

## NEW RECORDS OF MIRIDAE (HETEROPTERA) IN SERBIA

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### Abstract

Data on 9 new species for the fauna of Serbia are presented: *Dicyphus (Dicyphus) epilobii* Reuter, 1883; *Europiella decolor* (Uhler, 1893); *Icodema infuscata* (Fieber, 1861); *Lygus wagneri* Remane, 1955; *Orthocephalus brevis* Panzer, 1798; *Phoenicocoris obscurellus* (Fallén, 1829); *Phytocoris (Exophytocoris) scitulus* Reuter, 1908; *Pinalitus rubricatus* (Fallén, 1807) and *Polymerus (Poeciloscytus) palustris* Reuter, 1905.

KEY WORDS: Miridae, Heteroptera, new records, Serbia

### Introduction

During a review of undetermined material stored at the Study Collection of Heteroptera at the Natural History Museum in Belgrade we discovered 9 new species of the family Miridae for fauna of Serbia. Some of the specimens were collected last year (2019) and others many years ago. The newly processed material includes individuals collected from 1978 to 2019. The collectors' names include curator-entomologist Danka Čubrilović (1960) and entomologist Aleksandar Stojanović, who collected, mounted and labeled almost all specimens in the period 1998-2019. In the last few years, Stojanović used both nocturnal collecting of moths (where some of the Miridae were also attracted by light) and daytime collecting of insects in meadows, downs and forest edges with a sweeping net.

## Results

### ***Dicyphus (Dicyphus) epilobii* Reuter, 1883**

Material examined: Belgrade: Veliki Mokri Lug, Stepin Gaj, 06.09.1997, 1 ♂; 23.07.2011, 1 ♀, leg. A. Stojanović; Belgrade: Resnik, Kružni Put, 13.08.1997, 5 ♂♂, 26.08.2000, 5 ♂♂ leg. A. Stojanović; Popović, 08.08.1998, 1 ♀ leg. A. Stojanović; Divčibare, 12.08.1999, 1 ♀ leg. Lj. Protić; Kosmaj, 09.05.1996, 2 ♂♂, 04.10.2003, 1 ♂, 18.06.2005, 2 ♂♂ leg. A. Stojanović; Belgrade: Avala, Trešnja (lake), 03.06.2003, 2 ♂♂, leg. Lj. Protić; Belgrade: Avala, 14.06.2003, 2 ♂♂, leg. A. Stojanović; Lazarevac: Stubica, Stubički Vis, 12.06.2010, 1 ♂♂, leg. A. Stojanović; Lazarevac: Stubica, 03.09.2011, 1 ♀, leg. A. Stojanović; Mt. Rudnik, 20.08.2011, 4 ♂♂, leg. A. Stojanović; Surduk, 08.09.2012, 4 ♂♂, leg. A. Stojanović; Grocka: Vrčin, 5 ♂♂, 5 ♀♀, 23.09.2012, leg. A. Stojanović; Ljig: Kadina Luka – Ba, 15.06.2013, 1 ♂, leg. A. Stojanović; Rudnik: from the village to Cvijićev Vrh, 20.07.2013, 1 ♂, 07.09.2013, 3 ♂♂, leg. A. Stojanović.

Distribution on the Balkan Peninsula: Bulgaria, Croatia, Serbia, Slovenia.

General distribution: Europe.

Host plant: *Epilobium hirsutum*.

References: Gogala & Gogala, 1986; Josifov, 1986; Protić, 2002, 2011; Barić & Pajač 2008.

### ***Europiella decolor* (Uhler, 1893)**

[*Agalliaestes decolor* Uhler, 1893]

[*Plagiognathus decolor* Reuter, 1909]

Material examined: Deliblato Sands: Devojački Bunar 07.06.2003, 1 ♀; 25.06.2005, 1 ♀ leg. A. Stojanović; Bašaid-Melenci, 24.08.2013, 1 ♀, leg. A. Stojanović.

Distribution on the Balkan Peninsula: Bulgaria, Croatia, North Macedonia, Serbia, Slovenia.

General distribution: Holarctic.

Host plants: *Artemisia* spp.

References: Horváth, 1897; Josifov, 1986; Gogala, 2006.

### ***Icodema infuscata* (Fieber, 1861)**

Material examined: Valjevo: Mravinci, 03.08.2003, 1 ♂, 1 ♀, leg. M. Vujanić.

Distribution on the Balkan Peninsula: Albania, Bosnia & Herzegovina, Bulgaria, Croatia, Greece, Serbia, Slovenia.

General distribution: Europe.

Host plants: *Quercus* spp., *Quercus pubescens*.

References: Reuter, 1888; Apfelbeck, 1891; Josifov, 1969; Novak & Wagner, 1951; Balarin, 1968; Gogala, 2006; Pajač *et al.*, 2010; Malenovský *et al.*, 2011; Protić, 1998; Wachmann *et al.*, 2004.

Note: In the Catalogue of the Heteroptera of the Palaearctic Region, Aukema & Rieger (1999) cite Yugoslavia (erroneously). In the former Yugoslavia, this species is known from: Bosnia & Herzegovina, Croatia and Slovenia. In vol. 6 of this Catalogue, Aukema *et al.* (2013) deleted YU (Yugoslavia). Thus, our finding is the first in Serbia.

### ***Lygus wagneri* Remane, 1955**

Material examined: Mt. Tara: Konjska Reka, 02.08.1960, 1 ♂, leg. D. Čubrilović; Mt. Zlatar: Akmačići, 28.07.1979, 1 ♂, leg. Lj. Kašić (Protić); Mt. Zlatar: Nova Varoš, 28.07.1979, 1 ♂, 1 ♀ leg. Lj. Kašić (Protić); Mt. Tara: Račanska Šljivovica, 01.08.1988, 1 ♂, leg. Lj. Protić; Mt. Tara: hotel "Omorika", 02.08.2002, 1 ♀, leg. Lj. Protić; Mt. Tara: Zaovine, 22.07.2003, 3 ♂♂, leg. Lj. Protić; Mt. Tara: Metoh Manastira Rače, 21.7.2003, 3 ♂♂, 3 ♀♀ leg. Lj. Protić; Mt. Tara: Jelisavčići, 25.7.2003, 2 ♂♂ leg. Lj. Protić; Mt. Rudnik: foothills of Mali Šturac, 24/25.07.2015, 3 ♂♂ (attracted to light) leg. A. Stojanović; Mt. Stolovi 02/03.09.2015, 1 ♂ (attracted to light) legs. A. Stojanović & M. Jovanović; Mt. Željin, 03.09.2015, 1 ♂, 4 ♀♀ legs. A. Stojanović & M. Jovanović; Mt. Rudnik: Mali Šturac, 22/23.07.2016, 1 ♂ (attracted to light), leg. A. Stojanović; Mt. Čemerno: Smrdljuč – Berberovo Polje, 02.08.2019, 8 ♂♂, 4 ♀♀, legs. A. Stojanović & M. Jovanović.

Distribution on the Balkan Peninsula: Albania, Bulgaria, Greece, Montenegro, North Macedonia, Serbia, Slovenia.

General distribution: Euro-Siberia.

Host plants: in grass-dominated associations of meadows and pastures.

References: Remane, 1955; Göllner-Scheiding 1978; Protić *et al.*, 1990; Nau, 2004; Aglyamzyanov, 2009; Tazsakowski & Pasińska, 2017.

### ***Orthocephalus brevis* (Panzer, 1798)**

Material examined: Mt. Rudnik: Gradovi, 650 m a.s.l., 10.06.2003, 1 ♂, leg. Lj. Protić

Distribution on the Balkan Peninsula: Bosnia & Herzegovina, Bulgaria, Greece, Serbia, Slovenia.

General distribution: Euro-Siberia.

Host plants: Asteraceae, Lamiaceae.

References: Gogala, 2006; Kment & Baňar, 2012; Namyatova & Konstatinov, 2009.

### ***Phoenicocoris obscurellus* (Fallén, 1829)**

Material examined: Deliblato Sands: Devojački Bunar, 19.06.2004, 1 ♀, leg. A. Stojanović.

Distribution on the Balkan Peninsula: Bulgaria, Serbia, Slovenia.

General distribution: Euro-Siberian.

Host plants: *Pinus* sp. and *Junipers* sp.

References: Josifov, 1974, 1990; Wagner, 1975; Gogala & Gogala, 1989; Yıldırım, 2001; Vinokurov & Luo 2014; Vinokurov, 2020.

### ***Phytocoris (Exophytocoris) scitulus* Reuter, 1908**

Material examined: Belgrade: Vinča, 29.07.1997, 1 ♀, leg. A. Stojanović; Belgrade: Veliki Mokri Lug: Stepin Gaj, 21.07.2012, 1 ♀ leg. A. Stojanović; Belgrade: Veliko Selo, 11.08.2012, 1 ♂, leg. A. Stojanović; Ražanj:

Mt. Bukovik, 10.08.2013, 1 ♂, leg. A. Stojanović; Mt. Rudnik: Selo – Cvijićev Vrh, 07.09.2013, 1 ♂, leg. A. Stojanović; Lazarevac: Stubički Vis, 29/30.07.2016, 1 ♂ (attracted to light), leg. A. Stojanović.

Distribution on the Balkan Peninsula: Bulgaria, Croatia, Serbia.

General distribution: Eurasia.

Host plants: in Serbia, *Crataegus* sp.

References: Putshkov & Putshkov, 1983; Aukema & Rieger, 1999; Josifov, 1986; Kment et al., 2005; Linnavuori, 2007.

### ***Pinalitus rubricatus* (Fallén, 1807)**

Material examined: Vardenik: Veliki Strešer (at the foothills of the peak, at about 1700-1660 m a.s.l.), 31.07.2019, 3 ♂♂, 4 ♀♀, leg. A. Stojanović & M. Jovanović.

Distribution on the Balkan Peninsula: Bosnia & Herzegovina, Bulgaria, Croatia, Serbia, Slovenia.

General distribution: Euro-Siberian; North Africa (Maghreb), introduced to North America.

Host plants: Conifers. *Picea abies* (Horvath 1891 as *Abies excelsa*).

References: Wagner & Weber, 1964; Vinokurov & Kanyukova, 1995; Gogala, 2006; Pajač et al., 2010; Protić & Stanković, 2015.

### ***Polymerus palustris* (Reuter, 1907)**

Material examined: Stari Slankamen, r. Danube, 18/19.05.2018, 1 ♂ (attracted to light), leg. A. Stojanović; Belgrade: Pinosava, 24.05.1998, 2 ♂♂, leg. A. Stojanović.

Distribution on the Balkan Peninsula: Bulgaria, Croatia, North Macedonia, Serbia, Slovenia.

General distribution: Euro-Siberian.

Host plants: *Galium* sp., *Galium palustre*.

References: Horváth, 1897; Göllner-Scheiding, 1978; Josifov, 1986, 1999; Gogala & Gogala 1989; Protić, 1998.

## Discussion

*Dicyphus epilobii* is distributed throughout Europe (middle, central and northern Europe). There used to be only a few single records in countries of the Balkan Peninsula; however, in the last two decades, records have increased in number, indicating a southward range spread (Bulgaria, Croatia, and Serbia). The Study Collection includes specimens of *Dicyphus epilobii* collected at various altitudes, from lowlands (Grocka, Resnik, Surduk) to foothills (Avala, Kadina Luka, Stepin Gaj, Stubički Vis) to mountains (Divčibare, Kosmaj, Rudnik).

*Europiella decolor* was described from North America and it later spread throughout the Holarctic Region. As it is associated with plants of the widespread genus *Artemisia*, particularly *Artemisia campestris* L. and the invasive *Artemisia annua* L., it is expected that the number of known localities will continue to increase throughout the Balkan Peninsula, where its present occurrence is sporadic. In Serbia, *E. decolor* was recorded in two characteristic habitats. The first record is from Deliblato Sands, the largest sand-covered area in Europe, where in the vegetation of Pontian continental sands (*Festucion beckeri* Vicherek 1972) the genus *Artemisia* is represented not only by *A. campestris* L. but also by the endemic species *A. pancicii*

(Janka) Ronniger. The second record was from the Bašaid-Melenci road, in the region of characteristic salt pans of Banat.

The species *Icodema infuscata* was collected at the locality Mravinci at Debelo Brdo (a ridge of Mt. Povlen). These habitats are warm and sunlit. In the stretch of land from Debelo Brdo to Mravinci there is an almost continuous broadleaf forest (beech, oak, hazel, hornbeam and to a lesser extent, maple). In neighboring Croatia, it is usually collected from *Quercus pubescens* Willd. This rare European species is distributed throughout the Balkan Peninsula. Josifov (1999) cited it as a typical Mediterranean stenophagous species connected to *Quercus* spp.

The range of *Lygus wagneri* in Serbia includes mountains such as Čemerno, Rudnik, Tara, Zlatar and Željina. This species is positively phototropic – attracted by light. Therefore, specimens were collected during a night hunt on Mt. Stolovi, using a white cloth and 12-W LED bulbs. Imago specimens were collected from June to September. This is a phytophagous (polyphagous) species. During the day, it was collected with a sweeping net in mountain meadows and open, uncultivated localities. There is a record of this species being collected on alfalfa at the locality Sombor: Ridica (Konjević, 2015), which needs to be validated. Most probably it was some other species from the genus *Lygus*, such as *Lygus rugulipennis* Poppius, 1911.

*Orthocephalus brevis* was collected in meadows of Mt. Rudnik – Gradovi (archeological site). According to the Catalogue of the Heteroptera of the Palaearctic Region (Aukema & Rieger, 1999), this species was previously known from Bosnia-Herzegovina, Bulgaria, Greece and Slovenia to the north. It was recorded on various plant species in mountain meadows, glades and forest edges. The record from Serbia contributes to knowledge of the range of this rare mountain species.

*Phoenicocoris obscurellus* was collected at the locality Devojački Bunar (Deliblato Sands) on *Pinus sylvestris* L. Work on sand-binding and the afforestation of Deliblato Sands was first organized in 1818 (Milenković *et al.* 2017). *Pinus nigra* Arn. and *Pinus sylvestris* L. were mostly used for afforestation of Deliblato Sands. Monocultures of these species are on interconnected surfaces (Šljivovački, 1970). *Ph. obscurellus* is widely distributed from Europe to south of the Far East. The host plant on Kanas Lake in China is *Larix sibirica* Ledebour (Vinokurov, 2020).

*Phytocoris (Exophytocoris) scitulus scitulus* was recorded at various altitudes, from lowlands in the surroundings of Belgrade to mountains (Bukovik, Rudnik). One male was attracted to light at the site Lazarevac: Stubički Vis. All our records were of specimens collected on *Crataegus* sp., which is a host for several species from the genera *Cacopsylla* and *Psylla*. In Ukraine, this species was also collected from broadleaf trees (Putshkov & Putshvov, 1983), in contrast to other data from Croatia, Turkey and Iran (Kment *et al.* 2005; Linnavuori, 2007; Çerçi & Koçak, 2017), where it lives in conifers.

Specimens of *Pinalitus rubricatus* from Mt. Vardenik, below the Veliki Strešer peak, were collected on spruce trees at an altitude of more than 1700 m a.s.l. Branches were either shaken into a net or a net was swept along the canopy in short bursts, in the upper timber zone of spruce. Above the spruce belt there are no more trees, only a few stunted pines and willows.

This genus has so far been represented in Serbian fauna by three species: in addition to *P. rubricatus*, there are also *P. cervinus* (Herrich-Schaeffer) with a single record in the Study Collection: Mt. Kosmaj, and *P. coccineus* (Horváth): Požarevac (Horváth 1903).

At first glance, *Polymerus palustris* is very similar to *Polymerus unifasciatus*. It is darker and with a smaller yellow spot at the top of the scutellum and along the flanks, with black corium near the clavi, while the yellow edge of the posterior part of pronotum is just a narrow line, which is very well pronounced in our specimens. There is also a clear difference between these two species regarding the ratio of antenna segments. At the

locality Slankamen, a male was attracted to light. All three specimens were collected in the second half of May, in mesophilic meadows with *Galium* sp.

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## НОВИ ПОДАЦИ ЗА ФАМИЛИЈУ MIRIDAE (HETEROPTERA) У СРБИЈИ

ЉИЉАНА ПРОТИЋ

## Извод

У раду је обрађено девет нових врста из фамилије Miridae (Heteroptera) за фауну Србије: *Dicyphus* (*Dicyphus*) *epilobii* Reuter, 1883; *Europiella decolor* (Uhler, 1893); *Icodema infuscata* (Fieber, 1861); *Lygus wagneri* Remane, 1955; *Orthocephalus brevis* Panzer, 1798; *Phoenicocoris obscurellus* (Fallén, 1829); *Phytocoris* (*Exophytocoris*) *scitulus* Reuter, 1908; *Pinalitus rubricatus* (Fallén, 1807) и *Polymerus* (*Poeciloscytus*) *palustris* Reuter, 1905.

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