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Short communication

**PRELIMINARY DATA ON ANTS (FORMICIDAE,  
HYMENOPTERA) OF MOUNTAIN AVALA  
(BELGRADE, SERBIA)**

IVAN Z. PETROV

Institute of Zoology, Faculty of Biology, University of Belgrade,  
11000 Belgrade, Serbia, e-mai: bipetrov@bio.bg.ac.rs

Hölldobler and Wilson's statement (1990) that "ants are everywhere, but only occasionally noticed" is confirmed in Serbia, because although "ants are all around near us", only a few entomologists, (Živojinović 1950, Vogrin 1955, Janković 1962, Gradojević 1963), have paid attention to ants in the past and mentioned some ant species among other insect species.

Many years later the first data on the myrmecofauna of Serbia were recorded by Petrov (1986, 1992, 1994, 1995, 2000, 2001, 2002a, 2002b, 2002c, 2004, 2005, 2007), Petrov & Mesaroš (1988), Petrov & Collingwood (1993), Collingwood & Petrov (1999), Petrov *et al.* (2005, 2007), and Karaman & Karaman (2003, 2007).

Serbia is a part of the Balkan Peninsula, one large refugia, and its myrmecofauna is surely rich, as confirmed by the results of Agosti & Collingwood (1987a) who registered 319 species of ants on the Balkan Peninsula. In addition, in other Balkan countries these authors found 72 ant species which are still unregistered in Serbia and 42 species which can be expected in the myrmecofauna of the Balkans. In any event, the myrmecofauna of Serbia is still insufficiently investigated. Belgrade and its surroundings were included in some papers concerning former investigations on ants by Petrov, but species were not specified.

A very popular picnic place for the citizens of Belgrade, Mt. Avala is situated just 18 km to the south of the centre of the city. It is about 511 m high and covered by evergreen and deciduous forest. Nature on Mt. Avala was placed under protection in 1859.

In multiple visits to Mt. Avala ants were collected during the period 1988-1991, and sporadically before and after that period. Ants were collected by using several hundreds of pit-fall traps. Ten pit-fall traps were put in transect at every 10<sup>th</sup> m from the beginning, 4-5 times during the season. The dimension of the pit-fall trap was 7 cm in diameter and 8 cm deep. But ants were also collected by accidental findings and by looking for potential nests. Approximately several hundreds of potential nest were checked, many stones were picked up and looked under them for ants as well as under many barks of trees. Identification was done by using adequate keys, above all those of Agosti & Collingwood (1987b). In total twenty-six species belonging to 3 subfamilies (Formicidae subfam. Myrmicinae, F. subfam. Dolichoderinae and F. subfam. Formicinae) were collected (Tab. 1).

No species from the F. subfam. Ponerinae was found, although they must be present at Mt. Avala. As well, more species from the subfamilies F. subfam. Myrmicinae, F. subfam. Dolichoderinae and F. subfam. Formicinae must exist in the myrmecofauna of Mt. Avala. All species found at Mt. Avala could have been expected, and were already known in the myrmecofauna of Serbia (previous authors and Petrov 1986, 1992, 1995, 2000, 2001, 2002a, 2002b, 2002c, Petrov & Mesaroš 1988, Petrov & Collingwood 1992).

Among registered species, *Lasius lasioides*, found on Mt. Avala, (Tab. 1) (det. C. A. Collingwood 1997) was one of 17 new species registered in the myrmecofauna of Yugoslavia (Collingwood and Petrov 1999), and thus in Serbia too. In Belgrade this species was also found at Dedinje, (April 1993, det. C. A. Collingwood, unpubl. data). This is a fugitive woodland species like *L. alienus*. Its head shape and completely decumbent pubescence and the infusate wings of the queen place it near *L. brunneus*. It was redescribed and restored from synonymy by Seifert (1992). The species occurs through southern Europe from Portugal to Italy.

In the myrmecofauna of Mt. Avala some Holarctic (*Lasius alienus*, *L. niger*), Palearctic (*Tetramorium caespitum*, *Lasius brunneus*, *L. flavus*, *Formica cunicularia*, *Myrmica rubra*), European (*Lasius mixtus*, *Formica rufibarbis*), south European (*Cardiocondyla elegans*, *Lasius meridionalis*, *Formica balcanina*) and Euroasian (*Liometopum microcephalum*, *Formica pratensis*) species were found (Tab. 1). In addition, some Mediterranean species (*Messor denticulatus*, *Pheidole pallidula*, *Lasius emarginatus*)

(Stitz 1939, Bernard 1968, Collingwood 1979, Seifert 1988, Paraschivescu 1993) were registered too (Tab. 1).

Table 1. - List of ants collected at Mt. Avala.

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Subfam. MYRMICINAE

- Myrmica rubra* (Linneaus) 1758  
*Messor denticulatus* K. Uganski 1927  
*Pheidole pallidula* (Nylander) 1849  
*Solenopsis* sp.  
*Cardiocondyla elegans* Emery 1869  
*Tetramorium caespitum* (Linneaus) 1758  
*T. chefteki* Forel 1911  
*T. impurum* Foerster 1850  
*T. lucidulum* Emery 1909

Subfam. DOLICHODERINAE

- Liometopum microcephalum* (Panzer) 1798

Subfam. FORMICINAE

- Prenolepis* sp.  
*Lasius alienus* (Foerster) 1850  
*L. brunneus* (Latreille) 1798  
*L. carniolicus* Mayr 1861  
*L. distiguendus* Emery 1916  
*L. emarginatus* (Olivier) 1791  
*L. flavus* (F.) 1781  
*L. lasioides* (Emery) 1869  
*L. meridionalis* (Bondroit) 1919  
*L. mixtus* (Nylander) 1846  
*L. niger* (Linneaus) 1758  
*Formica balcanina* Petrov et Collingwood 1993  
*F. cunicularia* Latreille 1798  
*F. pratensis* Retzius 1783  
*F. rufibarbis* Fabricius 1793
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Mt. Avala is a forestry region, but different habitats are present there and ant diversity is shown by the species living in those different habitats. Namely, there are open warm habitats which species preferring such habitats inhabit (*Tetramorium caespitum*, *Formica balcanina*, *F. cunicularia*, *F. rufibarbis*). Species preferring more covered habitats (*Myrmica rubra*, *Formica pratensis*), and species that tolerate humid habitats (*Lasius flavus*) were also found (Tab. 1). Although species such as *Ponera coarctata*, *Aphenogaster subterranea*, *Myrmecina graminicola*, *Leptotho-*

*rax nylanderii*, *Prenolepis nitens*, *Camponotus truncatus* that tolerate living at the edges of woods or in woods (Stitz 1939, Bernard 1968, Collingwood 1979) were not found, they must be present in the myrmecofauna of Mt. Avala.

To get complete information about the myrmecofauna of this area, more intensive investigations and collecting of ants are demanded, especially since the myrmecofauna of that region must be richer than presented here.

This short contribution should serve only to enlighten the current knowledge of the myrmecofauna of one more area in Serbia.

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**ПРЕТХОДНО САОПШТЕЊЕ О МРАВИМА (FORMICIDAE,  
HYMENOPTERA) АВАЛЕ (БЕОГРАД, СРБИЈА)**

ИЗВОД

Вишекратном посетом Авале, у периоду 1988-1991. године, укупно је констатовано 26 врста које припадају потфамилијама: Formicidae subfam. Murgicinae, F. subfam. Dolichoderinae и F. subfam. Formicinae. Није нађена ни једна врста из потфамилије F. subfam. Ponerinae, иако се њихово присуство на овом подручју може очекивати.

У мирмекофауни Авале, поред холарктичких, палеарктичких, европских, јужноевропских и евроазијских врста, констатоване су и неке медитеранске врсте (*Messor denticulatus*, *Pheidole pallidula* и *Lasius emarginatus*).