

THREE NEW SPECIES OF BRACONIDAE FROM INDIA

BY B. R. SUBBA RAO, F.A.Sc. AND A. K. SHARMA

(Division of Entomology, Indian Agricultural Research Institute, New Delhi)

Received June 8, 1959

INTRODUCTION

THE hymenopterous family Braconidae includes many genera and species which are parasitic on various crop pests and are, therefore, of interest to the economic entomologist. However, the taxonomy of the Indian forms of Braconidae has not been intensively studied so far, apart from the excellent contributions on particular groups made by Nees, Wilkinson, Ramakrishna Ayyar and Bhatnagar. The braconid fauna of this sub-continent is rich and varied and its study should prove to be a rewarding one.

The present contribution contains descriptions of three new species belonging to three braconid genera: *Aphidius* (*Lysiphlebus*) *delhiensis* n. sp., *Microgaster* *adisuræ* n. sp. and *Philomacroploea* *cameroni* n. sp.

Aphidius (*Lysiphlebus*) *delhiensis* n. sp.

Female.—Length 1.40–1.60 mm. Head 0.30–0.35 mm. wide, facial line 0.19–0.23 mm., clypeoantennal line 0.07–0.08 mm., interocular line 0.13–0.19 mm., transfacial line 0.11–0.17 mm. Antennæ 13 segmented (none of the 44 females examined had less than 13), first flagellar segment 0.085–0.10 mm., second flagellar segment 0.081–0.090 mm.

Thorax smooth, 0.35–0.44 mm. wide at the tegulæ; notaulices weakly developed anteriorly. Stigma 0.250–0.285 mm. long, 0.71–0.89 mm. wide; metacarpus 0.214–0.250 mm.; first abscissa of radius 0.089–0.125 mm.; second abscissa of radius 0.071–0.09 mm.; cubital cross-vein 0.053–0.063 mm.

Petiole 0.018–0.0214 mm. long, 0.09 mm. wide at the spiracles. Genitalia illustrated on Fig. 1, 3.

Coloration.—Head, especially eyes, deep-brown; mouth parts pale-yellow; antennæ brown, basal portion lighter than apical. Thorax brown, prothorax almost as dark-brown as head; pleural region lighter than dorsum.

Wings hyaline, veins and stigma brown. Petiole and first abdominal segment testaceous or yellowish, rest of abdomen dark-brown. Coxæ and femora testaceous, tibiae and tarsi brownish.

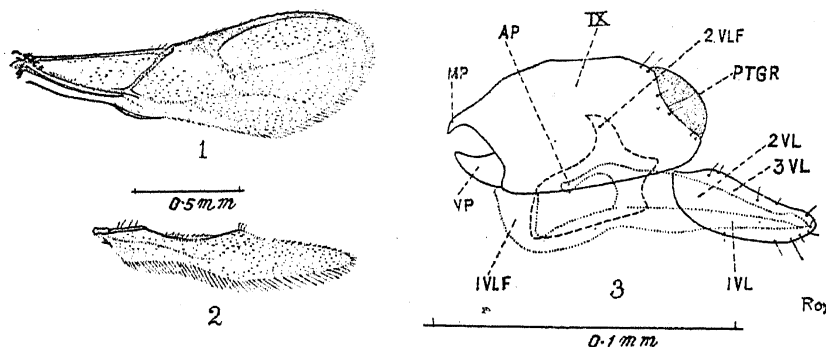


FIG. 1. 1. Forewing of *Lysiphlebus delhiensis* n. sp., ♀. 2. Hindwing of *Lysiphlebus delhiensis* n. sp., ♀. 3. Genitalia of *Lysiphlebus delhiensis* n. sp., ♀. AP, Anterior prong of the second valvula; MP, Median prong of the ninth abdominal tergite; IX, Ninth abdominal tergite; PTGR, Proctiger; 1 VL, 2 VL, 3 VL, First, second and third valvulae; 1 VLF, 2 VLF, First and second valvifer; VP, Ventral prong of the ninth abdominal tergite.

Male.—Antenna 14–15 segmented, majority with 15 segments (45 out of 55 specimens examined); two had 14 segments in one antenna and 15 segments in the other.

Coloration.—Similar to that of the female except that the pleural region of the thorax is generally darker.

Host.—*Longiunguis sacchari* (Zehnt.) on sugarcane.

Locality.—Indian Agricultural Research Institute, New Delhi. Coll.: A. K. Sharma, October–November 1957.

This species has been described from a large number of individuals obtained from parasitised aphids collected from the sugarcane plants. The holotype female and 4 paratypes (2 males, 2 females), all on card-strips, are deposited in the National Pusa Insect Collection of I.A.R.I., while certain paratypes are in the possession of the authors.

Of the known species of the subgenus *Lysiphlebus* Foerster, this species comes closest to *testaceipes* (Cresson) from which it differs in various characters, e.g., head width, venation, the female genitalia and coloration.

Microgaster adisura n. sp.

Female.—Head somewhat punctate, especially on the vertex; distance between posterior ocelli slightly less than the distance between the ocellus and the eye of the same side. Antennæ 18 segmented, longer than the entire body.

Thorax weakly punctate, mesopleural sulcus shallow, short, broad. Areola practically three-sided, breadth of stigma greater than the length of the first abscissa of the radius; stigma longer than the metacarp (Fig. 2, 1). Hind coxa smooth; shorter hind tibial spur 0.117 mm., longer hind tibial spur 0.135 mm.; basal segment of hind tarsus 3.303 mm. Propodeum markedly reticulate, without a median longitudinal carinae (Fig. 2, 2).

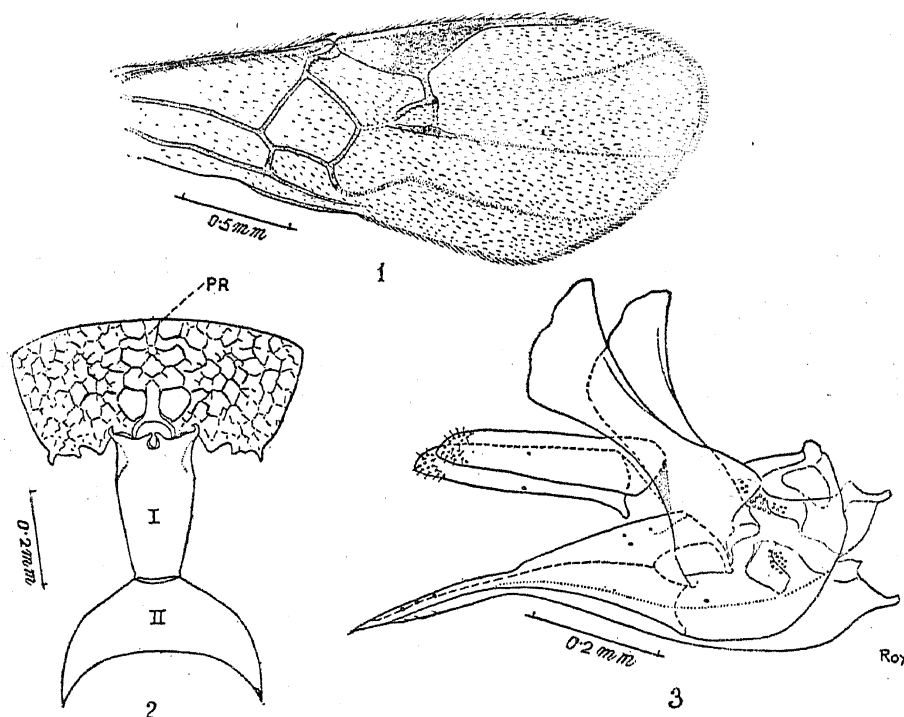


FIG. 2. 1. Forewing of *Microgaster adisuræ* n. sp., ♀. 2. Propodeum, first and second abdominal tergites of *Microgaster adisuræ* n. sp., ♀. 3. Genitalia of *Microgaster adisuræ* n. sp., ♀. I, II., First and second abdominal tergites; PR, Propodeum.

First tergite of the abdomen smooth, about twice as long as broad; second tergite about $\frac{1}{3}$ rd as long as its breadth at the posterior corners (Fig. 2, 2). Ovipositor sheaths without paired processes (Fig. 2, 2).

Coloration.—Head, thorax dark; propodeum dark; basal tergites and sternites of abdomen testaceous yellow, rest dark but slightly lighter than the thorax; hind coxæ dark above, somewhat lighter below; hind tibiae brownish. Wings slightly infumated in the apical half, vein deep-brown, stigma dark in the apical $\frac{2}{3}$ rd, the basal $\frac{1}{3}$ rd hyaline.

Male.—Antennæ 20 segmented; coloration similar to that of female except in being slightly darker generally and in having the abdomen entirely dark.

The female genitalia of this species are particularly interesting and serve as its most distinctive character.

Host.—Caterpillars of *Adisura atkinsoni* Moore, the lab-lab pod borer collected at Bangalore, South India, by B. R. Subba Rao, 1957.

This species is being described from a holotype female and an allotype male, deposited in the National Pusa Insect Collection, I.A.R.I., and a male and a female paratype each dissected on slides, in possession of the authors.

A perusal of literature shows that this is the first record of a species of *Microgaster* parasitising *Adisura atkinsoni* Moore. Further, the characters of this species are such that it is difficult to compare it with any known species of *Microgaster*.

Philomacrop læa Cameron

Ashmead (1900) erected the genus *Chelonogastra* with *C. kæbeli* Ashm. from Japan as its single representative. The description of *kæbeli* as well as of another species *pleuralis* was, however, published by Ashmead only in 1906.

In 1906, Cameron established the genus *Philomacrop læa* and described a single species under it, viz., *P. basimacula* from Ceylon.

Ramakrishna Ayyar (1928) synonymised *Chelonogastra* Ashmead with *Philomacrop læa* Cameron, retaining *Chelonogastra* for reasons of priority.

However, two of Ashmead's paratypes in the U.S. National Museum and the genotype of Cameron's *Philomacrop læa* in the British Museum were subsequently examined by Waterston (1929), who came to the conclusion that Ramakrishna Ayyar's view was incorrect and that *Chelonogastra* and *Philomacrop læa* are distinctly different genera, with clearly distinguishable characters.

Recently the authors had the opportunity of examining certain museum specimens which appeared to belong to *Chelonogastra*. However, a more careful examination revealed that these specimens really belong to *Philomacrop læa* and that the distinguishing characters of this genus as enunciated by Waterston were quite sound, notwithstanding the fact that he had examined only a single specimen, i.e., the genotype of Cameron's. But the specimens examined by us do not appear to be the same as *P. basimacula* Cam., and apparently belong to a new species, which is being described as follows:—

Philomacroplæa cameroni n. sp.

Female.—About 3.5–3.60 mm. Head slightly narrower than the thorax, twice as broad as long. Antennæ longer than the head and thorax combined, 23 segmented. Eyes large, non-pubescent; ocelli arranged in an equilateral triangle, ocellar region prominently raised.

Thorax as shown in Fig. 3, 1 propodeum with a very faint, low, median longitudinal keel or carina indicated only anteriorly 2nd abscissa of the radius almost equal to the 1st transverse cubital vein (Fig. 3, 1).

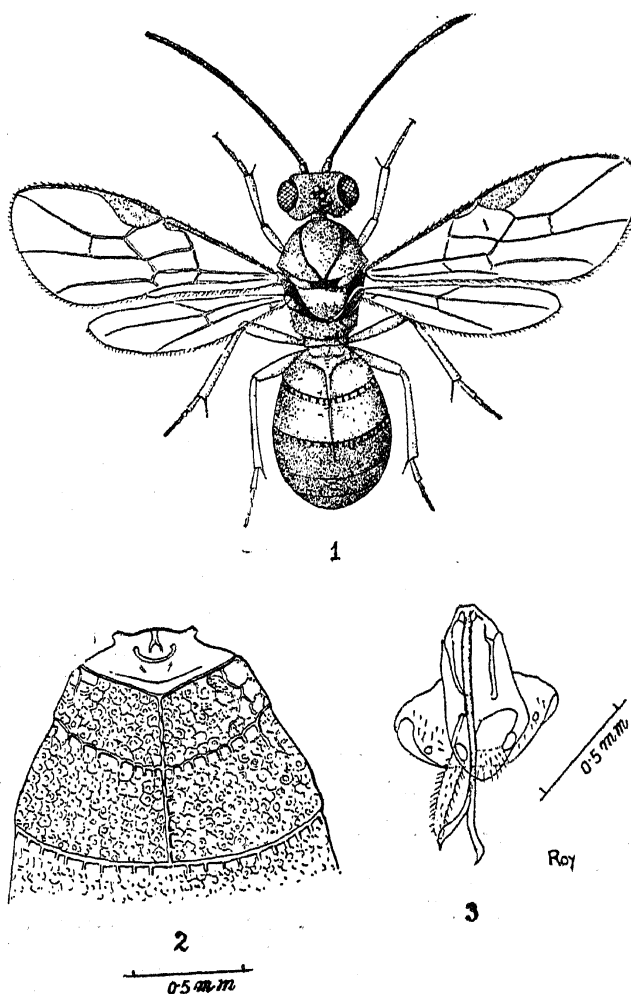


FIG. 3. *Philomacroplæa cameroni* n. sp., ♀. 2. First, second and third abdominal tergites of *Philomacroplæa cameroni* n. sp., ♀. 3. Genitalia of *Philomacroplæa cameroni* n. sp., ♀.

First tergite of the broad, rounded abdomen, depressed, with a strong ridge at the posterior margin. Second and third tergites with a well marked median longitudinal keel and umbilicate puncturation; fourth, fifth and sixth segments without median keel but possessing umbilicate puncturation.

Posterior margins of the second and third segments provided with blunt prolongations, the longitudinal carina of these segments also gives off similar projections (Fig. 3, 2). Ovipositor short, about $1/5$ the length of the abdomen (Fig. 3, 3).

Entire body covered with a fine dense pubescence except for the bare eyes; a tuft of especially long pubescence present in incised middle of the last abdominal segment whence issues the ovipositor.

Coloration.—Antennæ, head and thorax brown, eyes and ocellar area deep-brown. First abdominal segment completely dark-brown, middle of second and third segments much lighter, lateral margins dark-brown; fourth, fifth and sixth segments entirely dark-brown; ovipositor testaceous.

Male.—Essentially similar to the female, but not so stoutly built. Antennæ 26 segmented, more slender. Abdomen less dark-brown than in the female.

Described from a holotype female and an allotype male and 3 paratypes (1 male and 2 females).

Host.—"Pupæ of butterfly on *Calotropis*," Gwalior, 1956 (presumably *Danais* sp.).

This species differs from the only other described species,* of the genus, viz., *Philomacrop læa basimacula* Cameron in the following characters: the weakly developed median carina of the propodeum, the depressed first tergite of the abdomen, the coloration of the abdomen and the peculiar prolongations of the posterior margins of the second and third segments.

ACKNOWLEDGEMENTS

The authors are thankful to Dr. E. S. Narayanan, Head of the Division of Entomology, Indian Agricultural Research Institute, for his constant help and encouragement. They are indebted to Dr. C. F. W. Muesebeck of the U.S. National Museum, Washington, for his very generous help by supplying photostatic copies of the original descriptions of certain genera like *Chelonogotra* Ashmead, *Monocoila* Roman and *Ectemnoplax* Enderlein.

* Ramakrishna Ayyar (1928) described a species *Chelonogotra trifasciata* which might have been a species of *Philomacrop læa*. However, the description—as the author himself states—was only a provisional one and rather incomplete; no figures or diagrams were given, either. Even then, the coloration was quite different especially in the presence of three dark stripes on the mesothorax.

REFERENCES

- Ashmead, W. H. .. *Proc. U.S. Nat. Mus.*, 1900, **23**, 137.
.. *Ibid.*, 1906, **30**, 195-96.
- Cameron, P. .. *Spolia zeylanica*, 1905-1906, **3**, 67-68.
- Smith, C. F. .. *The Aphidiinae of North America*, Ohio Univ. Press, 1944.
- Ramakrishna Ayyar, T. V. .. *Mem. Dept. Agr. Ind.*, 1928, **10** (3), 52-53.
- Waterston, J. .. *Proc. ent. Soc. Wash.*, 1929, **31**, 167-68.
- Wilkinson, D. S. .. *Trans. ent. Soc. London*, 1929, **77**, 99-123.