

HETEROPTERA COLLECTED ON THE MOUNTAINS STOL AND CRNI VRH, EAST SERBIA

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The material collected in the mountains of Stol and Crni Vrh, E Serbia, has been identified into 59 Heteroptera species, five of which are new for the fauna of SR Yugoslavia, and are as follows: *Calocoris princeps*, *Placochilus seladonicus*, *Megalocoleus pilosus*, *Thermocoris algericus*, *Sternodonotus obtusus*. Moreover, *Calocoris princeps*, also recorded, is a rare and endemic species in the Balkan Peninsula.

KEY WORDS: Heteroptera, Mt. Stol, Mt. Crni Vrh, Serbia.

INTRODUCTION

Despite the few papers on the Heteroptera of E Serbia (ŽIVOJINOVIĆ, 1950; PROTIĆ, 1988/89, 1992) the mountains of Stol and Crni Vrh have remained out of the investigators' focus. This paper, therefore, aims at communicating the results of a collection carried out by the author on the mountains of Stol (1155 m) and Crni Vrh (1027 m) in E Serbia.

AREA EXAMINED

The examined area centres around the small town of Bor, E Serbia (22° 6' E, 44° 5' N). The geomorphology of the area is characterized by volcanic and carbonic rocks. Geologically, the mountain of Stol is made of limestone and dolomite, whereas the mountain of Crni Vrh consists of two andesite cones.

The Heteroptera collecting has been carried out in the following four sites:

- (1) The mountain of Stol – hay meadows by the Mountaineers' house and the lake, both at the altitude of 850-900 m. The plant life of this mountain is of certain characteristic traits of the Mediterranean flora. The mesophilic mead-

ows encircle the Mountaineers' house, bordering a forest farther on, in which *Fagus moesiaca* is edicator. The following are the species characteristic of the forest: *Cottinus cogygia*, *Siringa vulgaris* and *Eryngium palmatum*.

- (2) The mountain of Stol – the peak and ridge areas, the altitude ranging from the 850-900 m of the Mountaineers' house to the 1100 m of the ridge or 1156 m of the very peak. The northern steeps are characterized by the growth of *Sesleria regida*, *Saxifraga moschata* and *Dianthus petreus*. The endemorelict plant species, such as *Edrianthus serbicus*, also grows on the mountain of Stol. Many endemic species, such as *Potentilla chrysantha*, *Cerastium banaticum* and *Euphorbia ilirica* are to be found growing on the rocks and the ridge. The slopes with a southward exposition, however, are covered with plants of steppe-like character, such as *Carex pumilis*, *Potentilla cinerea*.
- (3) The mountain of Stol – the moist meadows along the road to Krivelj. The materials have been collected by the rivulet of Kriveljska Reka, at the altitude of about 350 m. At the river habitats in question, the vegetation was typical, consisting of species such as *Carex* sp., *Juncus* sp. and *Mentha* sp.
- (4) The mountain of Crni Vrh – hay meadows at the altitude of 700-800 m, the grass very high and lush at the time of our stay. The plant of *Tanacetum vulgare* dominated by its height.

MATERIAL AND METHODS

The collecting of Heteroptera on the mountain of Stol was carried out on June 11, and on that of Crni Vrh on July 13, 1989. A total of 208 Heteroptera specimens have been caught, the identification of which has yielded 59 species. These are the first specimens of these species in the Heteroptera collection of the Natural History Museum, which makes their record even more significant.

The standard sweeping net "catcher" has been used for catching the specimens, and the examination of individual plants applied.

RESULTS

Male has been marked ♂, female ♀, specimens of unidentified sex "ex", whereas the finding sites have been marked with bracketed figures in the annotated list.

The representation of species in the four examined sites: (1) the mountain of Stol – hay meadows by the Mountaineers' house and the lake; (2) the mountain of Stol – the peak and ridge areas; (3) the mountain of Stol – the moist meadows along the road to Krivelj; (4) the mountain of Crni Vrh – hay meadows is summarized in a table (Tab. I).

Miridae e. — *Amblytylus albidus* (Hahn, 1834): (4) 2♂ 4♀; — *Calocoris affinis* (Herrich-Schaeffer, 1835): (4) 1♀; — *Calocoris princeps* Reuter, 1880: (2) 3 ex on *Verbascum nigrum*; — *Globiceps flavomaculatus* (Fabricius, 1794): (1) 1♂; — *Halticus apterus* Linnaeus, 1761: (1) 1♀, (4) 1♀; — *Leptopterna dolobrata* (Linnaeus, 1758): (1) 1♀, (4) 3 ex; — *Macrotylus herrichi* (Reuter, 1873): (1) 1♂ 3♀ on *Tanacetum vulgare*; — *Megaloceroea reticornis* (Geoffroy, 1785): (4) 1♂ 2♀; — *Megalocoleus pilosus* Schrank, 1801: (4) 2♂ 2♀ on *Tanacetum vulgare*; — *Notostira elongata* (Geoffroy, 1785): (4) 4♂ 3♀; — *Orthops campestris* Linnaeus, 1758: (4) 2♂ 3♀; — *Orthops kalmi* Linnaeus, 1758: (2) 2 ex, (4) 2♀; — *Placochilus seladonicus* Fallén, 1807: (1) 2 ex, (2) 1 ex, (4) 2♂; — *Plagiognathus alpinus* Reuter, 1875: (4) 3 ex; — *Stenodema calcaratum* (Fallén, 1807): (4) 1 ex; — *Stenotus binotatus* (Fabricius, 1794): (1) 2 ex; (2) 1 ex; (4) 1 ex; — *Thermocoris algericus* E.Wagner, 1943: (1) 1 ex; — *Trigonotylus ruficornis* (Geoffroy, 1785): (4) 1 ex.

Anthocoridae e. — *Anthocoris gallarum-ulmi* (De Geer, 1773): (4) 2 ex on *Tanacetum vulgare*; — *Orius minutus* (Linnaeus, 1758): (1) 1 ex; — *Orius niger* Wolff, 1804: (2) 1 ex.

Nabidae e. — *Nabica flavomarginata* (Scholtz, 1846): (4) 1♂; — *Nabis capsiformis* (Germar, 1837): (1) 1♀, (4) 1♂ 1♀; — *Nabis fesus* (Linnaeus, 1758): (2) 1 ex; — *Nabis pseudoferus* Remane, 1949: (1) 2 ex.

Macrocephalidae e. — *Phymata crassipes* (Fabricius, 1775): (2) 1♂, 1♀.

Berytidae e. — *Berytinus clavipes* (Fabricius, 1775): (2) 1 ex; — *Gampsocors punctipes* (Germar, 1822): (4) 1 ex; — *Neides tipularius* (Linnaeus, 1758): (2) 1 ex.

Lygaeidae e. — *Lygaeus sardae* Spinola, 1837: (2) 1 ex; — *Lygaeus equestris* (Linnaeus, 1758): (1) 2♀, (2) 1♂ 1♀, (3) 1m; — *Lygaeus saxatilis* (Scopoli, 1763): (1) 1 ex; — *Melanocoryphus albomaculatus* (Goeze, 1778): (1) 1 ex; — *Megalonotus dilatatus* (Herrich-Schaeffer, 1842): (4) 2 ex; — *Megalonotus praetextatus* Herrich-Schaeffer, 1835: (2) 1 ex; — *Metopoplax ditomoides* (Costa, 1843): (1) 1 ex, (2) 3 ex; (4) 1♂; — *Nysius thymi* (Wolf, 1804): (1) 8 ex; — *Peritrechus geniculatus* (Hahn, 1831): (4) 2♀; — *Pterotmetus staphyliniformis* (Schilling, 1829): (4) 1 ex; — *Rhyparochromus alboacuminatus implagiatus* Stichel, 1962: (1) 1 ex; — *Rhyparochromus immaculatus* Royer, 1920: (4) 3♂ 3♀; — *Rhyparochromus (Xanthochilus) quadratus* Fabricius, 1798: (1) 1 ex; (2) 1 ex; (4) 3 ex; — *Rhyparochromus vulgaris* (Schilling, 1829): (4) 4 ex; — *Scolopostethus decoratus* Hahn, 1831: (2) 1 ex.

Rhopalidae e. — *Corizus hyosciami* (Linnaeus, 1758): (1) 1♀; — *Liorhyssus hyalinus* (Fabricius, 1794): (4) 2 ex; — *Rhopalus parampunctatus* (Schilling, 1817): (2) 6 ex on *Tanacetum vulgare*; (3) 1♂; — *Rhopalus subrufus* (Gmelin, 1790): (2) 16♂ 4♀, (3) 6♂, (4) 2♂ 4♀.

Table I

The representation of species in the four examined sites: (1) the mountain of Stol – hay meadows by the Mountaineers' house and the lake; (2) the mountain of Stol – the peak and ridge areas; (3) the mountain of Stol – the moist meadows along the road to Krivelj; (4) the mountain of Crni Vrh – hay meadows.

S P E C I E S	H A B I T A T S			
	(1)	(2)	(3)	(4)
<i>Globiceps flavomaculatus</i> (Fabricius)	+	–	–	–
<i>Leptopterna dolobrata</i> (Linnaeus)	+	–	–	–
<i>Thermocoris algericus</i> Wagner	+	–	–	–
<i>Orius minutus</i> (Linnaeus)	+	–	–	–
<i>Nabis pseudoferus</i> Remane	+	–	–	–
<i>Megalonotus dilatatus</i> (Herrich–Schaeffer)	+	–	–	–
<i>Nysius thymi</i> (Wolf)	+	–	–	–
<i>Corizus hyosciami</i> (Linnaeus)	+	–	–	–
<i>Eurygaster maura</i> (Linnaeus)	+	–	–	–
<i>Dolycoris baccarum</i> (Linnaeus)	+	–	–	–
<i>Palomena prasina</i> (Linnaeus)	+	–	+	–
<i>Halticus apterus</i> Linnaeus	+	–	–	+
<i>Leptopterna dolobrata</i> (Linnaeus)	+	–	–	+
<i>Orthops kalmi</i> Linnaeus	+	–	–	+
<i>Nabis capsiformis</i> (Germar)	+	–	–	+
<i>Coriomeris scabricornis</i> (Panzer)	+	–	–	+
<i>Lygaeus equestris</i> (Linnaeus)	+	+	+	–
<i>Placochilus seladonicus</i> Fallén	+	+	–	+
<i>Stenotus binotatus</i> (Fabricius)	+	+	–	+
<i>Metopoplax ditomoides</i> (Costa)	+	+	–	+
<i>Rhyparochromus quadratus</i> Fabricius	+	+	–	+
<i>Aelia acuminata</i> (Linnaeus)	+	–	+	+
<i>Calocoris princeps</i> Reuter	–	+	–	–
<i>Orius niger</i> Wolff	–	+	–	–
<i>Nabis ferus</i> (Linnaeus)	–	+	–	–
<i>Phymata crassipes</i> (Fabricius)	–	+	–	–
<i>Berytinus clavipes</i> (Fabricius)	–	+	–	–
<i>Neides tipularius</i> (Linnaeus)	–	+	–	–
<i>Lygaeosoma sardae</i> Spinola	–	+	–	–
<i>Megalonotus praetextatus</i> Herrich–Schaeffer	–	+	–	–
<i>Scolopostethus decoratus</i> (Hahn)	–	+	–	–

C o r e i d a e. – *Coreus marginatus* (Linnaeus, 1758): (4) 5♂ 2♀; – *Coriomeris scabricornis* (Panzer, 1809): (1) 4 ex, (4) 1 ex.

S c u t e l l e r i d a e. – *Eurygaster maura* (Linnaeus, 1758): (1) 3 ex.

S P E C I E S	(1)	(2)	(3)	(4)
<i>Sternodonotus obtusus</i> Mulsant et Rey	—	+	—	—
<i>Sciocoris microphthalmus</i> Flor	—	+	—	—
<i>Sciocoris umbrinus</i> Wolff	—	+	—	—
<i>Ventocoris philalyssum</i> Kirkaldy	—	+	—	—
<i>Rhopalus parampunctatus</i> (Schilling)	—	+	+	—
<i>Rhopalus subrufus</i> (Gmellin)	—	+	+	+
<i>Aelia rostrata</i> Boheman	—	—	+	—
<i>Palomena viridissima</i> (Poda)	—	—	+	—
<i>Amblytylus albidus</i> (Hahn)	—	—	—	+
<i>Calocoris affinis</i> (Herrich—Schaeffer)	—	—	—	+
<i>Megaloceroea recticornis</i> (Geoffroy)	—	—	—	+
<i>Megalocoleus pilosus</i> Schrank	—	—	—	+
<i>Notostira elongata</i> (Geoffroy)	—	—	—	+
<i>Orthops campestris</i> Linnaeus	—	—	—	+
<i>Plagiognathus alpinus</i> (Reuter)	—	—	—	+
<i>Stenodema calcaratum</i> (Fallén)	—	—	—	+
<i>Trigonotylus ruficornis</i> (Geoffroy)	—	—	—	+
<i>Anthocoris gallarum—ulmi</i> (De Geer)	—	—	—	+
<i>Nabicula flavomarginata</i> (Scholtz)	—	—	—	+
<i>Gampsocors punctipes</i> (Germar)	—	—	—	+
<i>Megalonotus dilatatus</i> (Herrich—Schaeffer)	—	—	—	+
<i>Peritrechus geniculatus</i> (Hahn)	—	—	—	+
<i>Pterotmetus staphyliniformis</i> (Schilling)	—	—	—	+
<i>Rhyparocromus immaculatus</i> (Royer)	—	—	—	+
<i>Rhyparochromus vulgaris</i> (Schilling)	—	—	—	+
<i>Liorhyssus hyalinus</i> (Fabricius)	—	—	—	+
<i>Coreus marginatus</i> (Linnaeus)	—	—	—	+

Pentatomidae. — *Aelia acuminata* (Linnaeus, 1775): (1) 3♂ 1♀, (3) 1♂, (4) 2♂ 1♂; — *Aelia rostrata* Boheman, 1852: (3) 1♂, 1♀ on *Tanacetum vulgare*; — *Dolycoris baccarum* (Linnaeus, 1758): (1) 11 ex; — *Palomena prasina* (Linnaeus, 1758): (1) 1♂, (3) 3♂; — *Palomena viridissima* (Poda, 1761): (3) 1♂ 2♀; — *Sternodonotus obtusus* Mulsant et Rey, 1856: (2) 1♀; — *Sciocoris microphthalmus* Flor, 1860: (2) 2 ex; — *Sciocoris umbrinus* Wolff, 1804: (2) 1♂ 1♀, — *Ventocoris philalyssum* Kirkaldy, 1916: (2) 1 ex.

DISCUSSION

Calocoris princeps Reuter is a rare and endemic Heteroptera species of the Balkan Peninsula, its range is disjunct. REUTER (1880) first described this species, stating Peloponessus as its *locus typicus*. The second record of this species was

made in Dalmatia, the locality of Dugopolje - the northern section of the Mosor mountain, on June 15, 1947 (NOVAK & WAGNER, 1951). Its third site was in Bulgaria, the mountain Strandža, on June 5, 1959 (JOSIFOV, 1959). Its fourth record comes from the mountain of Stol in Serbia at site 2 (limestone ground), and it was made on July 11, 1989. Three specimens were caught on *Verbascum nigrum* for the first time. JOSIFOV (1959) found this species on *Quercus* sp. The discovery of a new locality of this rare endemic species in Serbia is particularly important limit of the species range in the Balkans (Fig. 1). Its disjunct range can be ascribed to the characteristic limestone ground found at all the sites stated so far.

Placochilus seladonicus Fallén has been caught on the mountain of Stol, on *Galium verum*. That is the first record of this species in Serbia. Of all the territory of former Yugoslavia *P. seladonicus* was recorded in Macedonia only, and then in two localities: the mountains of Karadžica (1000 m) and Pelister (GÖLLNER-SCHIEDING, 1978).

Megalocoleus pilosus Schrank is another Heteroptera species new for the fauna of Serbia. The mountain of Crni Vrh is its first known locality. Three specimens were caught on *Tanacetum vulgare*. This is a Euro-Siberian species, and, as for the Balkan Peninsula, it is also spread in Macedonia, Albania and Bulgaria.

Thermocoris algericus E. Wagner is a new species for the Serbian fauna. As for its Balkan range, it has been recorded in Macedonia and Greece, including Crete.

The first Serbian record of the species of *Sternodonotus obtusus* Mulsant et Rey is the mountain of Stol. In the Mediterranean, it is distributed in warm, xerothermic habitats. Its Balkan range includes the Dalmatian mountain of Mosor, Roumania and Bulgaria. It is also to be found in France, Italy, Slovakia, Austria (Tyrol), Hungary, Russia (the Crimea) and Egypt (PUČKOV, 1961).

On the plant *Tanacetum vulgare* the following five Heteroptera species were caught: *Aelia rostrata*, *Rhopalus parampunctatus*, *Anthocoris gallarum ulmi*, *Macrotylus herrichi* and *Megalocoleus pilosus*. We have also found large colonies of Woolly Aphid (*Eriosoma lanigerum*) on this plant species; it is to be supposed that *Anthocoris gallarum ulmi* is a natural predator of the lice.

The comparison of the species collected in the covered areas has shown some similarities and discrepancies in the representation of the Heteroptera settlements (Tab. I).

Out of the total of 59 species, ten (10) have been caught on the mountain of Stol only. They are as follows: *Globiceps flavomaculatus*, *Leptopterna dolobrata*, *Thermocoris algericus*, *Orius minutus*, *Nabis pseudoferus*, *Megalonotus dilatatus*, *Nysius thymi*, *Corizus hyosciami*, *Eurygaster maura* and *Dolycoris baccarum*.

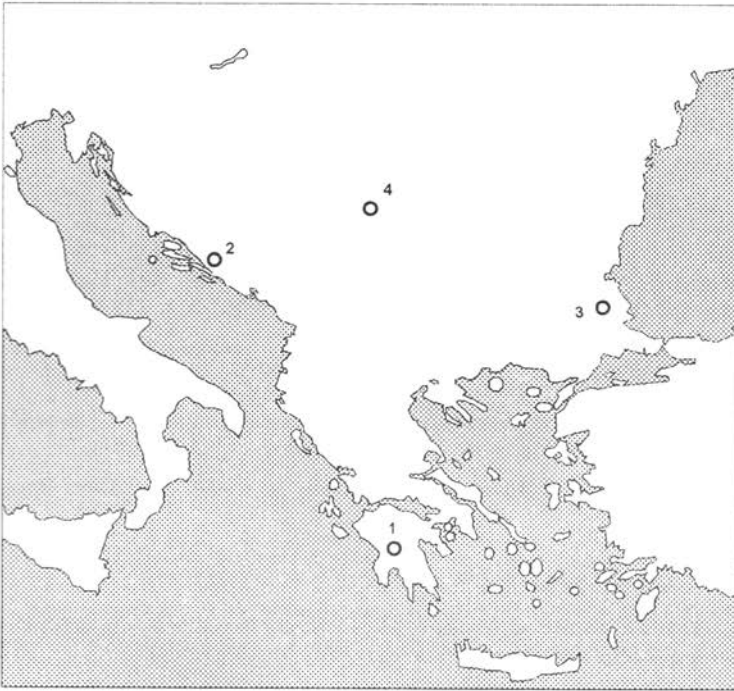


Fig.1. A sketch map showing the finding sites of the species *Calocoris princeps* on the Balkan Peninsula: 1 = Peloponessus, Greece; 2 = Dugopolje, Dalmatia; 3 = Strandža, Bulgaria; 4 = Stol, Serbia.

The following 19 species have been found on the mountain of Crni Vrh only: *Amblytylus albidus*, *Calocoris affinis*, *Megaloceroea recticornis*, *Megalocoleus pilosus*, *Notostira elongata*, *Orthops campestris*, *Plagiognathus alpinus*, *Stenodema calcaratum*, *Trigonotylus ruficornis*, *Anthocoris gallarum-ulmi*, *Nabicula flavomarginata*, *Gampsocors punctipes*, *Megalonotus dilatatus*, *Peritrechus geniculatus*, *Pterotmetus staphyliniformis*, *Rhyparocromus immaculatus*, *Rhyparochromus vulgaris*, *Liorhyssus hyalinus* and *Coreus marginatus*.

However, there are 11 species in common to both mountains: *Placochilus seladonicus*, *Stenotus binotatus*, *Metopoplax ditomoides*, *Rhyparochromus quadratus*, *Aelia acuminata*, *Halticus apterus*, *Leptopterna dolobrata*, *Orthops kalmi*, *Nabis capsiformis*, *Coriomeris scabricornis* and *Rhopalus subrufus*.

Such differences in the settlements of Heteroptera in the covered localities can be explained by the differences existing between the geological bases and plant associations. In addition to the aforesaid, the number of species found varied from site to site within the mountain of Stol itself.

The investigation on the mountains has shown the total of 59 species, i.e. 9.5% of all the Heteroptera known in Serbia so far. This is a significant fact inasmuch as the investigations lasted for only two days. This confirms the great diversity of the Heteroptera fauna of this region, caused by the specific geological composition of the ground and plant associations.

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НЕТЕРОПТЕРА САКУПЉЕНЕ НА ПЛАНИНАМА СТОЛ И ЦРНИ ВРХ, ИСТОЧНА СРБИЈА

Љ. ПРОТИЋ

И з в о д

За време једнодневних ентомолошких екскурзија на планине Стол (11.07.1989) и Црни врх (13.07.1989) прикупљено је 208 примерака и идентификовано 59 врста Heteroptera. То су прва истраживања Heteroptera ових планина до сада. Прикупљени материјал налази се у збирци Природњачког музеја у Београду (БЕО 600).

По броју врста најбројније су фамилије Miridae (18) и Lygaeidae (14). Фамилија Rhopalidae заступљена је са највећим бројем прикупљених примерака.

На истраживаним планинама Стол и Црни врх сакупљен је приближно једнак број врста Heteroptera, иако су ове планине са различитом геолошком подлогом, надморском висином и биљним заједницама, на којима су примерци сакупљани. На Столу је укупно нађено 32, а на Црном врху 30 врста Heteroptera. Од 59 врста само на Столу је утврђено 10 врста, а на Црном врху 19. На обе планине нађено је 11 преосталих врста.

Географски положај и геолошка прошлост ових планина су интересантни, а богатство фауне Heteroptera очевидно знатно. Започета истраживања би требало наставити. На то обавезују резултати добијени после ових краткотрајних сакупљања материјала.

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