

First records of three ant species (Hymenoptera: Formicidae) from Bulgaria

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Abstract

Three Mediterranean ant species – *Camponotus aegaeus* EMERY, 1915, *Camponotus gestroi* EMERY, 1878 and *Crematogaster auberti* EMERY, 1869 – were found on Bulgarian territory for the first time. The report of *Camponotus aegaeus* for Bulgaria is the first for continental Europe as well. The total number of known ant species for Bulgaria increases to more than 160.

Key words: Ants, *Camponotus*, *Crematogaster*, Formicidae, Bulgaria.

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Introduction

The ant fauna of Bulgaria has been the subject of a large number of studies and yet new species are still being reported (ANTONOVA 2009, BEZDĚČKA & BEZDĚČKOVÁ 2009). The specific geographic location of Bulgaria contributes to the richness of its myrmecofauna (nearly 160 ant species, A. Lapeva-Gjonova, V. Antonova, A. Radchenko & M. Atanasova, unpubl.), which consists of ant species that belong to a variety of zoogeographic complexes. The Mediterranean component of the Bulgarian ant fauna is represented by approximately 20 species, which constitute about 13% of the total number of species recorded for the country. The strongest Mediterranean influence in Bulgaria can be found in the valleys of Struma and Mesta rivers (Southwestern Bulgaria) but also in the Eastern Rhodope Mountains, the Thracian plains and at the Black Sea coast. The records known from these areas show a high species diversity in general. The Mediterranean influence in Southwestern Bulgaria and in particular along the Struma river valley is expressed in the presence of typical xerophilic vegetation including Mediterranean plants such as *Quercus coccifera* L., *Phyllirea latifolia* L., *Juniperus excelsa* M.B., *Pistacia terebinthus* L. and their communities. The Sub-Mediterranean flora is represented by communities of *Quercus pubescens* WILLD., *Carpinus orientalis* MILL., *Ostrya carpinifolia* SCOP., *Platanus orientalis* L., *Castanea sativa* L., and others. Results from faunistic studies of the family Formicidae in areas in Southwest Bulgaria with climatic conditions close to the Mediterranean ones, where the new ant species were recorded, can be found in the following works: ATANASSOV (1934, 1936, 1964), ATANASSOV & VASILEVA (1976), DLUSSKY & SOYUNOV (1988), SEIFERT (1988), ATANASSOV & DLUSSKIJ (1992), BUSCHINGER & DOUWES (1993), SEIFERT (1997), CSÓSZ & SEIFERT (2003), CSÓSZ & MARKÓ (2004), STEINER & al. (2005), SEIFERT (2006). Despite the considerable level of diversity characterising the myrmecofauna in these areas, new species are still being found there.

Material and methods

Materials were collected in three places in Southwest Bulgaria located nearby the following villages: Kamenitsa, Mikrevo (both Struma valley) and Kalimantsi (South Pirin Mountain). The areas around Kamenitsa and Kalimantsi are the only natural compact habitats with Sub-Mediterranean vegetation in Bulgaria where the kermes oak *Quercus coccifera* L. grows. This is the only species of evergreen oaks of the Bulgarian flora. Ants were sampled with pitfall traps. The samples from Kamenitsa and Kalimantsi were collected by M. Langurov and D. Chobanov and the materials from Mikrevo by T. Ljubomirov, all of them in 2002. Species were identified mainly according to RADCHENKO (1996, 1997), AGOSTI & COLLINGWOOD (1987) and BERNARD (1967). The specimens used are deposited in the author's collection.

Results

Camponotus aegaeus EMERY, 1915

Bulgaria: Struma valley, 2 km south of Kamenitsa (41.650° N, 23.167° E), 9. - 31.V.2002, 5 workers, 23.VI.2002 - 8.VIII.2002, 9 workers, 7. - 27.IX.2002, 13 workers, 170 - 240 m a.s.l., pitfall traps, leg. D. Chobanov and M. Langurov; South Pirin Mt., southeastern slope of Sveti Iliya hill, near Kalimantsi (41.467° N, 23.483° E), 6.VIII.2002 - 8.IX.2002, 10 workers, 8. - 28.IX.2002, 2 workers, 450 - 510 m a.s.l., pitfall traps, leg. M. Langurov; Struma valley, Mikrevo (41.626° N, 23.194° E), 25.IX.2002, 13 workers, 310 m a.s.l., pitfall traps, leg. T. Ljubomirov.

Distribution: This species has been known from the island of Rhodes and Asia Minor (RADCHENKO 1996, KIRAN & AKTAÇ 2006).

Notes: The species has been described as a subspecies of *Camponotus libanicus* ANDRÉ, 1881 but RADCHENKO (1996) raised it to species. *Camponotus aegaeus* is clearly distinguishable from *C. libanicus* by its characteristic pointed apex of petiole scale.

The finding of this species in Bulgaria is the first re-

port for continental Europe. There are no data on the ecological preferences of it.

***Camponotus gestroi* EMERY, 1878**

Bulgaria: Struma valley, 2 km south of Kamenitsa (41.650° N, 23.167° E), 31.V.2002 - 23.VI.2002, 2 workers, 23.VI.2002 - 8.VIII.2002, 3 workers, pitfall traps, leg. D. Chobanov and M. Langurov.

Distribution: Southern Europe, Northwest Africa, Asia Minor, Iraq, Middle East, Southern Transcaucasus (RADCHENKO 1996, KIRAN & AKTAÇ 2006).

Notes: Terricolous species, with a preference to dry open areas (RADCHENKO 1997). In France, BERNARD (1967) noted that *C. gestroi* can be found in oak and chestnut forests, beneath the tree bark and at the foot of tree trunks. On the island of Karpathos, COLLINGWOOD (1993) observed this species on nectar bearing plants.

***Crematogaster auberti* EMERY, 1869**

Bulgaria: Struma valley, 2 km south of Kamenitsa (41.650° N, 23.167° E), 9. - 31.V.2002, 7 workers, 23.VI.2002 - 8.VIII.2002, 12 workers, pitfall traps, leg. D. Chobanov.

Distribution: The nominate subspecies, *Crematogaster auberti auberti*, is known from different areas of the Mediterranean region. The remaining three European subspecies were reported in isolated areas: *C. auberti levithorax* FOREL, 1902 (Canary Islands), *C. auberti savinae* ZIMMERMANN, 1935 (Macedonia), and *C. auberti vogti* FOREL, 1909 (Spain) (RADCHENKO 2007).

Notes: *Crematogaster auberti* is a terricolous species, mainly nocturnal, that can be found nearly across the whole of the Mediterranean region. In France it has been found at altitudes of 0 to 1100 m a.s.l., while in Morocco, where it is rather widespread, at altitudes of 0 to 2200 m a.s.l. (BERNARD 1967). According to the latter author, this species is predominantly hygrophilous and has been found in drier areas only in the Provence. The species is omnivorous.

Discussion

Both *Camponotus* species that are new for the country's fauna – *C. aegaeus* and *C. gestroi* – are representatives of the subgenus *Myrmentoma*. Thus, there are already a total of 14 species of the genus *Camponotus* reported for the territory of Bulgaria. Ten of them were recorded by ATANASSOV & DLUSSKIJ (1992) and another two by ATANASSOV (1964) and VASSILEV & EVTIMOV (1973).

Camponotus aegaeus is the first representative of the *C. kiesenwetteri* (ROGER, 1859) group found in Bulgaria in which the body is entirely mat black, sculptured with propodeum flattened dorsally, without metanotal impression. Since identification was based on pitfall-trap catches, it was not possible to get any information about this species' colony composition and nest sites, but it seems to prefer dry, xerophyte places.

The other species, *C. gestroi*, belongs to the *C. lateralis* group and is characterised by a weak or entirely absent metanotal impression although it is also entirely black like *C. piceus* (LEACH, 1825). The dorsal and declivitous surfaces of the propodeum form a right or a relatively small obtuse rounded angle. According to RADCHENKO (1997) the centre of speciation of the *C. kiesenwetteri* group and the *C. gestroi* species complex is Anterior Asia.

The Mediterranean species *Crematogaster auberti* is the fourth representative of the genus in Bulgaria (FOREL 1892, AGOSTI & COLLINGWOOD 1987, ATANASSOV & DLUSSKIJ 1992). This species is characterised by a trapezium shaped petiole and the absence of a keel on the alitrunk in the workers, and an entirely dark brown to black body. BERNARD (1967) hypothesized that this species originates from Morocco.

All three of the above species were found along the Middle Struma valley in the region of Kamenitsa. Only *Camponotus aegaeus* was also found near Mikrevo and Kalimantsi (at the South foot of Pirin Mountain). Up to now, altogether 80 ant species have been recorded from Middle Struma valley, as stated mainly by ATANASSOV & VASILEVA (1976) and ATANASSOV & DLUSSKIJ (1992), 15 of which represent Mediterranean fauna.

It can be expected that the areas with distinct Mediterranean climate, considerably rich in species, will yield yet more ant species new to Bulgaria.

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Zusammenfassung

Drei mediterrane Ameisenarten – *Camponotus aegaeus* EMERY, 1915, *Camponotus gestroi* EMERY, 1878 und *Crematogaster auberti* EMERY, 1869 – wurden erstmals in Bulgarien festgestellt. Die Meldung von *Camponotus aegaeus* für Bulgarien ist gleichzeitig die erste für das kontinentale Europa. Die Gesamtzahl der aus Bulgarien bekannten Ameisenarten steigt auf über 160.

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