

CONTRIBUTION TO THE LITHUANIAN FLORA OF LICHENS AND ALLIED FUNGI. V.

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Abstract

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Three species of lichens and four species of lichenicolous fungi were reported as new to Lithuania: *Cercidospora macrospora*, *Didymocyrtis cladoniicola*, *Miriquidica leucophaea*, *Montanelia disjuncta*, *Plectocarpon lichenum*, *Porpidia nigrocruenta* and *Teloggalla olivieri*. Of these, two species, *Didymocyrtis cladoniicola* and *Miriquidica leucophaea*, were recorded for the first time in the Baltic States. Three lichens, namely *Lecanora sulphurea*, *Protoparmelia badia* and *Punctelia subrudecta* previously known in Lithuania from literature data were only confirmed with certainty for the first time.

Keywords: Baltic States, lichenicolous fungi, lichenized fungi.

INTRODUCTION

The paper continues the series of reports on new finds of lichens and allied fungi in Lithuania. Present contribution is based on the specimens collected from various parts of the country in 2010–2017. Three species of lichens and four species of lichenicolous fungi new to Lithuania were reported. Of these, two species were found for the first time in the Baltic States. Three species of lichens, previously known in Lithuania only from literature data of the end of the 19th century – first half of the 20th century, were confirmed with certainty for the first time.

MATERIALS AND METHODS

Lichen and fungus morphology was studied using a stereomicroscope Nikon SMZ 800, anatomy – a light microscope Nikon Eclipse Ci, by means of hand-sectioned preparations in water or KOH. All measurements were made in water preparations.

Spot-test reactions were checked using 10% KOH (K), sodium hypochlorite solution (C), and para-phenylenediamine solution in ethanol (Pd). All referred specimens are deposited at the Herbaria BILAS or WI (indicated accordingly).

The nomenclature of the listed lichens and lichenicolous fungi mainly follows NORDIN et al. (2011), except for *Didymocyrtis cladoniicola*, which follows ERTZ et al. (2015), and *Porpidia nigrocruenta*, which follows DIEDERICH et al. (1988). Lichenicolous fungi are marked with an asterisk (*).

LIST OF SPECIES

****Cercidospora macrospora* (Uloth) Hafellner & Nav.-Ros.**

The fungus is characterized by four-spored asci, long ascospores (22–27 × 5–6 μm in our specimens) and inhabiting *Protoparmeliopsis* spp. hosts. It is a widespread holarctic species recorded in many European countries (BRACKEL, 2014; CALATAYUD et

al., 2013). Of the Baltic States, it was known so far only from Estonia (APTROOT et al., 2005).

The host of *C. macrospora* in Lithuania is *Protoparmeliopsis muralis* (Schreb.) M.Choisy, common lichen in the country (MOTIEJŪNAITĖ, 2016), however, the lichenicolous fungus was only recorded in erratic boulder fields, which are rare and protected habitats in Lithuania.

Specimens examined: Both on thalli of *Protoparmeliopsis muralis* (Schreb.) M.Choisy growing on siliceous boulders. Skuodas distr., Salantai Regional Park, Kulaliai boulder field, 56° 7' 35.41" N, 21° 38' 33.68" E, 22 September 2016. Leg. I. Prigodina Lukošienė, WI L00001, WI L00006. Biržai distr., Biržai Regional Park, Juodžionys boulder field, 56° 9' 22.47" N, 24° 32' 32.57" E, 20 July, 2016. Leg. I. Prigodina Lukošienė, WI L00020.

****Didymocyrtis cladoniicola* (Diederich, Kourk. & Etayo) Ertz & Diederich**

This coelomycetous fungus, originally described from *Cladonia* spp. hosts, is now known to infect hosts from other lichen forming fungal genera and even families (BRACKEL, 2014; ERTZ et al., 2015). It is characterized by narrowly ellipsoid conidia, 2.5–4.5 µm high conidiogenous cells and pycnidia measuring 40–140 µm (DIEDERICH et al., 2007). Our specimen had narrowly ellipsoid conidia measuring 4.5–5 × 2.2–3 µm, conidiogenous cells 3–4.5 µm high and pycnidia 60–75 µm in diam. New to the Baltic States.

Specimen examined: On thalli of *Cladonia uncialis* (L.) Weber ex F.H. Wigg. growing in open heathland. Dzūkija National Park, former military training area, 53° 54' 19.54" N, 24° 23' 50.88" E, 1 October 2015. Leg. O. Grigaitė, BILAS 10888.

***Lecanora sulphurea* (Hoffm.) Ach.**

Of all saxicolous acidophilic *Lecanora* species found in Lithuania and in the close-laying countries (lowlands), *L. sulphurea* is distinguished by yellowish thallus, apothecia with early excluded thalline margin and absence of the reaction with C. Chemically, it is characterized by presence of usnic acid, atranorin, zeorin and gangaleoidin. This lichen often starts as a parasite on saxicolous *Tephromela atra* (Huds.) Hafellner, becoming an independent lichen later. Our specimen was well-developed independent lichen. The species was previously known in the country from one histori-

cal reference only, from nowadays Klaipėda district (western Lithuania) (LETTAU, 1912).

Specimen examined: On siliceous gravestones in old cemetery. Alytus distr., Raižiai, old Tatar cemetery, 54° 28' 31.45" N, 24° 10' 51.01" E, 15 July 2012. Leg. V. Kuodytė, WI L00013.

***Miriquidica leucophaea* (Flörke ex Rabenh.) Hertel & Rambold**

The species is characterized by pale-coloured (whitish) thallus, which is K± yellowish and P- and thalline margin of apothecia, which reacts C+ faint pink. New to the Baltic States.

Specimen examined: On quartzite boulder. Skuodas distr., Salantai Regional Park, Kulaliai boulder field, 56° 7' 35.41" N, 21° 38' 33.68" E, 22 September 2016. Leg. I. Prigodina Lukošienė, WI L00002.

***Montanelia disjuncta* (Erichsen) Divakar, A. Crespo, Wedin & Essl.**

The lichen is very similar to *Montanelia soledia-ta* (Ach.) Divakar, A. Crespo, Wedin & Essl. differing by the presence of pseudocyphellae and laminal to submarginal soralia (WESTBERG & THELL, 2011). *M. soledia-ta* is known from four localities (various parts of the country) and apparently, both species are infrequent in Lithuania as their substrate, siliceous boulders, unaffected by pollution are rather rare as well.

Specimens examined: All on siliceous stones (potassium feldspar granite and quartzite). Skuodas distr., Salantai Regional Park, Kulaliai boulder field, 56° 7' 35.41" N, 21° 38' 33.68" E, 22 September 2016. Leg. I. Prigodina Lukošienė, WI L00011, WI L00012. Ibidem, Šaukliai boulder field, 56° 7' 41.16" N, 21° 35' 54.79" E, 13 June 2013. Leg. I. Prigodina Lukošienė, WI L00009.

****Plectocarpon lichenum* (Sommerf.) D.Hawksw.**

This is a most widely distributed and the commonest species of the genus, characterized by basally constricted galls with pseudo-thalline margin and carbonised ascomata with greenish, K+ green intensifying stromatal tissue (ERTZ et al., 2005). In our specimen, no developed ascomata were detected, though pycnidia were present and abundant, 45–50 µm wide and 80 µm high, with bacilliform hyaline conidia 5–5.5 × 1 µm.

Though the host of the fungus – *Lobaria pulmonaria* (L.) Hoffm. is not rare in Lithuania, its populations largely are small and scanty. The locality of *P. lichenum* bore one of the more abundant populations of its host. The fungus was recorded on two trees overgrown with thalli of *L. pulmonaria*. Apparently, the occurrence (or at least manifestation) of *P. lichenum* requires not only presence of the host, but, possibly, also favourable environmental conditions. Similar case was observed for *Tremella hypogymniae* Diederich & M.S. Christ.: it is reported to be very common by DIEDERICH (1996), however, the fungus was recorded only twice in Lithuania, from humid old-growth forest stands, even though its host *Hypogymnia physodes* (L.) Nyl. is one of the commonest lichens in the country.

Specimen examined: On thallus of *Lobaria pulmonaria* (L.) Hoffm. growing on trunk of *Acer platanoides* in mature deciduous stand. Ukmergė distr., Viliukai forest, Deltuva forest district, forest compartment No 226, 55° 14' 23.72" N, 24° 32' 12.42" E, 11 March 2015. Leg. D. Stončius, BILAS 10876.

***Porpidia nigrocruenta* (Anzi) Diederich & Sérus.**

The lichen is characterized by a thin to immersed, grey thallus, large apothecia (to 2.2 mm in diam.) with thick, tumid margin (0.15–0.2 mm wide) and inner exciple reacting K⁺ red (FRYDAY, 2005).

Our specimen had immersed thallus, apothecia to 2.5 mm in diam. with thick (to 0.2 mm wide) margin and strong K⁺ red reaction of the inner exciple.

Specimen examined: On pegmatite granite boulder. Skuodas distr., Salantai Regional Park, Kulaliai boulder field, 56° 7' 35.41" N, 21° 38' 33.68" E, 22 September 2016. Leg. I. Prigodina Lukošienė, WI L00008.

***Protoparmelia badia* (Hoffm.) Hafellner**

The species is characterized by brownish thallus and apothecia, and ascospores with pointed apices. The lichen was previously known in Lithuania from one historical reference only, from nowadays Klaipėda district (western Lithuania) (OHLERT, 1870).

Specimens examined: On potassium feldspar granite and sandstone boulders. Skuodas distr., Salantai Regional Park, Kulaliai boulder field, 56° 7'

35.41" N, 21° 38' 33.68" E, 22 September 2016. Leg. I. Prigodina Lukošienė, WI L00003, WI L00004, WI L00010.

***Punctelia subrudecta* (Nyl.) Krog**

The lichen was previously known in Lithuania from one doubtful record in south-eastern part of the country (KUKWA & MOTIEJŪNAITĖ, 2012). Until recently, *P. subrudecta* was not distinguished from *P. jeckeri* (Roum.) Kalb, therefore, the present find is the only reliable proof that both species of the genus are present in Lithuania.

Specimen examined: On branches and upper trunk of an uprooted deciduous tree. Vilnius, Verkiai Regional Park, environs of Trinapolis Church complex, forested bank of Baltupis stream, 54° 43' 42.57" N, 25° 17' 22.45" E, 15 March 2017. Leg. J. Motiejūnaitė, BILAS 10895.

****Teloggalla olivieri* (Vouaux) Nik.Hoffm. & Hafellner**

The fungus is easily distinguished by hyaline ascomata sunk in galls formed on thalli of the host (*Xanthoria* spp.). The species is widely distributed in Europe (BRACKEL, 2014). The most common host for *T. olivieri* is *Xanthoria parietina* (L.) Th.Fr., which is also one of the most frequent lichens in Lithuania, however, the fungus has not been reported in the country up to now.

Specimen examined: On thallus of *Xanthoria parietina* (L.) Th.Fr. growing on twigs of *Populus tremula*. Jurbarkas distr. Balandinė Telmological Reserve, 55° 14' 26.24" N, 22° 42' 37.81" E, 4 November 2016. Leg. A. Uselienė, BILAS 10892.

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PAPILDOMI DUOMENYS APIE LIETUVOS KERPIŲ IR SU JOMIS SUSIJUSIŲ GRYBŲ FLORĄ. V.

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Santrauka

Straipsnyje pateikti duomenys apie trijų rūšių kerpės ir keturių rūšių lichenofilinius grybus, kurių iki šiol Lietuvoje nebuvo aptikta. Viena kerpių rūšis – *Miriquidica leucophaea* bei lichenofilinis grybas *Didymocyrtis cladoniicola* aptikti pirmą kartą Baltijos šalyse. *Cercidospora macrospora*, *Didymo-*

cyrtis cladoniicola, *Miriquidica leucophaea*, *Montanelia disjuncta*, *Plectocarpon lichenum*, *Porpidia nigrocruenta* ir *Teloggalla olivieri* aptiktos pirmą kartą Lietuvoje. Rastos iki šiol Lietuvoje tik iš istorinių literatūros šaltinių žinomos kerpės *Lecanora sulphurea*, *Protoparmelia badia* ir *Punctelia subrudecta*.