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Two new species of Hybotidae from Bolivia with keys to the world species of *Megagrapha* (Diptera)

Abstract - A new species of *Megagrapha* Melander, 1927 and a new species of *Tachyempis* Melander, 1927 are described. The genus *Megagrapha* is reported from the Neotropical region for the first time. *Megagrapha boliviana* n. sp. is related to *M. pubescens* (Loew, 1862), from which it differs in having a yellow occipital region, a linear posterior margin along eye, in the shape of the flagellomere, 1 developed humeral seta, 2 notopleural setae, the different costal index of the wing, yellow first and second abdominal segments and other segments brown. *Tachyempis bettella* n. sp. is related to *T. gagatina* Melander, 1927, from which it differs in having the wing entirely infusate, yellow coxae, yellow fore and midlegs, hindleg with brown femur and apically brown tibia and the different costal index of the wing.

Riassunto - Due nuove specie di ditteri Hybotidae della Bolivia con chiave delle specie mondiali di *Megagrapha* (Diptera).

Vengono descritte una nuova specie di *Megagrapha* Melander, 1927 e una nuova specie di *Tachyempis* Melander, 1927 della Bolivia. Il genere *Megagrapha* è nuovo per la Regione Neotropica. *Megagrapha boliviana* n. sp. differisce dall'affine *M. pubescens* (Loew, 1862) per l'area occipitale gialla, il margine posteriore dell'occhio lineare, la struttura del flagellomero, la presenza di una setola omerale, 2 setole notopleurali, il primo e secondo segmento addominale gialli e gli altri bruni e per il differente indice costale dell'ala; *Tachyempis bettella* n. sp. differisce dall'affine *T. gagatina* Melander, 1927 per le ali uniformemente imbrunite, le anche gialle, le zampe anteriori e mediane interamente gialle, il femore posteriore bruno e la tibia posteriore con l'apice bruno, nonché per il differente indice costale dell'ala.

Key words: Diptera, Hybotidae, new species, Bolivia.

INTRODUCTION

Examining some specimens of Hybotidae collected in Bolivia by Dr Paolo Bettella (Museo de Historia Natural "Noel Kempff Mercador", Santa Cruz de la Sierra, Bolivia), I found some specimens belonging to the following two new species.

Megagrapha boliviana n. sp.

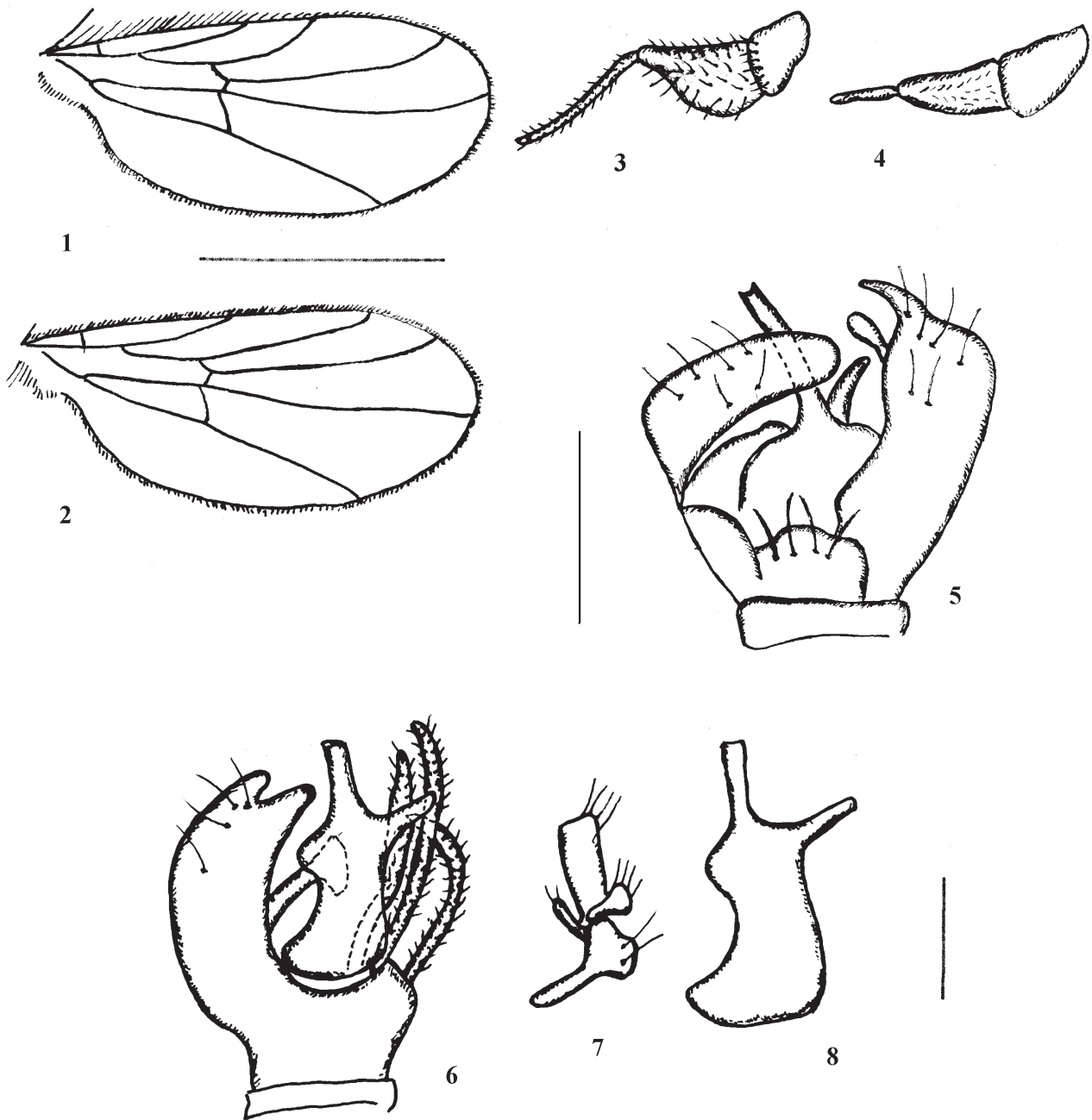
TYPE MATERIAL. Holotype ♂ from Bolivia, Dep. S. Cruz, Huasa Canada, 5.II.1989, collected by Dr. Paolo Bettella (Holotype is micropinned dorsally. Abdomen and terminalia of the holotype in a microvial pinned under the specimen. The holotype is deposited in the collection of the Museo di Storia Naturale, Venice.)

DESCRIPTION. Male. Body length 1.4 mm. Head: shining yellow, with yellow microtomentum and yellow all bristles; eyes touching beneath the antennae; posterior margin of eye linear; 2 ocellar setae; 2 vertical setae; 2 occipital setulae; gena with yellow, sparse hairs; antenna yellow, with yellow microtomentum; scape spherical, 1/3 time pedicel length; pedicel conical, 1 1/2 time flagellomere wide; flagellomere ovate, as long as scape and pedicel; arista

short, half as long as flagellomere; palpus yellow. Thorax: shining yellow, with sparse yellow short hairs and yellow all bristles; shining yellow pleura; 1 humeral seta; 1 prescutellar dorsocentral seta; 2 notopleural setae; 1 pre-alar seta; 1 well developed scutellar seta; wing yellowish, with darker yellow veins; costal index: 1:0.4:0.9:0.5; divergent R4+5 and M; haltere yellow; legs yellow, with sparse yellow hairs. Abdomen: 1 and 2 segments yellow, others brown. Male terminalia: right gonocoxite wide and recurved; left gonocoxite sinuous and acute to apex; right cercus long and concave to apex; left cercus half as long as right cercus and acute.

DERIVATIO NOMINIS. The new species has been collected in Bolivia, for that the attributed name.

COMPARATIVE REMARKS. *Megagrapha boliviana* n. sp. is similar to *M. pubescens* (Loew, 1862) in having a yellow wing and short arista. It differs from the latter species mainly in the following characters: yellow occipital region (brown in *M. pubescens*), posterior margin of eye linear (sinuous in *M. pubescens*), the narrow, ovate flagellomere (large and ovate in *M. pubescens*) (figs 3-4), 1 developed humeral seta



Figs 1-5. 1 - *Megagrapha boliviana* n. sp. (holotype): wing; 2 - *M. pubescens* (Loew, 1862): wing; 3 - *M. boliviana* n. sp. (holotype): antenna; 4 - *M. pubescens* (Loew, 1862): antenna; 5 - *M. boliviana* n. sp. (holotype): periandrium (scale bar: 0.2 mm).

Figs 6-8. *Tachyempis bettellai* n. sp. (holotype): 6 - epandrium in partial lateral view, with right gonocoxite; 7 - aedeagus with hypandrium; 8 - left gonocoxite (scale bar: 0.2 mm).

(lacking in *M. pubescens*), 2 notopleural setae (6 in *M. pubescens*), abdominal segments 1 and 2 yellow (entirely brown abdomen in *M. pubescens*), costal index: 1:0.4:0.9:0.5 (costal index: 1:1:0.5:0.6 in *M. pubescens*) (figs 1-2), and the morphology of the male terminalia (fig. 5).

***Tachyempis bettellai* n. sp.**

TYPE MATERIAL. Holotype ♂, 4 paratypes ♂♂, 3 paratypes ♀♀, from Bolivia, Dep. S.Cruz, Rio Seguayo, 21.III.1989, all collected by Dr Paolo Bettella (all types are micropinned dorsally. Abdomen and terminalia of the holotype in a microvial, pinned under the specimen. The holotype and paratypes are deposited in the collection of the Museo di Storia Naturale, Venice).

DESCRIPTION (male). Body length 2.3-2.4 mm. Head: shining black; posterior central area of occiput black, microtomentose; eyes touching beneath antennae; 1 ocellar and 2 vertical yellow setae; 5 yellow postocellar setulae; antenna with yellow scape and pedicel, flagellomere brown; arista brown, 6 times as long as scape, pedicel and flagellomere together; palpus yellow with 2 yellow apical setae; proboscis brown. Thorax: shining black with a brown microtomentose stripe along the notopleuron; prescutellar depression brown microtomentose; pleura and scutellum brown microtomentose; humeri

well developed; 2 yellow notopleural setae; 1 yellow postalar seta; 1 yellow dorsocentral prescutellar seta; 1 brown apical and 1 lateral scutellar setae; wing uniformly infusate; costal index: 1:1.4:1.2:0.2; halter yellow; coxae yellow; fore and midlegs yellow; hindleg with brown femur and apically brown tibia; tarsomere brown. Abdomen: shining black, with sparse small hairs. Male terminalia: right gonocoxite large and apically concave, fused with epandrium; left gonocoxite shorter than right gonocoxite, with two arms apically; hypandrium small, partially fused with aedeagus.

DERIVATIO NOMINIS. From the name of the collector of the new species, Dr Paolo Bettella.

COMPARATIVE REMARKS. *Tachyempis bettellai* n. sp. is similar to *Tachyempis gagatina* Melander, 1927 in having the mesonotum polished, the legs in large part yellow and a broad polished orbital stripe. It differs from the latter species mainly in the following characters: wing entirely infusate (base of wing pale in *T. gagatina*), coxae yellow (front coxae brown in *T. gagatina*), fore and midlegs yellow (front tibiae brown in *T. gagatina*), hindleg with femur brown and tibia apically brown (entirely brown hindleg in *T. gagatina*), costal index: 1:1.4:1.2:0.2 (costal index: 0.6:1:0.6:0.3 in *T. gagatina*), and the morphology of the male terminalia (figs 6-8).

KEY TO THE WORLD SPECIES OF *MEGAGRAPHIA* MELANDER, 1927

1. Wing patterned with at least a dark spot beyond basal cell.....*exquiseta* (Malloch, 1923)
- 1'. Wing clear.....2
2. Arista long, longer than 1st flagellomere.....3
- 2'. Arista short, as long as 1st flagellomere or shorter.....4
3. Second tarsomere of midleg elongate and broadened, almost as large as first tarsomere.....*platytarsis* Chillcott, 1983
- 3'. Second tarsomere of midleg narrow, shorter than first tarsomere.....*europaea* Papp & Foldvari, 2001
4. Six notopleural setae.....*pubescens* (Loew, 1862)
- 4'. Two notopleural setae.....*boliviana* n. sp.

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