10.2478/botlit-2014-0017

DE GRUYTER OPEN

BOTANICA LITHUANICA
ISSN 1392-1665

2014, 20(2): 169–172

NEW INTERESTING RECORD OF *LEPTOGIUM TERETIUSCULUM* (COLLEMATACEAE, LICHENIZED ASCOMYCOTA) FROM POLAND

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Abstract

Kubiak D., Kossowska M., 2014: New interesting record of *Leptogium teretiusculum* (Collemataceae, lichenized Ascomycota) from Poland [Nauja ir įdomi *Leptogium teretiusculum* (Collemataceae, lichenizuoti aukšliagrybūnai) radimvietė Lenkijoje]. – Bot. Lith., 20(2): 169–172.

New locality of a rare lichen species *Leptogium teretiusculum* (Wallr.) Arnold. from northern Poland was reported. It is the first record of this species on terricolous substrate (soil and plant debris) in Poland. General distribution and ecology of the species was discussed.

Keywords: cyanolichens, distribution, Red List, terricolous.

During field work in the Źródła Rzeki Łyny Landscape Reserve (N Poland) in 2008, the first author collected a sterile, terricolous crust, which later proved to be a rare lichen *Leptogium teretiusculum* (Wallr.) Arnold. The reported locality is the fifth known in Poland and the second one in the northern part of the country (Fig. 1). In addition, it is also the first terricolous record of this species in Poland.

Leptogium teretiusculum belongs to the section *Homodium*, distinguished within the genus on the basis of thallus size and structure (small and paraplectenchymatous throughout; Jørgensen, 2007). Thalli of the species initially consist of small squamulose structures or segments with isidia-like, clavate or coralloid extensions formed on their edges. These extensions may subsequently transform into cylindrical branches up to 1 mm in length and ca. 150 µm in diameter, that form dense cushions covering the entire thallus (Gilbert & Jørgensen, 2009). Apothecia develop sporadically and may be situated laminally in case of squamulose thalli or terminally in fruticose forms (Jørgensen, 2007).

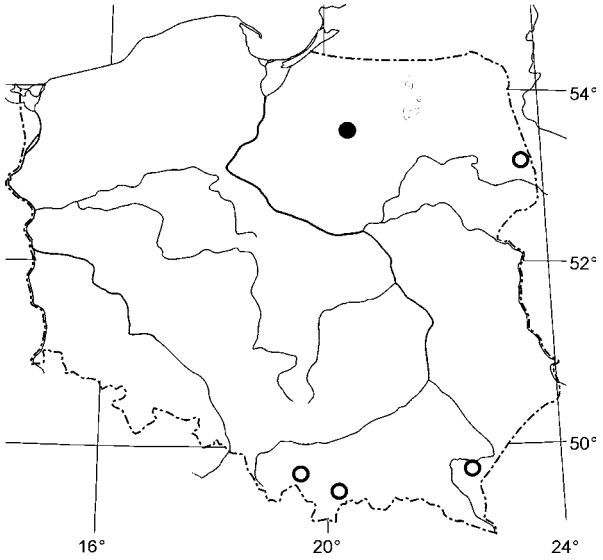

Fig. 1. Occurrence of *Leptogium teretiusculum* in Poland; ○ – known localities, ● – new locality

Leptogium teretiusculum is a widespread species, being reported from Europe, Macaronesia, North and South America and Asia (Gilbert & Jørgensen, 2009). It is known in most countries adjacent to Poland, e.g. Czech Republic (Vězda & Liška, 1999), Germany (Scholz, 2000), Lithuania (Motiejūnaitė et al., 2005), Ukraine (Vondrák et al., 2010) and Slovakia (Guttová et al., 2013). However, it is deemed rare in many parts of its geographical range.

In Europe, *Leptogium teretiusculum* occurs mainly on bark of old broadleaved trees with basic pH value, including *Acer*, *Fraxinus*, *Ulmus* and *Populus tremula*, and considerably less frequently on coniferous trees and bushes (Jørgensen, 2007; Gilbert & Jørgensen, 2009). It is one of the constant components of epiphytic, lichen-dominated communities belonged to the *Lobarion* alliance (James et al., 1977; Coppins et al., 2005), which are rare and declining in most parts of Europe. On the British Isles, this species is considered to be an indicator of forests ecological continuity (New Index of Ecological Continuity – NIEC; Coppins & Coppins, 2002). More rarely *L. teretiusculum* is also recorded on basic rocks (limestone, sandstone), anthropogenic substrata containing calcium carbonate (old masonries, burrows), and directly on soil (Guttová & Palice, 2004; Jørgensen, 2007; Thiel & Spribille, 2007; Gilbert & Jørgensen, 2009; Fačkovcová, 2013).

In many countries *Leptogium teretiusculum* has been considered more or less endangered and included into national red lists of lichens, e.g. in Lithuania (Motiejūnaitė, 2007), Czech Republic (Liška et al., 2008), Estonia (Randlane et al., 2008), Finland (Jääskeläinen et al., 2010) and Great Britain (Woods & Coppins, 2012).

In Poland, *Leptogium teretiusculum* was found for the first time in 1987 in the Puszcza Knyszyńska Large Forest, in the north-eastern part of the country (Cieśliński & Zielińska, 1994). Its further localities were provided by Kiszka & Piórecki (1991), Nowak (1995) and Czarnota et al. (2005), all of these from the southern, mountainous regions of Poland (Fig. 1). So far the species has been reported only as an epiphyte, growing on bark of *Populus tremula*, *Salix* sp. and *Sorbus aucuparia* (Fałtynowicz, 2003). Owing to just a few sites in the country and specific habitat requirements, the species was considered threatened with extinction and classified to the CR (Critically Endangered) category on the red list of Polish lichens (Cieśliński et al., 2006).

A new locality of *L. teretiusculum* has been found in the Źródła Rzeki Łyny Reserve on the southern edge of the Pojezierze Olsztyńskie Lakeland. The Reserve was established in 1959 in order to protect the processes of reverse seepage erosion that are rare on the lowlands in Poland. Its central part includes a vast valley with many side gorges surrounded by high plains (ca. 170 m a.s.l.). The reverse seepage erosion resulted in many niches being formed (valley cirques) that shape hillsides of the gorges into almost vertical walls. Bottoms of these depressions are sometimes 20 m lower than the adjoining areas. The high plain areas are afforested by pine stands aged 50 to 150 years, in major part planted in soils that naturally favour oak-linden-hornbeam forest (*Tilio cordatae-Carpinetum betuli*). Bottoms of depressions are overgrown with headwater vegetation, and alluvial valleys situated at the lower altitudes are overgrown with riparian communities with a sparse canopy of alder trees (Pisarek et al., 2002).

Leptogium teretiusculum was found in the southern part of the Reserve, in a few metres deep gorge (probably used as a sand-pit in the past). The bottom of the gorge and its steep hillsides are overgrown with poor sward vegetation predominated by psammophilous and xerothermic plants. Thalli of *L. teretiusculum* were recorded on the south-exposed hillside, where it was growing directly on sand with an admixture of clay components and on plant debris, occupying a total area of a few dm^2. The species was observed together with *Agonimia vouauxii* (B. de Lesd.) M.Brand et Diederich, *Bacidia bagliettoana* (A.Massal. et De Not.) Jatta, *Cladonia coniocraea* (Flörke) Spreng., *C. fimbriata* (L.) Fr., *C. furcata* (Huds.) Schrad., *C. rei* Schaer., *Collema limosum* (Ach.) Ach, *Peltigera didactyla* (With.) J.R.Laundon, *P. rufescens* (Weiss) Humb., *Placynthiella icmalea* (Ach.) Coppins et P.James, and *Vezdaea retigera* Poelt et Döbbeler.

It seems that the occurrence of *Leptogium teretiusculum* in the Źródła Rzeki Łyny Reserve is determined by the presence of bare sand slipping from the hillside as a result of trampling down the poor vegetation by inhabitants of a nearby village Łyna and by tourists visiting the Reserve. The excessive touristic pressure as well as a spontaneous overgrowing

of the hillside by a pine-stand pose a risk to the local population of this rare species. The protection of the aforementioned locality should include the monitoring of these potential risk-posing factors.

Specimen examined:

Poland, Pojezierze Olsztyńskie Lakeland, Łyna village, Źródła Rzeki Łyny Nature Reserve, Kocia Góra Hill, ATPOL grid square Be-82, 53° 26' 31.7" N, 20° 24' 58.3" E, on sandy soil, 26 Apr. 2008, leg. D. Kubiak; ibid., 2 Oct. 2013, leg. D. Kubiak.

The collected specimens are deposited at the Herbarium of the Department of Mycology, Warmia and Mazury University in Olsztyn (OLTC-L; nos.: 3020, 3571).

ACKNOWLEDGEMENTS

We are grateful to Professor Paweł Czarnota (Poręba Wielka, Gorce National Park) for determination of *Agonimia vouauxii* and *Vezdaea retigera*.

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NAUJA IR ĮDOMI *LEPTOGIUM TERETIUSCULUM* (COLLEMATACEAE, LICHENIZUOTI AUKŠLIAGRYBŪNAI) RADIMVIETĖ LENKIJOJE

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Santrauka

Straipsnyje aptariama nauja retos kerpių rūšies *Leptogium terretiusculum* (Wallr.) Arnold. radimvietė šiaurinėje Lenkijoje, kur pirmą kartą šalyje ši, paprastai epifitinė, kerpė buvo rasta ant dirvožemio ir augalų liekanų. Straipsnyje taip pat aptariamas rūšies bendras paplitimas ir ekologija.