

# A New Species of the Genus *Hercostomus* Loew, 1857 (Diptera: Dolichopodidae) from Bulgaria

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**Abstract:** The new species *Hercostomus thraciensis* sp. n. is described based on specimens collected in the Upper Thracian Plain, Bulgaria. It is closely related to *Hercostomus ruficauda* (Zetterstedt, 1859) on the basis of the pale hairs of the squamae and the lack of apicoventral bristles on the fore tibia.

**Keywords:** Palaearctic, Bulgaria, Dolichopodidae, *Hercostomus thraciensis* sp. n., taxonomy.

## Introduction

*Hercostomus* Loew is one of the most speciose genera of the family Dolichopodidae, with about 470 species worldwide (YANG ET AL. 2006). Up to now, keys to the genus have been constructed by BECKER (1917), STACKELBERG (1934) for the Palaearctic Realm, PARENT (1938) for France, NEGROBOV & STACKELBERG (1969) for the European part of Russia, D'ASSIS FONSECA (1978) for the UK, POLLET (1990) for Western Europe and GRICHANOV (2006, 2007) for Northern Europe and the Eastern Mediterranean region. The most recent comprehensive revision of the genus *Hercostomus* from the Palaearctic Region was published by STACKELBERG (1933, 1934). The species of the genus *Hercostomus* were divided into five groups according to the coloration of the antenna, femur and the postocular bristles (STACKELBERG, 1934; PARENT 1938). Keys to all groups have been published recently by NEGROBOV, NECHAY (2009a, 2009b), NEGROBOV ET AL. (2008, 2012) and SELIVANOVA ET AL. (2012). The new species described below belongs to the second group: with black antenna, yellow femur and yellow lower postocular bristles.

## Materials and Methods

The material for the present paper was collected by sweeping from two sites: Gradina floodplain forest,

near the village of Gradina and Basha site near the town of Chirpan. The two sites are situated close to Maritsa River in the Upper Thracian Plain, Bulgaria (Fig. 1):

A. Gradina floodplain forest: Geographical coordinates 42° 09' 15" N 25° 10' 34" E. Situated in the municipality of Parvomay. The forest is included in the Natura 2000 network of Special Protection Areas (SPA). The dominant trees are *Fraxinus oxycarpa* Willd., *Ulmus minor* Mill. and *Quercus robur* L. The forest is a protected area as a habitat of summer snowflake (*Leucojum aestivum* L.). In spring the forest is flooded regularly (KECHEV 2012).

B. Basha Site: Geographical coordinates 42° 10' 39" N 25° 17' 58" E. Situated in the municipality of Chirpan. The sampling site consists of a small pond canopied by *Populus* sp., *Salix fragillis* L., *Salix triandra* L., *Juglans regia*, *Sambucus nigra* L., *Morus alba* L. and *Ailanthus altissima* (Mill.) Swingle. The most dominant shrubs and grasses on the banks are *Urtica dioica* L., *Mentha aquatica* L., *Arctium lappa* L. and *Aristolochia clematitis* L.

Upon collection, the adult specimens were put in vials containing 75% ethanol. The specimens were sorted in the laboratory using a binocular microscope. The type material (holotype: one male; paratypes: two males and two females) was deposited at the National Museum of Natural History in

Sofia, Bulgaria (NMNHS). The rest of the material was preserved in the first author's personal collection in the Department of Technology in the University of Agribusiness and Rural Development, while nine male specimens were preserved in the second author's personal collection in the Department of

Ecology and Systematics of Invertebrate Animals in Voronezh State University.

## Results

### Description

#### *Hercostomus thraciensis* sp. n. (Figs. 2-8).

##### Material examined:

**Holotype:** 1 male, "Basha" site, northwest of the town of Chirpan, 148 m a.s.l., 02.05.2013, sweepnet, leg. M. Kechev (NMNHS).

**Paratypes:** Gradina forest site, near the village of Gradina, 137 m a.s.l., 24 males, 14 females, 01.05.2012; "Basha" site: 51 males, 12 females, 02.05.2013; 15 males, 12 females, 10.05.2013; one male, 20.05.2013; three males, 01.04.2014; all collected by sweepnet, leg. M. Kechev.

**Male:** body length 2.8 – 2.9 mm; wing length 2.7 mm.

Head: Frons metallic green. Face silvery-white, distinctly narrowing towards clypeus, not reaching lower eye margin, in the middle wider than the third antennal segment 1.1: 0.5. Upper postocular bristles dark, lower postocular bristles yellow. Antenna (Fig. 2) entirely black. Length ratio of the third antennal segment to its width 0.5: 0.5. Dorsal arista bare, no pubescence; about four times as long as postpedicel. Proboscis brown with dark hairs, palpi brown. Thorax metallic green with black bristles. Five strong dorsocentrals, five- six paired acrostichals. Propleuron with one black bristle. Scutellum green, with the same colour as the mesonotum, with a pair of very long marginal bristles.

Wings transparent (Fig. 6). Veins brown, with indistinct pale yellow anal vein; costa simple, without thickened costal cell.  $R_{4+5}$  and M distinctly convergent apically. Squamae yellow, with pale hairs. Halter yellow, with brownish shaft.

Legs (Figs. 3, 4, 5): Fore coxa yellow, brownish near the base, anteriorly with black bristles. Mid and hind coxae black. Fore femur largely yellow, pale brown dorsally; with one fine anterior preapical bristle. Fore tibia yellow, without bristles. Fore tarsus dark, with yellow basis of metatarsus. Length ratios of fore femur, tibia and tarsi 12.3 : 12.0 : 5.7 : 2.3 : 1.7 : 1.3 : 1.0. Mid coxa with a long fine black external bristle. Mid femur yellow, with one strong anterior preapical bristle. Mid tibia yellow, with two pairs of one anterodorsal and one posterodorsal bristles, inserted at basal 1/3 and 2/3, and four preapical bristles. Length ratios of mid femur, tibia and tarsi: 13.3 : 14.0 : 6.3 : 5.0 : 2.7 : 1.7 : 1.7. Hind coxa with a long fine black external bristle. Hind femur black

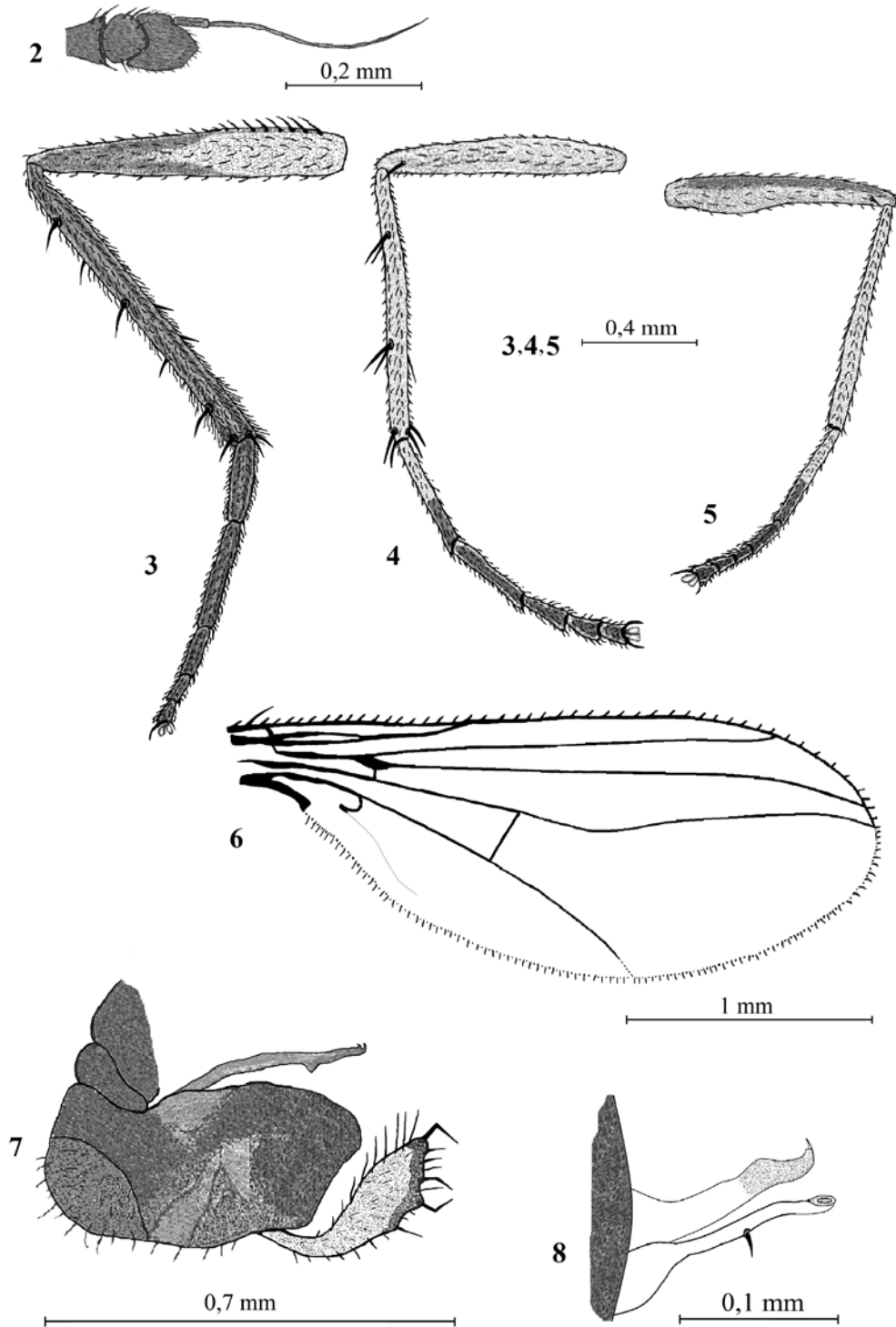


**Fig. 1.** Map of the studied region, with indication and photographs of the studied sites: A – Gradina floodplain forest site in April; B – Basha site

on apical 1/2. Hind tibia and tarsi black. Hind tibia with three anterodorsal, two posterodorsal, two short anteroventral bristles and three- four apical bristles; with short dense black anterodorsal and posteroventral hairs. Length ratios of hind femur, tibia and tarsi: 17.3 : 18.3 : 4.3 : 6.0 : 2.7 : 1.7 : 1.3. Abdomen metallic green with black bristles. Epandrium (Fig. 7)

black, approximately twice longer than wide. Cerci longer than wide, elongated, rather club-shaped, yellow with dark margin, with two- three strong curved marginal bristles.

**Female:** body length 3.0 mm, wing length 3.0 mm. Face brown, about 1.5 times broader than in males. Hind femur and tibia mainly yellow.



**Figs. 2–8.** *Hercostomus thraciensis* sp. n. 2. antenna; 3. hind leg; 4. middle leg; 5. fore leg; 6. wing; 7. hypopygium; 8. surstyli

## Diagnosis

**Male:** Face silvery-white, antenna entirely black, lower postocular bristles yellow, fore and mid femur yellow, hind leg black from the apical half of the femur onwards, wings transparent, squamae with pale hairs.

**Female:** Face brown; hind femur and tibia mostly yellow.

**Etymology:** The species is named after the Thracian Plain, where it was first collected. Thrace is a historical and geographical area in the southeast of Europe, situated at the current borders between Bulgaria, Greece and Turkey.

**Distribution:** Bulgaria, the Upper Thracian Plain.

The current key to the Palaearctic *Hercostomus* Loew (Part II) is based on the recent work by NEGROBOV ET AL. (2012). The new species described above is close to *Hercostomus ruficauda* (Zetterstedt, 1859) on the basis of the pale hairs of the squamae

and the lack of apicoventral bristles on the fore tibia.

**These two species can be distinguished as follows:**

Femur and tibia yellow. Basal part of abdomen yellow. Epandrium reddish-yellow .....

..... *Hercostomus ruficauda* (Zetterstedt)

Dorsal part of fore femur and apical part of hind femur and hind tibia black. Basal part of abdomen metallic green. Epandrium black .....

..... *Hercostomus thraciensis* sp. n.

*Hercostomus ruficauda* was described as a member of the genus *Dolichopus* Latreille, 1796 from Lund, Scania (Sweden); it was not recognised as valid by subsequent authors (BECKER, 1917, NEGROBOV, 1991). However, GRICHANOV (2002) reinstated this species as valid.

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