

**CONTRIBUTION TO KNOWLEDGE OF THE MYRMECOFAUNA (FORMICIDAE, HYMENOPTERA) OF BELGRADE, SERBIA. I. Z. Petrov.** *Institute of Zoology, Faculty of Biology, University of Belgrade, 11000 Belgrade, Serbia*

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“Among all the wide variety of insect life on the planet, ants are one of the few forms universally recognized” (Bolton, 1994).

The myrmecofauna of Serbia is still insufficiently investigated. Very few entomologists in the past paid attention to ants and mentioned them among other insect species. Živojinović (1950) registered 18 species of ants in the forest region of Majdanpek (Serbia). Vogrin (1955) elaborated the aculeate Hymenoptera of Yugoslavia and registered 16 species of ants in Serbia (Srem). Janković (1962) found 18 species on Mt. Kopaonik. Gradojević (1963) listed 11 species of ants for Deliblatska Peščara (Deliblato Sands, Vojvodina, Serbia).

The first data dealing only with the myrmecofauna of Serbia can be found in a paper of Petrov (1986), who registered eight genera and 12 species on Mt. Jastrebac (Serbia). Petrov and Mesaroš (1988) found 14 species from nine genera on Stara Planina Mountains (Serbia). Petrov (1992) listed 55 ant species known for Serbia by that time. Petrov and Collingwood (1993) described the new species *Formica balcanina*, which belonged to the *Formica cinerea* group and replaced *F. cinerea* on the Balkan Peninsula. The holotype was taken from Rošijana (Deliblatska Peščara - Deliblato Sands, 15 July 1987), about 70 km northeast of Belgrade. Petrov (1994) elaborated the myrmecofauna of Deliblatska Peščara and registered 32 species in its wider area. He later listed 14 more species in the myrmecofauna of Deliblatska Peščara (Petrov, 2002a). The same author (Petrov, 1995) gave a preliminary list of ants of Yugoslavia that contained 136 species, 92 of which were registered in Serbia. Collingwood and Petrov (1999) registered 17 new species in the myrmecofauna of ex-Yugoslavia and Serbia. Petrov (2000) subsequently listed 160 ant species in the myrmecofauna of Yugoslavia, 140 of which were found in Serbia. In 2001, Petrov listed 19 species of ants in the Jevremovac Botanical Garden in Belgrade (Petrov, 2001) and in 2002 he registered 75 species in the Vojvodina Province in Serbia (Petrov, 2002b). The same author (2002c) found 67 species in the myrmecofauna of the Banat Region (Vojvodina, Serbia). Finally, he gave a list of 141 species from Serbia (Petrov, 2004) and found 32 species on Mt. Kopaonik (Petrov, 2005).

Belgrade was involved in some of these investigations, but species were not specified.

In Belgrade, ants were collected in the city's wider area (Belgrade s. str., New Belgrade, Zemun, Stari Grad, Kalemegdan, Voždovac, Zvezdara, Karaburma, Dušanovac, Bežanija, Jevremovac Botanical Garden, Topčider, Košutnjak, Trešnja, Titov Gaj, Ada Ciganlija, Ada Huja, Višnjica, Barajevo, Veliki Mokri Lug, Veliko Selo, Slanci, Lipovička šuma, Jajinci, and Avala) during the period of 1998-2003. Pit-fall traps were mostly used, but ants were also collected by accidental findings and searching for potential nests.

In the course of these investigations, 78 species from four subfamilies (*Ponerinae*, *Myrmicinae*, *Dolichoderinae*, and *Formicinae*) were registered. The myrmecofauna of Belgrade is very diverse: Holarctic (*Lasius alienus*, *L. niger*, *Formica fusca*), Palearctic (*Tetramorium caespitum*, *Lasius brunneus*, *Formica cunicularia*, *Myrmica rubra*), European (*Myrmecina graminicola*, *Lasius fuliginosus*, *Formica rufibarbis*), South European (*F. balcanina*) and Eurasian (*Camponotus vagus*, *Formica pratensis*) species were found in it (Table 1). In addition, some Mediterranean species (*Aphenogaster subterranea*, *Messor capitatus*, *Crematogaster schmidtii*, *Tapinoma erraticum*, *Plagiolepis pygmaea*, *Camponotus lateralis*, *C. piceus*, *Cataglyphis hellenicus*, *C. viaticus*, *Lasius emarginatus*, *Formica gagates*) have also been registered (Stitz, 1939; Bernard, 1968; Collingwood, 1979; Seifert, 1988; Paraschivescu, 1993) (Table 1).

Ant diversity is also shown by the presence of many species living in different habitats. Some species prefer open, warm habitats (*Tetramorium caespitum*, *Tapinoma erraticum*, *Formica balcanina*, *F. cunicularia*, *F. rufibarbis*, *Polyergus rufescens*). Species preferring more covered habitats (*Myrmica rubra*, *M. sabuleti*, *Formica pratensis*) and ones that tolerate humid habitats (*Myrmica scabrinodis*, *Lasius flavus*, *L. fuliginosus*) were also found, as well as species living at the edges of woods or in woods (*Ponera coarctata*, *Aphenogaster subterranea*, *Myrmecina graminicola*, *Leptothorax nylanderii*, *Prenolepis nitens*, *Camponotus truncatus*) (Stitz, 1939; Bernard, 1968; Collingwood, 1979) (Table 1).

Among new species in the myrmecofauna of ex-

Table 1. List of ant species (Formicidae) collected in Belgrade.

Subfam.: PONERINAE	<i>Diplorhoptrum fugax</i> Latreille, 1798	<i>L. alienus</i> (Foerster, 1850)
<i>Ponera coarctata</i> (Latreille, 1802)	<i>Solenopsis monticola</i> Bernard, 1950	<i>L. brunneus</i> (Latreille, 1798)
<i>Hypoponera punctatissima</i> (Roger, 1859)	<i>S. wolffi</i> Emery, 1915	<i>L. carniolicus</i> Mayr 1861
<i>Proceratium algericum</i> Forel, 1899	<i>S. sp.</i>	<i>L. distiguendus</i> (Emery, 1916)
Subfam.: MYRMICINAE	<i>Leptothorax corticalis</i> (Sch., 1852)	<i>L. emarginatus</i> (Olivier, 1791)
<i>Myrmica bessarabica</i> Nasonov, 1889	<i>L. flavicornis</i> Emery, 1870	<i>L. flavus</i> (Fabricius, 1781)
<i>M. deplanata</i> Emery, 1921	<i>L. nylanderi</i> (Foerster, 1850)	<i>L. fuliginosus</i> (Latreille, 1798)
<i>M. lobicornis</i> Nylander, 1846	<i>L. parvulus</i> Schenck, 1852	<i>L. lasioides</i> Emery, 1869
<i>M. rubra</i> (L., 1758)	<i>L. rabaudi</i> Bondroit, 1918	<i>L. meridionalis</i> (Bondroit, 191
<i>M. ruginodis</i> Nylander, 1846	<i>L. rougeti</i> Bondroit, 1918	<i>L. mixtus</i> Nylander, 1846
<i>M. rugulosa</i> Nylander, 1849	<i>Cardiocondyla elegans</i> Emery, 1869	<i>L. niger</i> (L., 1758)
<i>M. sabuleti</i> Meinert, 1861	<i>Tetramorium caespitum</i> (L., 1758)	<i>L. umbratus</i> (Nylander, 1846)
<i>M. scabrinodis</i> Nylander, 1846	<i>T. chefteki</i> Forel, 1911	<i>L. sp.</i>
<i>M. specioides</i> Bondroit, 1918	<i>T. ferox</i> Ruzsky, 1903	<i>Camponotus dalmaticus</i> (Nyl.,
<i>M. sulcinodis</i> Nylander, 1846	<i>T. impurum</i> Foerster, 1850	<i>C. ligniperdus</i> (Latreille, 1802
<i>Stenamamma striatula</i> Emery, 1895	<i>T. lucidulum</i> Emery, 1909	<i>C. piceus</i> (Leach, 1825)
<i>Aphenogaster finzii</i> Mueller, 1913	<i>T. moravicum</i> Kratochvil, 1944	<i>C. truncatus</i> (Spinola, 1808)
<i>A. gibbosa</i> Latreille, 1798	Subfam.: DOLICHODERINAE	<i>C. vagus</i> (Scopoli, 1763)
<i>A. subterranea</i> (Latreille, 1798)	<i>Dolichoderus quadripunctatus</i> (L., 1771)	<i>Cataglyphis hellenicus</i> Emery,
<i>Messor capitatus</i> (Latreille, 1798)	<i>Liometopum microcephalum</i> (Panzer, 1798)	<i>Cataglyphis viaticus</i> (Fabriciu:
<i>M. denticulatus</i> K. Ugamski, 1927	<i>Bothriomyrmex</i> sp.	<i>Formica balcanina</i> Petrov &
<i>Pheidole pallidula</i> (Nylander, 1849)	<i>Tapinoma erraticum</i> (Latreille, 1798)	Collingwood, 1993
<i>Myrmecina graminicola</i> (Latr., 1802)	Subfam.: FORMICINAE	<i>F. cunicularia</i> Latreille, 1798
<i>Crematogaster schmidti</i> (Mayr, 1852)	<i>Plagiolepis pygmaea</i> (Latreille, 1798)	<i>F. fusca</i> L., 1758
<i>Monomorium pharaonis</i> (L., 1758)	<i>Prenolepis nitens</i> (Mayr, 1852)	<i>F. gagates</i> Latreille, 1798
<i>M. phoenicum</i> Santschi, 1927	<i>Prenolepis</i> sp.	<i>F. pratensis</i> Retzius, 1783
<i>M. sp.</i>	<i>Lasius affinis</i> Schenck, 1852	<i>F. rufibarbis</i> Fabricius, 1793
		<i>Polyergus rufescens</i>
		(Latreille, 1798)

Yugoslavia (Collingwood and Petrov, 1999), *Myrmica bessarabica* Nasonov 1889, *Myrmica deplanata* Emery 1921, *Monomorium phoenicum* Santschi 1927, *Solenopsis monticola* Bernard 1952, *Leptothorax corticalis* (Schenck) 1852, *L. rabaudi* Bondroit 1918, *L. rougeti* Bondroit 1918, *Lasius lasioides* (Emery) 1869 were registered in Belgrade.

The myrmecofauna of Belgrade is probably richer, and the list presented should only be considered a preliminary one.

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