

ЦРНОГОРСКА АКАДЕМИЈА НАУКА И УМЈЕТНОСТИ
ГЛАСНИК ОДЈЕЉЕЊА ПРИРОДНИХ НАУКА, 16, 2005.

ЧЕРНОГОРСКАЯ АКАДЕМИЯ НАУК И ИСКУССТВ
ГЛАСНИК ОТДЕЛЕНИЯ ЕСТЕСТВЕННЫХ НАУК, 16, 2005

THE MONTENEGRIN ACADEMY OF SCIENCES AND ARTS
GLASNIK OF THE SECTION OF NATURAL SCIENCES, 16, 2005.

UDK 595.796 (497.16)

Gordan S. Karaman, ¹ Marko G. Karaman²

NEW DATA OF MYRMECOFAUNA (HYMENOPTERA,
FORMICIDAE) FROM MONTENEGRO
(SERBIA & MONTENEGRO)

Abstract

The results of the investigations of fauna of the ants (Hymenoptera, Formicidae) from the northern part of Montenegro (Crna Gora), especially from Durmitor region, are presented, and 48 species, belonging to 15 genera and 4 subfamilies, respectively, are collected. Among them, 19 species are new for the fauna of Montenegro.

Keywords: taxonomy, Montenegro, Crna Gora, Hymenoptera, Formicidae

NOVI PODACI O FAUNI MRAVA (HYMENOPTERA,
FORMICIDAE) CRNE GORE (SRBIJA & CRNA GORA)

Izvod

Istražujući faunu mrava (Hymenoptera, Formicidae) u sjevernom dijelu Crne Gore, naročito planinskog masiva Durmitora, utvrdili smo na

¹ Montenegrin academy of sciences and arts, Podgorica. E-mail: karaman@cg.yu

² Natural History Museum of Montenegro, Podgorica. E-mail: markoka@cg.yu

tom području 48 vrsta mrava iz 15 rodova, odnosno 4 podfamilije, od kojih je 19 vrsta nova za faunu Crne Gore.

Ključne riječi: taksonomija, Montenegro, Crna Gora, Hymenoptera, Formicidae

INTRODUCTION

The fauna of Formicidae (Insecta: Hymenoptera) in Montenegro (Crna Gora) has been investigated only partially by various scientists (MÜLLER, 1923; SOUDEK, 1925, 1925a; ZIMMERMANN, 1934; VOGRIN, 1955; PETROV, 1986, 1993, 1995, 2000; AGOSTI & COLLINGWOOD, 1989; KARAMAN, M., 1998, 1999; KARAMAN et al. 1998.) mentioning mainly the localities from the southern part of Montenegro. From central and northern part of Montenegro only four species have been known: *Formica lemani* Bondroit, 1917, *Leptothorax gredleri* Mayr, 1855, *Camponotus vagus* (Scopoli, 1763), *Formica balcanina* Petrov & Collingwood, 1993 (from Durmitor Mt., PETROV 1995). For this reason, we decided to investigate the myrmecofauna of this part of Montenegro.

This paper reports the results of a study of the ant's fauna of NW part of Montenegro, and most of the investigation have been provided within the Durmitor National Park, which covers the plateau between the rivers Tara, Piva, Sušica and Komarnica. Being part of the Dinarids, Durmitor massive raising to 2522 m a.s.l. (Bobotov Kuk). Most part of investigated area lies between 1300 and 2000 m a.s.l. This large vertical extension enables existing of clear altitudinal zonation of the vegetation and corresponding diversity of ecological niches inhabiting very rich fauna.

MATERIAL AND METHODS

Myrmecofauna of Durmitor and surrounding area has been investigated during the partial realization of the Project »Fauna of Durmitor, and Fauna of Amphipoda of Montenegro of the Montenegrin academy of sciences and arts, as well as through the sporadical collections of both authors. The samples were collected mainly by G. S. Karaman, except when otherwise indicated.

Material was preserved in 70% etil alcohol and deposited in KARAMAN's collection.

RESULTS AND DISCUSION

LIST OF THE COLLECTED TAXA

Subfamilia PONERINAE

1. *Ponera coarctata* (Latreille, 1802)

Material examined: Đurđevića Tara, 22.08.1990, 1 worker.

Subfamilia MYRMICINAE

2. *Manica rubida* (Latreille, 1802)

Material examined: Barno lake, 05.07.1997., 13 workers (leg. S. Dragičević); Đurđevića Tara, about 800 m a.s.l., 07.08.1989, 1 worker, (leg. I.M. Karaman); Žabljak, 18.09.1992, , 45 workers, 1 female 2 males.

3. *Myrmica lobicornis* Nylander, 1846

Material examined: Vrela village, pine wood, 08.07.1990., 4 workers; Gornja Ališnica, Durmitor, about 2000 m a.s.l., 05.07.1992., 5 workers (leg. V. Karaman).

4. *Myrmica ruginodis* Nylander, 1846

Material examined: Aluge, in the ground, 08.07.1990., 64 workers; Aluge, beech wood; 09.07.1990., 86 workers, 3 females (1 microgyna, 5,5 mm); Tepce village, about 1100 m a.s.l., 05.08.1989., 8 workers 1 female (leg. I.M. Karaman); Žabljak, 18.09.1992., 48 workers, 3 males; Aluge, beech wood, in the stump, 09.07.1990, 3 workers; Aluge- Đurđevića Tara (Rasova), beech wood, 09.07.1990, 1 worker; Aluge, beech wood, 09.07.1990., 62 workers, 1 female; Above Šavnik, beech wood, 10.07.1990., 30 workers; Canyon of Tara river, Radovan Luka, meadow in the wood (with *M. vandeli*), 23.08.1998, 4 workers (leg. M.G. Karaman).

5. *Myrmica rugulosa* Nylander, 1849

Material examined: Canyon of Tara river, Radovan Luka, 13.08.1987., 27 workers, 19 females, 11 males, (1 microgyna, 4.0 mm); canyon of Tara river, Tepce village, meadow, 23.08.1998, 2 workers (leg. M.G. Karaman).

6. *Myrmica sabuleti* Meinert, 1861

Material examined: Vrela village, pine wood, in the ground, 08.07.1990., 42 workers; Vrela village, pine wood, 08.07.1990, 75 workers; Žabljak - Bobotov Kuk, 19.09.1992., 17 workers; Aluge vil-lage, 08.07.1990, 49 workers, 2 pupae of male; Barno lake, under the moss in the ground, 01.09.1997., 53 workers, (leg. S. Dragićević); Aluge, 08.07.1990., 16 workers; Šljivarski potok, Tara river, 12.08.1987., 2 workers.

7. *Myrmica scabrinodis* Nylander, 1846

Material examined: Aluge, in the ground, 08.07.1990, 60 workers, 1 female; Pošćenje village, 10.07.1990., 15 workers; Vrela village, 08.07.1992., 2 workers.

8. *Myrmica schencki* Viereck, 1903

Material examined: Between Aluge and Đurđevića Tara (Rasova), beech wood, 09.07.1990, 4 workers.

9. *Myrmica vandeli* Bondroit , 1919

Material examined: Canyon of Tara river, Radovan Luka, meadow in the wood (with *M. ruginodis*), 23.08.1998, 2 workers (leg. M.G. Ka-raman)

10. *Stenammina debile* (Foerster 1850)

Material examined: Đurđevića Tara, about 800 m a.s.l., 07.08.1989, 4 workers (leg. I.M. Karaman); Splavište, canyon of Tara river, 07. 08. 1989., 1 worker.

11. *Aphaenogaster subterranea* (Latreille, 1798)

Material examined: Bank of Tara river, Brštanovica, 13.08.1987., 16 workers, 25 males.

12. *Leptothorax acervorum* (Fabricius, 1793)

Material examined: Bobotov Kuk, about 2000 m a.s.l., 19.09.1992., 1 worker; Vrela village, under the bark of pine stump (with *L. melanocephalum*), 08.07.1990, 40 workers, 1 female; Šavnik, beech wood above town, in the stump, 10.07.1990, 2 workers.

13. *Leptothorax affinis* Mayr, 1855

Material examined: Poščenje village, on the plum tree, 06.07.1990, 5 workers.

14. *Leptothorax crassispinus* Karawajew, 1926

Material examined: Đurđevica Tara, about 800 m a.s.l., 07.08.1989, 2 workers; Durmitor, about 1200 m a.s.l., 25.07.1994, 24 workers.

Remarks: SEIFERT (1995) divided previous *Leptothorax nylanderi* (sensu auct.) into two distinct subspecies, *L. nylanderi nylanderi* (Foerster, 1850) for the area of Western Europe, and *L. nylanderi slavonicus*, n.ssp. for the area of Eastern Europe, with the contact zone in eastern Germany. Later some authors elevated *slavonicus* to the specific rank (SEIFERT, 1996), but RADCHENKO (2000) removed *slavonicus* to *L. crassispinus* Karawaew, 1926 as junior synonym. By this way, BRAČKO (2003) correctly considered that all former citations of *L. nylanderi* from Slovenia belong to *L. crassispinus*, and that in western part of Austria is present *L. nylanderi* s.str., and in eastern part of Austria, as well as in NE Italy, the sibling species *L. crassispinus*.

15. *Leptothorax melanocephalus* Emery, 1870

Material examined: Vrela village, under the bark of pine stump (with *L. acervorum*), 08.07.1990., 1 workers; Vrela village, pine wood, in the ground, 08.07.1990., 90 workers, 18 females, 22 males; Vrela village, 08.07.1990., 6 females, 25 workers.

Remarks: BOLTON (1995) considered this species as synonym of *L. tuberum*, but not accepted by other authors.

16. *Leptothorax gredleri* Mayr, 1855

Material examined: Aluge village, Žabljak, beech wood, on road, 09.08.1990., 4 workers.

REMARKS: PETROV (1995) mentioned this species for Durmitor also, but later in his checklist (PETROV, 2000) this locality and species

is omitted. This species is cited from Central Europe till former Yugoslavia and Greece.

17. *Leptothorax unifasciatus* (Latreille, 1798)

Material examined: Bistrica village, Tara river, 07.07.1990., 78 workers, 6 female.

18. *Tetramorium caespitum* (Linnaeus, 1758)

Material examined: Žabljak - Bobotov Kuk, 19.09.1992., 17 workers; Poščenje village, 10.07.1990, 10 workers; Gornja Vrela, 08.07.1990., 26 workers; Vrela village, Žabljak, in the stump, 08.07.1990., 70 workers; Canyon of Tara river, Radovan Luka, under the stone in the ground, 23.08.1998., 16 workers (leg. M.G. Karaman).

19. *Diplorhoptrum fugax* (Latreille, 1798)

Material examined: Vrela village, in the stump, 08.07.1990., 1 worker.

20. *Myrmecina graminicola* (Latreille, 1802)

Material examined: Tepce village, canyon of Tara river, under the moss, 24.08.1998., 16 workers, 5 females, 2 males.

21. *Crematogaster schmidtii* (Mayr, 1853)

Material examined: Durmitor, 1.08.1982., 1 worker.

Subfamilia DOLICHODERINAE

22. *Tapinoma erraticum* (Latreille, 1798)

Material examined: Aluge, in the ground, 08.07.1990, 55 workers, 1 female; *ibid.*, in the ground, 08.07.1990, 85 workers, 1 female.

Remarks: *Tapinoma nigerrimum* (Nylander, 1856) is considered as junior synonym of *T. erraticum* (ATANASOV & DLUSSKY, 1992; BOLTON, 1995). By this way, all citation of *Tapinoma nigerrimum* from Montenegro probably belongs to *T. erraticum* (Latreille, 1798).

Subfamilia FORMICINAE

23. *Lasius alienus* (Foerster, 1850)

Material examined: Vrela village, pine wood, 08.07.1990, 28 workers.

24. *Lasius brunneus* (Latreille, 1798)

Material examined: Poščenje village, on a plum tree, 06.07.1990., 29 workers; canyon of Tara river, 13.08.1987., 17 workers.

25. *Lasius citrinus* Emery, 1922

Material examined: Aluge, beech wood, 09.07.1990, 63 workers; Žabljak, 18.09.1992., 23 workers; Žabljak, wood, 18.09.1992., 23 workers, 65 males.

Remarks: This is a replacement name for the invalid taxon *Lasius affinis* (Schenck, 1852) (SEIFERT, 1990).

26. *Lasius emarginatus* (Olivier, 1798)

Material examined: Poščenje village, 10.07.1990., 11 workers; Radovan Luka, about 600 m a.s.l. under the stone in the ground, 23.08.1998., 20 workers, (leg. M.G. Karaman); Radovan Luka, outskirts, under the stone. 23.08.1998., 12 workers, 2 female (leg. M.G. Karaman).

27. *Lasius flavus* (Fabricius, 1781)

Material examined: Lake Barno jezero, on a tree, 01.09.1997., 155 workers, 4 male, 2 female pupae; Žabljak - Bobotov Kuk, 19.09.1992., 25 workers, 5 females, 4 males; *ibid.*, other nest, 19.09.1992., 58 workers, 13 females, 5 males.

28. *Lasius niger* (Linnaeus, 1758)

(figs. 3 and 4)

Material examined: Tušnja village, near Boan, on an apple tree, 06.07.1990., 1 worker; Tepca village, bank of Tara, sand ground, 13.08.1987., 13 workers; Šljivanski potok, near Tara river, 12.08.1987., 15 workers; canyon of Tara river, Splavište, 07.08.1989., 2 workers.

29. *Lasius paralienus* Seifert, 1992

Material examined: Tušnja village, Boan, on an apple tree, 06.07.1990, 19 workers; Žabljak, 18.09.1992., 17 workers, 29 male; Vrela village, in the stump, 08.07.1990., 6 workers, 6 females, 1 male.

30. *Lasius platythorax* Seifert, 1991

(figs. 2 and 5)

Material examined: Aluge, beech wood, in the stump, 09.07.1990., 23 workers; Žabljak, 18.09.1992., 10 workers; Poščenje village, on a plum tree, 06.07.1990., 78 workers; Aluge, Žabljak, beech wood, 09.08.1990., 101 workers.

Remarks: This species is sometimes hardly distinguish from *L. niger*. *L. platythorax* is characterized by presence of longer setae on the surface of dorsal part of thorax (fig.2) as well as by lower number of longer pubescens on surface of clypeus (fig.5) in compare with the same in *Lasius niger* (figs. 3 and 4).

31. *Lasius umbratus* (Nylander, 1846)

Material examined: Aluge, Žabljak, 08.07.1990., 3 workers.

32. *Camponotus herculeanus* (Linnaeus, 1758)

(fig. 6)

Material examined: Lake Zminje jezero, 11.07.1989, 1 female, 1 worker; Vrela village, 08.07.1992, 1 worker; Žabljak, 10.07.1990., 2 females; Vrela village, Žabljak, beech wood, in the stump, 08.07.1999., 30 workers; Žabljak, vicinity, 10.07.1990, 1 female.

Remarks: The first abdominal segment of females is characterized by dense pubescens on its surface (fig. 6).

33. *Camponotus ligniperda* (Latreille, 1802)

(fig. 7)

Material examined: Mojkovačka Bistrica village, canyon of Tara river, 07.07.1990., 1 worker; Aluge- Đurđevića Tara, beech wood, 09.07.1990, 2 workers, 1 female; Lake Crno jezero, bank, 11.07.1989, 3 workers, 2 females; above Vrela village, 08.07.1990, 3 workers; Vrela village, 08.07.1992, 4 workers; Aluge, 08.07.1990, 1 worker, 1 female; Mitrovac, Tara, 04.08.1989, 7 workers, 1 female; between Aluge and Đurđevića Tara, beech wood, 09.07.1990, 3 workers, 1 female; canyon of Tara river, Splavište, 07.08.1989, 10 workers; Tara river, Šljivanski potok-brook, 12.08.1987., 10 workers;

Remarks: The first abdominal segment of females is characterised by the absence of pubescence on its surface (fig. 7).

34. *Camponotus piceus* (Leach, 1825)

Material examined: Bistrica village, Tara river, 07.07.1990., 16 workers.

35. *Camponotus vagus* (Scopoli, 1763)

Material examined: Mojkovačka Bistrica village, canyon of Tara river, 07.07.1990., 2 workers; Aluge- Đurđevića Tara, 09.07.1990., 4 workers.

36. *Formica balcanina* Petrov and Collingwood, 1993

Material examined: Lever Tara, 22.08.1998., 15 workers; Bistrica village near Tara river, 07.07.1990., 22 workers.

Remarks: PETROV & COLLINGWOOD described this species from Serbia, but also mentioned from many other Balkan localities. *F. balcanina* is sibling species with *F. cinerea* Mayr 1853, differing to each other by different pilosity of genal setae, etc. *F. cinerea* is settling the central and northern part of Europe, and *F. balcanina* its southern part. By this way, probably many citations of *F. cinerea* from former Yugoslavia refer to *F. balcanina*.

But, recently SEIFERT (2002) mentioned that *F. balcanina*, despite the fact that the workers of *F. balcanina* from central Balkan have significantly higher genal setae numbers than these of Central Europe” (*L. cinerea* s. str.), “ a discriminating analysis showed a high frequency of intermediates in the area in between (N. Italy and Romania)”. Based of that, he concluded that “*F. balcanina* is more probably a geographical form of *F. cinerea* rather than representing a different species.” In this light, *L. balcanina* can be a junior synonym of *F. cinerea*, Mayr 1853, what must be checked again over numerous new samples from various part of Balkan, although the most of our samples are corresponding with the description of *F. balcanina*.

37. *Formica cunicularia* Latreille, 1798

Material examined: Pošćenje village, 10.07.1990, 5 workers, 1 male.

38. *Formica exsecta* Nylander, 1846

Material examined: Barno jezero lake, 05.09.1997., 82 workers (leg. S. Dragičević).

39. *Formica fusca* Linnaeus, 1758

Material examined: Bobotov Kuk, 19.09.1992., 5 workers; Aluge, 08.07.1990., 1 female, 44 workers; Vrela village, 08.07.1990., 29 workers, 1 female; Bistrica village, 07.07.1990., 20 workers; Žabljak, 18.09.1992., 22 workers; Durmitor, 10.08.1982., 7 workers; between Žabljak and Bobotov Kuk, 19.09.1992., 1 worker, 1 female; canyon of Tara river, Radovan Luka, 23.08.1998., 2 workers; Aluge- Đurđevića Tara, beech wood, 09.07.1990., 1 female, 5 workers; Tara river, Brštanovica, under the stones, 13.08.1987, 80 workers; Vrela, Žabljak, 08.07.1990., 68 workers (with *Polyergus rufescens*); between Aluge and Đurđevića Tara, beech wood, 09.07.1990., 1 worker; canyon of Tara river, Splavište, 07.08.1989., 10 workers.

40. *Formica lemani* Bondroit 1917

Material examined: Bobotov Kuk, 19.09.1992, 23 workers.

41. *Formica lusatica* Seifert, 1997

Material examined: Gornja Vrela, 08.07.1990., 20 workers, 2 female.

Remarks: *Formica lusatica* is also a correct name for the ant species previously named as *Formica glauca* (SEIFERT, 1996; BRAČKO, 2003).

SEIFERT (1997) mentioned that this species is more xerothermophile than *F. rufibarbis* Fabricius, 1793, preferring xerothermous grasslands with open vegetation.

42. *Formica nigricans* Emery 1909

Material examined: village Vrela, 08.07.1990., 3 workers.

Remarks: The value of this species is still not clear. Some authors considered this taxon as synonym of *Formica pratensis* Retzius 1783 (i.e. its ecomorph) (ATANASOV & DLUSSKYI, 1992; BOLTON, 1995; SEIFERT, 1996;). Some other authors considered this taxon as a valid species (COLLINGWOOD, 1979; AGOSTI & COLLINGWOOD, 1987; SOMMER & CAGNIANT, 1988; PETROV, 2000).

43. *Formica polyclena* Foerster, 1850

Durmitor Mt., 14.07.1997., 6 workers (leg. S. Hadžiablahović).

44. *Formica pratensis* Retzius, 1783

Material examined: Vrela village, 08.07.1990., 32 workers; Mitrovac near Tara river (with *F. rufa*), 04.08.1989., 1 worker; above Šavnik, beech wood, 10.07.1999., 41 workers.

45. *Formica rufa* Linnaeus, 1761

Vrela village, 08.07.1990., 62 workers; Mitrovac, Tara, 04.08.1989., 7 workers; Aluge, Žabljak, beech wood, 09.07.1990., 54 workers.

Remarks: Many authors mentioned erroneously the year 1758, but YARROW (1954) corrected this year through the International Commission on Zoological Nomenclature, into the year 1761.

PETROV (1995) mentioned this species for Ulcinj (Montenegro), and it was the first citation of this species for Montenegro. In his check list of Formicidae from Yugoslavia (PETROV, 2000) this citation is omitted.

46. *Formica rufibarbis* Fabricius, 1793

Material examined: Durmitor, 10.08.1982., 8 workers; Pošćenje village (with 1 female of *F. execta*), on the plum tree, 06.07.1990, 16 workers; Tepce village, meadow, 23.08.1998., 4 workers.

47. *Formica sanguinea* Latreille, 1798

Material examined: Village Tepce, 23.08.1998., 4 workers (leg. M. Karaman); in the nest of *F. rufibarbis*, 06.07.1990., 1 female.

48. *Polyergus rufescens* (Latreille, 1798)

Material examined: Vrela, Žabljak, beech wood (with *Formica fusca*), 08.07.1990., 49 workers.

CONCLUSIONS

Based on our investigations of ants, we registered in the collected material 48 species belonging to 15 genera and 4 subfamilies, respectively.

In the nests of *Myrmica ruginodis* and *Myrmica rugulosa* we found microgynes which are smaller than normal developed females.

In the nest of *Leptothorax acervorum*, under the bark of pine stump, we found one worker of *Leptothorax melanocephalum*. Also, in one nest

of *Myrmica* we collected two workers of *Myrmica vandeli* and four workers of *Myrmica ruginodis*.

In the nest of *Polyergus rufescens* we found many workers of *Formica fusca* as auxiliary workers.

In the nest of *Formica rufibarbis* we found one female of *Formica sanguinea*. It is known that single queen of *Formica sanguinea* entering nests of the auxiliary species (in this case *F. rufibarbis*) and appropriating a part of the brood, while host queen or queens being subsequently destroyed (COLLINGWOOD, 1979).

During the taxonomical studies, certain difficulties we found during the determination of the taxa of genus *Tetramorium*, because many species can be well distinguish only through the females and males. As we have not collected the males and females in many nests, we have not determined certain samples belonging probably to 3-4 different taxa of genus *Tetramorium*.

The following species are new for the fauna of Montenegro (Crna Gora):

Manica rubida (Latreille, 1802), *Myrmica ruginodis* Nylander, 1846, *Myrmica rugulosa* Nylander, 1849, *Myrmica schencki* Viereck, 1903, *Myrmica vandeli* Bondroit 1919, *Stenamma debile* (Foerster 1850), *Leptothorax affinis* Mayr, 1855, *Leptothorax melanocephalus* Emery, 1870, *Leptothorax crassispinus* Karawajew, 1926, *Lasius platythorax* Seifert, 1991, *Lasius flavus* (Fabricius, 1781), *Lasius citrinus* (Emery, 1922), *Camponotus herculeanus* (Linnaeus, 1758), *Camponotus ligniperda* (Latreille, 1802), *Formica lusatica* Seifert, 1997], *Formica nigricans* Emery 1909, *Formica polycytena* Foerster, 1850, *Formica exsecta* Nylander, 1846, *Polyergus rufescens* (Latreille, 1798).

By this way, the number of known species of Formicidae in Montenegro is elevated to 133 taxa.

Evidently, based on present only partially knowledge of this fauna in Montenegro, we believe that the number of Formicidae taxa known from this region, after further studies, will be elevated in the future also.

ACKNOWLEDGEMENTS. We are thankful to **Snežana Dragičević** from Natural History Museum of Montenegro, **Vesna Karaman-Castro** from Luisiana State University, U.S.A., **Sead Hadžiablahović** from the Republic Institute for the protection of the na-

ture in Podgorica and **Ivo M. Karaman** from the University of Novi Sad, for collecting of some ant specimens presented in this paper.

LITERATURE CITED

- AGOSTI, D., COLLINGWOOD, C.A. 1987. A provisional list of the Balkan ants with a list to the worker caste. I. Synonymic list. - *Mitt. Schw. Ent. Ges.* 60: 51-62.
- AGOSTI, D., COLLINGWOOD, C.A. 1987a. A provisional list of the Balkan ants (Hym., Formicidae) with a key to the worker caste. II. Key to the worker caste, including the European species without the Iberian. - *Bull. Soc. Entomol. Suisse*, 60: 261-293.
- ATANASOV, N., DLUSSKYI, G.M. 1992. Fauna Bulgarica (Hymenoptera, Formicidae). - *Aebidus Academiae Scientiarum Bulgaricae*, Sofia, 22: 1-311.
- BOLTON, B. 1995. *A New General Catalogue of the Ants of the World*. - Harvard University Press, Cambridge, Mass., London, 504 pp.
- BONDROIT, C. 1919. Supplément aux fourmis de France et de Belgique. - *Ann.Soc. ent. France*, 1: 298-305 (1918).
- BRAČKO, G. 2003. New species for the ant fauna of Slovenia (Hymenoptera: Formicidae).- *Natura Sloveniae*, 5 (1): 17-25.
- COLLINGWOOD, C.A. 1979. The Formicidae (Hymenoptera) of Fennoscandinavia and Denmark. - *Fauna Ent. Scandinavica* 8: 1-174.
- KARAMAN, M.G., 1998: Data about investigations on myrmecofauna (Hymenoptera, Formicidae) in Montenegro. – *Glas. Republ. Zavoda Zašt. Prirode-Prirodnjačkog muzeja Podgorica*, 26, 1993(1998), 55-62.
- KARAMAN, M.G., 1999: Contribution to the knowledge of the ants (Hymenoptera, Formicidae) of the Boka Kotorska bay - Montenegro. – *Acta entomologica serbica*, 4(1/2): 93-106.
- KARAMAN, M., KARAMAN, G., PETROV, I. 1998. Contribution to the Knowledge of the ants (Hymenoptera, Formicidae) of the Vrmac peninsula Boka Kotorska (Montenegro).- *Glas. Republ. Zavoda zast. prirode-Prirodnjackog muzeja Podgorica*, 26: 41-53.(1993)
- MÜLLER, G. 1923. Le formiche della Venezia Giulia e della Dalmazia. - *Boll. d. Soc. Adriat. di Sc. Nat. Trieste*, 28: 11-180.
- PETROV, I.Z. 1986. Distribution of species of the genus *Cataglyphis* Foerster, 1850 (Formicidae, Hymenoptera) in Yugoslavia. - *Arch biol. Nauka Beograd*, 38 (1-4): 11P-12P.

- PETROV, I.Z., COLLINGWOOD, C.A. 1993. *Formica balcanina* sp. n., a new species related to the *Formica cinerea* group (Hymenoptera, Formicidae). - Eur. J. Entomol. Česke Budejovice, 90: 349-354.
- PETROV, I.Z. 1995. Preliminary data on the myrmecofauna (Formicidae, Hymenoptera) in Yugoslavia. - Arch. Biol. Sci. Belgrade, 47 (3/4): 151-156.
- PETROV, I.Z. 2000. Checklist of the Myrmecofauna (Formicidae, Hymenoptera) of Yugoslavia. - Arch. Biol. Sci., Belgrade, 243-249.
- RADCHENKO, A. 2000. What is “*Leptothorax nylanderi*” (Hymenoptera: Formicidae) in Russian and former Soviet literature? - Annales Zoologici 50 (1): 43-45.
- SEIFERT, B. 1990. Supplementation to the revision of the European species of the ant subgenus *Chthonolasius* Ruzsky, 1913. - Doriana, Genova, 6 (271): 1-13.
- SEIFERT, B. 1992. *Formica nigricans* Emery, 1909- an ecomorph of *Formica pratensis* Retzius, 1783 (Hymenoptera, Formicidae). - Entomol. Fennica, 2: 217-226.
- SEIFERT, B. 1995. Two new Central European subspecies of *Leptothorax nylanderi* (Förster, 1850) and *Leptothorax sordidulus* Müller, 1923 (Hymenoptera, Formicidae). - Abh. Ber. Naturkundemus. Görlitz, 68 (7): 1-18.
- SEIFERT, B. 1996. Ameisen Beobachten, bestimmen.- Naturbuch Verlag Augsburg, 352 pp.
- SEIFERT, B. 1997. *Formica lusatica* n. sp.- a sympatric sibling species of *Formica cunicularia* and *Formica rufibarbis* (Hymenoptera: Formicidae). - Abh. Ber. Naturkundemus. Górlitz 69 (5): 3-16.
- SEIFERT, B. 2002. A taxonomic revision of the *Formica cinerea* group (Hymenoptera: Formicidae).- Abh. Ber. Naturkundemus. Górlitz, 74 (2): 245-272.
- SOMMER, F., CAGNIANT, H. 1988. Etude des peuplements de fourmis des Alpes orientales, France) (Seconde partie). - Vie Milieu 38 (3/4): 321-329.
- SOUDEK, S. 1925. Dalmatinski mravenci (Formicidae) (= Dalmatian Ants, Formicidae). - Casopis Československe společnosti entomologicke, 22 (1-2): 12-17.
- SOUDEK, S. 1925a. Four New European ants. - Entom. Record 37 (3): 33-38.
- VOGRIN, V. 1955. Prilog fauni Hymenoptera Aculeata Jugoslavije. - Zastita bilja, Beograd, 31: 15-21.
- YARROW, I.H.H. 1954. Application for the Re-examination and rephrasing of the decision taken by the International commission regarding the name of the type species of “*Formica*” Linnaeus, 1758 (Class Insecta, order Hymenoptera).- Bulletin of Zoological Nomenclature, 9 (10): 313-317.
- ZIMMERMANN, S. 1934. Beitrag zur Kenntnis der Ameisenfauna Süddalmatiens. - Sonder. Verhandl. Zool. Botan. Gesellschaft Wien, 84 (1-2):5-65.

NOVI PODACI O MIRMEKOFAUNI (HYMENOPTERA,
FORMICIDAE) CRNE GORE*Rezime*

Dosadašnja istraživanja faune mrava (Hymenoptera: Formicidae) na teritoriji Crne Gore su bila dosta oskudna i uglavnom provedena samo u njenom primorskom dijelu (ZIMMERMANN, MÜLLER, SOUDEK, PETROV, KARAMAN, M., AGOSTI & COLLINGWOOD), dok za središnji i sjeverni dio Crne Gore nije bilo skoro nikakvih podataka.

Naša istraživanja su obuhvatila uglavnom predio nacionalnog parka Durmitor i njegove okoline. Na osnovu tih istraživanja, na tom području je nađeno 48 vrsta iz 15 rodova odnosno 4 podfamilije. Od nađenih vrsta, 19 vrsta je novih za faunu Crne Gore.

Razmatran je problem vrste *Formica balcanina* Petrov & Collingwood, 1993, oko koje se još spore naučnici da li je samostalna vrsta ili samo geografska forma odnosno sinonim vrste *Formica cinerea* Mayr 1853.

U literaturi je sporna i validnost vrste *Formica nigricans* Emery 1909, koju jedni autori smaraju dobrom vrstom (PETROV, 2000, itd.), a drugi ekomorfom, odnosno sinonimom vrste *Formica pratensis* Retzius, 1783 (SEIFERT, 1996, etc.).

Među proučenim vrstama, vrste *Lasius niger* (Linnaeus, 1758) i *Lasius platythorax* Seifert, 1991 su međusobno vrlo slične, pa smo dali karakteristične crteže obje vrste radi lakšeg međusobnog razlikovanja. Slično smo napravili i za vrste *Camponotus herculeanus* (Linnaeus, 1758) i *Camponotus ligniperda* (Latreille, 1802).

Nastavkom istraživanja na prostorima Crne Gore se očekuju nalazi i drugih vrsta poznatih iz susjednih oblasti ili novih za nauku.



Fig. 1. Map of Montenegro with marked investigated area

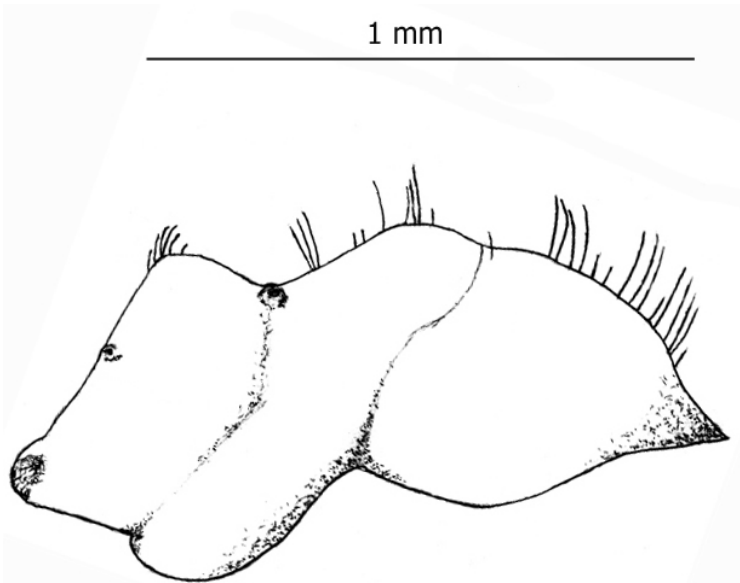


Fig.2: *Lasius platythorax*, worker, thorax, lateral view,
Aluge, 09. 08. 1990.

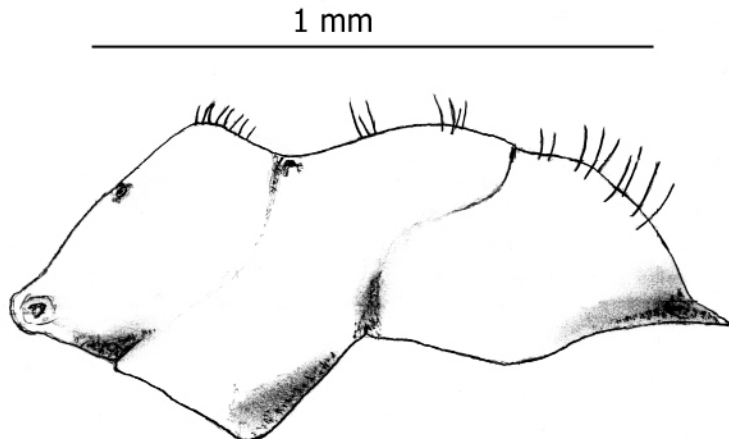


Fig. 3: *Lasius niger*, worker, thorax, lateral view
Radovan Luka, 23.08.1998.

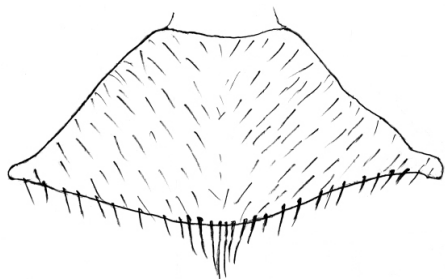


Fig. 4.: *L. niger*, worker, clypeus, frontal view, Radovan Luka, 23.08.1998.

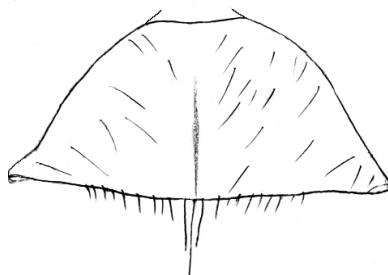


Fig. 5: *L. platythorax*, worker, clypeus, frontal view, Aluge, 09.08.1990.

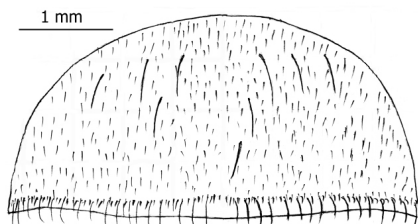


Fig. 6: *Camponotus herculeanus*, female, first abdominal segment, dorsal view, Žabljak 10.07.1990

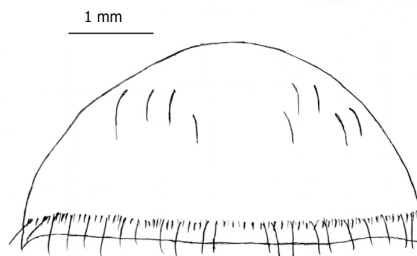


Fig. 7: *Camponotus ligniperda*, female, first abdominal segment, dorsal view, Radostak, 09.07.1990