

The lichen biota of the Drawieński National Park (NW Poland, Western Pomerania)

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Abstract: The whole known lichen biota of the Drawieński National Park is presented. In total 290 species (262 lichenized, 25 lichenicolous and 3 lichen-related, saprotrophic fungi) are listed. *Trichonectria anisospora* and *Milospium lacoizquetae* are reported as new to Poland. *Lecanora stenotropa* and *Phaeophyscia pusilloides* are reported for the first time from Polish lowlands. The most lichenologically interesting and richest habitat complexes are the river valleys with their beech slope forests, their alluvial forests and their fast running rivers. Further habitats of high nature conservation value are roadside trees and pine forests, which inhabit a rich lichen biota as well.

Kokkuvõte: Drawieński rahvusparki (Lääne-Pomeraania, Loode-Poola) samblike elustik

Tutvustatakse Drawieński rahvusparki kõiki teadaolevaid samblike, nimekiri sisaldab 290 liiki, neist 262 on liheniseerunud seened, 25 on lihenikoolsed seened ja 3 on samblikele lähedased saprotroofsed seened. *Trichonectria anisospora* ja *Milospium lacoizquetae* on Poolale uued; *Lecanora stenotropa* ja *Phaeophyscia pusilloides* on esmasleitud Poola tasandikualadele. Lihhenoloogiliselt kõige huvipakkumad ja liigirikkamad on jõgede orgude nõlvadel kasvavad põõgimetsad ja alluviaalsed metsad. Ka teedeäärsed puud ning männimetsad, kus leidub rikkalikult samblike, on kõrge looduskaitselise väärtusega kasvukohad.

INTRODUCTION

First lichen records from the Drawieński National Park originated from Karl Schulz-Korth (Berlin) who visited the present territory and its surroundings together with Johannes Hillmann (Berlin) and the local teacher E. Putzler from Choszczno (Arnswalde) in 1928. They explored the western part of the national park walking from the small town Drawno (Neuweddel) via Barnimie (Fürstenau) and Moczele (Marzelle) to Stare Osieczno (Hochzeit). Schulz-Korth presented his collections partly in his dissertation on the lichen flora of the Mark Brandenburg (Schulz-Korth 1931). Shortly after, the botanist Adolf Straus (Berlin) collected lichens mainly in the surrounding of Głusko (Steinbusch), Sitnica (Marienthal) and Rogoźnica (Räume), and the teacher Aloys Mallach (Lubstorf) close to Miradz (Grüneberg). Their data were published later by Hillmann together with his own results (Hillmann 1932–1933, 1936, 1942).

Finally, all results were compiled by Hillmann and Grumman (1957) in the lichen flora of the Mark Brandenburg.

Despite of the activities in the first half of the 20th century the lichen flora of the Drawieński National Park was poorly known until the work of Lipnicki (1993). He investigated the southern and western part of the park between Płociczna river and Ostrowieckie lake, and reported 206 taxa, including several lichens new for Poland.

Inspired by the results of Lipnicki (1993) and the nature value of the national park we decided to conduct more studies on lichen biota of this area. In this paper we present a compiled list of lichenized, lichenicolous and allied fungi of the Drawieński National Park, including historical literature records and the results of our recent surveys.

STUDY AREA

The Drawieński National Park was established in 1990 and is located in north-western Poland, on the border of the Greater Poland, Lubusz and West Pomeranian Voivodeships (Polish: Wielkopolskie, Lubuskie i Zachodniopomorskie) (Fig. 1). The park covers 113.42 km² and is a part of Puszcza Drawaska Forest, lying on the outwash plain with deep crevices of the Drawa and Płociczna rivers, and by a long string of gully lakes.

The northern (between Zatom and Drawno) and central part (Radęcin Reserve) of the study area belong to the ground moraine and are covered mainly by boulder-clay. The rusty soil is the most widespread soil type in the area (c. 87%), but also brown-earth soils and semihydrogenic or hydrogenic soils occur there (Biały et al. 1997).

The climate of the Drawieński National Park is characterized by the low amplitude of annual temperature differences, late spring, long, warm autumn, mild, not very snowy winter, mostly western and north-western winds and long periods of springtime dryness. The average monthly temperatures range from -2 °C in January to 17 °C in July and August (www.dpn.pl).

96.14 km² of the national park are covered by forests of which 80% are pure or mixed pine plantations (Pawlaczyk 1997); those stands are now under the reconstruction in order to develop natural forests. Present-day natural forest communities are acidophilic or mesotrophic beech forests, alder swamp forests and ash-alder alluvial forests, but those are rare and grown almost exclusively in the valleys of the rivers and in the nature reserve Radęcin. The oligo- and mesotrophic bogs are developed in former small

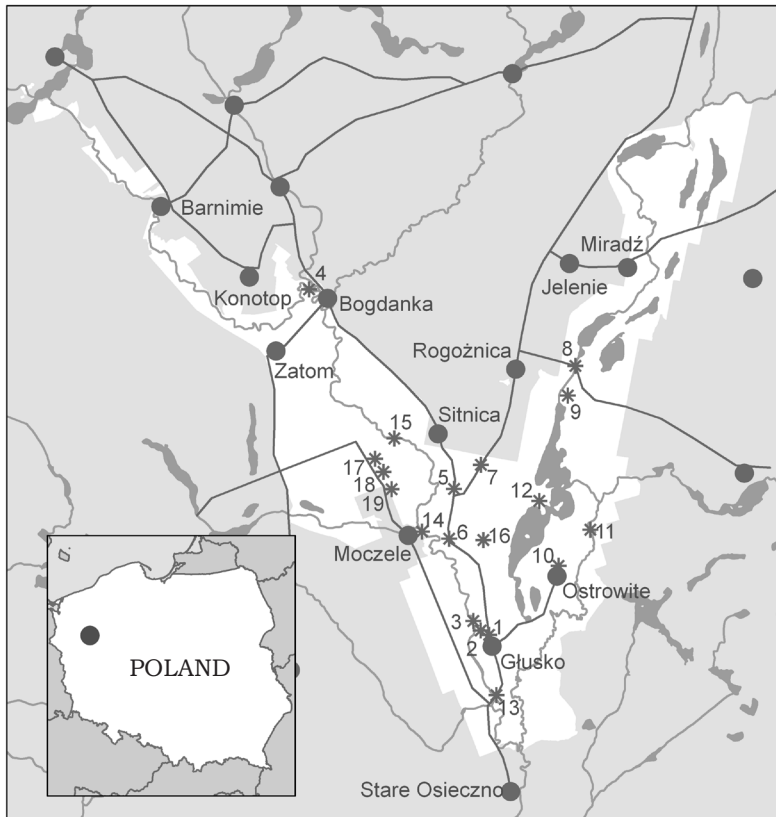


Fig. 1. Location of the Drawieński National Park in Poland and collecting sites (asterisks) in the study area.

lakes, in areas of intensive underground water leakages and in river valleys, and cover 3% of the total area. Also small mid-forest meadows are located in the river valleys, which are regularly mowed to protect the floristic and faunistic species richness. Settlements within the park are mostly abandoned, only some outposts and remains of churches, churchyards and farmyards still exist.

MATERIALS AND METHODS

The list is based on observations and collections made during field trips in 2004 (P. Czarnota, localities nos 16–19) and 2010 (M. Kukwa and U. Schiefelbein, localities nos 1–15) (Fig. 1), and on published data. Specimens are deposited in the herbaria UGDA, GPN and the private herbarium of the first author, with some duplicates in BM.

Lichen substances were analyzed by standard technique of thin-layer chromatography in solvent systems A, B, C and G (Orange et al. 2001). The nomenclature follows mostly Fałtynowicz (2003), Blanco et al. (2004), Santesson et al. (2004), Nordin et al. (2010), Arup & Sandler Berlin (2011), Kukwa (2011), Spribille et al. (2011), and Diederich et al. (2012).

Following symbols and abbreviations are used in the species list.: # – lichenicolous fungus, + – non-lichenized saprobic fungus, Ac – *Acer* spp., Acpl – *Acer platanoides*, Acps – *Acer pseudoplatanus*, Alg – *Alnus glutinosa*, Ali – *Alnus incana*, Be – *Betula* spp., br – brick, Cab – *Carpinus betulus*, co – concrete, Coa – *Corylus avellana*, de – detritus, Fas – *Fagus sylvatica*, Fre – *Fraxinus excelsior*, gr – granite, Lad – *Larix decidua*, li – lichenicolous, loc. – locality, Ma – *Malus* spp., mos – mosses, mor – mortar, Paa – *Padus avium*, Pia – *Picea abies*, Pis – *Pinus sylvestris*, Po – *Populus* spp., Pot – *Populus tremula*, Qu – *Quercus* spp., Rop – *Robinia pseudoacacia*, sa – sandstone, Sa – *Salix* spp., San – *Sambucus nigra*, so – soil, Soa – *Sorbus aucuparia*, Ti – *Tilia* spp., tu – turf, Ul – *Ulmus* spp., Vam – *Vaccinium myrtillus*, wo – wood. Categories of threats according to Cieśliński et al. (2006) are included in square brackets. CR means critically endangered, EN – endangered, VU – vulnerable and NT – near threatened. The excluded species are listed separately, after the main list of species.

List of localities

1. N of Głusko village, 53°03'10"N, 15°56'25"E, roadside trees; 5 May 2010.
2. C. 1 km N of Głusko village, E of Drawa river, 53°03'10"N, 15°56'22–25"E, pine and mixed forests, forest edge and row of ash trees; 5 May 2010.
3. Valley of Drawa river, c. 1.2 km N of Głusko, 53°03'14"N, 15°56'11"E, riverside, alluvial and deciduous slope forests; 5 May 2010.
4. 'Tragankowe Urwisko' range, c. 2 km NE of Zatom, 53°09'12"N, 15°51'49–54"E, steep slopes with deciduous forests and some open areas; 6 May 2010.
5. C. 2 km S of Sitnica by the road to Głusko village, by the crossroad to Jelenie village, 53°05'22–23"N, 15°55'51"E, pine forests, oak forests and old roadside oaks; 6 May 2010.
6. Former village Dąbrowa, c. 3 km N of Głuskie and c. 2 km E of Moczele village, 53°05'45"N, 15°55'36"E, mesotrophic grassland and in glades, old cemetery; 7 May 2010.
7. Road from Głusko to Jelenie village, c. 1 km N of the crossroad Głuskie – Drawno, 53°05'34"N, 15°56'05"E, c. 30 years old pine forest; 7 May 2010.
8. Former settlement Pustelnia, river valley around the bridge Gromnik, 53°07'23"N, 15°59'20"E, riverside, alluvial and deciduous slope forests; 7 May 2010.
9. C. 1.5 km S of Pustelnia settlement, 53°07'05"N, 15°59'13"E, transition bog woodland surrounded by old oaks and other trees; 7 May 2010.
10. Ostrowite village, 53°04'05"N, 15°58'30"E, ruins of the church, churchyard, roadside trees and open area; 7 May 2010.
11. Stara Węgornia scenic spot, valley of Płociczna river, c. 2 km NNE of Ostrowite village, 53°04'42–46"N, 15°59'31–41"E, deep river valley with alluvial and deciduous slope forests; 8 May 2010.
12. Dębowy peninsula in Ostrowieckie lake, 53°05'14"N, 15°58'20"E, old lime trees and old pine forest; 8 May 2010.
13. Bridge on Drawa river, c. 2 km S of Głusko village, boundary stones along the road, 53°01'58"N, 15°56'43"E; 8 May 2010.
14. Bridge on Drawa river, c. 5 km N of Głusko village, 53°04'57"N, 15°54'45"E, bridge and surrounding slopes; 8 May 2010.

15. Vicinity of 'Wydrzy Głaz' nature monument, c. 3 km N of Moczele village, 53°06'29"N, 15°54'17"E, erratic block in the river, alluvial and deciduous slope forests; 8 May 2010.
16. Forest section no. 307, W of Ostrowieckie lake, 53°04'30–32"N, 15°56'47–55"E, pine forest; 18 May 2004.
17. 'Radęcin' nature reserve, 53°05'56"N, 15°53'40"E, Pomeranian beech forest; 18 May 2004.
18. Forest section no. 248, 53°05'47"N, 15°53'39"E, Pomeranian beech forest; 18 May 2004.
19. Border of Drawieński National Park near 'Radęcin' nature reserve, 53°05'38"N, 15°53'52"E, Pomeranian beech forest; 18 May 2004.

RESULTS AND DISCUSSION

Prior to our studies the lichen biota of the Drawieński National Park included 188 lichen-forming, one lichenicolous (*Microcalicium disseminatum*) and one saprotrophic allied (*Leptorhaphis atomaria*) species. Schulz-Korth (1931) and Hillmann (1932–1933, 1936, 1942) recorded only 30 species, but Lipnicki (1993) identified 178 species accepted in this paper (some names are considered to be synonymous at present, and some taxa are excluded as probably misidentified; see the list). During our trips 228 species (201 lichenized, 25 lichenicolous and two saprotrophic fungi) have been recorded. Consequently, the lichen biota of the Drawieński National Park consists of 290 taxa (262 lichenized, 25 lichenicolous and 3 saprotrophic taxa). Two lichenicolous fungi, *Trichonectria anisopora* and *Milospium lacoizquetae*, are reported as new to Poland. *Lecanora stenotropa* and *Phaeophyscia pusilloides* are reported for the first time from Polish lowlands. Several other lichen species are rare in Poland; many of them are commented in the list.

Four species (*Bacidia circumspecta*, *Chrysothrix candelaris*, *Lecanographa amylycea*, *Usnea florida*) are considered to be critically endangered in Poland, further 25 species are endangered to extinction and 30 species are thought to be vulnerable; 16 taxa are in the category 'near threatened' (Cieśliński et al. 2006). The occurrence of *Usnea florida* and *Lecanora albella*, *L. intumescens*, *Lobaria pulmonaria* and *Usnea*

subfloridana as well as *Stereocaulon condensatum*, *Usnea dasypoga* and *U. hirta* was not confirmed nor by Lipnicki (1993) neither by us; those taxa are most probably extinct there. Also *Caloplaca lobulata* and *C. pyracea* have not been recently confirmed, but at least the later one can be found.

From the lichenological point of view the conservation value of the Drawieński National Park is largely determined by the deep valleys with their fast running river, old, well-preserved beech forests on steep slopes and alluvial forests. The lichen biota of *Fagus sylvatica* is the richest and 70 species were found on its bark; also *Carpinus betulus* is a host for many lichen taxa (42 species). According to Wirth et al. (2009) nine of them (*Bacidia circumspecta*, *B. rosella*, *Biatora efflorescens*, *Lecanographa amylycea*, *Lobaria pulmonaria*, *Microcalicium disseminatum*, *Mycobilimbia pilularis*, *Peltigera horizontalis* and *Phaeophyscia pusilloides*) have a strong affinity to old-growth forests, and additional twelve are considered to be indicators of old-growth forests in Polish lowland (Czyżewska & Cieśliński 2003). Further important lichen habitats are the old roadside trees, e.g., on the old maple trees in Ostrowite village and its surrounding 44 species occur, among other many threatened species (e.g. *Anaptychia ciliaris*, *Physconia distorta*, *Ph. perisidiosa*, *Ramalina fastigiata*) and other noteworthy lichens (e.g. *Phaeophyscia pusilloides*). Pine forests were usually strongly managed before the establishment of the national park, but they are rich in terricolous lichens, especially in *Cladonia* species.

SPECIES LIST

- ABSCONDITELLA LIGNICOLA Vězda & Pišút – loc. 9: wo.
- ACAROSPORA FUSCATA (Ach.) Th. Fr. – Lipnicki (1993); loc. 6, 13: gr.
- ACAROSPORA MOENIUM (Vain.) Räsänen [syn. *Aspicilia moenium* (Vain.) G. Thor & Timdal] – Lipnicki (1991b, 1993, as *Aspicilia excavata* G. Thor & Timdal): mor.
- ALYXORIA VARIA (Pers.) Ertz & Tehler – Lipnicki [1993, as *Opegrapha diaphora* (Ach.) Ach., *O. lichenoides* Pers., *O. lichenoides* var. *chlorina* (Pers.) Redgr. and *O. pulicaris* (Hoffm.) Schrad.]; loc. 4, 6, 8, 10, 15: Acpl, Acps, Cab, Fas, Pot, Rop, wo. [NT]

- AMANDINEA PUNCTATA (Hoffm.) Coppins & Scheid. – Lipnicki [1993, as *Buellia punctata* (Hoffm.) A. Massal.]; loc. 2, 4–6, 10: Acpl, Acps, gr, Fas, Pot, Qu, Rop, Sa, wo.
- ANAPTYCHIA CILIARIS (L.) Kőrb. – Lipnicki (1993); loc. 10: Acpl. [EN]
- ANISOMERIDIUM POLYPORI (Ellis & Everh.) M.E. Barr. – loc. 2, 4, 6, 8, 15: Cab, Fas, Fre, Pot, Rop, San, Ul.
- ARTHONIA ATRA (Pers.) A. Schneid. – Lipnicki (1993, also as *Opegrapha atra* Pers. and as *Opegrapha atra* var. *arthonioidea* Leight.); loc. 4, 6: Ac, Alg, Coa, Fas, Fre, Pot.
- ARTHONIA DIDYMA Kőrb. – Lipnicki (1991a, 1993, as *A. aspersella* Leight.): Soa. [EN]
- ARTHONIA RADIATA (Pers.) Ach. – Lipnicki (1993); loc. 4, 11, 15: Cab, Coa, Fas.
- ARTHONIA SPADICEA Leight. – Lipnicki [1993, as *A. spadicea* var. *subspadicea* (Nyl.) Redinger]; loc. 2–4, 8, 11, 15: Alg, Cab, Fas, Fre.
- ARTHOTHELIUM RUANUM (A. Massal.) Kőrb. – Lipnicki (1993); loc. 11: Cab. [NT]
- #ARTHORRHAPHIS AERUGINOSA R. Sant. & Tønsberg – loc. 3, 9, 11, 16: li (on *Cladonia coniocraea* and *C. digitata*).
- ASPICILIA CINEREA (L.) Kőrb. – Lipnicki (1993): gr.
- #ATHELIA ARACHNOIDEA (Berk.) Jülich – loc. 8: li (on *Physcia* sp. and *Xanthoria parietina*).
- BACIDIA CIRCUMSPECTA (Norrl. & Nyl.) Malme – loc. 11: Fas. [CR]
- BACIDIA ROSELLA (Pers.) De Not. – Lipnicki (1993): Fas. [EN]
- BACIDIA RUBELLA (Hoffm.) A. Massal. – Hillmann & Grummann [1957, as *B. luteola* (Ach.) Mudd var. *pachythallina* Vain.], Lipnicki (1993); loc. 10: Acpl. [VU]
- BACIDIA SUBINCOMPTA (Nyl.) Arnold – loc. 5: Qu. [EN]
- BACIDINA ADASTRA (Sparrius & Aptroot) M. Hauck & V. Wirth – loc. 2, 6: Fre, San.
- BACIDINA CALIGANS (Nyl.) Llop & Hladún – loc. 2, 6: Fre, Rop.
- BACIDINA DELICATA (Larbal. & Leight.) V. Wirth & Vězda – loc. 6: San.
- BACIDINA NEOSQUAMULOSA (Aptroot & Herk) S. Ekman – loc. 2, 11: Cab, Fre.
- BACIDINA SULPHURELLA (Samp.) M. Hauck & V. Wirth – loc. 2, 8, 11: Ali, Cab, Fre. Only recently distinguished species, previously included in *B. arnoldiana* (Kőrb.) V. Wirth & Vězda (Brand et al. 2009); so far reported from two localities in Poland (Brand et al. 2009), but most probably much more common.
- BAEOMYCES RUFUS (Huds.) Rebent. – Lipnicki (1993); loc. 4: so.
- BIATORA EFFLORESCENS (Hedl.) Räsänen – Lipnicki (1993): Qu. [VU]
- BIATORA GLOBULOSA (Flörke) Fr. – Lipnicki [1993, as *Bacidia globulosa* (Flörke) Hafellner & V. Wirth]; loc. 5, 6, 10: Acpl, Acps. Qu. [VU]
- BIATORA PONTICA Printzen & Tønsberg – loc. 11: Cab. Recently found in Poland (Kukwa et al. 2012).
- BILIMBIA SABULETORUM (Schreb.) Arnold – loc. 8, 10: co, mor, mos. Most probably also the record of *Mycobilimbia tetramera* (De Not.) Vitik. et al. [see Lipnicki 1993, as *M. fusca* (A. Massal.) Hafellner & V. Wirth] belongs to this species.
- #BRIANCOPPINSIA CYTOSPORA (Vouaux) Diederich, Ertz, Lawrey & van den Boom [syn. *Phoma cytospora* (Vouaux) D. Hawksw.] – loc. 5: li (on *Hypogymnia physodes*).
- BRYORIA FUSCESCENS (Gyeln.) Brodo & D. Hawksw. – Lipnicki (1993): Be. [VU]
- BUELLIA AETHALEA (Ach.) Th. Fr. – Lipnicki (1993): gr.
- BUELLIA GRISEOVIRENS (Turner & Borrer ex Sm.) Almb. – Lipnicki (1993); loc. 2–6, 8, 11, 15: Ali, Cab, Fas, Fre, Pot, Qu, Rop.
- CALICIUM ADSPERSUM Pers. – Lipnicki (1993); loc. 17: Qu. [EN]
- CALICIUM GLAUCELLUM Ach. – loc. 11: Alg. [VU]
- CALICIUM SALICINUM Pers. – Lipnicki (1993); loc. 4, 5: Acpl, Fas (wo), Qu. [VU]
- CALICIUM VIRIDE Pers. – Lipnicki (1993); loc. 5, 10: Acpl, Acps, Alg, Fas, Qu. [VU]
- CALOPLACA CITRINA (Hoffm.) Th. Fr. – Lipnicki (1993); loc. 2, 14: br, co.
- CALOPLACA DECIPIENS (Arnold) Blomb. & Forssell – Lipnicki (1993): co.
- CALOPLACA FLAVOCITRINA (Nyl.) H. Olivier – loc. 8: co.
- CALOPLACA LOBULATA (Flörke) Hellb. – Hillmann [1932–1933, as *Xanthoria lobulata* (Flörke) B. de Lesd.], Hillmann & Grummann (1957, as *X. lobulata*): San.
- CALOPLACA OASIS (A. Massal.) Szatala – loc. 10, 14: co. The occurrence of this species in Poland has only been recently confirmed by Wilk (2011), with two localities reported from Pomerania. The species is most probably more common than the morphologically similar

- Caloplaca holocarpa*; records of the latter reported by Lipnicki (1993) most probably belong here as well.
- CALOPLACA PUSILLA (A. Massal.) Zahlbr. – loc. 10: co, mor. *Caloplaca pusilla* has previously been filed under the name *C. saxicola* (Hoffm.) Nordin (Wilk 2011), but probably it is more common in the lowland than the latter taxon. The records of *C. saxicola* by Lipnicki (1993) may belong here.
- CALOPLACA PYRACEA (Ach.) Th. Fr. – Hillmann (1942), Hillmann & Grummann (1957): Pot.
- CANDELARIELLA AURELLA (Hoffm.) Zahlbr. – Lipnicki (1993); loc. 10: co, mor.
- CANDELARIELLA CORALLIZA (Nyl.) H. Magn. – Lipnicki (1993); loc. 15: co, gr.
- CANDELARIELLA EFFLORESCENS R.C. Harris & W.R. Buck – loc. 6, 12: Qu, San, Ul.
- CANDELARIELLA VITELINA (Hoffm.) Müll. Arg. – Lipnicki (1993); loc. 6, 13: co, gr.
- CANDELARIELLA XANTHOSTIGMA (Pers. ex Ach.) Lettau – Hillmann (1932–1933), Lipnicki (1993); loc. 5, 6, 10: Acpl, Acps, Pot, Qu.
- CATILLARIA NIGROCLAVATA (Nyl.) Schuler – loc. 6, 8: Ma, Pot, San.
- CETRARIA ACULEATA (Schreb.) Fr. – Lipnicki [1993, as *Coelocaulon aculeatum* (Schreb.) Link.]: so.
- CETRARIA SEPINCOLA (Ehrh.) Ach. – loc. 9: Lad. [EN]
- CHAENOTHECA BRACHYPODA (Ach.) Tibell – Lipnicki (1993); loc. 6: Fas, Rop. [EN]
- CHAENOTHECA CHRYSOCEPHALA (Turner ex Ach.) Th. Fr. – Lipnicki (1993); loc. 3, 5, 9–12: Acpl, Acps, Alg, Qu, Ti, wo.
- CHAENOTHECA FERRUGINEA (Turner ex Sm.) Mig. – Hillmann [1932–1933, as *Chaenotheca melanophaea* (Ach.) Zwack.], Lipnicki (1993), Tobolewski & Kupczyk (1974); loc. 2–6, 9, 10, 12: Acpl, Alg, Be, Ma, Pis, Pot, Qu, Ti, wo.
- CHAENOTHECA FURFURACEA (L.) Tibell – Lipnicki (1993); loc. 11, 15, 16: Alg, Coa, Fas, Qu, wo. [NT]
- CHAENOTHECA STEMONEA (Ach.) Müll. Arg. – Lipnicki (1993); loc. 11: Alg, Qu. [EN]
- CHAENOTHECA TRICHIALIS (Ach.) Th. Fr. – Lipnicki (1993); loc. 3, 5, 6, 9: Acpl, Alg, Fas, Qu, Rop. [NT]
- #CHAENOTHECOPSIS SAVONICA (Räsänen) Tibell – loc. 15: li (on *Chaenotheca furfuracea*).
- #CHAENOTHECOPSIS PUSILLA (Flörke) A.F.W. Schmidt – loc. 17: li (associated also with algae).
- CHRYSOTHRIX CANDELARIS (L.) J.R. Laundon – Lipnicki (1993): Qu, Ti. [CR]
- CIRCINARIA CAESIOCINEREA (Nyl. ex Malbr.) A. Nordin, S. Savić & Tibell – loc. 15: gr.
- CIRCINARIA CALCAREA (L.) A. Nordin, S. Savić & Tibell – Lipnicki [1993, as *Aspicilia calcarea* (L.) Mudd]: mor.
- CIRCINARIA CONTORTA (Hoffm.) A. Nordin, S. Savić & Tibell – Lipnicki [1993, as *Aspicilia contorta* (Hoffm.) Kremp.]; loc. 14: co.
- CLADONIA ARBUSCULA (Wallr.) Flot. subsp. *beringiana* Ahti – Lipnicki [1993, as *Cladina arbuscula* (Wallr.) Hale & W.L. Culb.]; loc. 4, 12: so.
- CLADONIA ARBUSCULA subsp. MITIS (Sandst.) Ruoss – Lipnicki [1993, as *Cladina mitis* (Sandst.) Hustich]; loc. 4, 12: so.
- CLADONIA CAESPITICIA (Pers.) Flörke – loc. 4: so. [EN]
- CLADONIA CENOTEA (Ach.) Schaer. – Lipnicki (1993); loc. 5, 7, 9, 12: Pis, so, wo.
- CLADONIA CERVICORNIS (Ach.) Flot. subsp. VERTICILLATA (Hoffm.) Ahti – Lipnicki (1993): so.
- CLADONIA CHLOROPHAEA (Flörke) Speng. – Lipnicki (1993); loc. 4: so, wo.
- CLADONIA CILIATA Stirt. – Lipnicki [1993, as *Cladina ciliata* (Stirt.) Trass]; loc. 4, 7: so.
- CLADONIA CONIOCRAEA (Flörke) Spreng. (syn. *C. ochrochlora* Flörke) – Hillmann (1932–1933, as *C. ochrochlora*), Hillmann & Grummann (1957, as *C. ochrochlora*), Lipnicki (1993, also as *C. ochrochlora*); loc. 2–7, 9–12, 15: Alg, Be, Cab, Fas, Fre, Qu, so, mos, wo.
- CLADONIA CORNUTA (L.) Hoffm. – Lipnicki (1993); loc. 7, 12: so.
- CLADONIA CRISPATA (Ach.) Flot. – Lipnicki (1993): so.
- CLADONIA DEFORMIS (L.) Hoffm. – Lipnicki (1993); loc. 4, 7: so, wo.
- CLADONIA DIGITATA (L.) Hoffm. – Lipnicki (1993); loc. 2–5, 7–9, 11, 12: Alg, Pis, so, wo.
- CLADONIA FIMBRIATA (L.) Fr. – Lipnicki (1993); loc. 4, 6–10, 12: Ali, Be, Pot, Rop, so, wo.
- CLADONIA FOLIACEA (Huds.) Willd. – Lipnicki (1993): so.
- CLADONIA FURCATA (Huds.) Schrad. – Lipnicki (1993); loc. 4, 7: so.
- CLADONIA GLAUCA Flörke – Lipnicki (1993); loc. 7, 9: Be, so, wo.
- CLADONIA GRACILIS (L.) Willd. – Lipnicki (1993); loc. 7: so.
- CLADONIA GRAYI G. Merr. ex Sandst. – loc. 9: wo.

- CLADONIA INCRASSATA Flörke – loc. 9: wo. [EN]
 CLADONIA MACILENTA subsp. FLOERKEANA (Fr.)
 V. Wirth – Lipnicki [1993, as *Cladonia floerkeana* (Fr.) Flörke]; loc. 5: so, wo.
 CLADONIA MACILENTA Hoffm. subsp. MACILENTA –
 Lipnicki [1993, as *Cladonia bacillaris* (Ach.)
 Nyl. and *C. macilenta* Hoffm.]; loc. 3–5, 9,
 12: Be, Pis, so, wo.
 CLADONIA MEROCHLOROPHAEA Asahina – loc. 5, 7,
 12: mos, so.
 CLADONIA PHYLLOPHORA Ehrh. ex Hoffm. – Lipnicki
 (1993); loc. 4, 7: so.
 CLADONIA PLEUROTA (Flörke) Schaer. – Lipnicki
 (1993); loc. 4: so.
 CLADONIA PORTENTOSA (Dufour) Coem. – Lipnicki
 [1993, as *Cladina portentosa* (Dufour) Foll-
 mann]: so.
 CLADONIA RAMULOSA (With.) J.R. Laundon – loc.
 4: so.
 CLADONIA RANGIFERINA (L.) Weber ex F. H. Wigg. –
 Lipnicki [1993, as *Cladina rangiferina* (L.)
 Nyl.]; loc. 7: so.
 CLADONIA RANGIFORMIS Hoffm. – Lipnicki (1993):
 so.
 CLADONIA SQUAMOSA (Scop.) Hoffm. – Lipnicki
 (1993); loc. 6: Be, Rop, so, wo.
 CLADONIA SUBULATA (L.) Weber ex F.H. Wigg. – Lip-
 nicki (1993): so, wo.
 CLADONIA UNCIALIS (L.) Weber ex F.H. Wigg. – Lip-
 nicki (1993); loc. 4: so.
 #CLYPEOCOCCUM HYPOCENOMYCIDIS D. Hawksw. –
 loc. 2, 4–6, 9, 12, 16: li (on *Hypocenomyce*
scalaris).
 COENOGONIUM PINETI (Schrad.) Lücking & Lumb-
 sch – Lipnicki [1993, as *Dimerella pineti*
 (Schrad. ex Ach.) Vězda]; loc. 2–4, 9, 11, 15:
 Alg, Fas, Pia, Pis, Qu, Ti, Vam.
 DIBAEIS BAEOMYCES (L. f.) Rambold & Hertel –
 Lipnicki (1993, as *Baeomyces roseus* Pers.):
 so. [NT]
 DIPLOTOMMA cf. ALBOATRUM (Hoffm.) Flot. – loc.
 10: gr.
 #EPICLADONIA SANDSTEDDEI (Zopf) D. Hawksw. – loc.
 9: li (on *Cladonia coniocraea*)
 #EPICLADONIA STENOSPORA (Harm.) D. Hawksw. –
 loc. 9: li (on *Cladonia coniocraea*).
 EVERNIA PRUNASTRI (L.) Ach. – Lipnicki (1993); loc.
 5, 6, 8–10, 12: Acpl, Ali, Be, Qu, Rop, Ti. [NT]
 FELLHANERA SUBTILIS (Vězda) Diederich & Sérus.
 – loc. 18: Pic.
 FLAVOPARMELIA CAPERATA (L.) Hale – Lipnicki
 (1993): Qu. [EN]
 FUSCIDEA ARBORICOLA Coppins & Tønsberg – loc.
 15: Fas.
 FUSCIDEA PUSILLA Tønsberg – loc. 9: Be.
 GRAPHIS SCRIPTA s.l. – Lipnicki (1993); loc. 3, 4,
 11: Cab, Fas. [NT]
 HALECANIA VIRIDESCENS Coppins & P. James – loc.
 2, 6, 8: Fre, Ma, San.
 HYPOCENOMYCE ANTHRACOPHILA (Nyl.) P. James &
 Gotth. Schneid. – loc. 5: Pis.
 HYPOCENOMYCE CARADOCENSIS (Leight. ex Nyl.) P.
 James & Gotth. Schneid. – Lipnicki (1993);
 loc. 16: Pis, wo.
 HYPOCENOMYCE SCALARIS (Ach. ex Lilj.) M. Choisy –
 Lipnicki (1993); loc. 2–7, 9, 11, 12, 16: Alg,
 Fre, Pis, Qu, Ti, wo.
 HYPOGYMNIA FARINACEA Zopf – Hillmann [1932–
 1933, as *Hypogymnia bitteriana* (Zahlbr.)
 Räsänen], Hillmann (1936, as *Parmelia*
bitteriana Zahlbr.), Hillmann & Grummann
 (1957, as *P. bitteriana*); loc. 4: Fas. [VU]
 HYPOGYMNIA PHYSODES (L.) Nyl. – Hillmann
 [1932–1933, as *Parmelia physodes* (L.) Ach.],
 Lipnicki (1993); loc. 2, 3, 5–7, 9–12, 15, 17:
 Acpl, Acps, Alg, Be, Cab, Fas, Fre, Ma, Pia,
 Pis, Pot, Qu, Rop, so, Soa, Ti, wo.
 HYPOGYMNIA TUBULOSA (Schaer.) Hav. – Lipnicki
 (1993); loc. 2, 5, 10, 12, 15, 17: Acpl, Acps,
 Fas, Fre, Qu, Ti, wo. [NT]
 IMSHAUGIA ALEURITES (Ach.) S.L.F. Mey. – Lipnicki
 (1993); loc. 12: Pis, wo.
 LECANIA CYRTELLA (Ach.) Th. Fr. – Lipnicki (1993);
 loc. 4–6, 8: Fas, Qu, San, wo.
 LECANIA NAEGELII (Hepp) Diederich & van den
 Boom – loc. 2, 4, 5, 8: Fas, Fre, Qu, San.
 LECANIA SYLVESTRIS (Arnold) Arnold – Lipnicki
 (1993): co.
 LECANOGRAPHIA AMYLACEA (Ehrh. ex Pers.) Egea
 & Torrente – Hillmann [1932–1933, as *Lecanactis*
amylacea (Ehrh. ex Pers.) Arnold],
 Hillmann & Grummann (1957, as *L. amylace-*
acea), Lipnicki (1993, as *L. amylacea*): Ac,
 Fas, Qu, wo. [CR]
 LECANORA ALBELLA (Pers.) Ach. – Hillmann
 [1932–1933, as *L. pallida* (Schreb.) Ra-
 benh.], Hillmann & Grummann (1957, as
L. pallida). [EN]
 LECANORA ALBESCENS (Hoffm.) Branth & Rostr. –
 Lipnicki (1993); loc. 10: br, co.
 LECANORA ALLOPHANA Nyl. – Hillmann (1932–1933),
 Lipnicki (1993); loc. 6: Acpl, Alg.
 LECANORA ARGENTATA (Ach.) Malmé – Hillmann
 (1932–1933, as *L. subfusca* (L.) Ach. var. *ex-*

- crescens* Hillmann), Hillmann & Grummann (1957, as *L. subfuscata*), Lipnicki (1993); loc. 3, 4, 11, 12, 15: Cab, Fas, Ti.
- LECANORA CARPINEA (L.) Vain. – Lipnicki (1993); loc. 2, 4, 6, 11: Acpl, Cab, Fas, Fre.
- LECANORA CHLARTHOTERA Nyl. – Lipnicki (1993); loc. 6: 10: Acpl, Fas, Pot.
- LECANORA COMPALLENS Herk & Aptroot – loc. 5: Acpl.
- LECANORA CONIZAEOIDES Nyl. ex Cromb. – Lipnicki [1993, also as *L. conizaea* (Ach.) Nyl.]; loc. 4–7, 9–12: Be, Pis, wo.
- LECANORA CRENULATA (Dicks.) Hook. – Lipnicki (1993): co.
- LECANORA DISPERSA (Pers.) Röhl. – Lipnicki (1993); loc. 10: co.
- LECANORA EXPALLENS Ach. – Lipnicki (1993); loc. 2–6, 8, 10–12, 17: Acpl, Acps, Alg, Ali, Fas, Fre, Ma, Pot, Qu, Rop, San, Ti.
- LECANORA GLABRATA (Ach.) Malme – Lipnicki (1993): Cab, Fas.
- LECANORA HAGENII (Ach.) Ach. – Lipnicki [1993, also as *L. umbrina* (Ehrh.) Röhl.]; loc. 10: Acpl, co.
- LECANORA HORIZA (Ach.) Lindsay – loc. 3: Cab.
- LECANORA INTUMESCENS (Rebent.) Rabenh. – Hillmann (1932–1933), Hillmann & Grummann (1957): Fas. [EN]
- LECANORA PERSIMILIS Th. Fr. – loc. 2, 4, 6, 10, 12: co, Fas, Fre, Pot, Qu, Ti. [DD]
- LECANORA POLYTROPA (Ehrh. ex Hoffm.) Rabenh. – Lipnicki (1993): gr.
- LECANORA PULICARIS (Pers.) Ach. – Lipnicki (1993); loc. 3, 4, 6, 15: Cab, Fas, Fre, Pot.
- LECANORA RUGOSELLA Zahlbr. – Lipnicki (1993): Alg, Fas.
- LECANORA SALIGNA (Schrad.) Zahlbr. – Lipnicki (1993); loc. 6, 8, 12: Ali, wo, bark of deciduous trees.
- LECANORA SAXICOLA (Pollich) Ach. – Lipnicki (1993); loc. 6: gr.
- LECANORA SEMIPALLIDA H. Magn. – loc. 10: co.
- LECANORA STENOTROPA Nyl. – loc. 13: gr. The species has been only recently reported from Poland (Flakus 2007). This is the first Polish lowland locality of the species.
- LECANORA SUBRUGOSA Nyl. – loc. 2, 6: Fre, Ma.
- LECANORA SYMMICTA (Ach.) Ach. – Lipnicki (1993); loc. 2: Fre, wo.
- LECANORA VARIA (Hoffm.) Ach. – Lipnicki (1993): Bark of deciduous trees, wo.
- LECIDEA FUSCOATRA (L.) Ach. – Lipnicki (1993); loc. 13: gr.
- LECIDEA NYLANDERI (Anzi) Th. Fr. – loc. 4, 8, 12: Ali, Pis.
- LECIDELLA ELAEOCHROMA (Ach.) M. Choisy – Lipnicki [1993, also as *L. euphorea* (Flörke) Hertel]; loc. 2–4, 6, 8, 13: Acpl, Alg, Cab, Fas, Fre, Pot, San, Ti.
- LECIDELLA FLAVOSOREDIA (Vězda) Hertel & Leuckert – loc. 10: Acpl.
- LECIDELLA STIGMATEA (Ach.) Hertel & Leuckert – Lipnicki 1993, also as *Lecidella cinnamomea* (Helb.); loc. 6, 10: co, mor.
- LEIMONIS ERRATICA (Körb.) R.C. Harris & Lendemmer – loc. 16, 19: gr. [NT]
- LEPRARIA ELOBATA Tønsberg – loc. 8, 9, 11, 15: Alg, Ali, Cab, Soa.
- LEPRARIA INCANA (L.) Ach. – Lipnicki (1993); loc. 2–12, 15: Acpl, Alg, Ali, Be, Cab, Fas, Fre, Ma, Pis, Qu, Rop, San, Ti, wo.
- LEPRARIA JACKII Tønsberg – loc. 2, 7, 12: Pis.
- LEPRARIA LOBIFICANS Nyl. – loc. 2–4, 6, 8, 10–12, 15: Cab, Fas, Fre, mor, Qu, Rop, San, Ti.
- LEPRARIA RIGIDULA (de Lesd.) Tønsberg – loc. 2, 4–6, 8–11, 15: Acpl, Alg, Ali, Cab, Fas, Fre, Pot, Qu, San, Soa.
- LEPRARIA VOUAUXII (Hue) R.C. Harris – loc. 2, 5, 6, 10, 15: Acpl, Acps, co, Fas, Fre, Ma, Pis, Rop.
- +LEPTORHAPHIS ATOMARIA (Ach.) Szatala – Lipnicki [1993, as *Arthopyrenia punctiformis* (Pers.) A. Massal. var. *atomaria* (Ach.) Anzi]: Cab.
- #LICHENOCONIUM ERODENS M.S. Christ. & D. Hawksw. – loc. 2, 10, 11: li (on *Hypogymnia physodes*, *Lecanora conizeoides* and *Parmelia sulcata*).
- #LICHENOCONIUM LECANORAE (Jaap) D. Hawksw. – loc. 7, 10: li (on *Lecanora conizeoides* and *Pleurosticta acetabulum*).
- #LICHENOCONIUM PYXIDATAE (Oudem) Petrak & H. Sydow – loc. 6, 12: li (on *Cladonia fimbriata* and *C. cornuta*).
- #LICHENOCONIUM XANTHORIAE M.S. Christ. – loc. 1: li (on *Xanthoria parietina*).
- #LICHENODIPLIS LECANORAE (Vouaux) Dyko & D. Hawksw. – loc. 6: li (on *Lecanora saligna*).
- #LICHENODIPLIS PERTUSARICOLA (Nyl.) Diederich – loc. 3: li (on *Pertusaria leioplaca*).
- LICHENOMPHALIA UMBELLIFERA (L.) Redhead, Lutzoni, Moncalvo & Vilgalys – loc. 9: mos, tu, wo. [NT]
- LOBARIA PULMONARIA (L.) Hoffm. – Hillmann (1932–1933), Schulz-Korth (1931). [EN]
- MELANELIXIA GLABRATULA (Lamy) Sandler & Arup – Lipnicki [1993, as *Melanelixia fuliginosa* (Fr. ex Duby) Essl.]; loc. 2–6, 8–12, 15, 17:

- Acpl, Acps, Alg, Ali, Be, Cab, Fas, Fre, Pot, Qu, Rop, Ul.
- MELANELIXIA SUBARGENTIFERA (Nyl.) O. Blanco et al. – Hillmann [1932–1933, as *Parmelia verruculifera* Nyl.], Hillmann & Grummann (1957, as *P. subargentifera* Nyl. f. *conspurcata* (Schaer.) Grummann), Lipnicki [1993, as *Melanelia subargentifera* (Nyl.) Essl.]; loc. 10: Ac, Acpl. [VU]
- MELANELIXIA SUBAURIFERA (Nyl.) O. Blanco et al. – Lipnicki [1993, as *Melanelia subaurifera* (Nyl.) Essl.]: Fas.
- MELANOHALEA ELEGANTULA (Zahlbr.) O. Blanco et al. – Lipnicki [1993, as *Melanelia incolorata* (Parr.) Essl.]; loc. 10: Acps, on bark of deciduous trees. [VU]
- MELANOHALEA EXASPERATULA (Nyl.) O. Blanco et al. – Lipnicki [1993, as *Melanelia exasperatula* (Nyl.) Essl.]; loc. 9: Ac, Be, Cab.
- MICAREA BYSSACEA (Th. Fr.) Czarnota, Guzow-Krzemińska & Coppins – loc. 11: Alg.
- MICAREA DENIGRATA (Fr.) Hedl. – Hillmann [1932–1933, as *Catillaria synothea* (Ach.) Beltr.], Hillmann & Grummann [1957, as *C. denigrata* (Fr.) Hedl.], Lipnicki (1993); loc. 7, 8, 12, 16, 18, 19: Ali, Pis, wo.
- MICAREA MELAENA (Nyl.) Hedl. – loc. 8, 11: wo. [NT]
- MICAREA MICROCOCCA (Körb.) Gams ex Coppins – loc. 16: Be, Pis.
- MICAREA MISELLA (Nyl.) Hedl. – loc. 4, 6, 10, 12: wo.
- MICAREA NITSCHKEANA (J. Lahm ex Rabenh.) Harm. – loc. 16, 18: Pic, Pis.
- MICAREA PRASINA Fr. – Lipnicki (1993); loc. 2, 11, 17: Alg, Cab, Qu, so, Ul, wo. Records by Lipnicki (1993) may also belong to other species of the complex, *M. byssacea* and *M. micrococca*.
- #MICROCALICIUM DISSEMINATUM (Ach.) Vain. – Lipnicki (1993); loc. 11, 17: li (on *Chaenotheca stemonea*).
- #MILOSPIUM LACOIZQUETAE Etayo & Diederich – loc. 9: li (on *Cladonia digitata*). The species is new to Poland.
- #MONODICTYS EPILEPRARIA Kukwa & Diederich – loc. 2, 3, 8, 9, 11, 15: li (on *Lepraria elobata*, *L. incana* and *L. rigidula*).
- MYCOBILIMBIA EPIXANTHOIDES (Nyl.) Vitik., Ahti, Kuusinen, Lommi & T. Ulvinen – loc. 15: Fas.
- MYCOBILIMBIA PILULARIS (Körb.) Hafellner & Türk – Lipnicki [1993, as *Biatora pilularis* (Körb.) Hepp]: Fas. [VU]
- OCHROLECHIA BAHUSIENSIS H. Magn. – loc. 2, 4: Acps, Fas.
- OCHROLECHIA SUBVIRIDIS (Høeg) Erichsen – Lipnicki (1993): Cab. [VU]
- OCHROLECHIA TURNERI (Sm.) Hasselrot – loc. 5, 10: Acpl.
- OPEGRAPHA NIVEOATRA (Borrer) Laundon – loc. 15: Fas. [VU]
- OPEGRAPHA VERMICELLIFERA (Kunze) J.R. Laundon – Lipnicki (1993): Cab. [EN]
- PARMELIA SAXATILIS (L.) Ach. – Lipnicki (1993); loc. 3–5, 9, 12: Alg, Be, Fas, Fre, Qu, Soa, Ti, Ul.
- PARMELIA SULCATA Taylor – Hillmann (1932–1933), Hillmann & Grummann (1957, also as *P. sulcata* f. *pruinosa* (Harm.) Maas Geest.), Lipnicki (1993); loc. 2–6, 8–12: Acpl, Acps, Alg, Ali, Be, Cab, Fas, Fre, Ma, Pot, Qu, Rop, San, Ti, Ul.
- PARMELINA TILIACEA (Hoffm.) Hale – Lipnicki (1993): Qu. [VU]
- PARMELIOPSIS AMBIGUA (Wulfen) Nyl. – Lipnicki (1993); loc. 2–4, 7, 8, 11, 12: Alg, Cab, Be, Fas, Pis, Qu, wo.
- PARMELIOPSIS HYPEROPTA (Ach.) Arnold – loc. 9: Be. [VU]
- PELTIGERA CANINA (L.) Willd. – Lipnicki (1993): so. [VU]
- PELTIGERA HORIZONTALIS (Huds.) Baumg. – Lipnicki (1993): so. [EN]
- PELTIGERA PRAETEXTATA (Flörke ex Sommerf.) Vain. – Hillmann (1932–1933, also as *P. subcanina* Gyeln.), Hillmann & Grummann (1957, also as *P. subcanina*), Lipnicki (1993), Schulz-Korth (1931, as *P. subcanina*); loc. 4, 11, 14: Qu, so, wo. [VU]
- PELTIGERA RUFESCENS (Weiss) Humb. – Lipnicki (1993): so.
- PERTUSARIA ALBESCENS (Huds.) M. Choisy & Werner – Hillmann [1932–1933, as *P. orbiculata* (Schreb.) Zahlbr.], Lipnicki (1993); loc. 10, 12: Acpl, Acps, Ti.
- PERTUSARIA AMARA (Ach.) Nyl. – Lipnicki (1993); loc. 2–6, 8, 10–12, 15: Acpl, Acps, Alg, Cab, Fas, Fre, Qu, Ti, wo.
- PERTUSARIA COCCODES (Ach.) Nyl. – Hillmann & Grummann [1957, as *P. coccodes* var. *phymatodes* (Ach.) Almb.], Lipnicki (1993), Tobolewski (1988); loc. 3–5, 10, 12: Acpl, Acps, Cab, Fas, Ti. [NT]
- PERTUSARIA CORONATA (Ach.) Th. Fr. – Lipnicki [1993, as *P. coronata* var. *isidiifera* (Erichsen) Almb.]: Cab. [VU]
- PERTUSARIA FLAVIDA (DC.) J.R. Laundon – Tobolewski (1988); loc. 4, 12, 15: Fas, Ti. [EN]

- PERTUSARIA HEMISPHAERICA (Flörke) Erichsen – Hillmann & Grummann (1957), Lipnicki (1993); loc. 12, 15: Fas, Ti, bark of deciduous trees. [VU]
- PERTUSARIA LEIOPLACA DC. – Hillmann (1932–1933), Hillmann & Grummann (1957), Lipnicki (1993); loc. 2–4, 11, 15: Cab, Fas, Fre. [NT]
- PERTUSARIA PERTUSA (Weigel) Tuck. – Lipnicki (1993); loc. 4, 10, 15: Acpl, Fas, wo. [VU]
- PHAEOPHYSCIA NIGRICANS (Flörke) Moberg – Hillmann & Grummann [1957, as *Physcia nigricans* (Flörke) Stizenb.], Lipnicki (1993); loc. 6, 10: co, Pot, Qu.
- PHAEOPHYSCIA ORBICULARIS (Neck.) Moberg – Lipnicki (1993); loc. 6, 8, 10, 12: Acpl, co, Pot, San, Ul.
- PHAEOPHYSCIA PUSILLOIDES (Zahlbr.) Essl. – loc. 10: Acpl. This is very rarely reported species in Poland (see Fałtynowicz 2003); it is the first record from Polish lowlands. [DD]
- #PHAEOSPOROBULUS sp. – loc. 4: li (on *Buellia griseovirens*). It is perhaps an undescribed species; material needs more study.
- PHLYCTIS AGELAEA (Ach.) Flot. – Lipnicki (1993): Cab, Fas, Pot. [EN]
- PHLYCTIS ARGENA (Spreng.) Flot. – Lipnicki (1993); loc. 2, 4, 5, 8, 10–12, 15: Acpl, Acps, Ali, Cab, Fas, Fre, Qu, San, Ti, Ul, wo.
- PHYSCIA ADSCENDENS (Th. Fr.) H. Olivier – Lipnicki (1993); loc. 1, 6, 8, 12: Paa, Pot, San, Ul.
- PHYSCIA CAESIA (Hoffm.) Fűrnr. – Lipnicki (1993); loc. 6, 10: co.
- PHYSCIA DUBIA (Hoffm.) Lettau – Lipnicki (1993): Ac.
- PHYSCIA STELLARIS (L.) Nyl. – loc. 8: San.
- PHYSCIA TENELLA (Scop.) DC. – Lipnicki (1993); loc. 4, 6, 8, 9, 12, 15, 17: Be, Cab, Fas, gr, Ma, Paa, Rop, San, Ul.
- PHYSCONIA DISTORTA (With.) J.R. Laundon – Lipnicki (1993); loc. 5, 10: Ac, Acpl. [EN]
- PHYSCONIA ENTEROXANTHA (Nyl.) Poelt – Lipnicki (1993); loc. 6, 10: Acpl, San.
- PHYSCONIA GRISEA (Lam.) Poelt – Lipnicki (1993); loc. 6, 10: Ac, Acpl, co, Pot.
- PHYSCONIA PERISIDIOSA (Erichsen) Moberg – Lipnicki (1993); loc. 5, 10: Acpl, Acps, co. [EN]
- PICCOLIA OCHROPHORA (Nyl.) Hafellner – loc. 6: Qu.
- PLACYNTHIELLA DASAEA (Stirt.) Tønsberg – loc. 3, 4, 6, 7, 9, 11: Be, co, Pic, wo.
- PLACYNTHIELLA ICMALEA (Ach.) Coppins & P. James – Lipnicki (1993); loc. 8, 9, 12: Ali, Be, so, wo.
- PLACYNTHIELLA OLIGOTROPHA (J.R. Laundon) Coppins & P. James – Lipnicki (1993); loc. 12: de, so, wo.
- PLACYNTHIELLA ULIGINOSA (Schrad.) Coppins & P. James – Lipnicki (1993); loc. 12: de, so, wo.
- PLATISMATIA GLAUCA (L.) W.L. Culb. & C.F. Culb. – Lipnicki (1993); loc. 3–5, 8, 9, 12, 15: Acpl, Ali, Fas, Qu, Ti, wo.
- PLEUROSTICTA ACETABULUM (Neck.) Elix & Lumbsch – Lipnicki [1993, as *Melanelia acetabulum* (Neck.) Essl.]; loc. 10: Acpl, Acps. [EN]
- POLYSPORINA SIMPLEX (Davies) Vězda – Lipnicki (1993); gr.
- #POLYSPORINA SUBFUSCESCENS (Nyl.) K. Knudsen & Kocourk. – loc. 13: li (on *Acarospora fuscata*).
- PORINA AENEA (Wallr.) Zahlbr. – Lipnicki (1993); loc. 2–4, 6, 10, 11, 15: Acpl, Acps, Cab, Cor, Fas, Fre.
- PORINA CHLOROTICA (Ach.) Müll. Arg. – Lipnicki (1993); loc. 10: br, gr.
- PORPIDIA CRUSTULATA (Ach.) Hertel & Knoph – Lipnicki (1993); gr.
- PORPIDIA SOREDIZODES (Lamy ex Nyl.) J.R. Laundon – Lipnicki (1993); loc. 6: gr.
- PORPIDIA TUBERCULOSA (Sm.) Hertel & Knoph – Lipnicki (1993); loc. 10: gr.
- PROTOPARMELIA OLEAGINA (Harm.) Coppins – loc. 4: Fas.
- PSEUDEVERNIA FURFURACEA (L.) Zopf – Hillmann [1932–1933, as *Parmelia furfuracea* (L.) Ach. var. *ceratea* (Ach.) Th. Fr.], Hillmann & Grummann (1957, as *P. f.* var. *soreumatica* Wallr. and *P. f.* var. *ceratea*), Lipnicki (1993); loc. 4, 5, 12, 15: Acpl, Be, Fas, Pis, Qu, wo.
- PYCNORA SOROPHORA (Vain.) Hafellner – loc. 12: Pis, wo.
- PYRENULA NITIDA (Weigel) Ach. – Lipnicki (1993); loc. 3, 4, 15: Cab, Fas, Ti. [VU]
- RAMALINA FARINACEA (L.) Ach. – Lipnicki (1993); loc. 5, 10: Acpl, Acps, Po, Ti. [VU]
- RAMALINA FASTIGIATA (Pers.) Ach. – Lipnicki (1993); loc. 10: Ac, Acps, Po. [EN]
- RAMALINA FRAXINEA (L.) Ach. – loc. 10: Ac, Acpl, Fas. [EN]
- RAMALINA POLLINARIA (Westr.) Ach. – Lipnicki (1993): Ac, Po. [VU]
- RHIZOCARPON DISTINCTUM Th. Fr. – Hillmann [1932–1933, as *R. ambiguum* (Schaer.) Zahlbr.], Hillmann & Grumman (1957), Lipnicki (1993); loc. 13: gr.
- RHIZOCARPON REDUCTUM Th. Fr. – Lipnicki (1993, as *R. obscuratum* auct.); loc. 6: co, gr.

- RINODINA OLEAE Bagl. – Lipnicki (1993, as *Rinodina gennarii* Bagl.): br.
- ROPALOSPORA VIRIDIS (Tønsberg) Tønsberg – loc. 3, 4, 8, 11, 15, 17: Ali, Cab, Coa, Fas.
- SARCOGYNE REGULARIS Körb. – Lipnicki (1993): co. +SAREA RESINAE (Fr.) Kuntze – loc. 6: Pic.
- SCOLIOSPORUM CHLOROCOCCUM (Graewe ex Stenh.) Vězda – Lipnicki (1993); loc. 4, 5: Fas, Qu, wo.
- SCOLIOSPORUM SAROTHAMNI (Vain.) Vězda – loc. 5, 12: Qu, Ti.
- SCOLIOSPORUM UMBRINUM (Ach.) Arnold – Lipnicki [1993, also as *Micarea intrusa* (Th. Fr.) Coppins & Kiliyas]; loc. 13: gr.
- +STENOBYBE PULLATULA (Ach.) Stein – loc. 8: Ali.
- STEREOCAULON CONDENSATUM Hoffm. – Hillmann (1932–1933): so. [VU]
- STEREOCAULON TOMENTOSUM Fr. – Lipnicki (1993): so. [EN]
- STRANGOSPORA MORIFORMIS (Ach.) Stein – Lipnicki (1993): wo.
- #SYZYGOSPORA PHYSCIACEARUM Diederich – loc. 6, 8, 9: li (on *Physcia adscendens* and *Ph. tenella*).
- #TAENIOLELLA PUNCTATA M.S. Christ. & D. Hawksw. – loc. 11: li (on *Graphis scripta*).
- THELOCARPON INTERMEDIELLUM Nyl. – loc. 12: wo. [VU]
- THELOCARPON LAURERI (Flot.) Nyl. – Lipnicki (1993): gr.
- #THELOCARPON LICHENICOLA (Fuckel) Poelt & Hafellner – loc. 11: wo.
- TRAPELIA COARCTATA (Turner ex Sm.) M. Choisy – Lipnicki (1993): gr.
- TRAPELIA GLEBULOSA (Sm.) J.R. Laundon – Lipnicki [1993, as *Trapelia involuta* (Taylor) Hertel]: br.
- TRAPELIOPSIS FLEXUOSA (Fr.) Coppins & P. James – Lipnicki (1993); loc. 3, 4, 6, 9, 11, 12, 17: Be, Pic, Pis, Qu, wo.
- TRAPELIOPSIS GLAUCOLEPIDEA (Nyl.) Gotth. Schneid. – loc. 2, 17: tu, wo. [DD]
- TRAPELIOPSIS GRANULOSA (Hoffm.) Lumbsch – Lipnicki (1993); loc. 4–6, 9, 11, 12: Be, de, Pis, so, wo.
- TRAPELIOPSIS PSEUDOGANULOSA Coppins & P. James – loc. 4, 11: so, wo.
- #TREMELLA HYPOGYMNIAE Diederich & M.S. Christ. – loc. 5, 15: li (on *Hypogymnia physodes*).
- #TREMELLA LICHENICOLA Diederich – loc. 11, 15: li (on *Violella fucata*).
- #TRICHONECTRIA ANISOSPORA (Lowen) van den Boom & Diederich – loc. 9: li (on *Hypogymnia physodes*). The species is new to Poland.
- TUCKERMANOPSIS CHLOROPHYLLA (Willd.) Hale – Lipnicki [1993, as *Cetraria chlorophylla* (Willd.) Vain.]; loc. 5, 6, 8, 10, 12, 17: Acps, Ali, Cab, Fas, Ma, Pis, Qu. [VU]
- USNEA DASYPOGA (Ach.) Nyl. – Hillmann & Grummann [1957, as *U. dasy-poga* var. *tuberculata* (Motyka) Räsänen]: Fas. [VU]
- USNEA FLORIDA (L.) Weber ex F.H. Wigg. – Hillmann (1932–1933), Hillmann & Grummann (1957), Schulz-Korth (1931): Fas, Pis. [CR]
- USNEA HIRTA (L.) Weber ex F.H. Wigg. – Hillmann (1932–1933), Hillmann & Grummann (1957): Pis. [VU]
- USNEA SUBFLORIDANA Stirt. – Hillmann & Grummann [1957, as *Usnea comosa* (Ach.) Röhl. var. *similis* (Motyka) Erichsen], Tobolewski (1988): Fas. [EN]
- VERRUCARIA DOLOSA Hepp. – loc. 8: gr.
- VERRUCARIA HYDRELA Ach. – loc. 3, 8, 15: gr. [VU]
- VERRUCARIA MURALIS Ach. – Lipnicki (1993, also as *V. rupestris* Schrad. and *V. confluens* A. Massal.); loc. 6: co.
- VERRUCARIA NIGRESCENS Pers. – Lipnicki (1993); loc. 6, 10: br, co.
- VERRUCARIA PRAETERMISSA (Trevis.) Anzi – loc. 3, 15: gr. [NT]
- VERRUCARIA SUBLOBULATA Eitner ex Servit – loc. 3: gr, sa. [DD]
- VIOLELLA FUCATA (Stirt.) T. Sprib. [syn. *Mycoblastus fucatus* (Stirt.) Zahlbr.] – loc. 3, 4, 8, 11, 15: Cab, Fas, wo.
- VULPICIDA PINASTRI (Scop.) J.-E. Mattsson & M.J. Lai – Lipnicki [1993, as *Cetraria pinastri* (Scop.) Ach.]: wo. [NT]
- XANTHOMENDOZA ULOPHYLLODES (Räsänen) Søchting, Kärnefelt & S. Y. Kondr. – loc. 10: Acpl. [VU]
- XANTHOPARMELIA CONSPERSA (Ehrh. ex Ach.) Hale – Lipnicki (1993): gr.
- XANTHOPARMELIA LOXODES (Nyl.) O. Blanco et al. – Lipnicki [1993, as *Neofuscelia loxodes* (Nyl.) Essl.]: co.
- XANTHOPARMELIA cf. PULLA (Ach.) O. Blanco et al. – loc. 15: gr. [NT]
- XANTHORIA CANDELARIA (L.) Th. Fr. – Lipnicki (1993): bark of deciduous roadside trees.
- XANTHORIA ELEGANS (Link) Th. Fr. – loc. 10: co.
- XANTHORIA PARIETINA (L.) Th. Fr. – Lipnicki (1993); loc. 1, 4, 6, 8: co, Fas, Paa, San.
- XANTHORIA POLYCARPA (Hoffm.) Rieber – loc. 12: Ti.

Excluded species

- Arthonia exilis* (Flörke) Anzi – Lipnicki (1993): Cab. Taxonomical classification could not be clarified.
- Cladonia bellidiflora* (Ach.) Schaer. – Lipnicki (1993): so. Determination considered to be doubtful.
- Cladonia pyxidata* (L.) Fr. – Lipnicki (1993): so. The records most probably belong to other morphologically similar species.
- Coenogonium* cf. *luteum* (Dicks.) Kalb & Lücking – Lipnicki [1993, as *Dimerella* cf. *lutea* (Dicks.) Trevis]: Cab. Determination needs re-examination.
- Hematomma ochroleucum* (Neck.) J.R. Laundon var. *porphyrium* (Pers.) J.R. Laundon – Lipnicki (1993): Fas. Determination considered to be doubtful; most Polish records of this lichen belong to *Lecanora thysanophora* R.C. Harris (Kukwa 2005).
- Lecanora populicola* (DC.) Duby – Lipnicki (1993): Cab. Determination needs re-examination; the species usually grows on *Populus tremula*.
- Lepraria membranacea* (Dicks.) Vain. – Hillmann [1932–1933, as *Crocynia membranacea* (Dicks.) Zahlbr.], Lipnicki [1993, *Leproloma membranaceum* (Dicks.) Vain.]: co, bark of deciduous trees. Determinations considered to be doubtful; this is a montane species in Poland (Kukwa 2006).
- Lepraria neglecta* (Nyl.) Lettau – Lipnicki (1993): co. Determination needs re-examination; it is mostly a montane species, which was often incorrectly reported from lowland (Kukwa 2006).
- Ochrolechia androgyna* (Hoffm.) Arnold – Lipnicki (1993): Be, Qu. Determination considered to be doubtful; the records belong most probably to *O. bahusiensis*, which was recently proved to be distinct from *O. androgyna* (see Jabłońska & Kukwa 2007).
- Opegrapha subparallela* Müll. Arg. – Lipnicki (1993): wo. Taxonomical classification could not be clarified.
- Pertusaria lactea* (L.) Arnold – Lipnicki (1993): co. Determination considered to be doubtful; it is a montane species in Poland.
- Pertusaria maculata* Erichs. – Lipnicki (1993): Coa. This name has been applied in Poland to many different species; the determination needs re-examination.

- Verrucaria athiobola* Ach. – Lipnicki (1993, as *V. laevata* Ach.): gr. Name of unclear identity.
- Verrucaria elaeomelaena* (A. Massal.) Arnold – Lipnicki (1993): gr. Determination needs re-examination.

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