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Australasian species of the genus Jassidophaga Aczél (Pipunculidae, Diptera)

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Abstract

Of the genus Jassidophaga Aczél, 1939, *a new species and a new subspecies from the Australasian region are described:* J. flavidipes *sp. n. from Australia, and* J. japonica melanosa *subsp. n. from Papua New Guinea and Australia. These are the first records of this genus from the Australasian region. Their relationship to other* Jassidophaga *spp. is discussed.*

Introduction

Pipunculidae (Diptera) are usually small, inconspicuous flies closely related to hoverflies (Syrphidae). They can be differentiated from the latter by differences in the wing venation (discal cell open and vena spuria lacking).

Jassidophaga Aczél is considered by several authors (Hardy, 1975; Morakote & Hirashima, 1990) as a subgenus of *Verrallia* or as a synonym of the latter. It is treated here as a separate genus, based on a cladistic analysis of the higher taxa of Pipunculidae (see Rafael & De Meyer, in prep). It can be differentiated from *Verrallia* by the absence of an appendix in vein M1+2 (present in *Verrallia*) and a wart present on the front femora in at least one of the sexes (warts absent on all femora in *Verrallia*). Together with *Chalarus*, *Jassidophaga* and *Verrallia* are considered as more plesiomorphic genera within the Pipunculidae, and are grouped under the subfamily Chalarinae. For a further discussion on the phylogenetic position of *Jassidophaga* we refer to Rafael & De Meyer (in prep).

So far only 13 *Jassidophaga* species are reported worldwide. It seems to be a mainly Holarctic genus with 8 species reported from the Nearctic and Palaearctic region. In addition 5 Oriental species are described (including 3 from China). No species are reported from the Australasian and/or Oceanian regions (Hardy, 1989).

During their larval stage, Pipunculidae are known as parasitoids from Auchenorrhyncha (Homoptera). From breeding results of Holarctic species, *Jassidophaga* seems to be restricted to Cercopidae (Waloff & Jervis, 1987; Freytag, 1985).

This study is based on material kindly put at our disposal by the Bishop

Museum (BPBM) at Honolulu, Hawaii and the Australian Museum at Sydney, Australia (AMS), by courtesy of Dr. N. EVENHUIS and Dr. D. BICKEL respectively.

Jassidophaga flavidipes sp. n.

Description

Body length: 6.0 mm; wing length: 5.7 mm.

Female

Frons, upper half dark grey, gradually changing to silver-grey pubescent in lower third. Ocellar triangle with pair of long dark bristles. Face with long silver-grey pubescence. Antennae orange-yellow; third antennal segment obtuse ventrally; second antennal segment with numerous long yellow bristles below and brownish bristles dorsally.

Thorax black, humeri and notopleura yellowish brown with greyish dusting; moderately subshining; all bristles and pilosity black. Scutellum velvet black, with 6 long black bristles along apical margin. Pleura silver-grey. Halteres yellow.

Legs yellow, coxae and trochanters dark brown. Front and mid femora with distinct wart ventrally; posterodorsal row of dark bristles. Hind femora with anterodorsal row of yellow bristles, posterodorsal row of short dark bristly hairs. Tibiae yellow; no long bristles on anteromedian part of hind tibiae. Tarsi yellow; last tarsal segment dark. Claws about twice as long as last tarsal segment; pulvilli longer.

Wings. Third costal section slightly shorter than fourth section. Pterostigma yellow-brown, almost extending back to tip of Sc. Cross vein r-m situated near middle of discal cell.

Abdomen. First tergum dark grey; lateral fan with numerous yellow and few dark bristly hairs. Terga 2-5 velvet black, tergum 2 at posterior third greyish; terga 3-5 posterior margin narrowly greyish, posterolaterally more so. Tergum 6 subshining black, brownish dusted. Sterna brown, with numerous black short bristles.

Female terminalia (Fig. 1). Base short, sternum 7 yellow, tergum 7 brownish. Piercer yellow; very long, reaching till posterior margin of fourth sternum.

Male unknown.

Distribution: Australia

Material: holotype ♀ *Australia:* New South Wales, Mooney Mooney Ck., near Gosford, 18.i.1980, McAlpine & Day (AMS). Holotype returned to AMS.

Etymology: from the Latin '*flavus* (yellow), *pes* (leg)' and referring to the complete yellow legs.

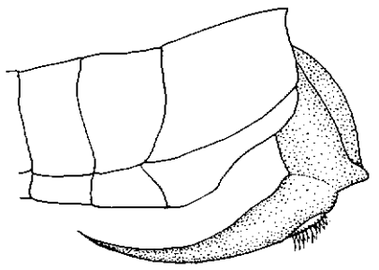

Fig. 1. Jassidophaga flavidipes sp.n., female ovipositor, lateral view.

Discussion: *J. flavidipes* is readily differentiated from other *Jassidophaga* species by the elongated ovipositor. It shows some morphological similarities to *Verrallia spectabilis* COLLIN, which is reported from the Eastern part of the U.S.S.R. and Japan (COLLIN, 1941; MORAKOTE & HIRASHIMA, 1990), like the elongated ovipositor, and the yellow legs. However the sixth abdominal segment is not as elongated as in *V. spectabilis*, and the shape of the ovipositor is different. In addition it shows the characteristics of *Jassidophaga* spp. (absence of appendix in vein M1+2, and distinct wart on four front femora).

Jassidophaga japonica japonica (MORAKOTE, 1990)

Verrallia japonica MORAKOTE, 1990: 140-141.

This species is originally described from Japanese specimens (type locality: Honshu, Iwate Pref., Kawaranobo, Mt Hayachine). The specimens from Papua New Guinea and Australia show the same male genital characteristics but differ in a few other morphological aspect (see discussion below) and are here described as a new subspecies.

Jassidophaga japonica melanosa subsp. n.

Description.

Body length 3.7-4.0 mm; wing length: 3.8-4.0 mm.

Male.

Frons, upper part dull black; lower part silver-grey pubescent. Ocellar triangle with pair of long black bristles. Face silver-grey pubescent. Antennae dark brown; third antennal segment rounded below; second antennal segment with numerous dark bristles.

Thorax velvet black, all bristles and pilosity dark. Scutellum with 4 long black bristles along apical margin. Pleura brownish. Halteres light brown.

Legs brown, knees narrowly yellow. Front and mid femora with wart ventrally; posterodorsal row of long dark bristles. Hind femora with slight trace of wart ventrally; anterodorsal row of long dark and posterodorsal of short dark bristles. Hind tibiae with row of long dark bristles anteriorly. Pulvilli and claws slightly longer than last tarsal segment.

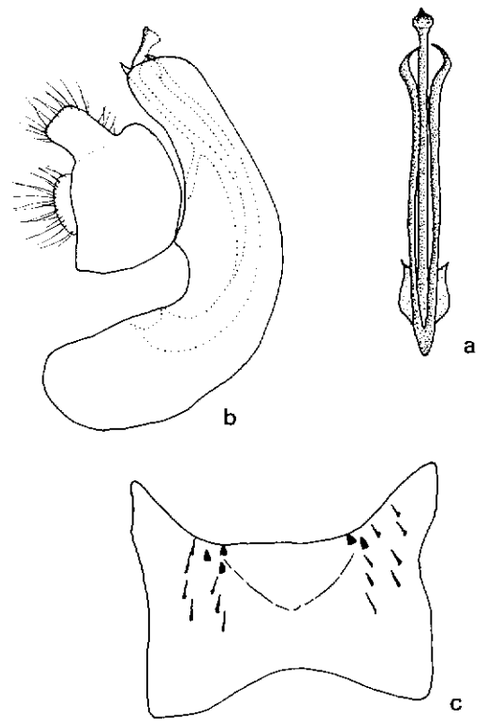

Fig. 2. Jassidophaga japonica melanosa subsp.n., male genitalia: a, aedeagus, dorsal view; b, hypopygium, lateral view; c, abdominal sternum 5, ventral view.

Wings brownish tinged. Third costal section 1.5 - 2 times longer than fourth section. Pterostigma brownish, almost reaching back to tip of Sc. Cross-vein r-m placed just before middle of discal cell.

Abdomen completely velvet black; viewed from behind dusting appears to be brownish; posterolaterally greyish dusted; all pilosity black. Sterna brownish, with short black bristles. Sternum 5 (Fig. 2c) with pair of 1-3 short spines near posterior margin, furthermore with several short bristles; indistinct apodema.

Male genitalia (Fig. 2a-b). Surstyli short, covered with long bristles. Parameres without any spines or appendages apically, as long as aedeagus. Aedeagus tubiform, apically with processus posteromedianly.

Female unknown.

Distribution: Papua New Guinea, Australia.

Etymology: from the Greeck 'melas' (meaning black) and referring to the complete black appearance of this subspecies. The name is also an allusion to the fact that this subspecies is found in the Australian or 'Melanesian' Region.

Material examined: holotype ♂ *Papua New Guinea:* Morobe district, Wau (1250m), 29.IX.1965 Sedlacek (Malaise trap) (BPBM). Paratypes: *Papua New Guinea*, same locality as holotype, 1♂ same date as holotype; 1♂, 14.IX.1965; 1♂, 29.VII. 1961, Sedlacek (BPBM). Other material: *Australia*, North Queensland, 'intake via Redlynch', 1♂, 30.XII.1966, McAlpine & Holloway (AMS). Holotype and two paratypes returned to BPBM, one paratype (ex BPBM) deposited in collections of the "Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussels".

Discussion. *Jassidophaga japonica melanosa* shows the same characteristics as *J. japonica japonica* (MORAKOTE, 1990). Both subspecies can be easily differentiated from other *Jassidophaga* species by the male genital characters (parameres without spines or appendages apically). This new subspecies differs from the Japanese subspecies by the third antennal segment being completely dark brown instead of brownish yellow on anterior half; the lateral fan of tergum 1 being completely black (in *japonica japonica* it is mixed with pale hairs anteriorly); hind femora without a distinct wart ventrally; and slightly smaller size.

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References

COLLIN, J. E., 1941. - Some Pipunculidae and Empididae from the Ussuri Region on the Far Eastern border of the U.S.S.R. (Diptera). *Proc. r. Ent. Soc. Lond.* (B), 10: 218-224.

FREYTAG, P. H., 1985. - The insect parasites of leafhoppers and related groups. In: NAULT, I. R. & RODRIGUEZ, J. G. (Eds) *The leafhoppers and planthoppers.* New York: 423-467.

HARDY, D. E., 1975. - Family Pipunculidae. In: *A Catalogue of Diptera of the Oriental Region 2.* University Press of Hawaii: 296-306.

HARDY, D. E., 1989. - 50. Family Pipunculidae. In: EVENHUIS, N. (Ed.) *Catalog of the Diptera of the Australasian and Oceanian Regions.* Bishop Museum Press, Honolulu: 433-436.

MORAKOTE, R. & HIRASHIMA, Y., 1990. - A Systematic Study of the Japanese Pipunculidae (Diptera) Part I. Introduction to the Family and the Genus *Verrallia* Mik. *J. Fac. Agr., Kyushu Univ.* 34: 123-159.

RAFAEL, J. A. & DE MEYER, M., in prep. - *Generic classification of the family Pipunculidae (Diptera): a cladistic analysis.*

WALOFF, N. & JERVIS, M. A., 1987. - Communities of Parasitoids associated with Leafhoppers and Planthoppers in Europe. *Adv. ecol. Res.* 17: 281-402.