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Short communication

CONTRIBUTION TO THE MYRMECOFAUNA (HYMENOPTERA: FORMICIDAE) OF KRUŠEVAC AND ITS SURROUNDINGS

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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). However, HÖLLDOBLER & WILSON (1990) concluded that "ants are everywhere, but only occasionally noticed". Maybe that is the very fact why ants of Serbia are still insufficiently investigated.

In the past only few entomologists paid attention to the ants which they registered among other insect species.

Among 18 species of ants which ŽIVOJINOVIĆ (1950) registered in the forest region of Majdanpek (Serbia), the valid species *M. rubra* (=*Myrmica laevinodis*, det. Živojinović), *Lasius alienus*, *L. brunneus*, *Camponotus herculeanus*, *Formica glebaria, F. pratensis* were misidentified as subspecies, or *Lasius myops* and *Formica nigricans* as varieties.

VOGRIN (1955) elaborated Hymenoptera Aculeata of Yugoslavia, mostly from Croatia and the Adriatic coast,. mentioning some localities in Serbia too (Belegiš, Fruška Gora - Venac, Ruma, Slankamen, Surduk) (Srem) where he registered 16 species of ants. This author identified valid species *Leptothorax parvulus*, *L. unifasciatus*, *Tetramorium semilaeve*, *Formica glebaria* as varietas.

JANKOVIĆ (1962) mentioned 18 species of ants of grassland communities from Mt. Kopaonik (Serbia). The ants that he collected were identified by Samšinak, but in his list the valid species *Formica lemani* was identified as a subspecies.

GRADOJEVIĆ (1963) listed 11 species of ants of Deliblatska Peščara (Deliblato Sands) (Vojvodina, Serbia). This author did not mention who identified his ants and in his list species *Myrmica rubra* and *Cataglyphis aenescens* were identified as *Myrmica laevinodis* and *Myrmecocystus cursor,* respectively.

Many years later, the first real myrmecological data can be found in PETROV (1986) who registered 8 genera and 12 species from some oak-tree communities on Mt. Jastrebac (Serbia). PETROV & MESAROŠ (1988) found 9 genera and 14 species in 6 open communities of meadows and pasture-grounds of Mt. Stara Planina (Serbia). PETROV (1992) listed 55 ant species known for Serbia by that time. PETROV & COLLINGWOOD (1993) described a new species (*Formica balcanina*) which belonged to the *Formica cinerea* group and which replaced *F. cinerea* on the Balkan Penninsula. The holotype was taken from Rošijana, (Deliblatska Peščara - Deliblato sands, 15 July 1987), about 70 km northeast from Belgrade. PETROV (1994) elaborated myrmecofauna of Deliblatska Peščara and registered 32 species in its wide area. PETROV (2002a) listed 14 more species in the myrmecofauna of Deliblatska peščara. PETROV (1995) gave a preliminary list of ants of Yugoslavia recording 136 species of which 92 were registered in Serbia. COLLINGWOOD & PETROV (1999) registered 17 new species in the myrmecofauna of Yugoslavia, which means in Serbia too. PETROV (2000) listed 160 ant species in the myrmecofauna of Yugoslavia of which 140 were found in Serbia. PETROV (2001) listed 19 species of ants from the Botanical Garden "Jevremovac" in Belgrade. PETROV (2002b) found 67 species in the myrmecofauna of Banat Province (Vojvodina, Serbia). The same author (PETROV, 2002c) registered 75 species of ants in Vojvodina (Serbia). PETROV (2004) provided a list of 141 species from Serbia. KARAMAN & KARAMAN (2003) reported 42 ant species from northeastern and northwestern Serbia.

PETROV (2005) found 32 species on Mt. Kopaonik. PETROV *et al*. (2005) enriched the knowledge of myrmecofauna of Mt. Stara Planina adding 10 more species. PETROV (2007) registered 78 species in Belgrade and its surroundings. PETROV *et al.* (2007) gave a contribution to the myrmecofauna of East and South Serbia recording 38 species. KARAMAN & KARAMAN (2007) mentioned 31 species of ants from Zasavica (Srem, Serbia).

In several visits to Kruševac and its surroundings the author collected ants by accidental findings and searching for potential nests. In total 22 species belonging to three subfamilies (Myrmicinae, Dolichoderinae Formicinae) were collected (Tab. I).

Table I. List of ant species (Formicidae) of Kruševac and its surroundings.

Subfam.: Myrmicinae	Subfam.: Formicinae
Myrmica rubra (Linnaeus, 1758)	*Lasius alienus* Foerster, 1850
Aphenogaster subterranea (Latreille, 1798)	*L. carniolicus* (Mayr, 1861)
Messor barbarus (Linnaeus, 1758)	*L. fuliginosus* (Latreille, 1798)
M. capitatus (Latreille)1798	*L. niger* (Linnaeus, 1758)
M. denticulatus K. Ugamski, 1927	*L. platithorax* Seifert, 1991
M. structor (Latreille, 1798)	*Camponothus aethiops* (Latreille, 1798)
Tetramorium caespitum (Linnaeus, 1758)	*C. vagus* (Scopoli, 1763)
T. moravicum Kratochvil, 1944	*Formica balcanina* Petrov et Collingwood, 1993
Subfam.: Dolichoderinae	*F. cunicularia* (Latreille, 1798)
Dolichoderus quadripunctatus (Linnaeus, 1771)	*F. gagates* (Latreille, 1798)
Liometopum microcephalum (Panzer, 1798)	*F. pratensis* Retzius, 1783
Tapinoma erraticum (Latreille, 1798)	
T. nigerrimum (Nylander, 1886)	

No species from the subfamily Ponerinae was found although some of them must be present there. More representatives of other subfamilies are surely also present in that area.

All species found in Kruševac and its surroundings were already known in the myrmecofauna of Serbia (ŽIVOJINOVIĆ, 1950, JANKOVIĆ, 1962, GRADOJEVIĆ, 1963, PETROV, 1986, 1992, 1995, 2000, 2001, 2002a,b,c, PETROV & MESAROŠ, 1988, PETROV & COLLINGWOOD, 1992).

In the myrmecofauna of Kruševac and its surroundings some Holarctic (*Lasius alienus*, *L. niger*), Palearctic (*Myrmica rubra*, *Tetramoruium caespitum*, *Lasius carniolicus*, *L. fuliginosus*, *Formica cunicularia*, *Myrmica rubra*), South European (*Aphenogaster subterranea*, *Dolichoderus quadripunctatus*, *Tapinoma erraticum*, *Camponothus vagus*, *Formica balcanina*) and Euroasian *(Liometopum microcephalum, Formica gagates*, *F. pratensis*) species were found too (Tab. 1). In addition, some Mediterranean species *(Messor barbarus*, *M. capitatus M. denticulatus, M. structor*) were also registered (Tab. I) (STITZ, 1939; BERNARD, 1968; COLLINGWOOD, 1979; SEIFERT, 1988; PARASCHIVESCU, 1993).

In that area there can be found open warm habitats which are inhabited by species preferring such habitats (*Tetramorium caespitum*, *Formica balcanina*, *F. cunicularia*,). Species preferring more covered habitats (*Myrmica rubra*, *Formica pratensis*) were found too (Tab. I). But there must be species present that tolerate humid habitats (*Lasius flavus*, for instance) Although the species *Ponera coarctata*, *Myrmecina graminicola*, *Leptothorax nylanderi*, *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 that area too.

This was just a start to investigations of myrmecofauna of middle Serbia, but to get complete information about myrmecofauna of this area, more intensive investigations and collecting of ants are required, especially since myrmecofauna of that region must be richer than presented.

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ПРИЛОГ ПОЗНАВАЊУ МИРМЕКОФАУНЕ (FORMICIDAE, HYMENOPTERA) КРУШЕВЦА И ЊЕГОВЕ ОКОЛИНЕ

ИВАН ПЕТРОВ

Извод

У току ових истраживања констатовано је 23 врсте. Ове врсте су већ биле констатоване у мирмекофауни Србије од стране ранијих аутора (ŽIVOJINOVIĆ, 1950; JANKOVIĆ, 1962; GRADOJEVIĆ, 1963) као и од стране PETROV (1986, 1992, 1995, 2000, 2001, 2002a, 2002b, 2002c), PETROV & MESAROŠ (1988), PETROV & COLLINGWOOD (1992). Али како истраживања овог дела Србије до сада нису урађена, то је био изазов за оваква истраживања.

У мирмекофауни Крушевца и његове околине нађене су неке холарктичке врсте (*Lasius alienus*, *L. niger*), палеарктичке *(Myrmica rubra, Tetramoriun caespitum, Lasius carniolicus, L. fuliginosus*, *Formica cunicularia*, *Myrmica rubra*), јужноевропске (*Aphenogaster subterranea*, *Dlichoderus quadripunctatus*, *Tapinoma erraticum*, *Camponotus vagus*, *Formica balcanina*), и евроазијске (*Liometipum microcephalum*, *Formica gagates*, *F. pratensis* су такође нађене, али и неке медитеранске врсте (*Messor barbarus*, *M. capitatus*, *M. denticulatus*, *M. structor*) (Табела 1) (STITZ, 1939; BERNARD, 1968; COLLINGWOOD, 1979; SEIFERT, 1988; PARASCHIVESCU, 1993).

У тој области могу се наћи отворена топла станишта које насељавају врсте као што су *Tetramorium caespitum*, *Formica balcanina*, *F. cunicularia*. Налажене су и врсте које преферирају затворенија станишта (*Myrmica rubra*, *Formica pratensis*) (Табела 1). Али тамо морају бити присутне и врсте које толеришу влажна станишта као што је *Lasisus flavus* на пример.

Мада врсте *Ponera coarctata*, *Myrmecina graminicola*, *Leptothorax nylanderi*, *Prenolepis nitens*, *Camponotus truncatus*, које толеришу живот на ивицама шума и у шумама (STITZ, 1939; BERNARD, 1968; COLLINGWOOD, 1979) нису нађене, оне морају бити присутне у овој области.

Ово је био тек почетак истраживања мирмекофауне средње Србије, али за добијање комплетних резултата потребно је интензивније сакупљање и истраживање, јер сигурно је да је мирмекофауна овог подручја богатија него што је приказано.

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