***DIMORPHOCORIS SAULI* (HETEROPTERA: MIRIDAE), A NEW SPECIES FOR THE FAUNAS OF SERBIA AND MONTENEGRO**

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Dimorphocoris saulii Wagner is a new species for the faunas of Serbia and Montenegro as well as a new genus for the fauna of Serbia. Genus *Dimorphocoris* is represented in Balkan Peninsula with nine species: *D. beieri* Wagner, *D. debilis debilis* (Reuter), *D. fuscus* Joakimov, *D. gracilis* (Rambur), *D. lateralis* Reuter, *D. sari* Linnavuori, *D. sauli* Wagner, *D. schmidtii* (Fieber) and *D. tristis* (Fieber). Within the Balkan Peninsula they inhabit Mts Dinarides (Montenegro, Croatia, Slovenia, Serbia), Mts Rhodope (Bulgaria), Mts Pindus (Greece) and some Mediterranean islands.

Key words: *Dimorphocoris*, Heteroptera, Serbia, Montenegro, Balkan Peninsula

INTRODUCTION

The genus *Dimorphocoris* Reuter is represented in Palearctic with 56 species (Aukema & Rieger, 1999). It is distributed from the Mediterranean region to Central Asia, as well as in Eastern Africa and at Sakhalin Island

in the North Pacific Ocean (Kerzhner 1970, Wagner 1973, Ehanno 1993, Linnavuori 1992, Ehanno & Ribes 1994, Tatarinic & Cassis 2012). This genus includes two main groups, named: “*gracilis*” and “*lateralis*” (Tatarinic & Cassis 2012). In the “*gracilis*” group, males are macropterous while females are brachypterous, while in the “*lateralis*” group both sexes are brachypterous.

Both groups are present in Europe and Balkan Peninsula. According to the Catalogue of Heteroptera of Palaearctic [CHP] (Aukema & Rieger 1999) 41 species of the genus *Dimorphocoris* are known for the European fauna. After that publication one more species, *D. poggi*, was also described (Carapeza 2002).

According to the referenced studies nine species are recorded for the Balkan Peninsula and faunas of Bulgaria, Montenegro, Greece, Croatia and Slovenia:

***Dimorphocoris beieri* Wagner, 1965**

Type locality Montenegro: Durmitor 2400 m a.s.l (Wagner 1965b, Tamanini 1972, Protić *et al.* 1990, Ehanno 1997); Durmitor leg. Penther (AMNH PBI00183810).

CHP EU: Montenegro (Aukema & Rieger 1999).

***Dimorphocoris debilis debilis* (Reuter, 1880)**

Type locality Greece: Attica Dr. Kreuper “specimena non-nulla legit” (Reuter 1880, 1890); Lindberg (1956); Wagner (1965b); Ehanno (1993).

CHP EU: France, Greece, Italy (Sicily), Spain, Turkey (European part) (Aukema & Rieger 1999).

***Dimorphocoris fuscus* Joakimov, 1909**

[= *Dimorphocoris riabauti* Wagner, 1954]

Type locality Bulgaria: Vitosha, Crni Vrh 2285 m a.s.l. August 1st, 1905; Rila Mt, Musala 2925 m a.s.l. August 1st, 1906. “Habitat in gramine” (Joakimov 1909); Wagner (1954); Wagner & Weber (1964); Vitosha, Rila (Josifov 1961); Pirin “Bajuvi Dupki” 2100 m a.s.l. September 14th, 1987. (Josifov 1990); Ehanno (1997); Vitosha, Rila, Pirin Mts (Josifov & Simov 2006).

CHP EU: Andora, Bulgaria, France, Spain (Aukema & Rieger 1999).

***Dimorphocoris gracilis* (Rambur, 1839)**

[= *Phytocoris gracilis* Rambur 1839]

[= *Orthocephalus signatus* Fieber, 1861; Reuter (1890)]

Type locality Spain: Granada (Rambur 1839).

Croatia: Solin July 28th, 1954. leg. H. Eckerlein. (Novak & Wagner 1955); Lindberg (1956); Seidensticker (1964); Ehanno & Ribes (1994); Ehanno (1997).

Note: Mr. Eckerlein from Coburg was collecting in June and July in Dalmatia, mostly in area between Podstrana and Grljevac, near Split.

CHP EU: Croatia, France, Portugal, Spain (Aukema & Rieger 1999).

***Dimorphocoris lateralis* Reuter, 1901**

Type locality Greece: Chania [Canea] “Hab. locis aridis in insula Creta (Canea! m. martis), leg. Prof. J. Sahlberg” (Reuter 1901); Crete (Lindberg 1956, Wagner 1965a, Eckerlein & Wagner 1969); Crete, Elaunda b. Aghios Nikolaos on *Sarcopoterium spinosum* (Heiss 1984); Crete, Canea: Naxos, Chora; Kos, Kardamena; Rhodos, Petaloudes, Kalathos - Asklipio, Santorin (Linnavuori 1992); Ehanno & Ribes (1994).

CHP EU: Greece (Aukema & Rieger 1999).

Note: Johan Reinhold Sahlberg (1845-1920) was a Finnish entomologist (specialized in Coleoptera and Auchenorrhyncha). He made expeditions to many parts of Finland, to Russian (Karelia, Siberia), the Mediterranean area, and to Central Asia.

***Dimorphocoris sari* Linnavuori, 1992**

Type locality Greece: Mt. Taygetos 1900m a.s.l. on Peloponnese, “on grasses in a luxuriant moist meadow in the coniferous zone” (Linnavuori 1992).

CHP EU: Greece (Aukema & Rieger 1999).

***Dimorphocoris sauli* Wagner, 1965 (Figs 1-2)**

Type locality Italy (actually Slovenia): Mt. Auremiano June 1938. leg. L. Sauli (AMNH PBI00183825) (Wagner 1965a);

Slovenia: Karst: Vremščica [Illyria, Mt. Auremiano] (Wagner 1965a); Tamanini (1982); Gogala, M. (1992); Gogala, A. (1994, 2008).

CHP EU: Slovenia (Aukema & Rieger 1999).

Note: Luciano Sauli (1894-1985) from Trieste was a railway employee who collected both Heteroptera and Homoptera.

***Dimorphocoris schmidtii* (Fieber, 1858)**

[=*Orthocephalus schmidtii* Fieber, 1858]

Type locality Slovenia: Krain leg. Ferdinand Schmidt (Fieber 1858); “Carniola” leg. F. Schmidt (Gogala & Moder 1960); Kamniško-Savinjske Alps, Karavanke (Gogala & Gogala 1986, Gogala, M. 1992, Gogala, A. 1994). Gogala (1992) believed that Schmidt collected this species

at the locality Dolga Njiva near Krvavec in the Kamniško-Savinjske Alps, where it was rediscovered many years after Schmidt's time.

Fig. 1. *Dimorphocoris sauli* Wagner, male
(Drawing by: Aleksandar Stojanović).

CHP EU: Austria, Slovakia, Slovenia (Aukema & Rieger 1999).

Note: Ferdinand Jožef Schmidt (1791-1878) was a merchant and a naturalist. He was born in Sopron (Hungary). He worked for a short time in Vienna and for the longest period of time in Ljubljana (Slovenia) [Laibach, Krain], until his death.

Fig. 2. *Dimorphocoris sauli* Wagner, female
(Drawing by: Aleksandar Stojanović).

***Dimorphocoris tristis* (Fieber, 1861)**

Spain *Type locality* Spain: Granada (Fieber 1861); Reuter (1890).

Greece: Lindberg (1956); Seidenstficker (1957), on flowers of *Anthemis* on a sand bank; Wagner (1965, 1973); Linnavuori (1992); Ehanno & Ribes (1994); Crete: Episkopi (Carapezza 1998).

CHP EU: Greece, Portugal, Spain, Turkey (European part) (Aukema & Rieger 1999).

This genus was previously unknown from Serbia while endemic *D. beieri* was the only registered species for the fauna of Montenegro. In this paper *D. sauli* is recorded for faunas of Serbia and Montenegro for the first time.

MATERIAL AND METHODS

Nomenclature of species is given according to Catalogue of the Heteroptera of the Palaearctic Region (Aukema & Rieger 1999).

Specimens of *D. sauli* from Serbia and Montenegro are stored in the Entomological Collection of the Natural History Museum in Belgrade.

RESULTS

Dimorphocoris saulii was described from Italy (actually Slovenia), Mt. Auremiano (Wagner 1969). The second record of the species comes from the same mountain in Slovenia at Mt. Vremščica [Mt. Auremiano] (Gogala, M. 1992, Gogala, A. 1994). This paper presents two new localities in Balkan Peninsula where *D. sauli* was collected:

***D. sauli* - new records:**

– Serbia: Mt. Stolovi, the mountain ridge Ravni Sto, 960-1080 a.s.l.. 11 m, 13 f., June 22nd-23rd, 2014. legs. A. Stojanović and Miroslav Jovanović. New genus for the fauna of Serbia.

– Montenegro: Mt. Durmitor, Sušičko Lake. 1f., July 22nd, 1981. leg. Lj. Janković New species for the fauna of Montenegro.

D. sauli belong to the “*lateralis*” group and both sexes are brachypterus and similar dimensions, between 3mm (male) and 3.0-3.4 mm (female).

The species are phytophagous, with many found on grasses. The majority of host records coming from the family Poaceae. The records from Serbia and Montenegro were collected in mountain meadow associations.

DISCUSSION AND CONCLUSIONS

So far mentioned new localities of *D. saulii* belong to Mts Dinarides – young fold-type mountains of the same type as Alps, Apennines and Pyrenees, bordering Julian Alps at the north and Šara-Pind mountain chain at the southeast. The longitudinal and transverse dislocation lines divide the Dinarides into several units. Mt. Stolovi belongs to Šumadija mountains of the Kopaonik group (Stolovi, Željin, Goč). Ravni Sto (Fig. 3) in Central Serbia is a mountain ridge leading from peak Orlovac (938 a.s.l.) toward the Usovica ridge and further toward the highest peak of Mt. Stolovi - Kamarište (1375 a.s.l.). The altitude of this ridge ranged from 960 m to about 1080 m above sea level, but *D. saulii* were present everywhere. Ravni Sto is one long unbroken meadow-pasture along the ridge, with a dirt road cutting through it at the middle, while the slopes at the sides of the

ridge are covered in sparse mixed forest struggling for survival in these conditions. The real scope of its range will be subject of further studies, but it is important to note that this species was not recorded in the same interval of time at nearby Mt. Goč, which has similar geological substrate and similar meadow-type plant association.

Fig. 3. – Mt. Stolovi, ridge Ravni Sto, 960-1080 m a.s.l. Habitat of *Dimorphocoris sauli* Wagner (Photo: Miroslav Jovanović).

Canyon of river Sušica in Montenegro is situated on the western slopes of Mt. Durmitor and is 14 km long. The source of river Sušica is at about 1300 m a.s.l, and its confluence into river Tara is at 512 m a.s.l. It is also an underground river for one part of its flow. Three kilometres downstream from the source, the river forms Sušičko Lake at the altitude of 1140 m. This lake is present only from early spring to June, and its greatest depth is about 5 m. Its limestone bed includes several sinkholes through which it loses water. At the season when snow is melting in the surrounding mountains, the lake is filled with water, while later it dries out and in the summer it turns into a meadow valley of extraordinary beauty. Canyon of Sušica and Sušičko Lake are characterized by valley climate, which is a transition between temperate-continental and mountain climates, and these areas are protected from large-scale wind movements. Therefore summers and winters are warmer than in the surrounding areas. As a consequence of all geomorphological and climate conditions, canyon of Sušica is a habitat for many relict species.

In the Balkan Peninsula, species from genus *Dimorphocoris* inhabit meadow associations in mountains (at altitudes of 1000 m above sea level

and above) but also some sandy coastal habitats in Greece and Dalmatia. In late Tertiary, many species of genus *Dimorphocoris* have retreated to higher altitudes and remained to this day as Tertiary relicts (Josifov & Simov 2006).

Dimorphocoris beieri was recorded only in Montenegro at Mt. Durmitor. Wagner (1976) described *D. beieri* after male specimens. In later research of entomofauna of Durmitor macropterous female was also collected and described (Protić *et al.* 1990). One specimens of *D. beieri*, collected by Penther, is stored at the American Museum of Natural History in New York (Toby Schuh - Discover Life AMNH PBI00183810).

Dimorphocoris fuscus was described by Joakimov (1909) and until 1964 it was considered endemic to Bulgaria, as it was recorded only on mountains Vitosha, Rila and Pirin. This species was recorded at new localities in Asia during the research of fauna of Mongolia (Kerzhner 1964, 1970) and later also of Tuva in Siberia (Vinokurov & Kanyukova 1995). Ehanno (1997) performed a review on species *D. ribauti*, concluding that it was actually a synonym for *D. fuscus*. Therefore the range of *D. fuscus* is spreading westward from Bulgaria into Spain, France and Andora (localities where *D. ribauti* was recorded). All these records indicate disjunctive character of range and wide distribution of *D. fuscus* in the Palaearctic.

Species recorded in Europe are mostly concentrated in France (19) and Iberian (12), Italian (10) and Balkan Peninsula (9) (Aukema & Rieger 1999, Carapeza 2002). They share their predisposition for fold-type mountains formed in Mesozoic. They are generally endemic-relict species with disjunctive ranges in high mountains of Europe, Asia, northern Africa or the coastal zone of Mediterranean. This hypothesis is supported by the geological past of the present range of genus *Dimorphocoris*. The younger fold mountains in Europe (Alps, Pyrenees, Apennines, Dinarides) were formed in Mesozoic and Tertiary. In Europe, the Alps were in the centre of folding activity. Their northern limestone chains are connected to the Carpathians, which are in turn connected to Balkan and Pontian mountains. The southern limestone chains are connected to the Dinarides and Taurus in Asia Minor. Toward the southwest the Alps are connected to the Pyrenees and toward the south to the Apennines. The mountain massif Atlas in Africa is connected to the Alps through Baetic Cordillera and the Balearics. Yayla Mountains at the Crimea are connected to the Caucasus massif and side branches of Balkans.

Ranges of *Dimorphocoris* species are mostly small, as among the 42 species recorded in Europe and 30 were recorded only in a single country. *D. lateralis* is present only in Greece, *D. sauli* in the Balkan Peninsula, and *D. schmidtii* only in the Alps. Only *D. debilis* was recorded in three large European peninsulas (Italian, Balkan, Iberian) while *D. tristis* was recorded at Iberian Peninsula and in Greece.

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***DIMORPHOCORIS SAULI* (HETEROPTERA: MIRIDAE), НОВА ВРСТА У ФАУНАМА СРБИЈЕ И ЦРНЕ ГОРЕ**

ЉИЉАНА ПРОТИЋ

Р Е З И М Е

Dimorphocoris saulii Wagner је нова врста стенице за фауне Србије и Црне Горе, док је род *Dimorphocoris* истовремено по први пут констатован за фауну Србије.

На Балканском полуострву распрострањено је девет врста рода *Dimorphocoris*: *D. beieri* Wagner, *D. debilis debilis* (Reuter), *D. fuscus* Joakimov, *D. gracilis* (Rambur), *D. lateralis* Reuter, *D. sari* Linnavuori, *D. saulii* Wagner, *D. schmidtii* (Fieber) и *D. tristis* (Fieber). На поменутом подручју врсте насељавају Динариде (Словенија, Србија, Црна Гора, Хрватска), Родопе (Бугарска), Пинд (Грчка) и острва у Медитерану.