



Taxonomic Paper

New and little-known ant species (Hymenoptera, Formicidae) from Bulgaria

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Academic editor: Sebastian Salata

Received: 11 Mar 2022 | Accepted: 13 Apr 2022 | Published: 09 May 2022

Citation: Lapeva-Gjonova A, Borowiec L (2022) New and little-known ant species (Hymenoptera, Formicidae) from Bulgaria. Biodiversity Data Journal 10: e83658. <https://doi.org/10.3897/BDJ.10.e83658>

Abstract

Background

Many faunistic studies on the myrmecofauna of Bulgaria have been carried out and about 180 ant species (Hymenoptera, Formicidae) from 43 genera and six subfamilies have been discovered as a result. Although the Bulgarian ant fauna is considered to be relatively well studied, the finding of unrecorded species continues, especially amongst the rare social parasites and the species with a more southern distribution in the Balkans.

New information

The current study presents data on 11 ant species recorded for the first time in Bulgaria (*Messor hellenius* Agosti & Collingwood, 1987, *M. mcarthuri* Steiner et al., 2018, *Crematogaster ionia* Forel, 1911, *Monomorium monomorium* Bolton, 1987, *Temnothorax aeolius* (Forel, 1911), *T. cf. exilis* (form *darii* Forel, 1911), *T. finzii* (Menozzi, 1925), *T. rogeri* Emery, 1869, *Tetramorium cf. punicum*, *Plagiolepis xene* Stärccke, 1936 and *Lasius reginae* Faber, 1967), as well as new locality data on 15 rarely found species. Some of the species, such as *Hypoponera eduardi* (Forel, 1894), *Strumigenys argiola* (Emery, 1869), *Temnothorax graecus* (Forel, 1911), *Tetramorium diomedeeum* Emery, 1908, *Camponotus*

ionius Emery, 1920 and *C. tergestinus* Müller, 1921, have been known so far only from a single locality in Bulgaria.

The dataset of all records presented in this work was published separately through Global Biodiversity Information Facility (GBIF, <https://doi.org/10.15468/mngbzip>).

Keywords

ants, Bulgaria, distribution, Formicidae, new records

Introduction

Ants (family Formicidae) in Bulgaria, with about 180 reported species, represent one of the richest fauna on the Balkan Peninsula. This high number is due to the country's heterogeneous topography, proximity to large water basins and the presence of sub-Mediterranean climatic influence in the southern regions. Only Greek myrmecofauna — with at least 315 known species — outnumbers the diversity reported from Bulgaria (Salata and Borowiec 2018).

The latest catalogue of the myrmecofauna of Bulgaria (Lapeva-Gjonova et al. 2010) was prepared, based on already published data on 163 ant species. Regardless, it significantly increased the knowledge on species diversity as the previously published review listed only 111 species (Atanassov and Dlussky 1992). Since the latest catalogue was published, 33 species have been added and important progress has been made in taxonomic studies focused on the diversity of cryptic species of the genera *Lasius*, *Messor*, *Temnothorax* and *Tetramorium* (Lapeva-Gjonova and Kiran 2012, Borowiec 2014, Csősz et al. 2014, Lapeva-Gjonova et al. 2014, Csősz et al. 2015, Seifert and Csősz 2015, Seifert 2016, Seifert and Galkowski 2016, Kiran et al. 2017, Wagner et al. 2017, Csősz et al. 2018, Steiner et al. 2018, Borowiec et al. 2019, Bračko et al. 2019, Ljubomirov 2019, Lapeva-Gjonova and Ljubomirov 2020, Seifert 2020, Lapeva-Gjonova and Radchenko 2021).

The present study adds new species records of taxa that were previously not known in Bulgaria, corrects some historical identifications and reports new localities of little-known species in the country. However, the doubtful presence of some species and the unidentified ant materials collected from some genera makes the final list incomplete.

Materials and methods

The present study is based on ant materials collected during field trips to several sites, mainly in the southern regions of Bulgaria: the mountains — Strandzha, Sakar, the Eastern Rhodopes, Pirin, Belasitsa, Ograzhden and Maleshevska — as well as the Thracian Plane and Struma Valley in the period 1994–2021. However, the majority of new ant records were found in the Eastern Rhodopes. The main collection method was by hand, unless other methods, such as pitfall and tree traps, sifting, sweeping, light traps, Malaise traps, suction

sampler, were noted. The specimens were deposited in the collection of the Faculty of Biology, Sofia University (BFUS), if not otherwise specified. The following abbreviations are used for ant castes in the results: q. - queen/s, m. - male/s, w. - worker/s; for collectors: ALG – A. Lapeva-Gjonova. The dataset of all records was published separately through GBIF (Lapeva-Gjonova and Borowiec 2022).

Ponerinae

Hypoponera eduardi (Forel, 1894)

Distribution: New records: Maleshevska Mt., Dobri laki vill., 30.07.-20.08.2002, pitfall traps, 1 m., leg. T. Ljubomirov; Thracian Plane, Bodrovo vill., 03.03.2010, collected by suction sampler, 1 w., leg. ALG. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: This Mediterranean species was reported from Bulgaria just once in the region of Petrich (Atanassov and Dlussky 1992).

Proceratiinae

Proceratium melinum (Roger, 1860)

Distribution: New records: Belogradchik, 28.09.2009, 1 w., leg. P. Mitov; East Rhodopes, Kremen vill., 21.07.2009, 1 w., leg. ALG; Thracian Plane, Brestovitsa vill., 07.04.2012, sifting, 1 w., leg. R. Bekchiev. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: *Proceratium melinum* is rarely collected due to its subterranean lifestyle and small colonies, although it is widespread in the Palaearctic. It is known in Bulgaria in a small number of localities (Dobrudzha, Thracian Lowland (Svilengrad), Struma Valley (Petrich, Sandanski) and Burgas) (Forel 1892, Atanassov and Dlussky 1992, Lapeva-Gjonova et al. 2010).

Myrmicinae

Crematogaster ionia Forel, 1911

Distribution: New records: Southern Black Sea coast, near Sinemorets vill., mouth Veleka River, 16.04.2009, sifting, 2 w., leg. R. Bekchiev; near Sinemorets vill., Butamyata loc., July 2010, pitfall traps, 1 w., leg. R. Kostova; East Rhodopes, Strazhets vill., 03.05.2009, 2 w., leg. ALG; Strandzha Mt., near Slivarovo vill, Shafaryitsa loc., waterside of Rezovska River, June 2010, pitfall traps, 1 w., leg. P.

Mitov, R. Kostova, O. Sivilov. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: First record for Bulgaria. This species is known from the north-eastern Mediterranean Region.

***Crematogaster gordani* Karaman, 2008**

Distribution: New records: Southern Black Sea coast: Chernomorets, 27.07.2006, 3 m., 7 w.; same place, 31.07.2006, 1 w., leg. and det. L. Borowiec (DBET); Sinemorets, Butamyata loc., 16.04.2009, 1 q., 4 w., leg. ALG. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: *Crematogaster gordani* was described from Montenegro by Karaman (2008). Presented record from Chernomorets is the sample based on which the species was reported from Bulgaria (Borowiec 2014). The second locality also is situated on the southern Black Sea coast.

***Crematogaster lorteti* Forel, 1910**

Distribution: New records: East Rhodopes: Pastrook vill., sweeping, 2 w., leg. I. Gjonov; Strazhets vill., 05.09.2010, 4 w., leg. ALG; Kazak vill., 05.09.2010, 11 w., leg. ALG; Meden buk vill., 09.04.2013, 11 w., leg. ALG; Madzharovo, Gluhite kamani loc., 11.04.2013, 1 w., leg. ALG; Svirachi vill., 22.04.2014, 10 w., leg. ALG; Vetrushka vill., 01.06.2015, 1 w., leg. ALG; Sakar Mt., Mihalich vill., 03.05.2019, 20 w., leg. ALG; Struma Valley, Lebnitsa vill., 06.08.2019, light trap, 1 q., leg. ALG; Besapari hills, Isperihovo vill., 12.04.2021, 25 w., leg. ALG. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: This species is known from the north-eastern and eastern Mediterranean regions. The records of *Crematogaster auberti* Emery, 1869 from Struma Valley in Bulgaria (Lapeva-Gjonova 2011) should be assigned to *C. lorteti*.

***Messor hellenius* Agosti & Collingwood, 1987**

Distribution: New records: Ograzhden Mt.: Drenovo vill., 06.04.2010, 7 w., leg. ALG; Churilovo vill., 10.09.2021, 1 q., 3 w., leg. ALG; East Rhodopes: Meden buk vill., 22.02.2012, 3 w., leg. ALG (Fig. 1); Dolna Kula vill., 19.04.2012, 1 q., 3 w.; same place, 23.04.2021, 1 q., 15 w., leg. ALG; North Black Sea coast, Varna, Morska Gradina Park, 20.07.2017, 10 w., leg. ALG; Struma Valley, Lebnitsa vill., 06.08.2019, 13 w., leg. ALG (Fig. 2); Burgas District, Tranak vill., 01.01.2021, 5 w., leg. M. Mohamed; Pirin Mt., Stara Kresna vill., 11.05.2021, 12 w., leg. ALG; Southern Black Sea coast: Chernomorets, 20.07.2006, 5 w., leg. and det. L. Borowiec (DBET); Primorsko, 27.05.2011, 6 w., leg. ALG; Maslen nos cape, 04.06.2021, 20 w., leg. ALG. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).



Figure 1. [doi](#)

Messor hellenius, major lateral: dark specimen from Meden buk vill.; scale bar 1 mm.



Figure 2. [doi](#)

Messor hellenius, major lateral: pale specimen from Lebnitsa vill.; scale bar 1 mm.

Notes: First record for Bulgaria. This species is known from Greece, the western coast of Anatolia and the European part of Turkey (Salata and Borowiec 2019a, Kiran and Karaman 2020). Borowiec and Salata (2018) suggested that the previous records of *M. capitatus* (Latreille, 1798) from eastern parts of the Balkan Peninsula concern *M. hellenius*. In this regard, it is very likely that the data on *M. capitatus* from the northern Black Sea coast (Markó and Csósz 2002) refer to *M. hellenius*.

***Messor mcarthuri* Steiner et al., 2018**

Distribution: New records: Southern Black Sea coast, Rezovo vill., 09.05.2009, 1 w., leg. ALG (Fig. 3); Strandzha Mt., Malko Tarnovo, Propada loc., 27.05.2009, 1 w., leg. ALG; East Rhodopes: Zornitsa vill., 19.04.2012, 5 w., leg. ALG; Meden buk vill., 09.04.2013, 8 w., leg. ALG; Gorni Glavanak vill., 01.05.2016, 6 w., leg. ALG; Sakar Mt., Matochina vill., 03.05.2019, 2 w., leg. ALG; Dervent Heights, Golyam Dervent vill., 06.06.2021, 12 w., leg. ALG (Fig. 4). Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).



Figure 3. [doi](#)

Messor mcarthuri, major lateral: specimen from Rezovo vill.; scale bar 1 mm.



Figure 4. [doi](#)

Messor mcarthuri, major lateral: specimen from Golyam Dervent vill. with intermediate characters between *M. mcarthuri* and *M. hellenius*; scale bar 1 mm.

Notes: First record for Bulgaria. This is a recently described member of the *Messor structor* species group (Steiner et al. 2018), distributed in Greece and Turkey (Kiran and Karaman 2020, Borowiec et al. 2021). Specimens from the vicinity of the Medenbuk and Golyam Derwent villages have intermediate characteristics between *M. mcarthuri* and *M. hellenius*, which may indicate a possible hybridisation between these species (Fig. 4).

***Monomorium monomorium* Bolton, 1987**

Distribution: New records: Sakar Mt., Matochina vill., 30.04.2011, 2 w.; same place, 03.05.2019, 2 w., leg. ALG; East Rhodopes: Oreshino vill., 21.04.2012, 5 w., leg. ALG (Fig. 5); Medenbuk vill., 03.07.2014, 8 w., leg. ALG. All specimens were collected by a suction sampler. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).



Figure 5. [doi](#)

Monomorium monomorium, worker lateral: specimen from Oreshino vill.; scale bar 0.5 mm.

Notes: First record for Bulgaria. *Monomorium monomorium* occurs in the Mediterranean Region and it is the only outdoor-living ant species of the *Monomorium* genus in Bulgaria.

***Stenamma striatulum* Emery, 1895**

Distribution: New records: Zemen Gorge, Razhdavitsa vill. mouth of Shegava River, 09.08.2004, 4 w., leg. Y. Petrova; East Rhodopes, Kremen vill., 21.07.2009, 1 w., leg. ALG. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: This is a southern European species with a range extending to Anatolia. It was reported only from Strandzha Mountain in Bulgaria (Lapeva-Gjonova and Kiran 2012).

***Strumigenys argiola* (Emery, 1869)**

Distribution: New records: Western Predbalkan, Banitsa vill., 21.08-28.08.1994, Malaise traps, 3 m., leg. T. Ljubomirov. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: Despite the rare finding of *Strumigenys argiola*, it is widespread in Europe and North Africa. This species was reported very recently for the first time from one locality in Bulgaria (Northeast Bulgaria, SW from Balchik) (Lapeva-Gjonova and Ljubomirov 2020). The presented record supplements the knowledge on its distribution in Bulgaria.

***Temnothorax aeolius* (Forel, 1911)**

Distribution: New records: South Pirin Mt., Kalimantsi vill., 06.04.-10.05.2002, pitfall traps, 1 w.; same place, 06.08-08.09.2002, pitfall traps, 1 w., leg. M. Langourov; Struma Valley, Kamenitsa vill., 23.06-08.08.2002, pitfall traps, 1 w., leg. D. Chobanov. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: First record for Bulgaria. A rarely collected ant that is a member of the *Temnothorax graecus* species group (Salata and Borowiec 2019b). This species is known from Turkey, its type locality, as well as from Israel and the Greek islands (Borowiec and Salata 2012). It was recently recorded in Greek Thrace (Bračko et al. 2016).

***Temnothorax bulgaricus* (Forel, 1892)**

Distribution: New records: South Pirin Mt., Kalimantsi vill., 10.05.-01.06.2002, pitfall traps, 1 w., leg. M. Langourov; Struma Valley, Kamenitsa vill., 31.05-23.06.2002, tree traps, 1 w., leg. M. Langourov; East Rhodopes, Strazhets vill., 03.05.2009, 2 w., leg. ALG; Sakar Mt., Radovets vill., 30.04.2011, sweeping, 3 w., leg. I. Gjonov; East Rhodopes, Meden buk vill., 09.04.2013, 1 w., leg. ALG. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: After the description of *T. bulgaricus* from Bulgaria (Forel 1892), it has been reported from a number of places in the southern Balkans and Turkey. It was found in several thermophilous sites (Sliven, Zemen Gorge, Petrich, Asenovgrad, Obzor) in Bulgaria (Atanassov and Dlussky 1992). Here we provide additional findings as South Pirin Mt., East Rhodopes Mt. and Sakar Mt. are hitherto unknown distribution regions.

***Temnothorax cf. exilis* (form *darii* Forel, 1911)**

Distribution: New records: South Pirin Mt., Kalimantsi vill., 06.04-10.05.2002, pitfall traps, 2 w., leg. M. Langourov; East Rhodopes, Svirachi vill., 22.04.2014, 1 w., leg. ALG. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: First record for Bulgaria. This is a common Balkan form of the species belonging to the *Temnothorax exilis* group. It was described from the vicinity of Izmir in Turkey as var. *darii* (Forel 1911) and synonymised with *T. exilis* by Baroni Urbani (1971). It is likely that the Balkan population is not conspecific with true *T. exilis*, described from the vicinity of Naples in Italy. Until the situation is clarified, we will leave the name of the morphospecies as *Temnothorax* cf. *exilis* (form *darii* Forel, 1911).

***Temnothorax finzii* (Menozzi, 1925)**

Distribution: New record: South Pirin Mt., Kalimantsi vill., 06.08-08.09.2002, pitfall traps, 1 w., leg. M. Langourov (Fig. 6). Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).



Figure 6. [doi](#)

Temnothorax finzii, worker lateral: specimen from Kalimantsi vill.; scale bar 0.5 mm.

Notes: First record for Bulgaria. Extremely rarely reported species known from Italy and the Republic of North Macedonia (Bračko et al. 2014), as its presence in Anatolia is doubtful (Kiran and Karaman 2020).

***Temnothorax graecus* (Forel, 1911)**

Distribution: New record: South Pirin Mt., Kalimantsi vill., 06.04-10.05.2002, pitfall traps, 1 w., leg. M. Langourov; Struma Valley, Kamenitsa vill., 31.05-23.06.2002, tree traps, 3 w., leg. M. Langourov. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: *Temnothorax graecus* has a range restricted to Greece, the Republic of North Macedonia and Bulgaria. Prior to this study, there was only one record of this species from Bulgaria (Central Stara Planina Mts: Gabrovo) (Lapeva-Gjonova et al. 2010).

***Temnothorax rogeri* Emery, 1869**

Distribution: New record: South Pirin Mt., Kalimantsi vill., 10.05.-01.06.2002, 01-22.06.2002, 06.08-08.09.2002, pitfall traps, 8 w., leg. M. Langourov. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: First record for Bulgaria. *Temnothorax rogeri* is an eastern Mediterranean species, known from Croatia, Greece, Montenegro and Turkish Thrace (Borowiec and Salata 2018, Kiran and Karaman 2020). Recently, it was recorded in Slovakia, but most likely this record is based on an introduced specimen (Klesniaková et al. 2018). Morphologically, it is very close to *T. recedens* (Nylander, 1856), which is known from the southern regions and the Black Sea coast in Bulgaria (Atanasov and Dlussky 1992, Lapeva-Gjonova et al. 2010) .

***Tetramorium diomedea* Emery, 1908**

Distribution: New records: Struma Valley, Kamenitsa vill., tree traps, 31.05-23.06.2002, 2 w., leg. M. Langourov; East Rhodopes, Meden buk vill., 04.05.2009, 2 q., leg. ALG; South Black Sea coast: Silistar, 28.04.2011, 10 w., leg. ALG; Primorsko, Maslen Nos cape, 25.06.2014, 7 q., 7 m., 10 w., leg. ALG. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: *Tetramorium diomedea* has east Mediterranean distribution—from Italy to the Anatolian part of Turkey (Salata et al. 2020). Prior to this study, *T. diomedea* was reported from Bulgaria just once from Ahtopol (Southern Black Sea coast) (Csősz and Schulz 2010).

Tetramorium cf. punicum

Distribution: New record: East Rhodopes, Meden buk vill., 22.04.2021, 12 w., leg. ALG. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: At least three morphospecies close to *Tetramorium punicum* (Smith, 1861), described from Israel, have been distinguished in the southern Balkans and the Greek islands. Accurate identification of this species complex requires the study of sexual castes. As our material consists only of workers, the species-level determination is not possible.

Formicinae

***Camponotus ionius* Emery, 1920**

Distribution: New record: Struma Valley, Kamenitsa vill., 31.05.-03.06.2002, pitfall traps, 3 w., leg. M. Langourov. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: The only published record comes from the hill of Kozhuh, situated not far from the new locality. As noted by Borowiec and Salata (2018), this species is widespread in the Balkans and Turkey.

***Camponotus oertzeni* Forel, 1889**

Distribution: North Black Sea coast, Cape Kaliakra, 23.06.2008, 6 w., leg. ALG; East Rhodopes, Strazhets vill., 03.05.2009, 2 w., leg. ALG; Gaberovo vill., 10.04.2013, 7 w., leg. ALG; Oreshari vill., 22.04.2014, 15 w., leg. ALG; Meden buk vill., 22.04.2021, 10 w., leg. ALG; Maleshevska Mt., Gorna Breznitsa vill., 27.03.2012, 1 q., 10 w., leg. ALG; Pirin Mt., Vlahi vill., 27.03.2012, 15 w., leg. ALG; Stara Kresna vill., 06.05.2013, 20 w., leg. ALG; Slavyanka Mt., Goleshovo vill., 04.05.2013, 7 w., leg. ALG. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: *Camponotus oertzeni* is known from Greece, Serbia, Iran and Turkey (Borowiec and Salata 2018) and its first published record from Bulgaria was given under the name *C. pilicornis* (Roger, 1859) in Lapeva-Gjonova and Santamaria (2011).

***Camponotus tergestinus* Müller, 1921**

Distribution: New record: Strandzha Mt., Bliznak vill., Bataka loc., July 2010, pitfall traps, 1 w., leg. R. Kostova. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: *Camponotus tergestinus* is a rare arboricolous ant species, nesting in oaks. It has scattered east Mediterranean distribution—from Italy to the Anatolian part of Turkey (Markó et al. 2009, Bračko 2017). In Bulgaria, it was known from only one locality on the southern Black Sea coast (an oak forest near the village of Sinemorets) (Lapeva-Gjonova and Kiran 2012).

***Camponotus aegaeus* Emery, 1915**

Distribution: New records: East Rhodopes, Meden buk vill., 03.07.2014, 1 w.; same place, 22.04.2021, 2 w., leg. ALG; Ograzhden Mt., Drakata vill., 09.09.2021, 10 w., leg. ALG. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: This is a species from the *Camponotus kiesenwetteri* group, which occurs in Greece, Turkey, the Republic of North Macedonia and Bulgaria (Salata et al. 2019). In Bulgaria, the species was reported in two localities: Struma Valley and South Pirin Mt. (Lapeva-Gjonova 2011).

***Cataglyphis viaticoides* (André, 1881)**

Distribution: New record: East Rhodopes, Svirachi vill., 02.06.2015, 6 w., leg. ALG (Fig. 7). Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).



Figure 7. [doi](#)

Cataglyphis viaticoides, worker lateral: specimen from Svirachi vill.; scale bar 1 mm.

Notes: In the last revision of *Cataglyphis livida* complex, Salata et al. (2021) proposed *Cataglyphis viaticoides* as a senior synonym of *Cataglyphis livida bulgarica* Atanassov, 1982. It is known from few sites in East Rhodopes in Bulgaria (Atanassov and Dlussky 1992) and its general distribution covers the south-eastern Balkans and Asia Minor (Salata et al. 2021).

***Formica clara* Forel, 1886**

Distribution: New records: East Rhodopes, Meden buk vill., 04.05.2009, 7 w.; same place, 22.04.2021, 3 w., leg. ALG; Southern Black Sea coast, Primorsko, Perla loc., 03.06.2021, 5 w., leg. ALG. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: Although this species has a wide range of distribution (from Europe and Anatolia to the Near East), it is limited to xerothermous grasslands at relatively low altitudes (Borowiec and Salata 2018, Seifert 2018). Only three localities are known so far for *Formica clara* in Bulgaria (Lapeva-Gjonova et al. 2010) and the Eastern Rhodopes is a new distribution area.

***Lasius reginae* Faber, 1967**

Distribution: New record: Slavyanka Mt., Goleshovo vill., 16.08.2014, 20 w. (Fig. 8) in a nest of *Lasius alienus* (Förster, 1850) located at the side of a path along the edge of a forest. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: First record for Bulgaria. This is a very rarely recorded temporary social parasite of *Lasius alienus* recorded from several European countries, as well as from Turkey and Mongolia (Aibek and Yamane 2010, Borowiec 2014). *Lasius reginae* joins *L.*

carnolicus Mayr, 1861 as the second member of the subgenus *Austrolasius* known from Bulgaria. It differs from the latter in a reduced chaetotaxy (Fig. 8).



Figure 8. [doi](#)

Lasius reginae, worker lateral: specimen from Goleshovo vill.; scale bar 1 mm.

***Plagiolepis xene* Stärcke, 1936**

Distribution: New record: East Rhodopes, Bryagovets vill., 06.04.2013, 7 q. in a nest of *Plagiolepis pygmaea* (Latreille, 1798), leg. ALG; Ograzhden Mt., Drakata vill., 09.09.2021, 6 q. in a nest of *Pl. pygmaea*, leg. ALG. Detailed occurrence data: Lapeva-Gjonova and Borowiec (2022).

Notes: First record for Bulgaria. *Plagiolepis xene* is a rare workerless inquiline in nests of *Plagiolepis pygmaea*. Its distribution range covers southern and central Europe to Anatolia.

Discussion

In the present study, 11 new species of ants are reported for the fauna of Bulgaria — *Messor hellenius*, *M. mcarthuri*, *Crematogaster ionia*, *Monomorium monomorium*, *Temnothorax aeolius*, *T. cf. exilis* form (*darii*), *T. finzii*, *T. rogeri*, *Tetramorium cf. punicum*, *Plagiolepis xene* and *Lasius reginae*. These new discoveries are added to the already known about 180 species. The number of ant species in Bulgaria is far higher than in the other Balkan countries, except Greece — most likely due to high number of endemic species known from this country.

Quite a few ant species in Bulgaria remain poorly studied due to their relatively rare detection, limited distribution or difficulties in identification. In the present study, for the first time, exact localities of *Crematogaster gordani*, previously reported for Bulgaria by Borowiec (2014), are given. New localities are added for another 14 rarely registered

species. Some of the species, such as *Hypoponera eduardi*, *Strumigenys argiola*, *Temnothorax graecus*, *Tetramorium diomedaeum*, *Camponotus tergestinus* and *C. ionius*, have been known so far only from a single locality in Bulgaria and *Stenamma striatulum* from two localities.

Almost all species included in this study, with the exception of *Lasius reginae*, are characteristic elements of southern European or eastern Mediterranean faunal complexes. This is directly related to the established localities, mainly in the southern regions of the country and the Black Sea coast, where the impact of the Mediterranean climate is more noticeable.

The two rare members of the socially parasitic species, *Lasius reginae* and *Plagiolepis xene*, were found together with their typical hosts: *Lasius alienus* and *Plagiolepis pygmaea*, respectively. Although their hosts can be common, both parasitic species are extremely rare, with *Lasius reginae* listed as vulnerable (IUCN 2022).

It is expected that future taxonomic revisions of some problematic groups of species from the southern Balkans, for example, of the genera *Aphaenogaster*, *Messor*, *Temnothorax* and *Tetramorium*, will significantly clarify the boundaries between species and will increase the knowledge of the extremely diverse fauna in this region.

Acknowledgements

This study was supported by the National Science Fund of the Republic of Bulgaria, grant No. KP-06-N-51/6 from 11.11.2021, to which we express our gratitude. We are indebted to the colleagues who have provided the ant materials included in this paper. Special thanks to Sebastian Salata and the reviewers for their suggestions for improving the manuscript.

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