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Checklist of the lichens and lichenicolous fungi from the Pirin Mountains in Bulgaria

by

Dobri IVANOV*)

Synopsis: The first checklist of lichen species and lichenicolous fungi of Pirin Mountains, Bulgaria is provided. A species list of 514 taxa (including 509 lichens, 2 lichenicolous fungi and 3 non-lichenized fungi) constitutes the main part of the text. 71 species are newly recorded to the region. The following species are recorded for the first time for Bulgaria: *Acarospora scabra*, *Carbonea vitellinaria*, *Chaenothecopsis pusilla*, *Leptogium subtile*, *Tetramelus chloroleucus*, *Umbilicaria laevis*, *Umbilicaria nylanderiana*.

Keywords: biodiversity, lichens, Pirin Mountains, Bulgaria

1. Introduction:

The regular publication of national and regional checklists is important for the further development of lichen taxonomy, floristics and phytogeography. Although the first lichen records from Bulgaria date back to 1900 and 1906 (KAZANDZHIEV 1900, 1906) and later to the publications by POPNIKOLOV (1928 - 1937) and a first lichen flora of Bulgaria was published by POPNIKOLOV & ZHELEZOVA (1964), the investigation of the lichen flora in Bulgaria in the 20th century was rather poor. The most comprehensive work on the lichens in Bulgaria is the "Catalogue of lichenized and lichenicolous fungi in Bulgaria" by MAYRHOFER et al. (2005), based on all available literature data and revision of old herbarium specimens. In spite of the fact that the lichen flora of Bulgaria is extremely rich and of special interest from a biogeographical point of view and many lichenologists were attracted to Bulgaria and contributed to the general lichen biodiversity of the country, a few regional inventories of the lichens were published (POPNIKOLOV 1931, 1937, 1937a).

The preparation of the checklist of lichens of Pirin Mountains aims to update the list of species compiling literature data and data from some unpublished revisions of herbarium specimens with special consideration on lichen specimens collected by the author in 1987-1989. In particular, many species were found that had not been documented before in that region.

*)Address of the author: Dobri Ivanov, Faculty of Pharmacy, Medical University "Prof. Dr. P. Stoyanov", Marin Drinov Str. 55, 9002 Varna, Bulgaria.

2. Material and methods:

This study is based on literature data and a personal collection deposited in the Biological Faculty of the Moscow State University “M. Lomonosov”, Russia, as well as specimens kept in the National Museum of Natural History, Sofia. Registration numbers of National Museum of Natural History specimens are given in square brackets at the end of each entry.

The nomenclature of the lichenforming fungi follows NIMIS & MARTELLOS (2008). Taxa new to Pirin Mountains are indicated by an asterisk, and taxa new to Bulgaria – with two asterisks. The genera and species within each genus are given in alphabetical order.

3. The study area:

Pirin Mountains are situated in the south-western Bulgaria within the Rila-Rhodope Massif and cover an area of 2582 km², extending for 70 km from north to south and 30-35 km from west to east. The average altitude is 1033 m, with two peaks above 2900 m and 79 above 2500 m. The climate of the area is continental influenced by the Mediterranean Sea. Annual precipitation varies from 700 to 1500 mm. The great physiographic and climatic diversity produces a great complexity of vegetation types, including half of the species of the high vegetation flora of Bulgaria, with many endemic and rare species among them.

4. Results and discussion:

The first checklist of 514 species of lichens, lichenicolous and non-lichenized fungi of Pirin Mountains, Bulgaria is provided below. 68 lichen taxa, 1 lichenicolous fungus and 2 non-lichenized fungi are documented for the floristic region Pirin Mountains for the first time. Of these the following species are new to Bulgaria: *Acarospora scabra* (PERS.) TH.FR., *Carbonea vitellinaria* (NYL.) HERT., *Chaenothecopsis pusilla* (ACH.) A. F. W. SCHMIDT, *Leptogium subtile* (SCHRAD.) TORSS., *Tetramelus chloroleucus* (KÖRB.) A.NORDIN, *Umbilicaria laevis* (SCHAER.) FREY, *Umbilicaria nylanderiana* (ZAHLBR.) H.MAGN.

List of species

- Acarospora cervina* A.MASSAL. – IVANOV (1990); MAYRHOFER et al. (2005); [1, 3];
Acarospora fuscata (SCHRAD.) TH. FR. – MAYRHOFER et al. (2005);
Acarospora glaucocarpa (ACH.) KÖRB. – IVANOV (1990); MAYRHOFER et al. (2005);
Acarospora impressula TH. FR. – KLOSS (1962); MAYRHOFER et al. (2005);
**Acarospora macrospora* (HEPP) BAGL. – IVANOV (1990);
***Acarospora scabra* (PERS.) TH.FR. – [773, 2838]
Acarospora sulphurata (ARNOLD) ARNOLD – PISÚT (1967); MAYRHOFER et al. (2005);
Acrocordia gemmata (ACH.) A.MASSAL. – PISÚT (1969); MAYRHOFER et al. (2005);
Ainoa mooreana (CARROLL) LUMBSCH & J. A. SCHMITT – PISÚT (2001); MAYRHOFER et al. (2005);
Alectoria sarmentosa (ACH.) ACH. – IVANOV (1990); MAYRHOFER et al. (2005);
Amandinea punctata (HOFFM.) COPPINS & SCHEID. – IVANOV (1990);
Anaptychia ciliaris (L.) KÖRB. – ZHELEZOVA (1963); PISÚT (1969); IVANOV (1990);
MAYRHOFER et al. (2005); [116];
Anaptychia kaspica GYELN. – PISÚT (1967, 2001); MAYRHOFER et al. (2005);
Arthonia calcicola NYL. – MAYRHOFER et al. (2005);
**Arthonia radiata* (PERS.) ACH. – IVANOV (1990);
Arthroraphis citrinella (ACH.) POELT – ZHELEZOVA (1960); MAYRHOFER et al. (2005);
[2743, 2746];
Aspicilia caesiocinerea (MALBR.) ARNOLD – ZHELEZOVA (1956); IVANOV (1990);
MAYRHOFER et al. (2005);
Aspicilia calcarea (L.) MUDD. – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005); [845];
**Aspicilia cinerea* (L.) KÖRB. – IVANOV (1990);
**Aspicilia contorta* (HOFFM.) KREMP. – IVANOV (1990);
**Aspicilia farinosa* (FLÖRKE) ARNOLD – IVANOV (1990);
**Aspicilia intermutans* (NYL.) ARNOLD – IVANOV (1990);
Bacidia bagliettoana (A. MASSAL. & DE NOT.) JATTA – POPNIKOLOV & ZHELEZOVA (1964);
MAYRHOFER et al. (2005);
Bacidia fraxinea LÖNNR. – OTTE (2005);
Bacidia laurocerasi (DUBY) ZAHLBR. – PISÚT (1969); MAYRHOFER et al. (2005);
Bacidia rubella (HOFM.) MASS. – ZHELEZOVA (1963); MAYRHOFER et al. (2005);
Bacidia subincompta (NYL.) ARN. – PISÚT (1969); MAYRHOFER et al. (2005);
Bacidina phacodes (KÖRB.) VEZDA – PISÚT (1969); MAYRHOFER et al. (2005);
Baeomyces carneus FLK. – POPNIKOLOV & ZHELEZOVA 1964; MAYRHOFER et al. (2005);
Baeomyces rufus (HUDS.) REBENT. – ZHELEZOVA (1960); IVANOV (1990); MAYRHOFER et al. (2005); [156, 3208];
Bagliettoa limborioides A. MASSAL. – IVANOV (1990); MAYRHOFER et al. (2005); [2064];
**Bellemereaa alpina* (SOMMERF.) CLAUZADE & CL. ROUX – IVANOV (1990);

- **Bellemerea diamarta* (ACH.) HAFELLNER & CL. ROUX (Syn. *Bellemerea cinereorufescens* (ACH.) CLAUZADE & CL. ROUX) – IVANOV (1990);
- Bilimbia lobulata* (SOMMERF.) HAFELLNER & COPPINS – POPNIKOLOV (1928); PISÚT (1969); MAYRHOFER et al. (2005); [2826, 2827, 2828, 2829, 2830, 2831];
- Bilimbia sabuletorum* (SCHREB.) ARNOLD – IVANOV (1990); MAYRHOFER et al. (2005); [145, 148];
- Brodoa atrofusca* (SCHAER.) GOWARD – PISÚT (1969); MAYRHOFER et al. (2005);
- Brodoa intestiniformis* (VILL.) GOWARD – ZHELEZOVA (1956); PISÚT (1969), (1986); IVANOV (1990); MAYRHOFER et al. (2005); [1346, 2447; 2873];
- Bryonora castanea* (HEPP) POELT – PISÚT (1986); MAYRHOFER et al. (2005);
- Bryoria capillaris* (ACH.) BRODO & D. HAWKSW. – IVANOV (1990); MAYRHOFER et al. (2005);
- Bryoria chalybeiformis* (L.) BRODO & D. HAWKSW. – MAYRHOFER et al. (2005); [2708];
- Bryoria fuscescens* (GYELN.) BRODO & D. HAWKSW. – IVANOV (1990); MAYRHOFER et al. (2005);
- Bryoria nadvornikiana* (GYELN.) BRODO & D. HAWKSW. – OTTE (2005);
- **Bryoria subcana* (STIZENB.) BRODO & D. HAWKSW. – IVANOV (1990);
- Buellia disciformis* (FR.) MUDD. – IVANOV (1990); MAYRHOFER et al. (2005);
- Buellia erubescens* ARNOLD – IVANOV (1990); VEZDA (1967a); PISÚT (2001); MAYRHOFER et al. (2005); [2909];
- Calicium glaucellum* ACH. – IVANOV (1990, 1990a); MAYRHOFER et al. (2005);
- **Calicium salicinum* PERS. – IVANOV (1990);
- **Calicium viride* PERS. – IVANOV (1990);
- **Caloplaca albopruinosa* (ARNOLD) H. OLIVIER (Syn. *Caloplaca agardhiana* (A. MASSAL.) CLAUZADE & CL. ROUX) – IVANOV (1990);
- Caloplaca ammiospila* (WAHLENB.) H. OLIVIER – PISÚT (1986); MAYRHOFER et al. (2005);
- **Caloplaca aurea* (SCHAER.) ZAHLBR. – IVANOV (1990);
- Caloplaca cerina* (HEDW.) TH. FR. var. *cerina* – ZHELEZOVA (1963); IVANOV (1990); MAYRHOFER et al. (2005); [3215];
- Caloplaca cerina* var. *chloroleuca* (SM.) TH. FR. – ZHELEZOVA (1956); PISÚT (1967); IVANOV (1990); MAYRHOFER et al. (2005); [204, 205, 3214];
- Caloplaca chalybaea* (FR.) MÜLL. ARG. – PISÚT (1969); MAYRHOFER et al. (2005);
- Caloplaca chlorina* (FLOT.) H. OLIVIER – POPNIKOLOV & ZHELEZOVA (1964); PISÚT (2001); MAYRHOFER et al. (2005);
- **Caloplaca cirrochroa* (ACH.) TH. FR. – IVANOV (1990);
- Caloplaca citrina* (HOFFM.) TH. FR. – ZHELEZOVA (1956); MAYRHOFER et al. (2005);
- Caloplaca coccinea* (MÜLL. ARG.) POELT – PISÚT (1969, 1986); VEZDA (1967a); MAYRHOFER et al. (2005);
- Caloplaca crenularia* (WITH.) J. R. LAUNDON – ZHELEZOVA (1956); POPNIKOLOV & ZHELEZOVA (1964); IVANOV (1990); MAYRHOFER et al. (2005); [210; 3220];
- Caloplaca epithallina* LYNGE – PISÚT (1986); MAYRHOFER et al. (2005);

- Caloplaca ferruginea* (HUDS.) TH. FR. – ZHELEZOVA (1956,1963); IVANOV (1990); MAYRHOFER et al. (2005); [194, 2768, 3221];
- Caloplaca flavesrens* (Huds.) J. R. LAUNDON – PISÚT (1969); MAYRHOFER et al. (2005);
- **Caloplaca flavorubescens* (HUDS.) J. R. LAUNDON – IVANOV (1990);
- **Caloplaca granulosa* (MÜLL. ARG.) JATTA – IVANOV (1990);
- Caloplaca haematis* (ST.-AMANS) ZWACKH – PISÚT (1969,2001); MAYRHOFER et al. (2005);
- Caloplaca herbidella* (HUE) H. MAGN. – IVANOV (1990); PISÚT (1969, 2001); MAYRHOFER et al. (2005); VONDRAK, SLAVÍKOVA-BAYEROVÁ (2006);
- Caloplaca holocarpa* (ACH.) A. E. WADE – VEZDA (1969a); IVANOV (1990); MAYRHOFER et al. (2005);
- Caloplaca hungarica* H. MAGN. – VONDRAK & SLAVÍKOVA-BAYEROVÁ (2006);
- Caloplaca lactea* (A. MASSAL.) ZAHLBR. – ZHELEZOVA (1956); MAYRHOFER et al. (2005); [222];
- **Caloplaca lobulata* (FLÖRKE) HELLB. – IVANOV (1990);
- Caloplaca oasis* (A. MASSAL.) SZATALA – ZHELEZOVA (1956); MAYRHOFER et al. (2005); [226];
- Caloplaca ochracea* (SCHAER.) FLAGEY – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005);
- Caloplaca pellodella* (NYL.) HASSE – PISÚT (1971, 2001); MAYRHOFER et al. (2005);
- Caloplaca percrocata* (ARNOLD) J. STEINER – KLOSS (1962); MAYRHOFER et al. (2005);
- Caloplaca sarcopidoides* (KÖRB.) ZAHLBR. – PISÚT (1969); MAYRHOFER et al. (2005);
- Caloplaca saxicola* (HOFFM.) NORDIN - IVANOV (1990); MAYRHOFER et al. (2005);
- Caloplaca saxifragarum* POELT – PISÚT (1967,1969); VEZDA (1967a); MAYRHOFER et al. (2005); VONDRAK & SLAVÍKOVA-BAYEROVÁ (2006); [206];
- Caloplaca schistidii* (ANZI) ZAHLBR. – PISÚT (1967); IVANOV (1990); MAYRHOFER et al. (2005);
- Caloplaca scrobiculata* H. MAGN. – PISÚT (1986); MAYRHOFER et al. (2005);
- Caloplaca sinapisperma* (LAM. & DC.) MAHEU & A. GILLET – POPNIKOLOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005);
- Caloplaca tirolensis* ZAHLBR. – VONDRAK & SLAVÍKOVA-BAYEROVÁ (2006);
- Caloplaca variabilis* (PERS.) MÜLL. ARG. – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005); [212];
- Caloplaca velana* (A. MASSAL.) DU RIETZ – POPNIKOLOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005);
- Caloplaca viridirufa* (ACH.) ZAHLBR. – IVANOV (1990); MAYRHOFER et al. (2005); [213];
- Caloplaca vitellinaria* SZAT. – PISÚT (1969); MAYRHOFER et al. (2005);
- Caloplaca xantholyta* (NYL.) JATTA – MAYRHOFER et al. (2005);
- Calvitimela armeniaca* (DC.) HAFELLNER – ZHELEZOVA (1963); PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [905];
- Candelariella aurella* (HOFFM.) ZAHLBR. – ZHELEZOVA (1956); PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [230];

- Candelariella vitellina* (HOFFM.) MÜLL. ARG. – IVANOV (1990); MAYRHOFER et al. (2005); [231, 233, 2760, 2761];
- Candelariella xanthostigma* (ACH.) LETTAU – ZHELEZOVA (1956,1963); IVANOV (1990); MAYRHOFER et al. (2005);
- Carbonea atronivea* (ARN.) HERT. – ZHELEZOVA (1960); MAYRHOFER et al. (2005); [913, 914, 915];
- Carbonea distans* (KREMP.) HAFELLNER & OBERMAYER – PISÚT (1986); MAYRHOFER et al. (2005);
- Carbonea vorticosa* (FLK.) HERT. – KLOSS (1962); MAYRHOFER et al. (2005);
- Catapyrenium cinereum* (PERS.) KOERB. – ZHELEZOVA (1956); PISÚT (1969,1967); MAYRHOFER et al. (2005); [628, 632; 633; 634; 635];
- **Catillaria erysiboides* (NYL.) TH. FR. – IVANOV (1990);
- Cetraria aculeata* (SCHREB.) FR. – IVANOV (1990); MAYRHOFER et al. (2005);
- Cetraria ericetorum* OPIZ – CRETZOIU P. (1936); IVANOV (1990); MAYRHOFER et al. (2005);
- Cetraria islandica* (L.) ACH. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [253, 254, 2683];
- Cetraria muricata* (ACH.) ECKFELDT – MAYRHOFER et al. (2005);
- Cetraria sepincola* (EHRH.) ACH. – CRETZOIU P. (1936); MAYRHOFER et al. (2005);
- Chaenotheca chryscephala* (ACH.) TH. FR. – ZHELEZOVA (1960); MAYRHOFER et al. (2005); [306; 316];
- Chaenotheca furfuracea* (L.) TIBELL – IVANOV (1990); MAYRHOFER et al. (2005);
- **Chaenotheca trichialis* (ACH.) TH. FR. – IVANOV (1990);
- Chrysothrix candelaris* (L.) J. R. LAUNDON – MAYRHOFER et al. (2005);
- Cladonia arbuscula* (WALLR.) FLOT. – MAYRHOFER et al. (2005);
- Cladonia arbuscula* ssp. *mitis* (SANDST.) RUOSS – ZHELEZOVA (1963); PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
- Cladonia cariosa* (ACH.) SPRENG. – PISÚT (1967); MAYRHOFER et al. (2005);
- Cladonia cenotea* (ACH.) SCHAER. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [344, 513, 2597];
- Cladonia chlorophaea* (FLK.) SPRENG. – IVANOV (1990); MAYRHOFER et al. (2005);
- Cladonia cervicornis* ssp. *verticillata* (HOFFM.) AHTI – ZHELEZOVA (1956); MAYRHOFER et al. (2005); [493, 2618];
- **Cladonia coccifera* (L.) WILLD. – IVANOV (1990);
- Cladonia coniocraea* (FLÖRKE) SPRENG. – ZHELEZOVA (1963); MAYRHOFER et al. (2005); [454];
- Cladonia convoluta* (LAM.) ANDERS – PISÚT (1967); MAYRHOFER et al. (2005);
- **Cladonia crispata* (ACH.) FLOT. – IVANOV (1990);
- Cladonia deformis* (L.) HOFFM. – ZHELEZOVA (1956,1963), IVANOV (1990); MAYRHOFER et al. (2005); [342, 343];
- Cladonia digitata* (L.) HOFFM. – ZHELEZOVA (1963); IVANOV (1990); MAYRHOFER et al. (2005); [363];

- Cladonia ecmocyna* LEIGHT. – PISÚT (1969), (1986); MAYRHOFER et al. (2005);
Cladonia fimbriata (L.) FR.– IVANOV (1990); MAYRHOFER et al. (2005); [335; 519];
Cladonia foliacea (HUDS.) WILLD. – IVANOV (1990); MAYRHOFER et al. (2005);
Cladonia furcata (HUDS.) SCHRAD. – IVANOV (1990); MAYRHOFER et al. (2005); [2612, 2613];
Cladonia gracilis (L.) WILLD. – ZHELEZOVA (1963); MAYRHOFER et al. (2005); [365, 366];
Cladonia macroceras (DELISE) HAV.– POPNIKOLOV & ZHELEZOVA (1964); [534];
Cladonia macrophyllodes NYL. – ZHELEZOVA (1956); PISÚT (1969); MAYRHOFER et al. (2005);
Cladonia ochrochlora FLÖRKE – IVANOV (1990); MAYRHOFER et al. (2005); [404; 3176];
Cladonia pocillum (ACH.) O. J. RICH. – PISÚT (1969); MAYRHOFER et al. (2005);
Cladonia pyxidata (L.) HOFFM. – KLOSS (1962); IVANOV (1990); MAYRHOFER et al. (2005);
Cladonia rangiferina (L.) F. H. WIGG. – MAYRHOFER et al. (2005); [381];
Cladonia rangiformis HOFFM. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
Cladonia squamosa HOFFM. – ZHELEZOVA (1956); MAYRHOFER et al. (2005);
Cladonia subrangiformis SANDST. – MAYRHOFER et al. (2005);
Cladonia subulata (L.) F. H. WIGG. – ZHELEZOVA (1956); PISÚT (1969); IVANOV (1990);
MAYRHOFER et al. (2005);
Cladonia sulphurina (MICHX.) FR. – PISÚT (1969); MAYRHOFER et al. (2005);
Cladonia uncialis (L.) F. H. WIGG. – IVANOV (1990); MAYRHOFER et al. (2005); [479];
Clauzadea immersa (WEBER) HAFELLNER & BELLEM. – IVANOV (1990); MAYRHOFER et al. (2005);
Clauzadea monticola (SCHAER.) HAFELLNER & BELLEM. – POPNIKOLOV (1935);
POPNIKOLOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005);
Cliostomum griffithii (SM.) COPPINS – PISÚT 1995; MAYRHOFER et al. (2005);
**Collema auriforme* (WITH.) COPPINS & J. R. LAUNDON – IVANOV (1990);
Collema crispum (HUDS.) F. H. WIGG. – PISÚT (1967); MAYRHOFER et al. (2005);
Collema cristatum (L.) WEB. – PISÚT (1967, 1969); IVANOV (1990); MAYRHOFER et al. (2005); [567; 2949];
Collema fasciculare (L.) F. H. WIGG. – PISÚT (1969); MAYRHOFER et al. (2005);
Collema flaccidum (ACH.) ACH. – ZHELEZOVA (1963); PISÚT (1967, 1969); IVANOV (1990);
MAYRHOFER et al. (2005);
Collema furfuraceum (ARNOLD) DU RIETZ – PISÚT (1967); MAYRHOFER et al. (2005);
Collema fuscovirens (WITH.) J. R. LAUNDON – IVANOV (1990, 1990a); MAYRHOFER et al. (2005);
Collema ligerinum (HY) HARM. – PISÚT (1967); MAYRHOFER et al. (2005);
Collema multipartitum SM. – ZHELEZOVA (1956); PISÚT (1967); MAYRHOFER et al. (2005);
Collema nigrescens (HUDS.) DC. – PISÚT (1967, 1969); MAYRHOFER et al. (2005); [2791, 2792, 3182];
Collema occultatum BAGL. – PISÚT (1967); MAYRHOFER et al. (2005);
Collema polycarpon HOFFM. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);

- Collema subflaccidum* DEGEL. – PISÚT (1967); MAYRHOFER et al. (2005);
Collema subnigrescens DEGEL. – PISÚT (1967); MAYRHOFER et al. (2005);
Collema tenax (Sw.) ACH. – PISÚT (1969); MAYRHOFER et al. (2005); [571, 2968];
Collema undulatum LAUR. ex FLOT. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
- Cornicularia normoerica* (GUNNERUS) DU RIETZ – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005); [2788];
- Cyphelium tigillare* (ACH.) ACH. – ZHELEZOVA (1956); MAYRHOFER et al. (2005); [590; 592, 2794];
- Dacampia hookeri* (BORRER) A. MASSAL. – PISÚT (2001); MAYRHOFER et al. (2005);
- Dermatocarpon luridum* (WITH.) J. R. LAUNDON – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005); [644, 645],
- Dermatocarpon miniatum* (L.) MANN. – ZHELEZOVA (1956, 1963); PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [611, 610, 619, 620, 653];
- Dermatocarpon rivulorum* (ARNOLD) DALLA TORRE & SARNTH. – PISÚT (2001); MAYRHOFER et al. (2005);
- Dimelaena oreina* (ACH.) NORMAN – ZHELEZOVA (1956); PISÚT (1986); IVANOV (1990); MAYRHOFER et al. (2005); [1734];
- Dimerella pineti* (ACH.) VEZDA – PISÚT (1969); MAYRHOFER et al. (2005);
- Diploschistes diacapsis* (ACH.) LUMBSCH – ZHELEZOVA (1960); MAYRHOFER et al. (2005); [3285];
- Diploschistes muscorum* (SCOP.) R. SANT. – ZHELEZOVA (1960); PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
- Diploschistes scruposus* (SCHREB.) NORM. – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005); [707];
- **Diplotomma chlorophaeum* (LEIGHT.) SZATALA – IVANOV (1990);
- **Endocarpon pusillum* HEDW. – IVANOV (1990);
- Evernia divaricata* (L.) ACH. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [719, 722, 725];
- Evernia prunastri* (L.) ACH. – IVANOV (1990); MAYRHOFER et al. (2005); [746];
- Farnoldia jurana* (SCHAER.) HERTEL – ZHELEZOVA (1963); IVANOV (1990); PISÚT (1969); MAYRHOFER et al. (2005); [941];
- Flavocetraria cucullata* (BELLARDI) KÄRNEFELT & THELL – IVANOV (1990); MAYRHOFER et al. (2005); [245];
- Flavocetraria nivalis* (L.) KÄRNEFELT & THELL – ZHELEZOVA (1962); IVANOV (1990); MAYRHOFER et al. (2005); [244];
- **Flavoparmelia caperata* (L.) HALE – IVANOV (1990);
- Fulglesia bracteata* (HOFFM.) RÄSÄNEN – ZHELEZOVA (1962); VEZDA (1967b); IVANOV (1990); MAYRHOFER et al. (2005); [2206];
- Fulglesia fulgens* (Sw.) ELENKIN – POPNIKOLOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005);

- Fuscopannaria leucophaea* (VAHL) M. JÖRG. – ZHELEZOVA (1963); PISÚT (1967); IVANOV (1990); MAYRHOFER et al. (2005); [1409];
- **Graphis scripta* (L.) ACH. – IVANOV (1990);
- Gyalecta derivata* (NYL.) H. OLIVIER – PISÚT (1969); MAYRHOFER et al. (2005);
- Gyalecta jenensis* (BATSCH) ZAHLBR. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
- Gyalecta peziza* (MONT.) ANZI – PISÚT (1986); MAYRHOFER et al. (2005);
- Gyalecta truncigena* (ACH.) HEPP – PISÚT (2001); MAYRHOFER et al. (2005);
- Haematomma ochroleucum* (NECK.) J. R. LAUNDON var. *ochroleucum* – MAYRHOFER et al. (2005); [2841];
- Heterodermia obscurata* (NYL.) TREVIS. – PISÚT (1969); MAYRHOFER et al. (2005);
- Hypogymnia austeroedes* (NYL.) RÄSÄNEN – POPNIKOLOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005);
- Hypogymnia farinacea* ZOPF – ZHELEZOVA (1963); PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [1395, 1400, 2214, 2215, 2847, 2848, 2865, 2866, 2869, 2870];
- Hypogymnia physodes* (L.) NYL. – ZHELEZOVA (1956); PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [1298, 1355, 2858, 2859, 2862];
- Hypogymnia tubulosa* (SCHAER.) HAV. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
- Hypogymnia vittata* (ACH.) PARRIQUE – PISÚT (1969); MAYRHOFER et al. (2005);
- Imshaugia aleurites* (ACH.) S. L. F. MEYER – ZHELEZOVA (1956); MAYRHOFER et al. (2005); [1419, 1431, 1432, 2376, 2778];
- Ionaspis lacustris* (WITH.) LUTZONI – PISÚT (2001); MAYRHOFER et al. (2005);
- **Lasallia pustulata* (L.) MÉRAT – IVANOV (1990);
- Lecania erysibe* (ACH.) MUDD. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
- Lecania hyalina* (Fr.) R. SANT. – MAYRHOFER et al. (2005);
- **Lecania koerberiana* J. LAHM – PISÚT (1969);
- **Lecania naegelii* (HEPP.) DIEDER. & V.D. BOOM – IVANOV (1990);
- Lecanora admontensis* ZAHLBR. – PISÚT (1969); MAYRHOFER et al. (2005);
- Lecanora agardhiana* ACH. – POPNIKOLOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005);
- Lecanora albescens* (HOFFM.) BRAUTH. et ROSTR. – IVANOV (1990); MAYRHOFER et al. (2005);
- Lecanora allophana* NYL – ZHELEZOVA (1963); MAYRHOFER et al. (2005);
- Lecanora argentata* (ACH.) MALME – MAYRHOFER et al. (2005);
- Lecanora argopholis* (ACH.) ACH. – PISÚT (1967); MAYRHOFER et al. (2005);
- Lecanora bicincta* RAMOND – PISÚT (1969); MAYRHOFER et al. (2005);
- Lecanora cadubriæ* (A. MASSAL.) HEDL. – POPNIKOLOV (1932); MAYRHOFER et al. (2005);
- Lecanora carpinea* (L.) VAIN. – IVANOV (1990); MAYRHOFER et al. (2005);
- Lecanora cenisia* ACH. – CRETZOIU P. (1936); ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005); [841];

- Lecanora chlorotera* NYL. – IVANOV (1990); PISÚT (2001); MAYRHOFER et al. (2005);
Lecanora dispersa (PERS.) SOMMERF. – ZHELEZOVA (1963); MAYRHOFER et al. (2005); [2580];
Lecanora epibryon (ACH.) ACH. – POPNIKOLOV (1932); POPNIKOLOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005);
Lecanora flotowiana SPRENG. – MAYRHOFER et al. (2005);
**Lecanora frustulosa* (DICKS.) ACH. – IVANOV (1990);
Lecanora intricata (ACH.) ACH. – MAYRHOFER et al. (2005);
Lecanora intumescens (REBENT.) RABENH. – IVANOV (1990); MAYRHOFER et al. (2005);
Lecanora leptyrodes (NYL.) NILLS. – IVANOV (1990, 1990a); MAYRHOFER et al. (2005);
Lecanora marginata (SCHAER.) HERT. et RAMB. – ZHELEZOVA (1963); MAYRHOFER et al. (2005);
Lecanora mughicola NYL. – ZHELEZOVA (1956); MAYRHOFER et al. (2005);
Lecanora pirinensis GYELN. – MAYRHOFER et al. (2005);
Lecanora polytropa (HOFFM.) RABH. – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005); [833];
Lecanora pulicaris (PERS.) ACH. – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005); [2538, 2539];
Lecanora rupicola (L.) ZAHLBR. – IVANOV (1990); MAYRHOFER et al. (2005); [2587];
Lecanora salina H. MAGN. – MAYRHOFER et al. (2005);
Lecanora subfallax MOTYKA, nom. illeg. – VEZDA (1969b); MAYRHOFER et al. (2005);
Lecanora subintricata (NYL.) TH. FR. – POPNIKOLOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005);
Lecanora sulphurea (HOFFM.) ACH. – KLOSS (1962); ZHELEZOVA (1963); MAYRHOFER et al. (2005); [3078];
**Lecanora swartzii* (ACH.) ACH. (Syn. *subradiosa* NYL.) – IVANOV (1990);
Lecanora varia (HOFFM.) ACH. – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005); [2572, 2583, 3273];
Lecidea atrobrunnea (RAM.) SCHAER. – ZHELEZOVA (1963); IVANOV (1990); MAYRHOFER et al. (2005); [940];
Lecidea confluens (WEB.) ACH. – ZHELEZOVA (1963); IVANOV (1990); MAYRHOFER et al. (2005); [896]; [897];
Lecidea lapicida (ACH.) ACH. var. *pantherina* ACH. – KLOSS (1962); IVANOV (1990); MAYRHOFER et al. (2005);
Lecidea lithophila (ACH.) ACH. – POPNIKOLOV 1928; ZHELEZOVA (1956); MAYRHOFER et al. (2005); [907];
Lecidea plana (LAHM.) NYL. – ZHELEZOVA (1956); MAYRHOFER et al. (2005);
Lecidea promiscua NYL. – KLOSS (1962); MAYRHOFER et al. (2005);
Lecidea pullata (NORMAN) TH. FR. – PISÚT (1967); MAYRHOFER et al. (2005);
Lecidea umbonata (HEPP) MUDD - VEZDA (1969b); MAYRHOFER et al. (2005);

- **Lecidella carpathica* KOERB. – IVANOV (1990);
Lecidella elaeochroma (ACH.) CHOISY – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005);
Lecidella patavina (A. MASSAL.) KNOPH & LEUCKERT – PISÚT (1969); VEZDA (1967)a; MAYRHOFER et al. (2005);
Lecidella stigmataea (ACH.) HERT. et LEUCK. – KLOSS (1962); PISÚT (1969); MAYRHOFER et al. (2005);
Lecidella wulfenii (HEPP) KÖRB. – PISÚT (1986); MAYRHOFER et al. (2005);
Lecidoma demissum (RUTSTR.) GOTTH. SCHNEID. & HERTEL – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005); [903, 942, 943, 946, 948];
Lepraria alpina (DE LESD.) TRETIACH & BARUFFO – PISÚT (2001); MAYRHOFER et al. (2005);
Lepraria crassissima (HUE) LETTAU – POPNIKOLOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005);
Lepraria membranacea (DICKS.) VAIN. – MAYRHOFER et al. (2005); [3125];
Lepraria neglecta (NYL.) LETTAU – MAYRHOFER et al. (2005); [582, 587, 895, 971, 997, 2636];
Leprocaulon microscopicum (VILL.) GAMS – PISÚT (1967); IVANOV (1990); MAYRHOFER et al. (2005);
Leptogium burnetiae C. W. DODGE – PISÚT (2001); MAYRHOFER et al. (2005);
Leptogium gelatinosum (WITH.) J. R. LAUNDON – ZHELEZOVA (1963); IVANOV (1990); MAYRHOFER et al. (2005); [3296, 3298];
Leptogium hildenbrandii (GAROV.) NYL. – PISÚT (1967); MAYRHOFER et al. (2005);
Leptogium lichenoides (L.) ZAHLBR. – IVANOV (1990); MAYRHOFER et al. (2005); [1033, 1036, 1040, 1041, 1044];
Leptogium magnussonii DEGEL. & M. JØRG. – PISÚT (2001); MAYRHOFER et al. (2005);
Leptogium saturninum (DICKS.) NYL. – PISÚT (1967, 1969, 1986); IVANOV (1990); MAYRHOFER et al. (2005); [1012, 1014, 1055];
***Leptogium subtile* (SCHRAD.) TORSS. (Syn. *L. minutissimum* (FLÖRKE) FR.) – IVANOV (1990);
Leptogium tenuissimum (DICKS.) KÖRB. – PISÚT (2001); MAYRHOFER et al. (2005);
Letharia vulpina (L.) HUE – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [1072, 1076, 1077, 1082, 1084, 1088, 1090,];
Lobaria amplissima (SCOP.) FORSELL – PISÚT (1969); MAYRHOFER et al. (2005);
Lobaria pulmonaria (L.) HOFFM. – ZHELEZOVA (1963); PISÚT (1967), (1969); IVANOV (1990); MAYRHOFER et al. (2005); [1093];
Lobaria scrobiculata (SCOP.) DC. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
Lobothallia melanaspis (ACH.) HAFELLNER – PISÚT (1967); MAYRHOFER et al. (2005);
Lobothallia parasitica (DE LESD.) – VEZDA (1968a); MAYRHOFER et al. (2005);
Lobothallia radiosua (HOFFM.) HAFELLNER – IVANOV (1990); MAYRHOFER et al. (2005); [2563];

- Lopadium pezizoideum* (Ach.) KÖRB. – MAYRHOFER et al. (2005);
Massalongia carnosa (DICKS.) KÖRB. – OTTE (2005);
Megaspora verrucosa (Ach.) HAFELLNER & V. WIRTH – ZHELEZOVA (1956); PISÚT (1969);
MAYRHOFER et al. (2005); [835, 2547, 2565, 3319, 3320];
Melanelia commixta (NYL.) THELL – IVANOV (1990,1990a); MAYRHOFER et al. (2005);
Melanelia hepatizon (Ach.) THELL – KLOSS (1962); IVANOV (1990); MAYRHOFER et al.
(2005);
**Melanelia olivacea* (L.) ESSL. – IVANOV (1990);
Melanelia stygia (L.) ESSL. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
Melanelia fuliginosa (DUBY) O. BLANCO, A. CRESPO, DIVAKAR, ESSL., D. HAWKSW. &
LUMBSCH – IVANOV (1990); MAYRHOFER et al. (2005);
Melanelia glabra (SCHAER.) O. BLANCO, A. CRESPO, DIVAKAR, ESSL., D. HAWKSW. &
LUMBSCH – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [2532];
Melanelia subargentifera (NYL.) O. BLANCO, A. CRESPO, DIVAKAR, ESSL., D. HAWKSW.
& LUMBSCH – IVANOV (1990); OTTE (2005);
Melanelia subaurifera (NYL.) O. BLANCO, A. CRESPO, DIVAKAR, ESSL., D. HAWKSW. &
LUMBSCH – IVANOV (1990); OTTE (2005);
Melanohalea exasperata (DE NOT.) O. BLANCO, A. CRESPO, DIVAKAR, ESSL., D. HAWKSW.
& LUMBSCH – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [2531];
Melanohalea exasperatula (NYL.) O. BLANCO, A. CRESPO, DIVAKAR, ESSL., D. HAWKSW. &
LUMBSCH – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005);
**Melanohalea infumata* (NYL.) O. BLANCO, A. CRESPO, DIVAKAR, ESSL., D. HAWKSW. &
LUMBSCH – IVANOV (1990);
Micarea denigrata (Fr.) HEDL. - MAYRHOFER et al. (2005);
Miriquidica garovaglii (SCHAER.) HERTEL & RAMBOLD – KLOSS (1962); IVANOV (1990);
MAYRHOFER et al. (2005);
Mycobilimbia hypnorum (LIB.) KALB & HAFELLNER – PISÚT (1969); MAYRHOFER et al.
(2005);
Mycobilimbia lurida (Ach.) HAFELLNER & TÜRK – ZHELEZOVA (1960); PISÚT (1969);
MAYRHOFER et al. (2005); [876; 880];
**Myriospora heppii* KÖRB. – IVANOV (1990);
**Naetrocymbe punctiformis* (PERS.) R. C. HARRIS – IVANOV (1990);
**Nephroma laevigatum* ACH. – IVANOV (1990);
Nephroma parile ACH. – ZHELEZOVA (1956); PISÚT (1967,1969,1986); VEZDA (1968a);
IVANOV (1990); MAYRHOFER et al. (2005);
Nephroma resupinatum (L.) ACH. – ZHELEZOVA (1963); PISÚT (1967,1969); IVANOV
(1990); MAYRHOFER et al. (2005); [2190];
Ochrolechia alboflavescens (WULF.) ZAHLBR. – ZHELEZOVA (1963); PISÚT (1969,1986);
IVANOV (1990); MAYRHOFER et al. (2005); [1188, 1189];
Ochrolechia androgyna (HOFFM.) ARNOLD – PISÚT (1969,1986); MAYRHOFER et al. (2005);

- Ochrolechia pallescens* (L.) A. MASSAL. – PISÚT (1969); MAYRHOFER et al. (2005); [1190, 1191];
- Ochrolechia parella* (L.) A. MASSAL. – IVANOV (1990); MAYRHOFER et al. (2005); [1150, 1157, 1158, 1161, 1162, 1166, 1168, 1173, 1176];
- Ochrolechia szatalaensis* VERSEGHY – PISÚT (1969, 1986); MAYRHOFER et al. (2005);
- **Opegrapha atra* PERS. – IVANOV (1990);
- Opegrapha varia* PERS. – OTTE (2005);
- **Ophioparma ventosa* (L.) NORMAN – IVANOV (1990);
- Orphniospora mosigii* (KÖRB.) HERTEL & RAMBOLD – KLOSS (1962); MAYRHOFER et al. (2005);
- **Pannaria conoplea* (ACH.) BORY – IVANOV (1990);
- Parmelia ernstiae* FEUERER & THELL – OTTE (2005);
- Parmelia omphalodes* (L.) ACH. – MAYRHOFER et al. (2005); [3098];
- Parmelia saxatilis* (L.) ACH. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [1320, 1323, 1325, 2431, 2346];
- Parmelia submontana* HALE – PISÚT (1969, 1986); IVANOV (1990); MAYRHOFER et al. (2005);
- Parmelia sulcata* TAYLOR – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
- Parmeliella triptophylla* (ACH.) MÜLL. ARG. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
- Parmelina carporrhizans* (TAYLOR) POELT & VEZDA – PISÚT (2001); MAYRHOFER et al. (2005);
- Parmelina quericina* (WILLD.) HALE – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
- Parmelina tiliacea* (HOFFM.) HALE – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [1355, 1357, 2473, 2495];
- Parmeliopsis ambigua* (WULFEN) NYL. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [1429, 1418, 1427, 2375];
- Parmeliopsis hyperopta* (ACH.) ARNOLD – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [3199];
- Peccania coralloides* (A. MASSAL.) A. MASSAL. – PISÚT (1967); MAYRHOFER et al. (2005);
- Peltigera aphthosa* (L.) WILLD. – ZHELEZOVA (1963); PISÚT (1967, 1969); IVANOV (1990); MAYRHOFER et al. (2005);
- Peltigera canina* (L.) WILLD. – ZHELEZOVA (1963); IVANOV (1990); MAYRHOFER et al. (2005); [1526];
- Peltigera collina* (ACH.) SCHRAD. – PISÚT (1967, 1969); IVANOV (1990); MAYRHOFER et al. (2005);
- Peltigera didactyla* (WITH.) J. R. LAUNDON – ZHELEZOVA (1960); PISÚT (1967); IVANOV (1990); MAYRHOFER et al. (2005); [1499, 1514, 2283];
- Peltigera horizontalis* (HUDS.) BAUMG. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);

- Peltigera leucophlebia* (NYL.) GYELN. – ZHELEZOVA (1956); MAYRHOFER et al. (2005); [2306];
- Peltigera malacea* (ACH.) FUNCK. – IVANOV (1990); OTTE (2005);
- Peltigera membranacea* (ACH.) NYL. – OTTE (2005);
- Peltigera polydactyla* (NECK.) HOFFM. – PISÚT (1967); IVANOV (1990); MAYRHOFER et al. (2005);
- Peltigera praetextata* (FLÖRKE) NYL. – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005);
- Peltigera rufescens* (WEIS.) HUMB. – IVANOV (1990); MAYRHOFER et al. (2005); [1482, 1489, 1494, 1496, 1497, 2282];
- Peltigera venosa* (L.) BAUMG. – ZHELEZOVA (1960); PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [1464, 1465];
- Peltula euploca* (ACH.) POELT – PISÚT (1967); MAYRHOFER et al. (2005);
- Pertusaria albescens* (HUDS.) M. CHOISY & WERNER – IVANOV (1990); MAYRHOFER et al. (2005); [2341, 2349];
- **Pertusaria amara* (ACH.) NYL. – IVANOV (1990);
- Pertusaria aspergilla* (ACH.) J. R. LAUNDON – PISÚT (2001); MAYRHOFER et al. (2005);
- Pertusaria coccodes* (ACH.) NYL. – MAYRHOFER et al. (2005); [2346];
- Pertusaria flava* (DC.) J.R.LAUNDON – PISÚT (1969); MAYRHOFER et al. (2005);
- Pertusaria hemisphaerica* (FLÖRKE) ERICHSEN – MAYRHOFER et al. (2005); [2374];
- Pertusaria lactea* (L.) ARNOLD – ZHELEZOVA (1956); MAYRHOFER et al. (2005);
- Pertusaria leioplaca* DC. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
- Pertusaria pertusa* (WEIGEL) TUCK. – PISÚT (1969); MAYRHOFER et al. (2005); [1544, 2362];
- Phaeophyscia ciliata* (HOFFM.) MOBERG – PISÚT (1967); IVANOV (1990); MAYRHOFER et al. (2005); [1577];
- Phaeophyscia endococcina* (KÖRB.) MOBERG – PISÚT (1967,1969); IVANOV (1990); MAYRHOFER et al. (2005);
- **Phaeophyscia nigricans* (FLÖRKE) MOBERG – IVANOV (1990);
- Phaeophyscia orbicularis* (NECK.) MOBERG – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005);
- Phaeorrhiza nimbo* (Fr.) H.MAYRHOFER & POELT – VEZDA (1967a); PISÚT (1969); MAYRHOFER et al. (2005);
- Phlyctis argena* (SPRENG.) FLOT. – OTTE (2005); [3159];
- Physcia adscendens* (Fr.) H. OLIVIER – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
- Physcia aipolia* (HUMB.) FÜRNR. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [3297];
- Physcia albinea* (ACH.) NYL. – ZHELEZOVA (1956); KLOSS (1962); ZHELEZOVA (1963); PISÚT (1967); IVANOV (1990); MAYRHOFER et al. (2005); [2258, 2259, 2261, 3124];
- Physcia biziana* (A.MASSAL.) ZAHLBR. – PISÚT (1967); MAYRHOFER et al. (2005);

- Physcia caesia*** (HOFFM.) FÜRNR. – ZHELEZOVA (1963); PISÚT (1967,1969); MAYRHOFER et al. (2005);
- Physcia dimidiata*** (ARNOLD) NYL. - PISÚT (2001); MAYRHOFER et al. (2005);
- Physcia dubia*** (HOFFM.) LETTAU – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
- Physcia leptalea*** (Ach.) DC. – PISÚT (1967); MAYRHOFER et al. (2005);
- Physcia magnussonii*** FREY – PISÚT (1986); MAYRHOFER et al. (2005);
- Physcia stellaris*** (L.) NYL. – IVANOV (1990); MAYRHOFER et al. (2005); [1564];
- ****Physcia tenella*** (SCOP.) DC. – IVANOV (1990);
- Physcia tribacia*** (Ach.) NYL. – POPNIKOLOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005);
- Physconia detersa*** (NYL.) POELT – PISÚT (2001); MAYRHOFER et al. (2005);
- Physconia distorta*** (WITH.) J. R. LAUNDON – IVANOV (1990); [1563, 2247]; OTTE (2005);
- Physconia enteroxantha*** (NYL.) POELT – IVANOV (1990); OTTE (2005);
- Physconia grisea*** (LAM.) POELT – PISÚT (1967); MAYRHOFER et al. (2005);
- Physconia perisidiosa*** (ERICHSEN) MOBERG – OTTE (2005);
- Physconia servitii*** (NÁDV.) POELT – OTTE et al. (2002); MAYRHOFER et al. (2005);
- Physconia venusta*** (Ach.) POELT – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
- Placidium lachneum*** (Ach.) DE LESD. – ZHELEZOVA (1956); PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [647, 648, 649];
- Placynthiella uliginosa*** (SCHRAD.) COPPINS & P. JAMES – ZHELEZOVA (1956); POPNIKOLOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005);
- Placynthium filiforme*** (GAROV.) M. CHOISY – PISÚT (1967); MAYRHOFER et al. (2005);
- Placynthium nigrum*** (HUDS.) GRAY – POPNIKOLOV (1928,1932); IVANOV (1990); MAYRHOFER et al. (2005); [1597];
- Platismatia glauca*** (L.) W. L. CULB. & C. F. CULB. – ZHELEZOVA (1960); PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [243, 264, 265, 274];
- Pleopsidium chlorophanum*** (WAHLENB.) ZOPF – PISÚT (2001); MAYRHOFER et al. (2005);
- Pleopsidium flavum*** (BELLARDI) KÖRB. – MAYRHOFER et al. (2005);
- Pleurosticta acetabulum*** (NECK.) ELIX & LUMBSCH – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
- Polyblastia albida*** ARNOLD – POPNIKOLOV (1932); MAYRHOFER et al. (2005);
- Polyblastia sendtneri*** KREMP. – POPNIKOLOV (1932); MAYRHOFER et al. (2005);
- Polysporina cyclocarpa*** (ANZI) VEZDA – KLOSS (1962); MAYRHOFER et al. (2005);
- Polysporina simplex*** (DAVIES) VEZDA – KLOSS (1962); IVANOV (1990); MAYRHOFER et al. (2005);
- ****Porina aenea*** (WALLR.) ZAHLBR. (Syn. *Pseudosagedia aenea* (WALLR.) HAFELLNER & KALB) – IVANOV (1990);
- ****Porpidia cinereoatra*** (Ach.) HERT. & KNOPH – IVANOV (1990);
- Porpidia crustulata*** (Ach.) HERTEL & KNOPH – MAYRHOFER et al. (2005);

- Porpidia macrocarpa* (DC.) HERT. et SCHWAB. – IVANOV (1990); MAYRHOFER et al. (2005);
Porpidia speirea (ACH.) KREMP. – KLOSS (1962); IVANOV (1990); MAYRHOFER et al. (2005);
Protoblastenia calva (DICKS.) ZAHLBR. – ZHELEZOVA (1956); MAYRHOFER et al. (2005);
Protoblastenia cyclospora (KÖRB.) POELT – IVANOV (1990,1990A); MAYRHOFER et al. (2005);
**Protoblastenia incrustans* (DC.) J. STEINER – IVANOV (1990);
Protoblastenia rupestris (SCOP.) J. STEINER – IVANOV (1990); MAYRHOFER et al. (2005); [1611, 2273];
Protomicarea limosa (ACH.) HAFELLNER – MAYRHOFER et al. (2005);
Protopannaria pezizoides (WEBER) M. JØRG. & S. EKMAN – ZHELEZOVA (1956); PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [1200, 1207, 1209];
Protoparmelia badia (HOFFM.) HAFELLNER – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005); [839, 2581, 3322];
Protoparmeliopsis bolcana (POLLINI) (Syn. *Lecanora bolcana* (POLLINI) POELT) – PISÚT (1967); MAYRHOFER et al. (2005);
Protoparmeliopsis muralis (SCHREB.) M. CHOISY – ZHELEZOVA (1956,1963); IVANOV (1990); MAYRHOFER et al. (2005); [836, 2574, 2562, 3271];
**Pseudephebe minuscula* (ARNOLD) BRODO & D. HAWKSW. – IVANOV (1990);
Pseudephebe pubescens (L.) M. CHOISY – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005); [305, 3113];
Pseudevernia furfuracea (L.) ZOPF – IVANOV (1990); MAYRHOFER et al. (2005); [3157, 3158, 3185, 3213];
Pseudevernia furfuracea var. *ceratea* (ACH.) D. HAWKSW. – MAYRHOFER et al. (2005);
Psora decipiens (HEDW.) HOFFM. – POPNIKOLOV 1928; ZHELEZOVA (1963); PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [908, 909, 910, 911];
Psorinia conglomerata (ACH.) GOTTH. SCHNEID. – PISÚT (1969,1986); MAYRHOFER et al. (2005);
**Psoroma hypnorum* (VAHL.) S. GRAY – IVANOV (1990);
Psorotrichia schaeereri (A. MASSAL.) ARNOLD – MAYRHOFER et al. (2005);
Psorula rufonigra (TUCK.) GOTTH. SCHNEID. – PISÚT (1969); MAYRHOFER et al. (2005);
Pycnora xanthococca (SOMMERF.) HAFELLNER – ZHELEZOVA (1956); MAYRHOFER et al. (2005);
Pycnothelia papillaria (EHRH.) DUF. – MAYRHOFER et al. (2005); [505, 2619];
Pyrenula nitida (WEIG.) ACH. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
Ramalina calicaris (L.) FR. – IVANOV (1990); MAYRHOFER et al. (2005); [1618];
Ramalina capitata (ACH.) NYL. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
Ramalina farinacea (L.) ACH. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [1617];
Ramalina fastigiata (PERS.) ACH. – IVANOV (1990); OTTE (2005);
Ramalina fraxinea (L.) ACH. – IVANOV (1990); MAYRHOFER et al. (2005);
Ramalina pollinaria (WESTR.) ACH. – IVANOV (1990); MAYRHOFER et al. (2005); [1638];

- Ramalina thrausta** (Ach.) Nyl. – Pisút (1969); Ivanov (1990); Mayrhofer et al. (2005); [1646];
- Rhizocarpon alpicola** (Anzi) Rabh. – Mayrhofer et al. (2005); [1693]; [1692];
- Rhizocarpon badioatrum** (Flk.) Th. Fr. – Zhelezova (1963); Ivanov (1990); Mayrhofer et al. (2005); [1703]; [1704];
- Rhizocarpon distinctum** Th. Fr. – Popnikolov & Zhelezova (1964); Mayrhofer et al. (2005);
- Rhizocarpon eupetraeum** (Nyl.) Arn. – Kloss (1962); Mayrhofer et al. (2005);
- Rhizocarpon geminatum** Körb. – Zhelezova (1963); Pisút (1969); Ivanov (1990); Mayrhofer et al. (2005);
- Rhizocarpon geographicum** (L.) DC. – Zhelezova (1956); Ivanov (1990); Mayrhofer et al. (2005); [1711, 1713, 1714, 1716, 1717, 3188];
- ***Rhizocarpon lecanorinum** Anders – Ivanov (1990);
- ***Rhizocarpon petraeum** (Wulfen) A. Massal. – Ivanov (1990);
- Rhizocarpon pusillum** Runemark – Pisút (1986); Mayrhofer et al. (2005);
- Rhizocarpon reductum** Th. Fr. – Pisút (1969); Ivanov (1990); Mayrhofer et al. (2005); [1697];
- Rhizocarpon saanaense** Räsänen – Pisút (1967, 1969, 1986); Mayrhofer et al. (2005);
- ***Rhizoplaca chrysoleuca** (Sm.) Zopf – Ivanov (1990);
- Rhizoplaca melanophthalma** (Ram.) Leuck. et Poelt – Zhelezova (1956); Pisút (1969), (1986); Ivanov (1990); Mayrhofer et al. (2005); [2559];
- Rhizoplaca peltata** (Ram.) Leuck. et Poelt – Kloss (1962); Mayrhofer et al. (2005);
- Rimularia gibbosa** (Ach.) Coppins, Hertel & Rambold – Pisút (2001); Mayrhofer et al. (2005);
- ***Rinodina archaea** (Ach.) Arnold – Ivanov (1990);
- Rinodina bischoffii** (Hepp) A. Massal. – Ivanov (1990); Mayrhofer et al. (2005);
- Rinodina capensis** Hampe – Vezda (1967a); Mayrhofer et al. (2005);
- Rinodina gennarii** Bagl. – Kloss (1962); Mayrhofer et al. (2005);
- ***Rinodina immersa** (Körb.) Zählbr. – Ivanov (1990);
- Rinodina lecanorina** (A. Massal.) A. Massal. – Pisút (1969); Mayrhofer et al. (2005);
- Rinodina milvina** (Wahlenb.) Th. Fr. – Ivanov (1990); Mayrhofer et al. (2005); [1724];
- Rinodina mniareaea** (Ach.) Körb. var. *mniareaea* – Mayrhofer et al. (2005);
- Rinodina obnascens** (Nyl.) H. Olivier – Mayrhofer et al. (2005);
- ***Rinodina pyrina** (Ach.) Arnold – Ivanov (1990);
- Rinodina sophodes** (Ach.) A. Massal. – Ivanov (1990); Mayrhofer et al. (2005);
- Rinodina turfacea** (Wahlenb.) Körb. – Zhelezova (1956); Mayrhofer et al. (2005); [1725, 1731, 1732];
- Sarcogyne regularis** Körb. – Zhelezova (1956); Ivanov (1990); Mayrhofer et al. (2005); [177, 2797, 2799, 2801];

- **Scoliciosporum umbrinum* (Ach.) ARNOLD – IVANOV (1990);
Scoliciosporum chlorococcum (STENH.) VEZDA – PISÚT (1967); MAYRHOFER et al. (2005);
Seirophora contortuplicata (Ach.) FRÖDÉN – KLOSS (1962); ZHELEZOVA (1962);
POPNIKOLOV & ZHELEZOVA (1964); VEZDA (1970); MAYRHOFER et al. (2005);
Solorina bispora NYL. – POPNIKOLOV 1928; PISÚT (1986); POPNIKOLOV & ZHELEZOVA
(1964); MAYRHOFER et al. (2005); [1764, 3142]; [3141];
Solorina crocea (L.) ACH. – ZHELEZOVA (1956); PISÚT (1969); IVANOV (1990); MAYRHOFER
et al. (2005); [1738];
Solorina saccata (L.) ACH. – ZHELEZOVA (1956, 1960); PISÚT (1969); IVANOV (1990);
MAYRHOFER et al. (2005); [175, 1747, 1751, 1755, 1766, 1759, 3181];
Solorina spongiosa (Sm.) ANZI – IVANOV (1990, 1990a); MAYRHOFER et al. (2005);
Spilonema paradoxum BORNET – PISÚT (1969); MAYRHOFER et al. (2005);
Sporastatia polyspora (NYL.) GRUMMANN – KLOSS (1962); IVANOV (1990); MAYRHOFER et
al. (2005);
Sporastatia testudinea (Ach.) A. MASSAL. – ZHELEZOVA (1956); KLOSS (1962); PISÚT
(1969); IVANOV (1990); MAYRHOFER et al. (2005); [3004];
Squamaria cartilaginea (WITH.) JAMES – ZHELEZOVA (1960); PISÚT (1969); IVANOV
(1990); MAYRHOFER et al. (2005);
Squamaria concrescens (MÜLL. ARG.) POELT – PISÚT (2001); MAYRHOFER et al. (2005);
Squamaria gypsacea (Sm.) POELT – PISÚT (1986); MAYRHOFER et al. (2005);
Staurothele areolata (Ach.) LETTAU – POPNIKOLOV, (1932); POPNIKOLOV & ZHELEZOVA
(1964); MAYRHOFER et al. (2005);
Staurothele bacilligera (ARNOLD) ARNOLD – POPNIKOLOV (1932); POPNIKOLOV &
ZHELEZOVA (1964); MAYRHOFER et al. (2005);
Staurothele clopinooides STNR. – IVANOV (1990); MAYRHOFER et al. (2005);
Staurothele fissa (TAYL.) ZW. – IVANOV (1990); MAYRHOFER et al. (2005);
**Staurothele frustulenta* VAIN. (Syn. *Staurothele catalepta* (KÖRB.) BLOMB.) – IVANOV
(1990); MAYRHOFER et al. (2005);
Stereocaulon alpinum LAURER – ZHELEZOVA (1956); MAYRHOFER et al. (2005); [1300,
1799];
Stereocaulon paschale (L.) HOFFM. – MAYRHOFER et al. (2005); [1787, 1790, 1792, 3109];
Stereocaulon saxatile H. MAGN. – PISÚT (1969); MAYRHOFER et al. (2005);
Sticta sylvatica (HUDS.) ACH. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
Tephromela atra (HUDS.) HAFELLN. – ZHELEZOVA (1963); [2564]; PISÚT (1986); IVANOV
(1990); MAYRHOFER et al. (2005); [2579];
***Tetramelas chloroleucus* (KÖRB.) A. NORDIN (Syn. *Buellia poeltii* T. SCHAUER) – IVANOV
(1990);
**Tetramelas insignis* (HEPP) KALB – IVANOV (1990);
Thamnolia vermicularis (Sw.) SCHAER. var. *vermicularis* – MAYRHOFER et al. (2005);
Thamnolia vermicularis var. *subuliformis* (EHRH.) SCHAER. – PISÚT (1969); MAYRHOFER
et al. (2005);

- Thelidium absconditum*** (HEPP.) RABH. – POPNIKOV (1932); POPNIKOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005);
- Thelidium incarvatum*** MUDD. – POPNIKOV (1932); IVANOV (1990); POPNIKOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005);
- Thelidium papulare*** (Fr.) ARNOLD – POPNIKOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005);
- Thelidium pyrenophorum*** (ACH.) MUDD. – POPNIKOV (1932); POPNIKOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005);
- Thelotrema lepadinum*** (ACH.) ACH. – PISÚT (1969); MAYRHOFER et al. (2005);
- Thyreia confusa*** HENSSEN – PISÚT (1967); MAYRHOFER et al. (2005);
- Toninia candida*** (WEB.) TH. FR. – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [2150, 2823];
- Toninia rosulata*** (ANZI) OLIV. – KLOSS (1962); MAYRHOFER et al. (2005);
- Toninia sedifolia*** (SCOP.) TIMDAL – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [2163, 2806, 2814, 2812, 3095];
- Toninia squalida*** (ACH.) A. MASSAL. – PISÚT (1986); MAYRHOFER et al. (2005);
- Toninia tristis*** (TH. FR.) TH. FR. – PISÚT (1967); MAYRHOFER et al. (2005); [2825];
- Trapelia atronivea*** (ARN.) HERTL. – ZHELEZOVA (1960); [913, 914, 915];
- ****Trapelia coarctata*** (SM.) CHOISY – IVANOV (1990);
- Trapeliopsis granulosa*** (HOFFM.) LUMBSCH. – POPNIKOV (1928); ZHELEZOVA (1956); MAYRHOFER et al. (2005); [176, 932, 933];
- Tremolecia atrata*** (ACH.) HERTEL – PISÚT (1986); MAYRHOFER et al. (2005);
- Tuckermannopsis chlorophylla*** (WILLD.) HALE – ZHELEZOVA (1963); POPNIKOV & ZHELEZOVA (1964); IVANOV (1990); MAYRHOFER et al. (2005);
- Umbilicaria crustulosa*** (ACH.) FREY – ZHELEZOVA (1956); PISÚT (1986); IVANOV (1990); MAYRHOFER et al. (2005); [1933, 2147, 2223];
- Umbilicaria cylindrica*** (L.) DUBY – ZHELEZOVA (1956, 1963); PISÚT (1986); IVANOV (1990); MAYRHOFER et al. (2005); [1987, 2116, 2120, 2137, 2139, 2221, 2222];
- Umbilicaria decussata*** (VILL.) ZAHLBR. – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005); [2124, 2140];
- Umbilicaria deusta*** (L.) BAUMG. – KLOSS (1962); ZHELEZOVA (1963); IVANOV (1990); MAYRHOFER et al. (2005); [2126, 2228];
- Umbilicaria grisea*** HOFFM. – PISÚT (1967), (1986); MAYRHOFER et al. (2005);
- *****Umbilicaria laevis*** (SCHAER.) FREY – IVANOV (1990);
- Umbilicaria leiocarpa*** DC. – PISÚT (1986); MAYRHOFER et al. (2005);
- Umbilicaria microphylla*** (LAURER) A. MASSAL. – PISÚT (1986); MAYRHOFER et al. (2005);
- *****Umbilicaria nylanderiana*** (ZAHLBR.) H. MAGN. (Syn. *Umbilicaria corrugata* (DC.) NYL.) – IVANOV (1990), (1990)a;
- Umbilicaria proboscidea*** (L.) SCHRAD. – KLOSS (1962); IVANOV (1990); MAYRHOFER et al. (2005);
- Umbilicaria subglabra*** (NYL.) HARM. – PISÚT (1986); IVANOV (1990); MAYRHOFER et al. (2005);

- Umbilicaria vellea* (L.) HOFFM. – PISÚT (1986); MAYRHOFER et al. (2005);
Usnea bithynica MOTYKA – POPNIKOLOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005); [2982];
Usnea capillaris MOTYKA – POPNIKOLOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005); [2978, 2979];
Usnea cavernosa TUCK. – MOTYKA & ZHELEZOVA (1962); POPNIKOLOV & ZHELEZOVA (1964); IVANOV (1990); MAYRHOFER et al. (2005); [1845, 1849, 1905, 1917];
Usnea chaetophora STIRT. – MOTYKA & ZHELEZOVA (1962); MAYRHOFER et al. (2005);
Usnea czeczottiae MOTYKA – MOTYKA & ZHELEZOVA (1962); POPNIKOLOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005);
Usnea filipendula STIRT. – MOTYKA & ZHELEZOVA (1962); IVANOV (1990); MAYRHOFER et al. (2005); [2973];
Usnea florida (L.) F. H. WIGG. – MOTYKA & ZHELEZOVA (1962); IVANOV (1990); MAYRHOFER et al. (2005);
Usnea glabrescens (NYL. ex VAIN.) VAIN. – OTTE (2005);
Usnea intermedia (A. MASSAL.) JATTA – MOTYKA & ZHELEZOVA (1962); POPNIKOLOV & ZHELEZOVA (1964); IVANOV (1990); MAYRHOFER et al. (2005);
**Usnea hirta* (L.) F. H. WIGG. – IVANOV (1990);
Usnea lapponica VAIN. – IVANOV (1990); MAYRHOFER et al. (2005);
Usnea scabrata NYL. – MOTYKA & ZHELEZOVA (1962); POPNIKOLOV & ZHELEZOVA (1964); IVANOV (1990); MAYRHOFER et al. (2005); [1942, 1848, 2034, 2050, 2054, 2151];
Verrucaria calciseda DC. – MAYRHOFER et al. (2005);
Verrucaria cyanea MASS. – POPNIKOLOV (1932); POPNIKOLOV & ZHELEZOVA (1964); MAYRHOFER et al. (2005);
Verrucaria dufourii DC. – POPNIKOLOV (1932); MAYRHOFER et al. (2005);
Verrucaria margacea (WAHLENB.) WAHLENB. – PISÚT (2001); MAYRHOFER et al. (2005);
**Verrucaria marmorea* (SCOP.) ARN. – IVANOV (1990);
Verrucaria nigrescens PERS. – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005);
Verrucaria pachyderma ACH. – ZHELEZOVA (1956); MAYRHOFER et al. (2005); [2534];
Vulpicida pinastri (SCOP.) J. E. MATTSSON & M. J. LAI – POPNIKOLOV & ZHELEZOVA (1964); PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005); [248, 280, 2567, 2661, 2663];
Xanthoparmelia conspersa (ACH.) HALE – IVANOV (1990); MAYRHOFER et al. (2005); [3096];
Xanthoparmelia pulla (ACH.) O. BLANCO, A. CRESPO, ELIX, D. HAWKSW. & LUMBSCH – PISÚT (1969); IVANOV (1990); MAYRHOFER et al. (2005);
Xanthoparmelia stenophylla (ACH.) AHTI & D. HAWKSW. – ZHELEZOVA (1956); IVANOV (1990); MAYRHOFER et al. (2005);
Xanthoparmelia tinctina (MAHEU & A. GILLET) HALE – PISÚT (1967); VEZDA (1968b); MAYRHOFER et al. (2005);
Xanthoparmelia verruculifera (NYL.) ESSL., O. BLANCO, A. CRESPO, ELIX, D. HAWKSW. & LUMBSCH – MAYRHOFER et al. (2005);

Xanthoria aureola (ACH.) ERICHSEN – PISÚT (1967); MAYRHOFER et al. (2005);
**Xanthoria candelaria* (L.) TH. FR. – IVANOV (1990);
Xanthoria elegans (LINK) TH. FR. – ZHELEZOVA (1956); IVANOV (1990); PISÚT (1969);
MAYRHOFER et al. (2005); [224, 226, 3213];
**Xanthoria fallax* (HEPP) ARNOLD – [2086];
**Xanthoria parietina* (L.) TH. FR. – IVANOV (1990);
Xanthoria sorediata (VAIN.) POELT – PISÚT (2001); MAYRHOFER et al. (2005);
Xylographa parallela (ACH.) BEHLEN & DESBERGER – ZHELEZOVA (1956,1963); IVANOV
(1990); MAYRHOFER et al. (2005); [2107, 2109, 2111, 2112, 2116];

Lichenicolous fungi

Abrothallus parmeliarum (SOMMERF.) NYL. – VEZDA (1983);
***Carbonea vitellinaria* (NYL.) HERT. – IVANOV (1990);

Non-lichenized fungi

Blastodesmia nitida A. MASSAL. – PISÚT (1967);
**Mycocalicium subtile* (PERS.) SZAT. – IVANOV (1990);
***Chaenothecopsis pusilla* (ACH.) A. F. W. SCHMIDT – IVANOV (1990).

The checklist provided above shows the rich lichen flora of Pirin Mts, a region, well-known for its ancient and recent biodiversity and declared as UNESCO Monument of Cultural and Natural Heritage.

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Autor(en)/Author(s): Ivanov Dobri

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