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Palearctic species of the *Hercostomus plagiatus* group (Diptera: Dolichopodidae) with description of a new species from the Middle East

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Abstract

The *Hercostomus plagiatus* species group is defined and distinguished from other *Hercostomus* groups by the following combination of features including: bulging clypeus in both sexes, anterodorsal comb-like row of setae on fore tibia, usually straight and weakly convergent veins R_{4+5} and M_{1+2} , hypopygium without basiventral epandrial lobes, mostly free hypandrium, relatively poorly developed postgonite, and female terminalia with tergite 8 and sternite 8 fused anterolaterally forming a narrow process. A new species, *Hercostomus golanensis* **sp. nov.**, is described from the Middle East (Golan Heights), differing from the other species of this group in the long-pubescent arista-like stylus, triangular rather than oval male cercus and epandrial lobe bearing a very long seta at the base of the stem. A key to species of the *H. plagiatus* group is provided.

Key words: Palearctic Region, Golan Heights, Diptera, Dolichopodidae, *Hercostomus plagiatus* species group, new species, key

Introduction

Dolichopodinae is the most diverse subfamily of Dolichopodidae (Diptera), and comprises nearly 25% of the known dolichopodid fauna (Grichanov 2014). Dolichopodines are found in a variety of habitats, ranging from salt marshes and pond margins to humid forests or sandy beaches. The subfamily is easily recognized by the setose antennal scape, mid and hind femora with strong anterior preapical setae, large pedunculate male genitalia projecting forward under the abdomen, and posterior mesonotum not flattened (Brooks 2005). Since the recent publication of more or less comprehensive reviews of genera of the subfamily as a whole on a global or regional scale (Grichanov 2004; Rodionova 2004; Brooks 2005; Zhang & Yang 2005), the Dolichopodinae has attracted attention of a number of researchers. The works of Brooks (2005) and Zhang & Yang (2005) are based on cladistic analyses of morphological characters. Bernasconi *et al.* (2007), Germann *et al.* (2009), and Pollet *et al.* (2010) used combined molecular and morphological data in cladistic analyses and revealed both congruencies and conflicts between DNA sequences and morphology in Dolichopodinae systematics. The latest phylogenetic analyses of the family Dolichopodidae based on morphological (Wang *et al.* 2007; Negrobov *et al.* 2014) and molecular (Germann *et al.* 2011) characters confirmed the monophyly of the subfamily.

As a result of new characters discovered and involved in dolichopodine systematics, 14 new genera have been established in the subfamily since 2005 (Zhang & Yang 2005; Brooks & Wheeler 2005; Grichanov 2006, 2010, 2011; Naglis *et al.* 2011, 2013), increasing the total number of dolichopodine genera to 38, of which many can only be reliably distinguished by male secondary sexual characters (MSSC). No doubt, the largely unrevised tropical fauna will bring more surprises.

Treating rich collections of Tel Aviv University (Israel), I found males of an undescribed dolichopodine species, which can be associated with the enigmatic *Hercostomus plagiatus* species group, which strongly differs from the nominotypical *H. longiventris* lineage (Pollet 1993). In the present paper, a new species, *Hercostomus golanensis* **sp. nov.**, from the Golan Heights is described and illustrated. A key to the three known West Palearctic species of the *H. plagiatus* species group is also presented, and characters of the group are discussed.

congeners by a large number of morphological traits. In keys to Chinese *Hercostomus* (Yang *et al.* 2011), species of the *H. plagiatus* group lead to the *H. biancistrus* group (one of 25 designated species groups, most of which can be considered subgroups of the *H. longiventris* lineage, distinctly differing from the *H. plagiatus* group). The main features of the *H. plagiatus* group distinguishing it from other *Hercostomus* groups are the bulging clypeus in both sexes, the anterodorsal comb-like row of setae on the fore tibia, usually straight and weakly convergent veins R_{4+5} and M_{1+2} , the hypopygium without basiventral epandrial lobes, the mostly free hypandrium, the relatively poorly developed postgonite, and the female terminalia with tergite 8 and sternite 8 fused anterolaterally forming a narrow process.

Nevertheless, species of the *H. plagiatus* species group have no distinct synapomorphies distinguishing them from some poorly defined groups or poorly described species. For example, species of the Oriental *H. ulrichi* group have veins R_{4+5} and M_{1+2} subparallel and basiventral lobes of epandrium reduced (Yang *et al.* 2011); but they have mostly yellow thorax and abdomen, very small cercus and narrowly separated position of apicoventral and basiventral lobes of epandrium. An unassigned and poorly described *H. additus* Parent from Oriental China is rather similar to species of the *H. plagiatus* group (S. Brooks, pers. comm. 2014). Some Palaearctic species of the genus bear anterodorsal comb-like row of setae on the fore tibia; e.g., *H. fuscipennis* (Meigen), *H. laufferi* (Strobl), and *H. zieheni* Parent (after Parent 1938). Some others have relatively broad face in males; e.g., *H. laufferi*, *H. zieheni*, *H. appendiculatus* (Loew), *H. conformis* (Loew), and *H. pokivajlovi* Maslova & Negrobov. Several insufficiently illustrated species have the epandrium pinched posteriorly, with about midlateral foramen; e.g., *H. appendiculatus*, *H. conformis*, *H. fuscipennis*, *H. gracilis* (Stannius), *H. cyprius* Parent, and *H. libanicola* Parent (after Parent 1938). The listed species have usually weakly and gradually convergent veins R_{4+5} and M_{1+2} , and some of them could be included in the *H. plagiatus* group after redescription.

Species of the *H. plagiatus* group occur in the West Palaearctic countries with mild climate, from UK, Belgium and the Netherlands in the North, to Algeria and Tunisia in the South. *Hercostomus plagiatus* extends its range to the Balkan countries in the East. *Hercostomus golanensis* is known only from the Golan Heights in the East Mediterranean. The common habitats for adults of *H. plagiatus* and *H. verbekei* in Europe are humid woodlands, riverbanks and marshlands (see Pollet (1993) for the detailed description of habitat preference and phenology of Belgian species).

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