# Diversity of long-legged flies (Diptera: Dolichopodidae) of the East Rhodope Mountains, Bulgaria

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# Разнообразие мух-зеленушек (Diptera: Dolichopodidae) Восточных Родоп, Болгария

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**Abstract.** This paper includes information about 29 species of the family Dolichopodidae distributed in the East Rhodope Mountains, Bulgaria. Eight of the listed dolichopodids are newly recorded for the studied area. The dominance of the species during the different months in this area is discussed.

Key words. Diptera, Empidoidea, first records, East Rhodopes, Balkans.

**Резюме**. В данной статье представлена информация о 29 видах семейства Dolichopodidae, распространенных в Восточных Родопах, Болгария. Восемь из перечисленных долихоподид являются новыми для района исследования. Обсуждается доминирование видов в разные месяцы в этом регионе.

**Ключевые слова**. Diptera, Empidoidea, первые находки, Восточные Родопы, Балканы. https://doi.org/10.1016/10.47640/1605-7678 2021 92 66

## Introduction

The family Dolichopodidae is presented with 209 species up to now in Bulgaria (Kechev, 2021a, 2021b). Unlike the West Rhodopes (Kechev, 2006, 2007, 2010) the East Rhodopes are poorly studied for dolichopodids. Beschovski (1967) listed two species from this region; Kechev et al. (2020) added next two species, and Kechev (2021b) recorded another 16 species of Dolichopodidae from the East Rhodopes.

The main purpose of this work is to summarise the information on the dolichopodid fauna of the East Rhodopes and to give new records for this area.

# Material and methods

The material for the present paper was collected by Malaise traps from three localities situated in the East Rhodope Mountains, Bulgaria. The traps were visited once every two weeks to extract the material. The collected material was sorted under laboratory conditions using microscope Carl Zeiss. The main keys

used for the identification of species were: Parent (1938), Negrobov and Stackelberg (1969), d'Assis Fonseca (1978) and Grichanov (2007). The material presented in this paper is housed in M. Kechev's collection in the Forest Research Institute of the Bulgarian Academy of Sciences, Department of Forest Entomology, Phytopathology and Game Fauna, Sofia, Bulgaria. The dolichopodids firstly recorded for the East Rhodopes are marked with an asterisk (\*).

Studied area. The Eastern Rhodopes (Fig.) are a part of the Rhodope Mountains. Unlike the western and central parts, the eastern part of the Rhodope Mountains has mostly low altitude and hilly relief; the





Fig. Maps of Bulgaria and the East Rhodopes with an indication of the sites of collecting (in red).

average altitude is here only 320 m. The mountain sections are also extensive, but significantly lower. The Eastern Rhodope region covers an area of 14700 km<sup>2</sup>, of which 12200 km<sup>2</sup> are located on Bulgarian territory, and the others are in Greece. Veikata peak, 1464 m a.s.l., which is the southernmost Bulgarian point and the highest peak in the Bulgarian part of the Eastern Rhodopes. The highest peak in the eastern part of the Rhodopes is Orlitsa peak in Greece, which is 1483 m high a.s.l.

## Results

## Family Dolichopodidae

### **Subfamily Diaphorinae**

#### \*Asyndetus latifrons (Loew, 1857)

Material examined. BULGARIA. 4 males, 4 females, Madzharovo village, 8.VIII–31.VIII.2004 (O. Todorov leg.); 15 males, 8 females, Dzherovo village, 5.VII–21.VII.2021; 4 males, 3 females, Dzherovo village, 21.VII–6.VIII.2021; 23 males, 19 females, Kremen village, 5.VII–21.VII.2021; 32 males, 24 females, Kremen village, 21.VII–6.VIII.2021 (all M. Langourov and N. Simov leg.).

## Chrysotus laesus (Wiedemann, 1817)

Material examined. BULGARIA. 2 males, 1 female, Kremen village, 5.VII–21.VII.2021 (M. Langourov and N. Si-mov leg.). (See also Kechev, 2021b).

## Chrysotus pulchellus Kowarz, 1874

Material examined. See Beschovski (1967).

#### **Subfamily Dolichopodinae**

#### Dolichopus diadema Haliday, 1832

Material examined. See Kechev (2021b).

#### Dolichopus griseipennis Stannius, 1831

Material examined. BULGARIA. 1 male, 1 female, Dzherovo village, 5.VII–21.VII.20212021 (M. Langourov and N. Simov leg.). (See also Kechev, 2021b).

#### \*Hercostomus gavarniae Parent, 1928

Material examined. BULGARIA. 1 male, Kremen village, 21.VII-6.VIII.2021 (M. Langourov and N. Simov leg.).

## \*Hercostomus gracilis (Stannius, 1831)

Material examined. BULGARIA. 1 male, Dzherovo village, 21.VII-6.VIII.2021 (M. Langourov and N. Simov leg.).

## Gymnopternus brevicornis (Staeger, 1842)

Material examined. BULGARIA. 3 males, 2 females, Kremen village, 21.VII–6.VIII.2021 (M. Langourov and N. Simov leg.). (See also Kechev, 2021b).

## Gymnopternus celer (Meigen, 1824)

Material examined. See Kechev (2021b).

## Poecilobothrus chrysozygos (Wiedemann, 1817)

Material examined. See Kechev (2021b).

Tachytrechus consobrinus (Haliday, 1851)

Material examined. See Kechev (2021b).

## \*Tachytrechus notatus (Stannius, 1831)

Material examined. BULGARIA. 1 male, 1 female, Kremen village, 21.VII–6.VIII.2021 (M. Langourov and N. Si-mov leg.).

#### **Subfamily Medeterinae**

### Medetera jacula (Fallén, 1823)

Material examined. BULGARIA. 1 male, 1 female, Madzharovo village, 8.VIII–31.VIII.2004 (O. Todorov leg.); 1 male, 2 females, Dzherovo village, 21.VII–6.VIII.2021 (M. Langourov and N. Simov leg.). (See also Kechev et al., 2020; Kechev, 2021b).

### Medetera sp.

Material examined. BULGARIA. 1 female, Madzharovo village, 8.VIII-31.VIII.2004 (O. Todorov leg.).

## Subfamily Hydrophorinae

## Liancalus virens (Scopoli, 1763)

Material examined. See Kechev (2021b).

#### Subfamily Rhaphiinae

#### Rhaphium antennatum (Carlier, 1835)

Material examined. Ssee Kechev (2021b).

## \*Rhaphium appendiculatum Zetterstedt, 1849

Material examined. BULGARIA. 1 male, Kremen village, 21.VII-6.VIII.2021 (M. Langourov and N. Simov leg.).

#### \*Rhaphium penicillatum Loew, 1850

Material examined. BULGARIA. 1 male, Kremen village, 21.VII-6.VIII.2021 (M. Langourov and N. Simov leg.).

### **Subfamily Peloropeodinae**

#### \*Chrysotimus molliculus (Fallén, 1823)

Material examined. BULGARIA. 1 male, 1 female, Kremen village, 21.VII–6.VIII.2021 (M. Langourov and N. Si-mov leg.).

#### Subfamily Neurigoninae

## Neurigona pallida (Fallén, 1823)

Material examined. BULGARIA. 1 female, Kremen village, 5.VII–21.VII.2021 (M. Langourov and N. Simov leg.). (See also Kechev, 2021b).

## Neurigona nubifera (Loew 1869)

Material examined. See Kechev (2021b).

## Neurigona suturalis (Fallén, 1823)

Material examined. See Kechev (2021b).

## **Subfamily Sciapodinae**

Sciapus bellus Loew, 1873 Material examined. See Kechev (2021b).

#### \*Sciapus costae Mik, 1890

Material examined. BULGARIA. 3 males, 2 females, Dzherovo village, 5.VII–21.VII.2021 (M. Langourov and N. Simov leg.).

*Sciapus flavicinctus* (Loew, 1857) Material examined. See Kechev (2021b).

Sciapus platypterus (Fabricius, 1805)

Material examined. See Kechev (2021b).

## Subfamily Sympycninae

*Sympycnus pulicarius* (Fallén, 1823) Material examined. See Beschovski (1967).

Sympycnus simplicipes Becker, 1908

Material examined. See Kechev et al. (2020).

#### Syntormon pallipes (Fabricius, 1794)

Material examined. BULGARIA. 3 males, 1 female, Kremen village, 21.VII–6.VIII.2021 (M. Langourov and N. Simov leg.). (See also Kechev, 2021b).

# Discussion

Two Malaise traps were installed on May 11, 2021 close to small rivers in Dzherovo and Kremen villages situated in the East Rhodope Mountains, Bulgaria. First results of this study were published by Kechev (2021b), where 16 species were reported. A summary of the published and new results for 29 dolichopodid species known from this part of the mountains are presented herein, but these data are still insufficient. The investigated area is closely situated to the border of Greece and has continental-Mediterranean climatic influence. New collecting trips to other sites of the East Rhodope Mountains could bring the new species at least for this area, and maybe for the Bulgaria.

Looking at the results of the research, several species can be dominant in different months. *Neurigona nubifera* was found with more than 100 specimens from the beginning to the end of May; more than 40 specimens of *Sciapus bellus* were collected in the same period; more than 60 specimens of *S. platypterus* were here collected from early May to mid-June. On the other side, *Asyndetus latifrons* dominates in July and August.

The second record of *Sciapus costae* for Bulgaria is presented herein. This species was previously known only from Italy, France, Morocco and Tunisia (Grichanov & Negrobov, 2014), but Kechev (2021a) found this species in the Bulgarian parts of the Balkan Mountains.

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