

# New and interesting lichenized and lichenicolous fungi from Tara National Park, Western Serbia

Leif Tibell\* & Sanja Savić

Department of Systematic Botany, Evolutionary Biology Centre, Uppsala University, Norbyvägen 18D, S-75236 Uppsala, Sweden

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**Abstract.** Twenty-eight lichen species and five species of lichenicolous fungi are reported new to Serbia. Moreover 68 species that previously only rarely have been reported from Serbia are listed. The genera *Cliostomum*, *Endococcus*, *Mycoblastus*, *Mycocalicium*, *Ropalospora*, and *Schismatomma* are reported from Serbia for the first time. Tara National Park harbours several macrolichens that, although having been recorded previously but usually only long ago, most likely are rare and threatened in Serbia today, e.g. *Collema auriforme*, *Evernia divaricata*, *Menegazzia terebrata*, and *Nephroma parile*. Accompanying these are numerous crustose lichens with similar habitat preferences, some of them forming rich communities of calicioid lichens. Several species new to Serbia were also found on calcareous rock outcrops.

**Key words:** Balkan Peninsula, biodiversity, fungal diversity, lichenized fungi, Serbia, Tara National Park

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## Introduction

Tara National Park (ca 19 000 ha) is situated in NW Serbia as part of the Dinaric mountains, and includes mountains close to 1600 m high, whereas the lowest parts are located at ca 250 m altitude. The bedrock is varied, but mostly calcareous, and open rocks occur, except for in the highest parts, in outcrops and particularly in valleys and canyons. Forests cover some 60 % of the park. The park is particularly renowned for the endemic occurrence of *Picea omorica*, and also harbors many other plants assumed to be Tertiary relicts. Cultivated areas with pasture form enclaves in the park, but the extensive and more mature forest stands occur at higher altitudes; the deciduous forests being dominated by *Fagus* and the conifer forests by *Picea abies* and *Abies*.

## Lichenological exploration of Tara National Park

Although a well explored area by botanists, and renowned for its rich and partly relictual flora, few reports concern the lichens. Gajić (1988) reported eleven species. Dimović & Lökös recorded 125 species from the park in a lichenological survey in year 2000, but only some, particularly interesting finds were published (Dimović & Lökös 2003), several of them at that time representing species new to Serbia. They pointed out the occurrence of interesting lichen communities in damp and sheltered localities in the forests, and reported on both macrolichens and crustose lichens. Further species collected by M. Andreev were included in Savić *et al.* (2006). Lichens were collected by us on a short visit to Tara N. P. on April 21<sup>st</sup> -22<sup>nd</sup> in 2007. The specimens have been deposited in BEO.

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\*Corresponding author: e-mail: leif.tibell@ebc.uu.se

## Results

Even during our short time in Tara N. P. several species new to Serbia were found (for a recent checklist of the lichens of Serbia, see Savić & Tibell 2006), and we were particularly struck by the rich epiphytic lichen communities of the oldgrowth (*Fagus-Abies*) forests at about 1000 m altitude in the central parts of the park. Here we found, sometime in profusion, macrolichens that in other parts of Europe are included in Red Lists (no Red List of lichens of Serbia has been published), and that do not seem to have been collected in Serbia for a long time (youngest record apart from here within parenthesis), e.g. *Collema auriforme* (1903 or earlier), *Evernia divaricata* (1946), and *Nephroma parile* (1935). *Menegazzia terebrata* also belongs to this community, and was also reported by Dimović & Lökös (2003). Among the crustose lichens the following species were recorded in this type of habitat: *Arthonia didyma*\*, *A. spadicea*\*, *Candelariella reflexa*, *Chrysothrix candelaris*, *Dimerella pineti*, *Lecanora albellula*\*, *Lecanora glabrata*, *Micarea misella*\*, *Mycobilimbia epixanthoides*, *Mycoblastus fucatus*\*, *Opegrapha viridis*, *O. vulgata*, *Pertusaria coccodes*, *P. coronata*, *P. flavida*, *P. hemisphaerica*, *Ropalospora viridis*\*, *Schismatomma pericleum*\*, *Thelocarpon intermedium*\*, *Thelotrema lepadinum*, and *Trapeliopsis gelatinosa*\* (species new to Serbia with asterisk:\*). Several of these are similarly included in Red Lists of different European countries. The status of species also occurring in Austria are indicated according to the Austrian Red List (Türk & Hafellner 1999). Twenty-six of the species of the Austrian Red List were found in Tara N. P. This indication is only included in order to direct the interest of future investigations towards some species potentially interesting for the preservation of Serbian lichen diversity. It is, however, not meant to carry any implications about their actual status in Serbia. In ageing trees in these habitats rich communities of calicioid lichens occur, and the following species were recorded: *Calicium salicinum*\*, *C. viride*, *Chaenotheca chrysocephala*, *C. ferruginea*\*, *C. furfuracea*, *C. phaeocephala*\*, *C. trichialis*\*, *C. xyloxena*\*, and *Mycocalicium subtile*\*. These species assemblages are also characteristic features of mature and oldgrowth forests. It is evident already from this limited investigation that the oldgrowth forests of Tara N. P. are very rich with respect to lichen diversity, and the forests at higher altitudes in the park may prove to add substantially to this diversity. Many of the species occurring can be expected to be included on a future Red List of lichens of Serbia. In addition to this several crustose lichens new to Serbia were recorded from open, calcareous rocks.

## List of species

Species new to Serbia are marked with an asterisk (\*). Lichenicolous species are indicated with: [LF]. For previous records in Serbia, see Savić & Tibell (2006) and Bilovitz & Mayrhofer (2008). Indications for the status of species

according to the Red List of lichens of Austria (Türk & Hafellner 1999) are given in italics.

### *Acarospora cervina* A. Massal.

7 km SSW of Bajina Bašta, 1 km NW of Manastirski stanovi, at outlook, on exposed calcareous rocks, alt. ca 900 m, Savić & Tibell (TNP082/BEO). Previously recorded from two localities in Serbia.

### *A. glaucocarpa* (Ach.) Körb.

Along the road between Predov krst and Križevac, 43°53'04" N, 19°21'31" E, on roadside calcareous rocks, alt. 900 m, Savić & Tibell (TNP054b/BEO, with *Protoblastenia rupestris*). Previously recorded from four localities in Serbia.

### *Acrocordia gemmata* (Ach.) A. Massal.

Along the road between Predov krst and Križevac, 43°56'41" N, 19°19'30" E, on trunk of deciduous tree along the roadside, alt. 900 m, Savić & Tibell (TNP047/BEO). Previously recorded from four localities in Serbia. *Endangered* or *extinct* outside the Alps.

### \**Arthonia didyma* Körb.

Along the road between Perućac and Mitrovac, 1 km NW of Mitrovac, 43°55'36" N, 19°26'04" E, on trunk of *Abies* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP061/BEO).

### \**A. spadicea* Leight.

Between Mitrovac and Kaluđerske bare, 3.5 km ESE of Sumbilić brdo, 43°55' N, 19°29' E, on trunk of *Fagus* in mixed forest, alt. 1045 m, Savić & Tibell (TNP071/BEO). *Endangered* or *extinct* outside the Alps.

### *Aspicilia hoffmannii* auct.

Along the road between Predov krst and Križevac, 43°56'41" N, 19°19'30" E, on exposed calcareous rocks along the roadside, alt. 900 m, Savić & Tibell (TNP033/BEO). Previously recorded from two localities in Serbia.

### *Bacidia bagliettoana* (A. Massal. & De Not.) Jatta

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, on calcareous pebbles at gravel pit, alt. 1000 m, Savić & Tibell (TNP131/BEO). Previously recorded from two localities in Serbia.

### *Bagliettoa baldensis* (A. Massal.) Vězda

1.5 km ENE of Predov krst along the road to Križevac, 43°53'04" N, 19°21'31" E, on roadside calcareous rocks, alt. 900 m, Savić & Tibell (TNP051/BEO). Previously recorded from three localities in Serbia. *Rare* and *susceptible* in Austria.

### *B. steineri* (Kušan) Vězda

1.5 km ENE of Predov krst along the road to Križevac, 43°53'04" N, 19°21'31" E, on roadside calcareous rocks, alt. 900 m, Savić & Tibell (TNP048/BEO). Previously

recorded from two localities in Serbia, one of them in Tara N. P. (Savić *et al.* 2006).

*Bryoria capillaris* (Ach.) Brodo & D. Hawksw.

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, at base of trunk of *Abies*, Savić & Tibell (TNP110/BEO). Previously recorded from four localities in Serbia.

*Buellia disciformis* (Fr.) Mudd

7 km SSW of Bajina Bašta, 1 km NW of Manastirski stanovi, at outlook, on twigs of deciduous tree, alt. ca 900 m, Savić & Tibell (TNP075/BEO). Previously recorded from one locality in Serbia.

*B. griseovirens* (Turner & Borrer ex Sm.) Almb.

Predov krst, 43°56'31" N, 19°18'34" E, on lignum in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP025/BEO). Previously recorded from one locality in Serbia.

\**Calicium salicinum* Pers.

Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Pyrus communis* at forest margin of mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP027/BEO); between Perućac and Mitrovac, 1 km NW of Mitrovac, 43°55'36" N, 19°26'04" E, on trunk of *Abies* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP064/BEO); 1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, on lignum, Savić & Tibell (TNP111/BEO).

*C. viride* Pers.

Between Perućac and Mitrovac, 1 km NW of Mitrovac, 43°55'36" N, 19°26'04" E, on trunk of *Abies* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP067/BEO); 1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, on trunk of *Abies*, Savić & Tibell (TNP097/BEO). Previously recorded from one locality in Serbia.

*Caloplaca alociza* (A. Massal.) Mig.

7 km SSW of Bajina Bašta, 1 km NW of Manastirski stanovi, at outlook, on exposed calcareous rocks, alt. ca 900 m, Savić & Tibell (with *Diplotomma venustum* in TNP081/BEO). Previously recorded from one locality in Serbia, also from Tara N. P. (Savić *et al.* 2006).

*C. chalybaea* (Fr.) Müll. Arg.

Along the road between Predov krst and Križevac, 43°56'41" N, 19°19'30" E, on exposed calcareous rocks along the roadside, alt. 900 m, Savić & Tibell (TNP034/BEO). Previously recorded from two localities in Serbia.

*C. cirrochroa* (Ach.) Th. Fr.

Along the road between Predov krst and Križevac, 43°56'41" N, 19°19'30" E, on exposed calcareous rocks along the roadside, alt. 900 m, Savić & Tibell (TNP037/BEO). Previously recorded from three localities in Serbia.

*C. flavescens* (Huds.) J.R. Laundon

7 km SSW of Bajina Bašta, 1 km NW of Manastirski stanovi, at outlook, on exposed calcareous rocks, alt. ca 900 m, Savić & Tibell (TNP080/BEO). Previously recorded from one locality in Serbia.

\**C. polycarpa* (A. Massal.) Zahlbr.

Along the road between Predov krst and Križevac, 43°56'41" N, 19°19'30" E, on exposed calcareous rocks along the roadside, alt. 900 m, Savić & Tibell (TNP038/BEO). *Endangered* in Austria.

*Candelariella reflexa* (Nyl.) Lettau

Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Fagus* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP012/BEO). Previously recorded from two localities in Serbia.

*Catillaria lenticularis* (Ach.) Th. Fr.

Along the road between Predov krst and Križevac, 43°53'04" N, 19°21'31" E, on roadside calcareous rocks, alt. 900 m, Savić & Tibell (TNP050b/BEO, with *Petractis clausa*); 7 km SSW of Bajina Bašta, 1 km NW of Manastirski stanovi, at outlook, on exposed calcareous rocks, alt. ca 900 m, Savić & Tibell (TNP085/BEO and with *Catillaria minuta* in TNP083/BEO). Previously recorded from one locality in Serbia, also from Tara N. P. (Savić *et al.* 2006).

\**C. minuta* (A. Massal.) Lettau

7 km SSW of Bajina Bašta, 1 km NW of Manastirski stanovi, at outlook, on exposed calcareous rocks, alt. ca 900 m, Savić & Tibell (TNP083/BEO). *Rare and susceptible* in Austria.

\**Cetrelia monachorum* (Zahlbr.) W.L. Culb. & C.F. Culb.

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, at base of trunk of *Abies*, Savić & Tibell (TNP103/BEO).

*Chaenotheca chrysocephala* (Turner ex Ach.) Th. Fr.

Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Pyrus communis* at forest margin of mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (BEO, with *Chaenotheca phaeocephala*); between Perućac and Mitrovac, 1 km NW of Mitrovac, 43°55'36" N, 19°26'04" E, on trunk of *Abies* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP063/BEO); between Mitrovac and Kaluderske bare, 3.5 km ESE of Sumbilić brdo, 43°55' N, 19°29' E, on trunk of *Larix*, alt. 1045 m, Savić & Tibell (TNP074/BEO); 1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, on trunk of *Abies*, Savić & Tibell (TNP092/BEO). Previously recorded from one locality in Serbia.

\**C. ferruginea* (Turner ex Sm.) Mig.

Between Perućac and Mitrovac, 1 km NW of Mitrovac, 43°55'36" N, 19°26'04" E, on trunk of *Abies* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP068/

- BEO); 1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, on trunk of *Abies*, Savić & Tibell (TNP096/BEO).
- C. furfuracea* (L.) Tibell  
1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, at base of trunk of *Abies*, Savić & Tibell (TNP114/BEO). Previously recorded from three localities in Serbia.
- \**C. phaeocephala* (Turner) Th. Fr.  
Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Pyrus communis* at forest margin of mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP029/BEO). *Endangered* in Austria.
- \**C. trichialis* (Ach.) Th. Fr.  
Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Pyrus communis* at forest margin of mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP026/BEO); between Mitrovac and Kaluderske bare, 3.5 km ESE of Sumbilić brdo, 43°55' N, 19°29' E, on trunk of *Larix*, alt. 1045 m, Savić & Tibell (TNP073/BEO); 1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, on trunk of *Abies*, Savić & Tibell (TNP091/BEO).
- \**C. xyloxena* Nád. v.  
1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, on lignum, Savić & Tibell (TNP126/BEO). *Endangered* or *extinct* outside the Alps.
- \**Chaenothecopsis pusilla* (Ach.) A.F.W. Schmidt  
1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, on trunk of *Abies*, Savić & Tibell (TNP094/BEO). *Note*: A non-lichenized calicioid ascomycete traditionally included in lichenological publishing, as other members of *Mycocaliciales* (Tibell & Wedin 1999).
- Chrysothrix candelaris* (L.) J.R. Laundon  
Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Pyrus communis* at forest margin of mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP028/BEO); 1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, on trunk of *Abies*, Savić & Tibell (TNP095/BEO). Previously recorded from two localities in Serbia.
- Clauzadea immersa* (Hoffm.) Hafellner & Bellem.  
Along the road between Predov krst and Križevac, 43°53'04" N, 19°21'31" E, on roadside calcareous rocks, alt. 900 m, Savić & Tibell (BEO/TNP055, with *Petractis clausa*); 7 km SSW of Bajina Bašta, 1 km NW of Manastirski stanovi, at outlook, on exposed calcareous rocks, alt. ca 900 m, Savić & Tibell (TNP086/BEO). Previously recorded from two localities in Serbia, one of them in Tara N. P. (Savić *et al.* 2006).
- \**C. metzleri* (Körb.) Clauzade & Cl. Roux  
1.5 km ENE of Predov krst along the road to Križevac, 43°53'04" N, 19°21'31" E, on roadside calcareous rocks, alt. 900 m, Savić & Tibell (TNP049/BEO).
- C. monticola* (Schaer.) Hafellner & Bellem.  
1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, on calcareous pebbles at gravel pit, alt. 1000 m, Savić & Tibell (TNP132/BEO). Previously recorded from two localities in Serbia.
- \**Cliostomum griffithii* (Sm.) Coppins in Hawksworth *et al.*  
Near Hotel Omorica, 43°53'33" N, 19°33'47" E, on trunk of *Pinus sylvestris* in open pine forest, alt. 1040 m, Savić & Tibell (TNP006/BEO). *Endangered* in Austria.
- \**Clypeococcum hypocenomycis* D. Hawksw. [LF]  
Near Hotel Omorica, 43°53'33" N, 19°33'47" E, alt. 1040 m, Savić & Tibell (TNP001/BEO). On the thallus of *Hypocenomyce scalaris*. Previously recorded from one locality in Serbia.
- Collema auriforme* (With.) Coppins & J.R. Laundon  
1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, at base of trunk of *Abies*, Savić & Tibell (TNP101/BEO). Previously recorded from three localities in Serbia, most recent publication was Katić (1903).
- C. flaccidum* (Ach.) Ach.  
1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, at base of trunk of *Abies*, Savić & Tibell (TNP100/BEO). Previously recorded from four localities in Serbia. *Endangered* or *extinct* outside the Alps.
- C. fuscovirens* (With.) J.R. Laundon  
Along the road between Predov krst and Križevac, 43°53'04" N, 19°21'31" E, on roadside calcareous rocks, alt. 900 m, Savić & Tibell (TNP054e/BEO). Previously recorded from three localities in Serbia.
- C. multipartitum* Sm.  
7 km SSW of Bajina Bašta, 1 km NW of Manastirski stanovi, at outlook, on exposed calcareous rocks, alt. ca 900 m, Savić & Tibell (with *Acarospora cervina* in TNP082/BEO). Previously recorded by Murati (1993), but without locality.
- Dimerella pineti* (Ach.) Vězda  
Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Abies* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP018/BEO). Previously recorded from two localities in Serbia.
- Diplotomma venustum* Körb.  
7 km SSW of Bajina Bašta, 1 km NW of Manastirski stanovi, at outlook, on exposed calcareous rocks, alt. ca 900 m, Savić & Tibell (TNP081/BEO). Previously recorded from one locality in Serbia. *Rare* and *susceptible* in Austria.

**\*Endococcus pseudocarpus** Nyl. [LF]

Along the road between Predov krst and Križevac, 43°56'41" N, 19°19'30" E, on exposed calcareous rocks along the roadside, alt. 900 m, growing on *Collema tenax*, Savić & Tibell (TNP043/BEO).

**Evernia divaricata** (L.) Ach.

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, on twigs of *Abies*, Savić & Tibell (TNP090, TNP108/BEO). Previously recorded from two localities in Serbia, the most recently collected in 1946 (Savić *et al.* 2006). *Endangered* or *extinct* outside the Alps.

**Hypocenomyce scalaris** (Ach.) M. Choisy

Near Hotel Omorica, 43°53'33" N, 19°33'47" E, alt. 1040 m, Savić & Tibell (TNP001/BEO). Previously recorded from one locality in Serbia.

**Hypogymnia farinacea** Zopf

Near Hotel Omorica, 43°53'33" N, 19°33'47" E, alt. 1040 m, Savić & Tibell (TNP002/BEO). Previously recorded from three localities in Serbia.

**Imshaugia aleurites** (Ach.) S.L.F. Meyer

Near Hotel Omorica, 43°53'33" N, 19°33'47" E, alt. 1040 m, Savić & Tibell (TNP003/BEO). Previously recorded from four localities in Serbia.

**Lecania cyrtella** (Ach.) Th. Fr.

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, at base of trunk of *Abies*, Savić & Tibell (as admixture with *Lecanora albellula* in TNP112/BEO). Previously recorded from one locality in Serbia.

**\*Lecanora albellula** (Nyl.) Th. Fr.

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, at base of trunk of *Abies*, Savić & Tibell (TNP112/BEO).

**L. expallens** Ach.

Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Abies* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP022/BEO); on trunk of *Pyrus communis*, Savić & Tibell (TNP030, 031b/BEO). Recorded by Murati (1993), but no locality indicated.

**L. flotoviana** Spreng.

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, on calcareous pebbles at gravel pit, alt. 1000 m, Savić & Tibell (TNP127/BEO). Previously recorded from two localities in Serbia.

**L. glabrata** (Ach.) Malmé

Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Fagus* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP013/BEO); 1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, on

bark of *Fagus*, alt. 1000 m, Savić & Tibell (TNP122/BEO). Previously recorded from two localities in Serbia. *Vulnerable* in Austria.

**L. pruinosa** Chaub.

7 km SSW of Bajina Bašta, 1 km NW of Manastirski stanovi, at outlook, on exposed calcareous rocks, alt. ca 900 m, Savić & Tibell (TNP078/BEO). Previously recorded from one locality in Serbia. *Rare* and *susceptible* in Austria.

**L. reuteri** Schaer.

7 km SSW of Bajina Bašta, 1 km NW of Manastirski stanovi, at outlook, on exposed calcareous rocks, alt. ca 900 m, Savić & Tibell (TNP079/BEO). Previously recorded from one locality in Serbia.

**L. subrugosa** Nyl.

Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Fagus* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP015/BEO). Previously recorded from two localities in Serbia.

**Lepraria lobificans** Nyl.

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, at the base of trunk of *Abies*, alt. 1000 m, Savić & Tibell (TNP115/BEO); on calcareous pebbles at gravel pit, Savić & Tibell (TNP128/BEO); along the road between Predov krst and Križevac, 43°56'41" N, 19°19'30" E, on trunk of deciduous tree along the roadside, alt. 900 m, Savić & Tibell (TNP045/BEO); along the road between Perućac and Mitrovac, 1 km NW of Mitrovac, 43°55'36" N, 19°26'04" E, on trunk of *Fagus* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP059/BEO). Previously recorded from two localities in Serbia.

**\*Leptogium gelatinosum** (With.) J.R. Laundon

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, on calcareous pebbles at gravel pit, alt. 1000 m, Savić & Tibell (TNP130/BEO). Previously recorded from two localities in Serbia.

**\*Lichenonium lecanorae** (Jaap) D. Hawksw. [LF]

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, on *Lecanora glabrata* on bark of *Fagus*, alt. 1000 m, Savić & Tibell (TNP123/BEO).

**\*Loxospora elatina** (Ach.) A. Massal.

Near Hotel Omorica, 43°53'33" N, 19°33'47" E, on lignum, alt. 1040 m, Savić & Tibell (TNP004/BEO); along the road between Perućac and Mitrovac, 1 km NW of Mitrovac, 43°55'36" N, 19°26'04" E, on trunk of *Fagus* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP063b/BEO).

**Menegazzia terebrata** (Hoff.) A. Massal.

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, at base of trunk

of *Abies*, Savić & Tibell (TNP098/BEO). Previously recorded from one locality in Serbia. *Endangered* or *extinct* outside the Alps.

\**Micarea misella* (Nyl.) Hedl.

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, at base of trunk of *Abies*, Savić & Tibell (TNP117/BEO).

*M. prasina* Fr.

Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Abies* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP009/BEO); between Perućac and Mitrovac, 1 km NW of Mitrovac, 43°55'36" N, 19°26'04" E, on lignum in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP069/BEO). Previously recorded from one locality in Serbia.

\**Muellerella lichenicola* (Sommerf. : Fr.) D. Hawksw. [LF]

7 km SSW of Bajina Bašta, 1 km NW of Manastirski stanovi, at outlook, on *Aspicilia calcarea* on exposed calcareous rocks, alt. ca 900 m, Savić & Tibell (as admixture in *Heteroplacidium fusculum*, TNP088a/BEO).

*Mycobilimbia epixanthoides* (Nyl.) Hafellner & Türk

Between Mitrovac and Kaluđerske bare, 3.5 km ESE of Sumbilić brdo, 43°55' N, 19°29' E, on trunk of *Fagus* in mixed forest, alt. 1045 m, Savić & Tibell (TNP072/BEO). Previously recorded from one locality in Serbia.

\**Mycoblastus fucatus* (Stirt.) Zahlbr.

Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Abies* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP016/BEO).

\**Mycocalicium subtile* (Pers.) Szatala

Predov krst, 43°56'31" N, 19°18'34" E, on lignum in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP023/BEO). *Note*: A non-lichenized calicioid ascomycete traditionally included in lichenological publishing, as other members of *Mycocaliciales* (Tibell & Wedin 1999).

*Nephroma parile* (Ach.) Ach.

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, at base of trunk of *Abies*, Savić & Tibell (TNP099/BEO). Previously recorded from two localities in Serbia, most recently collected in 1935 (Kušan 1953). *Vulnerable* in Austria.

*Ochrolechia turneri* (Sm.) Hasselrot

Along the road between Predov krst and Križevac, 43°56'41" N, 19°19'30" E, on trunk of deciduous tree along the roadside, alt. 900 m, Savić & Tibell (TNP044/BEO). Previously recorded from two localities in Serbia.

\**Opegrapha dolomiticola* (Arnold) Clauzade & Cl. Roux

Along the road between Predov krst and Križevac, 43°53'04" N, 19°21'31" E, on roadside calcareous rocks, alt. 900 m, Savić & Tibell (TNP054c/BEO).

\**O. parasitica* (A. Massal.) Olivier [LF]

7 km SSW of Bajina Bašta, 1 km NW of Manastirski stanovi, at outlook, growing on *Aspicilia calcarea* on exposed calcareous rocks, alt. ca 900 m, Savić & Tibell (TNP088b/BEO).

*O. viridis* (Ach.) Behlen & Desberger

Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Abies* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP021/BEO); along the road between Perućac and Mitrovac, 1 km NW of Mitrovac, 43°55'36" N, 19°26'04" E, on trunk of *Fagus* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP058/BEO). Recorded by Murati (1993), but no locality indicated.

*O. vulgata* Ach.

Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Abies* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP019/BEO); between Predov krst and Križevac, 43°56'41" N, 19°19'30" E, on trunk of deciduous tree along the roadside, alt. 900 m, Savić & Tibell (TNP046/BEO); between Perućac and Mitrovac, 1 km NW of Mitrovac, 43°55'36" N, 19°26'04" E, on trunk of *Abies* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP062/BEO). Previously recorded from one locality in Serbia.

*Peltigera praetextata* (Flörke ex Sommerf.) Zopf

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, at the base of *Fagus*, alt. 1000 m, Savić & Tibell (TNP125/BEO). Previously recorded from three localities in Serbia.

*Pertusaria coccodes* (Ach.) Nyl.

Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Abies* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP010/BEO). Previously recorded from two localities in Serbia.

*P. coronata* (Ach.) Th. Fr.

Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Abies* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP011/BEO). Previously recorded from one locality in Serbia.

*P. hemisphaerica* (Flörke) Erichsen

Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Abies* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP008/BEO); between Perućac and Mitrovac, 1 km NW of Mitrovac, 43°55'36" N, 19°26'04" E, on trunk of *Abies* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP066/BEO); 1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, at base of trunk of *Abies*, Savić & Tibell (TNP106/BEO). Previously recorded from one locality in Serbia. *Endangered* or *extinct* outside the Alps.

*Petractis clausa* (Hoffm.) Kremp.

Along the road between Predov krst and Križevac, 43°53'04" N, 19°21'31" E, on roadside calcareous rocks, alt. 900 m, Savić & Tibell (TNP050a/BEO); 1.5 km ENE of Predov krst along the road to Križevac, 43°53'04" N, 19°21'31" E, on roadside calcareous rocks, alt. 900 m, Savić & Tibell (BEO). Previously recorded from one locality in Serbia.

*Placidium squamulosum* (Ach.) Breuss

Along the road between Predov krst and Križevac, 43°53'04" N, 19°21'31" E, on roadside calcareous rocks, alt. 900 m, Savić & Tibell (TNP054a/BEO). Previously recorded from one locality in Serbia.

*Protoblastenia incrustans* (DC.) J. Steiner

Along the road between Predov krst and Križevac, 43°56'41" N, 19°19'30" E, on exposed calcareous rocks along the roadside, alt. 900 m, Savić & Tibell (TNP032/BEO); as admixture with *Verrucaria dufouri*. Previously recorded from one locality in Serbia.

*P. rupestris* (Scop.) J. Steiner

Along the road between Predov krst and Križevac, 43°53'04" N, 19°21'31" E, on roadside calcareous rocks, alt. 900 m, Savić & Tibell (TNP054b/BEO). Previously recorded from two localities in Serbia, one of them in Tara N. P. (Savić *et al.* 2006).

*Pyrenocollema monense* (Wheldon) Coppins

1.5 km ENE of Predov krst along the road to Križevac, 43°53'04" N, 19°21'31" E, on roadside calcareous rocks, alt. 900 m, Savić & Tibell (TNP053/BEO). Previously recorded from one locality in Serbia.

*Rinodina bischoffii* (Hepp) A. Massal.

7 km SSW of Bajina Bašta, 1 km NW of Manastirski stanovi, at outlook, on exposed calcareous rocks, alt. ca 900 m, Savić & Tibell (TNP084/BEO). Previously recorded from two localities in Serbia.

*R. sophodes* (Ach.) A. Massal.

7 km SSW of Bajina Bašta, 1 km NW of Manastirski stanovi, at outlook, on twigs of deciduous tree, alt. ca 900 m, Savić & Tibell (TNP076/BEO). Previously recorded from four localities in Serbia. *Endangered* or *extinct* outside the Alps.

*\*Ropalospora viridis* (Tønsberg) Tønsberg

Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Abies* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP020/BEO). *Rare* and *susceptible* in Austria.

*Sarcogyne regularis* Körb.

1.5 km ENE of Predov krst along the road to Križevac, 43°53'04" N, 19°21'31" E, on roadside calcareous rocks, alt. 900 m, Savić & Tibell (TNP052/BEO). Previously recorded from one locality in Serbia, also from Tara N. P. (Savić *et al.* 2006).

*\*Schismatomma pericleum* (Ach.) Branth & Rostr.

Predov krst, 43°56'31" N, 19°18'34" E, on trunk of *Pyrus communis* at forest margin of mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP031a/BEO). *Vulnerable* in Austria.

*Scoliciosporum chlorococcum* (Graewe ex Stenh.) Vězda

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, at base of trunk of *Abies*, Savić & Tibell (TNP116/BEO). Previously recorded from one locality in Serbia.

*\*Thelidium incavatum* Mudd

Along the road between Predov krst and Križevac, 43°56'41" N, 19°19'30" E, on exposed calcareous rocks along the roadside, alt. 900 m, Savić & Tibell (TNP040/BEO); 7 km SSW of Bajina Bašta, 1 km NW of Manastirski stanovi, at outlook, on exposed calcareous rocks, alt. ca 900 m, Savić & Tibell (TNP087/BEO). *Vulnerable* in Austria.

*\*Thelocarpon intermediellum* Nyl.

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, at base of trunk of *Abies*, Savić & Tibell (TNP118/BEO). *Vulnerable* in Austria.

*Thelotrema lepadinum* (Ach.) Ach.

Along the road between Perućac and Mitrovac, 1 km NW of Mitrovac, 43°55'36" N, 19°26'04" E, on trunk of *Fagus* in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP060/BEO); between Mitrovac and Kaluderske bare, 3.5 km ESE of Sumbilić brdo, 43°55'N, 19°29'E, on trunk of *Fagus* in mixed forest, alt. 1045 m, Savić & Tibell (TNP070/BEO). Previously recorded from one locality in Serbia. *Endangered* or *extinct* outside the Alps.

*Toninia diffracta* (A. Massal.) Zahlbr.

7 km SSW of Bajina Bašta, 1 km NW of Manastirski stanovi, at outlook, on exposed calcareous rocks, alt. ca 900 m, Savić & Tibell (TNP089/BEO). Previously recorded from one locality in Serbia, also from Tara N. P. (Savić *et al.* 2006). *Vulnerable* in Austria.

*\*Trapeliopsis gelatinosa* (Flörke) Coppins & P. James

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, at base of trunk of *Abies*, Savić & Tibell (TNP104/BEO).

*Tuckermanopsis chlorophylla* (Willd.) Hale

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, on thin branches of *Abies*, Savić & Tibell (TNP106/BEO). Previously recorded from one locality in Serbia.

*Usnea filipendula* Stirt.

1.3 km ESE of Hotel Tara, by a small, N-facing creek, 43°53'21" N, 19°31'39" E, alt. 1000 m, on trunk of *Abies*, Savić & Tibell (TNP113/BEO). Previously recorded from three localities in Serbia.

\**Verrucaria compacta* (A. Massal.) Jatta

7 km SSW of Bajina Bašta, 1 km NW of Manastirski stanovi, at outlook, on exposed calcareous rocks, alt. ca 900 m, Savić & Tibell (TNP088a/BEO). *Vulnerable* in Austria.

*V. dolosa* Hepp

Along the road between Predov krst and Križevac, 43°56'41" N, 19°19'30" E, on exposed calcareous rocks along the roadside, alt. 900 m, Savić & Tibell (TNP039/BEO). Previously recorded from one locality in Serbia. *Vulnerable* in Austria.

*V. dufourii* DC.

Along the road between Predov krst and Križevac, 43°56'41" N, 19°19'30" E, on exposed calcareous rocks along the roadside, alt. 900 m, Savić & Tibell (TNP032/BEO). Previously recorded from one locality in Serbia.

\**V. macrostoma* Dufour ex DC.

Along the road between Predov krst and Križevac, 43°56'41" N, 19°19'30" E, on exposed calcareous rocks along the roadside, alt. 900 m, Savić & Tibell (TNP036/BEO). *Vulnerable* in Austria.

\**V. subfuscella* (Turner) Winch

Along the road between Predov krst and Križevac, 43°53'04" N, 19°21'31" E, on roadside calcareous rocks, alt. 900 m, Savić & Tibell (TNP050b/BEO, with *Petractis clausa*).

*Vouauxiella lichenicola* (Linds.) Petr. & Sydow [LF]

Predov krst, 43°56'31" N, 19°18'34" E, on *Lecanora pulicaris* growing on lignum in mixed *Abies-Fagus* forest, alt. 1080 m, Savić & Tibell (TNP024/BEO). Previously recorded from one locality in Serbia.

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