Queensland signal flies of the *Duomyia ameniina* alliance (Diptera: Platystomatidae) and a related new species

David K. McAlpine

Four distinct species are now recognized that agree in key characters previously given for *Duomyia ameniina* McAlpine, including the new species *D. alfredi* sp. n., *D. semiclara* sp. n., and *D. rugula* sp. n. *Duomyia aliceae* sp. n., which shows a possible relationship to these species, is also described. These five species all live in the Queensland tropics; *D. ameniina* lives also in north-western Australia, Northern Territory, and southwards to north-eastern New South Wales; *D. rugula* lives also in Northern Territory.

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Introduction

The family Platystomatidae, recently called signal flies, has relatively great generic and specific diversity in the Australasian Region by comparison with that in northern continents. On present documentation, *Duomyia* Walker, 1849 is one of the largest genera in the Region, together with *Achias* Fabricius, 1805 and *Euprosopia* Macquart, 1847 (McAlpine 2001).

Unlike the other two genera, *Duomyia* appears to be endemic to Australia, living in all six states and the Australian Capital and Northern Territories. Most previously described *Duomyia* species were included in the key by McAlpine (1973), but many undescribed species exist in collections. I find it necessary to elucidate the present group of species before completing certain regional reviews.

Methods and terminology

Descriptive terminology is that used by me previously (McAlpine 1973) with some terms further explained by McAlpine (2007). Many terms can also be found in various standard works on Diptera. The terms clypeus (for the prelabrum) and post-pronotum (for the humeral callus) are avoided as they infer erroneous or inexact homologies. The term seta is avoided because of the diversity of its application in literature. The terms bristle, setula or hair, and molliseta are used for various categories of macrotrichium (socket-based trichoid hairs) as described by McAlpine (1973; 1991). The terminology for parts of the aedeagus is shown in Fig. 1.

Material has been collected by the following:


The following abbreviations refer to institutions holding collections:

AM Australian Museum, Sydney
ANIC Australian National Insect Collection, CSIRO, Canberra
QM Queensland Museum, South Brisbane
UQ University of Queensland Insect Collection, Brisbane

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Taxonomy

Duomyia Walker


Identification

Specimens may generally be identified to genus by means of keys given by McAlpine (1973; 2001). Most species of Duomyia, including all those treated in this paper, have: face with a flat-topped or medi ally slightly convex median carina with abrupt, steep sides; mesopleural (posterior anepisternal) bristle indistinguishable from surrounding hair-like setulae; squama (lower calypter) much larger than the axillary lobe (upper calypter); suprasquamal ridge with fine erect setulae; stem vein (basal part of vein 1 or vein R) without dorsal setulae basad of level of humeral crossvein; abdominal sternites 3 and 4 much reduced or absent; mid femur with a preapical posterior comb of long bristles. In life, the wings are normally fully flexed and sloped roof-wise as in cicas das (not flat and overlapping each other) when the fly is at rest. This position is also seen in some other platystomatid genera, e.g. Microepicausta Hendel, 1914, Rhytidortalis Hendel, 1914, and in some species of Euprosopia Macquart (author’s observations), also in at least one species of Euthyplatystoma Hendel, 1914 (photograph by P. Zborowski).

Notes

Adults of Duomyia species are often collected at insect lights, and some are attracted to fresh mammal dung. Some species feed at flowers in forested areas or in insect lights, and some are attracted to fresh mammal dung. Most species of Duomyia, including all those treated in this paper, have: face with a flat-topped or medi ally slightly convex median carina with abrupt, steep sides; mesopleural (posterior anepisternal) bristle indistinguishable from surrounding hair-like setulae; squama (lower calypter) much larger than the axillary lobe (upper calypter); suprasquamal ridge with fine erect setulae; stem vein (basal part of vein 1 or vein R) without dorsal setulae basad of level of humeral crossvein; abdominal sternites 3 and 4 much reduced or absent; mid femur with a preapical posterior comb of long bristles. In life, the wings are normally fully flexed and sloped roof-wise as in cicas das (not flat and overlapping each other) when the fly is at rest. This position is also seen in some other platystomatid genera, e.g. Microepicausta Hendel, 1914, Rhytidortalis Hendel, 1914, and in some species of Euprosopia Macquart (author’s observations), also in at least one species of Euthyplatystoma Hendel, 1914 (photograph by P. Zborowski).

Key to species of Duomyia ameniina alliance

1. Membrane of marginal, first basal, and discal cells of wing with substantial bare zones (Fig. 7); capitellum of halter yellow; vertical surface between supra-alar bristle and wing base densely grey-pruinose; tibiae largely tawny .................................................. 2
   - Marginal, first basal, and discal cells entirely microtrichose or almost so; capitellum dark brown; vertical surface below supra-alar bristle without pruinescence; tibiae black to dark brown ........................................... 3
2. Mesoscutum with broken bright green reflections; ventrolateral extension of face below cheek without strong rugosity; central region of cheek in front of oblique ridge without setiferous pits; abdominal tergite 5 with lateral zone of rather coarse, mainly erect white setulae on each side ........... semiclara
   - Mesoscutum with reflections at most faintly