

Lichens and allied fungi new for Latvia

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Abstract: Six lichenized fungi (*Calicium parvum*, *C. trabinellum*, *Carbonicola anthracophila*, *C. myrmecina*, *Peltigera extenuata*, *Pycnora sorophora*), two lichenicolous (*Clypeococcum hypocenomyces* and *Illosporium carneum*), and two saprobic calicioid fungi (*Chaenothecopsis savonica* and *Microcalicium arenarium*) are reported as new for Latvia.

Keywords: Latvia; lichenicolous; calicioid; saprobic fungi

INTRODUCTION

Several essential contributions for Latvian lichen biota have been presented recently (Āboliņa et al., 2015; Jurciņš et al., 2014; Moisejevs, 2015; Motiejūnaitė et al., 2016). These contributions added over one hundred species of lichens and allied fungi to the Latvian checklist, including re-find of *Lobaria amplissima*, a species which was considered to be extinct in the country. Currently about 690 species of lichenized and allied fungi are recorded in Latvia. This paper further supplements the knowledge on lichens and allied fungi in Latvia.

MATERIAL AND METHODS

All referred specimens were collected by the author in 2015–2016 in different regions of Latvia, during local inventories of protected habitats, according to Latvian interpretation of Annex I EU Habitat Directive in (Auniņš et al., 2013). The collections were determined using the routine lichenological methods (Smith et al., 2009). Specimens were examined under stereomicroscope Nikon SMZ 800. Water mounted hand-made cross sections were examined under light transmission microscope Nikon Eclipse E100. The nomenclature of taxa mainly follows Nordin et al. (2011). Doubtful specimens were compared with the collections at the herbarium of the Institute of Botany, Nature Research Centre, Vilnius (BILAS). For each specimen the protected habitat type and number according to Annex I EU Habitat Directive is added in brackets, if relevant. Species distribution data in neighboring countries (for Russia only Pskov region) are provided. All reference specimens are deposited at the Herbarium of Daugavpils

University, Institute of Life Sciences and Technology, Laboratory of Botany (DAU).

In the species list non-lichenized saprobic fungi are marked with + and lichenicolous fungi with #.

THE SPECIES

CALICIUM PARVUM Tibell – Krāslavas County, Kaplavas District, about 250–300 m off Šilovkas lake center, 55°49'33.32"N, 27°14'37.71"E; in dry old-growth *Pinus sylvestris* forest site, burned in past (evaluated as 9010* Western Taiga), on *Pinus sylvestris* bark; 24 August 2016 (DAU 5018009001).

Note. The species is known in Belarus (A. Tsurykau pers. comm.), Estonia (Löhmus, 1998) and Lithuania (Motiejūnaitė, 1999).

CALICIUM TRABINELLUM (Ach.) Ach. – Krāslavas Co., Ūdrīšu District, Tartaks village, about 600 m E off Tartaks village, 55°52'54.454"N, 26°59'35.746"E; in boggy *Pinus sylvestris* forest site with *Ledum palustre* L. (evaluated as 91D0* Bog woodland), on wood of pine snag; 10 September 2015; DAU518008001; Daugavpils Co., Dvietes District., Kinkauskū forest area, 56°8'30.884"N, 26°14'28.676"E; in young dry *Pinus sylvestris* forest, on wood of pine stump; 12 July 2016; DAU518008002.

Note. Known in Belarus (Golubkov & Titov, 1990), Estonia (Löhmus, 1998), Lithuania (Motiejūnaitė, 1999) and Russia (Istomina & Likhacheva, 2014). In Lithuania *C. trabinellum* is treated as an indicator species of undisturbed boggy pine forests (Motiejūnaitė et al., 2004).

CARBONICOLA ANTHRACOPHILA (Nyl.) Bendiksby & Timdal – Gulbenes Co., Stradu District, highway P36, turn to Lazdaga and Kaļņa lakes, about 200-300 m from the highway, 57°3'12.551"N, 26°55'27.059"E; in old-growth dry *Pinus sylvestris* forests (evaluated as 9010* Western taiga), on *Pinus sylvestris* bark; 2 August 2015; DAU552001001; Krāslavas Co., Kaplavas District, Šilovkas lake, about 250–300 m from Šilovka lake central part, 55°49'33.32"N 27°14'37.71"E; in old-growth dry *Pinus sylvestris* forests (evaluated as 9010* Western taiga), on *Pinus sylvestris* bark; 24 August 2016; DAU552001002; Alūksnes Co., Liepnas District, about 2km to SE from Liepna city, 57°20'29.798"N; 21°39'35.462"E; in old-growth moistured *Pinus sylvestris* forest, on burned pine snag, on wood; 26 September 2016; DAU552001003.

Note. The species is known in Belarus (Yatsyna, 2012), Estonia (Randlane et al., 1999) and Lithuania (Motiejūnaitė, 1999). In all neighboring countries, the species is mainly found in old-growth, previously burned forest sites. In Latvia, in all cases the lichen was found in dry old-growth pine stands impacted by past forest fires.

CARBONICOLA MYRMECINA (Ach.) Bendiksby & Timdal – Alūksnes Co., Liepnas District, about 2 km to SE from Liepna city, 57°20'29.798"N; 21°39'35.462"E; in old-growth moistured *Pinus sylvestris* forest, on burned pine snag, on wood; 26 September 2016; DAU552002001.

Note. Known in Estonia (Randlane et al., 1999) and Lithuania (Motiejūnaitė, 1999).

+CHAENOTHECOPSIS SAVONICA (Räsänen) Tibell – Ventspils Co., Užavas District, Užava town, Nature Preserve Užava, about 600 m SE off Užava lighthouse, 57°12'17.798"N, 21°25'37.462"E; in old-growth birch-spruce-pine forest site (evaluated as 9010* Western taiga), on *Picea abies* snag; 10 September 2015; DAU527005001.

Note. *C. savonica* is known in Estonia (Löhmus, 1998) and Lithuania (Motiejūnaitė, 1999).

#CLYPEOCOCCUM HYPOCENOMYCIS D. Hawksw. – Krāslavas Co., Ūdrīšu District, Borovka village, about 300 m N off the farmstead „Ciemati”, 55°55'9.289"N, 26°59'23.060"E; in a middle-aged *Pinus sylvestris* forest stand, on thalli of

Hypocenomyce scalaris growing on *Pinus sylvestris*; 14 September 2015; DAU646001001; Krustpils Co., Atašienes District, About 700 m S off Teiču Nature Reserve observation tower, 56°31'28.203"N, 26°34'2.132"E; in boggy *P. sylvestris* forest with *Ledum palustre* L., (evaluated as 91D0* Bog woodland), on thalli of *Hypocenomyce scalaris* growing on *Pinus sylvestris*; 17 March 2016; DAU646001002.

Note. It is a common lichenicolous fungus, known in Belarus (Tsurykau & Khramchankova, 2011), Estonia (Randlane et al., 2015) and Lithuania (Motiejūnaitė, 1999).

#ILLOSPORIUM CARNEUM Fr. – Krustpils Co., Atašienes District, about 500 m NE off Teiču Nature reserve observation tower, 56°32'54.332"N, 26°25'25.403"E; on the railroad earthwork, on thalli of *Peltigera extenuata* growing on soil (it was in the state of an anamorph); 26 April 2016; DAU647001001.

Note. *Illosporium carneum* is one of the commonest peltigericolous fungi, it is known in Estonia (Suija, 2005) and Lithuania (Motiejūnaitė, 1999).

+MICROCALICIUM ARENARIUM (Hampe ex A.Massal.) Tibell – Ventspils Co., Užavas District, Užava town, Užava Nature Reserve, about 700 m SE off Užava lighthouse, 57°11'7.195"N, 21°25'16.528"E; in old-growth birch-spruce-pine forest site (evaluated as 9010* Western taiga), on a sand layer in *Picea abies* root plate; 10 Sept 2015; DAU643003001.

Note. Known in Belarus (Golubkov, 1987), Estonia (Löhmus, 1998) and Lithuania (Motiejūnaitė et al., 2013). In all neighboring countries the species is known only from very few localities. In Estonia it has been assessed as vulnerable (Löhmus & Löhmus, 2011). In Lithuania the species was known from literature data and only recently was recorded in one locality (Motiejūnaitė et al., 2013). In Belarus the species is known from a single locality, Belovezhskaya Pushcha National Park, and is considered as very rare (Golubkov, 1987). Regional distribution and sparse occurrence of *M. arenarium* is a good basis to include it to local red lists.

PELTIGERA EXTENUATA (Vainio) Lojka – Krustpils Co., Atašienes District, about 500 m NE off Teiču Nature Reserve observation tower,

56°32'54.332"N, 26°25'25.403"E; on the railroad earthwork, on soil; 26 April 2016; DAU647001001.

Note. The species is recorded in all neighboring countries (Randlane et al., 2015; Motiejūnaitė, 1999).

RYCINORA SOROPHORA (Vain.) Hafellner – Krustpils Co., Atašienes District, Nature preserve “Great Pelečāre bog”, about 300 m to NW from “Bernāni” farmstead, 56°28'22.8"N 26°34'04.9"E; in boggy *Pinus sylvestris* forest with *Ledum palustre* L. (evaluated as 91D0* Bog woodland), on bark of *Pinus sylvestris*; 25 June 2016; DAU 648001001; Ventpils Co., Kolkas District., Slītere National Park, about 300 m to S from Kolka Cape, 57°45'11.73"N 22°35'56.62"E; in dry *Pinus sylvestris* forest (evaluated as 2180 Wooded dunes of the Atlantic, Continental and Boreal region), on bark of *Pinus sylvestris*; 24 July 2016; DAU 648001002.

Note. The species is known in Belarus (Tsurykau et al., 2012), Estonia (Randlane et al., 2015) and Lithuania (Motiejūnaitė, 1999).

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