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Two new species of the genus *Gymnomus* Loew from Asia (Diptera: Heleomyzidae)

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Abstract. *Gymnomus asiaticus* and *Gymnomus warchalowskii,* new to science, are described from Asia. Its relationships with other representatives of *Gymnomus* Loew are discussed.

Key words: entomology, taxonomy, morphology, new species, Diptera, Heleomyzidae, *Gymnomus*, Palaearctic Region.

INTRODUCTION

Heleomyzidae is a relatively small family of acalyptrate flies, comprising less than 500 species worldwide, and occurring in all zoogeographical regions of the world, except Antarctica. The larvae develop in a range of organic substrates, including carcasses, dung and fungi, although larval associations of many species remain unknown. The genus *Gymnomus* Loew, 1863 of the tribe Heleomyzini Bezzi, 1911 is widely distributed in Northern Hemisphere, especially in the Palaearctic where 14 species has been recorded (Papp & Woźnica 1993; Woźnica 2006). Among them 4 species were known from Asia only (Papp & Woźnica, 1993). In two species described below, as in other representatives of the genus, male terminalia are very similar with typical dististylus (Fig. 4, 8), with median lobe with a projecting process and black thorns grouped in the broad apex; its lateral lobe flattened, with some small thin setae and with black thornlets ventrally. The two newly described species are very similar to each other, especially with respect to the male terminalia.

MATERIAL AND METHODS

The material was borrowed from the Museum of Nature History in Vienna, Austria (NMW) and from the Zoological Institute of Russian Academy of Sciences, St. Petersburg, Russia (ZIRANSP). Details of male terminalia were drawn in the lateral view using China ink and light microscope. The genital parts were dissected and preserved in glycerin microvials. Bilaterally symmetrical structures in species descriptions are cited as singular. The terminology of the external structures and abbreviations of measurements follow those used by Woźnica (2003).

SYSTEMATICS

Gymnomus asiaticus n. sp.

(Figs 1-4)

Etymology

The species name refers to the area where this species occurs.

Diagnosis

Gymnomus asiaticus n. sp, with respect to the male genitalia, is similar to *G. martineki* Papp & Woźnica but differs from it by having brown first flagellomere, one dorsolateral bristle on hind femur and in chaetotaxy of postgonite (lower bristle is shorter than half of the length of upper one).

Description

Body length: 6.40 mm.

Head: Head ratio: 1.15. Eye rounded. A thin silver dusting area present around eye margins. Face yellowish-brown, slightly depressed below antennae. Palpus yellowish-brown. Frons yellowish-orange anteriorly and orange-brownish posteriorly. Ocellar triangle and vertex brownish. One big vibrissa present. The genal area silver dusted with genal setulae arranged in one to two irregular rows. Two well developed orbital bristles, the anterior shorter than the posterior one (0.6x). Scape and pedicel reddish. First flagellomere brown with small reddish basal part, arista blackish-brown, cheek-eye ratio about 0.60. Flag to cheek ratio ca. 0.60.

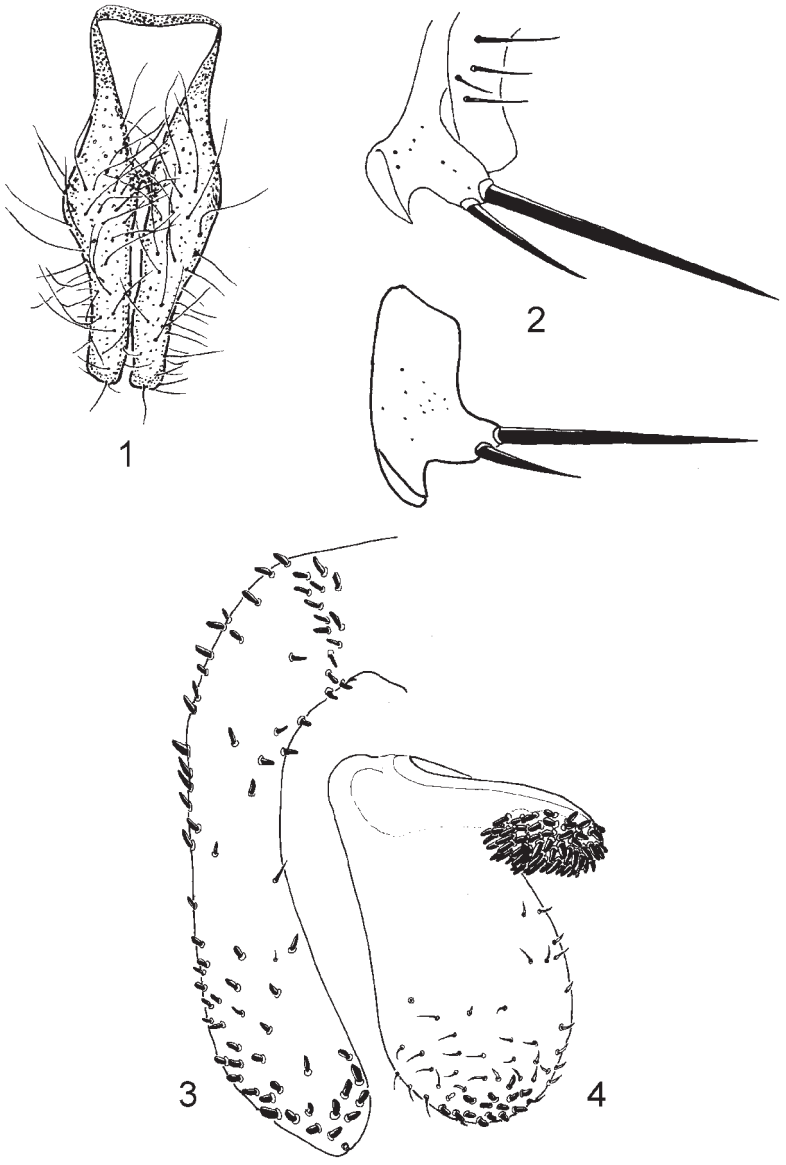
Thorax: Whole mesonotum grey, covered by short and thin hairs only. Scutellum and postscutellum similarly coloured. Pleural part grey. Dorsocentral bristles arise from small irregular dots. Anterior corner of anepisternum with some (14-15) blackish hairs.

Wing: Length: 7.05 mm, width: 2.40 mm. Membrane transparent, veins yellowish-brown, cross-veins not darkened. Costal spines well developed and distinctly longer than the width of costa. Medial vein ratio: 1.060. Halteres yellowish-brown.

Legs: yellowish-brown except greyish-brown fore leg. Fore femur with one row of anterodorsal and one row of posterodorsal bristles. Mid femur greyish-brown dusted, with few fat subapical bristles grouped in two rows outwardly. All femora, mid and

hind tibiae covered by long and thick hairs (ca. as long as width of the segments). Hind femur with 1 and thin dorsolateral bristle distally.

Abdomen: Tergites and sternites I-VI totally grey and covered with thick and long hairs and with strong black marginal bristles. Male genitalia: epandrium orange in colour, widened in the middle.



1-4. *Gymnomus asiaticus* n. sp., male terminalia: 1 – cerci, 2- postgonite laterally, 3 – basistylus laterally, 4– dististylus laterally

Male terminalia: Cerci (fig. 1) longer than wide, with much longer separated apical part and long haired. Postgonites (Fig. 2) short and high, with two bristles, the lower one shorter than the half of the length of very long upper one. Basistylus middle sized (fig. 3), slightly blunted distally and covered with black thorns ventrally. Dististylus (fig. 4) slightly elongated, widened and rounded apically, on the median lobe with a process projecting with black thorns (spines) grouped distally in narrow part, lateral lobe extended with several black thorns and setae, especially in the apical part.

Type Material

Holotype: ♂, Akmolinskiy u. (Kazakhstan), 26.VI.[1899], Balukleiskiy, *Gymnomus asiaticus* Woźnica, sp. nov. (ZIRANSP).

Biology and distribution

Unknown. Probably a steppes species, known from the type-locality only.

Remarks

The holotype specimen has broken left postpronotal and both left notopleural bristles. Scutellar bristles also missing. Wings are rolled up.

***Gymnomus warchalowskii* n. sp.**

(Figs 5-8)

Etymology

The species is dedicated to Prof. Dr. Andrzej Warchałowski, an outstanding coleopteran specialist, and the great tutor of many generations of entomologists.

Diagnosis

In general view *Gymnomus warchalowskii* n. sp. is closely related to *G. europaeus* Papp & Woźnica, but with respect to the male genitalia it resembles *G. martineki* Papp & Woźnica. It can be easily distinguished from *G. europaeus* by short haired abdominal segments and in the male genitalia, especially in the shape of dististylus, distally gradually curved and distinctly wider than in *europaeus*. It differs from *G. martineki* by having yellowish-orange postpronotum and scutellum in contrast to dark grey mesonotum and in the bristles length in the postgonite (the lower one longer than the half of the length of upper one).

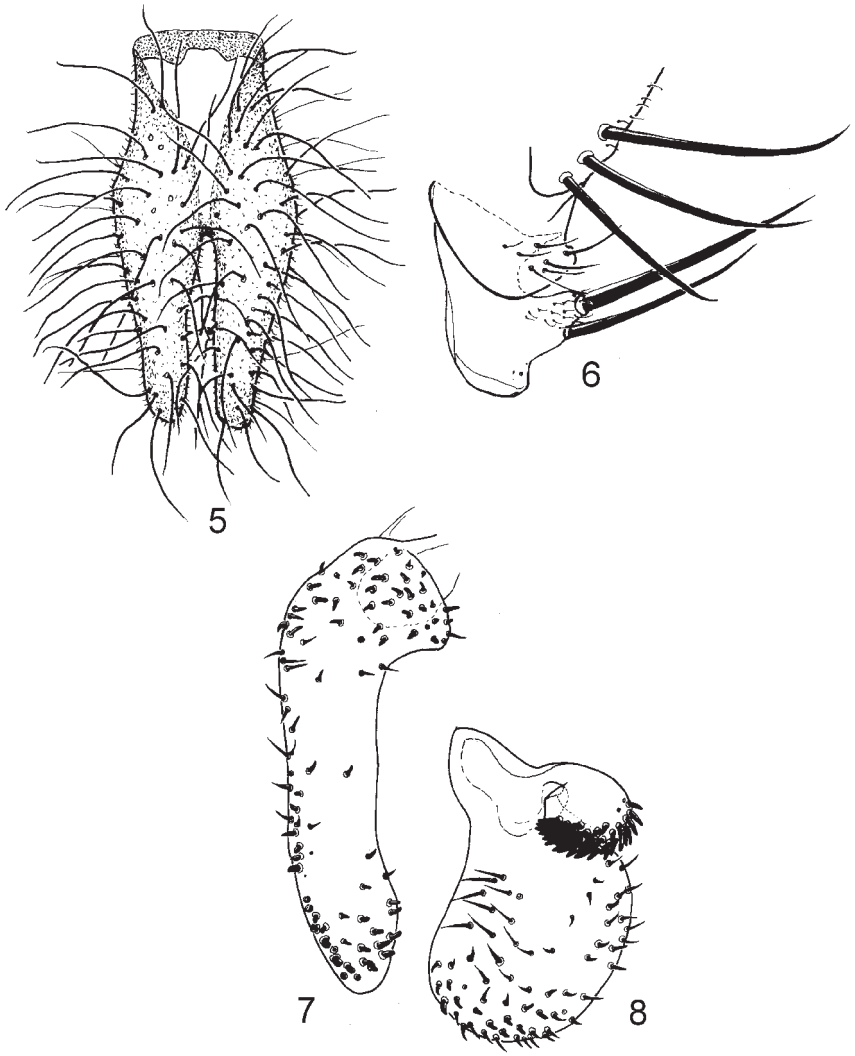
Description

Body length varies from 5.85 (paratype) to 6.15 mm (holotype).

Head: Head ratio: 1.20. Eye rounded. Face yellowish-orange, slightly depressed below antennae. Palpus orange-brownish. Hypostom brown. Frons yellowish-orange. Ocellar triangle and vertex dark brown in colour. One big vibrissa present. Genal setulae arranged in one rather regular row. Two well developed orbital bristles, the anterior directed slightly outwardly and shorter than the posterior one (0.6x). Scape

and pedicel orange-brownish. First flagellomere missing in both specimens. Cheek-eye ratio about 0.60.

Thorax: Mesonotum dark grey, covered by short and thin hairs only. Pleural part brownish-grey. Dorsocentral bristles arise from small black spots. Postpronotum and scutellum yellowish-orange, in contrast to grey disc of mesonotum. Sutellum yellowish-range, postscutellum greyish. Hind part of anepisternum and anterior part of anepimeron brownish. Anterior corner of anepisternum with few (6-9) short hairs only.



5-8. *Gymnomus warchalowskii* n. sp., male terminalia: 5 – cerci, 6 – postgonite laterally, 7 – basistylus laterally, 8 – dististylus laterally

Wing: Length: 6.25-6.35 mm, width: 2.05-2.10 mm. Membrane transparent, veins yellowish, cross-veins not darkened. Costal spines well developed and distinctly longer than the width of costa. Medial vein ratio: 1.06 (holotype) to 1.2 (paratype). Halteres yellow.

Legs: yellowish-orange and short haired. Fore femur externally greyish dusted. With one row of anterodorsal and one row of posterodorsal bristles. Mid femur with two rows of bristles outwardly. Hind femur with 1-2 black dorsolateral bristles distally.

Abdomen: Tergites and sternites I-IV totally grey and covered with short hairs and also with strong black marginal bristles. Segments V-VI dirty orange.

Male terminalia: Epandrium orange in colour, widened in the middle part. Cerci longer than wide, apically narrowed (fig. 1). Postgonites (Fig. 2) short and high, with two bristles, the lower one longer than the half of the length of upper one. Basistylus finger-like (fig. 3), slightly curved distally and covered with black thorns ventrally. Dististylus (fig. 4) regularly rounded and widened apically, on the median lobe with a process projecting with black thorns (spines) grouped distally in the broad portion, shorter than the width of dististylus, lateral lobe extended with several black thorns and setae, distally and apically with several black thorns.

Type Material

Holotype: ♂, Nevjansk, VII/5.09, J. Schnabl, *Gymnomus warchalowskii* Woźnica, sp. nov. (NMW).

Paratype: ♂, Aigyrbulak, vshr. B. Naryna, syrt, 3200m, Tien Shan, Vtorov, 6.VIII.964, *Gymnomus warchalowskii* Woźnica, sp. nov. (ZIRANSP)

Biology and distribution

A very rare Asiatic mountain species, probably widely distributed in Asia, but hitherto known from Asian Russia (Ural Mts.) and Kyrgyzstan (Tien Shan Mts.) only.

Remarks

Holotype: specimen in rather good condition; in all type-specimens the first flagellomeres are missing, right vibrissa broken in the middle, wings slightly damaged.

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