

Original research

Lithuanian lichens and lichenicolous fungi in the herbaria of the University of Tartu (Estonia) and the University of Latvia

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Abstract

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Herbarium collections are particularly significant in countries where systematic studies of specific taxonomic groups have not been carried out, such as in the case of lichens in Lithuania. Collections prior to the 1990s are scarce, so all historical material is of great value. This paper presents the results of a study of lichen collections in the herbaria of the University of Tartu (TU) and the University of Latvia (RIG). A total of 425 herbarium envelopes (84 RIG and 341 TU) were examined. A total of 170 species were identified, including 157 lichen species, 12 lichenicolous and one non-lichenized saprobic fungi species. Nine lichen species were identified from envelopes that did not indicate the exact location except for the country (Lithuania). Two lichenicolous fungi, *Endococcus nanellus* and *Stigidium lecidellae*, are new records for the country.

Keywords: historical collections, lichenized Ascomycota, lichenicolous Ascomycota, lichenicolous Basidiomycota.

INTRODUCTION

Herbarium collections preserve natural specimens representing the biodiversity of the regions where they were collected; they document the distribution and structural diversity of plant and fungi species. They are used in biogeographical, environmental, and taxonomic studies to fill the gaps in knowledge on distribution, often bearing new records for some territories (Aptroot & John, 2015; Kistenich et al., 2019). Herbarium collections are particularly important in countries where no systematic studies have been carried out on certain taxonomic groups. This is the case in Lithuania, where systematic research on lichens only started in the second half of the 20th century (Motiejūnaitė, 2002). Collections from ear-

lier studies in Lithuania are sparse, with most known extant specimens stored in the Herbarium of Vilnius University (WI) (Motiejūnaitė, 1992; Motiejūnaitė & Skirsgilienė, 1997). Two known historical collections from Lithuania are kept in the herbaria of the University of Helsinki (H) and the University of Krakow (KRAM) (Räsänen, 1946; Köhler, 1995).

Although there were no active lichenologists in Lithuania for a long time, Estonian and Latvian lichenologists have visited Lithuania during the Baltic botanical expeditions and the Baltic mycological and lichenological symposia, which have been held on a regular basis since the 1950s. They have collected lichen specimens, later deposited in the herbaria of the University of Tartu (TU) and the University of Latvia (RIG), but remained largely unidentified and

unpublished. From the end of the 20th century onwards, collections gathered during lichenological meetings in Lithuania were published in separate papers (Motiejūnaitė et al., 2003, 2012). Many specimens were collected in July 1963 during an Estonian lichenological trip to Lithuania. Estonian and Latvian lichenologists and botanists have collected some lichens during private trips to Lithuania. Of these collections, only a part has been identified, and none has been published.

The study aimed to analyse and identify lichen specimens in TU and RIG herbaria and add to the knowledge about the diversity of lichens and lichenicolous fungi in Lithuania.

MATERIALS AND METHODS

All Lithuanian specimens in the TU and RIG herbaria were examined: 84 herbarium envelopes in RIG and 341 in TU. Most envelopes contained more than one species of lichens or lichenicolous fungi. Lichens were usually identified by routine methods using dissecting, light microscopy and standard chemicals. For some specimens (sterile crustose lichens, species of the genera *Cladonia*, *Stereocaulon*, *Usnea*, etc.), thin-layer chromatography was applied (methods after Orange et al., 2001).

In cases where the information about the sites was unclear (misspelt locality name, etc.), the data were checked in the field diaries of Hans-Voldemar Trass (see Acknowledgements), as well as in Anonymus (1963, 1968) and Lekavičius & Dagys (1969). Some specimens were labelled as collected in Lithuania in TU without other data on the locality (Fig. 1a). Such specimens were not included in the species list below.

Collection sites

Unfortunately, most of the specimens studied had poor locality data. Only a very few were perfectly accurate (all of them from the still existing historic oak tree in Stelmužė village (Fig. 1b)). The following are given below: locality; date(s) on which the specimens were collected at this locality; name(s) of the collector(s); abbreviation of the herbarium in which the specimens are kept. Localities of the specimens are shown on the map (Fig. 2).

1. Kaunas environs; 1927, A. Minkevičius (TU); 17 August 1959, H. Trass (TU).

2. Kaunas district, Kauno marios environs; 8 September 1968; A.-L. Sömermaa (TU), A. Piterāns (RIG).

3. Neringa, Nida environs; 13 July 1957, L. Laasimer, S. Talts (TU); 9 July 1963, 23 July 1963, 29 July 1963, H. Trass (TU); 8 October 1994, 1 July 1994, A. Piterāns (RIG).

4. Curonian Spit (exact locality not indicated); 21 August 1959, H. Trass (TU); 17 July 1963, A. Piterāns (RIG).

5. Vilnius, Vingis Park and K. Čiurlionis Street environs; 16 April 1959; H. Trass (TU).

6. Vilnius, Žaliejai ežerai; 13 September 1961, H. Trass (TU); 18 July 1963, H. Trass (TU); 30 September 1993, A. Piterāns (RIG).

7. Vilnius district, Dūkštos oak forest; 29 September 1993; A. Piterāns (RIG).

8. Vilnius district (including former Naujoji Vilnia district); 18 August 1959; H. Trass (TU).

9. Varėna district, Valkininkai environs; 19 August 1959; H. Trass (TU).

10. Varėna district, Merkinė environs; 9 July 1969,

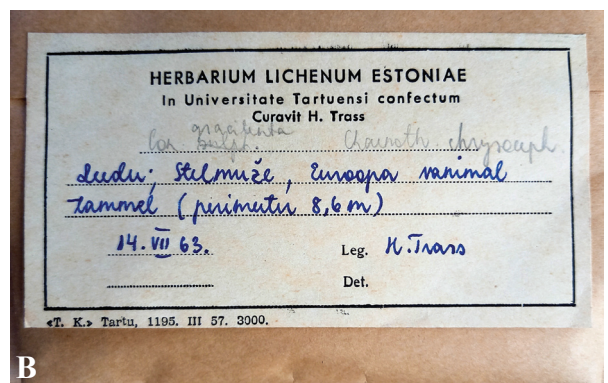
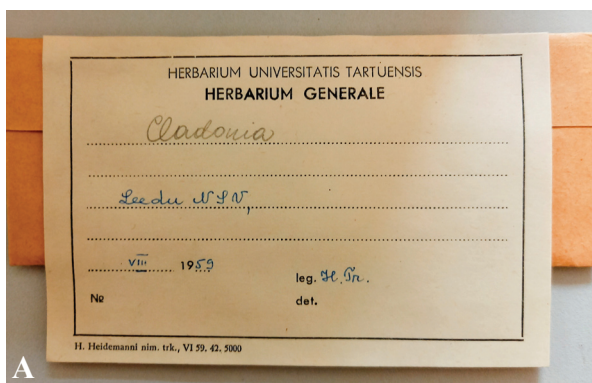


Fig. 1. Examples of herbarium envelopes of Lithuanian specimens in TU herbarium. Example of a herbarium envelope without locality (A); Example of a herbarium envelope with exact locality, i.e. Stelmužė historical oak (B).

11 July 1969, 12 July 1969; A. Piterāns (RIG).

11. Varėna district, Margionys environs; 12 July 1969; A. Piterāns (RIG).

12. Varėna district, Bakanauskas Lake environs; 12 July 1969; A. Piterāns (RIG).

13. Švenčionys district, Kaltanėnai environs; 10 July 1963, 11 July 1963; H. Trass (TU).

14. Švenčionys district, Zalavas environs; 10 July 1963; H. Trass (TU).

15. Švenčionys district, Kerotys Lake environs; 11 July 1963; H. Trass (TU).

16. Molėtai district, Dubingiai; 10 July 1963, 17 July 1963; T. Piin, H. Trass (TU).

17. Ignalina district, Palūšė; 10 July 1963; T. Piin, H. Trass (TU).

18. Ignalina district, Ginučiai environs; 12 July 1963; H. Trass (TU).

19. Ignalina district, Šventas Lake environs; 13 July 1963; T. Piin, H. Ting (TU).

20. Ignalina district, Rojus village; 15 July 1963; H. Trass, T. Piin (TU).

21. Ignalina environs; 12 July 1963; T. Piin (TU).

22. Utena district, Utenas Lake environs; 12 July 1963; T. Piin, H. Trass, E. Nilson (TU).

23. Utena district, Vitkūnai environs; 13 July 1963; T. Piin, H. Trass (TU).

24. Utena; 12 July 1963, 15 July 1963; H. Trass (TU).

25. Zarasai district, between the Lakes Smalvas and Smalvykštis, 2 km SW of Smalvas Lake; 14 July 1963; T. Piin, H. Ting (TU).

26. Zarasai district, Smalvos; 14 July 1963; T. Piin (TU).

27. Zarasai district, Stelmužė; 14 July 1963; T. Piin, H. Trass (TU).

28. Zarasai district, Šiurpis Lake environs; 14 July 1963; T. Piin (TU).



Fig. 2. Localities, where specimens were collected. The numbers are given according to the list in the text. Localities 1, 4, 8 and 34 are not marked on the map because they are not precise and cover too large area. Map from Geoportal (2024), modified.

29. Zarasai district, Gražutė environs; 14 July 1963; H. Trass, E. Nilsson, T. Piin (TU).
30. Zarasai district, Degučiai environs; 14 July 1963; H. Trass (TU).
31. Zarasai district, Salakas environs; 15 July 1963; H. Trass, T. Piin (TU).
32. Zarasai district, Dūkštas environs; 15 July 1963; H. Trass, E. Nilsson, T. Piin, H. Ting (TU).
33. Zarasai environs; 13 July 1963; T. Piin (TU).
34. Between Zarasai and Utena; 16 July 1963; T. Piin (TU).
35. Alytus district, Punia forest; 7 September 1968; A. Piterāns (RIG), A.-L. Sömermaa (TU).
36. Trakai district, Aukštadvaris environs, 9 September 1968; A. Piterāns (RIG), A.-L. Sömermaa (TU).
37. Druskininkai municipality, Leipalingis; 9 July 1969, 10 July 1969; A. Piterāns (RIG).
38. Druskininkai; 11 July 1969; A. Piterāns (RIG).
39. Šilutė district, Aukštumala bog; July 1980; V. Masing (TU).
40. Širvintos district, Kernavė; 29 September 1993; A. Piterāns (RIG), T. Randlane (TU).

RESULTS

List of the species

Taxon nomenclature mainly follows Index Fungorum (2023). Every species is provided with a locality number (according to the list above) and the abbreviation of the herbarium in which the specimen(s) are kept (TU – Herbarium of the University of Tartu, RIG – Herbarium of the University of Latvia). Host name/s are provided for lichenicolous fungi. New to Lithuania species are printed in bold; lichenicolous fungi are marked with #, saprobic fungi are marked with +. Species new to Lithuania are provided with short notes.

- Acarospora fuscata* (Schrad.) Arnold; 23, 36; RIG, TU.
- Alyxoria varia* (Pers.) Ertz & Tehler; 4; TU.
- Amandinea punctata* (Hoffm.) Coppins & Scheid.; 20, 32, 35, 40; RIG, TU.
- Anaptychia ciliaris* (L.) Flot.; 1, 16, 27; TU
- Arthonia radiata* (Pers.) Ach.; 35, 20; RIG, TU.

- Arthothelium ruanum* (A. Massal.) Körb.; 35; RIG.
- Athallia pyracea* (Ach.) Arup, Frödén & Søchting; 19; TU.
- # *Athelia arachnoidea* (Berk.) Jülich; on various epiphytic lichens, 40; RIG.
- Aspicilia cinerea* (L.) Körb.; 31, 36; RIG, TU.
- Bacidia arceutina* (Ach.) Th. Fr.; 35; RIG.
- # *Biatoropsis usnearum* Räsänen; on *Usnea subfloridana*; 35; RIG. Following Diederich et al. (2022), the specimen belongs to *Biatoropsis usnearum* s. str.: basidiomata are pale brownish, flattened when old, up to 2 mm diam. and the host is *Usnea subfloridana*.
- Bryoria implexa* (Hoffm.) Brodo & D. Hawksw.; 4, 20; TU.
- Buellia griseovirens* (Turner & Borrer ex Sm.) Almb.; 20, 35; RIG, TU.
- Calicium glaucellum* Ach.; 28; TU.
- Calicium salicinum* Pers.; 16; TU. 3.
- Calicium trabinellum* (Ach.) Ach.; 28; TU.
- Calicium viride* Pers.; 3; TU.
- Candelaria pacifica* M. Westb. & Arup; 11; RIG.
- Candelariella vitellina* (Hoffm.) Müll. Arg.; 18, 36; TU.
- Candelariella xanthostigma* (Ach.) Lettau; 7, 31; RIG, TU.
- Cetraria aculeata* (Schreb.) Fr.; 4; TU.
- Cetraria islandica* (L.) Ach.; 4, 10; RIG, TU.
- Cetraria sepincola* (Ehrh.) Ach., 10, 37; RIG.
- Chaenotheca brachypoda* (Ach.) Tibell; 27; TU.
- Chaenotheca chrysocephala* (Ach.) Th. Fr.; 3, 17, 35; TU.
- Chaenotheca ferruginea* (Turner ex Sm.) Mig.; 3; TU.
- Chaenotheca phaeocephala* (Turner) Th. Fr.; 17; TU.
- Chaenotheca trichialis* (Ach.) Hellb.; 27, 35; TU.
- Chrysothrix candelaris* (L.) J.R. Laundon; 27, 35; RIG, TU.
- Cladonia arbuscula* (Wallr.) Flot.; 36; TU.
- Cladonia borealis* S. Stenroos; 3; TU.
- Cladonia cenotea* (Ach.) Schaer.; 17; TU.
- Cladonia ciliata* Stirt.; 4, 38; RIG, TU.
- Cladonia cariosa* (Lilj.) Spreng.; 18, 32; TU.
- Cladonia coniocraea* (Flörke) Spreng.; 35; RIG.
- Cladonia cornuta* (L.) Baumg. 4, 24; TU.

- Cladonia crispata* (Ach.) Flot.; 21; TU.
Cladonia digitata (L.) Baumg.; 5, 16, 18, 35; RIG, TU.
Cladonia fimbriata (L.) Fr., 1; TU.
Cladonia foliacea (Huds.) Willd.; 3, 4; TU.
Cladonia furcata (Huds.) Baumg.; 2, 3, 4, 36, 38; RIG, TU.
Cladonia glauca Flörke; 39; TU.
Cladonia gracilis (L.) Willd. ssp. *gracilis*; 4; TU
Cladonia gracilis (L.) Willd. ssp. *turbinata* (Ach.) Ahti; 10, 35, 36; RIG, TU.
Cladonia grayi G. Merr. ex Sandst.; 39; TU.
Cladonia macilenta Hoffm.; 16; TU.
Cladonia mitis Sandst.; 4, 10, 36, 37; RIG, TU.
Cladonia ochrochlora Flörke; 31; RIG.
Cladonia phyllophora Hoffm.; 10, 13, 18, 36, 37; RIG, TU.
Cladonia portentosa (Dufour) Coem.; 39; TU.
Cladonia rangiferina (L.) Weber; 4, 15; TU.
Cladonia rei Schaer.; 3; RIG.
Cladonia scabriuscula (Delise) Nyl.; 4; TU.
Cladonia squamosa Hoffm.; 39; TU.
Cladonia subulata (L.) F.H. Wigg.; 30, 36, 37, 38; RIG, TU.
Cladonia uncialis (L.) F.H. Wigg. ssp. *uncialis*; 10; RIG.
Cladonia verticillata (Hoffm.) Schaer.; 30; TU.
Cliostomum griffithii (Sm.) Coppins; 4; TU.
Clypeococcum hypocenomyces D. Hawksw.; on *Hypocenomyce scalaris*; 4; TU.
Dibaeis baeomyces (L. f.) Rambold & Hertel; 9, 38; RIG, TU.
Didymocyrtis ramalinae (Roberge ex Desm.) Ertz, Diederich & Hafellner; on *Ramalina fraxinea*; 24; TU.
Diploschistes scruposus (Schreb.) Norman; 23; TU.
Endococcus nanellus Ohlert; on *Stereocaulon tomentosum*; 13, TU. The fungus was found on host phyllocladia, and its characteristics are consistent with those reported by Zhurbenko (2010). *Endococcus nanellus* is widely distributed in the boreal, arctic and mountain regions of the Northern Hemisphere. In the Baltic States, it has only been found in Estonia (Suija, 2004a), and, again, on *Stereocaulon tomentosum*, which, according to Zhurbenko (2010), is the most frequent host to this fungus.
Evernia prunastri (L.) Ach.; 16, 35; RIG, TU.
Flavoparmelia caperata (L.) Hale; 3, 6; TU.
Graphis scripta (L.) Ach.; 16, 20, 31; 35; 36; RIG, TU.
Hypocenomyce scalaris (Ach.) M. Choisy; 4, 5, 16; TU.
Hypogymnia physodes (L.) Nyl.; 2, 5, 10, 17, 20, 25, 35, 39; RIG, TU.
Hypogymnia tubulosa (Schaer.) Hav.; 10, 11, 16; RIG, TU.
Illosporium roseum Mart.; on *Peltigera extenuata*; 32; TU.
Imshaugia aleurites (Ach.) S.L.F. Mey.; 4, 5, 13, 16; RIG, TU.
Inoderma byssaceum (Weigel) Gray; 7, 35; RIG, TU.
Lecanora allophana (Ach.) Nyl.; 20, 27, 28, 30; TU.
Lecanora carpinea (L.) Vain.; 5, 19, 20, 25, 26, 32, 37, 40; RIG, TU.
Lecanora chlarotera Nyl.; 4, 5, 7, 20, 26, 27, 32, 35, 37; RIG, TU.
Lecanora expallens Ach.; 7; RIG.
Lecanora albella (Pers.) Ach.; 20; TU.
Lecanora polytropa (Ehrh. ex Hoffm.) Rabenh.; 3, 36; RIG, TU.
Lecanora pulicaris (Pers.) Ach.; 2, 10, 20, 25, 32, 33; RIG, TU.
Lecanora saligna (Schrad.) Zahbr.; 32, TU.
Lecanora symmicta (Ach.) Ach.; 16, 25, 26, 32; TU.
Lecanora thysanophora R.C. Harris; 35; RIG.
Lecanora varia (Hoffm.) Ach.; 20; TU.
Lecidea nylanderii (Anzi) Th. Fr.; 16, 17, 29; TU.
Lecidea turgidula Fr.; 16; TU.
Lecidella elaeochroma (Ach.) M. Choisy; 5, 6, 20, 35, 37; RIG, TU.
Lecidella flavosorediata (Vězda) Hertel & Leuckert; 20; TU.
Lepra albescens (Huds.) Haffelner; 5, 7, 10, 16, 27; RIG, TU.
Lepra amara (Ach.) Haffelner; 4, 7, 35; RIG, TU.
Lepraria neglecta (Nyl.) Erichsen; 23; TU.
Lichenocodium usneae (Anzi) D. Hawksw.; on *Flavoparmelia caperata*; 6; TU.
Lichenosticta alpicornaria (Linds.) D. Hawksw.; on *Cladonia rei* and on *Cladonia* sp.; 3, 18; RIG.

- Loxospora elatina* (Ach.) A. Massal.; 35; RIG.
- Melanelixia glabratula* (Lamy) Sandler & Arup; 16, 31, 35; RIG, TU.
- Melanelixia subargentifera* (Nyl.) O. Blanco, A. Crespo, Divakar, Essl., D. Hawksw. & Lumbsch; 27; TU.
- Melanelixia subaurifera* (Nyl.) O. Blanco, A. Crespo, Divakar, Essl., D. Hawksw. & Lumbsch; 6, 18, 20, 25, 27, 32, 33; TU.
- Melanohalea exasperatula* (Nyl.) O. Blanco, A. Crespo, Divakar, Essl., D. Hawksw. & Lumbsch; 2, 5, 11, 17, 20, 27, 31, 40; RIG, TU.
- Melanohalea septentrionalis* (Nyl.) O. Blanco, A. Crespo, Divakar, Essl., D. Hawksw. & Lumbsch; 31; TU.
- Montanelia soredata* (Ach.) Divakar, A. Crespo, Wedin & Essl.; 18, 36; TU.
- Ochrolechia arborea* (Kreyer) Almb.; 20, 29; TU.
- Opegrapha niveoatra* (Borrer) J.R. Laundon; 35; RIG.
- Opegrapha vulgata* (Ach.) Ach.; 35; TU.
- Parmelia sulcata* Taylor; 4, 5, 10, 11, 16, 20, 25, 27, 32; RIG, TU.
- Parmelina tiliacea* (Hoffm.) Hale; 5, 26, 27, 31, 40; RIG, TU.
- Parmeliopsis ambigua* (Hoffm.) Nyl.; 28, 29; TU.
- Peltigera didactyla* (With.) J.R. Laundon; 2, 13, 16, 24, 32; RIG, TU.
- Peltigera extenuata* (Nyl. ex Vain.) Lojka; 32; TU.
- Peltigera hymenina* (Ach.) Delise; 4; TU.
- Peltigera praetextata* (Flörke ex Sommerf.) Zopf; 4, 8, 35; RIG, TU.
- Pertusaria flavida* (DC.) J.R. Laundon; 7; RIG.
- Pertusaria leioplaca* (Ach.) DC.; 35; RIG.
- Pertusaria pupillaris* (Nyl.) Th. Fr.; 35; RIG.
- Phaeophyscia ciliata* (Hoffm.) Moberg; 6; RIG.
- Phaeophyscia nigricans* (Flörke) Moberg; 31; TU.
- Phaeophyscia orbicularis* (Neck.) Moberg; 3, 6, 17, 20, 31, 40; RIG, TU.
- Phlyctis argena* (Ach.) Flot.; 6, 7, 20, 27, 35; RIG, TU.
- Phlyctis agelaea* (Ach.) Flot.; 6, 7; RIG, TU.
- Physcia adscendens* H. Olivier; 11, 20, 31, 32, 40; RIG, TU.
- Physcia aipolia* (Ehrh. ex Humb.) Fűrnr.; 2, 20, 31; RIG, TU.
- Physcia caesia* (Hoffm.) Fűrnr.; 11, 18; RIG, TU.
- Physcia dubia* (Hoffm.) Lettau; 3, 31, 36; RIG, TU.
- Physcia stellaris* (L.) Nyl.; 6, 11, 32; RIG, TU.
- Physcia subalbinea* Nyl.; 23, 31; TU.
- Physcia tenella* (Scop.) DC.; 6, 11, 16, 31, 32, 40; RIG, TU.
- Physconia distorta* (With.) J.R. Laundon; 10, 27, 31; RIG, TU.
- Physconia enteroxantha* (Nyl.) Poelt; 5, 10, 27, 31, 40; RIG, TU.
- Physconia perisidiosa* (Erichsen) Moberg; 7, 16, 40; RIG, TU.
- Placynthium nigrum* (Huds.) Gray; 31; TU.
- Platismatia glauca* (L.) W.L. Culb. & C.F. Culb.; 4; TU.
- Pleurosticta acetabulum* (Neck.) Elix & Lumbsch; 24, 27, 40; RIG, TU.
- Polycauliona candelaria* (L.) Frödén, Arup & Søchting; 27; TU.
- Polycauliona polycarpa* (Hoffm.) Frödén, Arup & Søchting; 11, 20, 32, 40; RIG, TU.
- Porpidia crustulata* (Ach.) Hertel & Knoph; 36; TU.
- Pseudevernia furfuracea* (L.) Zopf; 2, 5, 10, 16, 20, 29; RIG, TU.
- Pseudoschismatomma rufescens* (Pers.) Ertz & Tehler; 35, 3; RIG.
- Pycnora sorophora* (Vain.) Hafellner; 16; TU.
- Ramalina farinacea* (L.) Ach.; 3, 7, 35; RIG, TU.
- Ramalina fastigiata* (Pers.) Ach.; 24; TU.
- Ramalina fraxinea* (L.) Ach.; 27, 40; RIG, TU.
- Ramalina pollinaria* (Westr.) Ach.; 16, 27; TU. + *Sarea resiniae* (Fr.) Kuntze; 2; TU.
- # *Sphaerellothecium propinquellum* (Nyl.) Cl. Roux & Triebel; on *Lecanora carpinea*; 20; TU.
- Stereocaulon condensatum* Hoffm.; 10, 12, 14; RIG, TU.
- Stereocaulon incrustatum* Flörke; 14, 36, 37; RIG, TU.
- Stereocaulon paschale* (L.) Hoffm.; 14, 37; RIG, TU.
- Stereocaulon tomentosum* Fr.; 13, 18, 24; TU.
- # *Stigmidium lecidellae* Triebel, Cl. Roux & Le Coer; on *Lecidella elaeochroma*; 6; TU. Of the several *Stigmidium* species that obligately grow in the hy-

menium of their hosts (Calatayud & Triebel, 2003), only *Stigmidium lecidellae* is known so far from a single host species, *Lecidella elaeochroma*. Anatomical details of the analysed specimens also agree with the species protologue (Roux et al., 1995). From the Baltic States, *Stigmidium lecidellae* has been known only from Estonia (Suija, 2004b).

Tephromela atra (Huds.) Hafellner; 21, 23; TU.

Trapeliopsis flexuosa (Fr.) Coppins & P. James; 18, TU.

Trapeliopsis granulosa (Hoff.) Lumbsch; 17, 18; TU.

Tremella phaeophysciae Diederich & M.S. Christ.; on *Phaeophyscia orbicularis*; 40; RIG.

Tuckermannopsis chlorophylla (Willd.) Hale; 4; TU.

Usnea dasopoga (Ach.) Nyl.; 15, 35; RIG, TU.

Usnea glabrescens (Nyl. ex Vain.) Vain. ex Räsänen; 4, 35; RIG, TU.

Usnea hirta (L.) F.H. Wigg.; 4, 35; RIG, TU.

Usnea subfloridana Stirt.; 15, 35; RIG, TU.

Vouauxiella lichenicola (Linds.) Petr. & Syd.; on *Lecanora pulicaris*; 20; TU.

Xanthoparmelia conspersa (Ehrh. ex Ach.) Hale; 20, 36; RIG, TU.

Xanthoparmelia loxodes (Nyl.) O. Blanco, A. Crespo, Elix, D. Hawksw. & Lumbsch; 20, 31, 36, 37; RIG, TU.

Xanthoparmelia pulla (Ach.) O. Blanco, A. Crespo, Elix, D. Hawksw. & Lumbsch; 18, 36, 37; RIG, TU.

Xanthoria parietina (L.) Th. Fr.; 19, 20, 31, 32; TU.

Xanthoriicola physciae (Kalchbr.) D. Hawksw.; on *Xanthoria parietina*, 31; TU.

DISCUSSION

A total of 161 species are listed, including 148 lichen species, 12 lichenicolous and one non-lichenicolous saprobic fungi species. Nine more lichen species (*Bryoria capillaris* (Ach.) Brodo & D. Hawksw., *Bryoria fuscescens* (Gyeln.) Brodo & D. Hawksw., *Cladonia botrytes* (K.G. Hagen) Willd., *Cladonia pyxidata* (L.) Hoffm., *Diploschistes muscorum* (Scop.) R. Sant., *Peltigera malacea* (Ach.) Funck, *Phaeophyscia endophoenicea* (Harm.) Moberg, *Placynthiella icmalea* (Ach.) Coppins & P. James,

Protoparmeliopsis muralis (Schreb.) M. Choisy, all from TU) were not included in the list as no information was provided on the label except for country (Lithuania) or, in some cases, the collection date. Two lichenicolous fungi, *Endococcus nanellus* and *Stigmidium lecidellae*, are new records to the country. Most of the species on the list are frequent or very frequent in Lithuania; none of the lichens that are included in the present Red Data book of Lithuania (Rašomavičius, 2021) were found in the studied collections. However, a few lichens such as *Calicium trabinellum*, *Cladonia borealis*, *Flavoparmelia caperata*, *Lecanora albella*, *Montanelia sorediata*, *Pertusaria pupillaris*, *Physcia subalbinea*, *Tephromela atra* and *Usnea glabrescens* are not frequent in the country. *Flavoparmelia caperata*, collected in the vicinity of Nida, has not been found in this area during all subsequent surveys. Another interesting point is the abundant collections of *Stereocaulon* species, which are becoming increasingly rare, especially *Stereocaulon incrustatum* and *Stereocaulon paschale*, which have not been found in the last 20 years. Although fragmentary, these historical collections provide insight into the past situation of the lichen flora of Lithuania and will have added value in assessing the status of lichen species in the country.

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REFERENCES

Anonymous, 1963: [Proceedings of the second symposium on the investigations of the myco-lichen

- flora of the Baltic Republics]. Vilnius.
- Anonymous, 1968: [Proceedings of the 5th symposium on the investigations of the myco-lichen flora of the Baltic Republics]. Vilnius.
- Aptroot A., John V., 2015: An Historical Lichen Collection from New Caledonia. – *Herzogia*, 28: 307–321. <https://doi.org/10.13158/heia.28.2.2015.307>
- Calatayud V., Triebel T., 2003: Three new species of *Stigmidium* s. l. (lichenicolous ascomycetes) on *Acarospora* and *Squamarina*. – *The Lichenologist*, 35: 103–116. [https://doi.org/10.1016/S0024-2829\(02\)00097-X](https://doi.org/10.1016/S0024-2829(02)00097-X)
- Diederich P., Millanes A.M., Wedin M., Lawrey J.D., 2022: Flora of lichenicolous fungi. Vol. 1. Basidiomycota. Luxembourg.
- Geoportal, 2024: Lithuanian Spatial Information Portal. – <https://www.geoportal.lt/geoportal/> [Accessed 11 January 2024].
- Index Fungorum, 2023: <https://www.indexfungorum.org/> [Accessed 18 December 2023].
- Kistenich S., Halvorsen R., Schröder-Nielsen A., Thorbek L., Timdal E., Bendiksby M., 2019: DNA sequencing historical lichen specimens. – *Frontiers in Ecology and Evolution*, 7: 5. <https://doi.org/10.3389/fevo.2019.00005>
- Köhler P., 1995: Zielnik Józefa Jundziłła. – *Botanical Studies. Guidebook Series*, 13: 1–154.
- Lekavičius A., Dagys J. (eds), 1969: [Guidebook of 10th Baltic excursion of botanists in the south-eastern part of Lithuanian SSR]. Vilnius.
- Motiejūnaitė J., 1992. Vilniaus universiteto kerpių herbaras. – *Ekologija*, 1: 3–15.
- Motiejūnaitė J., 2002: Lietuvos grybai, 13(1). Lapiškosios ir krūmiškosios kerpės (Ascomycetes lichenisati. Species foliosae et fruticosae). Vilnius.
- Motiejūnaitė J., Skirsgilienė A., 1997: Teklė Rudzinskaitė (1927–1994) ir jos mokslinis palikimas. – *Botanica Lithuanica*, 3: 377–389.
- Motiejūnaitė J., Kukwa M., Czarnota P., Prigodina Lukošienė I., Himelbrant D., Kuznetsova E., Kowalewska A., 2003: Lichens and allied fungi collected during the XV Symposium of Baltic Mycologists and Lichenologists in Birštonas, Lithuania. – *Botanica Lithuanica*, 9: 109–119.
- Motiejūnaitė J., Berglund T., Czarnota P., Himelbrant D., Högnabba F., Konoreva L.A., Korchiakov E.S., Kubiak D., Kukwa M., Kuznetsova E., Leppik E., Lõhmus P., Prigodina Lukošienė I., Pykälä J., Stončius D., Stepanchikova I., Suija A., Thell A., Tsurukau A., Westberg M., 2012: Lichens, lichenicolous and allied fungi found in Asveja Regional Park (Lithuania). – *Botanica Lithuanica*, 18: 85–100.
- Orange A., James P.W., White F.J., 2001: *Microchemical Methods for the Identification of Lichens*. London.
- Rašomavičius V. (ed.), 2021: *Lietuvos raudonoji knyga*. Vilnius.
- Räsänen V., 1946: Professori Kaarlo Linkolan vuonna 1931 Liettuasta keräämät jäkälät. – *Kuopion Luonnon Ystävain Yhdistyksen julkaisuja*. Sarja B, 2(3): 1–16.
- Roux C., Triebel D., Bricaud O., Le Coeur D., 1995: *Le Stigmidium leidellae* sp. nov. et remarques sur le genre *Stigmidium* (champignons lichenicoles non lichenise's, Ascomyce'tes). – *Canadian Journal of Botany*, 73: 662–672. <https://doi.org/10.1139/b95-070>
- Suija A., 2004a: *Endococcus*. – In: Randlane T., Saag A. (eds), *Eesti pisisamblikud*: 257–259. Tartu.
- Suija A., 2004b: *Stigmidium*. – In: Randlane T., Saag A. (eds), *Eesti pisisamblikud*: 509–512. Tartu.
- Zhurbenko M., 2010: Lichenicolous fungi and lichens growing on *Stereocaulon* from the Holarctic, with a key to the known species. – *Opuscula Philolichenum*, 8: 9–39.

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