

ON AUSTRALIAN HELODIDAE (COLEOPTERA). I.

DESCRIPTION OF NEW GENERA AND SPECIES.

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(Thirteen Text-figures.)

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Synopsis.

Three genera and fourteen species are described as new. *Elodes olliffi* Blackb., *montivagans* Blackb., *variegata* Cart., *atkinsoni* (Waterh.), *cincta* Blackb. and *costellifera* Cart., are found to have characters incompatible with that genus and are transferred to a new one, *Pseudomicrocara*, to which eleven new species are added. *Elodes tigrina* is considered a synonym of *variegata* Cart. A key is given to the species. One new species is placed in *Macrocyphon* Pic, thus adding this genus to the Australian fauna. Additional generic characters are given. *Elodes australis* (Er.) cannot remain in that genus and is transferred to a new one, *Hetrocyphon*, to which a new species is added. The position of *Macrocladellus* Cart. is commented on and *Elodes scalaris* Lea transferred to it. One new species is placed in *Peneveronatus*, n. gen. The shape of the mesosternal cavity is noted as a very useful taxonomic character, especially in *Cyphon*.

INTRODUCTION.

The author has been studying this family for a number of years and had much of the available Australian material before him. He has, also, representatives of most of the older described exotic genera of the Helodinae, and it soon became evident that many Australian species were misplaced in them. (*Elodes* does not occur in the Australian fauna.) It was therefore necessary to erect new genera for their reception. The shape of the mesosternal cavity has been found very useful in distinguishing species especially in *Cyphon* which will be dealt with in a later paper. In measuring the length of the insects the head has been excluded, as its position makes a material difference. The microscope used in preparing the figures reverses the images.

PSEUDOMICROCARA, n. gen. Helodinae.

Genotype, *Pseudomicrocara orientalis*, n. sp.

Form rather elongate, subdepressed, facies of *Microcara*.

Head covered by prothorax when withdrawn, with quite definite antennal fossae beneath eyes, front lightly convex, produced in a short muzzle. *Eyes* moderately prominent. *Mandibles* simple, wide, sharply pointed, but not long, very slender nor strongly overlapping. *Antennae* filiform, slender, about half length of body, second joint small, moniliform, third variable, remainder usually becoming progressively narrower. *Maxillary palpi* moderately slender, terminal joint a little shorter than penultimate. *Labial palpi*: terminal joint subcylindrical, slender, arising at an angle from end of penultimate. *Labrum* with apex broadly curved, tending to be constricted at base, separated from frons by a rather wide membranous area.

Prothorax about one-third narrower than elytra, semicircular in outline, sides and apex explanate, the latter extending a little over head, base bisinuate, anterior angles merged in general outline. *Elytra* usually about four times as long as prothorax. *Legs* of moderate length, moderately slender. *Hind tarsi* not bicarinate above, first joint long, second about half length of first, third about half that of second, fourth bilobed. *Prosternum* very narrow before coxae, prosternal process more or less diamond shaped, extending to about half-way between coxae but not nearly level with them. *Mesosternum* emarginate to receive prosternal process. *Metasternum* not produced forward between middle coxae. *Fore and middle coxae* narrowly separated, *hind coxae* contiguous, the latter transverse.

Distinguishing Characters.—This genus is separated from *Microcara* Thoms. and *Elodes* Latr. by the terminal joint of the labial palpi arising from the end of the

penultimate, and from the latter also by the hind tarsi not being flat and bicarinate above and the second joint not overlapping and obscuring part of the third, etc. From *Macrohelodes* Blackb. it differs in being pubescent, in the metasternum not being produced forward between the middle coxae, and in many other respects. *Peneveronatus*, n. gen., has toothed mandibles, different palpi and a very differently shaped metasternum, etc. Typical species of *Cyphon* have a very different prothorax, the 4-11th antennal joints shorter in comparison with their width, and the mandibles distinctly toothed.

Discussion.

Pseudomicrocara orientalis, n. sp., has been chosen as the genotype as it is typical and appears to be the commonest species on the mainland. Six described species are transferred from the palaearctic and North American genus *Elodes* Latr., which is a well-characterized genus having the terminal joint of the labial palpi arising from the side of the penultimate and the hind tarsi bicarinate above with the second joint overlapping and concealing part of the third. This genus and *Microcara* also differ from *Elodes* conspicuously in the mesocoxae being transverse and narrowly separated, not elongate and contiguous, and in the hind coxae being much less strongly oblique from the transverse. It is noticed that in *Microcara testacea* L. the lateral prolongation of the posterior coxal plate deviates from the posterior margin of the metasternum.

The six species transferred are *Helodes atkinsoni* (Waterh.), *H. olliffi* Blackb., *H. cincta* Blackb., *H. montivagans* Blackb., *Elodes variegata* Cart. (= *tigrina* Cart.), and *E. costellifera* Cart. Eleven species are now described as new, making a total of seventeen.

Key to the species of *Pseudomicrocara*.

- 1-32. Apex of the pronotum rounded, prosternal process more or less diamond shaped, intervals between elytral costae, when these are present, not convex.
- 2- 3. Third antennal joint about as long as 4th *olliffi* (Blackb.).
- 3- 2. Third antennal joint distinctly shorter than 4th.
- 4- 5. Pronotum testaceous, elytra black *montivagans* (Blackb.).
- 5- 4. Not so.
- 6-11. Upper surface having a distinctly mottled or spotted appearance.
- 7- 8. Explanate pronotal margins reflexed, abdominal segments spotted (2-4-4-4-2) with black *maculiventris*, n. sp.
- 8- 7. Not so.
- 9-10. Wider, larger, 6-9 mm. *variegata* (Cart.) (= *tigrina* (Cart.)).
- 10- 9. Narrower, smaller, 3.25-4 mm. *picta*, n. sp.
- 11- 6. Upper surface not having a mottled or spotted appearance.
- 12-17. Without trace of costae on elytra.
- 13-14. Elytral punctures very fine *atkinsoni* (Waterh.).
- 14-13. Elytral punctures rather coarse, at least on the disc.
- 15-16. Elytral punctures uneven in size and distribution, size larger *dixonii*, n. sp.
- 16-15. Elytral punctures coarse and even, size smaller *infuscata*, n. sp.
- 17-12. At least three costae discernible on each elytron.
- 18-23. Size smaller, less than 4.5 mm.
- 19-20. Pronotum usually dark with pale lateral and apical margins, form elongate ovate *variabilis*, n. sp.
- 20-19. Colour of upper surface uniform, form elongate sub-parallel.
- 21-22. Pronotum less convex, subobsoletely punctate *minor*, n. sp.
- 22-21. Pronotum more convex, finely but visibly punctate *elongata*, n. sp.
- 23-18. Size larger, more than 4.5 mm.
- 24-25. Mesosternal cavity twice as long as wide (length of insect 8 mm.) *spencei*, n. sp.
- 25-24. Mesosternal cavity not longer than wide (smaller).
- 26-27. Rather wider, red with centre of pronotum near base and disc of each elytron infuscated *cincta* (Blackb.).
- 27-26. Narrower, colour of pronotum and elytra uniform.
- 28-29. Elytra more elongate by comparison with pronotum, mesosternal cavity as wide as long *elstoni*, n. sp.
- 29-28. Elytra less elongate by comparison with pronotum, mesosternal cavity transverse.
- 30-31. Elytral punctures fine, eyes more prominent *orientalis*, n. sp.
- 31-30. Elytral punctures rather coarse, eyes less prominent *occidentalis*, n. sp.
- 32- 1. Apex of pronotum subtruncate, prosternal process acuminate, elytral intervals between costae convex *costellifera* (Cart.).

This key should be used with caution and as a guide to the descriptions, as there are probably still very similar species undescribed. It does not attempt to place the species in their natural order. They may, however, be provisionally grouped as follows:

A.—*cineta*, *spencei*, *olliffi*, *orientalis*, *occidentalis*, *elstoni*, *minor*, *elongata*, *picta*, *variabilis*, *montivagans*.

B.—*atkinsoni*, *dixonii*, *infusata*.

C.—*variegata*.

D.—*maculiventris*.

E.—*costellifera*.

D. and E. are aberrant.

PSEUDOMICROCARA MONTIVAGANS (Blackb.).

Blackburn, T., 1892, PROC. LINN. SOC. N.S.W., vi: 519 (*Elodes*).

Type in British Museum.

Type locality.—Victoria, alpine district.

Synonym: *Elodes montivagans* Blackburn, loc. cit.

NOTE.—This species must also be removed from *Elodes* for the reasons given under *P. cineta* (Blackb.). It is at once distinguished from all other species assigned to this genus by the contrast between the testaceous prothorax and the black elytra. On nearly all the specimens before me the scutellum is black and on the majority the head, with the exception of the mouth parts, also is black. The infuscation of the pronotum mentioned in the original description is due to the head showing through from beneath. This species has a very close superficial resemblance to the American *Cyphon collaris* Guer.

Distribution.—Victoria: Alpine district (Blackburn Coll.), Heathmont (Ringwood) (Pottinger and Dixon), Bayswater (Dixon); South Australia: Murray River, Myponga, Mt. Lofty Rn. (Elston); N.S.W.: Sydney (Spence), Illawarra, National Park (Bryant), Wallace Lake (Carter), Dorriggo (Heron), George's R. (Davidson), Orange (Armstrong); Western Australia: King George's Sound (Macleay Museum). Any specimens dated were taken either in October or November.

PSEUDOMICROCARA VARIEGATA (Cart.).

Carter, H. J., 1935, PROC. LINN. SOC. N.S.W., lx: 192 (*Elodes*).

Types in Coll. F. E. Wilson.

Type locality.—Warburton, Victoria.

Synonyms: *Elodes variegata* Cart., loc. cit.; *Elodes tigrina* Cart., loc. cit., 193, n. syn.

NOTE.—Mr. F. E. Wilson's paratype of *P. variegata* is before me, also a specimen taken by Dr. Nicholson at the same time as the types of *E. tigrina* which I believe to be this species and which is identical with the former. The only point at variance with the description is that the third antennal joint is much shorter than the following. Unfortunately the types of *E. tigrina* which should have been in the Macleay Museum seem to have been lost. In addition to the longitudinally carinate terminal abdominal segment in one sex (? ♀) the penultimate has a pronounced transverse brush of hairs. The original description omits to note two foveate depressions between the eyes. The head and pronotum are rugosely punctate, the antennae become progressively a little more slender in the female, the elytra are proportionately longer.

Distribution.—Victoria: Warburton, Millgrove, Belgrave (F.E.W.); N.S.W.: Dorriggo (Heron), Kosciusko (Nicholson), Narrabeen (Musgrave); Tasmania.

PSEUDOMICROCARA COSTELLIFERA (Cart.). Fig. 9.

Carter, H. J., 1935, PROC. LINN. SOC. N.S.W., lx: 192 (*Elodes*).

Type in Coll. F. E. Wilson.

Type locality.—Warburton, Victoria.

Synonyms: Carter, loc. cit., *Elodes costellifera*.

NOTE.—Types examined. This species also has labial palpi simple etc., and therefore cannot remain in *Elodes*. It is here placed in *Pseudomicrocara* with considerable hesitation pending more material for examination, as it is at least aberrant in its acuminate prosternal process and subtruncate pronotum.



Gunther, Carl E. M. 1953. "Factors worth considering when making measurements of trombiculid larvae." *Proceedings of the Linnean Society of New South Wales* 78, 35–37.

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