Research article

Campylosteira Fieber, 1844 (Hemiptera: Tingidae) a newly recorded member of the Bulgarian lace bug fauna

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Abstract: We report the first record for Bulgaria of *Campylosteira orientalis* Horváth, 1881 and the genus *Campylosteira*, on the whole, along with data of the habitats and the true bug assemblage in the studied locality.

Keywords: Bulgaria, Heteroptera, Tingidae, Western Pontic steppes

Introduction

Currently, the Bulgarian lace bug fauna comprises 18 genera with 67 species (Josifov, 1986, 1990; Péricart & Golub, 1996; Simov & Pencheva, 2007; Dobрева et al., 2013). In April and May 2018, a big series of an unknown very small lace bug was collected from three localities on the Bulgarian Black Sea coast by the second author. The specimens were identified by the first author as species of *Campylosteira* Fieber, 1844. In this paper, we present data about the first record of this lace bug genus in Bulgaria.

Material and methods

The material was collected using pitfall traps and colour pan traps (Fig. 1) in the course of studying the insect communities in north-eastern Bulgaria, close to Balchik Town. Three closely situated localities in the studied area were visited once every month from April to September 2018. The typical habitat in the studied localities was E1.2D1 Western Pontic steppes (Fig. 2) according EUNIS Habitat classification. The habitat has been classified as endangered in Bulgaria

and very important for the preservation of many rare, endangered and protected plants and animals (Tzonev et al., 2015; Abadjiev & Beshkov, 2007). It covers restricted areas in north-eastern Bulgaria and was subjected to various long-lasting negative impacts: golf playground construction, holiday complexes, motor racing, wind electric power parks (Abadjiev & Beshkov, 2007; Tzonev et al., 2015).

The material has been deposited in the collection of the National Museum of Natural History, Sofia (NMNHS).

Results and discussion

Campylosteira orientalis Horváth, 1881 (Fig. 3) – material examined: Bulgaria: Black Sea Coast, SW Balchik Town, 43.396098°N; 28.106186°E; 210 m a.s.l.: 8 ♂♂, 3 ♀♀, 17.iv.–11.v. 2018, pitfall traps, T. Ljubomirov leg., N. Simov det. (NMNHS); 4 ♂♂, 3 ♀♀, 11.v.–10.vi. 2018, pitfall traps, T. Ljubomirov leg., N. Simov det. (NMNHS). The range of *C. orientalis* includes territories of south-eastern Europe and Caucasus: Albania, Croatia, Greece, Hungary, Italy, Montenegro, Romania, Russia (ST: N Caucasus), Slo-

← Fig. 1. Pitfall and coloured pan traps used in this study.

↓ Fig. 2. Western Pontic steppes (EU-NIS habitat type E1.2D1) in the studied area close to Balchik Town, northern Black Sea Coast.

Fig. 3. *Campylosteira orientalis* Horváth, 1881 – a male collected in April–May 2018 in Bulgaria.

venia, Ukraine, Azerbaijan, Armenia, Turkey (Péricart & Golub, 1996; Protić, 2004). Overall, this is the first record of *C. orientalis* and the genus *Campylosteira* in Bulgaria. The finding is not a surprise. The closest published localities of the species are in the neighbouring Balkan countries Romania, Montenegro, Greece, and Albania (Péricart & Golub 1996, Protić, 2004). Similar habitat preferences of this and other species of the genus were published for the territories of England, Ukraine and Hungary, and namely steppe and dry calcareous grassland and Pannonic steppes (Putshkov, 1974; Péricart, 1983; Redei et al., 2003; Alexander, 2008; Glime 2017).

Other species of true bugs recorded during our study from the same habitats were:

Tingidae

- *Acalypta marginata* (Wolff, 1804) – material examined: Bulgaria: Black Sea Coast, SW Balchik Town, 43.396098°N; 28.106186°E; 210 m

a.s.l.: 1 ♂, 1 ♀, 17.iv.–11.v. 2018, pitfall traps, T. Ljubomirov leg., N. Simov det. (NMNHS); 4 ♂♂, 3 ♀♀, 11.v.–10.vi. 2018, pitfall traps, T. Ljubomirov leg., N. Simov det. (NMNHS);

- *Catoplatus carthusianus* (Goeze, 1778) – material examined: Bulgaria: Black Sea Coast, SW Balchik Town, 43.396098°N; 28.106186°E; 210 m a.s.l.: 1 ♀, 17.iv.–11.v. 2018, pan traps, T. Ljubomirov leg., N. Simov det. (NMNHS);

Rhyparochromidae

- *Aellopus atratus* (Goeze, 1778) – material examined: Bulgaria: Black Sea Coast, SW Balchik Town, 43.396098°N; 28.106186°E; 210 m a.s.l.: 1 ♀, 11.v.–10.vi. 2018, pitfall traps, T. Ljubomirov leg., N. Simov det. (NMNHS);
- *Emblethis angustus* Montandon, 1890 – material examined: Bulgaria: Black Sea Coast, SW Balchik Town, 43.396098°N; 28.106186°E; 210 m a.s.l.: 2 ♂♂, 1 ♀ and 1 juv., 11.v.–10.vi. 2018, pitfall traps, T. Ljubomirov leg., N. Simov det. (NMNHS);
- *Plinthisus* (s.str.) *longicollis* Fieber, 1861 – material examined: Bulgaria: Black Sea Coast, SW Balchik Town, 43.396098°N; 28.106186°E; 210 m a.s.l.: 1 ♀, 11.v.–10.vi. 2018, pitfall traps, T. Ljubomirov leg., N. Simov det. (NMNHS);
- *Tropistethus fasciatus* Ferrari, 1874 – material examined: Bulgaria: Black Sea Coast, SW Balchik Town, 43.396098°N; 28.106186°E; 210 m a.s.l.: 1 ♂, 11.v.–10.vi. 2018, pitfall traps, T. Ljubomirov leg., N. Simov det. (NMNHS);

Scutelleridae

- *Odontoscelis* (s.str.) *fuliginosa* (Linnaeus, 1761) – material examined: Bulgaria: Black Sea Coast, SW Balchik Town, 43.396098°N; 28.106186°E; 210 m a.s.l.: 3 ♂♂, 17.iv.–11.v. 2018, pitfall traps, T. Ljubomirov leg., N. Simov det. (NMNHS).

This species composition correspond well with the published for the localities of *C. orientalis* in Hungary (Redei et al., 2003, 2004). *Campylosteira orientalis*, *A. marginata*, *E. angustus* could be assigned to the typical ground-living species indicator complex associated with EUNIS habitat type E 1.2 Perennial calcareous grassland and basic steppes (Redei et al., 2003, 2004; present study).

The use of suction trapping with handhold leaf blower (vacuum combo), pitfalls and also sifting litter would be a successful attempt for the search of the same or other *Campylosteira* species in different Bulgarian regions with suitable habitats (Tzonev et al. 2015) in the future.

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