

## NEW RESEARCH ON THE FAUNA OF HETEROPTERA IN BOSNIA-HERZEGOVINA

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### Abstract

Data on 77 species of Heteroptera collected in 2013 and 2014 from 21 localities in Bosnia-Herzegovina are presented. Eight new species are recorded in Bosnia-Herzegovina for the first time: *Gerris costae costae* (Herrich-Schaeffer), *Myrmecoris gracilis* (Sahlberg), *Pithanus maerkeli* (Herrich-Schaeffer), *Aradus obtectus* Vászárhelyi, *Rhopalus subrufus* (Gmelin), *Stictopleurus punctatonervosus* (Goeze), *Leptoglossus occidentalis* Heidemann and *Trochiscocoris rotundatus* Horváth.

KEY WORDS: Heteroptera, Bosnia-Herzegovina, *Leptoglossus occidentalis* Heidemann

### Introduction

The systematic study of the fauna of Bosnia-Herzegovina was started by the entomologist Viktor Apfelbeck, curator at the National Museum of Bosnia-Herzegovina in Sarajevo. Apfelbeck (1891) published a list of 526 taxa of Heteroptera from the Entomological Collection of National Museum in Sarajevo. After his time, the study of Heteroptera was sporadic. Individual papers by a number of entomologists have contributed to the present-day knowledge of the fauna of Heteroptera in Bosnia-Herzegovina (Sabransky, 1891; Kormilev, 1928-1929; Novak & Wagner, 1951; Linnavuori, 1953; Filippi, 1957; Sienkiewicz, 1964; Balarin, 1975; Rieger, 1978; Péricart, 1983; Protić, 1987, 1988, 1998, 2005, 2006; Protić *et al.*, 1990; Kment & Jindra, 2005; Kment *et al.*, 2006). According to our research, the present list of Heteroptera includes around 750 species.

## Material and Methods

This contribution includes data on specimens collected in 2013 and 2014 in 21 localities in Bosnia-Herzegovina. The specimens were collected with catcher net and individually sampled from plants. They were conserved in 75% ethanol and stored in the Entomological Collection at the Natural History Museum in Belgrade. All specimens were collected by Mihajlo Stanković and identified by Ljiljana Protić. The order of species follows the Catalogue of Heteroptera of the Palaearctic Region (Aukema & Rieger, 1995-2006).

### Studied localities

- 1) Surroundings of Berkovići: Dobro Polje, Mt. Straževica – the town of Berkovići is a municipality in the Republika Srpska. The peak of Mt. Straževica is 1050 m above sea level. The climate is influenced by proximity to the sea, relief, exposure to air circulations and geological composition, leading to a combination of Mediterranean and temperate-continental climate. Heteroptera were collected from stony meadows with grass vegetation, and occasionally also from sparse shrub (brush) vegetation.
- 2) Mt. Cincar: Lake Hrast – this mountain is situated in the western part of Bosnia-Herzegovina, between Kupreško and Glamočko Polje. The artificial lake Hrast is situated 3 km from the town of Glamoč. The highest peak of Mt. Cincar is 2006 m a.s.l. and is mostly composed of Jurassic and Cretaceous limestones and dolomites. Heteroptera were collected on the banks and in vegetation around Lake Hrast, overgrown with herbaceous vegetation of grass type, with occasional bushes or low trees.
- 3) Duvno: Duvanjsko Polje – a limestone field in southwestern Bosnia-Herzegovina. Duvanjsko Polje is a plateau 860-900 m a.s.l., a typical karst terrain with stony meadows and sparse shrub vegetation.
- 4) Mt. Krug – situated above Livno in southwestern Bosnia-Herzegovina, with the highest altitude 1147 m a.s.l. Heteroptera were collected in spacious stony pastures (meadows) with low vegetation, and occasionally from bush vegetation.
- 5) Mostar: Čitluk – the small town of Čitluk is situated on a plateau in southwestern part of Bosnia-Herzegovina, in the vicinity of Mostar. This area is characterized by a pronounced arid climate with hot dry summers and mild winters. Heteroptera were collected from a stony meadow with grass vegetation and sparse bushes, as well as in shrub vegetation and low trees.
- 6) Popovo Polje: Tulje – the village Tulje is situated in eastern Herzegovina at Popovo Polje, on the edge of the Trebinje forest. The field includes a number of chasms, and the Trebišnjica river flows through the valley. The climate of Popovo Polje is Mediterranean with hot dry summers. Heteroptera were collected on rocky ground with bush vegetation.
- 7) Rama-Šćit – until 1968, the small town of Šćit rose above a fertile cultivated valley through which the Rama river and its tributaries Buk and Krupić flowed. When a new reservoir flooded vast areas in the Ram valley, Šćit remained on a small peninsula together with a Franciscan monastery and a church. Heteroptera were collected on the bank and from water plants of Lake Ram, including fragments of mesohygrophilous associations with sparse trees and bushes of *Salix* sp.

8) Mt. Treskavica: Veliko Jezero is the largest lake on Mt. Treskavica, at 1550 m a.s.l. The lake is about 300 m long, 150 m wide and 5 m deep. The bank is overgrown with sparse herbaceous vegetation of grass type with an occasional bush or low tree.

National Park Kozara was established in 1967 and is situated in the northwestern part of Bosnia-Herzegovina. The area of the park measures 3520 ha. Within the NP Kozara, Heteroptera were collected in the following localities:

9) Benkovac – GPS coordinates 45°0.096' N, 16°53.412' E, 665 m a.s.l., stony ground with sparse grass and bush (shrub) vegetation.

10) Bešića Poljana, meadow – GPS coordinates 45°01.073' N, 16°52.157' E, 745 m a.s.l., ruderal and bush (shrub) vegetation in open terrain with sparse trees, surrounded by mixed forest of *Fagetum montanum* and *Abieti-Fagetum* (Bucalo *et al.*, 2007).

11) Bešića Poljana, forest edge – mixed forest of *Fagetum montanum* and *Abieti-Fagetum* (Bucalo *et al.*, 2007).

12) Bešića Poljana, quarry – stony meadow in a quarry, with sparse ruderal vegetation and considerable cover with *Rubus discolor* Weihe & Nees.

13) Mt. Gola Planina: Brezovac Spring, surrounded with a wet meadow belonging to the type *Pteridium aquilinum silicicolum* – GPS coordinates: 44°59.385' – 44°58.983' N to 16°55.186' – 16°56.110' E, 735-880 m a.s.l. Most of Mt. Gola Planina is covered in meadows and pastures of secondary origin (mowed meadows) overgrown with mesoxerophilous associations from suballiance *Mesobromion* and alliance *Brometalia erecti* (Bucalo *et al.*, 2007).

14) Jankovića Kamen, swamp – stony ground at 650 m a.s.l., with sparse vegetation of low trees and bushes. In certain depressions, changes in vegetation show that water remains there for a longer period of time after heavy rainfall, leading to the appearance of plants of aquatic to semiaquatic habitats, and include *Alisma plantago-aquatica* L., *A. lanceolata* With., *Rorippa amphibia* (L.) Bess., *Mentha aquatica* L. etc., indicating that special microhabitats form depending on terrain configuration.

15) Jojin Bunar – permanently flooded terrain with semiaquatic and immersed vegetation, surrounded by *Fagetum montanum* forest, about 40 x 30 m in surface area. The dominant plants include *Veronica beccabunga* L., *Alisma plantago-aquatica* L., *Scrophularia nodosa* L. and *Polygonum mite* L.

16) Kotlovača River – stony bank with sparse semiaquatic vegetation. The dominant plants include *Cyperus fuscus* L., *Juncus articulatus* L., *Equisetum arvensis* L. and rare trees of *Salix* sp. and *Alnus* sp.

17) Mandžukove Lokve – ponds in a forest – permanently flooded terrain with semiaquatic and immersed vegetation, surrounded by *Abieti-Fageto-Picetum* forest. The dominant plants include *Juncus articulatus* L., *Alisma plantago-aquatica* L. and *Eupatorium cannabinum* L.

18) Pašini Konaci, marshland – GPS coordinates: 45°03.132' N, 16°52.719' E, at 450 m a.s.l. The marsh is surrounded by ruderal vegetation while the marsh proper has a thick cover of *Glyceria plicata* (Fries), *Scirpus sylvaticus* L., *Juncus* sp. and *Carex* sp., enclosed by *Abieti-Fagetum praepannonicum* forest (Bucalo *et al.*, 2007).

19) Mlječanica River – bank is overgrown with sparse forest of *Alneto-Salicetosum*, which along the slopes turns into *Fagetum montanum* and *Abieti-Fagetum* (Bucalo *et al.*, 2007).

20) Moštanička Vrela – bank is overgrown in fragments of mesohygrophilous associations with sparse trees of *Alnus* and *Salix*. Further inland it merges into *Fagetum montanum* and *Abieti-Fagetum* forests (Bucalo *et al.*, 2007).

21) Mrakovac, ski slope, meadow – sunny open surface with meadow and ruderal vegetation, surrounded by a mixed forest of *Abieto-Fageto-Picetosum* (Bucalo *et al.*, 2007).

This contribution also includes previously unpublished data on species collected by Czech entomologists in the territory of Bosnia-Herzegovina, kindly provided by our colleague Petr Kment from Prague. New species for the fauna of Heteroptera in Bosnia-Herzegovina are designated using asterisks (\*).

## Results

### Nepidae

1. *Nepa cinerea* Linnaeus, 1758

Cincar Mt.: Lake Hrast, 26.08.2013, 1♀, leg. M. Stanković.

### Corixidae

2. *Sigara (Pseudovermicorixa) nigrolineata* (Fieber, 1848)

Mt. Čemerno, 1305 m a.s.l., 03.06.1967, 1♂, 04.06.1967, 2♂, leg. P. Lauterer, det. P. Kment (coll. Moravian Museum, Brno, Czech Republic).

### Notonectidae

3. *Notonecta glauca* Linnaeus, 1758

Mt. Cincar: Lake Hrast 26.08.2013, 1♀, leg. M. Stanković; NP Kozara: Moštanička Vrela, 21.08.2013, 2♂, 3♀, leg. M. Stanković; Pašini Konaci 17.08.2014, 1♀, leg. M. Stanković.

### Gerridae

4. *Aquarius najas* (De Geer, 1773)

Rama-Ščit: 17.10.2014, 1♂, 2♀, leg. M. Stanković.

5. *Aquarius paludum* (Fabricius, 1794)

Mt. Treskavica: Veliko Jezero, 30.08.2013, 1♂, leg. M. Stanković.

6. \**Gerris costae costae* (Herrich-Schaeffer, 1850)

Mt. Cincar: Lake Hrast 26.08.2013, 1♂, leg. M. Stanković; NP Kozara: Pašini Konaci, 21.08.2013, 3♂, leg. M. Stanković.

7. \**Gerris lacustris* Linnaeus, 1758

NP Kozara: Moštanička Vrela, 21.08.2013, larvae; Mandžukove Lokve, 18.08.2014, 1♂, leg. M. Stanković;  
Mostar: Čitluk, 19.10.2013, 1♂, leg. M. Stanković.

## Saldidae

8. *Saldula pallipes* (Fabricius, 1794)

Mt. Cincar: Lake Hrast, 26.08.2013, 1♂, leg. M. Stanković.

## Tingidae

9. *Catoplatus carthusianus* (Goeze, 1778)

NP Kozara: Mt. Gola Planina: Spring Brezovac, 17.08.2013, 3♂, 3♀, leg. M. Stanković.

10. *Tingis auriculata* (Costa, 1834)

Mt. Treskavica: Veliko Jezero, 30.08.2013, 1♀, leg. M. Stanković.

## Miridae

11. *Adelphocoris lineolatus* (Goeze, 1778)

Mt. Treskavica: Veliko Jezero, 30.08.2013, 2♀, leg. M. Stanković; Mostar: Čitluk, 19.10.2013, 1♂, 1♀, leg. M. Stanković; Rama-Ščit, 17.10.2014, 1♂, leg. M. Stanković; NP Kozara: Benkovac, 16.08.2014, 1♀; Jankovića Kamen, 16.08.2014, 1♂, 1♀; Bešića Poljana, 18.08.2014, 1♀; Bešića Poljana (quarry), 19.08.2014, 2♂, 1♀, leg. M. Stanković.

12. *Adelphocoris vandalicus* (Rossi, 1790)

NP Kozara: Mt. Gola Planina: Spring Brezovac, 17.08.2013, 2♀, leg. M. Stanković.

13. *Brachycoleus pilicornis* (Panzer, 1805)

Popovo Polje: Tulje, 20.10.2013, 1♀, leg. M. Stanković.

14. *Chargochilus gyllenhalii* (Fallén, 1807)

NP Kozara: Mt. Gola Planina: Spring Brezovac, 17.08.2013, 1♂, 1♀, leg. M. Stanković.

15. *Chlamydatus (Euattus) pulicarius* (Fallén, 1807)

Krivajevići (35 km N of Sarajevo), 05.08.1985, leg. Jindra Z., 0 ex., 1♂, coll. Jindra, det. J. Bryja.

16. *Dereocoris (Deraeocoris) ruber* (Linnaeus, 1758)

NP Kozara: Gola Mt.: Spring Brezovac, 17.08.2013, 1♀, leg. M. Stanković.

17. *Lygus gemellatus* (Herrich-Schaeffer, 1835)

NP Kozara: Moštanička Vrela, 21.08.2013, 1♀, leg. M. Stanković.

18. *Lygus pratensis* (Linnaeus, 1758)

NP Kozara: Mrakovac, 15.08.2013, 1♂, 18.08.2014, 1♀; Pašini Konaci, 21.08.2013, 6♂, 10♀, 17.08.2014, 3♂, 2♀; River Mlječanica, 23.08.2013, 1♀; Bešiča Poljana, 18.08.2014, 1♀; Benkovac, 16.08.2014, 3♂, 1♀; Mandžukove Lokve, 18.08.2014, 1♂; Bešiča Poljana (quarry), 19.08.2014, 2♂, 3♀, leg. M. Stanković; Berkovići: Dobro Polje: Mt. Straževica, 28.08.2014, 1♂, leg. M. Stanković; Rama-Ščit, 17.10.2014, 2♂, 1♀, leg. M. Stanković.

19. *Lygus rugulipennis* Poppius, 1911

NP Kozara: Benkovac, 16.08.2014, 1♂, leg. M. Stanković.

20. *Macrotylus (Macrotylus) quadrilineatus* (Schrank, 1785)

NP Kozara: Pašini Konaci, 21.08.2013, 1♂, 1♀, leg. M. Stanković.

21. \**Myrmecoris gracilis* (Sahlberg, 1848)

Mt. Cincar: Lake Hrast, 26.08.2013, 1♀, leg. M. Stanković.

22. *Notostira elongata* (Geoffroy, 1785)

NP Kozara: Pašini Konaci, 17.08.2014, 2♂; Jankovića Kamen, 16.08.2014, 1♀; Benkovac, 24.08.2014, 3♂; Bešiča Poljana (quarry), 19.08.2014, 4♂; Mrakovac, 18.08.2014, 1♂, 1♀, leg. M. Stanković.

23. *Oncotylus (Cylindromelus) setulosus* (Herrich-Schaeffer, 1837)

Gornja Grabovica (near Mostar), 06.08.1985, 1♀, leg. Jindra Z., det. J. Bryja, coll. Z. Jindra, Praha, Czech Republic.

24. *Orthops campestris* (Linnaeus, 1758)

NP Kozara: River Kotlovača, 24.08.2014, 1♂, leg. M. Stanković.

25. *Orthops kalmii* (Linnaeus, 1758)

NP Kozara: Mrakovac, 15.08.2013, 1♂, leg. M. Stanković.

26. *Phytocoris (Ktenocoris) varipes* (Boheman, 1852)

NP Kozara: Mt. Gola Planina: Spring Brezovac, 17.08.2013, 3♀; Mrakovac, 18.08.2014, 1♀; Benkovac, 16.08.2014, 1♂, leg. M. Stanković.

27. *Pinalitus rubricatus* (Fallén, 1807)

Krivajevići (35 km N of Sarajevo), 05.08.1985, leg. Jindra Z., det. J. Bryja.

28. *Pithanus maerkelii* (Herrich-Schaeffer, 1839)

NP Kozara: River Kotlovača, 24.08.2014, 2♀, leg. M. Stanković.

29. *Stenodema (Brachystira) calcarata* (Fallén, 1807)

Duvno (vicinity), 31.08.2013, 1♀, leg. M. Stanković; Mt. Cincar: Lake Hrast, 26.08.2013, 1♀, leg. M. Stanković; NP Kozara: Bešiča Poljana, 18.08.2014, 1♂; Pašini Konaci, 17.08.2014, 1♂, 1♀; Mrakovac, 18.08.2014, 1♂, 1♀, leg. M. Stanković.

30. *Stenodema (Stenodema) holsata* (Fabricius, 1787)

NP Kozara: Bešića Poljana, 18.08.2014, 1♂, leg. M. Stanković.

31. *Stenodema (Stenodema) laevigata* (Linnaeus, 1758)

Rama-Šćit, 17.10.2014, 1♀, leg. M. Stanković; Berkovići: Dobro Polje: Mt. Straževica, 28.08.2014, 1♂, leg. M. Stanković; NP Kozara: River Kotlovača, 24.08.2014, 1♀; Mrakovac, 18.08.2014, 4♂, 1♀; Jojin Bunar, 17.08.2014, 2♂, 1♀; Benkovac 16.08.2014, 3♀, leg. M. Stanković.

32. *Stenodema (Stenodema) virens* (Linnaeus, 1767)

NP Kozara: Mrakovac, 15.08.2013, 1♀, leg. M. Stanković.

33. *Trigonotylus coelestialium* (Kirkaldy, 1902)

Duvno (vicinity), 31.08.2013, 2♂, 1♀, leg. M. Stanković; Mt. Treskavica: Veliko Jezero, 30.08.2013, 8♂, 9♀, leg. M. Stanković; NP Kozara: Pašini Konaci, 07.08.2014, 1♂, leg. M. Stanković.

## Nabidae

34. *Himacerus (Aptus) mimicooides* (O. Costa, 1834)

Mostar: Čitluk, 19.10.2013, 1♀, leg. M. Stanković; NP Kozara: Mrakovac, 18.08.2014, 1♀; Mandžukove Lokve, 18.08.2014, larva, leg. M. Stanković.

35. *Himacerus (Himacerus) apterus* (Fabricius, 1789)

NP Kozara: Bešića Poljana, 1♀, 16.08.2013, leg. M. Stanković.

36. *Nabis (Dolichonabis) limbatus* Dahlbom, 1851

NP Kozara: Benkovac, 16.08.2014, 2♀; Mandžukove Lokve, 18.08.2014, 1♀; Bešića Poljana (quarry), 19.08.2014, 5 larvae, 1♂, leg. M. Stanković.

37. *Nabis (Nabis) brevis* Scholtz, 1846

NP Kozara: Pašini Konaci, 21.08.2013, 1♂, 1♀; Mrakovac, 18.08.2014, 1♀; Benkovac, 16.08.2014, 12♂, 2♀, leg. M. Stanković.

38. *Nabis (Nabis) ferus* (Linnaeus, 1758)

Lebršnik, 27.05.1951, leg. G. Nonveiller; Duvno (vicinity), 31.08.2013, 1♀, leg. M. Stanković; Mt. Treskavica: Veliko Jezero, 30.08.2013, 1♂, 1♀, leg. M. Stanković; Mostar: Čitluk, 19.10.2013, 1♀, leg. M. Stanković; NP Kozara: Mt. Gola Planina: Spring Brezovac, 1♂, 1♀, 17.08.2013, leg. M. Stanković; Benkovac, 16.08.2014, 1♀; Mandžukove Lokve, 18.08.2014, 1♂; Pašini Konaci, 17.08.2014, 2♂; Mrakovac, 18.08.2014, 1♂, leg. M. Stanković.

39. *Nabis (Nabis) rugosus* (Linnaeus, 1758)

Rama-Šćit, 17.10.2014, 1♂, 2♀, leg. M. Stanković; Berkovići: Dobro Polje: Mt. Straževica, 28.08.2014, 1♂, leg. M. Stanković; NP Kozara: River Kotlovača, 24.08.2014, 1♀; Jankovića Kamen, 16.08.2014, 2♀; Jojin Bunar, 17.08.2014, 1♀, leg. M. Stanković.

## Aradidae

40. \**Aradus obtectus* Vásárhelyi, 1988

Mt. Cincar: Lake Hrast, larva, 26.08.2013, leg. M. Stanković.

## Lygaeidae

41. *Beosus maritimus* (Scopoli, 1763)

Mostar: Čitluk, 19.10.2013, 1♀, leg. M. Stanković.

42. *Cymus clavicolus* (Fallén, 1807)

NP Kozara: Pašini Konaci, 21.08.2013, 1♂, leg. M. Stanković.

43. *Lygaeus equestris* (Linnaeus, 1758)

Mt. Cincar: Lake Hrast, 26.08.2013, 1♂, 1♀, leg. M. Stanković; Mt. Krug, 28.08.2013, 1♂, 1♀, leg. M. Stanković.

44. *Orsillus depressus* (Mulsant & Rey, 1852)

Duvno (vicinity), 31.08.2013, 1♂, leg. M. Stanković.

45. *Rhyparochromus (Rhyparochromus) vulgaris* (Schilling, 1829)

Duvno (vicinity), 31.08.2013, 1♀, leg. M. Stanković; Popovo Polje: Tulje, 20.10.2013, 1♀, leg. M. Stanković; Mostar: Čitluk, 19.10.2013, 1♀, leg. M. Stanković.

46. *Spilostethus saxatilis* (Scopoli, 1763)

Mt. Cincar: Lake Hrast, 26.08.2013, 2♂, 2♀, leg. M. Stanković.

## Berytidae

47. *Berytinus hirticornis* (Brullé, 1835)

Mt. Treskavica: Veliko Jezero, 30.08.2013, 1♂, leg. M. Stanković.

48. *Gampsocoris punctipes* (Germar, 1822)

Duvno (vicinity), 31.08.2013, 1♂, leg. M. Stanković; NP Kozara: Pašini Konaci, 21.08.2013, 1♂, 1♀, leg. M. Stanković.

## Stenocephalidae

49. *Dicranocephalus albipes* (Fabricius, 1781)

Mt. Cincar: Lake Hrast, 26.08.2013, 1♂, leg. M. Stanković.



## Rhopalidae

50. *Corizus hyoscyami* (Linnaeus, 1758)

NP Kozara: River Kotlovača, 24.08.2014, 1♂, leg. M. Stanković.

51. *Rhopalus (Aeschyntelus) maculatus* (Fieber, 1836)

NP Kozara: Benkovac, 16.08.2014, 9♂, 2♀; Mandžukove Lokve, 18.08.2014, 3♂, 1♀; Bešića Poljana (quarry), 19.08.2014, leg. M. Stanković.

52. *Rhopalus parumpunctatus* Schilling, 1817

Mt. Cincar: Lake Hrast, 26.08.2013, 1♀, leg. M. Stanković; Mt. Treskavica: Veliko Jezero, 30.08.2013, 3♂, 2♀, leg. M. Stanković; Duvno (vicinity), 31.08.2013, 1♂, leg. M. Stanković; Rama-Ščit, 17.10.2014, 3♂, 1♀, leg. M. Stanković; Berkovići: Dobro Polje, Mt. Straževica, 28.08.2014, 2♂, 1♀, leg. M. Stanković; NP Kozara: Bešića Poljana, 16.08.2013, 1♂, 1♀, 18.08.2014, 2♀; River Mlječanica, 23.08.2013, 1♂; Jankovića Kamen, 16.08.2014, 3♂, 3♀; Pašini Konaci, 17.08.2014, 2♂; Mrakovac, 18.08.2014, 1♀; Benkovac, 24.08.2014, 2♂; River Kotlovača, 24.08.2014, 2♂, 3♀, leg. M. Stanković; Mt. Gola: Spring Brezovac, 17.08.2013, 1♀, leg. M. Stanković.

53. \**Rhopalus subrufus* (Gmelin, 1788)

Duvno (vicinity), 31.08.2013, 1♂, leg. M. Stanković; Mt. Cincar: Lake Hrast, 26.08.2013, 1♂, leg. M. Stanković.

54. *Stictopleurus abutilon* (Rossi, 1790)

NP Kozara: Benkovac, 16.08.2014, 2♂, 1♀, leg. M. Stanković.

55. \**Stictopleurus punctatonervosus* (Goeze, 1778)

NP Kozara: Benkovac, 24.08.2014, 1♂, leg. M. Stanković.

## Alydidae

56. *Camptopus lateralis* (Germar, 1817)

Duvno (vicinity), 31.08.2013, 1♂, leg. M. Stanković; Mt. Treskavica: Veliko Jezero, 30.08.2013, 1♂, leg. M. Stanković.

## Coreidae

57. *Ceraleptus gracilicornis* (Herrich-Schaeffer, 1835)

Mt. Treskavica: Veliko Jezero, 30.08.2013, 1♀, leg. M. Stanković.

58. *Coreus marginatus* (Linnaeus, 1758)

Popovo Polje: Tulje, 20.10.2013, 1♀, leg. M. Stanković; NP Kozara: Pašini Konaci, 21.08.2013, different larval stages, leg. M. Stanković; River Mlječanica, 23.08.2013, 1♀, different larval stages, leg. M. Stanković; Moštanička Vrela, 21.08.2013, larvae, leg. M. Stanković.

59. *Coriomeris denticulatus* (Scopoli, 1763)

Duvno (vicinity), 31.08.2013, 3♂, leg. M. Stanković.

60. \**Leptoglossus occidentalis* Heidemann, 1910

Berkovići: Dobro Polje: Mt. Straževica, 28.08.2014, 1♂, leg. M. Stanković.

61. *Syromastus rhombeus* (Linnaeus, 1767)

NP Kozara: Jankovića Kamen, 16.08.2014, 1♀, leg. M. Stanković.

## Acanthosomatidae

62. *Acanthosoma haemorrhoidale* (Linnaeus, 1758)

Mt. Treskavica: Veliko Jezero, 30.08.2013, larvae, leg. M. Stanković.

## Scutelleridae

63. *Eurygaster maura* (Linnaeus, 1758)

Duvno (vicinity), 31.08.2013, 2♀, leg. M. Stanković; Mt. Treskavica: Veliko Jezero, 30.08.2013, 1♀, larva, leg. M. Stanković; Mostar: Čitluk, 19.10.2013, 1♂, 1♀, leg. M. Stanković; NP Kozara: Benkovac, 24.08.2014, 1♀, leg. M. Stanković.

## Pentatomidae

64. *Aelia acuminata* (Linnaeus, 1775)

Duvno (vicinity), 31.08.2013, 1♂, leg. M. Stanković; Mostar: Čitluk, 19.10.2013, 2♂, leg. M. Stanković; NP Kozara: Jankovića Kamen, 16.08.2014, 2♂; Mrakovac, 18.08.2014, 2♂, leg. M. Stanković.

65. \**Aelia klugii* Hahn, 1831

NP Kozara: Mt. Gola Planina: Spring Brezovac, 17.08.2013, 1♂; Jankovića Kamen, 16.08.2014, 1♀, leg. M. Stanković.

66. *Apodiphus amygdali* (Germar, 1817)

Mt. Krug, 28.08.2013, 1♂, leg. M. Stanković.

67. *Carpocoris pudicus* (Poda, 1761)

Duvno (vicinity), 31.08.2013, 1♂, leg. M. Stanković; NP Kozara: Mt. Gola Planina: Spring Brezovac, 17.08.2013, 1♂, 1♀, leg. M. Stanković.

68. *Dolycoris baccarum* (Linnaeus, 1758)

Duvno (vicinity), 31.08.2013, 1♂, leg. M. Stanković; Popovo Polje: Tulje, 20.10.2013, 2♂, leg. M. Stanković; Mt. Treskavica: Veliko Jezero, 30.08.2013, 1♂, 1♀, leg. M. Stanković; Mt. Cincar: Lake Hrast, 26.08.2013, 2♂, leg. M. Stanković; Mostar: Čitluk, 19.10.2013, 5♂, leg. M. Stanković; NP Kozara: Mrakovac, 15.08.2013,

2♂; Mt. Gola Planina: Spring Brezovac, 17.08.2013, larvae; Benkovac, 16.08.2014, 1♂; River Kotlovača, 24.08.2014, 1♂, leg. M. Stanković.

69. *Eurydema oleracea* (Linnaeus, 1758)

NP Kozara: Mt. Gola Planina: Spring Brezovac, 17.08.2013, 1♀, leg. M. Stanković; Mt. Cincar: Lake Hrast, 26.08.2013, 2♂, leg. M. Stanković; Mostar: Čitluk, 19.10.2013, 1♀, leg. M. Stanković.

70. *Eurydema ventralis* Kolenati, 1846

Mt. Cincar: Lake Hrast, 26.08.2013, 1♀, leg. M. Stanković.

71. *Eysarcoris aeneus* (Scopoli, 1763)

Mt. Treskavica: Veliko Jezero, 30.08.2013, 1♂, 1♀, leg. M. Stanković.

72. *Graphosoma lineatum* (Linnaeus, 1758)

NP Kozara: Mt. Gola Planina: Spring Brezovac, 17.08.2013, 1♂, leg. M. Stanković.

73. *Neottiglossa leporina* (Herrich-Schaeffer, 1830)

NP Kozara: Mt. Gola Planina: Spring Brezovac, 17.08.2013, 2♂, leg. M. Stanković.

74. *Nezara viridula* (Linnaeus, 1758)

Mt. Treskavica: Veliko Jezero, 30.08.2013, final instar nymph, leg. M. Stanković; Mt. Cincar: Lake Hrast, 26.08.2013, 1♂, different larval stages, leg. M. Stanković; Mt. Krug, 28.08.2013, 1♂, 2♀, larva, leg. M. Stanković; Mostar: Čitluk, 19.10.2013, larvae, leg. M. Stanković; Berkovići: Dobro Polje: Mt. Straževica, 28.08.2014, 1♂, 2♀, 3 larvae, leg. M. Stanković.

75. *Palomena prasina* (Linnaeus, 1758)

NP Kozara: Mrakovac, 15.08.2013, larva; Pašini Konaci, 21.08.2013, different larval stages; 17.08.2014, larva; Benkovac, 16.08.2014, larva; Jojin Bunar, 17.08.2014, 2 larvae; Mandžukove Lokve, 18.08.2014, 2 larvae; Bešića Poljana (quarry), 19.08.2014, 2 larvae; River Mlječanica, 23.08.2013, final instar nymph; 24.08.2014, larva, leg. M. Stanković; Mt. Cincar: Lake Hrast, 26.08.2013, larva, leg. M. Stanković; Mostar: Čitluk, 19.10.2013, 1♂, leg. M. Stanković; Rama-Ščit, 17.10.2014, larva, leg. M. Stanković.

76. *Pentatoma rufipes* (Linnaeus, 1758)

NP Kozara: River Mlječanica, 23.08.2013, 1♂, leg. M. Stanković; Mostar: Čitluk, 19.10.2013, 2♂, larvae, leg. M. Stanković.

77. *Piezodorus lituratus* (Fabricius, 1794)

NP Kozara: Mt. Gola Planina: Spring Brezovac, 17.08.2013, 1♂; Benkovac, 16.08.2014, larva; Bešića Poljana (quarry), 19.08.2014, larva, leg. M. Stanković.

78. *Rhaphigaster nebulosa* (Poda, 1761)

Popovo Polje: Tulje, 20.10.2013, 1♂, leg. M. Stanković; Mt. Treskavica: Veliko Jezero, 30.08.2013, 1♂, leg. M. Stanković; Mt. Krug, 28.08.2013, 1♂, leg. M. Stanković; Berkovići: Dobro Polje: Mt. Straževica, 28.08.2014, 1♂, leg. M. Stanković.

79. *Stagonomus (Dalleria) bipunctatus* (Linnaeus, 1758)

Mt. Cincar: Lake Hrast, 26.08.2013, 1♀, leg. M. Stanković; Mostar: Čitluk, 19.10.2013, 1♂, leg. M. Stanković.

80. \**Trochiscocoris rotundatus* Horváth, 1895

Duvno (vicinity), 31.08.2013, 1♀, leg. M. Stanković.

81. *Vilpianus galii* (Wolff, 1802)

NP Kozara: Mt. Gola Planina: Spring Brezovac, 17.08.2013, 1♀, leg. M. Stanković.

## Discussion and Conclusions

The processing of material collected and recorded by the second author in the territory of Bosnia-Herzegovina in August and October 2013 and August 2014 has uncovered the presence of 78 species, belonging to 17 families. The largest families were Miridae with 20 and Pentatomidae with 18 species.

This paper includes unpublished records for four species collected by Czech entomologists in Bosnia-Herzegovina: *Sigara (Pseudovermicorixa) nigrolineata* (Fieber), *Chlamydatus (Euattus) pulicarius* (Fallén), *Oncotylus (Cylindromelus) setulosus* (Herrich-Schaeffer) and *Pinalitus rubricatus* (Fallén).

Eight new species were recorded for the Heteroptera fauna of Bosnia-Herzegovina: *Gerris costae costae* (Herrich-Schaeffer), *Myrmecoris gracilis* (Sahlberg), *Pithanus maerkeli* (Herrich-Schaeffer), *Aradus obtectus* Vásárhelyi, *Rhopalus subrufus* (Gmelin), *Stictopleurus punctatonervosus* (Goeze), *Leptoglossus occidentalis* Heidemann and *Trochiscocoris rotundatus* Horváth.

This paper includes the first published record of the invasive species *Leptoglossus occidentalis* Heidemann in Bosnia-Herzegovina. The find at locality Berkovići in eastern Herzegovina complements the range of this species on the Balkan Peninsula. There are no published data for Albania and Macedonia (Petrakis, 2011). As this species has been recorded in Bulgaria and Greece, we assume that it is also present in these two states.

The first record of *Myrmecoris gracilis* (Sahlberg) in Bosnia-Herzegovina was noted on Mt. Cincar, locality Lake Hrast. In the neighboring countries, it has been recorded in Slovenia (Gogala & Gogala, 1986) and Serbia (Protić, 2002). On the Balkan Peninsula it is also known from Bulgaria (Aukema & Rieger, 1999).

The only record for *Pithanus maerkeli* (Herrich-Schaeffer) in Bosnia-Herzegovina is from Mt. Kozara, at the locality Kotlovača River. This species was also recorded in a small number of localities in Slovenia (Gogala & Gogala, 1986) and in two localities in Croatia (Horváth, 1897).

*Aradus obtectus* Vásárhelyi is a mountainous forest species, which was recorded on the Balkan Peninsula from Dalmatia (Vásárhelyi, 1988), Slovenia (Gogala, 1996) and Montenegro (Vásárhelyi, 1988, Protić *et al.*, 1990). The record of this species on Mt. Cincar near the artificial lake Hrast is a significant contribution to the knowledge of its range.

The first record of *Trochiscocoris rotundatus* Horváth in Bosnia-Herzegovina in the vicinity of Duvno contributes to the knowledge of its range on the Balkan Peninsula (Novak & Wagner, 1951; Kormilev, 1938, 1939; Protić, 1987).

The species *Stictopleurus punctatonervosus* (Goeze) is well-known in all neighboring countries, and it is now also recorded from Bosnia-Herzegovina. It was collected in the National Park Kozara at locality Benkovac.

The first record of *Gerris costae costae* (Herrich-Schaeffer) in Bosnia-Herzegovina is from the mountains Cincar (locality Lake Hrast) and Kozara (locality Pašini Konaci). It has been known from neighboring countries for a long time (Protić, 1998).

Heteroptera listed in this paper were collected mostly in localities with no previous data. The numbers of recorded species by locality are illustrated in Fig. 1. Most species were recorded in the National Park Kozara (50), which is 64% of the total number of Heteroptera included in this paper. At the four localities of NP Kozara, there were over 10 collected species of Heteroptera. Most Heteroptera in NP Kozara were recorded at locality Benkovac (17), followed by Mt. Gola Planina – Brezovac Spring (15 species), Pašini Konaci (14) and Mrakovac (13 species). Among the 21 studied localities, the locality Lake Hrast on Cincar Mt. stands out with the greatest recorded number of species of Heteroptera (18 species), followed by Mt. Treskavica (15) and the surroundings of Duvno (14 species). The reason for the highest number of species in these localities is the high diversity of microhabitats.

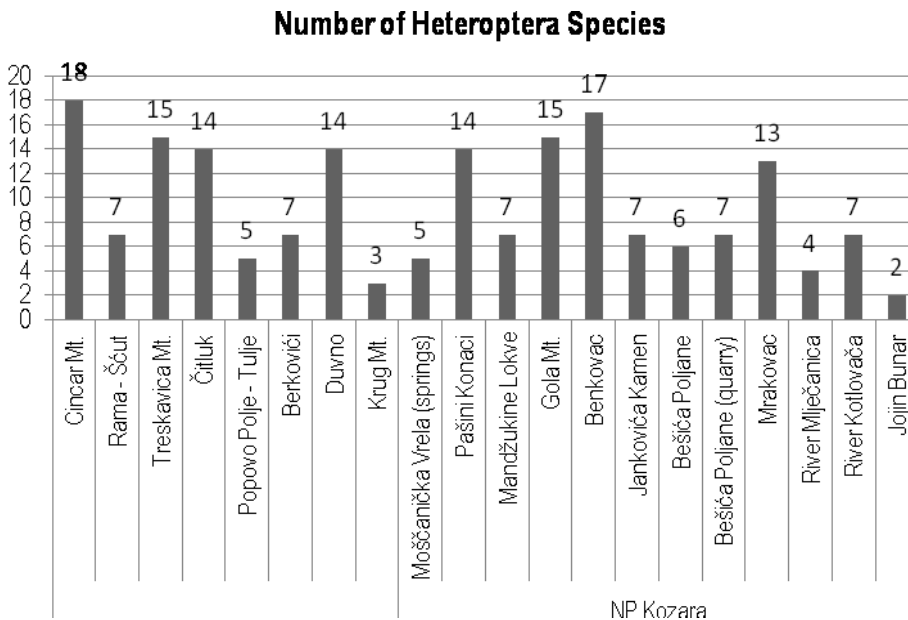


Figure 1. Numbers of recorded Heteroptera species per locality.

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# НОВА ИСТРАЖИВАЊА ФАУНЕ НЕТЕРОПТЕРА БОСНЕ И ХЕРЦЕГОВИНЕ

ЉИЉАНА ПРОТИЋ И МИХАЈЛО СТАНКОВИЋ

## Извод

У раду су обрађени примерци који су уловљени током лета 2013. и 2014. године на 21 локалитету у Босни и Херцеговини. Идентификовано је 78 врста, које су систематисане у 17 фамилија.

Утврђено је осам нових врста за фауну Босне и Херцеговине: *Gerris costae costae* (Herrich-Schaeffer), *Myrmecoris gracilis* (Sahlberg), *Pithanus maerkeli* (Herrich-Schaeffer), *Aradus obtectus* Vásárhelyi, *Rhopalus subrufus* (Gmelin), *Stictopleurus punctatonervosus* (Goeze), *Leptoglossus occidentalis* Heidemann и *Trochiscocoris rotundatus* Horváth.

Највећи број врста уловљен је у Националном парку Козара, 64% од укупног броја Heteroptera обрађених у овом раду. Укупан преглед констатованих врста по локалитетима приказан је графички (Фиг. 1).

Први пут се објављују подаци о налазу инвазивне врсте *Leptoglossus occidentalis* Heidemann у Босни и Херцеговини. Са налазом на локалитету Берковић (Дабарско поље) у источној Херцеговини употпуњена је карта ареала ове врсте на Балканском полуострву.

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