

VI. *Catalogue of the Australian and Tasmanian Byrrhidæ ; with Descriptions of New Species.* By ARTHUR M. LEA, F.E.S., Government Entomologist, Tasmania.

[Read March 6th, 1907.]

THE *Byrrhidæ* are fairly numerous in Australia and Tasmania, although few species have been recorded thence. This is no doubt due to the small size and retiring habits of most of the species; and probably when moss and fallen leaves have been systematically examined in many parts of Australia, the number herein recorded will be more than trebled.

MICROCHÆTES.

The Rev. T. Blackburn has recently described several species belonging to this genus and made remarks on others. The late Rev. R. L. King had previously remarked on the variation of species of the genus, and in all the species I have seen there is considerable variation in the size and clothing. In *M. scoparius* and *sphæricus* (and probably in others) the prothoracic fascicles have a decided tendency to degenerate into scattered setæ, so that the prothorax is occasionally non-fasciculate; the elytral setæ and fascicles are also variable.*

MICROCHÆTES AUSTRALIS, Boisd. (*Byrrhus*, Boisd.), Voy. Ast. Col., p. 149; Blackb., Trans. R. Soc. S. Aust., 1903, p. 174.

Referred by Boisduval to *Byrrhus*, but evidently a *Microchætes*. His description † is quite useless, as it would apply to every species of the genus, and without some definite information as to the type I think the name should be ignored. I wrote to Mons. Albert Bovie of Brussels about the type, but he informed me that it was

* This to a certain extent may be accidental, as the scales and setæ are liable to abrasion. Specimens are also frequently heavily encrusted with mud, which is difficult to remove without at the same time injuring the clothing.

† "Niger, thorace elytrisque verrucosis."

not in the Brussels Museum,* nor could he find it in the Paris Museum on a visit to that institution.

Hab. AUSTRALIA.

MICROCHÆTES SPHÆRICUS, Hope, Trans. Ent. Soc. Lond., 1833, p. 13, Pl. I, fig. 2; King, Trans. Ent. Soc. N. S. Wales, ii, p. 72; Blackburn, Trans. R. Soc. S. Aust., 1903, p. 174. *M. coloratus*, Blackb. *l. c.*, p. 176.

The Rev. T. Blackburn says this species "could certainly not be identified with confidence except by specimens from the original locality." This locality was the Swan River, where I have taken numerous specimens† which agree with both the description and figure. In all these the under-surface is reddish whilst the upper-surface is dark, except that sometimes the outer parts of the elytra are also reddish. The elytra have large punctures in the striae, but they cannot be seen in fresh specimens, and the punctures of the metasternum are much as in *scoparius*. On some of them there is a patch of greyish or obscure ochreous scales on each elytron towards the base, the patch usually commencing on the shoulders (where it is narrowest) and obliquely directed towards the suture, which, however, it does not reach. In one specimen it is again directed towards the base so that each appears to be supplied with a semicircle of pale scales. The clothing is liable to abrasion, but several of the specimens before me agree well with the description of *coloratus*, and I believe that name to be synonymous.

Hab. W. and S. AUSTRALIA—coastal districts.

MICROCHÆTES SCOPARIUS, Er., Wieg. Arch., 1842, p. 153; King, Trans. Ent. Soc. N. S. Wales, ii, p. 72; Blackburn, Trans. R. Soc. S. Aust., 1903, p. 174.

This species is very abundant in Tasmania, and is the common species in New South Wales and Victoria. On fence tops and stumps at dusk it may sometimes be taken in hundreds; it also occurs under logs (usually in dry situations) and occasionally in moss. As a rule Tasmanian specimens have more uniformly dark clothing than those

* Boisduval's types of Curculionidæ of the Astrolabe are in that institution.

† I have taken specimens also on Rottnest, Garden, and Pelsart Islands and at Albany.

from the mainland, and the under-surface is nearly always black.

The punctures in the elytral striæ are normally concealed by the clothing, but when this has been abraded they are seen to be rather coarse at the sides and practically absent from the disc. When the clothing of the metasternum has been abraded the punctures there are seen to be considerably larger at the base than at the apex.

Hab. TASMANIA, VICTORIA, N. S. WALES.

MICROCHÆTES MINOR, King, Trans. Ent. Soc. N. S. Wales, ii, p. 73; Blackb., Trans. R. Soc. S. Aust., 1903, p. 174.

The Rev. T. Blackburn regarded this species* as probably not being a true *Microchætes*. It has every appearance of being one however, despite the want of fascicles. My specimen (a co-type from the late Rev. R. L. King's collection) is in rather bad preservation and I have been unable to examine its antennæ and tarsi; but this (owing to their small size and the frequency with which they are covered with dirt) is not often easy even in the larger species; so King may quite easily have been misled in describing the tarsi as tetramerous.

Hab. N. S. WALES.

MICROCHÆTES FASCICULARIS, MacL., Trans. Ent. Soc. N. S. Wales, ii, p. 171; Blackb., Trans. R. Soc. S. Aust., 1903, p. 174.

The Rev. T. Blackburn mentions having received specimens from me under the above name and queries the correctness of same. I received the name originally from Mr. George Masters and subsequently compared my specimens with the type. On examining them again, however, in April 1905, I found that I had two species mixed together, one being *scoparius* and the other *fascicularis*; this latter was again and more carefully compared with the type and found to agree with it. Macleay's remark, "Thorax . . . with a transverse series of five fascicles" is erroneous, as on the type there are only four. On abrasion the metasternum of my specimen is seen to be covered with very coarse punctures, becoming smaller (but still rather coarse) to apex; there are also a few minute punctures

* Unknown to him except by description.

scattered about. The punctures are after the same style as in *scoparius*, only much larger.

Hab. QUEENSLAND, N. S. WALES.

MICROCHÆTES SOLIDUS, Blackb., Trans. R. Soc. S. Aust., 1903, p. 175.

Hab. QUEENSLAND.

MICROCHÆTES NIGROVARIUS, Blackb., *l. c.*, p. 175.

Hab. S. AUSTRALIA.

MORYCHUS.

To this genus have been referred many species, which structurally would appear to belong to several genera. The wingless species, however, have been regarded as belonging to the genus, or sub-genus *Pedilophorus*.

MORYCHUS TORRENSSENSIS, Blackb. (*Byrrhus*, Blackb.), Trans. R. Soc. S. Aust., 1889, p. 138; 1903, p. 173.

Hab. S. AUSTRALIA.

PEDILOPHORUS.

One species only has been referred to this genus from Australia, but I have now to add seven more. Superficially these would appear to belong to several genera, but they are all evidently closely allied despite the fact that some are smooth, others are tuberculate and others hairy. I have not ventured therefore to propose new genera for their reception as the boundaries of *Pedilophorus* are rather vague.

The natural groups appear to be:—

1. *raucus* and *mixtus*.
2. *bryophagus* and *griffithi*.
3. *simplicicornis*.
4. *multicolor*.
5. *carissimus* and *dives*.

In all the species the head is widely rounded in front with practically no clypeus, the antennæ are widely separated and close to the eyes and in repose would just pass the middle coxæ. Their basal joint is large and about

twice as long as the second, the third is variable between the species, the seventh is transverse, and the eighth to eleventh form a rather wide club. In *simplicicornis*, however, the antennæ are otherwise.

The third joint of the tarsi is lamellate beneath in all the species, but the lamellæ are sometimes so thin that when closely pressed to the tarsi they cannot always be seen; in *raucus* on one specimen I can see them clearly, in *mixtus* they are very thin, and except from the side and in a good light they appear to be absent, in *multicolor* they are indistinct; but in all the others they can be seen clearly and from the sides are very conspicuous.

In *raucus* and *mixtus* the epipleuræ of the elytra are comparatively narrow and suddenly terminate at the hind coxæ; in the others they are very much wider, and especially in *simplicicornis*; in *bryophagus* they are strongly depressed at the hind coxæ.

In *carissimus* and *dives* the intercoxal process of the prosternum is wider than in the others, in *multicolor* it is considerably narrower.

The species may be tabulated as follows:—

Elytra tuberculate—

Prothorax with punctures	<i>carissimus</i> .
Prothorax with ridges	<i>dives</i> .

Elytra without tubercles—

Upper-surface hairy.

Upper-surface not uniformly coloured *multicolor*.

Upper-surface uniformly coloured.

Clothing uniform *raucus*.

Clothing not uniform *mixtus*.

Upper-surface glabrous.

Under-surface black *bryophagus*.

Under-surface reddish.

Antennal joints gradually increasing in width

simplicicornis.

Antennæ with terminal joints forming a distinct club

griffithi.

PEDILOPHORUS RAUCUS, Blackb. (*Byrrhus*, Blackb.), Trans. R. Soc. S. Aust., 1891, p. 133; 1903, p. 173.

Two specimens from New South Wales (obtained in flood débris on the Hawkesbury River) were named by

Mr. Blackburn as this species, but they differ from the description in having the clothing of a reddish-brown; in all other respects, however, they agree with the description.

Hab. VICTORIA, N. S. WALES.

PEDILOPHORUS MIXTUS, n. sp.

Bronze-black and shining; under surface dull red, appendages paler. Upper surface with long blackish hair mingled with shorter whitish hair; under-surface with greyish pubescence.

Head rounded in front, with fairly numerous but partially concealed punctures. *Antennæ* with third joint almost as stout as second, and not much longer. *Prothorax* widely transverse, strongly but evenly convex, with numerous distinct but not quite evenly distributed punctures. *Scutellum* very distinct. *Elytra* strongly and evenly convex, punctures as on prothorax; epipleuræ rather narrow and suddenly terminated at hind coxæ. *Under-surface* with moderately dense but rather small and partially concealed punctures. Length 3 mm.

Hab. TASMANIA: Hobart, Mount Wellington.

The outline is a perfect oval. The whitish hair gives the upper-surface a faintly speckled appearance and from some directions appears to be in about five feeble bands across the elytra. Several specimens were taken dead at Sandy Bay whilst searching for blind sand-beetles, others were taken from moss on trees.

In general appearance rather close to *raucus* but smaller and narrower than that species, the under-surface paler and with much smaller and sparser punctures, the legs paler, the clothing different, and the punctures of the elytra smaller, sparser and less uniform.

PEDILOPHORUS BRYOPHAGUS, n. sp.

Of a bright metallic green with a slight coppery gloss; under-surface black, legs dull red, antennæ and tarsi somewhat paler. Under-surface and appendages sparsely pubescent, elsewhere glabrous.

Head widely rounded in front, with fairly large and numerous clearly-defined punctures. *Antennæ* with third joint distinctly thinner than and almost twice the length of third. *Prothorax* strongly convex, the sides almost vertical, with numerous comparatively small but clearly defined punctures. *Scutellum* minute. *Elytra* very strongly convex, punctures rather smaller than on

prothorax, but almost as clearly defined ; epipleuræ wide and somewhat sinuous internally, strongly diminished towards but not suddenly terminated at hind coxæ. *Under-surface* almost impunctate. Length $3-3\frac{1}{4}$ mm.

Hab. TASMANIA : base of Mount Wellington.

With the head as normally concealed the outline is a perfect oval. The elytral epipleuræ, although not suddenly terminated at the hind coxæ, are strongly depressed there for the reception of the apex of the femora. Mr. H. H. D. Griffith and myself have taken numerous specimens in moss, but always near the base of Mount Wellington ; the following species was always obtained at a considerably greater elevation.

PEDILOPHORUS GRIFFITHI, n. sp.

Of a metallic green with a slight coppery gloss ; under-surface and appendages of a dull red. Under-surface and appendages very sparsely pubescent, elsewhere glabrous.

Head widely rounded in front, with fairly numerous punctures of moderate size and clearly defined in front, becoming smaller and less clearly-defined posteriorly. *Antennæ* with third joint much thinner than and twice the length of second. *Prothorax* and *elytra* of the same shape as in the preceding species but with much less distinct punctures, especially on the elytra ; the epipleuræ of these wide, rather strongly narrowed behind the hind coxæ, and not depressed there. *Under-surface* with sparse and minute punctures. Length $4-4\frac{1}{2}$ mm.

Hab. TASMANIA : Mount Wellington.

In general appearance close to the preceding species but larger, the under-surface not black, elytra with different punctures, and their epipleuræ different. The colour is sometimes almost as bright a green as the preceding species, but is usually not so metallic ; the prothorax in some specimens is almost black.

Dedicated to Mr. H. H. D. Griffith, in memory of many very pleasant excursions on Mount Wellington, where we have frequently taken this species in moss from old logs.

PEDILOPHORUS SIMPLICICORNIS, n. sp.

Black or brown, and usually with a metallic greenish gloss, under-surface and appendages more or less reddish. Under-surface and appendages very sparsely pubescent, elsewhere glabrous.

Head widely rounded in front ; with numerous clearly defined punctures of moderate size in front and on the sides sparser and smaller elsewhere. *Antennæ* in repose extending to hind coxæ, their first joint stout and more than thrice the length of second, second subglobular, third thinner than and twice the length of second, fourth the width of third and the length of second, the others regularly increasing in width, eleventh the length of ninth and tenth combined. *Prothorax* very strongly convex, sides almost vertical, in front with small indistinct punctures, elsewhere smaller and still less distinct. *Scutellum* extremely minute or absent. *Elytra* very little longer than head and prothorax combined, almost as wide as long, outline not regularly continuous with that of prothorax, punctures very minute and indistinct ; epipleuræ very wide, strongly narrowed behind but not depressed at hind coxæ. *Abdomen* with fairly numerous but small punctures, rest of under-surface almost impunctate. Length $3\frac{1}{2}$ -4 mm.

Hab. TASMANIA : Mount Wellington (in very wet moss).

There are seven specimens before me, and not two are exactly alike in colour. The colour of the upper-surface is more commonly black glossed with metallic green, but in three specimens whilst the greenish gloss is present the ground-colour is more of a reddish-brown especially towards the tip of the elytra ; the tip, however, is always more or less reddish ; the under-surface is of a more or less dark reddish-brown, sometimes paler at the sides and the appendages are usually paler, the legs and basal joints of the antennæ being sometimes almost flavous. In some lights the elytra at the base appears to have very faint traces of striation.

Although in many respects close to the preceding species the antennæ differ from those of that species and from all the others here noted in not forming a distinct club, the four terminal joints are certainly larger and wider than the others, but the increase in width is quite regular from the fourth joint. It is also more convex than *griffithi* and the elytral epipleuræ are very much wider and are otherwise different.

PEDILOPHORUS MULTICOLOR, n. sp.

Upper-surface (except sides of prothorax and elytra) dark, with various metallic glosses, lower-surface reddish-flavous, appendages paler. Upper-surface with fairly long golden semi-decumbent hair ; elsewhere with fine pubescence.

Head widely rounded in front, with dense and rather coarse clearly-defined punctures. *Antennæ* stout, third joint thinner but no longer than second. *Prothorax* strongly convex, sides in places quite vertical, disc towards base almost flattened; densely and coarsely punctate. *Scutellum* minute. *Elytra* strongly convex, subcordate, punctures almost as on prothorax, epipleuræ very narrow, strongly narrowed behind hind coxæ and with sparse but rather large punctures. *Under-surface* with fairly numerous and distinct punctures. Length 2 mm.

Hab. TASMANIA: Mount Wellington.

The head is usually of a dark metallic green, the prothorax is usually also metallic green, but much brighter than the head, its sides are widely diluted with red, but the colours are not sharply limited; the elytra are black with a bronzy or greenish gloss, their apex and sides are widely diluted with red, the red being sometimes advanced along the suture; the meso- and metasternum are usually somewhat darker than the rest of the under-surface. One specimen has the dark parts of the head and elytra slightly bronzed, but the prothorax of a beautiful purple.

A lovely little insect, all my specimens of which were obtained in moss on stones continually wet with spray, just above the Silver Falls.

PEDILOPHORUS CARISSIMUS, n. sp.

Of a bright metallic coppery green; tubercles coppery bronze; under-surface and appendages black; second joint of antennæ, palpi, claws and trochanters of a more or less dull red. Under-surface and appendages with very fine pubescence, elsewhere glabrous.

Head almost semicircularly rounded in front, with dense clearly defined punctures, rather smaller along middle than elsewhere. *Antennæ* with third joint much thinner than and almost twice the length of second, seventh almost the width of eighth. *Prothorax* very strongly and almost regularly convex, densely but not very coarsely punctate. *Scutellum* small. *Elytra* very strongly convex, with rows of slightly elevated burnished tubercles, the whole surface with small evenly distributed punctures, the spaces between the tubercles finely shagreened; epipleuræ rather narrow, and very narrow behind the hind coxæ. *Under-surface* with fairly dense and very distinct punctures, becoming coarse on intercoxal process of prosternum. Length 6 mm.

Hab. TASMANIA: summit of Mount Wellington.

The tubercles, of which there are about 36 on each elytron, may be regarded as being in five irregular rows on each, the rows being in places irregularly doubled and they appear to be always slightly different in disposition; although very conspicuous they are not much elevated above the general surface; they have punctures as the rest of the elytra but are not shagreened.

A lovely insect which has been obtained on the summits of several mountains in Tasmania. Mr. Aug. Simpson has one specimen probably from Ben Lomond. My own was obtained on the summit of Mount Wellington in January 1904, under a deeply buried stone; fragments are numerous there, but although both Mr. Griffith and myself repeatedly searched for it there we never succeeded in taking more than one living specimen. For years we have been in the habit of referring to this species as "Simpson's beauty."

PEDILOPHORUS DIVES, n. sp.

Of a metallic coppery green, tubercles coppery purple, under-surface black, appendages dull red, tarsi paler. Under-surface and appendages with very fine pubescence, elsewhere glabrous.

Head very widely rounded in front, immediately behind which is an irregular transverse impression; surface with short ridges and granules. *Antennæ* short, third joint thinner than and more than twice the length of second. *Prothorax* very strongly convex, densely covered with short ridges. *Scutellum* minute. *Elytra* strongly convex, with numerous small granules, and each with four somewhat irregular rows of strongly elevated tubercles, epipleuræ narrow and strongly narrowed at hind coxæ. *Sterna* with dense and coarse punctures; abdomen with sparser, smaller, and more irregular punctures. Length 4 mm.

Hab. TASMANIA: Frankford (in moss).

The prothoracic ridges on the sides are more or less parallel with the sides, but elsewhere they are very irregular in direction, except that from two points they appear to radiate like the spokes of a wheel. The elytral tubercles are usually somewhat elongated, those of the two sutural rows are largest, the sutural row extends almost to the apex where it joins in with the third row; the second row terminates at about one-third from the apex, the outer row consists of little more than tubercular swellings of the

apparent margin*; between the second and third rows there are on the specimens before me from one to three tubercles.

LIMNICHUS.

LIMNICHUS AUSTRALIS, Er., Wieg. Arch. 1842, p. 153.

Hab. TASMANIA.

ASPIDOPHORUS.

ASPIDOPHORUS HUMERALIS, Blackb., Proc. Linn. Soc. N. S. Wales, 1894, p. 92.

Hab. TASMANIA.

ASPIDOPHORUS GLOBOSUS, Macl. (*Trinodes*, Macl.), Trans. Ent. Soc. N. S. Wales, 1871, ii, p. 171.

I recently examined the type of *Trinodes globosus* referred by Macleay to the *Dermestidæ*; it is certainly an *Aspidophorus*. The original description is quite worthless and the specimen, when I examined it, was very greasy. There are two species before me, either of which may be *globosus*, but until they have been compared with the type, after this has been cleaned, it would be unsafe to describe one of them as new.

SPECIES REFERRED IN ERROR TO THE *BYRRHIDÆ*.

MICROCHÆTES COSTATUS, Macl.

Macleay states of this species that it "ought probably to constitute a new genus." I recently examined the type and found that it belongs to the *Histeridæ* and is *Epiechinus tasmani*, Lewis.† The species therefore must now be known as *Epiechinus costatus*, Macl.

LIMNICHUS FRONTALIS, Macl.

This has already been referred to the genus *Stictostix* of the *Histeridæ* by Lewis.

* From above they appear to be on the extreme sides of the elytra, but these are incurved below them.

† Of this species I have specimens named by Mr. Lewis.

BIZENIA FORMICICOLA, King.

This also belongs to the *Histeridæ*, and is stated to be a synonym of *Chlamydopsis striatella*, Westw.

MORYCHUS HETEROMERUS, King.

This belongs to the *Tenebrionidæ*, and I have recently commented upon it in the Proceedings of the Linnean Society of New South Wales.*

* 1906, p. 226.



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