Two plant bug genera *Euryopicoris* Reuter, 1875 and *Solenoxyphus* Reuter, 1875 (Hemiptera: Heteroptera: Miridae) new for the Bulgarian fauna

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Abstract: Two plant bug species, *Euryopicoris nitidus* (Meyer-Dür, 1843) and *Solenoxyphus lepidus* (Puton, 1874), are reported for the first time for Bulgaria. Their habitats, host plants, and reasons for the late discovery in the country are briefly discussed. The genera *Euryopicoris* Reuter, 1875 and *Solenoxyphus* Reuter, 1875 have not been previously reported in Bulgaria as well.

Keywords: Balkans, Bulgaria, Halticini, new records, Orthotylinae, Phylinae, plant bugs

Introduction

The Bulgarian plant bug fauna is relatively well studied (Josifov, 1986; Josifov & Simov, 2006), with about 369 species from 123 genera reported so far (Kerzhner & Josifov, 1999; Aukema et al., 2013; Aukema, 2018). In the present work, we provide the first country record of the genera *Euryopicoris* Reuter, 1875 with the species *Euryopicoris nitidus* (Meyer-Dür, 1843) and *Solenoxyphus Reuter, 1875 with the species *Solenoxyphus lepidus* (Puton, 1874).

Material and methods

The material for the present study was collected by the authors from mountainous areas in southwestern Bulgaria and the Thracian Lowland between 2015 and 2024. Net sweeping as well as hand collection from the food plants were used in the field work. The pictures were taken with digital cameras Olympus TG-4 and Canon PowerShot SX420 IS (Figs 1, 3), Olympus SZ61 stereomicroscope, equipped with a digital camera Canon EOS 2000D (Fig. 2), and Carl Zeiss STEMI 2000 stereomicroscope, equipped with a digital camera Canon EOS 2000D (Fig. 4). The material is preserved in the Zoological Collection of Sofia University “St Kliment Ohridski”, Faculty of Biology, Sofia, Bulgaria (BFUS), and in the collection of the National Museum of Natural History, Sofia, Bulgaria (NMNHS). Habitat classification follows the EUNIS (Davies et al., 2004; European Environment Agency, [2024]) and Red Data Book of Bulgaria (Biserkov & Gussev, 2015).

Results and discussion

**Family Miridae**

**Subfamily Orthotylinae**

*Euryopicoris* Reuter, 1875

*Euryopicoris nitidus* (Meyer-Dür, 1843)

Material: SW Bulgaria: Zemenska Planina Mountain, NE of Polska Skakavitsa Village, 42°24′46.64″N,
22°41′02.04″E, 650 m a.s.l., roadside grassland, 30.iv.2019, 12 ♂, 14 ♀, net sweeping on grass and *Salvia nemorosa* L., N. Simov leg. [NMNHS]; Western Balkan Mts, NW of Bezden Village, 42°53′08.2″N, 23°05′44.57″E 24.v.2019, 5 ♂, 4 ♀ observed and photographed N. Simov; Verila Mountain, NE of Dren Village, 42°24′53.52″N, 23°09′53.40″E, 830 m a.s.l., roadside herbaceous vegetation (Fig. 1A), 24.v.2022, 3 ♂, 4 ♀, on *Verbascum* sp., D. Gradinarov & Y. Petrova leg. [BFUS] (Fig. 2 A, B, D); the same locality, 23.iv.2023, 10 ♂, 7 ♀, on Poaceae, *Myosotis* sp. (Boraginaceae), and dry grasses, D. Gradinarov & Y. Petrova leg. [BFUS]; Lozenska Planina Mountain, N of Dolni Pasarel Village, 42°33′25.1″N, 23°29′47.8″E, 830 m a.s.l., mountain meadows (Fig. 1B), 07.v.2023, 13 ♂, 18 ♀ (including two macropterous specimens), on different plants (*Verbascum speciosum* Schrad., *Galium album* Mill. and *G. verum* L., *Vicia* sp., *Cirsium ligulare* Boiss., *Tordylium maximum* L. and *Fragaria vesca* L.), D. Gradinarov leg. [BFUS] (Fig. 2 C); Radomir Valley, Dolni Rakovets Village, 42°28′28.6″N 23°00′46.0″E, 639 m a.s.l., 28.iv.2023, 15 ♂, 17 ♀, on different Poaceae, N. Simov, F. Konstantinov, S. Grozeva, D. Stoyanova leg. [NMNHS]; Mount Chepan, N of Dragoman, 42°56′50.5″N 22°56′16.7″E, 984 m, mountain steppe, 26.v.2024, 1 ♂, 1 ♀, on *Verbascum* sp., Y. Petrova leg. [BFUS].

New record for Bulgaria.

*Euryopicoris nitidus* is distributed from Southern through Central Europe to the Far East of Russia and Northern China (Tatarnic & Cassis, 2012; Konstantinov & Namyatova, 2009; Aukema, 2018). In Europe, its range reaches the northernmost regions, including the tundra biome (Lammes & Rinne, 1990; Zinovyeva & Dolgin, 2006; Zinovyeva, 2013; Roth &

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Fig. 2. *Euryopicoris nitidus* from Bulgaria – (A) male from Dren locality, (B) female from Dolni Pasarel locality, (C) macropterous female from Dolni Pasarel locality, (D) parameres (left and right), male from Dren locality. Scale bars: 1 mm (A–C), 100 μm (D).
Coulianos, 2014). In Central Europe (Hradil et al., 2019), Balkan Peninsula (Greece, Albania, North Macedonia), parts of Serbia (Kormilev, 1936; Josifov, 1986; Günther, 1990; Protić, 2018), Italy (Carapezza & Faraci, 2006), as well as in Iran (Mohammadi et al., 2020), *E. nitidus* is limited to mountainous areas. In
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In our study, the species was found in mountainous regions of southwestern Bulgaria. All the specimens collected and observed were found in the low mountain zone (from 650 to 980 m a.s.l.), mainly in steppe-like grasslands. The species is probably more widespread in this part of the country, but has a patchy local distribution.

In the field, we have observed adults of *E. nitidus* on herbaceous plants of various families, as well as on dry stems of grasses (in the localities near Dren Village and Dolni Rakovets). Feeding, often causing characteristic damage on the food plants (chlorosis), has been observed on *Salvia nemorosa* (Lamiaceae), *Verbascum* spp. (Scrophulariaceae), *Myosotis* sp. (Boraginaceae), *Galium album* and *G. verum* (Rubiacaeae), *Vicia* sp. (Fabaceae), *Cirsium ligulare* (Asteraceae), *Tordylium maximum* (Apiaceae), and *Fragaria vesca* (Rosaceae), as well as on unidentified Poaceae species (Fig. 3). Tatarnic & Cassis (2012) indicate grasses (Poaceae) as hostplants of *E. nitidus*, while according to Kerzhtner & Jaczewski (1964) the species occurs on herbaceous legumes (Fabaceae). Our observations indicate a broader host preference range, and in the Bulgarian localities, *E. nitidus* seems to be polyphagous on various herbaceous plants.

Subfamily Phylinae

*Tribe Phylini*

*Solenoxyphus* Reuter, 1875

*Solenoxyphus lepidus* (Puton, 1874)

Material: Bulgaria, Tundzha River Valley, S from Blatets Village 42°37′00.9″N; 26°32′11.4″E, on *Camphorosma annua* Pall., 11.vii.2015, 146 m a.s.l., 9 ♂♂, 14 ♀♀, N. Simov leg. (NMNHS) (Fig. 4).

New record for Bulgaria.

The habitat of this species in Bulgaria – saline steppes, pastures, and marshes (EUNIS: E6.221 and E6.223) (Fig. 1C, D) – is rare and endangered according to the new edition of the Red Data Book of Bulgaria (Tzonev & Gusev, 2015).
The range of *S. lepidus* includes Europe: France, North Macedonia, European Kazakhstan, Romania, Russia (South European Territory), Spain, Ukraine; North Africa: Algeria; Asia: Armenia, Asian Kazakhstan, China, (Northern and Northwest Territories), Kyrgyzstan, Mongolia, Russia (East Siberia), Turkmenistan, Uzbekistan (Göllner-Scheiding, 1978) are very similar to our findings. *Bassia prostrata* (L.) A.J.Scott, (as *Kochia prostrata* (L.) Schrad.), *B. laniflora* (S.G.Gmel.) A.J.Scott (as *Kochia laniflora*, *K. arenaria* (Maerkl.) Roth), *Camphorosma monspeliaca* L. and *Camphorosma* sp. (Chenopodiaceae) are reported as host plants of *S. lepidus* (Konstantinov, 2008). Our records indicate *Camphorosma annua* as a new host plant and well correspond with the previously published host associations with the tribe Camphorosmeae (Amaranthaceae sl). The host association with Asteraceae (Qi & Nonnaizab, 1996) is rather doubtful (Konstantinov, 2008).

Both species mentioned above remain overlooked despite the intensive studies of the Bulgarian true bug fauna in the second half of 20th and the first two decades of 21st century. The reason for the late discovery of *E. nitidus* could be the focus of the entomological studies on parts of the country with Mediterranean climate influence in Southern Bulgaria while the fauna of the small mountains west of Sofia has been neglected.

Regarding *S. lepidus*, the collection of plant bugs and other insects on the *C. annua* is quite difficult with standard entomological technique and equipment. Careful examination of each plant or suction trapping with a handheld leaf blower (vacuum combo) are the best technique for successful collection. In addition, the saline habitats in Bulgaria develop at specific conditions and usually the areas they cover are fragmented and not large (Tzonev & Gussev, 2015). These habitat and host plant particularities could probably explain the late discovery of *S. lepidus* in Bulgaria.

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**References**


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