

ON SOME AUSTRALIAN SLUGS, CHIEFLY TASMANIAN.

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Slugs have long been known to inhabit various parts of the Australian colonies, and their existence is, year by year, becoming more and more unpleasantly familiar to the gardener and floriculturist. The naturalist has, however, paid little attention to them.

The scientifically-known Australasian Slugs belong to two different families. 1st. The *Limacidae*, which includes *Limax olivaceus*, Gould, described in 1852 (see "Otia," p. 223), from specimens obtained at Parramatta, New South Wales; and the New Zealand *Milax antipodarum*, Pfeiffer, and *Limax fuliginosus*, Gould (l. cit., p. 223). The last has been overlooked by Hutton, Cat. Land Moll. of New Zealand, 1873, and by Von Marten's Critical List of Moll. of N. Z., 1873, but it is congeneric with *Milax antipodarum*, and may probably prove to be specifically identical. 2nd. The *Janellidae*, which comprises the bitentaculated Slugs, is restricted to the Australasian province, and includes the following types:—*Janella bitentaculata*, Quoy and Gaimard (*Limax*), of New Zealand; *Aneita MacDonaldi*, Gray, of New Hebrides; and *Triboniophorus Graffi*, Humbert (Memories de la Soc. de Physique, etc., de Geneve, vol. xvii., 1st part, 1863), from Woollongong, New South Wales. Similar forms occur in New Caledonia. (Fischer, Journ. de Conchyliologie xvi., p. 228-232, 1868), but it is doubtful if more than one generic form is represented. *Triboniophorus* differs from the other genera of the family by the absence of a dorsal groove.

The common Tasmanian and South Australian Slugs belong to the first-named family, and to the Old World genera, *Limax* and *Milax*; but a new genus, *Cystopelta*, I have erected for the reception of a rarer Tasmanian form, which may be relegated to the family *Arionidae*. To Messrs. Petterd and Legrand I am indebted for the material forming the basis of this communication, and from whose observations it would appear that *Limax Legrandi* and *Milax Tasmanicus* are widely spread in Tasmania; but the chief interest attached to *Cystopelta Petterdi*, which has been forwarded to me by the gentleman whose name it bears. Both gentlemen have also submitted to me the large Slug inhabiting cellars

and gardens about Hobart and Launceston,—this is the European *Limax cinereus*, and which is also well established about Adelaide. The question arises, may not *Milax Tasmanicus* and *M. nigricolus* be conspecific with *M. gagates* of the South of Europe? but they both present the peculiarity of a smooth shield; and as regards *M. nigricola*, its distribution favours the opinion that it is indigenous.

LIMAX LEGRANDI, nov. sp.

Body elongated, slender, about one inch; shield long and narrow, reddish-brown to pale yellowish-gray, marbled with darker colour (reddish-brown to dark-brown); hinder part of body with dark reticulations on a yellowish-white spotted ground.

Back of neck similarly coloured to shield; under side of foot gray, inconspicuously longitudinally three-banded; respiratory orifice post median.

Shell small, elongate-ovate, concave within, mandible yellow to dark-horn, rostrated, and finely transversely striated.

Lingual ribbon and teeth as in *Milax Tasmanicus*. Locality, Hobart (W. Legrand) and Launceston (F. Petterd).

MILAX TASMANICUS, nov. sp.

An elongated Slug of a blackish colour, keeled from the end of the small mantle; body smooth, slender, hind part carinated, colour grey-brown, with black stripes diverging from the shield; sides lighter in colour, of a general steel-blue, minutely spotted with white.

Shield small, black smudged on a greyish-brown coloured ground, free to the respiratory orifice, which is post median, marked with a rhomboidal dark band conformable with the edge of the internal shell.

Under side of foot of a grey colour, divided into three longitudinal bands, the central one the broadest, which is transversely wrinkled; the lateral bands are also wrinkled, and are separated from the body by a longitudinal groove.

Shell, an imperfectly calcified membranous plate, very small, oblong, pointed behind, concave.

Penis, a little behind the front edge of the mantle on the middle of the right side, strap-shaped, spirally-coiled.

Jaw yellowish-brown, with a black edge, or entirely black; lingual ribbon, consisting of 90 rows of 50 teeth each; mucus colourless.

Dimensions:—Of a large specimen, when extended, length, $2\frac{1}{2}$ inches; width across hind part of shield, $\frac{1}{2}$ inch; height, $\frac{1}{3}$ inch. Of a medium-sized example, when contracted, length, about $1\frac{1}{4}$ inches; greatest breadth, $\frac{1}{4}$ inch; height, $\frac{1}{4}$ inch.

Localities :—Launceston (W. F. Petterd) and Hobart (W. Legrand).

MILAX NIGRICOLUS, nov. sp.

Resembles *M. Tasmanicus*, but is less robust, and the surface is not so much wrinkled.

General colour black, with bluish-black sides; head bluish-black; under side of foot grey; upper tentacles bluish-black, short; neck black, with two median longitudinal grooves.

Shield elongate-oval, deep black, shagreened, with a rhomboidal commissure on hinder part; body carinated from the shield; back with diverging grooves from the shield, granulated between; respiratory orifice, post median; penis, strap-shaped, a little behind front edge of the shield, spirally coiled. Length, $1\frac{1}{4}$ inches.

Locality :—Inhabits the gullies of the Adelaide hills, and is widely dispersed over the Adelaide Plain.

CYSTOPELTA, nov. gen.

Derivation, in allusion to the inflated or bladder-like shield; animal slug-like; body attached for half its length to the back of the foot; mantle very large, enveloping the whole animal in repose, but from beneath which the head and the tip of the tail alone are visible from above, when the animal is crawling; tentacles, four; tail with a mucous pore at the tip; mandible like that of *Arion*; lingual teeth resembling those of *Testacella*.

CYSTOPELTA PETTERDI, nov. sp.

Animal elongated, somewhat slender; mantle rather of a leathery consistency, very large, dilated behind, and projecting laterally, so as to cover the whole animal excepting the end of the foot, and the head as far as the tentacles; surface smooth, or minutely wrinkled all over; brown, or blackish-brown, sprinkled with whitish and blackish minute spots, darker towards the posterior margin; free as far as the pulmonary orifice, which is situated at about one-third the length of the shield from the front margin. No shell.

Foot narrow, strap-shaped, tapering posteriorly, perpendicularly sulcated on the sides, and margined by a groove above. It is of a similar colour to that of the shield, but the part exerted beyond the mantle is marked with black lines *en chevrons* on a white spotted ground. Mucus colourless.

Tentacles, four, the upper five millimetres long, minutely granular at the base, and becoming smooth towards the apex, which is black; lower pair, two millimetres long, pale in colour.

Penis cylindrical, stout, long, and slightly dilated at the

end, situated in a line with the upper tentacle on the right side.

Mandible crescent-shaped, not rostrated, vertically grooved and interstriated, denticulated on the margin.

Lingual ribbon of 96 rows of an infinite number of similar lanceolate teeth.

Dimensions:—Total length when crawling (without tentacles), 30 millimetres; total width when crawling, 9 millimetres. (Measures made by Mr. Petterd.)

Locality:—Near Launceston (W. F. Petterd); Southport (B. R. Dyer).

A CONTRIBUTION TO OUR KNOWLEDGE OF THE
UNIONIDÆ OF THE LAUNCESTON TERTIARY
BASIN.

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Several interesting papers having recently appeared on the Tertiary beds of the Launceston Basin, by Mr. R. M. Johnston, it struck me that the description of two forms of *Unio*, occurring in these beds, might be acceptable to the Royal Society, especially as the subject appears to be, comparatively speaking, a new one.

So far as I am aware, the literature relating to the occurrence of this genus in the Tertiary and Post Tertiary formations of Australasia is very limited.

Omitting, as not coming within the scope of this present