

Diversity of Long-Legged Flies (Diptera: Dolichopodidae) in Gradina Floodplain Forest, Bulgaria

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Abstract: Twenty-three distinct dolichopodid species were found in Gradina Floodplain forest during spring and summer 2012. Four of them (*Hercostomus fulvicaudis*, *Sybistroma setosa*, *Syntormon metathesis* and *Sciapus frater*) are new to the fauna of Bulgaria.

Key words: Dolichopodidae, Floodplain forest, Bulgaria, fauna, diversity.

Introduction

There are known 156 dolichopodid species in Bulgaria so far (BESCHOVSKI 2012, KECHEV 2011, 2012, NEGROBOV, KECHEV 2012). Most of the published flies are from Bulgarian Black sea coast and the West Rhodopes Mountains. The dolichopodid entomofauna in floodplain forests has not been subject of special investigation up to now.

Studied Area

Gradina floodplain forest (Fig. 1, 2) is situated in the middle course of Maritsa River in Upper Thracian Plain, municipality of Parvomay. The forest is located on the territory of 439 900 ha and it is included in the European ecological Network NATURA 2000. The habitat type is 91F0: Riparian mixed forests of *Quercus robur* L., *Ulmus laevis* PALL. and *Fraxinus excelsior* L. or *Fraxinus angustifolia* Vahl, along the great rivers (*Ulmion minor*).

The dominant tree species in the forest are presented by clear polish (*Fraxinus oxycarpa* WILLD.), field elm (*Ulmus minor* MILL.) and summer oak (*Quercus robur* L.)

According to GEORGIEV *et al.* (2012, in press) the forest encompasses 159 higher plants, 78 of which are medical plant species.

To the middle of the last century the entire forest was regularly flooded in spring. Nowadays the forest is drier and the most humid site in spring is the northwest one (Fig. 4, forest in April). One part of this site is intersected from a meadow (Fig. 3). In summer when the entire forest is dry, during our visits in August, we found a little bit humid spot (10 m long and 6 m wide, Fig. 5) where the soils are still humid and overgrown by fresh vegetation. The dominant species are presented by *Typha latifolia* L., *Carex* sp., *Solanum dulcamara* L., *Solanum nigrum* L., *Iris* sp., *Menta* sp., *Urtica dioica* L.

Material and Methods

Gradina floodplain forest was visited during spring and summer 2012 for collecting dolichopodid flies. The material was collected by means of sweeping and after that the adults were put in vials containing 95% ethanol. The insects were gathered two hours per trip. The samples were sorted in a laboratory with the help of a binocular microscope. The total number of selected specimens is 468. The faunistic list gives the following information: dates of collecting, number of specimens (male, female) and name

of collector. Two species are given with their generic names (*Chrysotus* sp. and *Medetera* sp.), because only females were collected. However, without males in one sample, the determination is difficult. Some pictures were taken in the investigated forest and applied in the paper (Fig. 3, 4 and 5). Google Earth software (version 6) was used for Fig. 2, geographical coordinates and altitude.

Results

Faunistic list

Diaphorinae Schiner, 1864

Argyra leucocephala (MEIGEN, 1824)

09.06.2012, 1 male, leg. Kechev.

Chrysotus sp.

25.05.2012, 1 female, 09.06.2012, 1 female, leg. Kechev.

Dolichopodinae Latreille, 1809

Dolichopus latilimbatus MAQUART, 1827

09.06.2012, 17 male, 18 female, leg. Kechev.

Dolichopus nubilus MEIGEN, 1824

25.06.2012, 1 male, 1 female, 09.06.2012, 45 male, 39 female, leg. Kechev.

Dolichopus salictorum LOEW, 1871

25.06.2012, 6 male, 11 female, 09.06.2012, 7 male, 2 female, 23.06.2012, 6 male, 8 female, leg. Kechev.

Dolichopus signifer HALIDAY, 1838

25.05.2012, 1 male, leg. Kechev.

Gymnopternus metallicus (STANNIUS, 1831)

25.05.2012, 9 male, 12 female, 09.06.2012, 32 male, 24 female, 03.08.2012, 6 male, 8 female, 26.08.2012, 4 male, 5 female, leg. Kechev.

Hercostomus convergens LOEW, 1857

23.06.2012, 1 male, 2 female, 03.08.2012, 1 male, leg. Kechev.

Hercostomus fulvicaudis (WALKER, 1851). New to Bulgaria.

09.06.2012, 16 male, 8 female, leg. Kechev.

Poecilobothrus chrysosyngus (WIEDEMANN, 1817)

09.06.2012, 6 male, 3 female, leg. Kechev.

Poecilobothrus regalis (MEIGEN, 1824)

09.06.2012, 4 male, 2 female, 23.06.2012, 1 male, 2 female, leg. Kechev.

Sybistroma nodicornis MEIGEN, 1824

09.06.2012, 2 male, leg. Kechev.

Sybistroma setosa (SCHINER, 1862). New to Bulgaria.

25.05.2012, 1 male, leg. Kechev.

Medeterinae Lioy, 1864

Medetera sp.

26.08.2012, 1 female, leg. Kechev.

Rhaphiinae Bigot, 1852

Rhaphium caliginosum MEIGEN, 1824

09.06.2012, 9 male, 1 female, 23.06.2012, 3 male, 2 female, leg. Kechev.

Sciapodinae Becker, 1917

Sciapus frater (PARENT, 1927). New to Bulgaria.

03.08.2012, 3 male, 8 female, 26.08.2012, 3 female, leg. Kechev.

Sciapus platypterus (FABRICIUS, 1805)

25.05.2012, 1 male, leg. Kechev.

Sympycninae Aldrich, 1905

Campsicnemus curvipes (FALLEN, 1823)

06.04.2012, 1 male, 2 female, 25.05.2012, 1 male, leg. Kechev.

Campsicnemus simplicissimus STROBL, 1906

18.03.2012, 1 male, 1 female, 06.04.2012, 10 male, 8 female, leg. Kechev.

Syntormon metathesis (LOEW, 1850). New to Bulgaria.

09.06.2012, 1 male, 23.06.2012, 1 male, leg. Kechev

Syntormon mikii STROBL, 1899

09.06.2012, 1 male, 1 female, 23.06.2012, 15 male, 14 female, 03.08.2012, 3 male, 7 females, 26.08.2012, 4 female, leg. Kechev.

Syntormon pallipes (FABRICIUS, 1794)

06.04.2012, 5 male, 7 female, leg. Kechev.

Teuchophorus spinigerellus (ZETTERSTEDT, 1843)

09.06.2012, 17 male, 16 female, 23.06.2012, 1 female, 03.08.2012, 2 male, 4 female, leg. Kechev.

Discussion

The species *Hercostomus fulvicaudis*, *Syntormon metathesis* are widely spread throughout Europe. *Sciapus frater* was collected only in August in humid spot shown on Fig. 5. According to GRICHANOV (2007) *Sciapus frater* is distributed in Austria, France, Slovakia and South Russia (Krasnodar). *Sybistroma setosa* is not widely spread in Europe either. It is



Fig. 1. Map of Bulgaria with an indication of Gradina forest. **Fig. 2.** Google Earth map of Gradina forest. **Fig. 3.** Meadow in the northwest site of the forest. **Fig. 4.** The flooded forest in April. **Fig. 5.** Humid spot in the forest during the summer.

known from Austria, Hungary, Slovakia and Romania (GRICHANOV 2007). This new record gives the southernmost location of *Sybistroma setosa* up to now. With these data the total number of Dolichopodidae known in Bulgaria increases from 156 to 160.

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References

- BESCHOVSKI V. 2012. Two genera of Long-legged Flies (Diptera: Dolichopodidae) new for the fauna of Bulgaria. – *ZooNotes* **29**: 1-2.
- GEORGIEV S., K. KOEV 2012. Floristic characteristic of the protected area *Nahodishte na Blatno Kokiche* – Gradina village. – In: PETROVA, A. (Ed.): Proc. VII Natl. Conf. Bot., 29–30.09.2011, Sofia, pp. 225-235. Bulg. Bot. Soc., Sofia. ISBN 978-954-92808-2-1.
- GEORGIEV S., A. TASHEV and K. KOEV. (In press). Eco-Biological Characteristics of Medicinal Plants in the Protected Area ‘Nahodishte Na Blatno Kokiche’ the Village of Gradina, Parvomay (Bulgaria). – *Ecologica Balcanica*.
- GRICHANOV I. YA. 2007. A checklist and keys to Dolichopodidae (Diptera) of the Caucasus and East Medeterranean. – *Plant Protection News*, Supplement, 160 p.
- KECHEV M. 2011. An improved check-list of Dolichopodidae (Diptera, Brachycera) to the fauna of Bulgaria. – In: NEGROBOV O., V.GOLUB, S.GAPONOV and V.LOGVINOVSKII (Eds.): Current Problems of Entomology, Voronezh State University, 73-78.
- KECHEV M. 2007. Logn-legged flies (Diptera: Dolichopodidae) from the Upper Thracian Plain New to Bulgaria: Habitats and Distribution. – *Acta zoologica bulgarica*, **64** (2): 205-208.
- NEGROBOV O., M. KECHEV. 2012. A new species of the genus *Syntormon* Loew from Bulgaria (Diptera, Dolichopodidae). – *Dipterists digest*, **19** (1): 93-96.