

BIODIVERSITY OF THE FAMILY BERYTIDAE (HETEROPTERA) IN FR YUGOSLAVIA AND IN THE BALAKAN PENINSULA

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The totals of 21 and 17 species of Berytidae family have been established in the Balkan Peninsula and Yugoslavia respectively. An endemic species, *Gampsocoris lilianae* Josifov, was found in Bulgaria. New species for the fauna of Yugoslavia are: *Apopolymus pectoralis* Fieber and *Gampsocoris culicinus* Seidenstücker. The paper particularly considers the arrangement of Serbia by regions and the distribution of species within regions, as well as their biodiversity compared to the neighbouring countries of the Balkan Peninsula.

KEY WORDS: Heteroptera, Berytidae, Yugoslavia, Balkan Peninsula

INTRODUCTION

The fauna of the Berytidae family in the Balkan Peninsula has not yet been treated as the sole subject of a single paper. There exist only faunistical papers which consider the Berytidae together with other families (GÖLLNER-SCHIEDING 1978, HOBERLANDT 1955, HORVÁTH 1897, JOSIFOV 1964, 1965, PROTIĆ 1988/89, PUTCHKOV 1974, STICHEL 1955-1962). The most comprehensive data on the species of the Berytidae family can be found in the monograph of Euro-Mediterranean region (PERICART 1984).

According to the available literature, a total of 21 species of the Berytidae family has so far been established in the Balkan Peninsula. An endemic species, *Gampsocoris lilianae* Josifov, was found in Bulgaria (JOSIFOV 1958).

The paper particularly considers the arrangement of Serbia by regions and the distribution of species within regions, as well as their biodiversity

compared to the neighbouring countries in the Balkan Peninsula. A density index has been calculated for species in the regions of Serbia.

MATERIAL AND METHODS

During our work on this paper we made use of the data from collections and literature (Table 1). We have first identified the specimens from the Heteroptera Study Collection and compared them to the existing, already determined species from old collections of the Natural History Museum. This paper treats the specimens from:

Heteroptera Study Collection of the Natural History Museum [600BEO595.7543]. A total of 14 species and 113 specimens has been examined.

Table 1.

Researches into the Berytidae family in Balkan countries: AL Albania, BH Bosnia and Herzegovina, BU Bulgaria, CR Croatia, GR Greece (Crete included), MC Macedonia, SL Slovenia, YU Yugoslavia (Serbia and Montenegro)

Nº	TAXON	AL	BH	BU	CR	GR	MC	SL	YU
1.	<i>Apophymus pectoralis</i>	+	-	+	+	+	+	-	+
2.	<i>Berytinus clavipes</i>	+	+	+	+	+	+	+	+
3.	<i>Berytinus hirticornis</i>	-	+	+	+	+	+	+	+
4.	<i>Berytinus minor</i>	+	+	+	+	+	+	+	+
5.	<i>B. (Lizinus) cosimilis</i>	+	-	+	+	+	+	-	+
6.	<i>B. (Lizinus) crassipes</i>	-	-	+	+	-	+	+	+
7.	<i>B. (Lizinus) distinguendus</i>	-	+	+	+	+	+	-	+
8.	<i>B. (Lizinus) geniculatus</i>	-	+	+	+	+	+	-	+
9.	<i>B. (Lizinus) montivagus</i>	+	+	+	+	+	+	+	+
10.	<i>B. (Lizinus) setipennis</i>	-	-	-	-	+	-	-	-
11.	<i>B. (Lizinus) signoreti</i>	-	+	+	-	+	+	+	+
12.	<i>B. (Lizinus) striola</i>	-	+	+	+	+	+	-	+
13.	<i>Neides aduncus</i>	+	+	+	+	+	+	-	+
14.	<i>Neides tipularius</i>	+	+	+	+	+	+	+	+
15.	<i>Gampsocoris culicinus</i>	+	+	+	+	+	+	+	+
16.	<i>Gampsocoris enslini</i>	+	+	+	+	+	-	-	-
17.	<i>Gampsocoris lilianae</i>	-	-	+	-	-	-	-	-
18.	<i>Gampsocoris punctipes</i>	+	+	+	+	+	+	+	+
19.	<i>Metacanthus meridionalis</i>	-	-	+	+	+	+	-	+
20.	<i>M. (Cardopostethus) annulosus</i>	-	+	+	+	+	+	-	-
21.	<i>Metatropis rufescens</i>	-	+	+	+	+	-	+	+
	Σ	10	15	20	18	19	17	10	17

Nicholas Kormilev Heteroptera Collection in the u Natural History Museum [600BEO595.7542] encompassing 12 species and 65 specimens.

Initial Heteroptera Collection of the Natural History Museum [600BEO595.7541] containing only two species and two specimens of the Berytidae family.

Scientific papers considering faunal, taxonomy, or biogeography of the Berytidae species for the area of ex-Yugoslavia and the Balkans have been examined.

A LIST OF SITES

IC - Initial Collection; NK - Nicholas Kormilev Collection, all other sites refer to the specimens from the Heteroptera Study Collection of the Natural History Museum. The numbers in brackets represent UTM codes.

SERBIA

1. Dubovac (EQ16)
2. Banatski Karlovac
3. Deliblatski Pesak (EQ06)
4. Deliblatski Pesak: Dolina^{NK} (EQ07)
5. Deliblatski Pesak: Korn (EQ87)
6. Deliblatski Pesak: Volovska Pa{a^{NK} (EQ18)
7. Deliblatski Pesak: Grebenac^{NK} (EQ17)
8. Deliblato^{NK} (EQ06)
9. Dupljaja^{NK} (EQ17)
10. Boljevci (DQ35)
11. Boljevci: Crni Lug (DQ35)
12. Ruma^{NK} (DQ08)
13. Vrdnik (DQ99)
14. Obrenovac: Konatice (DQ43)
15. Obrenovac^{IC} (DQ34)
16. Div-ibare (DP28)
17. Priboj (CP82)
18. Zlatar (DP00)
19. Tara: Radmilovac (CP75)
20. Tara: Ra-anska [ljivovica (CP75)
21. Peru}ac na Drini (CP76)
22. Uvac (DN19)
23. Beograd^{NK} (DQ55)
24. Beograd: Ada Ciganlija (DQ55)
25. Beograd: Avala (DQ64)
26. Beгалjica (DQ74)
27. Beograd: Ko {utnjak^{NK} (DQ55)
28. Beograd: Ko {utnjak (DQ55)
29. Beograd: Pinosava (DQ64)
30. Beograd: Rakovica^{NK} (DQ55)
31. Beograd: Radmilovac (DQ65)
32. Beograd: Resnik (DQ55)
33. Beograd: Stepin Gaj (DQ55)
34. Beograd: Top-ider^{NK} (DQ55)
35. Beograd: Top-ider (DQ55)
36. Beograd: Vin-a (DQ65)
37. Beograd: Zemun (DQ56)
38. Boj-inska [uma (DQ45)
39. Mala Mo {tanica: @to Brdo (DQ44)
40. Kragujevac^{NK} (DP97)
41. Sopot: Djurinci (DQ72)
42. Topola^L (DP79)
43. Kosmaj (DQ62)
44. Rudnik^L (DP68)
45. Po`arevac^{NK} (EQ14)
46. Zatonje (EQ32)
47. Usje (EQ44)
48. Veliko Gradi {te (EQ05)
49. Golubac (EQ44)
50. Kladovo (FQ24)

51. Kladovo: Mala Vrbica (FQ23)
52. Majdanpek^{NK} (EQ71)
53. Negotin: Bukovo^{NK} (FP19)
54. Negotin: Kusjak (FP29)
55. Mokranja: Mokranjske Stene (FP28)
56. Veliki Kr̂: Gornjane (EP89)
57. Stol (EP99)
58. Bor: Crni Vrh (EP78)
59. Severni Ku-aj (EQ73)
60. Sveta Petka^{NK} (EN89)
61. Bela Palanka^{NK} (FN08)
62. Ozren (EP62)
63. Ozren: Ripaljka (EP62)
64. Pirot^{NK} (FN27)
65. Vranje^{NK} (EN71)
66. Ni^{NK} (EN79)
67. Leskovac^{NK} (EN75)
68. ^ emernik (FN03)
69. [ajince r. P-inja (EM98)
70. Kopaonik: Treska^L (DN89)
71. Kopaonik: Je-mi {te^L (DN89)
72. Ka-anik^{NK} (EM27)
73. Klisura Prizrenske Bistrice (DM77)
74. Srbica: Rudnik^{NK} ((DN83)
75. Pe}^{NK} (DN42)
76. Korab^{NK} (DM62)
77. Pe}: Belo Polje^{NK} (DN42)

MONTENEGRO

78. Durmitor: Tepca

MACEDONIA

79. Skopje^{NK}
80. Skopje: Vodno 700 m^{NK}
81. Katlanovo^{NK}
82. [tip Sofulari^{NK}
83. Ra{-e^{NK}
84. Veles: Vlak-ane^{NK}
85. Veles: Zelenikovo^{IC}
86. Zletovska Reka, r^{NK}
87. Dojran^{NK}
88. Matka^{NK}
89. Struga^{NK}
90. Nerezi 950 m^{NK}
91. Radovi { [Radovi {te]^{NK}
92. Udovo^{NK}
93. Ko-ani^{NK}
94. Ko-ani: Carevo Selo^{NK}

SLOVENIA

95. Pod-etrtek^{NK}

BOSNA & HERZEGOVINA

96. Jahorina^{NK}
97. Sarajevo, Hranisava^{NK}
98. Jablanica^{NK}
99. Mariabesuyö (Hungary)^{NK}
100. Filisur 1100 m (Switzerland)^{NK}

Species density (Table 2) in different regions was calculated by the formula

$$\rho = \log(S) / \log(A)$$

S = number of species; A = area (km²)

RESULTS

The established species of Berytidae family in this paper have been presented in the alphabetic order within the subfamily.

Table 2

Density index (r) in Serbian regions. Data on the area of each region (km²) and the number of established species (sp.) are given in separate columns.

Region	km ²	sp.	ρ
1. Beograd (as mikroregion)	3222	12	0.307
2. Stig and Bram-evo	1688	7	0.261
3. Karpatska Srbija	8423	8	0.230
4. Banat	8997	7	0.213
5. Metohija	4684	6	0.211
6. [umadija	6070	6	0.205
7. Srem	3838	4	0.167
8. Balkanska Srbija	5184	4	0.162
9. Veliko Pomoravlje	2841	3	0.138
10. Ibar & Kopaonik	1780	2	0.092
11. Vlasina & Kraj ište	2334	2	0.089
12. Podrinjska Srbija	3101	2	0.086
13. Kososvo	3991	2	0.083
14. Ju no Pomoravlje	5609	2	0.080
15. Stari Vlah & Ra jka	8479	2	0.076

Familia: **BERYTIDAE** Fieber, 1851

BERYTINAE Douglas & Scott, 1865

Apolymus Fieber, 1859

1. ***A. pectoralis*** Fieber, 1859 Wien. ent. Monschr. 3: 206 (Fig. 1)

Material examined:

600BEO595.7543: Heteroptera Study Collection:

Inv. nr. 3260 1 ex. Kosmaj 1998.08.15. leg. A. Stojanović

New for the fauna of Serbia and Yugoslavia.

Balkan Peninsula: AL, BU, CR, GR, MC, YU

References: JOSIFOV (1986); NOVAK & WAGNER (1951, 1955); PÉRICART (1984); WAGNER (1962)

Genus: ***Berytinus*** Kirkaldy, 1900

2. ***B. clavipes*** (Fabricius, 1775)

Cimex clavipes Fabricius, 1775 Syst. Ent.: 729

Material examined:

600BEO595.7543: Heteroptera Study Collection:

Inv. nr. 2382 1 ex. Beograd: Radmilovac 1992.06.29. leg. Lj. Protić

Inv. nr. 3240 1 ex. Beograd: Topčider 1996.05.01. leg. A. Stojanović

Inv. nr. 3241 1 ex. Beograd: Stepin Gaj 1997.09.06. leg. A. Stojanović

Inv. nr. 3242 1 ex. Beograd: Resnik 1997.06.16. leg. A. Stojanović

Inv. nr. 3243 1 ex. Beograd: Avala 1998.05.09. leg. A. Stojanović

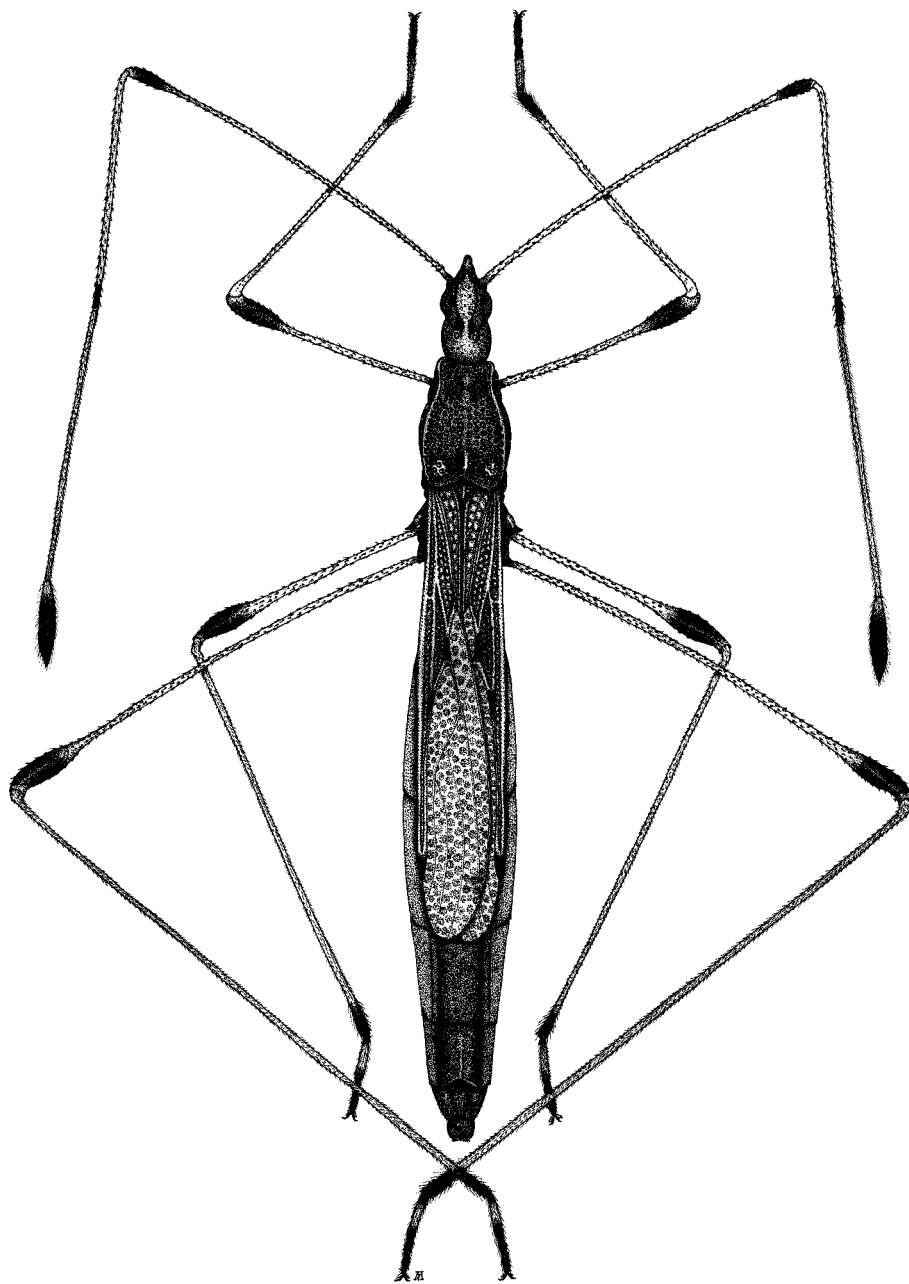


Fig. 1. *Apoplymus pectoralis* Fieber 1859 (drew A. Stojanović)

Inv. nr. 3244 6 ex. Beograd: Vinča 1999.07.17. leg. A. Stojanović
600BEO595.7542: Nicholas Kormilev Heteroptera Collection:

Inv. nr. 1140 3 ex Požarevac leg. N. Kormilev

Balkan Peninsula: AL, BH, BU, CR, GR, MC, SL, YU

References: APFELBECK (1891); DIVAC (1907a); GOGALA & GOGALA (1986, 1989); GÖLLNER-SCHAEIDING (1978); GRADOJEVIĆ (1963); HORVÁTH (1897); JANKOVIĆ (1963); JOSIFOV (1986); KORMILEV (1928/29, 1936); PROTIĆ (1987, 1993, 1996); ŽIVOJINOVIĆ (1950)

3. *B. hirticornis* (Brullé) 1835

Neides hirticornis Brullé 1835 Hist. nat. ins.: 355

Material examined:

600BEO595.7542: Nicholas Kormilev Heteroptera Collection:

Inv. nr. 1137 1ž Beograd: Košutnjak 1940.09.03. leg. N. Kormilev

Inv. nr. 1138 3 ex. Požarevac leg. N. Kormilev

Inv. nr. 1139 1 ex. Kočani: Carevo Selo 1939.05.15. leg. N. Kormilev

Kormilev

Balkan Peninsula: BH, BU, CR, GR, MC, SL, YU

References: APFELBECK (1891); FURLAN & GOGALA (1995); GOGALA (1991); HORVÁTH (1897); JOSIFOV (1986); KORMILEV (1936, 1939a); LINNAVUORI (1953); PERICART (1984); PROTIĆ (1986a, 1987)

4. *B. minor* (Herrich-Schaeffer, 1835)

Berytus minor Herrich-Schaeffer, 1835 Nomencl. ent.: 43

Material examined:

BEO595.7543: Heteroptera Study Collection:

Inv. nr. 2658 1 ex. Banatski Karlovac 1992.05.29. leg. Lj. Protić

Inv. nr. 3239 1 ex. Beograd: Avala 1984.04.22. leg. A. Četković

600BEO595.7542: Nicholas Kormilev Heteroptera Collection:

Inv. nr. 1141 1a Podčetrtek 1930.05.30. leg. dr E. Jaeger

Inv. nr. 1142 1 ex. Veles: Vlakčane 1937.09.19. leg. S. Karaman

Inv. nr. 1143 1 ex. Katlanovo 1936.06.05. leg. N. Kormilev

Inv. nr. 1144 2 ex. Carevo Selo 1939.05.15. leg. N. Kormilev

Inv. nr. 1145 2 ex. Požarevac leg. N. Kormilev

Balkan Peninsula: AL, BH, BU, CR, GR, MC, SL, YU

References: APFELBECK (1891); CSIKI (1940); DIVAC (1907a); FRIVALDSZKY (1877); GOGALA & GOGALA (1986, 1989); GOGALA & MODER (1960); GÖLLNER-SCHAEIDING (1978); GRADOJEVIĆ (1963); HORVÁTH (1897); JOSIFOV (1986); KORMILEV (1928/29, 1936); MANCINI (1952); NOVAK & WAGNER (1951); PETRIK (1958); PROTIĆ (1986, 1987, 1993, 1994)

5. *B. (Lizinus) consimilis* (Horváth, 1885)*Berytus consimilis* Horváth, 1885**Balkan Peninsula:** AL, BU, CR, GR, MC, YU**References:** HORVÁTH (1897, 1903); JOSIFOV (1986); KORLEVIĆ (1887); KORMILEV (1936); PERICART (1984); WAGNER (1962)**6. *B. (Lizinus) crassipes*** (Herrich-Schaeffer, 1835)*Brtytus crassipes* Herrich-Schaeffer, 1835 Nomencl. ent.: 43*Berytus affinis* Reuter, 1870**Material examined:**

BEO595.7543: Heteroptera Study Collection:

Inv. nr. 3238 1 ex. Durmitor: Žabljak 1982.09.02. leg. P. Durbešić

600BEO595.7542: Nicholas Kormilev Heteroptera Collection:

Inv. nr. 1154 1 ex. Skopje 1937.05.04. leg. N. Kormilev

Inv. nr. 1155 2 ex. Skopje 1937.05.09. leg. N. Kormilev

Inv. nr. 1156 1 ex. Radovište 1937.03.26. leg. N. Kormilev

Inv. nr. 1157 1 ex. Udovo 1937.05.29. leg. N. Kormilev

Inv. nr. 1158 1 ex. Podčetrtek 1934.05. leg. dr E. Jaeger

Inv. nr. 1159 2 ex. Jablanica 1933.02.01. leg. A. Winneguth

Balkan Peninsula: BU, CR, MC, RO, SL, YU**References:** GOGALA & MODER (1960); GOGALA & GOGALA (1986, 1989); JOSIFOV (1986); KORMILEV (1938); PERICART (1984); PROTIĆ *et al.* (1990)**7. *B. (Lizinus) distinguendus*** (Ferrari, 1874)*Berytus distinguendus* Ferrari, 1874**Material examined:**

BEO595.7543: Heteroptera Study Collection:

Inv. nr. 3236 1 ex. Zatonje 1985.06.29. leg. Lj. Protić

Inv. nr. 3237 1 ex. Usje 1985.06.29. leg. Lj. Protić

Balkan Peninsula: BH, BU, CR, GR, MC, YU**References:** HORVÁTH (1897, 1903, 1918); JOSIFOV (1986); KORMILEV (1936); NOVAK & WAGNER (1951, 1955); PERICART (1984); PROTIĆ (1986); WAGNER (1962)**8. *B. (Lizinus) geniculatus*** (Horváth, 1885)*Berytus geniculatus* Horváth, 1885 Rev. Ent., 4: 321**Material examined:**

600BEO595.7543: Heteroptera Study Collection:

Inv. nr. 3235 2 ex. Zemun 1941.03. leg. V. Kodrič

Inv. nr. 3234 1 ex. Čemernik 1984.06.15. leg. Lj. Protić

600BEO595.7542: Nicholas Kormilev Heteroptera Collection:

Inv. nr. 1147 3 ex Skopje: Rašče 1936.05.10. leg. N. Kormilev

Inv. nr. 1148 1 ex. Dojran 1939.02.14. leg. N. Kormilev
Inv. nr. 1149 1 ex. Kočane 1939.05.14. leg. N. Kormilev
Inv. nr. 1150 1 ex. Štip: Sofulari 1939.05.11-14. leg. N. Kormilev

Balkan Peninsula: BH, BU, CR, GR, MC, SL, YU

References: APFELBECK (1891); HORVÁTH (1897); JOSIFOV (1986); KORMILEV (1938, 1943); NOVAK & WAGNER (1951); PROTIĆ (1986, 1987)

9. *B. (Lizinus) montivagus* (Meyer-Dür, 1841)

Berytus montivagus Meyer-Dür, 1841 Ent. Ztg. Stettin, 2: 89

Material examined:

600BEO595.7543: Heteroptera Study Collection:

Inv. nr. 3245 2 ex. Zemun 1941.07. leg. V. Kodrić

Inv. nr. 3246 1 ex. Usje 1985.06.29. leg. M. Živković

Inv. nr. 3247 1 ex. Klisura Prizrenske Bistrice 1988.06.22. leg. Lj.

Protić

Inv. nr. 3248 2 ex. Begaljica 1997.05.10. leg. A. Stojanović

Inv. nr. 3249 1 ex. Beograd: Vinča 1997.05.18. leg. A. Stojanović

Inv. nr. 3250 1 ex. Beograd: Pinosava 1998.05.24. leg. A. Stojanović

Inv. nr. 3251 1 ex. Mala Moštanica: Žuto Brdo 1998.07.25. leg. A.

Stojanović

Inv. nr. 3262 1 ex. Obrenovac: Konatice 1982.06.20. leg. Lj. Protić

600BEO595.7542: Nicholas Kormilev Heteroptera Collection:

Inv. nr. 1146 1 ex. Filisur 1100 m (Switzerland) 1934.10.28. leg.

dr Wolff

Balkan Peninsula: AL, BH, BU, CR, GR, MC, SL, YU

References: APFELBECK (1891); CSIKI (1940); DIVAC (1907a); GOGALA & MODER (1960); GOGALA & GOGALA (1989); GÖLLNER-SCHAEIDING (1978); HORVÁTH (1903, 1918); KORMILEV (1936); LINNAVUORI (1953); MANCINI (1952); NOVAK & WAGNER (1955); PROTIĆ (1986a, 1987); WAGNER (1962)

10. *B. (Lizinus) setipennis* (Saunders, 1876)

Berytus setipennis Saunders, 1876 Ent. m. Mag., 13: 102

Balkan Peninsula: GR

References: JOSIFOV (1986)

11. *B. (Lizinus) signoreti* (Fieber, 1859)

Berytus distinguendus Fieber, 1859 Wien. ent. Monschr., 3: 204

Material examined:

600BEO595.7543: Heteroptera Study Collection:

Inv. nr. 3252 1 ex. Zatonje 1988.06.29. leg. Lj. Protić

600BEO595.7542: Nicholas Kormilev Heteroptera Collection:

Inv. nr. 1151 1 ex. Jahorina 1935.10. leg. A. Winneguth

Inv. nr. 1152 1 ex. Sarajevo, Hranisava 1935.11.03. leg. A. Winneguth

Inv. nr. 1153 1 ex. Beograd 1938.09.10. leg. N. Kormilev

Balkan Peninsula: BH, BU, GR, MC, SL, YU

References: APFELBECK (1891), GOGALA & MODER (1960); GOGALA & GOGALA (1986, 1989); JOSIFOV (1986); KORMILEV (1936, 1939); PERICART (1984); PROTIĆ (1987)

12. *B. (Lizinus) striola* (Ferrari, 1874)

Berytus striola Ferrari, 1874

Berytus procerus Horváth, 1891

Balkan Peninsula: BH, BU, CR, GR, MC, YU

References: HORVÁTH (1891, 1897); JOSIFOV (1986); PROTIĆ (1987)

Genus: *Neides* Latreille, 1804

13. *N. aduncus* Fieber, 1859 Wien. ent. Monschr., 3:200

Material examined:

600BEO595.7541: Initial Heteroptera Collection:

Inv. nr. 3263 1 ex. Veles: Zelenikovo 1921.05.21. leg. D. Stojadinović

600BEO595.7543: Heteroptera Study Collection:

Inv. nr. 3256 3 ex. Kladovo: Mala Vrbica 1987.06.16. leg. Lj. Protić

600BEO595.7542: Nicholas Kormilev Heteroptera Collection:

Inv. nr. 1129 1 ex. Leskovac 1930.06. leg. N. Kormilev

Inv. nr. 1130 1 ex. Skopje 1938.04.24. leg. N. Kormilev

Inv. nr. 1131 1 ex. Kačanik 1940.11.05. leg. N. Kormilev

Inv. nr. 1132 1 ex. Skopje, Vodno 1941.05.04. leg. N. Kormilev

Balkan Peninsula: AL, BH, BU, CR, GR, MC, YU

References: JOSIFOV (1986); KORMILEV (1939a, 1943); NOVAK & WAGNER (1951); PÉRICART (1984); PROTIĆ (1987, 1992); SCHUMACHER (1914); ŽIVOJINOVIĆ (1950); WAGNER (1960, 1962)

14. *N. tipularius* (Linnaeus, 1758)

Cimex tipularius Linnaeus, 1758 Syat. Nat., 10: 451

Neides favosus Fieber, 1859

Berytus tipularius var. *immaculatus* Westhoff, 1833

Material examined:

600BEO595.7541: Initial Heteroptera Collection:

Inv. nr. 3264 1 ex. Obrenovac 1927.08.25. leg. D. Stojadinović

600BEO595.7543: Heteroptera Study Collection:

Inv. nr. 2659 1 ex. Banatski Karlovac 1992.05.29. leg. Lj. Protić

Inv. nr. 2818 3 ex. Deliblatski Pesak: Korn 1984.07.06. leg. Lj. Protić

Inv. nr. 3253 1 ex. Zatonje 1985.06.29. leg. Lj. Protić

- Inv. nr. 3254 1 ex. Kosmaj 1998.07.18. leg. A. Stojanović
Inv. nr. 3255 1 ex. Divčibare 1999.08.14. leg. Lj. Protić
600BEO595.7542: Nicholas Kormilev Heteroptera Collection:
Inv. nr. 1133 2p Skopje 1938.04.22. leg. N. Kormilev
Inv. nr. 1134 2a Skopje 1938.04.24. leg. N. Kormilev
Inv. nr. 1135 5 ex Skopje 1932.06.23. leg. N. Kormilev
Inv. nr. 1136 1 ex. Matka 1940.09.29. leg. N. Kormilev
Inv. nr. 306B 1 ex. Beograd: Topčider 1941.08.31. leg. O. Vagner
Inv. nr. 307B 2 ex Skopje 1936.09.20. leg. N. Kormilev
Inv. nr. 308B 1 ex. Struga 1927.08.05. leg. N. Kormilev

Balkan Peninsula: AL, BH, BU, CR, GR, MC, SL, YU

References: APFELBECK (1891); CSIKI (1940); DIVAC (1907, 1907a); FRIVALDSZKY (1877); GOGALA & MODER (1960); GOGALA & GOGALA (1986, 1989); GÖLLNER-SCHAEIDING (1978); HORVÁTH (1891, 1897, 1903); KORLEVIĆ (1887); KORMILEV (1928/29, 1936, 1943); LINNAVUORI (1953); MARTINO (1949); PROTIĆ (1986, 1986a, 1987, 1993, 1994, 1996); SCHUMACHER (1916)

METACANTHINAE Douglas & Scott, 1865

Genus: *Gampsocoris* Fuss, 1852

15. *G. culicinus culicinus* Seidenstücker, 1948 Senckenbergiana, 29: 109

Material examined:

600BEO595.7543: Heteroptera Study Collection:

- Inv. nr. 2819 1 ex. Dubovac 1985.09.21. leg. M. Živković
Inv. nr. 3203 1 ex. Beograd: Avala 1984.04.22. leg. A. Četković
Inv. nr. 3204 3 ex. Šajince r. Pčinja 1985.07.14. leg. Lj. Protić
Inv. nr. 3205 1 ex. Severni Kučaj 1985.06.29. leg. Lj. Protić
Inv. nr. 3206 1 ex. Veliki Krš: Gornjane 1988.05.06. leg. G. Mesaroš
Inv. nr. 3207 1 ex. Klisura Prizrenske Bistrice 1988.06.22. leg. Lj. Protić
Inv. nr. 3208 1 ex. Stol 1989.07.12. leg. Lj. Protić
Inv. nr. 3209 1 ex. Bor: Crni Vrh 1989.07.13. leg. Lj. Protić
Inv. nr. 3210 2 ex. Kosmaj 1994.08.16. leg. A. Stojanović
Inv. nr. 3216 1 ex. Kosmaj 1996.05.09. leg. A. Stojanović
Inv. nr. 3228 1 ex. Kosmaj 1998.07.18. leg. A. Stojanović
Inv. nr. 3232 1 ex. Kosmaj 1997.08.26. leg. A. Stojanović
Inv. nr. 3211 1 ex. Ozren 1994.07.20. leg. Lj. Protić
Inv. nr. 3212 2 ex. Đurinci 1995.09.01. leg. A. Stojanović
Inv. nr. 3213 2 ex. Bojčinska šuma 1996.04.22. leg. A. Stojanović
Inv. nr. 3231 3 ex. Bojčinska šuma 1997.08.22. leg. A. Stojanović
Inv. nr. 3214 2 ex. Vinča 1996.05.03. leg. A. Stojanović

- Inv. nr. 3223 1 ex. Vinča 1997.05.18. leg. A. Stojanović
 Inv. nr. 3221 1 ex. Beograd: Košutnjak 1997.05.04. leg. A. Stojanović
 Inv. nr. 3215 1 ex. Beograd: Košutnjak 1996.05.01. leg. A. Stojanović
 Inv. nr. 3217 2 ex. Beograd: Resnik 1996.05.18. leg. A. Stojanović
 Inv. nr. 3225 1 ex. Beograd: Resnik 1997.08.13. leg. A. Stojanović
 Inv. nr. 3226 2 ex. Beograd: Resnik 1998.05.16. leg. A. Stojanović
 Inv. nr. 3218 1 ex. Boljevcı 1996.07.21. leg. A. Stojanović
 Inv. nr. 3219 1 ex. Beograd: Ada Ciganlija 1997.04.19. leg. A. Stojanović
 Inv. nr. 3220 1 ex. Beograd: Ada Ciganlija 1997.04.27. leg. A. Stojanović
 Inv. nr. 3222 1 ex. Begaljica 1997.05.10. leg. A. Stojanović
 Inv. nr. 3229 1 ex. Begaljica 1998.09.26. leg. A. Stojanović
 Inv. nr. 3233 2 ex. Begaljica 1997.09.09. leg. A. Stojanović
 Inv. nr. 3224 1 ex. Beograd: Stepin Gaj 1997.05.11. leg. A. Stojanović
 Inv. nr. 3227 1 ex. Pinosava 1998.05.24. leg. A. Stojanović
 Inv. nr. 3230 1 ex. Divčibare 1999.08.14. leg. Lj. Protić
 New for the fauna of Serbia and Yugoslavia.

Balkan Peninsula: AL, BU, CR, MC, RO, SL, YU

References: GOGALA & GOGALA (1986, 1989); GÖLLNER-SCHAEIDING (1978); NOVAK & WAGNER (1951)

16. *G. enslini* Seidenstücker, 1953 Rev. Fac. Sci. Istanbul (B), 18: 165

Balkan Peninsula: AL, BH, BU, CR, GR

References: JOSIFOV (1986); PÉRICART (1984)

17. *G. lilianae* Josifov, 1958 Acta ent. Mus. Prag, 32, 503: 269

END

Balkan Peninsula: BU

References: JOSIFOV (1986)

18. *G. punctipes* (Germar, 1822)

Berytus punctipes Germar, 1822 Fn. Ins. Eur., 7: 21

Berytus elegans Curtis, 1827

Metacanthus punctipes Douglas & Scott, 1865

Material examined:

600BEO595.7543: Heteroptera Study Collection:

Inv. nr. 3192 1 ex. Kusjak 1984.09.12. leg. Lj. Protić

Inv. nr. 3193 1 ex. Negotin: Mokranjske stene 1984.09.13. leg. Lj. Protić

Inv. nr. 3194 1 ex. Durmitor: Tepac 1985.07.21. A. Rohalj

Inv. nr. 3195 3 ex. Priboj 1987.07.24. leg. Lj. Protić

- Inv. nr. 3196 2 ex. Zlatar 1987.07.23. leg. Lj. Protić
Inv. nr. 3197 1 ex. Tara: Radmilovac 1988.07.26. leg. Lj. Protić
Inv. nr. 3198 1 ex. Tara: Račanska Šljivovica 1988.07.29. leg. Lj. Protić
Inv. nr. 3199 3 ex. Perućac na Drini 1988.08.05. leg. Lj. Protić
Inv. nr. 3200 1 ex. Stol 1988.05.06. leg. G. Mesaroš
Inv. nr. 3201 1 ex. Ozren: Ripaljka 1994.08.17. leg. Lj. Protić
Inv. nr. 3202 2 ex. Ozren 1994.08.19. leg. Lj. Protić
Inv. nr. 3261 1 ex. Obrenovac: Konatice 1982.06.20. leg. Lj. Protić
600BEO595.7542: Zbirka Heteroptera Nikole Kormileva
Inv. nr. 1163 1 ex. Skopje 1937.05.04. leg. N. Kormilev
Inv. nr. 1164 1 ex. Dojran 1932.04.14. leg. N. Kormilev
Inv. nr. 1165 1 ex. Nerezi 950 m 1940.10.06. leg. N. Kormilev
Inv. nr. 1166 1 ex. Mariabesuyö (Hungary) 1935.09.15. leg. dr Feige
Inv. nr. 1167 1 ex. Skopje 1932.06.22. leg. N. Kormilev
Inv. nr. 1168 1 ex. Skopje: Vodno 700 m 1932.07.03. leg. N. Kormilev

Kormilev

Balkan Peninsula: AL, BH, BU, CR, GR, MC, SL, YU

References: APFELBECK (1891); CSIKI (1940); DIVAC (1907a); FRIVALDSZKY (1877); GOGALA & MODER (1960); GÖLLNER-SCHAEIDING (1978); GRADOJEVIĆ (1963); HORVÁTH (1891, 1903); NOVAK & WAGNER (1951); JANKOVIĆ (1963); JOSIFOV (1986); KORLEVIĆ (1887); KORMILEV (1928/29, 1936, 1943); LINNAVUORI (1953); PROTIĆ (1986, 1987, 1992, 1996); PROTIĆ *et al.* (1990); SCHUMACHER (1914)

Genus: *Metacanthus* Costa, 1847

19. *M. (Cardopostethus) annulosus* (Fieber, 1859)

Cardopostethus annulosus Fieber, 1859

Metacanthus breviceps Horváth, 1905

Material examined:

Balkan Peninsula: BH, BU, CR, GR, MC

References: APFELBECK (1891); JOSIFOV (1986); PÉRICART (1984); PROTIĆ (1987); WAGNER (1962)

20. *M. meridionalis* (Costa, 1844)

Berytus meridionalis Costa, 1844 Cim. neap., 1: 27

Megalomerium meridionalis Puton, 1881

Material examined:

600BEO595.7543: Heteroptera Study Collection:

Inv. nr. 3257 9 ex. Boljevci: Crni Lug 1998.07.07. leg. A. Stojanović

600BEO595.7542: Nicholas Kormilev Heteroptera Collection:

Inv. nr. 1160 4 ex Rašće 1940.09.04. leg. N. Kormilev

Inv. nr. 1161 3 ex Zletovska reka, r 1939.05.11. leg. N. Kormilev

Balkan Peninsula: BU, CR, GR, MC, YU

References: GÖLLNER-SCHAEIDING (1978); JOSIFOV (1986); KORMILEV (1943); NOVAK & WAGNER (1951); PERICART (1984)

Genus: *Metatropis* Fieber, 1859

21. *M. rufescens* (Herrich-Schaeffer, 1835)

Berytus rufescens Herrich-Schaeffer, 1835 Nomencl. ent.: 43

Berytus sieberi Spinola, 1837

Material examined:

600BEO595.7543: Studijska zbirka Heteroptera:

Inv. nr. 3258 1 ex. Kosmaj 1998.06.06. leg. A. Stojanović

Inv. nr. 3259 1 ex. Kosmaj 1998.08.15. leg. A. Stojanović

600BEO595.7542: Nicholas Kormilev Heteroptera Collection:

Inv. nr. 1162 1 ex. Podčetrtek 1930.07.03. leg. dr E. Jaeger

Balkan Peninsula: BU, CR, GR, MC, RO, SL, YU

Table 3

Regional arrangement of Serbia; km² - region area, r - density index. The number of sites where Heteroptera were established and the number of species by regions are also presented in separate columns.

MACROREGION	MICROREGION	Region	km ²	ρ	No. sites	No. sp.
Panonska Srbija	Vojvodina	Banat	8997	0.213	9	7
		Ba-ka	8671	/	0	0
		Srem	3838	0.167	2	4
Peripanonska Srbija	West Serbia	Posavska Srbija	3276	0.171	4	4
		Podrinjska Srbija	3101	0.086	1	2
	Central Serbia	Beograd (as mikroregion)	3222	0.307	16	12
		Šumadija	6070	0.205	5	6
		Veliko Pomoravlje	2841	0.138	1	3
		Stig i Brani-evo	1688	0.261	3	7
Planinsko-kotlinska Srbija	East Serbia	Karpataska Srbija	8423	0.230	10	8
		Balkanska Srbija	5184	0.162	5	4
	South Serbia	Južno Pomoravlje	5609	0.080	3	2
		Vlasina & Krajište	2334	0.089	2	2
	Southwest Serbia	Stari Vlah & Raška	8479	0.076	6	2
		Ibar & Kopaonik	1780	0.092	2	2
		Kosovo	3991	0.083	2	2
	Metohija	4684	0.211	4	6	
		Σ			75	17

References: APFELBECK (1891); DIVAC (1907a); FRIVALDSZKY (1877); GOGALA & MODER (1960); GOGALA & GOGALA (1986, 1989); GRADOJEVIĆ (1963); HORVÁTH (1897); JOSIFOV (1986); KORMILEV (1936); LANGHOFER (1899); PROTIĆ (1986)

A density index was calculated for species in the regions of Serbia. Regional arrangement of Serbia is represented in Table 3.

DISCUSSION

Apolymus pectoralis Fieber is widespread in the Mediterranean. The northernmost point of its range in the Balkan Peninsula lies in the Romanian part of Banat, at the site of Cazane (KIS 1975). It was first found in Serbia on Kosmaj Mt in August 1998. Compared to the sites from which it is known in ex-Yugoslavia, Mosor in Dalmatia and Skopje and Drenovo in Macedonia, the record on Kosmaj lies on the northern boundary of this species' range in the Balkan Peninsula. NOVAK & WAGNER (1951) have identified this species as *Neides brevipennis* Puton, but have corrected the identification into *Apolymus pectoralis* in the paper NOVAK & WAGNER (1955). In their opinion *N. brevipennis* does not occur in Dalmatia as its range lies much further to the south (Transcaucasia, Turkey, Israel, Lebanon, Turkmenistan).

Berytinus clavipes (Fabricius) in Serbia has been found on a number of sites in the neighbourhood of Belgrade: Avala, Radmilovac, Resnik, Stepin Gaj, and Vinča as well as in the vicinity of Požarevac, Negotin, Majdanpek, on Deliblato Sand in ass. *Chrysopogoentum pannonicum ischaemetosum* and *Coryspermeto-polygonetum arenariae* (GRADOJEVIĆ 1963); on grass communities of Kopaonik (JANKOVIĆ 1963); the peak and ridge areas of Stol Mt 1155 m (PROTIĆ 1996). Widespread throughout the Balkan Peninsula, it inhabits the plants from the families of Fabaceae: *Ononis spinosa*, *O. repens*, and Poaceae: *Poa annua*, *Brachypodium pinnatum*, *Phleum phleoides*, *Sesleria varia*, *Agrostis* sp.

Berytinus hirticornis (Brullé) is a Euromediterranean species. It is frequent on warm "Mediterranean" habitats, as can be inferred from the list of sites in ex-Yugoslavia where it has so far been caught: Beograd: Košutnjak, Negotin: Bukovo, Požarevac, Majdanpek, Peć, Kočani: Carevo Selo, Dragonja: Stena, Lošinj, Ivanec or on sands and sandy soil: Usje, Veliko Gradište, Podravski peskovi: Virovitica. *B. hirticornis* occurs on the plants of the Poaceae family: *Agropyrum repens*, *Arrhenatherum avenaceum*, *Dactylis glomerata*.

Berytinus minor (Herrich-Schaeffer) is widespread in Eurosiberia and has been found in all Balkan countries. In Serbia, it has been caught in warm habitats on various plants: *Trifolium* sp., *Medicago* sp., *Alopecurus pratensis*. Similar to other species of this family, *B. minor* overwinters as adult in moss, roots of trees and grass, and also in the nests of *Lasius fuliginosus* (PERICART 1984).

The collections of the Natural History Museum still contain no specimens of the species *Berytinus (Lizinus) consimilis* (Horváth). From literature data it is known to have been recorded on the following sites in Yugoslavia: Deliblato, Ruma (HORVÁTH 1897); Golubac (HORVÁTH 1903, KORMILEV 1936); Beograd, Pljevlja (PERICART 1984), Bugarska: Stara Planina «Balkan Mt» (JOSIFOV 1983, PERICART 1984).

Berytinus (Lizinus) crassipes (Herrich-Schaeffer) has not been found in Serbia. In Montenegro, it has been noted only on Durmitor Mts (PROTIĆ *et al.* 1990). It is sporadically distributed in the Balkan Peninsula in Dalmatia (PERICART 1984); in Macedonia: Skopje, Radovište, Udovo; in Bosnia: Jablanica (PROTIĆ 1995) and Bulgaria (JOSIFOV 1986). Considering that the species has been caught on Durmitor Mts. and that the collection contains specimens from Jablanica it may be inferred that it prefers humid habitats. With regard to altitudinal distribution, it is classed as euryvalent, as it thrives from the river valleys of the Vardar to lofty Durmitor Mts. (from c. 200 to over 1000 m asl). It occurs on the plants of the Caryophyllaceae family, on the species of *Cerastium* genus.

Berytinus (Lizinus) distinguendus (Ferrari) is a Mediterranean species. It has been found in sandy habitats and on xerophilous vegetation in Serbia on Deliblatski Pesak and Ramsko-Golubačka Peščara. Also in Macedonia: Drenovo, Bosnia and Herzegovina: Neum (a small town on the Adriatic coast), in Dalmatia from Crikvenica to Split. It is particularly frequent on *Medicago* sp.

Berytinus (Lizinus) geniculatus (Horváth) is a Euromediterranean species. In Serbia, it has so far been recorded only near Belgrade in Zemun (1941) and on Čemernik Mt (1984) near the Vlasina. In ex-Yugoslav regions, it is known from Dalmatia, Bosnia and Herzegovina, and Macedonia. It thrives in warm habitats and occurs mainly on the plants of the family Fabaceae - *Medicago* sp.

Berytinus (Lizinus) montivagus (Meyer-Dür) is a Euromediterranean species. An euryvalent species according to altitudinal distribution, it is represented in our collections by specimens from Vinča near Belgrade at 100

m asl and from Switzerland (Filisur 1100 m). It has been caught on *Medicago* sp. and *Trifolium* sp. In Serbia it has been found in warm habitats, mostly in the vicinity of Belgrade, but also on Ramsko-Golubačka Peščara and in the neighbourhood of Prizren.

Berytinus (Lizinus) signoreti (Fieber) has been found in a sandy habitat in Serbia (Zatonje). The collections of the Natural History Museum also contain specimens from Bosnia: Jahorina Mt and the neighbourhood of Sarajevo. These records confirm the occurrence of *B. signoreti* in hilly regions, in dry and sunny habitats with xerothermophilous vegetation. It is tropically related to Fabaceae, particularly *Lotus corniculatus*.

Berytinus (Lizinus) striola (Ferrari) - The collections of the Natural History Museum still contain no specimen of this species. In Serbia it has so far been found only on Vrdnik on Fruška Gora (HORVATH 1897). *B. striola* is widespread in the Mediterranean on sunny sites. The host plant is *Coronilla varia* (PUTSHKOV 1974).

Neides aduncus Fieber is another Mediterranean species. It has been recorded in warm habitats in Serbia: Leskovac, Kačanik, Kladovo, Beograd, Topola and Majdanpek, and in Montenegro in Podgorica and Virpazar. The sites in Serbia where *N. aduncus* was found are the northernmost records for the Balkan Peninsula. The adult overwinters. It occurs on the plants of the genus *Cistus* sp. (PUTSHKOV 1974, PÉRICART, 1984).

Neides tipularius (Linnaeus) - The collections of the Natural History Museum keep the specimens caught from April to September at different altitudes from the lowland Ramsko-Golubačka Peščara: Zatonje (200 m asl) to the hills of Šumadija: Kosmaj (600 m), and mountains in Podrinjska Serbia: Divčibare 900 m. We caught it on various grass species (Poaceae). At Banatski Karlovci it was caught on weeds in a pear orchard on *Erigeron canadensis* and *Coronilla varia* (PROTIĆ 1994). This polyphagous species inhabits a great number of plant species. An European-Central Asian species.

Gampsocoris culicinus Seidenstücker is widespread in Serbia. In ex-Yugoslav regions it has been caught on a number of sites in Slovenia (GOGALA & GOGALA 1986, 1989); in Dalmatia only on Mosor Mt. (NOVAK & WAGNER 1951) and in Macedonia: Vodno, Pelister, Struga (GÖLLNER-SCHAEIDING 1978). The Kormilev Collection contains not a single specimen of this species. All specimens housed at the Natural History Museum belong in the Study Collection and were collected after 1984. It is possible to suppose that the range of the species has extended northward to the con-

tinental part of the Balkan Peninsula (Šumadija, Karpatska and Balkanska Serbia).

Gampsocoris enslini Seidenstücker in the areas of ex-Yugoslavia has been recorded in Dalmatia and Herzegovina, an old record 1911. (PÉRICART 1984). It has not been found in Serbia. It is known in the south of the Balkan Peninsula, in Albania, Bulgaria, and Greece.

Gampsocoris punctipes (Germar) is a Euromediterranean species. Widespread in Serbia, in Yugoslavia it occurs at different altitudes, from very low, such as Ulcinj (sea coast) or Deliblatski Pesak to high mountains over 1000 m asl (Bor: Crni Vrh 1027 m, Tara 1400 m, Durmitor: Tepca 1200 m, Kopaonik: Ječmište 1500 m, Zlatar 1500 m). It inhabits plants of the Fabaceae family, particularly *Ononis* sp.

Metacanthus (Cardopostethus) annulosus (Fieber) is a Mediterranean species recorded in ex-Yugoslavia only on few sites: on the island of Hvar in Croatia, Domanović in Bosnia, and Drenovo in Macedonia. It has not been found in Serbia and Montenegro. In the Balkan Peninsula it is also known from Bulgaria and Greece.

Metacanthus meridionalis (Costa) is widespread in the Mediterranean, as well as in the Transcaucasian region. As for the ex-Yugoslav areas, it is known from Dalmatia: Solin where Petar Novak caught it on *Epilobium hirsutum* (NOVAK & WAGNER 1951), from Serbia where it was only found in Peć (PÉRICART 1984), and from several sites in Macedonia: Skopje: Rašče, Štip, the Zletovska Reka. (KORMILEV 1943); Dojran, Sveti Naum (GÖLLNER-SCHAEIDING 1978). The site of Boljevci: Crni Lug is the second record of this species for Serbia and FR Yugoslavia. In the Balkan Peninsula it is also known from Bulgaria and Greece.

Metatropis rufescens (Herrich-Schaeffer) is a Eurosiberian species. Of ex-Yugoslav countries, it inhabits in Slovenia, Croatia, and Serbia. The Natural History Museum collections contain two specimens from Serbia from Kosmaj Mt (610 m). Other sites in Serbia where it was found, according to previous investigations, are Rudnik Mt (DIVAC 1907a) and Deliblatski Pesak (FRIVALDSZKY 1877). The sites of Rudnik and Kosmaj lie in Šumadija on the southern boundary of the species range. It has also been recorded in Bulgaria: Berkovitsa (JOSIFOV 1964). In 1837, De Cristofori found the type of *sieberi* (PÉRICART 1984) in Greece. The largest number of the species belonging to the Berytidae family has been found in Bulgaria (20), followed by Greece (19), Croatia (18), Macedonia (17), Yugoslavia (17), Bosnia and Herzegovina (15), Albania (10) and Slovenia (10) (Table

3). There are several reasons for such an order of Balkan countries reflecting the number of established species. Species biodiversity is affected by geographical position, relief, habitat diversity, plant world composition, and the degree to which fauna has been researched. In Bulgaria, for example, the Heteroptera fauna has been systematically investigated for dozens of years, unlike in Albania, where investigations are few.

We have established from the data on distribution of the Berytidae species PERICART (1984), PUTSHKOV (1974) and our investigations that the species occurring in the Balkan Peninsula fall into four groups of zoogeographical elements: Mediterranean, Holopalaearctic and Eurosiberian, European, and endemites.

According to the zoogeographical composition of the species belonging to the Berytidae family the most frequent in the Balkan Peninsula are the Mediterranean elements with 14 species (66.66%), followed by Holopalaearctic and Eurosiberian with four species (19.04%), European with two (9.52%), and there is one endemite (4.76%).

In Table 2, regions have been arranged according to density index in the following order: Beograd (as microregion), Stig and Braničevo, Karpatska Srbija, Banat, Metohija, Šumadija, Srem, Balkanska Srbija, Veliko Pomoravlje, Ibar and Kopaonik, Vlasina and Krajište, Podrinjska Srbija, Kosovo, Južno Pomoravlje, Stari Vlah and Raška. Density index shows to what degree the species of the Berytidae family are related to certain habitats, principally warm, sunny, sandy, and to refugia ("Mediterranean oases"). The regions with the greatest density are those dominated by the biomes of steppes and woodland steppe, biomes of rocky grounds, pastures and woodlands on rocky grounds of (oro)Mediterranean mountains (MATVEJEV & PUNCER 1989). Density index is affected by the extent to which an area has been researched, which is illustrated by Belgrade region.

CONCLUSION

We have established from the literature data and our investigation that the Balkan Peninsula is inhabited by 21 species of the Berytidae family. Another two subspecies occur in the Balkan Peninsula: *Berytinus hirticornis nigrolineatus* Jakovlev (JOSIFOV 1986) and *Gampsocoris culicinus eckertleini* Josiof (JOSIFOV 1959). An endemic species of the Berytidae family was found in Bulgaria - *Gampsocoris lillianae* Josifov.

During our work on this family for the area of Serbia and ex-Yugoslavia (SFRJ), we have made use of the material from the collections of the Natural History Museum, Heteroptera Collection of the Land Museum in Sarajevo, and literature data. Having analysed all these data, we have established that there are 10 species of the family Berytidae known from Slovenia, 18 from Croatia, 15 from Bosnia and Herzegovina, 16, from Serbia, 6 from Montenegro, and 17 from Macedonia. A total of 20 has been established for ex-Yugoslavia.

A total of 17 species is known from FR Yugoslavia (Serbia and Montenegro), while the Heteroptera collections of the Natural History Museum contain 15 species. The following species are missing *B. consimilis* and *B. striola*. The Natural History Museum has housed in its collections 180 specimens from 100 sites.

New species for the fauna of FR Yugoslavia are: *Apolymus pectoralis* Fieber, and *Gampsocoris culicinus* Seidenstücker.

Having established the density index of species in different Serbian regions, we have concluded that the greatest index is in Belgrade region ($\rho=0.307$)

With regard to the zoogeographical composition, the Mediterranean elements comprising 66.66% dominate the Balkan Peninsula.

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БИОДИВЕРЗИТЕТ ФАМИЛИЈЕ *BERYTIDAE* (HETEROPTERA) У СР ЈУГОСЛАВИЈИ И НА БАЛКАНСКОМ ПОЛУОСТРВУ

Љ. Протић

И з в о д

За подручје Балканског полуострва још увек нема јединственог рада који је посвећен фауни фамилије Berytidae. Постоје само појединачни фаунистички радови у којима се између осталих фамилија наводе и Berytidae (GÖLLNER-SCHIEDING 1978; HOBERLANDT 1955; HORVÁTH 1897; JOSIFOV 1964, 1965; PROTIĆ 1988/89; PUTCHKOV 1974; STICHEL, 1955-1962).

Према доступној литератури на Балканском полуострву су до сада утврђене 21 врста фамилије Berytidae. У Бугарској је нађена и једна ендемична врста *Gampsocoris lilianae* Josifov.

У току обраде ове фамилије за подручје Србије и претходне Југославије користили смо материјал из збирки Природњачког музеја, збирке Heteroptera Земаљског музеја из Сарајева и података из литературе. Сумирањем свих тих података утврдили смо да је у Словенији познато 10, у Хрватској 18, у Босни и Херцеговини 15, Србији 16, Црној Гори 6 и Македонији 17 врста фамилије Berytidae. Односно утврђено је 20 врста на просторима претходне Југославије и СР Југославије.

Нове врсте за фауну СР Југославије су: *Apoplymus pectoralis* Fieber i *Gampsocoris culicinus* Seidenstücker.

Ендемит *Gampsocoris lilianae* Josifov насељава Бугарску.

Утврђивањем индекса густине врста појединих регија у Србији, израчунали смо да је он највећи у Београдској регији ($\rho=0.307$)

Према зоогеографској припадности на Балканском полуострву су најзатупљенији медитерански елементи са 66.66%.

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