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BIODIVERSITY OF THE HETEROPTERA OF SERBIA

LJILJANA PROTIĆ

Natural History Museum, YU-11000 Belgrade, Njegoševa 51

In the paper Heteroptera have been classified according to altitudinal zones, taking into consideration all biogeographical, zoographical and vegetational divisions in Serbia. Biogeographically, Serbia was divided into five basic areas based on habitat type: alpine rocks and meadows, coniferous woodland, deciduous woodland, Mediterranean sub-alpine rocky pastures and woodland on rocks, and European steppes with diverse grasses. However, since no sharp boundaries between different entities exist in a natural environment, and since within one area there could occur several habitats, this paper uses an expanded list of 11 specific biocenoses which can be classified into five basic areas based on habitat type. The paper lists the Heteroptera species characteristic for each area based on habitat type and each biocenosis.

KEY WORDS: Heteroptera, distribution, biomes, Serbia, Balkan Peninsula.

INTRODUCTION

The territory of Serbia is situated in north-central part of Balkan Peninsula. Following are the natural boundaries of Serbia: to the north Subotičko-Horgoška Sands, to the south the elongated and almost meridionally stretched massif of Šara Mt., and to the southeast Prokletije Mts and their branches. The eastern boundaries are represented by mountains of Carpathian-Balkan and Rhodopes mountain systems, and to the west there is Drina R. with the eastern Dinarides (Mt. Tara, Pešter Uplands). Territory of Serbia is divided into two clearly distinguished geographic and orographic units: the lowland part of Pannonian Plain and the mountain-valley part of Balkan lands. Although these two are separated by Rivers Sava and Danube, they are however gradually connected by Peripannonian Serbia consisting of low hills.

Matvejev and Puncer (1989) had separated Serbia into five basic biome areas:

Biome of European high-mountain rocky grounds and pastures
Biome of European, mostly spruce, forests of boreal type (Coniferous forests)
Biome of European, mostly deciduous forests
Biome of Mediterranean stony mountain pastures and forests of rocky grounds
Biome of European steppes with diverse grasses

HIGH-MOUNTAIN ROCKY GROUNDS AND PASTURES

European high-mountain rocky grounds and pastures are sometimes also called "the mountain tundra" or "alpine areas of mountains".In Serbian mountains there is no real tundra, however in the belt laying significantly above the upper forest line the life conditions are so cruel that they are very close to those reigning in the real tundra. There is certain regularity in distribution of these biomes in Serbia, and they are always found above the zone of European boreal forests. The lower limit of altitudinal distribution is caused by climatic conditions. For example, in Eastern Serbia, it starts at about 1700 - 1900 m. In Kosovo-Metohija area it is found in Prokletije mountain range on saddle Čakor (1849 m) and on Starac (2426m). In Central Serbia, the characteristic habitats are present on Mt. Kopaonik (2017 m). There are spacious mountain pastures and stony grounds on ridge of Stara Planina Mt from Midžor (2169 m) to Tri Kladenca (1967 m). Certain elements and habitats of this biome type are present in Suva Planina (1808 m). These biomes are characterized by very pronounced glacial relief. All kinds of ice-induced erosion are very pronounced. In territory of these biomes is also recognized the relief caused by intensive glacial erosion, the glacial valleys with morrains. These valleys are often filled with picturesque lakes called "mountain eyes". In the shadiest spots on northern slopes of highest peaks there are snow fields that do not melt even in summer.

Characteristic plants: *Leonthopodium alpinum*, *Dryas octopetala*, *Vaccinium uliginosum*, *Arctostaphylos uvae-ursi*, *Salix reticulata*, *S. retusa*, *Geum reptans*, *Sedum* sp., *Poa alpina*, *Carex curvula*, *Polygonum viviparum*.

Characteristic Heteroptera: *Alloeonotus egregius* Fieber, *Myrmecophyes latus* Wagner, *Stenodema holsatum* (Fabricius), *Strongylocoris leucocephalus* (Linnaeus), *Systellonotus triguttatus* (Linnaeus), *Nithecus jacobaeae* (Schilling), *Eurydema oleraceum* f. *paradoxa* Horváth, *Eurydema rotundicolle* (Dohrn), *Sciocoris pentheri* Wagner.

CONIFEROUS FORESTS

European coniferous forests compose a separate altitudinal belt on all mountains that are high enough. The width of this belt is greater on northern slopes than

in southern ones. For example on Kopaonik this belt begins on northern slopes from 1100 m to 1800 m, and on the southern ones from 1500 m to 1850 m. The lower altitudinal limit matches the upper boundary of biome of European mostly deciduous forests. In Serbia, greater complexes are found in following mountains: Kopaonik, Golija, Stara Planina, Prokletije, Zlatibor, Tara, Goč, Zlatar and Javor. The best landscapes of this province are found in upper divide of Studenica River. The characteristic habitats in this biome type are various types of forests, forest glades, meadows and pastures, mountain bush and mountain peat bogs. Their combination makes the individual look of each landscape. The macrorelief of these areas is mostly glacial. During the last glaciation these areas were covered with glaciers, and today there are clearly visible glacial valleys, sometimes containing glacial lakes. These parts of glacial relief are partly covered with a layer of forest soil where coniferous forests grow, and in other places the glacial relief is denuded and projects out of forest.

Characteristic plants: *Picea excelsa*, *Betula pubescens*, *Pinus mugo*, *Vaccinium myrtillus*, *Populus tremula*, *Sorbus aucuparia*, *Rubus idaeus*. In forest glades and forest edges there are creeping bushes of Mountain Juniper *Juniperus nana*, *Eryophorum vaginatum*, *Caltha palustris*, *Drosera rotundifolia*.

Characteristic Heteroptera: ***Elatophilus pini*** (Bärensprung), ***Fulvius oxycarenoides*** (Rossi), ***Globiceps*** (***Globiceps***) ***sphegiformis*** (Rossi), *Dichrooscytus rufipennis* Fallén, *Aradus obtectus* Vásárhelyi, *Eremocoris abietis* (Linnaeus), ***Gastrodes abietum*** Bergroth, *Coriomeris alpinus* Horváth.

DECIDUOUS FORESTS

Biomes of submediterranean-Balkan mostly deciduous dry forests are present in Serbia mostly to the south of the Sava and the Danube rivers. The lower boundary descends to 70 m on the edges of Pannonian plain, while the upper boundary is on altitudes from 800 to 1000 m. The preserved remains of forests belonging to this biome type are present today in vicinity of Kragujevac, on southern slopes of mountains in Šumadija area, on Avala near Belgrade, Kosmaj, Venčac and Bukulja Mts, in Vojvodina on Fruška Gora Mt and Vršacke Mts, in larger gorges (Gornjačka, Ovčarsko-Kablarska and Djerdapska) as well as southern and southwestern slopes of Stara Planina Mt and Suva planina Mt, the eastern and southwestern slopes of Prokletije and the southern slopes of Kopaonik. This biome is characterized by forests or bush-like shrub, composed of deciduous trees and deciduous, mostly thorny bushes. Forests are open and the dominant tree species is Oak. On limestone ground there is a distinct biome subtype of karst forest and karst shrublands with hornbeams Ostryo - Carpinion orientalis. This biome is poor in water and most springs and streams go dry in the summer. During the

summer drought this biomes is similar to biomes of European steppes and even Mediterranean dry steppes of semidesert type.

Characteristic plants: *Quercus pubescens*, *Q. conferta*, *Q. cerris*, *Acer monspessulanum*, *Corylus colurna*, *Syringa vulgaris*, *Ostria carpinifolia*, *Juglans regia*, *Cotinus coggygria*, *Chrysopogon gryllus*, *Phleum phleoides*, *Andropogon ischaemum*.

Characteristic Heteroptera: *Anthocoris amplicollis* Horváth, ***Xylocoris cursitans*** (Fallén), *Physatocheila confinis* Horváth, *Heterotoma meriopterum* (Scopoli)

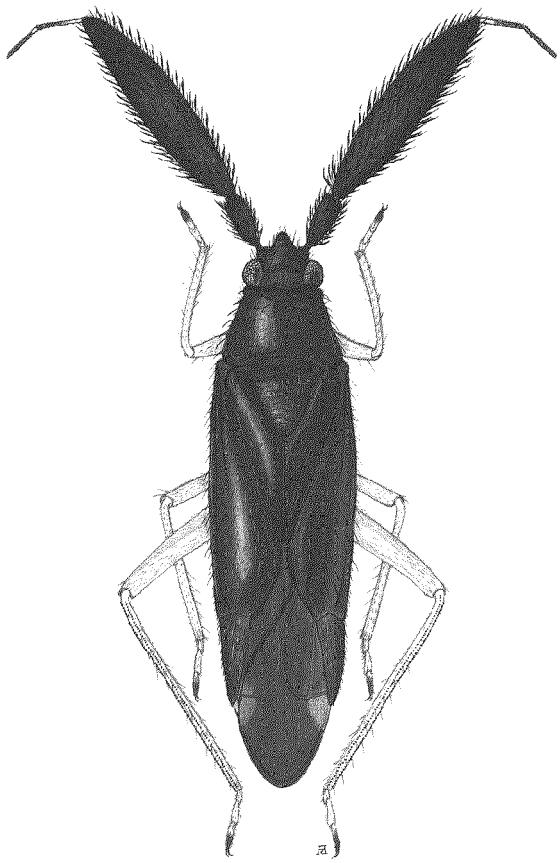

Fig. 1. *Heterotoma meriopterum* (Scopoli)
[Submediterranean-Balkan mostly deciduous dry forests]

(Fig. 1), ***Megacoelum beckeri*** Fieber, *Phylus coryli* (Linnaeus), ***Phytocoris*** (***Phytocoris***) ***longipennis*** Flor, ***Phytocoris*** (***Stictophytocoris***) ***meridionalis*** Herrich-Schaeffer, *Psallus variabilis* (Fallén), ***Aradus depresus*** (Fabricius), *Elasmucha grisea* (Linnaeus), *Pentatoma rufipes* (Linnaeus), *Trolius luridus* (Fabricius).

Biomes of European, mostly deciduous forests are present as larger or smaller islands or altitudinal belts. In Pannonian plain, this biome is present mostly along riverbeds, and in the other areas there is an altitudinal belt 500-800 m wide. These areas belong to Serbian or Moesian subtype of European mostly deciduous forests. Under the human influence, the greatest part of this territory is turned into agrobiocenoses, meadows, orchards and human settlements. This biome is present in mountains Fruška Gora, Avala, Kosmaj and includes part of aged parks in Belgrade (Topčider and Košutnjak). The greatest reserve of deciduous forests is preserved near Majdanpek (Debeli Lug), while the smaller reserves are present in mountains Deli Jovan, Jastrebac, Kukavica, on slopes of Čemernik and Vardenik. This biome is characterized by abundance of water, as there are springs, small bogs, ponds, rivulets and lakes. In order to be continually protected, many habitats of this biome type are included in national parks or special nature reserves. According to its origin, the wildlife of biome of European mostly deciduous forests is most similar to the one that dwelled in Middle and Southern Europe before the start of Ice Ages. During the glaciations these organisms vanished from most of their former territory and remained only in refugiums, where they managed to survive the unfavorable conditions of Ice Ages. Such refugiums were especially abundant in Balkan Peninsula. After the last glaciation, the organisms characteristic for this biome type again spread northwards and into neighboring mountains, into the present-day boundaries of distribution of European type of deciduous forests.

Characteristic plants: *Fagus moesiaca*, *Fraxinus excelsior*, *Carpinus betulus*, *Quercus robur*, *Q. petraea*, *Evonymus europaeus*, *Acer campestre*, *Ligustrum vulgare*, *Pruns avium*, *Betula verrucosa*, *Alnus glutinosa*, *Ulmus campestris*, *Cyclamen europaeum*, *Vinca minor*, *Anemone nemorosa*, *Erythronium dens-canis*, *Viola alba.*

Characteristic Heteroptera: *Calocoris norvegicus* (Gmelin), *Compsidolon salicellum* (Herrich-Schaeffer), *Deraeocoris lutescens* (Schilling), *Daereocoris ruber* (Linnaeus), *Miris striatus* (Linnaeus), *Pilophorus perplexus* Douglas & Scott, *Psallus quercus* (Kirschbaum), *Anthocoris confusus* Reuter, *Orius minutus* (Linnaeus.), *Aradus conspicuus* Herrich-Schaeffer, *Stictopleurus abutilon* (Rossi), *Carpocoris pudicus* (Poda).

BIOME OF MEDITERRANEAN STONY MOUNTAIN PASTURES AND FORESTS OF ROCKY GROUNDS

This biome begins on altitude of about 900 m and spreads to mountain peaks. Sometimes there appear smaller territories of oasis type and these may be in much lower altitudes. In this group of biomes there are two types of habitats: thinned-out forests of rocky ground and terrains without forests. Forests are composed of rare species of mountain conifers, while in the ground stratum there are scattered evergreen bushes. In terrains without forests, there are many exposed rocks, stone heaps and vertical cliffs. In these biomes there are suitable stony habitats, for example in gorges. There are spacious pastures, imposing-looking rocks and forests. In Serbia, the greatest territories are present on mountains Šara, Prokletije and Tara. Smaller territories or individual elements are present on mountains Stara Planina, Suva Planina, Maljen as well as the larger gorges, such as Sićevačka, Svrljiška and Djerdapska. On Kodža-Balkan, the mountain massif pointing northwards from Šara Mt, there are two reserves of forests composed of endemic pine species "Molika" - Balkan Pine (*Pinus peuce*) and "Munika" - Whitebark Pine (*Pinus heldreichii*). On Prokletije Mt there is a larger reserve of forests of these pines, on localities Kožnjar (1500-2154 m) and Maja Rops (1800-2502 m). According to the origin, all biomes of Mediterranean mountain stony pastures and forests on rocky ground are among the oldest biogeographic territories. Their landscape and wildlife are most similar to those present on all Mediterranean mountains before the start of Ice Ages.

Characteristic plants: *Pinus peuce*, *Pinus nigra*, *Pinus heldreichii*, *Picea omorika*, *Daphne blagayana*, *Erica carnea*, *Ramonda nathaliae*, *R. serbica*, *Crepis kerneri*.

Characteristic Heteroptera: ***Acalypta gracilis*** Fieber, ***Sphedanolestes lividigaster*** (Mulsant & Rey) *Calocoris cinctipes* (Costa), ***Deraeocoris*** (***Deraeocoris***) ***morio*** (Boheman), ***Chargochilus*** (***Chargochilus***) ***weberi*** Wagner ***Phytocoris*** (***Phytocoris***) ***setiger*** Reuter 4, *Piesma capitatum* (Wolff), *Phymata crassipes* (Fabricius), *Macroplax fasciata* (Herrich-Schaeffer), *Trapezonotus arenarius* (Linnaeus), *Dicranocephalus medius* (Mulsant & Rey), *Eysarcoris fabricii* Kirkaldy, *Holcostethus sphacelatus* (Fabricius), *Horvathiolus superbus* (Pollich), *Derula flavogutata* Mulsant & Rey, ***Aethus nigritus*** (Fabricius).

Biome of European steppes with diverse grasses creeps deeply into the subpannonian area, along the valleys of Sava, Morava, Kolubara and other large rivers. The isolated steppe territories are also present much to the south, in Kosovo-Metohija area. To the north, this biome is found in lowlands, wide river valleys and low hills. It is important to stress that on mountains of Serbia and

Balkan Peninsula steppe does not form a separate altitudinal belt but is present on leveled grounds up to 1200 m of altitude. In these habitats the soil is composed of loess and there is no forest. In the southeastern part of Serbia there are no steppe habitats of stony high-mountain pastures of Mediterranean mountains, but Mediterranean mountain habitats instead. Under the human interference most of these biomes are destroyed and turned either into the fertile agricultural soil - "cultural steppe" or infertile soil. The biomes of European steppes with diverse grasses are young. There were formed during diluvium mostly from elements of mountain pastures of Mediterranean mountains and of those species that live in forest glades in European deciduous forests. Therefore, these species should not be considered immigrants from European steppes but mostly autochthonous mountain elements that spread their ranges during diluvium into the European steppe. The greatest steppe habitats are: Deliblato Sands, near Ludaško lake, in vicinity of Titel and on eastern slopes of Fruška Gora Mt (Slankamen and Čortanovci). To the south from Sava and Danube the steppe oases are present in Negotinska Krajina area near Radujevci, Prahovo and Kladovo, and there is a great Ramsko-Golubačka sands near Veliko Gradište. In the subpannonian part of Šumadija there are remains of steppe habitats in hills and valleys of Velika Morava and Južna Morava Rivers, up to towns of Aleksinac and Niš. In Kosovo, the typical steppe habitats with peonies are present on Kosovo Polje Plain, while in Metohija plians there are steppe habitats near Prizren.

Characteristic plants: *Festuca vallesiaca*, *F sulcata*, *F. vaginata*, *Phleum phleoides*, C*ynodon dactylon*, *Koeleria* sp., *Stipa pennata*, *S. vaginata*, *Poeonia officinalis*, *P. tenuifolia*, *Adonis vernalis*, *Iris pumila*.

Characteristic Heteroptera: *Copium clavicorne* (Linnaeus), *Elasmotropis testaceus* (Herrich-Schaeffer), *Lasiacantha capucina* (Gmelin), *Oncochila scapularis* (Fieber), *Dicyphus cerasti* Wagner, *Phytocoris setiger* Reuter), *Piesma silens* (Horváth), *Berytinus clavipes* (Fabricius), *Geocoris ater* (Fabricius), *Ischnopeza hirticornis* Herrich-Schaeffer, *Macroplax fasciata* (Herrich-Schaeffer), *Nysius senecionis* (Schilling), *Orsillus depressus* Mulsant & Rey, *Oxycarenus pallens* (Herrich-Schaeffer), *Prostemma sanguineum* (Rossi), *Dimorphopterus doriae* (Ferrari), *Gonocerus juniperi* Herrich-Schaeffer, *Enoplops scapha* (Fabricius), *Rubiconia intermedia* (Wolff).

Habitats of Mediterranean semideserts and dry steppes

In Serbia there are only small territories belonging to biome of Mediterranean semideserts. These are areas with hot and dry climate where even in season of lush spring vegetation there are patches of denuded soil. These habitats are a proof that once before the glaciations at foothills of Serbian mountains there were widely

distributed areas of Mediterranean semideserts. This hypothesis was supported by fossil finds consisting of bones of gazelles, antelopes, hyparions, giraffes and other animals that today live only in deserts and semideserts of Africa and Asia. This statment confirms also calculation the high value of Index of Faunistic Similarity between sands and Mediterranean mountain pastures and forests on rocky ground (0,4737). These fossil localities are on Jastrebac Mt and near Veles in Macedonia. The northernmost parts of this biome in Serbia are in Deliblato Sands, in Ramsko-Golubačka Sands, in foothills of Suva Planina Mt and Svrljiške Mts near town of Niš, in vicinity of Vranje, Ristivac and Gnjilane, near Peć, Prizren and Djakovica. According to MATVEJEV (1973), these habitats belong to the biogeographic subprovince of Aegean-Anatolian semideserts.

Characteristic plants: *Stipa vaginata*, *Carduus hamulosus*, *Eryngium*

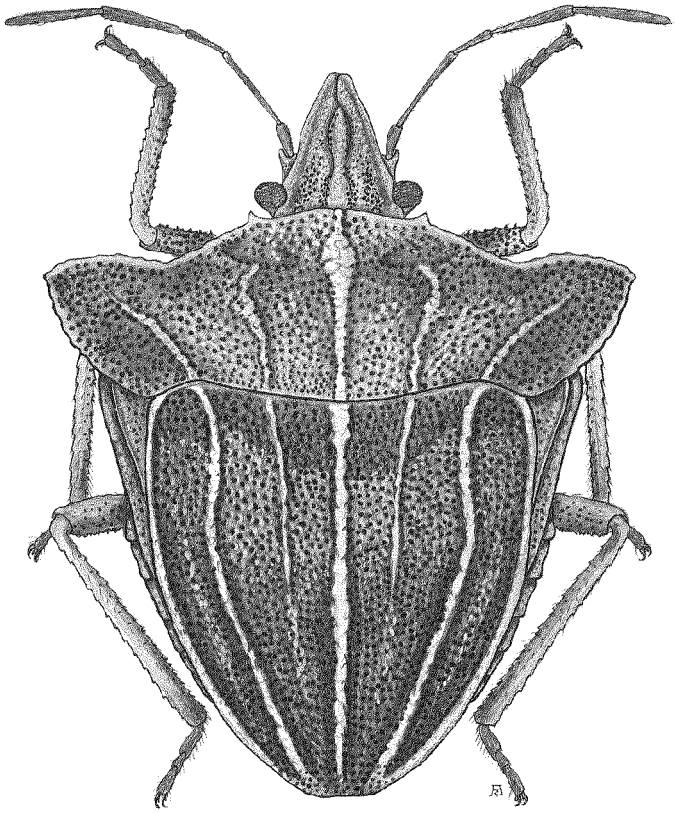

Fig. 2. *Ancyrosoma leucogrammes* (Gmelin)
[Mediterranean semideserts and dry steppes]

campestre, *Triticum villosum*, *Stachys recta*, *Achillea clypeolata*, *Astragalus* sp.

Characteristic Heteroptera: *Tingis cardui* (Linnaeus), *Emblethis angustus* Montadon), *Geocoris dispar* (Waga), *Horvathiolus superbus* (Pollich), *Macropternella inermis* (Fieber), *Megalotomus junceus* (Scopoli), *Melanocoryphus tristrami* (Douglas & Scott), *Rhyparochromus saturnius* (Rossi), *Alydus calcaratus* (Linnaeus), *Ancyrosoma leucogrammes* (Gmelin) (Fig. 2), ***Byrsinus fossor*** Mulsant & Rey.

"CULTURAL STEPPES"

However, as in nature there are no strict boundaries between certain biomes and as within the same biome there may be several distinct habitats, we have compiled a list of 11 specific biocenoses that are included within the five basic ones, described by MATVEJEV and PUNCER (1989). This is also a rough estimate, however it is intended to depict a better picture of distribution and diversity of Heteroptera in Serbia. Human activities have created new "cultural steppes" - agrobiocenoses, orchards, meadows, pastures and parks. These human-made biocenoses are situated in diverse altitudes and have led to significant decrease and change of autochthonous biomes, influencing composition and distribution of animal species, including Heteroptera.

MEADOWS

Characteristic Heteroptera: *Nabis ferus* (Linnaeus), *Orius minutus* (Linnaeus), *Capsodes gothicus* (Linnaeus), *Dicyphus errans* (Wolff), *Halticus apterus* (Linnaeus), *Leptopterna ferrugata* (Fallén), *Liocoris tripustulatus* (Fabricius), *Lygus pratensis* (Linnaeus), *Polymerus nigritus* (Fallén), *Heterogaster artemisiae* Schilling, *Nysius senecionis* (Schilling), *Platyplax salviae* (Schilling), *Corizus hyoscyami* (Linnaeus), *Rhopalus parumpunctatus* (Schilling), *Stictopleurus crassicornis* (Linnaeus), *Carpocoris fuscispinus* (Boheman), *Carpocoris pudicus* (Poda), *Dolycoris baccarum* (Linnaeus), *Holcostethus vernalis* (Wolff), *Cydnus aterrimus* (Forster).

PARKS

Characteristic Heteroptera: *Nabis brevis* Scholtz, *Orius vicinus* (Ribauti), *Corythuca ciliata* Say, *Tingis auriculata* (Costa), *Chargochilus gyllenhali* (Fallén), *Polymerus holosericeus* (Hahn), *Psallus mollis* Mulsant & Rey, *Oxycarenus lavaterae* (Fabricius), *Rhyparochromus alboacuminatus* (Goeze), *Pyrrhocoris apterus* (Linnaeus), *Coriomeris hirticornis* (Fabricius), *Rhopalus subrufus* (Gmelin), *Derula flavogutata* Mulsant & Rey, *Eysarcoris inconspicuus* (Herrich-Schaeffer), *Holcostethus vernalis* (Wolff), *Piezodorus lituratus* (Fabricius), *Stagonomus pusillus* (Herrich-Schaeffer), *Tritomegas bicolor* (Linnaeus).

ORCHARDS

Characteristic Heteroptera: *Nabis brevis* Schrank, *Nabis ferus* (Linnaeus), *Anthocoris nemoralis* (Fabricius), *Anthocoris simulans* Reuter, *Orius minutus* (Linnaeus), *Stephanitis pyri* (Fabricius), ***Atractotomus mali*** (Meyer-Dür, *Daereocoris ruber* (Linnaeus), *Malacocoris chlorizans* Panzer, *Pilophorus perplexus* Douglas & Scott, *Lygaeus equestris* (Linnaeus).

AGROBIOCENOSES

Characteristic Heteroptera: **weeds**: *Adelphocoris lineolatus* (Goeze), *Lygus pratensis* (Linnaeus), *Trigonotylus ruficornis* (Geoffroy), *Eurygaster austriaca* (Schrank), *Eurygaster maura* (Linnaeus), *Aelia acuminata* (Linnaeus), *Aelia rostrata* Boheman, *Eurydema oleracea* (Linnaeus);

alfa alfa: *Nabis pseudoferus* Remane, *Adelphocoris lineolatus* (Goeze), *Lygus rugulipennis* Poppius, *Coptosoma scutellatum* (Geoffroy).

BOGS AND MARSHES

Characteristic Heteroptera: *Chartoscirta cocksi* Curtis, *Macrosaldula variabilis* (Herrich-Schaeffer), *Saldula pallipes* (Fabricius), *Orius majusculus* Reuter, *Agramma laetum* (Fallén), *Dictyla lupuli* (Herrich-Schaeffer), *Monosynamma bohemani* (Fallén), *Stenotus binotatus* (Fabricius), *Stygnocoris rusticus* (Fallén), *Chilacis typhae* (Perris), *Cymus claviculus* (Fallén), *Ischnodemus sabuleti* (Fallén), *Corizus hyoscyami* (Linnaeus), *Coreus marginatus* (Linnaeus), *Spathocera lobata* (Herrich-Schaeffer), *Dolycoris baccarum* (Linnaeus), *Graphosoma lineatum* (Linnaeus), *Thyreocoris scarabaeoides* (Linnaeus).

AQUATIC HABITATS

Characteristic Heteroptera: *Nepa cinerea* Linnaeus, *Ranatra linearis* (Linnaeus), *Corixa punctata* Illiger, *Sigara falleni* (Fieber) *Ilyocoris cimicoides* (Linnaeus), *Notonecta glauca* Linnaeus, *Plea minutissima* Leach, *Hydrometra stagnorum* (Linnaeus), *Velia rivulorum* (Fabricius) *Gerris argentatus* Schummel.

RESULTS

Presence of Heteroptera species in various biomes and biocenoses in Serbia: 1 -alpine rocks and meadows, 2 -coniferous woodland, 3 -deciduous woodland, 4 -Mediterranean sub-alpine rocky pastures and woodland on rocks, 5 -European steppes with diverse grasses, 6 -orchards, 7 -meadows, 8 -agrobiocenoses, 9 -parks, 10 -Bogs and marshes, 11 -Aquatic habitats.

NEPIDAE: *Nepa cinerea* Linnaeus 11, *Ranatra linearis* (Linnaeus) 11.

BELOSTOMATIDAE: *Lethocerus patruelis* (Stål) 11.

CORIXIDAE: CORIXINAE: *Corixa affinis affinis* (Leach) 11, *C. punctata* Illiger 11, *Hespercorixa sahlbergi* (Fieber) 11, *Paracorixa concinna* (Fieber) 11, *Sigara* (*Sigara*) *striata* (Linnaeus) 11, *S. (Retrocorixa*) *limitata* (Fieber) 11, *S. (Retrocorixa*) *semistriata* (Fieber) 11, *S. (Subsigara*) *distincta* (Fieber) 11, *S. (Subsigara*) *falleni* (Fieber) 11, *S. (Vermicorixa*) *lateralis* (Leach) 11, *Cymatia coleoptrata* (Fabricius) 11, *C. rogenhoferi* (Fieber) 11; MICRONECTINAE: *M.* (*Micronecta*) *poweri* (Douglas &Scott) 11, *M.* (*Dichaetonecta*) *pusilla* (Horváth) 11, *M.* (*Dichaetonecta*) *scholtzi* (Fieber) 11.

NAUCORIDAE: *Ilyocoris cimicoides* (Linnaeus) 11.

NOTONECTIDE: *N.* (*Notonecta*) *glauca glauca* Linnaeus 11, *N.* (*Notonecta*) *lutea* Müller 11, *N.* (*Notonecta*) *obliqua obliqua* Thunberg 11, *N.* (*Notonecta*) *viridis viridis* Delcourt 11.

PLEIDAE: *Plea minutissima* Leach 10, 11.

HEBRIDAE: ***Hebrus pusillus*** (Fallén) 10, 11, ***Hebrus ruficeps*** Thomson 10,11.

HYDROMETRIDAE: ***Hydrometra stagnorum*** (Linnaeus) 10.

VELIIDAE: ***Microvelia pygmaea*** (Dufour) 10, ***M. reticulata*** (Burmeister) 10, ***Velia*** (***Plesiovelia***)***currens*** Fabricius 10, ***Velia*** (***Velia***)***rivulorum*** (Fabricius) 10, 11.

GERRIDAE: ***Aquarius najas*** (De Geer) 11, ***A. paludum*** (Fabricius) 11, ***Gerris*** (***Gerris***) ***argentatus*** Schummel 11, ***G.*** (***Gerriselloides***) ***asper*** Fieber 11, ***G.*** (***Gerris***) ***costae costae*** (Herrich-Schaeffer) 11, ***G.*** (***Gerris***) ***gibbifer*** Schummel 11, ***G.*** (***Gerris***) ***lacustris*** Linnaeus 11, ***G.*** (***Gerriselloides***)***lateralis*** Schummel 11, ***G.*** (***Gerris***) ***odontogaster*** (Zetterstadt) 11, ***G.*** (***Gerris***) ***thoracicus*** Schummel.

LEPTOPODIDAE: ***Leptopus marmoratus*** (Goeze) 10.

SALDIDAE: ***Chartoscirta cincta*** (Herrich-Schaeffer) 10, ***C. cocksi*** Curtis 10, ***Macrosaldula scotica*** (Curtis) 10, ***M. variabilis*** (Herrich-Schaeffer) 10, ***Salda litoralis*** (Linnaeus) 10, ***Saldula amplicollis*** Reuter 10, ***S. arenicola*** (Scholtz) 10, ***S. c-album*** (Fieber 10, ***S. dimidiata*** (Curtis) 10, ***S. melanoscela*** (Fieber) 10, ***S. opacula*** Zetterstadt 10, ***S. orthochila*** (Fieber) 10, ***S. pallipes*** (Fabricius) 10, ***S. pilosella pilosella*** (Thomson) 10, ***S. saltatoria*** (Linnaeus) 10, ***S. xanthochila***

(Fieber) 10.

NABIDAE: PROSTEMMATINAE: ***Alloeorhynchus flavipes*** (Fieber) 4, 6, 8, ***Prostemma aeneicolle*** (Stein) 1, 7, ***P. bicolor*** Rambur 4, ***P. guttula guttula*** (Fabricius) 4, 5, 9, ***P. sanguineum*** (Rossi) 4, 5, NABINAE: ***Himaceru*** (***Anaptus***) ***major*** (A. Costa) 1, ***H.*** (***Aptus***) ***mirmicoides*** (O. Costa) 6, ***H.*** (***Himacerus***) ***apterus*** (Fabricius) 1, 4, 6, 8, ***H.*** (***Stalia***) ***boops*** (Schiodte) 7, ***Nabis***(***Nabicula***) ***flavomarginata*** (Scholtz) 7, ***N.*** (***Nabis***) ***brevis*** Scholtz 4, 6, 7, 8, 9, ***N.*** (***Nabis***) ***ferus*** (Linnaeus) 1, 3, 4, 5, 6, 7, ***N.*** (***Nabis***) ***palifer*** Seidenstücker 3, 9, ***N.*** (***Nabis***) ***pseudoferus*** Remane 4, 6, 7, 8, ***N.*** (***Nabis***) ***punctatus*** A. Costa 6, 8, ***N.*** (***Nabis***) ***rugosus*** (Linnaeus) 3, 4, 5, 6, 7, 8, ***N.*** (***Tropiconabis***) ***capsiformis*** (Germar) 5, 7.

MICROPHYSIDAE: ***Loricula bipunctata*** (Perris) 7.

ANTHOCORIDAE: ***Anthocoris amplicollis*** Horváth 3, ***A. confusus*** Reuter 3, ***A. gallarum-ulmi*** (De Geer) 3, ***A. limbatus*** Fieber 5, ***A. minki minki*** Dohrn 4, 6, 8, ***A. nemoralis*** (Fabricius) 3, 4, 6, 7, 8, 9, ***A. nemorum*** (Linnaeus) 5, 6, 8, 9, ***A. pilosus*** Jakovlev 9, ***A. simulans*** Reuter 4, 8, ***A. visci*** Douglas 3, 9, ***Elatophilus pini*** (Bärensprung) 2, 9, ***Temnostethus gracilis*** Horváth 2, 3, ***T. pusillus*** (Herrich-Scheffer) 3, ***T.*** (***Ectemnus***) ***reduvinus*** (Herrich-Schaeffer) 2, 3, ***T.*** (***Montandoniella***) ***dacicus*** Puton 2, 3, 9, ***Orius*** (***Heterorius***) ***horvathi*** (Reuter) 5, ***O*** (***Heterorius***) ***laticollis*** (Reuter) 5, ***O*** (***Heterorius***) ***majusculus*** Reuter 4, 5, 6, 7, 8, 10, ***O*** (***Heterorius***) ***minutus*** (Linnaeus) 4, 5, 6, 7, ***O***. (***Heterorius***) ***vicinus*** (Ribaut) 3, 9, ***O*** (***Orius***) ***laevigatus*** (Fieber) 1, ***O*** (***Orius***) ***niger*** (Wolff) 3, 4, 5, 6, 7, 8, LYCTOCORINAE: ***Lyctocoris campestris*** (Fabricius) 1, 3, 4, 5, 9, ***L. dimidiatus*** (Spinola) 3, 7, ***Xylocoris cursitans*** (Fallén) 3, ***X. lativentris*** (J. Sahlberg) 3, 9, ***X. obliquus*** Costa 1, 3, 5, ***Brachysteles parvicornis*** (Costa) 2, 3, 10, ***Cardiastethus fasciventris*** (Garbillietti) 2, 3, 6, ***Dufouriellus ater*** (Dufour) 2, 3, 9, ***Scoloposcelis pulchella angusta*** (Reuter) 2.

CIMICIDAE: ***Cimex lectularius*** Linnaeus 8, ***Oeciacus hirundinis*** (Lamarck) 8.

TINGIDAE: TINGINAE: ***Acalypta gracilis*** Fieber 4, ***A. marginata*** (Wolff) 3, 7, ***A. platycheila*** (Fieber) 7, ***Agramma atricapillum*** (Spinola) 4, 9, 10, ***A. laetum*** (Fallén) 1, 7, 10, ***A minutum*** (Horváth) 1, 4, ***A. ruficorne*** (Germar) 3, ***Catoplatus carthuusianus*** (Goeze) 4, ***C. crassipes*** (Fieber) 4, ***C. horvathi*** (Puton) 4, ***C. nigriceps*** Horváth 4, ***Copium clavicorne*** (Linnaes) 5, ***C. teucrii teucrii*** (Host) 4, 5, ***Corythuca ciliata*** Say 9, ***Derephysia foliacea*** Fallén 1, 4, 6, ***Dictyla echii*** (Schrank) 4, 5, 8, 10, ***D. humuli*** (Fabricius) 4, ***D. lupuli*** (Herrich-Schaeffer) 10, ***D. platyoma*** (Fieber) 4, ***D. rotundata*** (Herrich-Schaeffer) 4, ***Dictyonota strichnocera*** Fieber 1, 4, ***Elasmotropis testaceus*** (Herrich-Schaeffer) 4, ***Galeatus***

spinifrons (Fallén) 4, ***Hyalochiton syrmiensis*** (Horváth) 3, ***Kalama lugubris*** (Fieber) 6, ***K. tricornis*** (Schrank) 1, 3, 7, ***Lasiacantha capucina*** (Germar) 1, 4, 5, ***L. gracilis*** (Herrich-Schaeffer) 1, 4, ***L. hermani*** Vásárhelyi 4, ***Monosteira unicostata*** (Mulsant & Rey) 3, 4, ***Oncochila scapularis*** (Fieber) 3, 4, 7, 9, ***O. simplex*** (Herrich-Scahaeffer) 4, 5, 7, 9, ***Physatocheila confinis*** Horváth 3, 6, ***P. dumetorum*** (Herrich-Schaeffer) 3, 4, 6, 9, ***Stephanitis pyri*** (Fabricius) 3, 4, 6, 9, ***Tingis*** (***Neolasiotropis***) ***pilosa*** Hummel 3, 7, ***T.*** (***Tingis***) ***ampliata*** (Herrich-Schaeffer) 9, ***T.*** (***Tingis***) ***angustata*** (Herrich-Schaeffer) 3, 7, ***T.*** (***Tingis***) ***auriculata*** (Costa) 3, 4, 6, 9, ***T.*** (***Tingis***) ***cardui*** (Linnaeus) 4, ***T.*** (***Tingis***) ***crispata*** (Herrich-Schaeffer) 4, 5, ***T.*** (***Tingis***) ***elongata*** (Fieber) 4, ***T.*** (***Tingis***) ***grisea*** Germar 4, 6, ***T.*** (***Tropidocheila***) ***maculata*** (Herrich-Schaeffer) 4, ***T.*** (***Tropidocheila***) ***ragusana*** (Fieber) 3, 4, ***T.*** (***Tropidocheila***) ***reticulata*** (Herrich-Schaeffer) 1, 7**.**

REDUVIIDAE: EMESINAE: ***Empicoris baerensprugi*** (Dohrn) 3, ***E. culiciformis*** (De Geer) 3, 4, ***Ploiaria domestica*** (Scopoli) 6, STENOPODINAE: ***Oncocephalus sqalidus*** (Rossi) 3, ***Pygolampis bidentata*** (Goeze) 3, 9, REDUVINAE: ***Reduvius personatus*** (Linnaeus) 3, 4, ***R. testaceus*** (Herrich-Schaeffer) 3, PEIRATNAE: ***Peirates hybridus*** (Scopoli) 5, 8, 9, PHYMATINAE: ***Phymata crassipes*** (Fabricius) 1, 3, 4, 5, HARPOCORINAE: ***Coranus aegypticus*** (Fabricius) 3, 4, 5, ***C. contrarius*** Reuter 4, 9, ***C.subapterus*** (De Geer) 1, 3, 4, ***C. tuberculifer*** Reuter 3, 4, 9, ***Nagusta goedeli*** (Kolenati) 4, ***Rhynocoris annulatus*** (Linnaeus) 2, 3, ***R. cuspidatus*** Ribaut 3, ***R. iracundus*** (Poda) 3, 4, 6, 8, ***R. niger*** (Herrich-Schaeffer) 3, ***Sphedanolestes lividigaster*** (Mulsant & Rey) 4.

MIRIDAE: CYLAPINAE: ***Fulvius oxycarenoides*** (Rossi) 2, BRYOCORINAE: ***Monalocoris filicis*** (Linnaeus) 2, 3, ***Campyloneura virgula*** (Herrich-Schaeffer) 5, 9, ***Dicyphus*** (***Dicyphus***) ***errans*** (Wolff) 3, 6, 7, ***D.*** (***Dicyphus***) ***hyalipennis*** (Burmeister) 3, 5, ***D.*** (***Dicy phus***) ***pallidus*** (Herrich-Schaeffer) 3, 6, ***D.*** (***Dicyphus***) ***stachydis*** J. Sahlberg 3, ***D.*** (***Brachyceroea***) ***annulatus*** (Wolff) 7, ***D.*** (***Bra chyceroea***) ***geniculatus*** Fieber 3, 7, ***D.*** (***Brachyceroea***) ***globulifer*** (Fallén) 7, ***Macrolophus costalis*** Fieber 7, 8, ***M. glaucescens*** Fieber 3, DERAEOCORINAE: ***Deraeocoris*** (***Deraeocoris***) ***morio*** (Boheman) 4, ***D.*** (***Deraeocoris***) ***olivaceus*** (Fabricius) 4, ***D.*** (***Deraeocoris***) ***punctum*** (Rambur) 4, ***D.*** (***Deraeocoris***) ***ruber*** (Linnaeus) 2, 3, 4, 6, 7, ***D.*** (***Deraeocoris***) ***rutilus*** (Herrich-Schaeffer) 3, 4, ***D.*** (***Deraeocoris***) ***scutellaris*** (Fabricius) 4, ***D.*** (***Deraeocoris***) ***trifasciatus*** (Linnaeus) 3, 4, ***D*** (***Deraeocoris***) ***ventralis*** Reuter 3, 4, ***D.*** (***Knightocapsus***) ***lutescens*** (Schilling) 3, 6, ***D.*** (***Camptobrochis***) ***punctulatus*** (Fallén) 3, ***D.*** (***Camptobrochis) serenus*** (Douglas & Scott) 3, 5, 7, *Stethoconus pyri* (Mella) 6, 9, MIRINAE: ***Adelphocoris detritus*** (Fieber) 2, 3, ***A. insignis*** Horváth 3, ***A. lineolatus*** (Goeze) 3, 4, 5, 6, 7, 8, ***A. quadripunctatus*** (Fieber) 3, ***A. reicheli*** (Fieber) 7, ***A. seticornis*** (Fabricius) 3, 4, 7, 8, ***A. ticinensis*** (Mayer-Dür) 1, 3, 4, ***A. vandalicus*** (Rossi) 2, 3, 4, 8, ***Agnocoris reclairei*** (Wagner) 3, ***A. rubi-***

cundus (Fallén) 3, ***Alloeonotus egregius*** Fieber 1, ***All. fulvipes*** Scopoli 3, 6, ***Apolygus limbatus*** (Fallén) 3, ***A. lucorum*** (Meyer-Dür) 3, 4, 6, 7, ***A. spinolae*** (Meyer-Dür) 7, ***Brachycoleus decolor*** Reuter 1, 3, 4, 6, 7, 9, ***B. pilicornis pilicornis*** (Panzer) 3, 4, ***Calocoris affinis*** (Herrich-Schaeffer) 3, 7, ***C. roseomaculatus angularis*** (Fieber) 1, 3, 8, ***Capsodes*** (***Capsodes***) ***gothicus*** (Linnaeus) 3, 7, ***Capsus ater*** (Linnaeus) 3, 4, 6, ***Chargochilus*** (***Chargochilus***) ***gyllenhalii*** (Fallén) 1, 3, 4, 6, 9, ***C.*** (***Chargochilus***) ***weberi*** Wagner 4, ***Closterotomus annulus*** (Brullé) 3, 4, ***C. biclavatus*** (Herrich-Schaeffer) 2, 3, ***C. cinctipes*** (Costa) 3, 4, ***C. fulvomaculatus*** (De Geer) 3, 5, ***C. norvegicus*** (Gmelin) 3, 5, 6, ***C. princeps*** (Reuter) 5, ***C. reuteri*** Horváth 9, ***C. trivialis***(Costa) 5, 8, ***C. vicinus*** Horváth 7, ***Cyphodema instabile*** (Lucas) 5, ***Dichrooscytus rufipennis*** Fallén 2, ***Dionconotus neglectus*** (Fabricius) 7, ***Gryposoris*** (***Lophyromiris***) ***sexguttatus*** (Fabricius) 1, 4, ***Horistus*** (***Primihoristus***) ***cingulatus***(Gmellin) 7, ***Liocoris tripustulatus*** (Fabricius) 3, 4, 7, ***Lygocoris pabulinus*** (Linnaeus) 3, 7, 8, ***Lygus gemellatus gemellatus*** (Herrich-Schaeffer) 1, 4, 6, 7, 8, ***L. pratensis*** (Linnaeus) 1, 2, 3, 4, 5, 6, 7, 9, ***L. punctatus*** (Zetterstedt) 2, 6, 7, ***L. rugulipennis*** Poppius 4, 7, 8, ***Megacoelum beckeri*** Fieber 3, ***Miris striatus*** (Linnaeus) 3, 6, 9, ***Odontoplatys bidentatus*** (Herrich-Schaeffer) 2, 3, ***Orthops*** (***Montanorthops***) ***forelii*** (Fieber) 4, ***O.*** (***Montanorthops***) ***montanus*** (Schilling) 1, ***O.*** (***Orthops***) ***campestris*** (Linnaeus) 6, 7, 8, ***O.*** (***Orthops***) ***kalmi*** (Linnaeus) 4, 6, 7, 8, ***Phytocoris*** (***Eckerleinius***) ***incanus*** Fieber 4, ***P.*** (***Ktenocoris***) ***nowickyi*** Fieber 7, ***P.*** (***Ktenocoris***) ***ulmi*** (Linnaeus) 3, 9, ***P.***(***Ktenocoris***) ***varipes*** (Boheman) 3, 5, 7, ***P.*** (***Leptophytocoris***) ***ustulatus*** Herrich-Schaeffer 7, ***P.*** (***Phytocoris***) ***confusus*** Reuter 3, ***P.*** (***Phytocoris***) ***longipennis*** Flor 3, ***P.*** (***Phytocoris***) ***reuteri*** Saunders 3, ***P.*** (***Phytocoris***) ***setiger*** Reuter 4, ***P.*** (***Phytocoris***) ***tiliae*** Fabricius 3, ***P.*** (***Stictophytocoris***) ***meridionalis*** Herrich-Schaeffer 3, ***Pinalitus cervinus*** (Herrich-Schaeffer) 3, ***P. coccineus*** (Horváth) 3, ***Polymerus (Poeciloscytus) asperule*** (Fieber) 4, 5, ***P. (Poeciloscytus) brevicornis*** Reuter) 4, 5, ***P.*** (***Poeciloscutus***) ***cognatus*** (Fieber) 4, 6, 7, ***P.*** (***Poeciloscytus***) ***microphthalmus*** (Wagner) 4, ***P.*** (***Poeciloscytus***) ***unifaciatus*** (Fabricius) 1, 4, 7, 9, ***P.*** (***Poeciloscytus***) ***vulneratus*** (Panzer) 4, 6, 7, 9, ***P.*** (***Polymerus***) ***holosericeus*** Hahn 4, 9, ***P.*** (***Polymerus***) ***nigrita*** (Fallén) 4, 7, 9, ***Rhabdomiris striatellus striatellus*** (Fabricius) 4, 5, ***Stenotus binotatus*** (Fabricius) 1, 4, 5, 6, 7, ***Acetropis carinata*** (Herrich-Schaeffer) 6, 7, ***A. longirostris*** (Puton) 7, ***Leptopterna dolobrata*** (Linnaeus) 1, 7, ***L. ferrugata*** (Fallén) 1, 7, ***Megalocerea recticornis*** (Geoffroy) 4, 7, 9, ***Notostira elongata*** (Geoffroy) 4, 6, 7, ***N. erratica*** (Linnaeus,) 4, 6, 7, 8, ***Stenodema*** (***Stenodema***) ***holsatum*** (Fabricius) 1, ***S.*** (***Stenodema***) ***laevigatum*** (Linnaeus) 7, ***S.*** (***Stenodema***) ***sericans*** (Fieber) 9, ***S.*** (***Stenodema***) ***virens*** (Linnaeus) 1, 4, 8, ***S.*** (***Brachystira***) ***calcaratum*** (Fallén) 1, 4, 6, 7, 8, ***Trigonotylus pulchellus*** (Hahn) 4, 6, 8, ***T. ruficornis*** (Geoffroy) 4, 6, 8, 9, ***Camponotidea saundersi*** (Puton) 6, 8, HALTICINAE: ***Anapus longicornis*** Jakovlev 4, ***Halticus apterus apterus*** (Linnaeus) 4, 6, 7, 8, ***H. luteicollis*** (Panzer) 4, 7, ***H. pusillus*** (Herrich-Schaeffer) 4, ***H. saltator*** (Geoffroy) 4, 7, 8, ***Myrmecophyes alboornatus***

(Stål) 4, ***M. latus*** Wagner 1, ***Orthocephalus bivittatus*** Fieber 1, ***O. coriaceus*** (Fabricius) 1, ***O. parvulus*** Reuter 4, 6, ***O. saltator*** (Hahn) 4, 6, 7, 8, ***O. vittipennis*** (Herrich-Schaeffer) 4, 7, ***Piezocranum simulans*** Horváth 7, ***Strongylocoris leucocephalus*** (Linnaeus) 1, 4, 5, 7, ***S. niger*** (Herrich-Schaeffer) 1, 4, 5, 9, ORTHOTYLINAE: ***Blepharidopterus diaphnus*** (Kirschbaum) 3, ***Cyllocoris histrionicus*** (Linnaeus) 3, 6, ***Dryophilocoris flavoquadrimaculatus*** (De Geer) 3, ***Globiceps*** (***Globiceps***) ***sphegiformis*** (Rossi) 2, 3, ***G.*** (***Kelidocoris***) ***flavomaculatus*** (Fabricius) 3, 7, 8, ***G.*** (***Kelidocoris***) ***salicola*** Reuter 3, ***G.*** (***Kelidocoris***) ***fulvicollis*** Jakovlev 4, 7, ***Heterocordylus*** (***Heterodactylus***) ***genistae*** (Scopoli) 3, 4, ***H.*** (***Heterodactylus***) ***leptocerus*** (Kirschbaum) 4, ***H.*** (***Heterodact.***) ***tumidicornis*** (Herrich-Schaeffer) 3, 4, 9, ***Heterotoma meriopterum*** (Scopoli) 3, ***Malacocoris chlorizans*** Panzer 3, 6, ***Orthotylus*** (***Orthotylus***) ***marginalis*** Reuter 3, 6, ***O.*** (***Orthotylus***) ***nassatus*** (Fabricius) 3, ***O.*** (***Orthotylus***) ***viridinervis*** (Kirschbaum) 3, ***O.*** (***Melanotrichus***) ***flavosparsus*** (C.R. Sahlberg) 3, 8, ***O.*** (***Pinocapsus***) ***fuscescens*** Kirschbaum 2, ***Pseudoloxops coccinea*** Meyer-Dür 3, ***Reuteria marqueti*** Puton 3, PILOPHORINAE: ***Pilophorus angustulus*** Reuter 3, 6, ***P. confusus*** (Kirschbaum) 3, 6, ***P. perplexus*** Douglas & Scott 3, 6, ***P. simulans*** Josifov 3, 6, HALLODAPINAE: ***Mimocoris rugicollis*** (A. Costa) 7, ***Systellonotus triguttatus*** (Linnaeus) 1, 7, PHYLINAE: ***Acrotelus caspicus*** (Reuter) 3, ***Adelphophylus balcanicus*** (Kormilev) 3, ***Amblytylus albidus*** (Hahn) 3, ***A. brevicollis*** Fieber 3, ***A. concolor*** Jakovlev 3, 7, ***A. nasutus*** (Kirschbaum) 3, 7, ***Ascidema obsoleta*** (Fieber) 3, ***Atomoscelis onusta*** (Fieber) 3, 7, ***Atractotomus kolenatii*** (Flor) 5, ***A. mali*** (Meyer-Dür) 3, 6, ***Campylomma simillimum*** Jakovlev 4, ***C. verbasci*** (Meyer-Dür) 4, 6, 7, ***Chlamydatus pulicarius*** (Fallén) 1, 2, 4, 6, 7, ***Ch. pullus*** (Reuter) 1, 5, 7, ***Chlorillus pictus*** (Fieber) 1, 7, ***Compsidolon*** (***Apsinthophylus***) ***pumilum*** (Jakovlev) 3, 7, ***C.*** (***Coniortodes***) ***salicellum*** (Herrich-Schaeffer) 3, ***Conostethus griseus*** Douglas & Scott 4, 7, ***Criocoris crassicornis*** Hahn 3, 7, ***C. nigripes*** Fieber 3, ***C. sulcicornis*** (Kirschbaum) 2, 3, ***Europiella albipennis*** (Fallén) 4, 7, ***E alpina*** (Reuter) 1, 7, 10, ***E. artemisiae*** (Becker) 4, 7, ***Harpocera thoracica*** Fallén 4, ***Heterocapillus tigripes*** (Mulsant & Rey) 1, 3, 7, ***Hoplomachus thunbergi*** (Fallén) 5, ***Lopus decolor decolor*** (Fallén) 7, 10, ***Macrotylus*** (***Alloeonycha***) ***atricapillus*** (Scott) 3, ***M.*** (***Alloeonycha***) ***horváthi*** (Reuter) 7, 8, ***M.*** (***Alloeonycha***) ***paykulli*** (Fallén) 5, ***M.*** (***Alloeonycha***) ***solitarius*** (Meyer-Dür) 3, ***M.*** (***Macrotylus***) ***herrichi*** (Reuter) 3, 7, ***M.*** (***Macrotylus***) ***quadrilineatus*** (Schrank) 1, 7, ***Megalocoleus aurantiacus*** (Fieber) 5, ***M. dissimilis*** (Reuter) 4, ***M. exsanguis*** (Herrich-Schaeffer) 4, ***M. mellae*** Reuter 3, ***M. molliculus*** (Fallén) 7, 8, ***M. tanaceti*** (Fallén) 3, 7, ***Monosynamma bohemanni*** (Fallén) 3, 7, ***Nigrocapillocoris ochraceus*** (Scott) 3, ***Oncotylus*** (***Cylindromelus***) ***setulosus*** (Herrich-Schaeffer) 4, 9, ***O.*** (***Oncotylus***) ***viridiflavus*** (Goeze) 1, ***Orthonotus cylindricollis*** (A. Costa) 4, 5, ***O. rufifrons*** (Fallén) 4, 7, ***Paredrocoris pectoralis*** Reuter 4, 5, ***Phylus*** (***Phylus***) ***coryli*** (Linnaeus) 3, ***P.*** (***Phylus***) ***melanocephalus*** (Linnaeus) 3, ***Placochilus seladonicus seladonicus*** (Fallén) 3, 6, 7,

Plagiognathus (***Plagiognathus***) ***arbustorum*** (Fabricius) 1, 3, 7, ***P.*** (***Plagiognathus***) ***bipunctatus*** Reuter 1, 5, 7, ***P.*** (***Plagiognathus***) ***chrysanthemi*** (Wolff) 1, 4, 5, 7, 8, ***P.*** (***Plagiognathus***) ***fulvipennis*** (Kirschbaum) 4, 5, 7, ***Psallus (Hylopsallus) variabilis*** (Fallén) 4, 6, ***P. (Mesopsallus) ambiguus*** (Fallén) 2, 6, 7, ***P. (Phylidea) ocularis*** (Mulsant & Rey) 3, 7, ***P. (Phylidea) quercus*** (Kirschbaum) 3, 7, ***P. (Phylidea) syriacus*** **(**Reuter) 4, ***P.*** (***Pityopsallus***) ***luridus*** Reuter 6, ***P.*** (***Pityopsallus***) ***pinicola*** Reuter 1, 2, ***P.*** (***Psallus***) ***lepidus*** Fieber 3, 9, ***P.*** (***Psallus***) ***mollis*** (Mulsant & Rey) 3, 9, ***Salicarius roseri*** (Herrich-Schaeffer) 3, ***Sthenarus*** (***Sthenarus***) ***rotermundi*** (Scholtz) 3, ***Thermocoris munieri*** Puton 8, ***Tuponia*** (***Chlorotuponia***) ***brevirostris*** Reuter 5, ***T.*** (***Chlorotuponia***) ***hippophaes*** (Fieber) 5, 7, ***T.*** (***Tuponia***) ***tamaricus*** Perris 4, 5.

LEPTOPODIDAE: ***Leptopus marmoratus*** (Goeze) 5.

ARADIDAE: ANEURINAE: ***Aneurus avenius*** (Dufour) 3, ***A. laevis*** (Fabricius) 3, ARADINAE: ***Aradus betulae betulae*** (Linnaeus) 3, 9, ***A. cinnamomeus*** Panzer 2, *A. conspicuus* Herrich-Schaeffer 3, ***A. corticalis*** (Linnaeus) 3, ***A. depresus*** (Fabricius) 3, ***A. distinctus*** Fieber 3, ***A. lugubris*** Fallén 2, ***A. ribauti*** Wagner 3, ***A. serbicus*** Horváth 3, ***A. truncatus*** Fieber 3, ***A. versicolor*** Herrich-Schaeffer 3, ***Calisius salicis*** Horváth 3.

PIESMATIDAE: ***Piesma*** (***Piesma***) ***capitatum*** (Wolff) 4, 5, ***P.*** (***Piesma***) ***maculatum*** (Laporte de Castelnau) 1, 3, 4, 6, ***P.*** (***Parapiesma***) ***kochiae*** (Becker) 4, ***P. (Parapiesma) quadratum*** (Fieber) 6, 8, ***P. (Parapiesma) salsolae*** (Becker) 4, ***P.*** (***Parapiesma***) ***silens*** (Horváth) 4, ***P.*** (***Parapiesma***) ***variabile*** (Fieber) 1.

BERYTIDAE: BERYTINAE: ***Apoplymus pectoralis*** Fieber 3, ***Berytinus clavipes*** (Fabricius) 4, ***B. hirticornis*** (Brullé) 4, ***B. minor*** (Herrich-Schaeffer) 1, 4, ***B.*** (***Lizinus***) ***consimilis*** (Horváth) 4, ***B.*** (***Lizinus***) ***distinguendu***s (Ferrari) 4, 5, ***B.*** (***Lizinus***) ***geniculatus*** (Horváth) 4, ***B.*** (***Lizinus***) ***montivagus*** (Meyer-Dür) 4, 5, 7, 8, ***B.*** (***Lizinus***) ***signoreti*** (Fieber) 8, ***B.*** (***Lizinus***) ***striola*** (Ferrari) 8, ***Neides aduncus*** Fieber 4, 5, 9, ***N. tipularius*** (Linnaeus) 4, 5, 8, METACANTHINAE: ***Gampsocoris culicinus*** Seidenstucker 3, 4, 5, 6, 7, ***G. enslini*** Seidenstücker 5, ***G. punctipes*** (Germar) 1, 4, 5, 7, 8, 9, ***Metacanthus meridionalis*** (Costa) 5, ***Metatropis rufescens*** (Herrich-Schaeffer) 3, 4.

LYGAEIDAE: LYGAEINAE: ***Arocatus longiceps*** Stål 3, 9, *Lygaeus melanocephalus* Fabricius 3, 9, ***Arocatus roeselli*** (Schilling) 3, 6, 9, ***Horvathiolus superbus*** (Pollich) 3, 4, 5, ***Lygaeosoma sardeum*** Spinola 4, 5, ***Lygaeus equestris*** (Linnaeus) 2, 3, 4, 5, 6, ***Melanocoryphus albomaculatus*** (Goeze) 1, 3, 4, 5, 7, ***M. tristrami*** (Douglas & Scott) 4, 5, 7, ***Nithecus jacobaeae*** (Schilling) 1, 8, ***Nysius ericae*** (Schilling) 4, ***N. thymi*** (Wolff) 1, 4, 5, 7, ***N.***(***Macroparius***) ***cymoides***

(Spinola) 1, 6, 7, ***N.*** (***Macroparius***) ***graminicola*** (Kolenati) 1, 4, ***N.***(***Macroparius***) ***helveticus*** (Herrich-Schaeffer) 4, 5, ***N.*** (***Tropinysius***) ***senecionis*** (Schilling) 4, 5, ***Orsillus depressus*** (Mulsant & Rey) 4, ***Ortholomus punctipennis*** (Herrich-Schaeffer) 1, 4, 5, 7, ***Spilostethus pandurus*** (Scopoli) 1, 3, 4, 5, ***S. pandurus militaris*** (Fabricius) 3, 5, ***S. saxatilis*** (Scopoli) 1, 3, 4, 5, 7, ***Tropidothorax leucopterus*** (Goeze) 4, ISCHNORHYNCHINAE: ***Kleidocerys ericae*** (Horváth) 2, 3, ***K. resedae*** (Panzer) 3, 4, 10, CYMINAE: ***Cymus aurescens*** Distant 10, ***C. claviculus*** (Fallén) 4, 7, 10, ***C. glandicolor*** Hahn 1, 4, 10, ***C. melanocephalus*** Fieber 4, 7 , 10, BLISSINAE: ***Dimorphopterus blissoides*** Baerensprung 6, 10, ***D. doriae*** (Ferrari) 4, 5, ***Dimorphopterus spinolae*** (Signoret) 4, ***Ischnodemus caspius*** Jakovlev 10, ***I. sabuleti*** (Fallén), ***I. suturalis*** Horváth 5, HENESTARINAE: ***Henestaris halophilus*** (Burmeister) 5, GEOCORINAE: ***Geocoris arenarius*** (Jakovlev) 4, ***G. ater*** (Fabricius) 4, 5, 7, ***G. ater albipennis*** Fabricius 4, ***G. dispar*** (Waga) 4, ***G. grylloides*** Linnaeus 4, ***G. lapponicus*** (Zetterstedt) 5, ***G. lineola*** (Rambur) 5, ***Piocoris erythrocephalus*** (Lepeletier & Serville) 4, 5, 9, ARTHENEINAE: ***Chilacis typhae*** (Perris) 10, HETEROGASTRINAE: ***Heterogaster affinis*** Herrich-Schaeffer 4, ***H. artemisiae*** Schilling 4, 5, 7, ***H. cathariae*** (Geoffroy) 7, ***H. urticae*** (Fabricius) 4, 7, ***Platyplax salviae*** (Schilling) 4, 7, OXYCARENINAE: ***Brachyplax tenuis*** (Mulsant & Rey) 7, ***Camptotelus lineolatus*** (Schilling) 4, ***Macroplax fasciata*** (Herrich-Schaeffer)5, ***M. preyssleri*** (Fieber) 1, 4, ***Macropternella inermis*** (Fieber) 5, ***Metopoplax ditomoides*** (Costa) 4, 5, ***M. fuscinervis*** Stål 1, 4, ***M. origani*** (Kolenati) 4, 5, 6, ***Microplax interruptus*** (Fieber) 1 4, 5, ***Oxycarenus hyalinipennis*** (Costa) 5, 9, ***O. lavaterae*** (Fabricius) 5, 9, ***O. modestus*** (Fallén) 3, 4, 8, ***O. pallens*** (Herrich-Schaeffer) 4, 5, ***Tropidophlebia costalis*** (Herrich-Schaeffer) 3, 4, RHYPAROCHROMINAE: ***Acompus pallipes*** (Herrich-Schaeffer) 4, ***A. rufipes*** (Wolff) 1, 9, ***Aellopus atratus*** (Goeze) 4, 5, ***Aoploscelis bivirgata*** (Costa) 5, ***Aphanus rolandri*** (Linnaeus) 4, 5, ***Beosus maritimus*** (Scopoli) 4, 5, 7, 8, ***B. quadripunctatus*** (Müller) 3, 4, ***Diomphalus hispidulus*** Fieber 7, ***Drymus*** (***Drymus***) ***latus*** Douglas & Scott 3, 7, ***D.*** (***Sylvadrymus***) ***brunneus*** (R. F. Sahlberg) 1, 4, ***D.*** (***Sylvadrymus***) ***sylvaticus*** (Fabricius) 3, 7, ***Emblethis angustus*** Montadon 4, ***E. ciliatus*** Horváth 4, ***E. denticollis*** Horváth 4, 6, ***E. griseus*** (Wolff) 4, 5, ***E. verbasci*** (Fabricius) 1, 4, 5, ***Eremocoris abietis*** (Linnaeus) 2, 4, ***E. fenestratus*** (Herrich-Schaeffer) 4, 5, 6, ***E. plebejus*** (Fallén) 3, 6, ***E. podagricus*** (Fabricius) 4, ***Gastrodes abietum*** Bergroth 1, 2, ***G. grossipes*** (De Geer) 2, 9, ***Gonianotus marginepunctatus*** (Wolff) 6, 7, ***Icus angularis*** Fieber 5, ***Ischnocoris punctulatus*** Fieber 5, ***Ischnopeza hirticornis*** Herrich-Schaeffer 5, ***Lamprodema maurum*** (Fabricius) 7, ***Lasiosomus enervis*** (Herrich-Schaeffer) 7, ***Lethaeus cribratissimus*** (Stål) 4, ***Macrodema micropterum*** (Curtis) 4, ***Megalonotus chiragra*** (Fabricius) 1, 4, 7, 8, ***M. colon*** Puton 5, ***M. dilatatus*** (Herrich-Schaeffer) 7, ***M. emarginatus*** (Rey) 5, ***M. hirsuus*** Fieber 1, 4, ***M. mixtus*** (Horváth) 3, ***M. praetextatus*** (Herrich-Schaeffer) 4, 5, ***M. puncticollis*** (Lucas) 4, 5, ***M. sabulicola*** (Thomson) 4, 5, ***Neurocladus brachi-***

idens (Dufour) 5, ***Pachybrachius fracticollis*** (Schilling) 7, 10, ***Peritrechus angusticollis*** (R. F. Sahlberg) 4, 5, ***P. geniculatus*** (Hahn) 1, 4, 8, ***P. gracilicornis*** Puton 4, 5, ***P. lundi*** (Gmelin) 5, ***P. meridionalis*** Puton 5, ***P. nubilus*** (Fallén) 4, 5, ***Pionosomus opacellus*** Horváth 4, ***P. varius*** (Wolff) 4, ***Plinthisus brevipennis*** (Latreille) 4, ***P. longicollis*** Fieber 5, 7, ***P.*** (***Plinthisomus***) ***pusillus*** (Scholtz) 4, ***Pterotmetus dimidiatus*** Fieber 4, ***P. staphyliniformis*** (Schilling) 4, 5, 7, ***Rhyparochromus*** (***Graptopeltus***) ***lynceus*** (Fabricius) 4, 5, ***Rh.*** (***Graptopeltus***) ***validus*** (Horváth) 4, ***Rh. phoeniceus*** (Rossi) 1, 4, 5, ***Rh. phoeniceus sanguineus*** (Douglas & Scott) 1, 4, ***Rh. pini*** (Linnaeus) 1, 4, 5, ***Rh.***(***Microtomideus***) ***leucodermus*** Fieber 3, ***Rh.***(***Raglius***) ***alboacuminatus*** (Goeze) 1, 4, 5, 7, ***Rh.*** (***Raglius***) ***confusus*** (Reuter) 4, 5, ***Rh.*** (***Raglius***) ***pineti*** (Herrich-Schaeffer) 4, ***Rh.*** (***Raglius***) ***tristis*** (Fieber) 5, ***Rh.*** (***Rhyparochro-mus***) ***vulgaris*** (Schilling) 1, 4, 5, ***Rh.*** (***Xanthochilus***) ***minusculus*** (Reuter) 5, ***Rh.***(***Xanthochilus***) ***quadratus*** (Fabricius) 4, 5, 7, ***Rh.*** (***Xanthochilus***) ***saturnius*** (Rossi) 4, ***Scolopostethus affinis*** (Schilling) 5, ***S. decoratus*** (Hahn) 1, 4, ***S. grandis*** Horváth 5, ***S. pictus*** (Schilling) 5, ***S.thomsoni*** Reuter 1, 5, ***Stygnocoris fuligineus*** (Geoffroy) 4, ***S. rusticus*** (Fallén) 7, ***Taphropeltus contractus*** (Herrich-Schaeffer) 9, ***T. hamulatus*** (Thomson) 7, ***Trapezonotus*** (***Trapezonotus***) ***arenarius*** (Linnaeus) 1, 4, 5, ***T.*** (***Trapezonotus***) ***dispar*** Stål 1, 4, 5, ***T.*** (***Trapezonotus***) ***ullrichi*** (Fieber) 4, 5, ***T.*** (***Gonopherus***) ***anorus*** (Flor) 5, ***Tropistethus fasciatus*** (Ferrari) 4, 5, ***T. holosericus*** (Scholtz) 1, 4, 5.

PYRRHOCORIDAE: ***Pyrrhocoris apterus*** (Linnaeus) 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, ***P. apterus*** f. ***crassipuncta*** Schulze 3, 7, 9, ***P. apterus*** f. *gigas* Kormilev 3, 7, ***P. apterus*** f. ***membranaceus*** Westwood 5, ***P. apterus*** f. ***pennata*** Westwood 4, 9, ***P. marginatus*** (Kolenati) 3, 4, 5.

STENOCEPHALIDAE: ***Dicranocephalus agilis*** (Scopoli) 1, 4, 5, ***D. albipes*** (Fabricius) 4, 5, ***D. medius*** (Mulsant & Rey) 5.

COREIDAE: COREINAE: ***Centrocoris spiniger*** (Fabricius) 4, 5, ***C. variegatus*** Kolenati 4, 5, ***Coreus marginatus*** (Linnaeus) 1, 3, 4, 5, 7, 8, 9, ***C. marginatus*** var. ***fundator*** Herrich-Schaeffer 7, ***Enoplops scapha*** (Fabricius) 1, 4, ***E. scapfa*** f. ***illyrica*** Horváth 5, ***Gonocerus acuteangulatus*** (Goeze) 4, 5, ***G. insidiator*** (Fabricius) 1, ***G. juniperi juniperi*** Herrich-Schaeffer 3, 4, 5, ***G. juniperi triquetricornis*** (Rambur) 4, ***Haploprocta sulcicornis*** (Fabricius) 4, ***Phyllomorpha laciniata*** (Villers) 1, 4, ***Ph. lacerata*** Herrich-Schaeffer 3, ***Spathocera dahlmannii*** (Schilling) 2, 3, ***S. laticornis*** (Schilling) 4, 7, ***S. lobata*** (Herrich-Schaeffer) 7, ***S. obscura*** (Germar) 4, ***Syromastus rhombeus*** (Linnaeus) 2, 4, 5, PSEUDOPHLOEINAE: ***Anoplocerus elevatus*** (Fieber) 5, ***Arenocoris falleni*** (Schilling) 4, 5, ***A. waltli*** (Herrich-Schaeffer) 3, 5, ***Bathysolen nubilus*** (Fallén) 4, 5, 9, ***Bothrostethus annulipes*** (Costa) 4, ***B. annulipes*** var. ***sabulicola*** Horváth 4,

Ceraleptus gracilicornis (Herrich-Schaeffer) 3, 4, 5, ***C.s lividus*** Stein 3, 5, 7, 9, ***C. lugens*** (Horváth) 5, ***C.s obtusus*** (Brullé) 5, ***Coriomeris alpinus*** Horváth 1, 2, 5, ***C. denticulatus*** (Scopoli) 1, 4, 5, 7, ***C. hirticornis*** (Fabricius) 7, 9, ***C. scabricornis*** (Panzer) 1, 4, 5, 7, ***C. spinolai*** (Costa) 7.

ALYDIDAE: ***Alydus calcaratus*** (Linnaeus) 4, 5, ***Camptopus lateralis*** (Germar) 1, 4, 5, 9, ***C. lateralis*** f. ***brevipes*** Herrich-Schaeffer 1, 4, 7, ***Megalotomus junceus*** (Scopoli) 7, 9.

RHOPALIDAE: ***Brachycarenus tigrinus*** (Schilling) 4, 5, 8, ***Chorosoma schillingi*** (Schilling) 4, 5, 7, 8, ***Corizus hyoscyami*** (Linnaues) 1, 4, 5, 7, ***Liorhysus hyalinus*** (Fabricius) 4, 5, 6, 8, ***L. hyalinus*** f. ***sanguineus*** (Costa) 7, ***Maccevethus caucasicus*** (Kolenati) 3, 4, 5, 8, 9, ***Myrmus miriformis*** (Fallén) 4, 8, 9, ***Rhopalus parumpunctatus*** Schilling 4, 8, ***R. parumpunctatus*** *var.* ***subspeciosus*** (Schumacher) 7, ***R. rufus*** Schilling 1, 7, 9, ***R. subrufus*** (Gmelin) 1, 7, 9, ***R.*** (***Aeschyntelus***) ***maculatus*** (Fieber) 4, ***R. conspersus*** (Fieber) 4, 5, ***R. distinctus*** (Signoret) 5, ***R. lepidus*** Fieber 5, ***Stictopleurus abutilon*** (Rossi) 3, 4, 5, ***S. crassicornis*** (Linnaeus) 4, 5, 8, ***S. pictus*** (Fieber) 4, 8, ***S. punctatonervosus*** (Goeze) 4, 5.

SCUTELLERIDAE: ***Eurygaster austriaca*** (Schrank) 4, 7, 8, ***E. austriaca*** var. ***frishii*** (Goeze) 7, 8, ***E. austriaca*** var. ***nigra*** Fieber 4, 7, 8, ***E. austrica*** f. ***obliquus*** Kolenati 7, 8, ***E. integriceps*** Puton 4, 7, 8, ***E. maura*** (Linnaeus) 1, 3, 4,

Table I
Present level of knowledge on Heteroptera in certain regions of Serbia and characteristic biocenoses that are entwined in each

Biomes/Biocenoses		% value from all so far determined species
High-mountain rocky grounds and pastures	162	18,94
Coniferous forests	31	3,62
Deciduous forests	222	25,96
Mediterranean mountain pastures and forests on rocky ground	249	29,12
Meadows	210	24,56
Parks	85	9,94
Orchards	86	10,05
Steppes with diverse grasses	380	44,44
Agrobiocenoses	83	9,70
Bogs and Marshes	47	5,49
Aquatic habitats	36	4,21

7, 8, ***E. maura*** f. ***grisescens*** Rey 4, 7, 8, ***E. maura*** f. ***niger*** Fieber 4, ***E.maura*** f. ***personnata*** Stichel 4, 8, ***E. maura*** f. ***picta*** (Fabricius) 4, 8, ***E. maura*** f. ***subnigra*** Stichel 4, 8, ***E. schreiberi*** var. ***marginella*** Wagner 1, ***E. testudinaria*** (Geoffroy) 4, 7, 8, ***E. testudinaria*** f. ***mixta*** Cerutti 7, ***Odontoscelis dorsalis*** (Fabricius) 4, ***O. fuliginosa*** (Linnaeus) 1, 4, 5, ***O. fuliginosus*** f. ***carbonaria*** (Zetterstadt) 1, ***O. fuliginosus*** f. ***dorsalis*** Hahn 4, ***O. fuliginosus*** f. ***litura*** (Fabricius) 5, ***Odontotarsus caudatus*** Burmeister 5, ***O. grammicus*** Linnaeus 5, ***O. purpureolineatus*** (Rossi) 4, 5, ***O. robustus*** Jakovlev 7, ***O. rugicollis*** Jakovlev 5, 7, ***Phimodera galgulina*** (Herrich-Schaeffer) 4, ***Psacasta exanthematica*** (Scopoli) 1, 4, 5, ***P. neglecta*** (Herrich-Schaeffer) 4, 5.

PENTATOMIDAE: PODOPINAE: ***Ancyrosoma leucogrammes*** (Gmelin) 4, 5, 7, 8, 9, ***Crypsinus angustulus*** (Barensprung) 4, ***Derula flavogutata*** Mulsant & Rey 4, 5, 9, ***Graphosoma lineatum*** (Linnaeus) 4, 5, 7, 10, ***G. lineatum italicum*** (Müller) 4, 5, 7, ***Podops inuncta*** (Fabricius) 4, ***P.*** (***Opocrates***) ***curvidens*** Costa 4, 9, ***P.*** (***Opocrates***) ***rectidens*** Horváth 4, ***Sternodonotus obtusus*** Mulsant & Rey 1, 5, ***Tholagmus flavolineatus*** Fabricius 5, ***Ventocoris philalyssum*** Kirkaldy 1, 5, ***V. rusticus*** (Fabricius) 4, 9, ***V. trigonus*** (Krynnicky) 4, ***Vilpianus galii*** (Wolff) 4, 5, PENTATOMINAE: ***Aelia acuminata*** (Linnaeus) 1, 4, 5, 7, 9, ***Ae. acuminata*** f. ***burmeisteri*** Küster 5, ***Ae. glebana*** Ferrari 5, 9, ***Ae. klugi*** Hahn 1, 5, ***Ae. rostrata*** Boheman 1, 5, 6, 8, 10, ***Anthemina lunulata*** (Goeze) 4, 5, 7, 8, ***Apodiphus amyg-***

Table II
The value of Index of similarity (IFS) in the compare bioocenoses

Comparable Biomes/Biocenoses	IFS
Steppes with diverse grasses Mediterranean mountain pastures and forests on rocky ground	0,4737
Orchards Agrobiocenoses	0,3313
High-mountain rocky grounds and pastures Meadows	0,3188
Steppes with diverse grasses Meadows	0,2779
Deciduous forests Parks	0,2345
Coniferous forests Deciduous forests	0,1581
Meadows Bogs and Marshes	0,0933

dali (Germar) 5, ***Carpocoris fuscispinus*** (Boheman) 1, 4, 5, 7, ***C. fuscispinus*** f. ***hahni*** Flor 7, ***C. mediterraneus*** Tamanini 1, 4, 5, ***C. mediterraneus medite-rraneus*** f. ***incerta*** Tamanini 1, 4, ***C. mediterraneus*** f. ***maculosa*** Tamanini 7, ***C. melanocerus*** (Mulsant & Rey) 7, ***C. pudicus*** (Poda) 1, 3, 4, 7, ***C.s pudicus*** f. ***stigmata*** Stichel 7, ***C. purpureipennis*** (De Geer) 1, 3, 4, 5, 7, ***Codophila varia*** (Fabricius) 4, 5, 7, ***C. varicornis*** (Jakovlev) 4, ***Dolycoris baccarum*** (Linnaeus) 1, 3, 4, 5, 6, 7, 8, 10, ***Dyroderes umbraculatus*** (Fabricius) 4, 5, ***Eurydema dominulus*** (Scopoli) 2, 3, 7, ***E. fieb eri*** Fieber 7, ***E. fieberi*** f. ***armeniaca*** Kolenati 4, ***E. gebleri*** Kolenati 4, ***E. oleracea*** (Linnaeus) 4, 5, 7, 8, ***E. oleracea*** var. ***albomarginata*** Goeze 1, 3, 4, 7, ***E. oleraceum*** var. ***annulatum*** Fallén 4, ***E. oleraceum*** f. ***angularis*** Kolenati 4, 9, ***E. oleraceum*** f. ***consimile*** Horváth 1, 3, 4, 7, ***E. oleraceum*** f. ***flavatum*** Schrank 7, ***E. oleraceum*** f. ***paradoxa*** Horváth 1, ***E. oleraceum triguttatum*** Horváth 4, ***E. ornatum*** (Linnaeus) 4, 5, 8, ***E. ornatum*** f. ***chlorotica*** Horváth 4, ***E. ornatum*** f. ***decorata*** (Herrich-Schaeffer) 4, 5, 9, ***E. ornatum*** f. ***conjuncta*** Kolenati 1, ***E. ornatum*** f. ***mehadienese*** Horváth 1, 7, ***E. ornatum*** f. ***pictella*** Kirkaldy 5, 7, *Eurydema rotundicollae* (Dohrn) 1, ***E. ventrale*** Kolenati 3, 4, 5, ***E. ventrale*** f. ***trimaculata*** Tamanini 7, ***Eysarcoris aeneus*** (Scopoli) 4, 7, 10, ***E. aeneus*** f. ***spinicollis*** Puton 1, 7, 9, ***E. fabricii*** Kirkaldy 1, 3, 4, ***E. inconspicuus*** (Herrich-Schaeffer) 4, 5, 7, 8, ***Holcostethus albipes*** (Fabricius) 4, ***H. sphacelatus*** (Fabricius) 4, 5, ***H. vernalis*** (Wolff) 4, 5, ***Menaccarus arenicola*** (Scholtz) 4, ***Neottiglossa bifida*** (Costa) 5, ***N. flavomarginata*** (Lucas) 5, ***N. leporina*** (Herrich-Schaeffer) 4, 5, ***N. lineolata*** Mulsant & Rey 4, ***N. pusilla*** (Gmelin) 4, 5, ***Palomena prasina*** (Linnaeus) 1, 4, 5, 6, 7, ***P. prasina*** f. ***rosea*** Müller 4, ***P. viridissima*** (Poda) 1, 4, 5, ***Pentatoma rufipes*** (Linnaeus) 3, 4, 5, ***Piezodorus lituratus*** (Fabricius) 4, 5, ***P. lituratus*** var. ***alliacea*** (Germar) 1, 4, 5, 9, ***Pitedia juniperina*** (Linnaeus) 1, ***P. pinicola*** (Mulsant & Rey) 5, ***Rhaphigaster nebulosa*** (Poda) 4, 5, ***Rubiconia intermedia*** (Wolff) 4, ***Sciocoris cursitans cursitans*** (Fabricius) 4, 5, ***S. deltocephalus*** Fieber 4, ***S. distinctus*** Fieber 4, *S. pentheri* Wagner 1, ***S. sulcatus*** Fieber 4, 5, ***S.*** (***Neosciocoris***) ***maculatus*** Fieber 5, ***S.*** (***Aposciocoris***) ***homalonotus*** Fieber 5, ***S.*** (***Aposciocoris***) ***macrocephalus*** Fieber 4, 5, ***S.*** (***Aposciocoris***) ***microphthalmus*** Flor 1, 4, 5, ***Stagonomus amoenus*** (Brullé) 1, 4, 5, ***S.*** (***Dallerio***) ***bipunctatus*** (Linnaeus) 5, ***S.*** (***Dallerio***) ***pusillus*** (Herrich-Schaeffer) 4, 5, 9, ***Staria lunata*** (Hahn) 4, 5, 7, ***Trochiscocoris rotundatus*** Horváth 5, AMYOTINAE: ***Arma custos*** (Fabricius) 4, 5, ***A. insperata*** Horváth 5, ***Jalla dumosa*** (Linnaeus) 4, ***Picromerus bidens*** (Linnaeus) 1, 4, ***P. conformis*** (Herrich-Schaeffer) 5, ***Rhacognathus punctatus*** (Linnaeus) 5, ***Trolius luridus*** (Fabricius) 3, ***Zicrona coerulea*** (Linnaeus) 1, 3, 4, 7.

ACANTHOSOMATIDAE: ***Acanthosoma haemorrhoidale*** (Linnaeus) 3, 4, 5, ***Cyphostethus tristriatus*** (Fabricius) 5, ***Elasmostethus minor*** Horváth 3, ***E. fieberi*** (Jakovlev) 3, ***E. grisea*** (Linneus) 3, 4.

CYDNIDAE: SEHIRINAE: ***Adomerus biguttatus*** (Linnaeus) 5, ***A. bigutta-***

tus var. ***concolor*** (Nickerl) 1, ***Canthophorus dubius*** (Scopoli) 4, 5, ***C. impressus*** (Horváth) 1, 4, ***C. melanopterus*** (Herrich-Schaeffer) 1, 3, 4, 5, ***Crocistethus waltlianus*** (Fieber) 4, ***Legnotus limbosus*** (Geoffroy) 3, 4, 9, ***L. picipes*** (Fallén) 4, 5, ***Ochetostethus balcanicus*** Wagner 1, 4, ***O. nanus*** (Herrich-Schaeffer) 1, 4, 5, ***Sehirus luctuosus*** Mulsant & Rey 1, 7, ***S. morio*** (Linnaeus) 1, 4, ***Tritomegas bicolor*** (Linnaeus) 4, 7, ***T. sexmaculatus*** (Rambur) 5, 7, CYDNINAE: ***Aethus flavicornis*** (Fabricius) 4, ***Ae. nigritus*** (Fabricius) 4, 5, ***Ae. pilosulus*** (Klug) 4, ***Byrsinus fossor*** Mulsant & Rey 4, ***Cydnus aterrimus*** (Forster) 4, 5, 7, ***Geotomus brunipennis*** Wagner 5, ***G. elongatus*** Herrich-Schaeffer 5, THYREOCORINAE: ***Thyreocoris balcanicus*** Schumacher 5, ***Th. scarabaeoides*** (Linnaeus) 4, 5, 7.

PLATASPIDAE: ***Coptosoma scutellatum*** (Geoffroy) 3, 4, 5, 7, 8, 9.

CONCLUSIONS

Great diversity of flora and fauna on territory of Serbia and Yugoslavia can be explained by the fact that the Balkan Peninsula, especially its central part, is the part of Europe where the most diverse floristic and faunistic influences from Middle Europe and boreal and arctic parts of Eurasia, as well as eastern and mid-Mediterranean are present together. This influence has formed the long-term migratory process of flora and fauna since the early geological periods (Tertiary), and together with the autochthonous nucleus of Balkan species they make the wildlife of Serbia and Yugoslavia not only rich but also very heterogenous in content and origin.

It is very difficult to present concisely all habitats where all Heteroptera species live in Serbia. This is especially difficult in eurivalent species that dwell within the large spectrum of different communities. Another problem is caused by species living only in narrowly defined parts of certain larger habitats (i.e. soil in meadow and forest ecosystems, tree bark or trunks within a forest, terrain with specific slopes, exposition and geological substrate etc.).

Table I shows present level of knowledge on Heteroptera in certain regions of Serbia and characteristic biocenoses that are entwined in each. The shown results are not representing the real picture of Heteroptera fauna, but are the result of our research and data gleaned from collections and available literature. That is explanation for a relatively small number of species of aquatic and semi-aquatic bugs, as we collected these only on few occasions. We are convinced that their number must be much greater, as Serbia is an area rich in flowing and still waters, which permeate all the biomes. The present data were calculated from 855 so far determined Heteroptera species in Serbia (PROTIĆ 1998, 2000, 2001).

The composition of the Heteroptera fauna of different areas has been compared and the index of faunistic similarity was calculated (Table II).

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РАСПРОСТРАЊЕНОСТ HETEROPTERA У РАЗЛИЧИТИМ ПРЕДЕЛИМА СРБИЈЕ

Љиљана Протић

И з в о д

Територија Србије заузима северно-централни положај на Балканском полуострву. Подељена је на две јасне географске и орографске целине: равничарски део Панонске низије и планинско-котлински део балканског копна. Иако су ове целине раздвојене Савом и Дунавом, оне су међусобно постепено повезане низијско-брдском перипанонском Србијом. Ове основне геолошке и еколошке целине карактеришу се специфичном флором и фауном. Биогеографски Србија је подељена у пет основних предеоних целина: високопланински камењари и пашњаци, четинарске шуме, листопадне шуме, медитерански планински каменити пашњаци и шуме на камењарима, европске степе разнотравног типа.

Међутим, како у природи не постоје строге границе између појединих предела и како у оквиру једног предела има више различитих станишта,

саставили смо проширену листу од 11 специфичних биоценоза које се могу сврстати у пет основних, које су МАТВЕЈЕВ и ПУНЦЕР (1989) обрадили. Ово је такође груба подела, али ће се на основу ње стећи боља слика о распрострањености и разноврсности Хетероптера у Србији. Кроз историју човек је својом делатношћу створио нове "културне степе" - агробиоценозе, воћњаке, ливаде, пашњаке и паркове. Ове "нове" биљне заједнице смањиле су и измениле аутохтоне пределе и утицале су на састав и распоред животињских врста, па и Хетероптера. Ове биоценозе срећемо на различитим надморским висинама, које карактерише специфичан биљни свет, а који прати карактеристична фауна Хетероптера..

У табели 1 приказана је досадашња истраженост Хетероптера у појединим пределима Србије и пратећим биоценозама, које се у њима испреплићу. Ови резултати не представљају право стање у природи, јер смо до њих дошли на основу прикупљених података о распрострањењу појединих врста на терену, затим на основу података из музејских збирки и доступне литературе. У досадашњим истраживањима например, скоро да уопште нису сакупљане водене стенице што се одражава у малом броју врста. С обзиром да је подручје Србије богато текућим и стајаћим водама, а оне прожимају све обрађене пределе сигурно је њихов број много већи. Према последњим истраживањма (Протић, 2000) у Србији је нађено 855. врста Хетероптера. То је објашњење процентуалних вредности за поједине пределе и биоценозе.

Веома је тешко концизно приказати сва станишта у којима живе све врсте Хетероптера у Србији. То је посебно тешко код еуривалентних врста које насељавају широк спектар различитих заједница. Проблем представљају и врсте које настањују посебне делове одређених ширих станишта (нпр. земљиште у ливадским и шумским стаништима, кора или стабла у шумама, терени специфичног нагиба, експозиције и геолошке подлоге, итд.). Ово је први покушај да се класификују Хетероптера по природним стаништима. Са даљим истраживањима, свака следећа класификација ће бити ближа стварном стању у природи.

Упоређењем проучаваних предела и биоценоза и израчунавањем индекса фаунистичке сличности (ИФС) установили смо да је највећа сличност фауне Хетеоптера на просторима пешчара и медитеранских планинских пашњака и шума на камењарима (0,4737), а најмања сличност на ливадама и воденим стаништима (0,0933).

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