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ADDENDA TO THE FAUNA OF CICADINA (HEMIPTERA) OF BULGARIA

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Abstract New data on the distribution of 50 species of Cicadina in Bulgaria, including 44 species first recorded, are presented. *Arboridia stranjensis* Bayryamova, 1987 is placed in synonymy with *Fagocyba carri* (Edwards, 1914).

KEY WORDS: Hemiptera, Cicadina, fauna, Bulgaria

Izvleček – DODATEK K FAVNI ŠKRŽATKOV (HEMIPTERA: CICADINA) BOLGARIJE

Predstavljeni so novi podatki o razširjenosti 50 vrst škržatkov (Cicadina) v Bolgariji, vključno s 44 prvič zabeleženimi vrstami. *Arboridia stranjensis* Bayryamova, 1987, je sinonimizirana z vrsto *Fagocyba carri* (Edwards, 1914).

KLJUČNE BESEDE: Hemiptera, Cicadina, favna, Bolgarija

Introduction

From July 18 to August 12, 2000, and, from June 11 to July 9, 2001, we made a trip through Bulgaria to collect Cicadina material. The south-western and southern parts of Bulgaria were studied most intensively, but eastern regions along the sea coast and some northern regions were investigated as well. The territory of Bulgaria lies in the southern part of a zone of broad-leaved forests including regions transi-

tional to the Mediterranean subtropical zone, and in the north-eastern and northern parts landscapes are transitional to the steppe zone. The plain territories of Bulgaria are considerably changed by the economic activity of men. Perhaps many species were natively characteristic but have disappeared by now from the plains where they did not retain these territories. At present, as a result of the selective identification of these materials as well as the materials deposited in the collections of the Zoological Institute of the Russian Academy of Sciences (Saint-Petersburg) and the Institute of Zoology of the Bulgarian Academy of Sciences (Sofia), we are able to add 44 species to the list of *Cicadina* recorded from Bulgaria (noted with an asterisk*) and to furnish new data on the distribution of 6 other species.

Results

*Species first recorded from Bulgaria or first reliable records

Delphacidae Leach, 1865

**Megamelus notula* (Germar, 1830)

Males and females, Rodopy Mts., 5 km N Smolyan, marshy bank of pond, 2.VIII.2000 (Emeljanov).

**Javesella salina* (Haupt, 1924)

Male, Zemensko Canyon, 2-3 km WSW Zemen, ~500 m, 26.VII.2000 (Gnezdilov).

**Eurysella brunnea* (Melichar, 1896)

Male, 11 km SE Pernik, Studena Reservoir, 5.VII.2001 (Gjonov).

Cixiidae Spinola, 1839

**Trigonocranus emmeae* Fieber, 1876

Female, 5 km NW Kostinbrod, near Beledie khan village, ~600 m, 7.VII.2001 (Emeljanov).

**Eumecurus bourouensis* (Linnavuori, 1965)

Male, Kresnensko Gorge, near Kresna, 16.VIII.1988 (Volkovich).

Achilidae Stål, 1866

**Cixidia pilatoi* D'Urso & Guglielmino, 1995

Males and females: 10 km ESE Petrovo village, Slavyanka Mt., ~600 m, 31.VII.2000 (Gnezdilov); 43 km E Vratsa, near Karlukovo village, 12.VI.2001 (Emeljanov, Gjonov); Vlahina Mt., near Boboshevo village, ~600 m, 15.VI.2001 (Gjonov); Stara Planina, 5 km S Radotina village, 28.VI.2001 (Emeljanov, Gjonov); Zemenska Planina, near Polska Skakavitsa village, ~700 m, 4.VII.2001 (Gjonov).

Meenoplidae Fieber, 1872

Meenoplus albosignatus Fieber, 1866

Males and females: 8 km N Kresna, Stara Kresna village, ~600 m, 22.VII.2000 (Emeljanov, Gnezdilov, Gjonov); Kresnensko Gorge, Shaytan-Dere River, ~500 m,

23.VII.2000 (Emeljanov, Gnezdilov, Gjonov); Vlahkina Mt., near Boboshevo village, ~600 m, 27.VII.2000 (Emeljanov).

Derbidae Spinola, 1839

**Cedusa bosnica* (Horváth, 1907)

Male, Kresnensko Gorge, Shaytan-Dere River, ~500 m, 23.VII.2000 (Gnezdilov).

Dictyopharidae Spinola, 1839

Dictyopharinae Spinola, 1839

**Dictyophara lindbergi* Metcalf, 1955

Female, Rodopy Mts., 5 km S Zhelezino, Pystrook, ~400 m, 5.VIII.2000 (Gnezdilov); female, Danube River flood-land, Srebrn Reservation, 9.VIII.2000 (Gnezdilov).

Callodictya krueperi (Fieber, 1876)

Males and females: 8 km N Kresna, Stara Kresna village, ~600 m, 22.VII.2000 (Emeljanov, Gnezdilov, Gjonov); Vlahkina Mt., near Boboshevo village, ~600 m, 27.VII.2000 (Gnezdilov), 27-28.VII.2000 (Emeljanov); 10 km ESE Petrovo village, Slavyanka Mt., ~600 m, 31.VII.2000 (Emeljanov); Rodopy Mts., 15 km N Krdzhali, near Stremtsi village, ~350 m, 4.VIII.2000 (Emeljanov), 5 km S Zhelezino, Pystrook, ~400 m, 5.VIII.2000 (Emeljanov), near Kamilski Dol village, ~250 m, 5.VIII.2000 (Emeljanov); 4 km SW Topolovgrad, 5.VIII.2000 (Emeljanov); Stranndzha Mts., 5 km N Malko Tarnovo, near Stoilovo village, ~250 m, 6.VIII.2000 (Emeljanov). Previously the species was recorded only by Nast (1987), but without concrete location.

Orgeriinae Fieber, 1872

**Parorgerius platypus* (Fieber, 1866)

Males and females, Vlahkina Mt., near Boboshevo village, ~600 m, 28.VII.2000 (Emeljanov), 15.VI.2001, 29.VI.2001 (Emeljanov, Gjonov).

**Ranissus scythia* (Oshanin, 1913)

Males and females: Zemenska Planina, near Polska Skakavitsa village, ~700 m, 25.VII.2000 (Emeljanov, Gnezdilov, Gjonov), 17.VI.2001, 4.VII.2001 (Emeljanov, Gjonov); Vlahkina Mt., near Boboshevo village, ~600 m, 28.VII.2000 (Emeljanov, Gnezdilov), 30.VI.2001, 2.VIII.2001 (Emeljanov, Gjonov); 5 km NW Kostinbrod, near Beledie khan village, ~600 m, 7.VII.2001 (Emeljanov, Gjonov).

Caliscelidae Amyot & Serville, 1834

**Peltonotellus melichari* Horváth, 1897

Males and females, 5 km NW Kostinbrod, near Beledie khan village, ~600 m, 7.VII.2001 (Emeljanov, Gjonov).

Flatidae Spinola, 1839

Phantia subquadrata (Herrich-Schäffer, 1838)

Males and females: 8 km N Kresna, Stara Kresna village, ~600 m, 22.VII.2000 (Emeljanov, Gnezdilov, Gjonov); SW Sandanski, near Damjanitsa village, ~450 m, 23.VII.2000 (Emeljanov); Kresnensko Gorge, Shaytan-Dere River, ~500 m, 23.VII.2000 (Emeljanov, Gnezdilov, Gjonov); Vlahkina Mt., near Boboshevo vil-

lage, ~600 m, 27-29.VII.2000 (Emeljanov, Gnezdilov); Pirin Mts., 8 km S Melnik, near Khyrsovo village, ~ 500 m, 31.VII.2000 (Emeljanov, Gnezdilov, Gjonov); Rodopy Mts., 15 km N Krdzhali, near Stremtsi village, ~350 m, 4.VIII.2000 (Emeljanov, Gnezdilov, Gjonov), 5 km S Zhelezino, Pystrook, ~400 m, 5.VIII.2000 (Emeljanov, Gnezdilov, Gjonov), near Kamilski Dol village, ~250 m, 5.VIII.2000 (Gnezdilov); 4 km SW Topolovgrad, 5.VIII.2000 (Emeljanov); 5 km N Primorsko, 7.VIII.2000 (Emeljanov); near Cherven and Ivanovo villages, Rusenski Lom River flood-land, ~ 150 m, 10.VIII.2000 (Emeljanov, Gnezdilov, Gjonov).

Cicadellidae Latreille, 1825

Macropsinae Evans, 1935

**Macropsidius abrotani* Emeljanov, 1964

Males and females: Vlahina Mt., near Boboshevo village, ~700 m, 30.VI.2001, 3.VII.2001; 5 km NW Kostinbrod, near Beledie khan village, ~ 600 m, 7.VII.2001 (all leg. Emeljanov, Gjonov).

Agalliinae Kirkaldy, 1901

**Dryodurgades anatolicus* Dlabola, 1957

Males and females: Rodopy Mts., near Kamilski Dol village, ~250 m, 5.VIII.2000 (Gnezdilov).

**Agallia brachyptera* (Boheman, 1847)

Male, Vitosha Mt., Chuypetlovo village, ~1200 m, 21.VII.2000 (Gnezdilov); male, Osagovska Planina, 10 km S Kyustendil, Trite Buki, ~1600 m, 24.VII.2000 (Gnezdilov).

Idiocerinae Baker, 1915

**Idiocerus vicinus* Melichar, 1898

Males and females: 15 km NNE Kresna, Stara Kresna village, ~600 m, 22.VII.2000 (Gnezdilov); Pirin Mts., 7 km NE Melnik, ~500 m, 31.VII.2000 (Gnezdilov).

**Acericerus rotundifrons* (Kirschbaum, 1868)

Males and females, Danube Plain, 15 km N Strazhitsa, Nova Vrbovka village, ~250 m, 11.VIII.2000 (Gnezdilov).

Typhlocybinae Kirschbaum, 1868

**Kybos strigilifer* Ossiannilsson, 1941

Male, Vitosha Mt., fir-beech forest, ~1700 m, 20.VII.2000 (Gnezdilov).

**Fagocyba carri* (Edwards, 1914)

Arboridia stranjensis Bayryamova, 1987, **syn. n.**

Male, Strandzha Mts., Kacul-M Tirново, 25.IX.1985 (Bayryamova).

Iassinae Amyot & Serville, 1843

**Iassus mirabilis* Orosz, 1979

Males and females, 8 km N Kresna, Stara Kresna village, 600 m, 1.VII.2001 (Emeljanov, Gjonov).

Deltocephalinae Fieber, 1869

**Grypotes puncticollis* (Herrich-Schäffer, 1834)

Female, Rodopy Mts., 15 km NW Chepelare, Skalni Mostovi location, ~1700 m, 3.VIII.2000 (Gnezdilov); male, 8 km N Kresna, Stara Kresna village, ~600 m, 2.VII.2001 (Emeljanov).

**Aconura jakowléfi* Lethierry, 1876

Males and females, N Burgas, solonchak, 7.VIII.2000 (Emeljanov, Gnezdilov, Gjonov).

**Anaconura pallifrons* (Horváth, 1897)

Males and females: SW Sandanski, near Damyanitsa village, ~ 450 m, 23.VII.2000; Pirin Mts., 8 km S Melnik, near Khyrsovo village, ~ 500 m, 31.VII.2000 (all leg. Emeljanov, Gnezdilov, Gjonov).

**Anaconura ragusai* (Melichar, 1914)

Males and females: Danube Valley, 10 km W Pleven, near Tarnene village, 12.VIII.2000 (Emeljanov), 13.VI.2001 (Emeljanov, Gjonov).

**Japananus hyalinus* (Osborn, 1900)

Males and females: Vitosha Mt., near Dragalevtsi village, ~1000 m, 20.VII.2000 (Gnezdilov); Vlahina Mt., near Boboshevo village, ~600 m, 27.VII.2000 (Emeljanov); Zemenska Planina, near Polska Skakavitsa village, Struma River flood-land, 25.VII.2000 (Gnezdilov); Zemensko Canyon, 2-3 km WSW Zemen, ~500 m, 26.VII.2000 (Gnezdilov); Danube Plain, 15 km N Strazhitsa, Nova Vrbovka village, ~250 m, 11.VIII.2000 (Gnezdilov).

Tetartostylus illyricus (Kirschbaum, 1868)

Males and females: Vlahina Mt., near Boboshevo village, ~600 m, 29.VII.2000 (Emeljanov); Zemenska Planina, near Polska Skakavitsa village, ~700 m, 25.VII.2000 (Gnezdilov), 4.VIII.2001 (Emeljanov, Gjonov); Danube Valley, 10 km W Pleven, near Tarnene village, 13.VI.2001 (Emeljanov, Gjonov); Stara Planina, 5 km S Radotina village, 27.VI.2001 (Emeljanov, Gjonov).

Osbornellus sanderanus Dlabola, 1987

Male and female, 8 km N Kresna, Stara Kresna village, ~600 m, 22.VII.2000, 2.VII.2001 (Emeljanov). The species was recorded before only by Dlabola (1987).

**Platymetopius curvatus* Dlabola, 1974

Males and females: 8 km N Kresna, Stara Kresna village, ~600 m, 22.VII.2000 (Emeljanov); Strandzha Mts., 2 km NW Bliznak village, ~250 m, 6.VIII.2000 (Emeljanov, Gnezdilov).

**Mocycdia aegea* Abdul-Nour, 1988

Males and females: Zemenska Planina, near Polska Skakavitsa village, Struma River flood-land, 25.VII.2000 (Gnezdilov); Vlahina Mt., near Boboshevo village, ~600 m, 27.VII.2000 (Gnezdilov).

**Taurotettix beckeri* Fieber, 1885

2 females, 5 km NW Kostinbrod, near Beledie khan village, ~600 m, 7.VII.2001 (Emeljanov, Gjonov).

**Rhopalopyx adumbratus* (C. Sahlberg, 1842)

Males and females, 5 km NW Kostinbrod, near Beledie khan village, ~600 m, 18.VII.2000 (Gnezdilov).

**Streptanus albanicus* Horváth, 1916

Male and females, Zemenska Planina, near Polska Skakavitsa village, ~700 m, 17.VI.2001 (Emeljanov).

Handianus flavovarius (Herrich-Schäffer, 1835)

Males and females: 5 km NW Kostinbrod, near Beledie khan village, ~600 m, 18.VII.2000 (Emeljanov, Gnezdilov); 10 km NE Godech, near Gintsi village, ~1100 m, 18.VII.2000 (Emeljanov, Gnezdilov); Vitoshka Mt., near Dragalevtsi village, ~1000 m, 20.VII.2000 (Emeljanov); Chuypetlovo village, ~1200 m, 21.VII.2000 (Emeljanov); Vlahkina Mt., near Boboshevo village, ~600 m, 28.VII.2000 (Emeljanov); Danube Valley, 10 km W Pleven, near Tarnene village, 13.VI.2001 (Emeljanov, Gjonov); Zemenska Planina, near Polska Skakavitsa village, ~700 m, 17.VI.2001 (Emeljanov); Stara Planina, 5 km S Radotina village, 27.VI.2001 (Emeljanov, Gjonov); near Mezdra, 28.VI.2001 (Emeljanov); 11 km SE Pernik, Studena Reservoir, 5.VII.2001 (Emeljanov).

**Laburrus handlirschi* Matsumura, 1908

Males and females, Vlahkina Mt., near Boboshevo village, 700 m, 29.VI.2001 (Emeljanov, Gjonov).

**Laburrus quadratus* (Forel, 1864)

Female, 5 km NW Kostinbrod, near Beledie khan village, ~600 m, 18.VII.2000 (Gnezdilov); males and females, Vlahkina Mt., near Boboshevo village, ~600 m, 28.VII.2000 (Emeljanov, Gnezdilov).

**Rhytistylus kaloneroi* Asche, 1980

Males and females, Vitoshka Mt., Chuypetlovo village, ~1200 m, 5.VIII.2001 (Emeljanov, Gjonov).

**Colobotettix morbillosus* (Melichar, 1896)

Male and females, Rodopy Mts., 15 km NW Chepelare, Skalni Mostove location, ~1700 m, 3.VIII.2000 (Emeljanov, Gnezdilov).

**Calamotettix taeniatus* (Horváth, 1911)

Female, Near Novo Oryakhovo village, Kamchiya River Reserve, Black Sea coast, 8.VIII.2000 (Gnezdilov).

**Paralimnus zachvatkini* Emeljanov, 1964

Males and females, 10 km E and 10 km W Pazardzhik, 16.VI.2001 (Emeljanov, Gjonov).

**Metalimnus steini* Fieber, 1869

Males and females, 11 km SE Pernik, Studena Reservoir, 5.VII.2001 (Emeljanov, Gjonov).

**Psammotettix comitans* Emeljanov, 1964

Males and females, 5 km NW Kostinbrod, near Beledie khan village, ~600 m, 7.VII.2001 (Emeljanov, Gjonov).

**Psammotettix salsuginosus* Logvinenko, 1961

Males and females, N Burgas, solonchak, 7.VIII.2000 (Emeljanov, Gnezdilov, Gjonov).

**Errastunus ocellaris* (Fallén, 1806)

Males and females, near Ivanovo village, Rusenski Lom River flood-land, 10.VIII.2000 (Emeljanov).

**Arthaldeus pascuellus* (Fallén, 1826)

Males and females, Rodopy Mts., 15 km SW Batak, ~1600 m, 1.VIII.2000 (Emeljanov).

**Enantiocephalus cornutus* (Herrich-Schäffer, 1838)

Males and females: Danube River flood-land, Srebrn Reservation, 9.VIII.2000 (Emeljanov); near Cherven village, Rusenski Lom River flood-land, ~ 150 m, 10.VIII.2000 (Emeljanov, Gnezdilov); Danube Valley, 10 km W Pleven, near Tarnene village, 13.VI.2001 (Emeljanov).

**Mocuellus quadricornis* Dlabola, 1949

Males and females: 5 km NW Kostinbrod, near Beledie khan village, ~600 m, 18.VII.2000 (Emeljanov); Vlahina Mt., near Boboshevo village, ~600 m, 27-28.VII.2000 (Emeljanov).

**Pleargus pygmaeus* (Horváth, 1897)

Male and female, 5 km NW Kostinbrod, near Beledie khan village, ~600 m, 7.VII.2001 (Emeljanov, Gjonov).

**Mendrausus pauxillus* (Fieber, 1869)

Female, 10 km NE Godech, near Gintsi village, ~1100 m, 18.VII.2000 (Emeljanov).

Discussion

The correctness of identification of some species recorded before is more or less doubtful, for example: *Conomelus anceps* (Germar, 1821) (Bayryamova, 1983, 1990), *Metropis ugamicus* Mitjaev, 1969 (Bayryamova, 1984, 1992), *Ranissus punctiger* (Horváth, 1905) (Bayryamova, 1976, 1992), *Philaenus signatus* Melichar, 1896 (as *Ph. signatus* Fieber) (Nedaylkov, 1908); *Perotettix pictus* (Lethierry, 1880) (only in the list by Nast, 1987). Taking the importance of the list of European Cicadina by Nast (1987) into consideration, it should be said that some species recorded earlier were missed in the list: *Errhomenus brachypterus* Fieber, 1866; *Meenoplus albosignatus* Fieber, 1866; *Tetartostylus illyricus* (Kirschbaum, 1868); *Handianus flavovarius* (Herrich-Schäffer, 1835); *Paralimnus phragmitis* (Boheman, 1847); *Anoscopus histrionicus* (Fabricius, 1794) (all recorded by Joakimov, 1909); *Akotropis quercicola* Linnavuori, 1962 (Dlabola, 1970); *Bootheca taurus* (Oshanin, 1870) (Gruev, 1973). The paper of Nedyalkov (1908) also includes valuable data on the distribution of some other Cicadina in Bulgaria.

At present, the list of Bulgarian Cicadina (with new records) includes about 570 species. In the future we can expect no less than 100 additional species.

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