

## New and unpublished data about the ground beetles from tribes Zabrinini and Harpalini (Coleoptera: Carabidae) of Bulgaria

Teodora TEOFILOVA

Institute of Biodiversity and Ecosystem Research (IBER), Bulgarian Academy of Sciences (BAS),  
1 Tsar Osvoboditel Blvd., 1000 Sofia, Bulgaria, E-mail: oberon\_zoo@abv.bg

Received: 31. January 2021 / Accepted: 25. May 2021 / Available online: 05 December 2021 / Printed: December 2021

**Abstract.** Bulgarian carabid (Coleoptera: Carabidae) fauna is relatively well studied but there are still many taxa and regions in the country lacking enough research. This study provides new information and new records on 93 carabid species of the tribes Zabrinini (28 species) and Harpalini (65 species), and 23 zoogeographical regions and subregions in Bulgaria. The focus is on tribes Zabrinini and Harpalini, which are among the most abundant and species-rich in Bulgaria and worldwide. Fifty-one, or more than the half of the species collected are recorded for the first time in 20 different zoogeographical regions of Bulgaria. Twenty-nine species are reported for the second time about the 15 regions where they were currently collected. Sixty-six species haven't been reported for more than 20 years from the Eastern and Western Stara Planina Mts., Kraishite region, Osogovska planina Mt., Boboshevo-Simitli valley, Sandanski-Petrich valley, Vitosha Mts., Rila Mts., and Pirin Mts.

**Key words:** carabids, Harpalinae, Bulgaria, geographic distribution, supplemental data

### Introduction

Ground beetles (Coleoptera: Carabidae) represent one of the largest beetle families with cosmopolitan distribution and with decisive importance for the functioning of ecosystems. Zabrinini and Harpalini are two of the largest and most diversified, widely distributed and species-rich carabid tribes (Kryzhanovskij 1983, Bousquet 2012, Löbl & Löbl 2017). According to the last edition of the Palaearctic catalogue of the ground beetles, in Bulgaria currently 64 species of Zabrinini and 152 species of Harpalini are known (Löbl & Löbl 2017). However, according to our own recent estimations (Teofilova & Guéorguiev, unpublished data), this number is not precise, because: *Amara (Paracelia) dalmatina* Dejean, 1828, *Zabrus (Pelor) corpulentus* Schaum, 1864, *Z. (Zabrus) ignavus* Csiki, 1970, and *Carterus (Carterus) rotundicollis* Rambur, 1837 are excluded from Bulgarian fauna; *Zabrus (Pelor) asiaticus* Laporte, 1834, *Z. (Pelor) femoratus* Dejean, 1828, and *Acinopus (Acinopus) subquadratus* Brullé, 1832 are still doubtful for Bulgaria; and *Acupalpus (Acupalpus) dubius* Schilsky, 1888, *Amblystomus rectangulus* Reitter, 1883, *Anthraxus insignis* (Reitter, 1884), *Bradycellus (Bradycellus) harpalinus* (Audinet-Serville, 1821), *Harpalus (Harpalus) flavescens* (Piller et Mitterpacher, 1783) and *H. (Harpalus) taciturnus* Dejean, 1829 are missing for Bulgaria in the Palaearctic catalogue. Therefore, the total number of the species currently established in Bulgaria should be 59 species of Zabrinini and 156 species of Harpalini.

Beetles from the studied tribes are often dominant in different, mostly open habitats in Bulgaria, including agroecosystems (e.g. Kostova 2004, Kodzhabashev & Penev 2006, Teofilova 2019a, Teofilova 2020, Teofilova in press, Teofilova & Kodzhabashev 2020a, 2020b).

Most Zabrinini and Harpalini are eurytopic, actively flying mixophytophages, adapted to more xerothermic conditions than the other carabids, which enables their spreading and survival (e.g. Kryzhanovskij 1983). Despite that fact, there are still many regions and taxa continuing to surprise us with new records.

The present study aims at complementing the data about the distribution of the ground beetles in Bulgaria by adding new records for 12% of the species in Bulgarian carabid fauna, collected in 23 zoogeographical regions and subregions.

### Material and Methods

Most material on which this study is based is an outcome of a field work carried out in different localities in Bulgaria in the period from 1976 to 2020. This material has been collected through different sampling methods, such as handpicking, pan, Malaise, or pitfall trapping, and has not been published so far. All specimens are stored in the private collection of the author in the Institute of Biodiversity and Ecosystem Research (BAS, Sofia).

The following abbreviations of the collectors' names are used in the text: AV - A. Valkov, DD - Dragomir Dimitrov, IG - Iliya Gyonov, IT - Ivaylo Todorov, IV - Ilko Vassilev, LP - Lyubomir Penev, MN - Maria Naumova, NA - Neno Atanasov, NKar - Nikolay Karaivanov, NK - Nikolay Kodzhabashev, NS - Nikolay Simov, OI - Ognyan Iliev, SS - Stefaniya Sabeva, TL - Toshko Ljubomirov, TT - Teodora Teofilova, YG - Yuli Ganev, VG - Vasil Genchev, VGu - Vyara Gusseva, VP - Vlada Peneva (Radkova), VS - Vladimir Sakalian.

The abbreviations of the zoogeographical regions and subregions are as follows: BS - Black Sea coast, DE - Eastern Danubian plain, PRW - Western Predbalkan, SPE - Eastern Stara Planina Mts., SPW - Western Stara Planina Mts., SGS - Sashtinska Sredna Gora Mts., SGI - Ihtimanska Sredna Gora Mts., WB - Western Bulgaria, K - Kraishite region, OP - Osogovska Planina Mt., MPO - Maleshevska Planina Mt. and Ograzhden Mt., BSM - Boboshevo-Simitli valley; SPT - Sandanski-Petrich valley, L - Lyulin Mts., V - Vitosha Mts., PL - Plana Mt., R - Rila Mts., P - Pirin Mts., T - Thracian Lowland, ST - Sakar-Tundzha region, RDW - Western Rhodope Mts., RDE - Eastern Rhodope Mts., S - Strandzha Mts.

The material was determined by the author, if not, that was pointed in the text. All specimens determined by others were re-examined by the author. The nomenclature follows the last edition of the Catalogue of the Palaearctic ground beetles (Löbl & Löbl 2017).

### Results

The present study is based on various field observations and

contains data about 93 Bulgarian carabid species from tribes Zabrinini (28 species) and Harpalini (65 species), collected in 23 zoogeographical regions and subregions in Bulgaria. There are 51 species recorded for the first time in different regions. Twenty-nine species are reported for the second time in the regions where they were currently collected. Sixty-six species haven't been reported for the given regions for more than 20 years.

HARPALINAE Bonelli, 1810

ZABRINI Bonelli, 1810

**1. *Amara (Amara) aenea* (DeGeer, 1774)**

Material: BS (Varna, 1♀, 20.III.1983, leg. OI, det. F. Hieke); DE (S Vetren vill. near Srebarna Reserve, N 44°06'00", E 27°02'09", 112 m, 1♀, 30.IX.2014, leg. TL); PRW (Reselets vill., about 300 m, 1♀, 20.VI.1981, leg. IV, det. E. Kirschenhofer); SPE (Sedlarevo vill., N 42°41'22", E 26°34'53", 460 m, 4.V.1980, leg. IV, 1♂, det. H. Freude, 1 ex., det. F. Hieke); WB (Sofia city, N 42°41'44", E 23°19'43", 560 m, 1♀, 8.III.2016, leg. TT); BSM (Selishte vill., 1♀, 14.IX.1978, leg. IV); ST (Svilengrad, 1♂, 5.V.1982, leg. IV, det. unknown); RDW (Trigrad, 1♀, 29.VII.1982, leg. IV, det. unknown); Stoykite vill., N 41°39'07", E 24°38'09", 1402 m, 1♂, 3.V.2019, leg. TT).

**2. *Amara (Amara) anthobia* A. Villa & G.B. Villa, 1833**

Material: WB (W Bezden vill., N 42°52'53", E 23°05'55", 561 m, 1♀1♂, Malaise trap, 30.IV.2017, leg. NKar).

**3. *Amara (Amara) convexior* Stephens, 1828**

Material: BS (Cape Emine, Irakli Site, 1 ex., V-XII.2012, leg. TT); SPW (Berkovski Balkan Mts., 2♀3♂, IX.2016-28.IV.2017, pitfall trap, leg. TT&NK); R (S Samokov, N 45°15'14", E 23°30'44", 1203 m, 1♂, 25.VI.2020, leg. IT); ST (Balabana Reserve, Tundzha River, 1 ex., 9.V-3.IX.2014, leg. TT).

**4. *Amara (Amara) curta* Dejean, 1828**

Material: R (Parangalitsa Reserve, 1♂, 23.V.1982, leg. IV, det. unknown).

**5. *Amara (Amara) familiaris* (Duftschmid, 1812)**

Material: P (near Rozhen vill., 1500 m, 1♂, 2.VIII.1982, leg. IV, det. O. Kryzhanovskij).

**6. *Amara (Amara) lucida* (Duftschmid, 1812)**

Material: SPT (Kozhuh Mt., about 230 m, 1♂, 3.III.1982, leg. YG, det. F. Hieke).

**7. *Amara (Amara) lunicollis* Schiødte, 1837**

Material: SPW (Berkovski Balkan Mts., 1♂, IX.2016-28.IV.2017, pitfall trap, leg. TT&NK); R (S Samokov, N 45°15'14", E 23°30'44", 1203 m, 2♂, 25.VI.2020, leg. IT).

**8. *Amara (Amara) montivaga* Sturm, 1825**

Material: V ("Vitosha", 1♂, 10.X.1979, leg. IV, det. O. Kryzhanovskij); RDW (N Grashtitsa hamlet, N 41°39'16", E 24°37'21", 1476 m, 1 ex., 6.V.2018, leg. TT).

**9. *Amara (Amara) ovata* (Fabricius, 1792)**

Material: SPE (Sedlarevo vill., N 42°41'22", E 26°34'53", 460 m, 1♀, 4.V.1980, leg. IV, det. F. Hieke).

**10. *Amara (Amara) saphyrea* Dejean, 1828**

Material: DE (Srebarna Reserve, N 44°05'60", E 27°05'37", 20 m, 1♂, 19.VII.2014, leg. TL).

**11. *Amara (Amara) similata* (Gyllenhal, 1810)**

Material: BS (Durankulak beach, N 43°40'(40"), E 28°33'50", 0 m, 1♂, 30.VI.2017, leg. TT).

**12. *Amara (Amara) tibialis* (Paykull, 1798)**

Material: R (Parangalitsa Reserve, 2♂, 15.X.1979, 1♂, 23.V.1982, leg. IV, det. F. Hieke).

**13. *Amara (Bradytus) apricaria* (Paykull, 1790)**

Material: SPW (Petrohan - Kom path, N 43°08'22", E 23°06'42", 1530 m, ridge meadow with juniper, 1♂, 15.VII-28.X.2017, pitfall trap, leg. TT&NK); R ("Rila", 1 ex., 20.VIII.1979, leg. IV, det. O. Kryzhanovskij); P (near Bansko, 1 ex., 18.VII.1982, leg. IV, det. F. Hieke; 1♀, 13.VII.1982, leg. SS, det. F. Hieke); RDW (Chepelare, about 1230 m, 2♀1♂, 5.VIII.1982, leg. IV, det. E. Kirschenhofer).

**14. *Amara (Bradytus) consularis* (Duftschmid, 1812)**

Material: SGS (near Strelcha, about 500 m, 1♀, 8.VIII.1983, leg. unknown, det. O. Kryzhanovskij).

**15. *Amara (Bradytus) fulva* (O.F. Müller, 1776)**

Material: R (Slavovo vill., 900 m, open habitat, 1♂, 30.V.1981, leg. LP, det. unknown).

**16. *Amara (Bradytus) majuscula* (Chaudoir, 1850)**

Material: V ("Vitosha", 1♂, 6.VI.1976, leg. IV, det. F. Hieke).

**17. *Amara (Celia) bifrons* (Gyllenhal, 1810)**

Material: SPT (Tisata Reserve, N 41°45'42", E 23°08'58", 230 m, 1♀, 25.IV-7.VI.2014, leg. TT).

**18. *Amara (Celia) sollicita* Pantel, 1888**

Material: BS (SW Balchik, N 43°23'49", E 28°06'52", 193 m, 1♀, 17.IV-10.V.2018, pitfall trap, leg. TL).

**19. *Amara (Curtonotus) aulica* (Panzer, 1796)**

Material: BS (Veteran Hut near Varna, 9 m, 1♀, 15.VIII.1982, leg. VS, det. F. Hieke; Cape Maslen Nos, N 42°18'27", E 27°47'34", 15 m, 1♀, 24.VIII.1997, at light, leg. NS).

**20. *Amara (Curtonotus) convexiuscula* (Marshall, 1802)**

Material: SPT (Kozhuh Mt., about 230 m, 1♀, 14.VIII.1982, leg. YG, det. F. Hieke).

**21. *Amara (Paracelia) quenseli quenseli* (Schönherr, 1806)**

Material: P ("Pirin", 1♀, 20.VIII.1982, leg. YG, det. F. Hieke).

**22. *Amara (Percosia) equestris equestris* (Duftschmid, 1812)**

Material: V (Kopitoto Site, about 1300 m, 1♀, X.1979, leg. VP, det. unknown).

**23. *Amara (Zezea) fulvipes* (Audinet-Serville, 1821)**

Material: ST (SW Elhovo, Balabana Reserve, Tundzha River, N 42°08'48", E 26°32'23", 104 m, 1♀, 9.V-2.IX.2014, leg. TT&NK); RDW (Krastava vill., N 41°56'24", E 23°51'49", 1192 m, 1♀, 27.VI-27.VII.2015, leg. TL).

**24. *Zabrus (Pelor) balcanicus* Heyden, 1883**

Material: SPE ("Colect. Haberhauer, Sliven, Cotypus!, teste H. Freude 1987, 1♂"); V ("Vitoscha", 1300 m, 1♀, 1.X.1983, leg. VGu, det. H. Freude); P (near Bansko, about 900 m, 1♀, 18.VII.1982, leg. IV, det. H. Freude); RDW (Chepelare, about 1230 m, 1♀, 5.VIII.1982, leg. IV, det. H. Freude).

**25. *Zabrus (Pelor) incrassatus* (Ahrens, 1814)**

Material: MPO (Ograzhden Mts., 27.III.1984, leg. YG, 3♀1♂, det. H. Freude, 1♀, det. F. Hieke & H. Freude).

**26. *Zabrus (Pelor) rhodopensis* Apfelbeck, 1904**

Material: R (Parangalitsa Reserve, above 1400 m, 1♂, 28.IV.1980, leg. IV, det. H. Freude); P (near Bansko, about 900 m, 1♀, 13.VII.1982, leg. SS, det. H. Freude).

**27. *Zabrus (Pelor) spinipes spinipes* (Fabricius, 1798)**

Material: BS (SW Balchik, N 43°23'49", E 28°06'20", 217 m, 1♀, 17.IV-10.V.2018, pitfall trap, leg. TL); RDW (Besaparski Ridove Hills, S Sinitovo vill., N 42°07'39", E 24°22'38", 322 m, 1♂, 29.V-22.VI.2020, leg. TL).

- 28. *Zabrus (Zabrus) tenebrioides tenebrioides* (Goeze, 1777)**  
Material: BS (Varna, 1♀, 30.VIII.1980, leg. IV, det. F. Hieke & H. Freude; Durankulak beach, N 43°40'(40"), E 28°33'50", 0 m, 2♀1♂, 30.VI.2017, leg. TT).
- HARPALINI Bonelli, 1810
- 29. *Gynandromorphus etruscus* (Quensel, 1806)**  
Material: DE (Srebarna Lake, 1♀, 12.VIII.1991, leg./det. NK); SGI (SE German vill., N 42°36'03", E 23°26'34", 790 m, 2♀1♂, 2.VI.1999, leg./det. NK).
- 30. *Carterus (Carterus) dama* (P. Rossi, 1792)**  
Material: T (Yagodovo vill., N 42°06'38", E 24°51'04", 159 m, house yard, 1♀, 15.VII.2020, leg. VG).
- 31. *Ditomus calydonius calydonius* (P. Rossi, 1790)**  
Material: T (Yagodovo vill., N 42°06'38", E 24°51'04", 159 m, house yard, 1♂, 14.VII.2020, leg. VG).
- 32. *Dixus clypeatus* (P. Rossi, 1790)**  
Material: BS (Durankulak Marsh, steppified pasture, 2 ex., 22.VII.1992, leg. LP, det. NK).
- 33. *Dixus eremita* (Dejean, 1825)**  
Material: PRW (Karlukovo vill., about 250 m, 1 ex., 13.VII.1997, leg. IG); MPO (Ograzhden Mts., near Lebnitsa vill., about 200 m, 1 ex., 23.V.1984, leg. VP, det. O. Kryzhanovskij).
- 34. *Dixus obscurus* (Dejean, 1825)**  
Material: BS (SW Balchik, N 43°23'49", E 28°06'06", 218 m, 1 ex., 12.VI–25.VII.2018, pitfall trap, leg. TL); SPT (near the town of Petrich, about 150 m, 1 ex., 31.V.1998, leg. AV; Tisata Reserve, N 41°45'42", E 23°08'58", 230 m, 1 ex., 7.VI.2014, leg. TT); L ("Liulin", 1 ex., 10.III.1983, leg. VP, det. O. Kryzhanovskij); R (near Skakavitsa Hut, about 1850 m, 1 ex., 8.III.1983, leg. IV); T (W Katunitsa vill., N 42°06'14", E 24°51'52", 161 m, 2♀, 6.VI.2020, leg. VG); ST (Sakar Mt., NW Ustrem vill., N 42°02'01", E 26°25'33", 143 m, quarry, 1 ex., 9.VI.2020, leg. MN).
- 35. *Acinopus (Acinopus) laevigatus laevigatus* Ménétrés, 1832**  
Material: BS (Durankulak Marsh, steppified pasture, 1♀, 22.VII.1992, leg. LP, det. NK).
- 36. *Acinopus (Acinopus) picipes* (Olivier, 1795)**  
Material: BS (Durankulak Marsh, steppified pasture, 1♀2♂, 22.VII.1992, leg. LP, det. NK); DE (Srebarna Lake, 1 ex., 13.VIII.1991, leg./det. NK); BSM (Selishte vill., 1♂, 14.IX.1978, leg. IV); SPT (Struma River, 1♀, 27.VII.1981, leg. IV).
- 37. *Harpalus (Cryptophonus) litigious litigious* Dejean, 1829**  
Material: SPT (Kozhuh Mt., about 230 m, 1♂, 14.VIII.1982, leg. YG, det. B. Kataev).
- 38. *Harpalus (Cryptophonus) tenebrosus* Dejean, 1829**  
Material: BS (Veteran Hut near Varna, 9 m, 1♀, 15.VIII.1982, leg. VS, det. F. Hieke); DE (Srebarna Lake, 1♀, 20.VIII.1989, leg./det. NK); SPT (Struma River, 1♂, 27.VII.1981, leg. IV, det. F. Hieke; Kozhuh Mt., about 230 m, 2♀, 14.VIII.1982, leg. YG, det. F. Hieke); V (Cherni Vrah Peak, 2290 m, 1♂, 26.VI.1983, leg. unknown, det. O. Kryzhanovskij); RDE (Zlatograd, 1♂, 5.VIII.1982, leg. IV, det. B. Kataev).
- 39. *Harpalus (Harpalus) attenuatus* Stephens, 1828**  
Material: BS (Varna, 1♀, 15.VIII.1982, leg. VS, det. F. Hieke); DE (Srebarna Lake, 1♀, 11.IX.1989, leg. NK, det. B. Kataev); SPW (Berkovski Balkan Mts., 1♂, IX.2016–28.IV.2017, pitfall trap, leg. TT&NK); SPT (near the town of Petrich, about 150 m, 1♂, 31.V.1998, leg. AV); R (Parangalitsa Reserve, 1430 m, open habitat, 1♂, 3.VI.1981, leg./det. VP); RDW (Trigrad, 1♀, 29.VII.1982, leg. IV, det. F. Hieke).
- 40. *Harpalus (Harpalus) honestus honestus* (Duftschmid, 1812)**  
Material: SPW (Varshets, about 400 m, 1♂, 10.VIII.1989, leg. OI; N Petrohan, N 43°08'33", E 23°07'27", 1400 m, clearing, 1♀, 1.V.2018, leg. TT); SPT (Tisata Reserve, N 41°45'42", E 23°08'58", 230 m, 3♂, leg. TT, 25.IV–7.VI.2014); R (Slavovo vill., 900 m, 1♂, 5.IV.1981, Parangalitsa Reserve, 1430 m, open habitat, 1♀, 29.VIII.1981, Dobro Pole vill., 1150 m, open habitat, 1♂, 13.VII.1981, leg./det. VP); ST (SW Hlyabovo vill., N 42°03'04", E 26°13'42", 357 m, 1♂, 20.VI–20.VII.2019, leg. DD); RDE (Zlatograd, 1♀, 5.VIII.1982, leg. IV, det. unknown); RDW (Chepelare, 1♂, 5.VIII.1982, leg. IV; Trigrad, 1♀, 29.VII.1982, leg. IV, det. F. Hieke).
- 41. *Harpalus (Harpalus) rubripes* (Duftschmid, 1812)**  
Material: BS (SW Balchik, N 43°23'49", E 28°06'20", 217 m, 1♂, 20.IX–11.X.2018, pitfall trap, leg. TL); WB (NW Pancharevo, N 42°36'20", E 23°23'45", 670 m, 3♀4♂, 30.V–12.VI.2019, leg. IT); MPO (Ograzhden Mt., 1♂, 20.IV.1982, 1♀, 27.III.1984, leg. YG, det. unknown); V (Kopitoto Site, 1340 m, 1♂, 2.VI.1979, 1♂, 17.V.1980, leg./det. VP; near Bistritsa vill., N 42°36'05", E 23°22'22", 764 m, 1♀, 25.04.2019, leg. IT; N Bistritsa, N 42°36'51", E 23°21'35", 740 m, 2♀4♂, 25.IV–17.V.2019, 1♀2♂, 17.V–29.V.2019, leg. IT); R (Dobro Pole vill., 1150 m, 1♂, 31.V.1981, leg./det. VP; Parangalitsa Reserve, above 1400 m, 1♂, 23.V.1982, leg. IV; S Samokov, Mala Tsarkva vill., N 45°15'14", E 23°30'44", 1203 m, 1♀, 30.VI–7.VII.2020, leg. IT); T (W Katunitsa vill., N 42°06'14", E 24°51'52", 161 m, 1♀, 6.VI.2020, leg. VG); RDW (Trigrad, 1♂, 29.VII.1982, leg. IV, det. F. Hieke; Dobra Voda Hut, N 42°04'22", E 24°14'54", 730 m, 1♂, 8.VII.1983, leg. D. Dimitrova).
- 42. *Harpalus (Harpalus) rufipalpis rufipalpis* Sturm, 1818**  
Material: V (Kopitoto Site, 1340 m, 1♂, 24.VI.1979, 1♂, 7.VIII.1979, leg./det. VP, 1♂, 28.VII.1979, leg. VP, det. F. Hieke); R ("Rila planina", 1♂, 28.IV.1980, leg. IV; Parangalitsa Reserve, above 1400 m, 1♂, 23.V.1982, leg. IV, det. F. Hieke; Parangalitsa Reserve, 1430 m, open habitat, 1♀2♂, 26.VII.1980, 1♂, 30.VI.1981, leg./det. VP); P (near Rozhen vill., 1500 m, 1♂, 6.VIII.1982, leg. YG, det. H. Freude); RDW (Dobra Voda Hut, N 42°04'22", E 24°14'54", 730 m, 1♂, 18.VII.1983, leg. T. Dekova).
- 43. *Harpalus (Harpalus) sulphuripes sulphuripes* Germar, 1824**  
Material: R (Bistritsa vill., Brakadantsi hamlet, 710 m, 1♀, 12.X.1980, leg. VP, det. B. Kataev).
- 44. *Harpalus (Harpalus) atratus* Latreille, 1804**  
Material: PRW (Reselets vill., about 300 m, 1♂, 20.VII.1989, leg./det. NK); SGS (Koprivshitsa, N 42°38'25", E 24°21'23", 1020 m, 1♂, 18.VIII.2016, leg. TT); V (Dragalevtitsa vill., near the cable car station, 1♀, 27.VII.1979, leg./det. VP; Tihya Kat Motel, N 42°38'18", E 23°13'03", 1050 m, 1♂, 29.III.1980, leg./det. VP); PL (Planshtitsa River, N 42°33'15", E 23°27'81", 724 m, 1♂, 24.V.2012, leg. MN); R (Bistritsa vill., 540 m, 1♀, 13.VIII.1981, leg./det. VP); RDW (N Grashtitsa hamlet, N 41°39'16", E 24°37'21", 1476 m, 1♂, 6.V.2018, leg. TT; Grashtitsa hamlet, N 41°39'05", E 24°37'04", 1340 m, 1♀, 30.VI.2018, leg. TT).

**45. *Harpalus (Harpalus) laevipes* Zetterstedt, 1828**

Material: V (Kopitoto Site, 1340 m, 1♂, 24.VI.1979, leg. VP, det. F. Hieke); R (Parangalitsa Reserve, above 1400 m, 1♀1♂, 23.V.1982, leg. IV, det. H. Freude & F. Hieke).

**46. *Harpalus (Harpalus) flavicornis flavicornis* Dejean, 1829**

Material: DE (Srebarna Lake, 1♀, 15.VI.1989, leg. NK, det. B. Kataev)

**47. *Harpalus (Harpalus) serripes serripes* (Quensel, 1806)**

Material: OP (Osogovo, 1♂, 2.V.1982, leg. NA, det. F. Hieke); BSM (Bachinovo vill., 430 m, shaded habitat, 1♂, 30.VIII.1981, leg./det. VP); SPT (near Petrich, about 150 m, 3♂, 31.V.1998, leg. AV; Tisata Reserve, N 41°45'42", E 23°08'58", 230 m, 2♂, 25.IV-7.VI.2014, leg. TT); L (ridge above Vladaya vill., 1♂, 24.III.1979, leg./det. VP); V ("Vitosha", 1♂, 10.V.1989, leg./det. NK); R (Parangalitsa Reserve, above 1400 m, 1♀1♂, 26.VII.1980, leg. IV, det. F. Hieke; Sestrimo vill., 1♂, 24.IV.1983, leg. YG, det. B. Kataev); T (Yagodovo vill., N 42°06'38", E 24°51'04", 159 m, house yard, 1♂, 18.V.2020, 1♀, 16.VI.2020, leg. VG; S Yagodovo vill., N 42°05'59", E 24°50'53", 164 m, 1♀, 2.VI.2020, leg. VG); RDE (Zlatograd, about 500 m, 1♂, 5.VIII.1982, leg. IV, det. B. Kataev).

**48. *Harpalus (Harpalus) triseriatus triseriatus* A. Fleischer, 1897**

Material: MPO (Ograzhden Mts., 1♂, 22.IV.1981, leg. IV, det. unknown); R (Skakavitsa Hut, about 1870 m, 1♂, 8.IV.1983, leg. IV, det. B. Kataev).

**49. *Harpalus (Harpalus) picipennis* (Duftschmid, 1812)**

Material: BS (Varna, 1♂, 30.VIII.1980, leg. IV, det. H. Freude).

**50. *Harpalus (Harpalus) pumilus* Sturm, 1818**

Material: PRW (Reselets vill., 1♀, 16.VII.1982, leg./det. IV); R (Bistritsa vill., Brakadantsi hamlet, 710 m, near river, 1♂, 29.III.1981, leg. VP, det. B. Kataev); T (Stamboliyski, about 200 m, 1♂, 20.VIII.1980, leg. IV, det. F. Hieke).

**51. *Harpalus (Harpalus) anxius* (Duftschmid, 1812)**

Material: BSM (Selishte vill., about 515 m, 1♂, 14.IX.1978, leg. IV, det. unknown); R (Belovo, 1♂, 6.IV.1980, leg. IV, det. H. Freude; Bistritsa vill., about 540 m, 1♂, 13.III.1981, leg./det. VP); RDE (Ada Tepe Hills, meadow, 1♀, VI-VIII.2006, leg. NK).

**52. *Harpalus (Harpalus) subcylindricus* Dejean, 1829**

Material: BSM (Selishte vill., about 515 m, leg. IV, 1♂, 18.III.1979, det. B. Kataev, 1♀1♂, 14.IX.1978, det. unknown); V ("Vitosha", 1♂, 11.IX.1989, leg./det. NK); R (Slavovo vill., 900 m, open habitat, 1♂, 12.VII.1981, leg./det. VP); P (Bansko, 1♀, 18.VII.1982, leg. IV).

**53. *Harpalus (Harpalus) froelichi* Sturm, 1818**

Material: BS (Veteran Hut near Varna, 9 m, 1♂, 5.VIII.1982, leg. VS, det. F. Hieke); PRW (Reselets vill., about 300 m, 1♂, 18.VII.1981, leg. IV, det. F. Hieke); SPT (Kozhuh Mt., about 230 m, 1♀3♂, 14.VIII.1982, leg. YG, det. F. Hieke).

**54. *Harpalus (Harpalus) latus* (Linnaeus, 1758)**

Material: P (Bansko, 1♂, 18.VII.1982, leg. IV, det. F. Hieke; near Rozhen vill., 1500 m, 1♂, 2.VIII.1982, leg. YG, det. O. Kryzhanovskij); RDW (NE Grashtitsa hamlet, N 41°39'15", E 24°37'25", 1483 m, 1♂, 15.VI.2020, leg. TT).

**55. *Harpalus (Harpalus) tardus* (Panzer, 1796)**

Material: BS (Goritsa vill., 1♂, 9.VI.1993, leg. OI, det. unknown); SPE (Aytos, 1♀, 7.IX.1997, leg. OI, det. unknown); MPO (Ograzhden, 1♂, 20.IV.1982, leg. YG, det. F. Hieke); SPT (near the town of Petrich, about 150 m, 1♀, 31.V.1998,

leg. AV); RDE (Krumovgrad, N 41°28'15", E 25°39'41", 265 m, 1 ex., 18.VI.2019, leg. TT).

**56. *Harpalus (Harpalus) smaragdinus* (Duftschmid, 1812)**

Material: DE (Srebarna Lake, 2♂, 7.IX.1989, leg./det. NK); BSM (Selishte vill., about 515 m, 1♂, 14.IX.1978, 1♂, 18.III.1979, leg. IV, det. unknown); R (Parangalitsa Reserve, above 1400 m, 1♂, 26.VII.1980, leg. IV, det. F. Hieke; Bistritsa vill., Brakadantsi hamlet, 710 m, open habitat, 1♂, 12.VII.1981, 1♀, 18.IX.1981, 1♀, 3.X.1981, leg./det. VP); P (Bansko, 1♂, 10.VII.1982, leg. SS, det. B. Kataev, 1♂, 18.VII.1982, leg. IV, det. unknown).

**57. *Harpalus (Harpalus) autumnalis* (Duftschmid, 1812)**

Material: K (Razhdavitsa vill., about 500 m, 1♂, 6.VII.1984, leg./det. VS); BSM (Bachinovo vill., 430 m, 1♂, 13.X.1980, leg./det. VP); SPT (Kresna Gorge, 1♀, 20.VII.1982, leg. YG, det. F. Hieke); R (Bistritsa vill., Brakadantsi Bridge, 710 m, open habitat, 1♀, 16.VI.1981, leg./det. VP); P (Bansko, about 950 m, 1♀, 10.VII.1981, leg. SS, 1♂, 18.VII.1981, leg. IV, det. F. Hieke).

**58. *Harpalus (Harpalus) caspius* (Steven, 1806)**

Material: PRW (Hubavene vill., about 270 m, 1♂, 16.V.1981, leg. IV, det. O. Kryzhanovskij); V (Tihya Kat Motel, N 42°38'18", E 23°13'03", 1050 m, 1♀, 5.IV.1979, 1♂, 16.IV.1980, leg./det. VP; N Bistritsa, N 42°36'51", E 23°21'35", 740 m, 2♀2♂, 25.IV-17.V.2019, leg. IT); RDW (Besaparski Ridove Hills, S Sinitovo vill., N 42°07'39", E 24°22'38", 322 m, 1♀, 28.IV-29.V.2020, 1♀, 29.V-22.VI.2020, leg. TL).

**59. *Harpalus (Harpalus) dimidiatus* (P. Rossi, 1790)**

Material: L (Dragichevo vill., about 750 m, 1♂, 30.VIII.1982, leg. IV, det. unknown); ST (Svilengrad, 3♀, 5.V.1982, leg. IV, det. W. Heintz); S (Voden vill., 1♂, 14.IV.1982, leg. IV, det. B. Kataev).

**60. *Harpalus (Harpalus) pygmaeus* Dejean, 1829**

Material: BS (SW Balchik, N 43°23'49", E 28°06'06", 218 m, 1♀, 17.IV-10.V.2018, pitfall traps, leg. TL); BSM (Selishte vill., about 515 m, 1♂, 24.VIII.1980, leg. IV, det. F. Hieke).

**61. *Harpalus (Harpalus) hospes hospes* Sturm, 1818**

Material: BS (SW Balchik, N 43°23'49", E 28°06'06", 218 m, 1♀, 17.IV-10.V.2018, pitfall traps, leg. TL).

**62. *Harpalus (Harpalus) affinis* (Schrank, 1781)**

Material: DE (Srebarna Lake, 1♂, 11.IX.1989, leg./det. NK); K (Golo Bardo Mt., about 1000 m, 1♂, 6.IV.1983, leg. YG, det. unknown); V (Kopitoto Site, 1340 m, 1♀, 16.IV.1980, leg./det. VP); R ("Rila planina", 1♀, 28.IV.1980, Parangalitsa Reserve, above 1400 m, 1♂, 23.V.1982, leg. IV, det. O. Kryzhanovskij); P (Bansko, 1♂, 18.VII.1982, leg. IV, det. F. Hieke); ST (Sakar Mt., NW Ustrem vill., N 42°02'01", E 26°25'33", 143 m, quarry, 1♀, 9.VI.2020, leg. MN); RDE (Zlatograd, 1♂, 5.VIII.1982, leg. IV, det. unknown); RDW (Trigrad, about 1250 m, 1♀, 29.VII.1982, leg. IV, det. unknown).

**63. *Harpalus (Harpalus) distinguendus* (Duftschmid, 1812)**

Material: DE (S Vetren vill., N 44°06'00", E 27°02'09", 112 m, 1♀, 30.IX.2014, leg. TL); PRW (Reselets vill., about 300 m, 1♀, 20.VII.1989, leg./det. NK); K (Golo Bardo Mt., about 1000 m, 1♂, 6.IV.1983, leg. YG, det. unknown); SPT (Kozhuh Mt., about 230 m, 1♀, 8.III.1983, leg. YG, det. F. Hieke); L (Dragichevo vill., about 750 m, 1♀2♂, 30.VIII.1982, leg. IV, det. unknown); V (Vitosha Mts., 1♂, 7.VI.1989, leg. NK, det. B. Kataev, 1♂, 3.IV.1982, leg. IV, det. unknown); R (Bistritsa vill., 1♂ 3.V.1980, leg. IV, det. F.

- Hieke; Slavovo, 900 m, open habitat, 1♀1♂, 30.IV.1981, leg./det. VP); P (Rozhen vill., 1♀1♂, 27.IV.1983, leg. IV, det. unknown).
- 64. *Harpalus (Harpalus) saxicola* Dejean, 1829**  
Material: SPE (Sedlarevo vill., N 42°41'22", E 26°34'53", 460 m, 1♀, 4.V.1980, leg. IV, det. H. Freude); MPO (Ograzhden Mts., 1♂, 27.III.1984, leg. YG, det. unknown); SPT (Kozhuh Mt., about 230 m, 1♀, 23.X.1985, leg. YG, det. B. Kataev); ST (Sakar Mts., E Izvorovo vill., N 41°57'47", E 26°10'07", 450 m, 1♀, 3.VI.2014, leg. TL).
- 65. *Harpalus (Pseudophonus) calceatus* (Duftschmid, 1812)**  
Material: BS (Veteran Hut near Varna, 9 m, 1♂, 15.VIII.1982, leg. VS, det. O. Kryzhanovskij); PRW (Reselets vill., about 300 m, 1♂, 20.VI.1981, leg. IV, det. VP).
- 66. *Harpalus (Pseudophonus) griseus* (Panzer, 1796)**  
Material: BS (Veteran Hut near Varna, 9 m, 1♂, 15.VIII.1982, leg./det. VS); DE (Srebarna Lake, 1♀, 1.X.1989, leg./det. NK); PRW (Reselets vill., about 300 m, 2♀1♂, 20.VI.1981, leg. IV, det. W. Heintz & O. Kryzhanovskij); SPT (Struma River, 1♀, 27.VII.1981, leg. IV); RDW (Chepelare, 5.VIII.1982, 1♀, leg. IV, det. F. Hieke).
- 67. *Harpalus (Pseudophonus) rufipes* (DeGeer, 1774)**  
Material: BS (Chernomorets vill., N 42°26'55", E 27°38'03", 20 m, 1♀, 23.VIII.2020, leg. TT); DE (SE Petleshkovo vill., N 43°38'43", E 28°02'08", 230 m, 1♀1♂, 1.X.2016, leg. TL); PRW (Reselets vill., about 300 m, 1♀, 20.VI.1981, leg. IV, det. W. Heintz); SGI (SE German vill., N 42°36'03", E 23°26'34", 790 m, 2♀, 2.VI.1999, leg./det. NK); WB (Sofia city, N 42°38'54", E 23°24'31", 562 m, 1♂, 3.VIII.2017, leg. TT); SPT (Struma River, 3♂, 27.VII.1981, leg. IV); R (Dobro Pole vill., 1150 m, 1♀, 28.V.1981; Bistritsa vill., Brakadanski Bridge, 710 m, 1♂, 30.IV.1981, leg./det. VP); Parangalitsa Reserve, above 1400 m, 1♂, 23.V.1982, leg. IV, det. F. Hieke; Skakavitsa, meadow, 1 ex., 11.VIII.1984, leg./det. VS); RDW (Grashtitsa hamlet, N 41°39'05", E 24°37'04", 1340 m, 1♀1♂, 6.IX.2018, leg. TT).
- 68. *Harpalus (Semiophonus) signaticornis* (Duftschmid, 1812)**  
Material: SGI (SE German vill., N 42°36'03", E 23°26'34", 790 m, 1♂, 2.VI.1999, leg./det. NK); R (Bistritsa vill., 540 m, 2♂, 2.X.1981, leg./det. VP).
- 69. *Ophonus (Hesperophonus) azureus* (Fabricius, 1775)**  
Material: BS (Ahtopol, 2♀, 8.IX.1984, leg. SS, det. O. Kryzhanovskij); DE (Srebarna Reserve, N 44°05'43", E 27°04'11", 18 m, 1♂, 20.VII.2014, leg. TL); SGI (SE German vill., N 42°36'03", E 23°26'34", 790 m, 1♀, 2.VI.1999, leg./det. NK); OP (Osogovo, 1♂, 2.V.1982, leg. YG, det. O. Kryzhanovskij); MPO (Ograzhden, 1♂, 20.IV.1982, leg. YG).
- 70. *Ophonus (Hesperophonus) cribricollis* (Dejean, 1829)**  
Material: BS (Durankulak Swamp, N 43°39', E 28°33', 1 m, 1♀, 1.VII.2017, leg. TT); SPT (near Petrich, about 150 m, 1♀, 31.V.1998, leg. AV); V (N Bistritsa, N 42°36'51", E 23°21'35", 740 m, 1♂, 17.V-29.V.2019, leg. IT); R (Dobro Pole vill., 1150 m, 1♂, 22.VII.1981, leg./det. VP); RDE (NE Zornitsa vill., Studen Kladenets Dam, N 41°37'58", E 25°31'42", 307 m, 1♀, 14.V.2019, leg. MN).
- 71. *Ophonus (Hesperophonus) similis* (Dejean, 1829)**  
Material: SGI (SE German vill., N 42°36'03", E 23°26'34", 790 m, 1♀, 2.VI.1999, leg./det. NK).
- 72. *Ophonus (Hesperophonus) subquadratus* (Dejean, 1829)**  
Material: BS (Cape Maslen Nos, N 42°18'27", E 27°47'34", 15 m, at light, 1♀, 24.VIII.1997, leg. NS); DE (Srebarna Reserve, 1♀, 12.VII.1991, leg./det. NK); SGI (SE German vill., N 42°36'03", E 23°26'34", 790 m, 1♀, 2.VI.1999, leg./det. NK).
- 73. *Ophonus (Metophonus) brevicollis* (Audinet-Serville, 1821)**  
PRW (Reselets vill., about 300 m, 1♀, 20.VI.1981, leg. IV).
- 74. *Ophonus (Metophonus) laticollis* Mannerheim, 1825**  
Material: V (Kopitoto Site, 1340 m, 1♂, 28.VII.1979, det. F. Hieke, 1♀, 26.VIII.1979, leg. VP); Tihya Kat Motel, N 42°38'18", E 23°13'03", 1050 m, 1♂, 2.VI.1979, 1♂, 24.VI.1979, 1♀, 16.IV.1980, leg./det. VP); Tihya Kat Motel, near the road, 1♀, 5.IV.1979, leg. VP); R (Bistritsa vill., 542 m, shaded habitat, 2♂, 18.IV.1981, Bistritsa vill., Brakadantsi hamlet, 719 m, shaded habitat, 1♂, 16.VI.1981, 1♀, 30.VIII.1981, Bistritsa vill., Brakadanski Bridge, 710 m, near river, 1♀, 19.IV.1981, Dobro Pole vill., 1150 m, 1♂, 28.V.1981, leg./det. VP); RDW (Grashtitsa hamlet, N 41°39'05", E 24°37'04", 1340 m, 2♀, 6.IX.2018, leg. TT).
- 75. *Ophonus (Metophonus) melletii melletii* (Heer, 1837)**  
Material: WB (W Bezden vill., N 42°52'54", E 23°05'48", 558 m, 2♂, 17.VII.2016, leg. NKar).
- 76. *Ophonus (Metophonus) parallelus* (Dejean, 1829)**  
Material: WB (W Bezden vill., N 42°52'54", E 23°05'48", 558 m, 1♀, 17.VII.2016, leg. NKar).
- 77. *Ophonus (Metophonus) puncticeps* Stephens, 1828**  
Material: BS (Chernomorets vill., N 42°26'55", E 27°38'03", 20 m, 1♀1♂, 23.VIII.2020, leg. TT); PRW (Reselets vill., about 300 m, 1♀, 20.VI.1981, leg. IV, det. E. Kirschenhofer); SGI (SE German vill., N 42°36'03", E 23°26'34", 790 m, 1♂, 2.VI.1999, leg./det. NK); WB (W Bezden vill., N 42°52'54", E 23°05'48", 558 m, 1♀, 17.VII.2016, leg. NKar); BSM (Bachinovno vill., 430 m, shaded habitat, 1♀, 30.VIII.1981, leg./det. VP); R (Bistritsa vill., 542 m, shaded habitat, 1♀, 1.V.1981, Bistritsa vill., 540 m, 1♂, 13.VIII.1982, Bistritsa vill., Brakadanski Bridge, 710 m, open habitat, 1♂, 19.IV.1981, Dobro Pole vill., 1150 m, 1♀, 17.IV.1981, leg./det. VP).
- 78. *Ophonus (Metophonus) puncticollis* (Paykull, 1798)**  
Material: PRW (Reselets vill., about 300 m, 1♂, 10.VII.1978, leg. IV, det. O. Kryzhanovskij); R (Bistritsa vill., Brakadanski Bridge, 710 m, 1♀, 19.IV.1981, 1♂, 30.IV.1981, Dobro Pole vill., 1150 m, 1♀1♂, 30.IV.1981, leg./det. VP).
- 79. *Ophonus (Metophonus) rufibarbis* (Fabricius, 1792)**  
Material: BS (Cape Maslen Nos, N 42°18'27", E 27°47'34", 15 m, at light, 1♀, 24.VIII.1997, leg. NS); PRW (Reselets vill., about 300 m, 1♀, 20.VI.1981, leg. IV, det. O. Kryzhanovskij); WB (W Bezden vill., N 42°52'54", E 23°05'48", 558 m, 1♀, 17.VII.2016, leg. NKar); K (near Razhdavitsa vill., about 500 m, forest, 1♀, 6.VII.1984, leg./det. VS).
- 80. *Ophonus (Metophonus) rupicola* (Sturm, 1818)**  
Material: BS (Ahtopol, 2♀2♂, 8.IX.1984, leg. SS, det. O. Kryzhanovskij); SGI (SE German vill., N 42°36'03", E 23°26'34", 790 m, 1♀, 2.VI.1999, leg./det. NK); V ("Vitosha", 1♀, 15.IV.1986, leg. unknown, det. O. Kryzhanovskij).
- 81. *Ophonus (Metophonus) schaubergerianus* (Puel, 1937)**  
Material: R (Dobro Pole vill., 1150 m, open habitat, 1♂, 17.IV.1981, leg. VP); P (Bansko, 1♂, 18.VII.1981, leg. IV, det. O. Kryzhanovskij); RDW (Grashtitsa hamlet, N 41°39'05", E 24°37'04", 1340 m, 1♀, 6.IX.2018, leg. TT).

**82. *Ophonus (Ophonus) diffinis* (Dejean, 1829)**

Material: SGI (SE German vill., N 42°36'03", E 23°26'34", 790 m, 2♂1♀, 2.VI.1999, leg. NK).

**83. *Ophonus (Ophonus) sabulicola* (Panzer, 1796)**

Material: PRW (Reselets vill., about 300 m, 1♂, 20.VI.1981, leg. IV, det. O. Kryzhanovskij); WB (W Bezden vill., N 42°52'54", E 23°05'48", 558 m, 1♀1♂, 17.VII.2016, leg. NKar); BSM (Selishte vill., about 515 m, 2♂, 14.IX.1978, 1♀, 24.VIII.1980, leg. IV).

**84. *Parophonus (Parophonus) dejeani* (Csiki, 1932)**

Material: DE (Srebarna Reserve, 1♂, 10.II.1989, leg. NK, det. B. Kataev).

**85. *Parophonus (Parophonus) planicollis* (Dejean, 1829)**

Material: SPT (Kozhuh Mt., about 230 m, 1♂, 17.VII.1982, leg. YG).

**86. *Acupalpus (Acupalpus) luteatus* (Duftschmid, 1812)**

Material: BS (Durankulak beach, N 40°40'40", E 28°33'50", 0 m, 1♂, 30.VI.2017, leg. TT).

**87. *Acupalpus (Acupalpus) meridianus* (Linnaeus, 1761)**

Material: DE (Srebarna Reserve, 1 ex., 1989, leg./det. NK).

**88. *Bradycellus (Bradycellus) caucasicus* (Chaudoir, 1846)**

Material: SPW (Berkovski Balkan Mts., 1♀, IX.2016–28.IV.2017, pitfall trap, leg. TT&NK); R (Bistritsa vill., 540 m, 1♀, 30.III.1981, Parangalitsa Reserve, above 1400 m, near river, 1♂, 15.X.1981, Dobro Pole vill., 1150 m, open habitat, 1♂, 28.III.1981, 2♂, 17.IV.1981, leg./det. VP).

**89. *Stenolophus (Egadroma) marginatus* Dejean, 1829**

Material: MPO (Ograzhden Mts., near Lebnitsa vill., about 200 m, 2♀, 23.V.1984, leg. VP, det. O. Kryzhanovskij); SPT (Kozhuh Mt., about 230 m, 1 ex., 14.VIII.1982, leg. YG).

**90. *Stenolophus (Stenolophus) abdominalis persicus* Man-nerheim, 1844**

Material: DE (Srebarna Reserve, N 44°06'25", E 27°03'37", 11 m, 1♀, 18.VII.2014, leg. TL).

**91. *Stenolophus (Stenolophus) discophorus* (Fischer von Waldheim, 1823)**

Material: BS (Durankulak Marsh, 0 m, sea shore, under stones, 1♀, 23.VII.1992, leg. LP, det. NK); SPT (Kozhuh Mt., about 230 m, 1♂, 14.VIII.1982, leg. YG, det. F. Hieke).

**92. *Stenolophus (Stenolophus) skrimshiranus* Stephens, 1828**

Material: PRW (Reselets vill., 1♀, 16.VII.1982, leg. IV, det. O. Kryzhanovskij).

**93. *Stenolophus (Stenolophus) teutonius* (Schrank, 1781)**

Material: DE (Srebarna Lake, 3♀, 10.IV.1989, leg./det. NK); PRW (Hubavene vill., about 300 m, 1♀, 19.V.1979, leg. IV, det. F. Hieke); BSM (Bachinovo vill., 430 m, shaded habitat, 1♀, 18.IV.1981, leg./det. VP); SPT (Kozhuh Mt., about 230 m, 1♂, 3.III.1982, leg. YG, det. F. Hieke); V ("Vitosha, O. blato", 1♀, 15.IV.1996, leg. IV, det. F. Hieke); R (Slavovo vill., 900 m, 1♀, 1.XI.1980, leg./det. VP); Bistritsa vill., Brakadanski Bridge, 710 m, open habitat, 1♀, 13.VIII.1981, leg. LP, det. VP); T (W Katunista vill., N 42°06'14", E 24°51'52", 161 m, 1♂, 15.VI.2020, leg. VG).

**Discussion**

Fifty-one, or more than the half of the species collected, are recorded for the first time in different zoogeographical regions of Bulgaria. Six species are new to the Western Pred-

balkan (*Amara aenea*, *Harpalus atratus*, *Dixus eremita*, *Ophonus puncticollis*, *O. sabulicola*, and *Stenolophus teutonius*). Another nine species are new for this subregion too, but are also new to the whole Predbalkan region (*Harpalus calceatus*, *H. caspius*, *H. distinguendus*, *H. griseus*, *H. froelichi*, *H. pumilus*, *Ophonus brevicollis*, *O. rufibarbis*, and *Stenolophus skrimshiranus*). *Zabrus balcanicus* is new to the Eastern Stara Planina Mts., and *Harpalus attenuatus* is new to the Western Stara Planina Mts. Four species of the genus *Ophonus* are here reported for the first time from the whole territory of the Sredna Gora Mts. (*O. diffinis*, *O. rupicola*, *O. similis*, and *O. subquadratus*). Besides them, *Ophonus azureus* and *Harpalus signaticornis* are new to the Ihtimanska Sredna Gora Mts., and *Amara consularis* and *Harpalus atratus* are new to the Sashtinska Sredna Gora Mts. *Harpalus atratus* is also new to the Plana Mt. *Ophonus parallelus* is reported here firstly for the Western Bulgaria, and *Harpalus affinis* and *H. distinguendus* – for the Kraishte region. Four harpalines are new to Maleshevska planina Mt. and Ograzhden Mt. (*Dixus eremita*, *Harpalus saxicola*, *Ophonus azureus*, and *Stenolophus marginatus*), and two are new to the Boboshevo-Simitli valley (*Acinopus picipes* and *Ophonus puncticeps*). *Harpalus litigiousus* is reported here for the first time from the Sandanski-Petrich valley. *Harpalus subcylindricus* and *Ophonus cribricollis* are new for the Vitosha Mts., and *Dixus obscurus* – for the Lyulin Mts. Carabid fauna of the Rila Mts. is enriched with seven species (*Amara lunicollis*, *Dixus obscurus*, *Harpalus rufipalpis*, *H. signaticornis*, *H. subcylindricus*, *H. sulphuripes*, and *Ophonus puncticollis*). *Harpalus rufipalpis* is new for the Pirin Mts., *Ditomis calydonius* – for the Thracian Lowland, *Amara fulvipes* and *Harpalus affinis* – for the Sakar-Tundzha region, and *Harpalus anxius* – for the Eastern Rhodope Mts.

Twenty-nine species are reported for the second time in the regions where they were currently collected. *Parophonus dejeani* was reported for the Danubian Plain only by Kodzhabashev & Penev (2006). *Ophonus puncticeps* and *Harpalus rufipes* are here reported for the second time in Western Predbalkan, after Vasilev & Necheva (1985) and Beron (2015), respectively. This is also the second report of *O. puncticeps* from the Ihtimanska Sredna Gora Mts. after Kodzhabashev & Mollov (2000), and of *Bradycellus caucasicus* from the Western Stara Planina Mts. after Jaeger (2007). *Amara ovata* and *Harpalus saxicola* were reported for the Eastern Stara Planina Mts. only by Hieke & Wrase (1988). *Ophonus azureus* was reported for the Osogovo Mts. only in 1999 (Guéorguiev 1999a, 1999b). Here are given the second records of *Harpalus rubripes*, *H. tardus* and *H. triseriatus* for the region of the Maleshevska planina Mt. and Ograzhden Mt. (after Guéorguiev & Ljubomirov 2009), and of *Harpalus smaragdinus* and *Ophonus sabulicola* for the Boboshevo-Simitli valley (after Guéorguiev & Guéorguiev 1995, and Hieke & Wrase 1988, respectively). *Amara bifrons* is reported only by Hieke & Wrase (1988) for the Sandanski-Petrich valley. Three species of the genus *Harpalus* are reported for the second time for the Lyulin Mts. – *H. dimidiatus* and *H. distinguendus* (after Guéorguiev & Guéorguiev 1995), and *H. serripes* (after Kodzhabashev & Mollov 2000). Another four are secondly reported from the Vitosha Mts. – *H. caspius* (after Hieke & Wrase 1988), *H. tenebrosus* (after Guéorguiev & Guéorguiev 1995), and *H. laevipes* and *H. serripes* (after Guéorguiev & Guéorguiev 1995 and Krusteva et al. 1995).

For the second time in Sakar-Tundzha region are reported *Harpalus saxicola* (since Guéorguiev & Guéorguiev 1995), and *Amara aenea*, *A. convexior* and *H. honestus* (after Teofilova 2017a). This is also the second record of *Harpalus tenebrosus* in the in the Eastern Rhodope Mts. (after Teofilova & Kodzhabashev 2020a), and of *H. caspius* and *H. rufipalpis* in the Western Rhodope Mts. (after Teofilova 2018, 2019b). *Carterus dama* seems recently established in the Thracian Lowland, since it was firstly found in 2018 (Teofilova, in press).

Sixty-six species have not been recorded for the given regions for more than 20 years. Guéorguiev & Guéorguiev (1995) are the last who reported: *Amara aenea* and *Harpalus tardus* for the Eastern, and *Amara lunicollis* for the Western Stara Planina Mts.; *H. autumnalis* and *Ophonus rufibarbis* for the Kraishte region (also reported the same year by Sakalian & Guéorguiev, 1995); *A. aenea*, *H. anxius*, *H. autumnalis*, *H. pygmaeus*, *H. subcylindricus*, and *Stenolophus teutonius* for the Boboshevo-Simitli valley; *Amara convexiuscula*, *Harpalus autumnalis*, *H. froelichi*, *H. saxicola*, *H. tenebrosus*, *Parophonus planicollis*, and *Stenolophus marginatus* for the Sandanski-Petrich Valley; *Amara majuscula*, *Harpalus distinguendus*, *H. rufipalpis*, *Ophonus rupicola*, *Stenolophus teutonius*, *A. equestris*, *A. montivaga*, and *H. affinis* for the Vitosha Mts., as the last three species were also reported the same year by Krusteva et al. (1995); *Amara apricaria*, *A. convexior*, *A. fulva*, *A. tibialis*, *Harpalus affinis*, *H. anxius*, *H. atratus*, *H. attenuatus*, *H. autumnalis*, *H. distinguendus*, *H. honestus*, *H. laevipes*, *H. pumilus*, *H. rubripes*, *H. rufipalpis*, *H. rufipes*, *H. serripes*, *H. smaragdinus*, *H. triseriatus*, *Ophonus cribricollis*, *O. laticollis*, *O. puncticeps*, *O. schaubergerianus*, and *Stenolophus teutonius* for the Rila Mts.; *Amara apricaria*, *A. familiaris*, *Harpalus affinis*, *H. autumnalis*, *H. distinguendus*, *H. latus*, *H. rufipalpis*, *H. smaragdinus*, *Ophonus schaubergerianus* for the Pirin Mts.; *Stenolophus teutonius* for the Thracian Lowland.

Same year, Krusteva et al. (1995) reported for the last time *Ophonus laticollis* from the Vitosha Mts. Two years later, *Zabrus balcanicus* is recorded for the last time from Pirin Mts. (Guéorguiev et al. 1997). Guéorguiev et al. (1998) are the last who reported: *Zabrus balcanicus* for the Vitosha Mts., *Z. rhodopensis* for the Rila Mts., and *Amara quenseli* and *Zabrus rhodopensis* for the Pirin Mts. This paper gives the last record of *H. serripes* in Osogovo Mts., since Guéorguiev (1999b).

Some of these newly rediscovered species are quite common in Bulgaria and their long-time absence in the given regions is probably due to the lack of more recent research (e.g. *Amara aenea*, *Harpalus distinguendus*, *H. rufipes*, and *H. tardus*). Many areas in the country are missing contemporary information about their carabid (or any) fauna. Other species are relatively rare or stenotopic and do not fall in mass collections (e.g. *Amara lunicollis*, *Stenolophus marginatus*, *Zabrus balcanicus*, and *Z. rhodopensis*).

New altitude ranges are found for eleven species (data according to Teofilova & Guéorguiev, unpublished data). New lower altitude limits are recorded for *Amara fulvipes* – 104 m a.s.l. in Balabana Reserve (known so far from 290 to 1730 m) and *Bradycellus caucasicus* – 540 m a.s.l. near Bistritsa vill. in the Rila Mts. (known so far from 1200 to 2210 m). The other nine species were expanding upwards. *Dixus obscurus* lifted from an altitude of 1250 m to 1850 m in the Rila Mts. *Harpalus signaticornis* was so far established up to 500 m, and now it is recorded from 540 m near Bistritsa vill. and from

790 m near German vill. *Harpalus tenebrosus* was so far established up to 1100 m and it is now recorded from 2290 m at Cherni Vrah Peak. *Harpalus triseriatus* is reported here from 1870 m, as it was so far known up to 1600 m. *Harpalus attenuatus* is reported here from an altitude of 1430 m while it was so far known up to 1340 m. *Harpalus litigiousus* was so far known only from the Black Sea coast up to 50 m and it is recorded here from 230 m in the Sandanski-Petrich valley. *Ophonus diffinis* was so far known from up to 204 m and it is recorded here from 790 m. The ranges of *Ophonus subquadratus* and *Amara convexiuscula* lifted in height with only 75 m and 30 m, respectively – from 715 m to 790 m for *O. subquadratus* and from 200 m to 230 m for *A. convexiuscula*. Since most of the material is relatively old, it would be speculative to predict if these new findings concern global environmental changes and reflect the respective responses of the animals, but such trends have been previously reported in Bulgaria (Teofilova 2017b).

The present study gives some novelty about the carabid fauna of Bulgaria, which although relatively well-studied, is still lacking serious and more recent research, especially in some regions or some taxa. Studied tribes, Zabrini and Harpalini, are among the best studied and the most species-rich in Bulgaria and worldwide, and they are also a main component of carabid abundance in many ecosystems, regions and surveys in Bulgaria and Europe. Despite that fact, this paper gives some new data on their distribution in Bulgaria. A more complete knowledge of the diversity of this group in the country could be revealed only after carrying out further studies in some poorly-examined regions.

**Acknowledgement.** The author is grateful to all collectors for providing specimens.

## References

- Beron, P. (2015): Cave Fauna of Bulgaria. East-West Publishing, Sofia. 434p.
- Bousquet, Y. (2012): Catalogue of Geadephaga (Coleoptera, Adephaga) of America, north of Mexico. ZooKeys 245: 1-1722.
- Guéorguiev, B.V. (1999a): Contribution to the study of the ground-beetle fauna (Coleoptera: Carabidae) of the Osogovo Mountain, Bulgaria.III. Historia Naturalis Bulgarica 10: 67-76.
- Guéorguiev, B.V. (1999b): [Faunistic, zoogeographic and ecological studies on the family Carabidae (Coleoptera) from the Osogovska Planina Mts. PhD thesis]. NMNH – BAS, Sofia. 219 p. [in Bulgarian]
- Guéorguiev, V.B., Guéorguiev, B.V. (1995): Catalogue of the ground-beetles of Bulgaria (Coleoptera: Carabidae), PENSOF Publishers, Sofia-Moscow. 279p.
- Guéorguiev, B.V., Ljubomirov, T. (2009): Coleoptera and Hymenoptera (Insecta) from Bulgarian Section of Maleshevska Planina Mountain: Study of an Until Recently Unknown Biodiversity. Acta Zoologica Bulgarica 61(3): 235-276.
- Guéorguiev, V.B., Sakalian, V.P., Guéorguiev, B.V. (1997): Biogeography of the Endemic Balkan Ground-Beetles (Coleoptera: Carabidae) in Bulgaria. PENSOF Publishers, Sofia-Moscow. 73p.
- Guéorguiev, V.B., Beshovski, V.L., Russev, B.K., Kumanski, K.P., Josifov, M.V., Sakalian, V.P. (1998): Insects of Bulgaria, Part 1: Odonata, Ephemeroptera, Plecoptera, Homoptera (Auchenorrhyncha), Heteroptera, Coleoptera, pp. 163-209. In: Meme, C. (ed.), Bulgaria's Biological Diversity: Conservation Status and Needs Assessment. Biodiversity Support Program. Washington, DC.
- Hieke, F., Wrase, D.W. (1988): Faunistik der Laufkäfer Bulgariens (Coleoptera, Carabidae). Deutsche Entomologische Zeitschrift, N. F. 35(1-3): 1-171.
- Jaeger B., (2007): Zur Synonomie und Verbreitung westpaläarktischer Arten der *Bradycellus* - Untergruppe *Bradycellus* Erichson 1837 (Coleoptera, Carabidae). Linzer Biologische Beiträge 39(1): 331-370.

- Kodzhabashev, N.D., Mollov, K.B. (2000): Faunistic and ecological studies on the carabid fauna of the open territories in the vicinity of city of Sofia. Jubilee Book of Scientific Papers, Forestry University, Sofia, pp. 291-302. [in Bulgarian, English Summary]
- Kodzhabashev, N.D., Penev, L.D. (2006): The ground beetles (Coleoptera: Carabidae) of South Dobrudzha, Bulgaria. *Acta Zoologica Bulgarica* 58(2): 147-180.
- Kostova, R. (2004): A contribution to the study of the carabid beetle fauna (Coleoptera: Carabidae) in winter wheat agrocoenoses near Sofia. *Acta Zoologica Bulgarica* 56(2): 199-204.
- Krusteva, I., Popov, V., Sakalian, V. (1995): Indirect gradient analysis of carabid (Coleoptera, Carabidae) spatial pattern on Vitosha Mountain (West Bulgaria). Third National Science Conference on Entomology, 18-20 September 1995, Sofia, pp. 55-59.
- Kryzhanovskij, O.L. (1983): [Beetles from the suborder Adephaga; fam. Rhysodidae, Trachypachidae; fam. Carabidae (introductory part and review of the fauna of the USSR)]. In: [Fauna of the USSR, Coleoptera], Vol. 1 (2). Nauka, Leningrad. 341 p. [in Russian].
- Löbl, I., Löbl, D. (eds.) (2017): Catalogue of Palaearctic Coleoptera. Archostemata-Myxophaga-Adephaga. Vol. 1. Revised and Updated Edition. Koninklijke Brill NV, Leiden. 1443 p.
- Sakalian, V.P. & Guéorguiev, B.V. (1995): Faunistic and zoogeographical studies on Carabidae (Coleoptera) in the Zemen gorge (Southwestern Bulgaria). *Acta Zoologica Bulgarica* 48: 68-76.
- Teofilova, T. (2017a): Ground beetles (Coleoptera: Carabidae) and some other invertebrates from the managed nature reserves "Dolna Topchiya" and "Balabana" (Lower valley of the river of Tundzha, Bulgaria). *Ecologia Balkanica* 9(1): 63-77.
- Teofilova, T. (2017b): New highest altitudes for some ground beetles (Coleoptera: Carabidae) from the Western Rhodope Mts. (Bulgaria). *Ecologia Balkanica* 9(2): 23-28.
- Teofilova, T.M. (2018): A contribution to the study of ground beetles (Coleoptera: Carabidae) in the Western Rhodope Mts. (Bulgaria). *Journal of BioScience and Biotechnology* 6(3): 203-209.
- Teofilova, T. (2019a): Ground beetles (Coleoptera: Carabidae) from the region of Vrachanska Planina Mts. pp. 39-58. In: Bechev, D., Georgiev, D. (eds.), Faunistic diversity of Vrachanski Balkan Nature Park. Part 2. ZooNotes, Supplement 7, Plovdiv University Press.
- Teofilova, T.M. (2019b): Errata: A contribution to the study of ground beetles (Coleoptera: Carabidae) in the Western Rhodope Mts. (Bulgaria), published in *J. BioSci. Biotech.* 2017, 6(3): 203-209. *Journal of BioScience and Biotechnology* 8(1): 39-44.
- Teofilova, T.M. (2020): Pseudomaquises in SW Bulgaria as a habitat for the ground beetles (Coleoptera: Carabidae). *Zoology and Ecology* 30(1): 27-36.
- Teofilova, T.M. (2021): Ground beetles in Bulgarian oilseed rape fields and adjacent actively grazed pastures (Coleoptera: Carabidae). *Bulgarian Journal of Agricultural Science* 27(6): in press.
- Teofilova, T.M., Kodzhabashev, N.D. (2020a): Ecological, faunistic and zoogeographical notes on the ground beetles (Coleoptera: Carabidae) from the Eastern Rhodope Mts. of Bulgaria. *Forestry Ideas* 26(1): 77-96.
- Teofilova, T.M., Kodzhabashev, N.D. (2020b): The ground beetles (Coleoptera: Carabidae) from a significant, but poorly studied region in NW Bulgaria. Part 1: Taxonomic, faunistic and zoogeographic notes. *Forestry Ideas* 26(2): 302-325.
- Vasilev, I., Necheva, V. (1985): Investigation on the carabid's fauna (Carabidae, Coleoptera) from Bulgaria. *Annuaire de l'Universite de Sofia "St. Kliment Ohridski", Faculte de Biologie* 79(1): 49-52. [in Bulgarian, English summary]