

## SOME NEW EUCHARIDID PARASITES OF AUSTRALIAN ANTS.

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The material dealt with in the present paper was collected in Australia by Professor W. M. Wheeler during his sojourn there as leader of the Harvard Australian Expedition in 1931-32. The very rich ant fauna of Australia undoubtedly supports a large number of species of the chalcidoid family Eucharididae, as all the known forms are parasites of ants. So far, such a meagre series has been described from this region that it is not surprising to find all which were obtained by the Expedition to be undescribed.

Three genera, *Tricoryna*, *Schizaspidia* and *Eucharomorpha* are represented, each by a single species and these are described below. Several of the ant colonies in which the material was collected were heavily parasitized, containing numerous pupae in addition to adults.

### *Eucharomorpha* Girault.

Trans. Proc. R. Soc. Australia, vol. 37, p. 94 (1913).

Girault, Arch. Naturg. Abt. A, Heft. 6, p. 62 (1913).

Gahan and Fagan, Bull. U. S. Nat. Mus., No. 124 (1923).<sup>1</sup>

### *Eucharomorpha wheeleri* sp. nov. (fig. 1).

♀. Length 2.0-2.5 mm. Brilliant metallic blue-green, the head and parapsides strongly green, the mesonotum, mesopleura below, propodeum, base of legs and abdomen clearly blue. Antennae black, the scape and pedicel brown; legs whitish yellow on tips of femora and beyond, the coxae and most of femora metallic blue, trochanters and tips of tarsi brown. Wings slightly brownish, the veins dark brown. Sheaths of ovipositor whitish toward tips. Head very flat, three times as wide as thick; the eyes bare, very strongly protuberant, much

<sup>1</sup> There is some confusion concerning the type species. Girault's original description of the genus appeared in the Australian journal with *E. viridis* cited as type but some neotropical species described by him later were published in advance of his generic description. Gahan and Fagan cite one of these latter species as the genotype, stating that *E. viridis* was not originally included. This is obviously contrary to the intention of the author and is based simply on the more prompt printing of the German journal, as the characterization of "*Eucharomorpha* n. gen." is in the Australian periodical.

shorter than the malar space. Surface of head rugulose, the deep impression above the antennae more finely sculptured. Ocelli in a triangle; the posterior pair equidistant from the eye and from each other and two-thirds as far from the anterior one. Right and left mandible nearly symmetrical, each with three large teeth (Fig. 1, *a*). Antennae 11-jointed, not count-

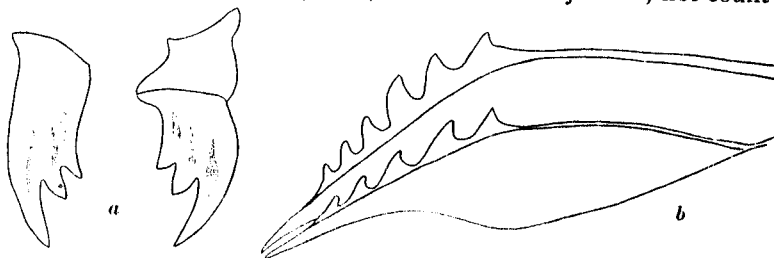


FIG. 1.—*Eucharomorpha wheeleri* sp. nov.

ing a ring-joint nor a very indistinct division of the club-joint; scape three times as long as wide, almost as long as the first three flagellar joints together; flagellar joints all very nearly equal in length, the first considerably more slender; club-joint nearly as long as the two preceding joints; pedicel oval, equal to the first flagellar joint. Mesonotum finely rugose, flat or slightly concave in front; notauli very deep, their sides strongly sloped so that the bottom forms a finely punctate line. Parapsides and axillae together forming a convex almost tuberculate, smooth and polished elevation. Scutellum strongly convex; with a smooth transverse furrow, behind which it is rugulose; anteriorly more or less longitudinally striate, with a small rounded polished space before the groove. Propodeum rugose, with a distinct median carina. Pleurae and coxae rugulose. Abdominal petiole very short, the abdomen practically sessile, rather broad; shining, but very shallowly roughened or reticulate on the surface. Ovipositor sheaths very stout, curved downwards, not attaining the tip of the abdomen; ovipositor (Fig. 1, *b*, seen in a specimen treated with caustic potash) broad, curled upwards on each side which bears a series of about six saw-like, slightly recurved teeth that become very minute before the tip which is prolonged as a slender dart on each side in line with the row of teeth. Wings with the radial vein almost as long as the marginal, postmarginal one-third as long; stigmal very short, tuberculate.

Type and numerous paratypes, all females, most of which had not yet emerged from the pupal envelope.

This species was taken with *Pheidole proxima* Mayr at Wentworth Falls (altitude 2800 ft.), New South Wales. The material came from two nests, collected on successive days, December 22 and 23, 1931, by Professor Wheeler.

This species is very similar to *E. tridentata* Girault from Queensland, but differs in several characters, so after a careful comparison with the original description there seems to be no doubt that the present form is new. The antennae have the second funicular joint fully as long as the first which is not longer than the pedicel. The color of the head and thorax is bright green, not purple and the scutellum is distinctly striated in front of the transverse groove, especially on the sides.

*Tricoryna* Kirby.

Journ. Linn. Soc., Zool., vol. 20, p. 29 (1886).

*Tricoryna chalcopneræ* sp. nov. (Fig. 2).

♀. Length 3.4–3.6 mm. Head and thorax black, with a slight, but distinct dark greenish-blue sheen, abdomen dark brown; antennae brown, somewhat lighter apically and with the scape and pedicel yellowish; legs brown, the front tibiae pale yellowish; tarsi pale beyond the first joint. Wings hyaline. Head very coarsely rugose, its sculpture becoming more or less transversely strigose on the sides of the face below; clypeus polished, with large deep foveae above; a small,

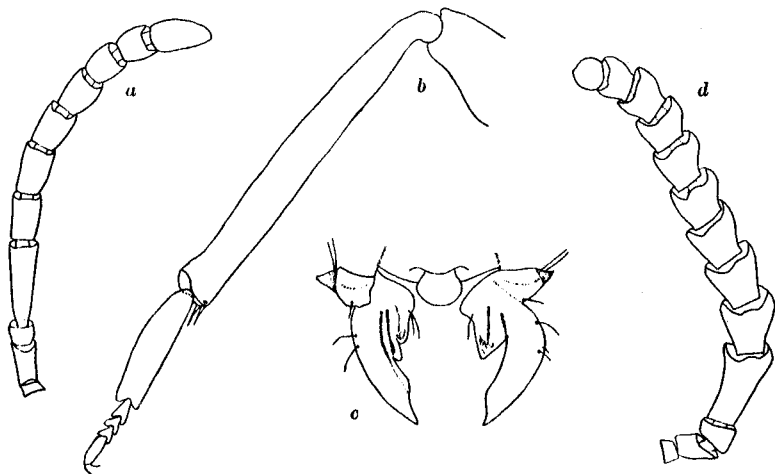


FIG. 2.—*Tricoryna chalcopneræ* sp. nov.

rounded area just below the base of the antennae also polished. Head seen from above nearly four times as wide as thick; ocelli forming a curved line, the posterior ones equidistant from the eye margin and from each other. Eyes sparsely clothed with stiff hairs; somewhat shorter than the malar space which is coarsely vertically striate. Left mandible (Fig. 2, c) with one large tooth within at base; right mandible with two smaller teeth at base. Antennae (Fig. 2, a) 10-jointed (or 12-jointed if the last indistinctly divided joint is counted as three); scape is very short, about half as long as the first flagellar joint which is three times as long as thick; pedicel shorter than wide; second flagellar joint less than twice as long as thick, two-thirds as long as the first; following slowly growing shorter, but all slightly wider than long. Mesonotum with a slight median impression in front; its surface irregularly striate, more or less transversely so in front, obliquely so on the sides behind and longitudinally so medially behind; the oblique striae crossing the notauli and extending on to the parapsides, except that the parapsides are smooth and highly convex centrally over a large area. Axillae rugose, not much shortened where they meet medially. Scutellum longitudinally rugose-striate, not much longer than wide, with a bluntly rounded apex which projects only slightly beyond the post-scutellum in profile view. Propodeum longitudinally striate behind, obliquely so on the sides; pleura rugose, the mesopleura horizontally striate behind. Abdominal petiole as long as the propodeum, about one-fourth longer than the hind coxa; smooth, with a few striae at the base. Gaster smooth and shining first tergite occupying one-third its length, second short; third and fourth equal, longer. Wings with very minute hairs; marginal vein three-fifths as long as the submarginal; post-marginal long, two-thirds as long as the marginal; stigmal vein very short, perpendicular to the costal margin.

♂. Differs from the female in having the antennae 12-jointed with the last three joints as strongly separated as the others (Fig. 2, d); first flagellar joint very much thickened apically, the following joints similarly widened and scarcely wider than long, fifth and following flagellar joints clearly moniliform and growing gradually smaller to tip of antenna; entire flagellum densely clothed with very minute bent or hooked hairs. First joint of hind tarsi as broad as the tibia and one-third as long (Fig. 2, b); abdominal petiole longer, nearly one-half longer than the hind coxa; stigmal vein present only as a triangular thickening at apex of marginal vein.

This species was taken with *Chalcoponera metallica* F. Smith, var. *crustulata* Emery at the Creel on Mt. Kosciusko, New South

Wales (altitude 3000 ft.). The material came from four different nests, collected by Professor Wheeler on December 14 and 15, 1931.

This species differs from *T. iello* Walker, the type of the genus, by having the antennae of the male 12-jointed. It differs likewise from *T. esthottomae* Girault, known from the female, by having ten, not nine, antennal joints in that sex, and from *T. subsalebrosa* Girault by having twelve, not ten, joints in the male. It does not appear to be identical with any of Walker's species of *Eucharis* described from Australia, but of course the generic position of most of these species cannot be determined from Walker's descriptions.

There are a number of pupae among the brood contained in the vials, some entirely uncolored and others nearly mature. The pupa shows no striking characteristics, except that the margins of the abdominal tergites are distinctly raised and carinate, the edge of the second tergite projecting as a distinct, sharp tooth on each side not far from the median line.

#### *Schizaspidia* Westwood

Proc. Zool. Soc. London, vol. 3, p. 69 (1835).

Four species of *Schizaspidia* have been described from Australia, but it is doubtful if all are congeneric. In the type of the genus, *S. furcifera* Westw. from India, the antennae (undoubtedly of the female) are strongly serrate, with the flagellar joints triangularly produced at their tips just as in *S. calomyrmecis* described below. Also in *S. vicina* Masi from Formosa of which both sexes are known the female has serrate and the male flabellate antennae. On the other hand certain species with simple antennae in the male have been placed in *Schizaspidia*, e.g., *S. tenuicornis* Ashm. and *S. manipurensis* Clausen.

The Australian forms at present referred to the genus may be distinguished by the following key:

#### KEY TO THE AUSTRALIAN SPECIES OF SCHIZASPIDIA.

- |    |  |                               |
|----|--|-------------------------------|
| 1. | Thorax uniformly bronzed or metallic .....   | 2                             |
|    | Thorax brownish yellow, with dark, metallic maculations; antennae 12-jointed ..... |                               |
|    |  | <i>S. quinqueguttata</i> Gir. |
| 2. | Thorax green or golden bronze .....  | 3                             |
|    | Thorax black or very dark bronze .....   | 4                             |
| 3. | Abdomen with a yellowish stripe above; blackish green on the sides .....           | <i>S. murrayi</i> Kirby       |
|    | Abdomen uniformly colored, bronze or black .....                                   | <i>S. doddi</i> Bingham       |

4. Apical, constricted portion of scutellum as long as the basal portion, longitudinally striated; flagellum of antennae apically thickened, but not serrate . . . . . *S. rudis* Westwood  
 Apical portion of scutellum much shorter than the basal portion, rugose-punctate . . . . . *S. calomyrmecis* sp. nov.

**Schizaspidia calomyrmecis** sp. nov.

♀. Length 5.0 mm. Head and thorax black, with purplish or coppery bronzy reflections; gaster brown, the abdominal petiole pale yellowish; antennae piceous, lighter brown at tips; legs yellowish, the coxae black and the femora darkened at the base; wings hyaline. Head circularly striate; the striae more or less vertical on the front, except that the supra-antennal depression is transversely striate; striae of face more or less transverse, those on the median convex area much finer and the clypeus entirely smooth and polished; striae behind the eyes following the contour of the eye-margin; intra-ocellar space rugose. Antennae (Fig. 3) 12-jointed; scape short,

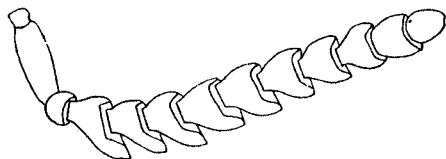


FIG. 3.—*Schizaspidia calomyrmecis* sp. nov.

about twice as long as thick, not reaching to the anterior ocellus; pedicel small, globular; first to eighth flagellar joints of about equal length, each prolonged at the apical corner, so that the apical width is greater than the length, the prolongations weaker on the seventh and eighth joints; ninth flagellar joint oval; tenth oval and much smaller. Thorax above and scutellum very coarsely and almost confluent punctate with a smoother, finely rugulose area on the disk of each of the parapsides. Notauli deep, crenate, straight, well separated behind. Base of scutellum with a crenate line; its apex bearing a forked process less than one-half the length of the scutellum, the prongs diverging, sharply rounded at tips and without tooth inwardly before apex. Pleura irregularly punctate-reticulate, the mesopleura above more or less obliquely striate. Declivity of propodeum finely, shallowly reticulate except toward the sides where it is coarsely reticulate, the lateral edge defined by a carina that terminates above in a tooth-like projection. Abdominal petiole short, as long as the hind coxa and trochanter combined. Abdomen shining although distinctly sparsely punctulate; first to fourth tergites sharply incised medially on their posterior edges.

Type and one other female specimen from Meekatharra, West Australia, September 23, 1931 (W. M. Wheeler). Both specimens were taken in a nest of *Calomyrmex purpureus* Mayr, still enclosed in the cocoon, although fully developed. After removal from the cocoon the wings were seen to be partially unexpanded and the color of the abdomen a rather light brown, very pale on the sutures, indicating I feel sure, a fuscous color in fully matured specimens. Although a number of cocoons are included in the vial, no other parasites are present, and no trace of the preparatory stages is to be found.

This species may be distinguished from the other Australian species as indicated in the key.