

Survey of the family Russulaceae (Agaricomycetes, Fungi) in Montenegro

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Abstract – The paper shows that there are 84 known species of the family Russulaceae in Montenegro, 39 of them belonging to the genus *Lactarius* and 45 to the genus *Russula*.

Key words: Russulales, mycobiota, biodiversity, bibliography

Introduction

Montenegro is a south European country with an area of 13,812 km². The physical geography of Montenegro includes high mountains (2,523 m) in the northern part of the country, going through a karst segment in the central and southern parts, to a narrow coastal plain by the Adriatic Sea. The dominant types of climate are moderate continental, mountainous and Mediterranean (STEVANOVIĆ and STEVANOVIĆ 1995). The area is characterized by rich fungal diversity, which can be found in diverse habitats and forest associations, such as: Mediterranean broadleaved evergreen woodlands and scrubs (*Quercion ilicis*, *Ostryo-Carpinion orientalis*), Central European broadleaved deciduous woodlands (*Ostryo-Fagenion illyricum*, *Ostryo-Fagenion moesiaca*, *Carpinion betululi illyrico-moesiacum*, *Quercion frainetto*, *Fagenion illyricum*, *Fagenion moesiacum* and *Fagenion moesiaca subalpinum*), boreal frigidophilous coniferous woodlands (*Vaccinion-Piceion*, *Abieti-Piceion* and *Juniperion sibiricae*), and central south European alpine grasslands (STEVANOVIĆ 1995).

The first data on the family Russulaceae Lotsy were provided at the close of the 20th century (TORTIĆ 1974, 1988; HADŽIĆ 1995; KARADŽIĆ 1995; PERIĆ and PERIĆ 1995, 1996a, b, c, 1997a, b, 1998a, b, 1999a, b). At the beginning of the 21st century, studies in the quoted taxonomic group were continued, with data recorded in papers such as PERIĆ and PERIĆ (2000,

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2002, 2003, 2004, 2005); PERIĆ et al. (2000, 2001); KASOM (2003, 2004); HADŽIABLAHOVIĆ and KASOM (2005).

The data provided in the present paper are based on all published and unpublished records of species of the family Russulaceae in Montenegro.

Materials and methods

The survey of taxa is given in alphabetical order. Along with each taxon presented, the published sources of records (in chronological order), collections in which the collected material is deposited, and our unpublished data (material examined) for every species found on the territory of Montenegro are specified. All synonyms that the authors of records have used in Montenegro are also specified as well as those used in modern taxonomic literature. Our identification or revision of the records has been carried out using the following literature: NEUHOFF (1955), PHILLIPS (1981), SINGER (1986), HANSEN and KNUDSEN (1992), ARNOLDS et al. (1995), HEILMANN-CLAUSEN et. al (1998), BASSO (1999), HORAK (2005), and KRÄNZLIN (2005). For the interpretation of species we have also used the paper of TKALČEC and MEŠIĆ (2003). Taxonomic nomenclature followed that of ROBERT et al. (2005). A number of available records by other authors have been revised during this research.

The material known to us has been deposited in the following herbaria and fungaria: F.M.M.C. – Fungarium of Montenegrin Mycological Centre, Podgorica, Montenegro; Hadžić – Private Fungarium of Ibrahim Hadžić, Rožaje, Montenegro; M.N.F. – Montenegrin National Fungarium, Institute for Nature Protection, Podgorica, Montenegro. The material collected during our investigation is deposited in M.N.F.

The chapter Excluded Records comprises records of species that we have not been able to interpret in the sense of the modern classification.

Marks and abbreviations

- * – taxon reported for the first time for Montenegro;
- – at least part of records of the taxon revised;
- = – synonym;
- () – empty brackets indicate that the author of the record has also quoted the taxon under the name used herewith;
- (x) – number in brackets indicates a synonym under which the author of the record has quoted the taxon;
- =? – taxon not found in modern taxonomic literature;
- Exs. – collections in which the dried materials (exsiccata) are deposited;
- leg. – collector;
- Mt – mountain;
- nom. nud. – nomen nudum;
- NP – national park;
- Ref. – references (sources of records of the taxon in Montenegro);
- rev. – revised (when record have been revised by the authors of this paper).

Results

In this paper 83 species belong to two genera of the family Russulaceae: 38 species of the genus *Lactarius* and 45 species of the genus *Russula*.

The taxa *Lactarius intermedius*, *L. subdulcis*, and *Russula subfoetens* are reported for the first time for the territory of Montenegro.

Survey of taxa

Lactarius Pers.

- *Lactarius acris* (Bolton: Fr.) Gray

Ref.: PERIĆ and PERIĆ (1995b: 63, 1996a: 154, 1997a: 60, 2004: 20), KASOM (2003: 251).

Exs.: F.M.M.C., M.N.F.

Material examined: 29 October 2010, Mt Dragišnica, forest of *Fagus sylvatica*, M.N.F. 3/10.

- *Lactarius aurantiacus* (Pers.: Fr.) Gray

= *Lactarius mitissimus* (Fr.: Fr.) Fr. (1)

Ref.: HADŽIĆ (1995: 23), KARADŽIĆ (1995: 82–83), PERIĆ and PERIĆ (1997a: 61 (1)).

Exs.: Hadžić, M.N.F.

Material examined: 27 October 2008, Mt Ljubišnja, forest of *Picea abies*, M.N.F. 142/08; 01 October 2009, Mt Milogora, forest of *Abies alba* and *Fagus sylvatica*, M.N.F. 53/09.

Lactarius azonites (Bull.) Fr.

Ref.: PERIĆ and PERIĆ (1995b: 63, 1997a: 60).

Exs.: F.M.M.C.

- *Lactarius blennius* (Fr.: Fr.) Fr.

Ref.: PERIĆ and PERIĆ (1996c: 73, 1997a: 60, 2003: 81), KASOM (2003: 252, 2004: 25).

Exs.: F.M.M.C., M.N.F.

Material examined: 29 October 2010, Mt Dragišnica, forest of *Fagus sylvatica*; 29 October 2010, NP Lovćen: Mt Treštenik, forest of *Fagus sylvatica*.

Lactarius camphoratus (Bull.) Fr.

Ref.: HADŽIĆ (1995: 23), PERIĆ and PERIĆ (1996c: 73).

Exs.: F.M.M.C., Hadžić.

- *Lactarius chrysorrheus* Fr.

Ref.: PERIĆ and PERIĆ (1997a: 60, 1997b: 283), PERIĆ et al. (2000: 159), KASOM (2003: 252).

Exs.: F.M.M.C., M.N.F.

- *Lactarius circellatus* Fr.

Ref.: TORTIĆ (1988: 131), HADŽIĆ (1995: 23), PERIĆ and PERIĆ (1997a: 60), KASOM (2003: 252).

Exs.: Hadžić, M.N.F.

• *Lactarius controversus* Pers.: Fr.

Ref.: HADŽIĆ (1995: 23), KARADŽIĆ (1995: 78–79 (rev.)), PERIĆ and PERIĆ (1997a: 60), PERIĆ et al. (2001: 15).

Exs.: F.M.M.C., Hadžić.

• *Lactarius deliciosus* (L.: Fr.) Gray

Ref.: HADŽIĆ (1995: 23), KARADŽIĆ (1995: 80–81 (rev.)), PERIĆ and PERIĆ (1996b: 36–37 (rev.), 1997a: 60, 1997b: 283, 1998b: 75, 1999a: 92, 1999b: 52, 2000: 108), PERIĆ et al. (2000: 159), KASOM (2003: 252), HADŽIABLAHOVIĆ and KASOM (2005: 133–134).

Exs.: F.M.M.C., Hadžić, M.N.F.

Material examined: 01 October 2006, Lovćen NP, Ivanova korita, forest of *Pinus nigra*.

• *Lactarius deterrimus* Gröger

Ref.: HADŽIĆ (1995: 23), KARADŽIĆ (1995: 80–81 (rev.)), PERIĆ and PERIĆ (1996b: 42–43 (rev.), 1997a: 60, 1998b: 75), HADŽIABLAHOVIĆ and KASOM (2005: 135–136).

Exs.: F.M.M.C., Hadžić, M.N.F.

Material examined: 20 and 21. July 2009, Mt Hajla, forest of *Picea abies*, leg. Ibrahim Hadžić, M.N.F. 33/09.

• *Lactarius fluens* Boud. 1899

Ref.: PERIĆ et al. (2000:159).

Exs.: F.M.M.C.

Lactarius fuliginosus (Krapf: Fr.) Fr.

Ref.: PERIĆ and PERIĆ (1995b: 63, 1997a: 60, 2004: 20).

Exs.: F.M.M.C.

*• *Lactarius intermedius* (Krombh.) Berk. et Broome

Exs.: M.N.F.

Material examined: 01 October 2009, Mt Milogora, forest of *Abies alba* and *Fagus sylvatica*, M.N.F. 52/09.

Lactarius lignyotus Fr.

Ref.: HADŽIĆ (1995: 23).

Exs.: Hadžić.

• *Lactarius lilacinus* (Lasch: Fr.) Fr.

Ref.: TORTIĆ (1988: 131), HADŽIĆ (1995: 23), PERIĆ and PERIĆ (1997a: 60).

Exs.: BEO, M.N.F.

Material examined: 09 September 2005 and 16 October 2006, Biogradska gora NP, near Biogradska River and Biogradsko Lake, forest of *Alnus* sp., M.N.F. 18/05.

Annotation: TORTIĆ (1988: 131) quoted this taxon from TORTIĆ (1974), but in this article these data are not mentioned.

Lactarius mairei Malençon

Ref.: PERIĆ et al. (2000: 159), PERIĆ et al. (2001: 15), PERIĆ and PERIĆ (2004: 21).

Exs.: F.M.M.C.

Lactarius musteus Fr.

Ref.: HADŽIĆ (1995: 23).

Exs.: Hadžić.

• *Lactarius pallidus* Pers.: Fr.

Ref.: PERIĆ and PERIĆ (1995b: 63, 1997a: 61), KASOM (2003: 252).

Exs.: F.M.M.C., M.N.F.

• *Lactarius picinus* Fr.

Ref.: HADŽIĆ (1995: 23), KARADŽIĆ (1995: 84–85), PERIĆ and PERIĆ (1996a: 154, 1997a: 61).

Exs.: F.M.M.C., Hadžić.

Lactarius piperatus (L.) Pers. sensu lato

Ref.: TORTIĆ (1974: 210, 1988: 131).

• *Lactarius piperatus* (L.) Pers.

Ref.: HADŽIĆ (1995: 23), KARADŽIĆ (1995: 84–85 (rev.)), PERIĆ and PERIĆ (1995b: 63, 1996c: 73, 1997a: 61, 1999a: 92, 2000: 108–109, 2005: 94), PERIĆ et al. (2000: 159).

Exs.: F.M.M.C., Hadžić.

• *Lactarius pubescens* Fr.

Ref.: HADŽIĆ (1995: 23), KARADŽIĆ (1995: 86–87 (rev.)), PERIĆ and PERIĆ (1997a: 61).

Exs.: Hadžić, M.N.F.

Material examined: 17 October 2008, Prokletije NP, Mt Visitor; under *Betula* sp., M.N.F. 64/08; 30 September 2009, Mt Golija, forest of *Betula* sp., M.N.F. 55/09.

Lactarius pyrogalus (Bull.: Fr.) Fr.

Ref.: HADŽIĆ (1995: 23).

Exs.: Hadžić.

• *Lactarius rufus* (Scop.: Fr.) Fr.

Ref.: HADŽIĆ (1995: 23), KARADŽIĆ (1995: 86–87), PERIĆ and PERIĆ (1997a: 61), KASOM (2003: 252).

Exs.: Hadžić, M.N.F.

• *Lactarius salmonicolor* R. Heim et Leclair

Ref.: HADŽIĆ (1995: 23), KARADŽIĆ (1995:88–89 (rev.)), PERIĆ and PERIĆ (1996b: 38–39, 1997a: 61).

Exs.: F.M.M.C., Hadžić, M.N.F.

Material examined: 30 September 2009, Mt Golija, under *Abies alba*; 01 October 2009, Mt Milogora, forest of *Abies alba* and *Fagus sylvatica*, under *Abies albe*, M.N.F. 60/09; 29 October 2010, Mt Dragišnica, forest of *Abies alba* and *Fagus sylvatica*, under *Abies albe*, leg. D. Roganović and S. Hadžiablahović, M.N.F. 2/10.

• *Lactarius sanguifluus* (Paulet) Fr.

Ref.: KARADŽIĆ (1995: 90–91 (rev.)), PERIĆ and PERIĆ (1996b: 40–41, 1996c: 73, 1997a: 61, 1997b: 283, 1999a: 92, 1999b: 52), PERIĆ et al. (2000: 159).

Exs.: F.M.M.C.

• *Lactarius scrobiculatus* (Scop.: Fr.) Fr.

Ref.: HADŽIĆ (1995: 23), KARADŽIĆ (1995: 88-89 (rev.)), PERIĆ and PERIĆ (1997a: 61, 1998b: 75).

Exs.: F.M.M.C., Hadžić, M.N.F.

Material examined: 30 July 2008, Mt Bogičevica, forest of *Picea abies*; 20 July 2009, Mt Hajla, forest of *Picea abies*, leg. Ibrahim Hadžić, M.N.F. 32/09.

• *Lactarius semisanguifluus* R. Heim et Leclair

Ref.: HADŽIĆ (1995: 23), KARADŽIĆ (1995: 90–91 (rev.)), PERIĆ and PERIĆ (1996b: 44–45, 1996c: 73, 1997a: 61, 2005: 94).

Exs.: F.M.M.C., Hadžić.

Lactarius serifluus (DC.: Fr.) Fr.

Ref.: PERIĆ and PERIĆ (1996c: 73).

Exs.: F.M.M.C.

Lactarius sphagneti (Fr.) Neuhoff

Ref.: HADŽIĆ (1995: 23).

Exs.: Hadžić.

*• *Lactarius subdulcis* (Pers.: Fr.) Gray

Exs.: M.N.F.

Material examined: 22 September 2010, canyon of Sušice River, forest of *Fagus sylvatica*, leg. S. Hadžiablahović, M.N.F. 25/10.

• *Lactarius torminosus* (Schaeff.: Fr.) Pers.

Ref.: KARADŽIĆ (1995: 92–93 (rev.)), PERIĆ and PERIĆ (1997a: 62).

Exs.: M.N.F.

Material examined: 30 September 2009, Mt Golija, forest of *Betula* sp., M.N.F. 54/09.

• *Lactarius turpis* (Weinm.) Fr.

Misapplied name: *Lactarius necator* (Bull.: Fr.) P. Karst. sensu auct. (1)

Ref.: HADŽIĆ (1995: 23), KARADŽIĆ (1995: 82–83 (1) (rev.)), PERIĆ and PERIĆ (1997a: 61 (1), 1999a: 92 (1)).

Exs.: F.M.M.C., Hadžić.

• *Lactarius uvidus* (Fr.: Fr.) Fr.

Ref.: PERIĆ and PERIĆ (1996a: 154, 1997a: 62), KASOM (2003: 252).

Exs.: F.M.M.C., M.N.F.

Material examined: 20 July 2009, Mt Hajla, forest of *Picea abies*, M.N.F.34/09.

• *Lactarius vellereus* (Fr.: Fr.) Fr. (1)

Ref.: KARADŽIĆ (1995: 92–93), PERIĆ and PERIĆ (1996c: 73, 1997a: 62, 1999a: 92), KASOM (2003: 252).

Exs.: F.M.M.C., M.N.F.

Lactarius vinosus (Quél.) Bat.

Ref.: PERIĆ and PERIĆ (1997a: 62, 1997b: 283).

Exs.: F.M.M.C.

- ***Lactarius volemus*** (Fr.: Fr.) Fr.
 Ref.: HADŽIĆ (1995: 23), KARADŽIĆ (1995: 94–95), PERIĆ and PERIĆ (1995a: 40–41, 1995b: 63, 1997a: 62, 1999a: 92, 2004: 21,?: 40–41), PERIĆ et al. (2000: 159).
 Exs.: F.M.M.C., Hadžić, M.N.F.
Material examined: 09 September 2005, Biogradska gora NP, forest of *Fagus sylvatica*; M.N.F. 19/05; 09 July 2009, Andrijeвица town, forest of *Quercus cerris*, M.N.F. 17/09.
 - ***Lactarius zonarioides*** Kühner et Romagn.
 = *Lactarius bresadolanus* Singer nom. nud. (1)
 Ref.: KARADŽIĆ (1995: 78–79 (1) (rev.)), PERIĆ and PERIĆ (1997a:60 (1)).
 Exs.: M.N.F.
Material examined: 20 July 2009, Mt Hajla, forest of *Picea abies*, M.N.F. 31/09.
 - ***Lactarius zonarius*** (Bull.) Fr.
 = *Lactarius zonarius* var. *scrobipes* Kühner et Romagn. (1)
 Ref.: HADŽIĆ (1995: 23), PERIĆ and PERIĆ (1997a: 62, 1997b: 283 (1)), KASOM (2003: 252 (rev.)).
 Exs.: F.M.M.C., M.N.F.
- Russula*** Pers.
- Russula aeruginea*** Lindblad
 Ref.: HADŽIĆ (1995: 22).
 Exs.: Hadžić.
- Russula albonigra*** (Krombh.) Fr.
 Ref.: HADŽIĆ (1995: 22).
 Exs.: Hadžić.
- Russula alutacea*** (Pers.: Fr.) Fr.
 Ref.: TORTIĆ (1988: 131), PERIĆ and PERIĆ (1997a: 62).
 Exs.: M.N.F.
Material examined: 20 July 2009, Mt Hajla, forest of *Picea abies*, M.N.F. 35/09.
- Russula amoena*** Quéf.
 Ref.: HADŽIĆ (1995: 22), PERIĆ and PERIĆ (1995b: 63, 1996a: 154, 1997a: 62, 1998b: 75).
 Exs.: F.M.M.C., Hadžić.
- Russula anthracina*** Romagn.
 Ref.: PERIĆ and PERIĆ (1995b: 63, 1997a: 62, 1997b: 283, 1999a: 92), PERIĆ et al. (2000: 159).
 Exs.: F.M.M.C.
- ***Russula aurea*** Pers.
 = *Russula aurata* (With.) Fr. (1)
 Ref.: HADŽIĆ (1995: 22 (1)), PERIĆ and PERIĆ (1998a: 54–55 (1), 1998b: 75 (1), 1999a: 92, 1999b: 52 (1), 2004: 25 (1), 2005: 94 (1)), KASOM (2003: 252 (1)).

Exs.: F.M.M.C., Hadžić, M.N.F.

Material examined: 19 June 2008, Mt Orjen, Grahovac village, forest of *Quercus cerris*.

• *Russula azurea* Bres.

Ref.: KARADŽIĆ (1995: 120–121 (rev.)), PERIĆ and PERIĆ (1997a: 62).

Exs.: /.

Russula brunneoviolacea Crawshay

Ref.: HADŽIĆ (1995: 22).

Exs.: Hadžić.

Russula carminipes J. Blum

Ref.: PERIĆ and PERIĆ (1999a: 92).

Exs.: F.M.M.C.

• *Russula cyanoxantha* (Schaeff.) Fr.

= *Russula cutefracta* Cooke (1)

Ref.: HADŽIĆ (1995: 22 (1) ()), KARADŽIĆ (1995: 122–123), PERIĆ and PERIĆ (1995a: 38–39, 1995b: 63, 1996a: 154, 1996c: 73, 1997a: 62, 1998b: 75, 1999a: 92, 1999b: 52, 2000: 110–111, 2002: 138,?: 38–39), PERIĆ et al. (2000: 159), KASOM (2004: 25).

Exs.: F.M.M.C., Hadžić, M.N.F.

Material examined: 20 July 2009, Mt Hajla, forest of *Picea abies*, M.N.F. 36/09.

• *Russula delicata* Fr.

Ref.: TORTIĆ (1988: 131), HADŽIĆ (1995: 22), KARADŽIĆ (1995: 122–123), PERIĆ and PERIĆ (1995b: 63, 1997a: 62, 1999a: 92), KASOM (2003: 252, 2004: 26).

Exs.: F.M.M.C., Hadžić, M.N.F.

Russula emetica (Schaeff.) Pers.

Ref.: HADŽIĆ (1995: 22), PERIĆ and PERIĆ (1995b: 63, 1996c: 73, 1997a: 63, 1999a: 92, 2005: 94).

Exs.: F.M.M.C., Hadžić.

Russula foetens Pers. sensu lato

Ref.: TORTIĆ (1974: 211, 1988: 131).

• *Russula foetens* Pers.: Fr.

Ref.: HADŽIĆ (1995: 22), KARADŽIĆ (1995: 124–125), PERIĆ and PERIĆ (1997a: 63), KASOM (2003: 253).

Exs.: Hadžić, M.N.F.

Russula fragilis (Pers.: Fr.) Fr.

Ref.: HADŽIĆ (1995: 22).

Exs.: Hadžić.

Russula gracillima Jul. Schöff.

Misapplied name: *Russula gracilis* Burl. sensu auct. (1)

Ref.: HADŽIĆ (1995: 22 (1)).

Exs.: Hadžić.

Russula grata Britzelm.

= *Russula laurocerasi* Melzer (1), = *Russula laurocerasi* var. *fragrans* Romagn. (2)

Ref.: PERIĆ and PERIĆ (1996a: 154, 1997a: 63 (1)(2)).

Exs.: F.M.M.C.

Russula grisea Fr.

Ref.: KARADŽIĆ (1995: 124–125), PERIĆ and PERIĆ (1997a: 63).

Exs.: /.

Russula heterophylla (Fr.) Fr.

Ref.: HADŽIĆ (1995: 22).

Exs.: Hadžić.

Russula illota Romagn.

Ref.: HADŽIĆ (1995: 22).

Exs.: Hadžić.

Russula integra (L.) Fr.

Ref.: HADŽIĆ (1995: 22), KARADŽIĆ (1995: 126–127), PERIĆ and PERIĆ (1995b: 63, 1997a: 63, 1999a: 92).

Exs.: F.M.M.C., Hadžić.

Russula ionochlora Romagn.

Ref.: HADŽIĆ (1995: 22).

Exs.: Hadžić.

Russula maculata Quél. et Roze

Ref.: PERIĆ and PERIĆ (1999a: 92).

Exs.: F.M.M.C.

Russula mairei Singer

Ref.: HADŽIĆ (1995: 22).

Exs.: Hadžić.

Russula mustelina Fr.

Ref.: HADŽIĆ (1995: 22).

Exs.: Hadžić.

• ***Russula nigricans*** Fr.

Ref.: HADŽIĆ (1995: 22), KARADŽIĆ (1995: 128–129 (rev.)), PERIĆ and PERIĆ (1997a: 63).

Exs.: Hadžić.

Russula ochroleuca Pers.

Ref.: HADŽIĆ (1995: 22).

Exs.: Hadžić.

Russula olivacea (Schaeff.) Pers.

Ref.: HADŽIĆ (1995: 23), KARADŽIĆ (1995: 128–129), PERIĆ and PERIĆ (1995b: 63, 1997a: 63, 2004: 25), KASOM (2003: 253).

Exs.: F.M.M.C., Hadžić.

Russula paludosa Britzelm.

Ref.: TORTIĆ (1988: 131), PERIĆ and PERIĆ (1997a: 63).

Exs.: /.

Russula puellaris Fr.

Ref.: HADŽIĆ (1995: 23), KASOM (2003: 253).

Exs.: Hadžić.

• ***Russula queletii*** Fr.

Ref.: HADŽIĆ (1995: 23), PERIĆ and PERIĆ (1997a: 63, 1997b: 283, 1999a: 92).

Exs.: F.M.M.C., Hadžić, M.N.F.

Russula romellii Maire

Ref.: PERIĆ and PERIĆ (1995b: 63, 1996b: 46–47, 1997a: 63).

Exs.: F.M.M.C.

• ***Russula rosea*** Pers.

= *Russula lepida* Fr. (1), = *Russula rosacea* (Pers.) Gray (2)

Ref.: TORTIĆ (1988: 131 (2)), KARADŽIĆ (1995: 126–127 (1)), PERIĆ and PERIĆ (1997a: 63 (1), 2005: 94 (1)), KASOM (2003: 253 (1)).

Exs.: F.M.M.C., M.N.F.

• ***Russula sanguinea*** (Bull.) Fr.

= *Russula sanguinaria* (Schumach.) Rauschert (1)

Ref.: HADŽIĆ (1995: 23 (1)), KARADŽIĆ (1995: 130–131 (1)), PERIĆ and PERIĆ (1996c: 73 (1), 1997a: 64 (1), 1997b: 283 (1), 1999b: 53 (1), 2005: 94 (1)), PERIĆ et al. (2000: 159 (1)), KASOM (2003: 253 (1), 2004:26 (1) (rev.)).

Exs.: Hadžić, F.M.M.C., M.N.F.

Russula sardonias Fr.

= *Russula drimeia* Cooke (1)

Ref.: HADŽIĆ (1995: 23), PERIĆ et al. (2000: 159 (1)).

Exs.: Hadžić, F.M.M.C.

Russula solaris Ferd. et Winge

Ref.: PERIĆ and PERIĆ (1999a: 92).

Exs.: F.M.M.C.

Russula sororia (Fr.) Romell

Ref.: HADŽIĆ (1995: 23).

Exs.: Hadžić.

*• ***Russula subfoetens*** Wm.G. Sm.

Exs.: M.N.F.

Material examined: 20 June 2011, Andrijevića town, forest of *Quercus cerris*, M.N.F. 04/11.

Russula turci Bres.

Ref.: HADŽIĆ (1995: 23).

Exs.: Hadžić.

Russula undulata Velen.

= *Russula atropurpurea* (Krombh.) Britzelm. (1)

Ref.: HADŽIĆ (1995: 22 (1)).

Exs.: Hadžić.

• ***Russula vesca*** Fr.

Ref.: HADŽIĆ (1995: 23), PERIĆ and PERIĆ (1995a: 36–37, 1995b: 63, 1996a: 154, 1997a: 64, 1998b: 75,?: 36–37).

Exs.: Hadžić, F.M.M.C.

Russula vinosa Lindblad

= *Russula obscura* (Romell) Peck (1)

Ref.: HADŽIĆ (1995: 22 (1) and 23 ()).

Exs.: Hadžić.

Russula violeipes Quél.

Ref.: HADŽIĆ (1995: 23).

Exs.: Hadžić.

• ***Russula virescens*** (Schaeff.) Fr.

Ref.: JAAP (1916) in TORTIĆ (1988:131), HADŽIĆ (1995: 23), KARADŽIĆ (1995: 130–131 (rev.)), PERIĆ and PERIĆ (1995a: 34–35, 1995b: 63, 1996a: 154, 1997a: 64, 1999a: 93, 2005: 95,?: 34–35), PERIĆ et al. (2000: 159).

Exs.: Hadžić, F.M.M.C.

Russula vitellina Gray.

Ref.: PERIĆ and PERIĆ (1996a: 154, 1997a: 64).

Exs.: F.M.M.C., Hadžić.

Russula xerampelina (Schaeff.) Fr.

= *Russula xerampelina* var. *erythropus* (Pelt.) Konrad et J. Favre (1)

Ref.: HADŽIĆ (1995: 23 (1)), KARADŽIĆ (1995: 132–133), PERIĆ and PERIĆ (1997a: 64).

Exs.: Hadžić, F.M.M.C.

Excluded records

Lactarius pargamenus (Sw.: Fr.) Fr.

Ref.: PERIĆ and PERIĆ (1999a: 92).

Exs.: F.M.M.C.

Annotation: For determination of this taxon PERIĆ and PERIĆ used the book of FOCHT (1986: 223–224). According to Focht's description, the Montenegrin record could represent *L. glaucescens* Crossl. However, without revision of this record it is not possible to know which species the authors have found.

Lactarius semisanguifluus deformans R. Heim et Leclair =?

Ref.: HADŽIĆ (1995: 23).

Russula cloroflava (Schaeff.) Fr. =?

Ref.: HADŽIĆ (1995: 22).

Russula lutea (Huds.: Fr.) Gray

Ref.: HADŽIĆ (1995: 22).

EXS.: Hadžić.

Annotation: This name cannot be interpreted in the sense of modern taxonomy (nomen dubium). It has been used for two species: *Russula risigallina* and *R. vitellina* (ARNOLDS et al., 1995: 411, HANSEN and KNUDSEN, 1992: 391, TKALČEC and MEŠIĆ, 2003: 295). Without revision of the cited record it is not possible to know which species the authors have found.

Discussion

In this paper we present 84 species of Russulaceae that have been found in Montenegro. The genus *Lactarius* is represented by 39 species, and the genus *Russula* by 45 species. For each presented species, the published and unpublished sources of data are provided, as well as those from the collections in which the material is deposited. The three taxa *Lactarius intermedius*, *L. subdulcis*, and *Russula subfoetens* are reported for the first time for the territory of Montenegro.

Acknowledgements

A great debt of gratitude is owed to doctors Zdenko Tkalčec, Armin Mešić, Vladimír Antonín, Katerina Rusevska, Branislav Perić, Olgica Perić, Ibrahim Hadžić, Zlatko Bulić, Danijel Vincek and Sead Hadžiallahović for their assistance during the preparation of this paper.

References

- ARNOLDS, E., KUYPER, T. W., NOORDELOOS, M. E. (eds), 1995: Overview of the fungi in the Netherlands (in Dutch). Nederlandse Mycologische Vereniging, Wijster.
- BASSO, M. T., 1999: *Lactarius* Pers. Fungi Europaei 7. Mykoflora, Alassio.
- FOCHT, I., 1986: Key for fungi (in Croatian). Naprijed, Zagreb.
- HADŽIABLAHOVIĆ, S., KASOM, G., 2005: Herbs and edible wild mushrooms in Serbia and Montenegro. Monograph for collectors on the principles of organic production (in Montenegrin). Njemačko društvo za tehničku saradnju (GTZ), Podgorica.
- HADŽIĆ, I., 1995: The contribution to the study of micoflora of area of Rožaje (in Montenegrin). Rožajski zbornik 7, 11–34.
- HANSEN, L., KNUDSEN, H. (eds.), 1992: Nordic Macromycetes 2. Polyporales, Boletales, Agaricales, Russulales. Nordsvamp, Copenhagen.
- HEILMANN-CLAUSEN, J., VERBEKEN, A., VESTERHOLT, J., 1998: The genus *Lactarius*. Fungi of Northern Europe 2. Jacob Heilmann-Clausen, Annemieke Verbeken, Jan Vesterholt and the Danish Mycological Society, Oddense.
- HORAK, E., 2005: Röhrlinge und Blätterpilze in Europa, 6. Elsevier GmbH, München.
- KARADŽIĆ, D., 1995: Mushrooms of National Park Durmitor (in Montenegrin). Nacionalni park Durmitor i Šumarski fakultet, Beograd.

- KASOM, G., 2003: The first contribution of the study of macromycetes of Lovcen Mt (Montenegro) (in Montenegrin). *Doclea* 4, 247–271.
- KASOM, G., 2004: The contribution to the study of macromycetes of Montenegro. *Glasnik Republičkog zavoda za zaštitu prirode* 27–28, 19–32.
- KRÄNZLIN, F., 2005: *Fungi of Switzerland*, 6, Russulaceae: *Lactarius*, *Russula*. Verlag Mykologia, Luzern.
- NEUHOFF, W., 1955 »1956«: *Die Milchlinge (Lactarii). Die Pilze Mitteleuropas*, 2b. Julius Klinkhardt, Bad Heilbrunn Obb.
- PERIĆ, B., KARADELEV, M., TKALČEC, Z., 2001: Vulnerability and protection of fungi in Montenegro, Macedonia and Croatia (in Montenegrin). Crnogorski mikološki centar, Podgorica.
- PERIĆ, B., PERIĆ, O., 1995a: Small mycological edition, mushroom tracks – summer (in Montenegrin). Dizajn studio, Beograd.
- PERIĆ, B., PERIĆ, O., 1995b: The contribution to the study of fungi of Montenegro (in Montenegrin). *Poljoprivreda i Šumarstvo* 41, 61–69.
- PERIĆ, B., PERIĆ, O., 1996a: National park Biogradska gora. The contribution to the study of mikodiversity (in Montenegrin). *Proceedings Balkan conference National parks and their role in biodiversity protection on Balkan peninsula, Ohrid*, 151–161.
- PERIĆ, B., PERIĆ, O., 1996b: Small mycological edition, mushroom track – autumn (in Montenegrin). CID, Podgorica.
- PERIĆ, B., PERIĆ, O., 1996c: The fungi of Montenegro (8th contribution to the study of macromycetes of Montenegro) (in Montenegrin). *Poljoprivreda i Šumarstvo* 42, 69–84.
- PERIĆ, B., PERIĆ, O., 1997a: Diversity of macromycetes in Montenegro (in Montenegrin). *Glasnik odeljenja prirodnih nauka* 11, 45–142.
- PERIĆ, B., PERIĆ, O., 1997b: Makromycetes of forest culture in the urban zone of Podgorica (in Montenegrin). *Glasnik odeljenja prirodnih nauka* 44, 279–290.
- PERIĆ, B., PERIĆ, O., 1998a: Small mycological edition, mushroom tracks – spring (in Montenegrin). Mikološko društvo Crne Gore, Podgorica.
- PERIĆ, B., PERIĆ, O., 1998b: The contribution of the macromycetes of National Park Durmitor (in Montenegrin). *Glasnik odeljenja prirodnih nauka* 12, 71–94.
- PERIĆ, B., PERIĆ, O., 1999a: The contribution to the study of the macromycetes of Montenegro (in Montenegrin). *Mycologia Montenegrina* 2, 83–98.
- PERIĆ, B., PERIĆ, O., 1999b: The macromycetes of Montenegro (18th contribution to the study of macromycetes of Montenegro) (in Montenegrin). *Poljoprivreda i Šumarstvo* 45, 47–67.
- PERIĆ, B., PERIĆ, O., 2000: Some of the most edible and medicinal wild fungi of Montenegro (in Montenegrin). *Poljoprivreda i Šumarstvo* 46, 97–119.
- PERIĆ, B., PERIĆ, O., 2002: The macromycetes of Montenegro (contribution to the study of 33) (in Montenegrin). *Mycologia Montenegrina* 5, 131–146.
- PERIĆ, B., PERIĆ, O., 2003: The macromycetes of Montenegro (36th contribution to the study) (in Montenegrin). *Mycologia Montenegrina* 6, 73–95.

- PERIĆ, B., PERIĆ, O., 2004: Preliminary red list of the macromycetes of Montenegro. (second contribution to the study) (in Montenegrin). *Mycologia Montenegrina* 7, 7–33.
- PERIĆ, B., PERIĆ, O., 2005: The macromycetes of Montenegro (46th contribution to the study) (in Montenegrin). *Mycologia Montenegrina* 8, 85–102.
- PERIĆ, B., PERIĆ, O., PERIĆ, I., 2000: The contribution to the study of macromycetes of Montenegro (in Montenegrin). *Mycologia Montenegrina* 3, 149–165.
- PHILLIPS, R., 1981: *Mushrooms and other fungi of Great Britain and Europe*. Pan Books Ltd., London.
- ROBERT, V., STEGEHUIS, G., STALPERS, J., 2005: The MycoBank engine and related databases. <http://www.mycobank.org> (access: October 13, 2011).
- SINGER, R., 1986: *The Agaricales in modern taxonomy*. Koeltz Scientific Books, Koenigstein.
- STEVANOVIĆ, V., 1995: Biogeography division of the territory of Yugoslavia. In: STEVANOVIĆ, V., VASIĆ, V., (eds.), *Biodiversity of Yugoslavia with a review of the species of international importance* (in Serbian), 117–127. Ecolibri, Beograd.
- STEVANOVIĆ, V., STEVANOVIĆ, B., 1995: The main climatic, geological and pedological factors biodiversity of terrestrial ecosystems Yugoslavia In: STEVANOVIĆ, V., VASIĆ, V., (ed.), *Biodiversity of Yugoslavia with a review of the species of international importance* (in Serbian), 75–95. Ecolibri, Beograd.
- TKALČEC, Z., MEŠIĆ, A., 2003: Preliminary checklist of Agaricales from Croatia V, Families Crepidotaceae, Russulaceae and Strophariaceae. *Mycotaxon* 83, 279–314.
- TORTIĆ, M., 1974: Small contribution to the summer flora of macromycetes of Montenegro (in Montenegrin). *Tokovi* 9, 207–214.
- TORTIĆ, M., 1988: Macromycetes of Crna Gora (Montenegro). *Glasnik Odeljenja prirodnih nauka* 6, 113–138.