 5 (no date). *Id.*, Pfeiffer, *Conch. Cab. Helix*, 1846, p. 65, pl. 83, f. 7, 9.

§ Gould. *U.S. Expl. Exped.*, xii., 1852, p. 32, pl. v., f. 71 a, b.

‖ Brazier. *Proc. Zool. Soc.*, 1872, p. 618. *Rhytida gawleri*, Kobelt and Moellendorff, *Conch. Cab. Agnatha*, 1903, p. 37, pl. 7, f. 12–14.

The novelty is nearest in the genus to *P. atramentaria*, but with as many whorls in about half the diameter, the whorls increase more slowly, the last whorl is proportionately smaller, the perforation narrower, and the whole shell more globose. In size it resembles the Tasmanian *P. fumosa*, but the whorls of *compacta* are wound more nearly in the same plane and increase less rapidly. It seems confined to the southern part of the State, while *atramentaria* inhabits the centre.

SUB-GROUP AULACOPODA.

Family Endodontidæ.

GENUS ENDODONTA, Albers, 1850.

ENDODONTA ALBANENSIS, Cox.

Helix albanensis, Cox, Proc. Zool. Soc., 1867, *p.* 723.

Id., Mon. Austr. Land Shells, 1868, *p.* 15, *pl. iv., f.* 2.

Endodonta albanensis, Pilsbry, Man. Conch., VIII., 1892, *pl. xxxvii, f.* 43–46 ; *IX.*, 1894, *p.* 34.

Id., Hedley, Proc. Malac. Soc., I., 1895, *p.* 260.

Id., Petterd and Hedley, Rec. Austr. Mus., VII., 1909, *p.* 288.

Helix stanleyensis, Tate, Trans. Roy. Soc., S.A., IV., 1882, *p.* 75.

Habitat.—Fernshaw (Petterd), Wimmera (Australian Museum), Gippsland and Wilson's Promontory (Kershaw).

ENDODONTA FUNEREA, Cox.

Helix funerea, Cox, Monogr. Austr. Land Shells, 1868, *p.* 16, *pl. iii., f.* 1.

Endodonta funerea, Hedley, Rec. Austr. Mus., II., 1896, *p.* 104.

This species appears to be generally distributed. We now record it from Frankston (Australian Museum), Burrumbeet (Tate), Bairnsdale (Kershaw), and Mount Shadwell (Whan).

ENDODONTA JULOIDEA, Forbes.

Helix juloidea, Forbes, voy. Rattlesnake, Append., p. 379, *pl. ii., f.* 4.

The type of this species was found at Port Molle, in tropical Queensland, so that the shell is very unlikely to occur also in Tasmania or Victoria. Professor Tate recorded (Trans. Roy. Soc., S.A., IV., 1882, p. 75) *juloidea* from Victoria, but specimens which he so determined prove to be *E. funerea.* The Melbourne shell which Tenison Woods (Proc. Linn. Soc., N.S.W., III., 1879, p. 125) called *juloidea* was probably *E. albanensis.*

ENDODONTA MURRAYANA, Pfeiffer, var. SUBMURRAYANA, var. nov.

(Plate I., Figs. 6, 7, 8.)

Helix murrayana, Pfeiffer, Proc. Zool. Soc., 1863, *p.* 527.

Id., Angas, op. cit., p. 521, *and Journ. of Conch., I.*, 1876, *p.* 134.

Id., Cox, Monog. Austr. Land Shells, 1868, *p.* 14, *pl. xix., f.* 10, 10*a*, 10*b*.

E. murrayana is related to *E. funerea*, than which it is larger, flatter, with wider umbilicus, and more distant radial lamellæ. It has not hitherto been recorded from Victoria. Some examples from Geelong, collected by Dr. T. S. Hall, have a narrower umbilicus and weaker closer radial riblets than typical shells from the Murray cliffs. For these we adopt the varietal name of *submurrayana*, which Professor Tate proposed to bestow when he had this form under consideration. A specimen in the Australian Museum here figured is, major diam., 6·5 mm.; minor diam., 5 mm.; and height, 3·5 mm.

ENDODONTA RETIPORA, COX, var. MELBOURNENSIS, COX.

Helix retipora, Cox, Proc. Zool. Soc., 1867, *p.* 39.
Id., Mon. Austr. Land Shells, 1868, *p.* 21, *pl. vii., f.* 8.
Id., Billinghurst, Vict. Nat., X., 1893, *p.* 62.
Helix melbournensis, Cox, Mon. Austr. Land Shells, 1868, *p.* 22, *pl. xii., f.* 10.
Id., Tate, Trans. Roy. Soc., IV., 1882, *p.* 75.
Endodonta melbournensis, Hedley, Proc. Linn. Soc., N.S.W., XXVII., 1902 (1903), *p.* 604, *pl. xxxi., f.* 16, 17.

The Victorian form is rather more finely sculptured than the South Australian, but the difference is not constant enough for specific distinction.

Habitat.—Melbourne (Masters), Fernshaw (Petterd), Castlemaine (Billinghurst), Gippsland and Wimmera (Australian Museum), Mount Macedon, Dandenong Range, and Western Port (Kershaw).

ENDODONTA TAMARENSIS, Petterd.

Helix tamarensis, Petterd, Mon. Tasm. Land Shells, 1879, *p.* 30.
Id., Tate, Trans. Roy. Soc., S.A., IV., 1882, *p.* 75.
Charopa tamarensis, Billinghurst, Vict. Nat., X., 1893, *p.* 62.
Endodonta tamarensis, Hedley, Proc. Linn. Soc., N.S.W., XXVII., 1903, *p.* 605, *pl. xxxi., f.* 18, 19, 20.
Id., Petterd and Hedley, Rec. Austr. Mus., VII., 1909, *p.* 291.
Habitat.—Burrumbeet (Tate), Mount Franklin (Billinghurst).

GENUS CYSTOPELTA, Tate, 1881.

CYSTOPELTA PETTERDI, Tate.

Cystopelta petterdi, Tate, Proc. Roy. Soc., Tasm., 1880 (1881), *p.* 17.
Id., Hedley, Proc. Linn. Soc., N.S.W., (2), *V.*, 1890, *pp.* 44–46, *pl. i.*; *and Rec. Austr. Mus., II.*, 1896, *p.* 102.
Id., Petterd and Hedley, Rec. Austr. Mus., VII., 1909, *p.* 292.
Habitat.—Ballarat (Musson), Loch (Frost).

Genus Laoma, Gray, 1849.

Laoma morti, Cox.

Helix morti, Cox, Ann. Mag. Nat. Hist. (3), *XIV.*, 1864, *p.* 182.
Id., Monog. Austr. Land Shells, 1868, *p.* 21, *pl. xi., f.* 13.
Id., Tate, Trans. Roy. Soc., S.A., IV., 1882, *p.* 75.
Laoma morti, Petterd and Hedley, Rec. Austr. Mus., VII., 1909, *p.* 294.
Helix hobarti, Tate, Trans. Roy. Soc., S.A., IV., 1882, *p.* 75.
Flammulina retinodes, Tate, Horn Exp., II., p. 187, *p. xvii., f.* 4.
Habitat.—Mount Eliza (Pritchard), Jan Juc (Kershaw).

Professor Tate has quoted other Victorian localities, but since that of Melbourne (on the authority of Petterd) refers to *L. mucoides*, we regard them as uncertain.

Laoma mucoides, Tenison Woods.

(Plate II., Figs. 9, 10, 11, 12.)

Helix mucoides, Tenison Woods, Proc. Linn. Soc., N.S.W., III., 1879, *p.* 125, *pl. iii., f.* 5, 5*a*.
Id., Tate, Trans. Roy. Soc., S.A., IV., 1882, *p.* 75.

L. mucoides is closely related to *L. morti*, Cox, in form and sculpture, and has in the past been mistaken for it. *L. mucoides* has an extra whorl, and is larger, darker, and more solid. In *L. morti* the radial lamellæ are better developed. One of Tenison Woods' type specimens here figured is 2·8 mm. maj. diam., 2·35 mm min. diam., and 1·35 mm. in height. The type locality is Melbourne.

Laoma penolensis, Cox.

Helix penolensis, Cox, Proc. Zool. Soc., 1867, *p.* 724.
Id., Monogr. Austr. Land Shells, 1868, *p.* 8., *pl. xi., f.* 12.
Helix pictilis, Tate, Proc. Linn. Soc., N.S.W., II., 1878, *p.* 290.
Laoma pictilis, Petterd and Hedley, Rec. Austr. Mus., VII., 1909, *p.* 294, *pl. lxxxvi., f.* 35–37.

Cape Northumberland, the type locality of *H. pictilis*, is but a short distance from Penola, where the type of *H. penolensis* was found. Professor Tate distinguished *H. pictilis* from the Penola shell by "its coarser ribbing, its colouration, and the presence of transverse striæ." The first and second characters are variable, and we find that the type of *H. penolensis* in the Cox collection has microscopic spiral striæ. So that *H. pictilis* may be safely reduced to a synonym of *H. penolensis*.

Found at Port Fairy, by the Rev. W. T. Whan; near Melbourne and at Oberon Bay, Wilson's Promontory, by Mr. J. A. Kershaw; at Lorne, by Dr. G. B. Pritchard.

Genus Flammulina, von Martens, 1873.

Flammulina excelsior, Hedley.

Flammulina excelsior, Hedley, Rec. Austr. Mus., II., 1896, *p.* 103, *pl. xxiii., f.* 2–4.

The type of this species occurred on Mount Kosciusko. It is likely that the unlocalized Victorian specimen obtained by Professor Spencer, and referred to in the original description, came from some neighbouring alpine district.

Flammulina fordei, Brazier, var. m'coyi, Petterd.

(Plate II., Figs. 13, 14, 15.)

Helix fordei, var. m'coyi, Petterd, Monogr. Tasm. Land Shells, 1879, *p.* 14.
Helix m'coyi, Tate, Trans. Roy. Soc., S.A., IV., 1882, *p.* 75.
? Helix fernshawensis, Petterd, Journ. of Conch., II., 1879, *p.* 355.
Id., Monogr. Tasm. Land Shells, 1879, *p.* 15.
Id., Tate, Trans. Roy. Soc., S.A., IV., 1882, *p.* 75.

The type which Mr. Petterd presented to the Australian Museum, and which measures, maj. diam. 7·5 mm., min. diam. 6 mm., height 5·5 mm., is here figured. The *H. fernshawensis* is regarded by us as a lost species, for Mr. Petterd had retained no specimen of it, neither is an example preserved in the Tate collection, as Dr. Vereo kindly informs us. We have taken advantage of Professor Tate's suggestion, that *H. fernshawensis* is an immature *H. m'coyi*, to suppress it as a synonym.

Habitat.—Dandenong Range (Petterd), Fernshaw (Tate), Don River (National Museum), Upper Yarra (Kershaw).

Flammulina elenescens, sp. nov.

(Plate III., Figs. 16, 17, 18.)

Shell subdiscoidal, thin, spire slightly elevated, base flattened and broadly umbilicated. Colour ochraceous-buff, with a few faint radial streaks of brown. Whorls five, slowly increasing, parted by deeply impressed sutures. Sculpture: First whorl and a half smooth, about the ante-penultimate whorl the shell is ornamented with fine close even thread-like radials at the rate of about a hundred to a whorl, this sculpture is also visible within the umbilicus. On the later whorls this sculpture gradually vanishes, so that their smoothness is only broken by fine and rather irregular growth lines. There is no spiral sculpture. Umbilicus about a quarter of the shell's diameter, broad and open, exposing all the earlier whorls. Maj. diam., 6·7 mm.; minor diam., 5·4 mm.; height, 2·9 mm.

Habitat.—Merri Creek (Tenison Woods). Type in the Australian Museum.

In general appearance the novelty is like *F. diemenensis* and *F. marchianæ*, between which it is intermediate in size. The break in sculpture of *F. elenescens* readily distinguishes it.

Sub-genus allodiscus, Pilsbry, 1892.

Obs.—The following species are assigned to this sub-genus by reason of their spirally striated nuclear whorls.

Flammulina otwayensis, Petterd.

Helix otwayensis, Petterd, Mon. Tasm. Land Shells, 1879 (*April*), *p.* 39.

Id., Journ. of Conch., II., 1879 (*December*), *p.* 356.

Endodonta otwayensis, Hedley, Proc. Linn. Soc., N.S.W., XXVII., 1903, *p.* 605, *pl. xxix., f.* 10, 11, 12.

Habitat.—Cape Otway (Petterd), Fern Tree Gully (Hall), Fernshaw (Kershaw).

Flammulina subdepressa, Brazier.

Helix subdepressa, Brazier, Proc. Zool. Soc., 1871, *p.* 641.

Endodonta subdepressa, Hedley, Proc. Linn. Soc., N.S.W., XXVII., 1903, *p.* 605, *pl. xxxi., f.* 13, 14, 15.

Helix dandenongensis, Petterd, Journ. of Conch., II., 1879, *p.* 355.

Id., Tate, Proc. Roy. Soc., S.A., IV., 1882, *p.* 75.

Habitat.—Snowy River and Fernshaw (Kershaw), Dandenong Range (Petterd), Oakleigh (French), Gembrook (Coghill), Emerald District (Jarvis).

Flammulina meraca, sp. nov.

(Plate III., Figs. 19, 20, 21.)

Shell small, very thin, subdiscoidal spire slightly elevated, base narrowly perforated. Colour pure white. Whorls three and a half, parted by deep sutures and rather rapidly increasing. Sculpture: The protoconch, of one and a half whorls, is finely spirally striated and ends abruptly, the adult shell is perpendicularly traversed by fine evenly spaced radial riblets, amounting on the last whorl to about two hundred, between the riblets are a few very minute radial threads. Aperture lunate-ovate, columella slightly reflected. Inner lip overlaid by a callus spread in advance over the riblets of the preceding whorl. Base rounded, umbilicus narrow, about one-fifteenth of the major diameter. Height, 2 mm.; maj. diam., 4 mm.; minor diam., 3 mm.

Habitat.—Dandenong Range, numerous specimens (Kershaw), and Fernshaw (Petterd). Type from the Dandenongs in the National Museum.

The novelty is nearest related to *F. nivea*, Hedley,* from Kosciusko, which differs in the microscopic details of the sculpture, is more closely coiled, and has a sunken instead of an elevated spire.

It is possible that this may be the species recorded from Fernshaw as *Helix garthii*, Petterd, M.S. by Professor Tate.†

* Hedley. *Rec. Austr. Mus.*, ii., 1896, p. 103, pl. xxiii, f. 2–4.

† Tate. *Trans. Roy. Soc., S.A.*, iv., 1884, p. 75.

Neither the collection of Professor Tate nor of Mr. Petterd now contains this shell, so that the name must be written off as unrecognisable.

Family Zonitidæ.

GENUS HELICARION, Ferussac (em.), 1821.

HELICARION CUVIERI, Ferussac.

Helicarion cuvieri, Ferussac, Tabl. Syst., 1821, *p.* 20.

Id., Petterd and Hedley, Rec. Austr. Mus., VII., 1909, *p.* 301.

Vitrina nigra, Quoy et Gaim., voy. Astrolabe, Zool., II., 1832, *p.* 135, *pl. xi., f.* 8, 9.

Id., Tate, Trans. Roy. Soc., S.A., IV., 1882, *p.* 75.

Vitrina verreauxii, Pfeiffer, Proc. Zool. Soc., 1849, *p.* 132.

Habitat.—Western Port (Astrolabe), Fernshaw, Sale, and Cape Otway (Petterd), Jumbunna, South Gippsland (Kitson).

The following land mollusca have been introduced into Victoria from Europe :—*

Limax maximus, Linne.
Limax flavus, Linne.
Agriolimax agrestis, Linne.
Agriolimax lævis, Muller.
Milax gagates, Draparnaud.
Vitrea cellaria, Muller.
Zonitoides nitidus, Muller.
Helicella caperata, Montagu.
Helicella barbara, Linne.
Helix aspersa, Muller.
Helix pisana, Muller.

* Musson.—*Proc. Linn. Soc.* (2), v., 1890, pp. 883–896. Woodward.—*Journ. of Conch.*, x., 1903, pp. 352–367.

EXPLANATION OF PLATES.

Plate I.

Fig. 1.—Bristles and (Fig. 2) hair scars of *Chloritis victoriæ*. Cox. Much magnified.

Figs. 3, 4, 5.—Various aspects of *Paryphanta compacta*. Cox and Hedley. Enlarged.

Figs. 6, 7, 8.—Various aspects of *Endodonta murrayana*. Pfeiffer. Var. *submurrayana*. Cox and Hedley. Enlarged.

Plate II.

Figs. 9, 10, 11.—Various aspects of *Laoma mucoides*. Tenison Woods. Enlarged.

Fig. 12.—Sculpture of *L. mucoides*. Much magnified.

Figs. 13, 14, 15.—Various aspects of *Flammulina fordei*. Brazier. Var. *m'coyi*. Petterd. Enlarged.

Plate III.

Figs. 16, 17, 18.—Various aspects of *Flammulina elenescens*. Cox and Hedley. Enlarged.

Figs. 19, 20, 21.—Various aspects of *Flammulina meraca*. Cox and Hedley. Enlarged.

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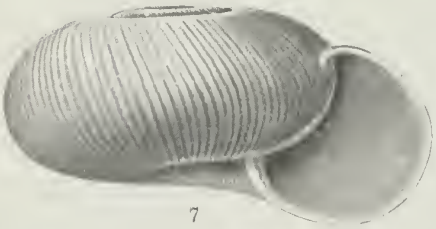

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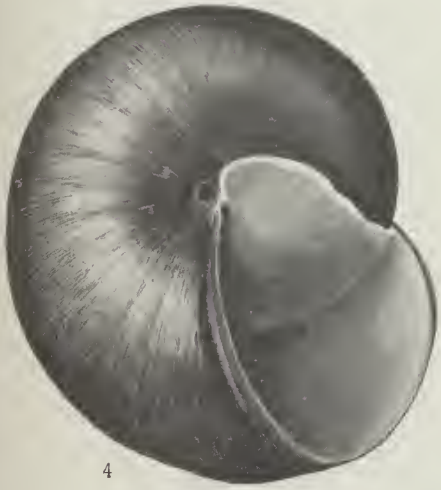

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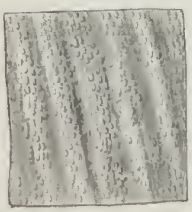

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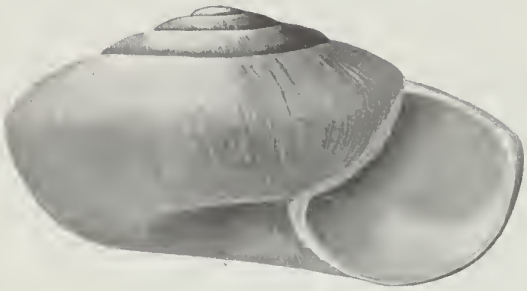

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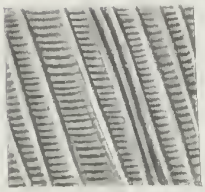

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Winifred Wood

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Winifred Wood.