

**NEW DATA ON DISTRIBUTION AND ECOLOGY OF LICHEN *PARMOTREMA STUPPEUM* (PARMELIACEAE, LICHENIZED ASCOMYCOTA) IN BELARUS**
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**Abstract**

Bely P., 2016: New data on distribution and ecology of lichen *Parmotrema stuppeum* (Parmeliaceae, lichenized Ascomycota) in Belarus [Nauji duomenys apie kerpės *Parmotrema stuppeum* (Parmeliaceae, lichenized Ascomycota) paplitimą ir ekologiją Baltarusijoje]. – Bot. Lith., 22(1): 93–95.

The paper presents information about new localities of *Parmotrema stuppeum*, rare foliose lichen in Belarus. Both earlier known and new localities of the species are discussed. New data on the ecology of *P. stuppeum* in Belarus are provided.

**Keywords:** Brest region, Gomel region, new localities, old-growth forest, parmelioid lichens, *Parmotrema*, Republic of Belarus.

The genus *Parmotrema* was established by MAS-SALONGO (1860) to accommodate foliose species that form short and broad, rarely elongated, often ciliate lobes, cylindrical conidia and the intermediate type of thallus between *Cetraria*-type and *Xanthoparmelia*-type. The lower surface of the thallus is white to black, usually sparingly rhizinate with a wide bare marginal zone, sometimes irregularly rhizinate or finely short-rhizinate with scattered much longer rhizines mixed without an erhizinate margin or with a very narrow one. A wide range of secondary metabolites may occur in the medulla, with atranorin and/or usnic acid being present in the upper cortex (HALE, 1965; BLANCO et al., 2005; CRESPO et al., 2010). To date, the genus comprises ca. 350 species, which occur mostly in the tropics (KIRK et al., 2008).

The true species diversity of the *Parmotrema* genus in Belarus was established not long ago. After the revision of Belarusian material, two species were identified: *P. perlatum* (Huds.) M. Choisy and *P. stuppeum* (Taylor) Hale. (TSURYKAU et al., 2015).

During our fieldwork in the southern part of Belarus in 2014–2015, several specimens belonging to the *Parmotrema* genus were collected and determined as

*P. stuppeum*. This paper presents exhaustive data on its distribution and ecology in Belarus, and contributes to its known distribution in Europe. The study is based on voucher specimens collected by the author. Morphology was examined using the stereo microscope for thallus colour, and shape, size and position of soralia. Lichen substances were investigated by thin-layer chromatography (TLC) in solvent system “C” according to the methods described by ORANGE et al. (2001). The voucher specimens are deposited at the Herbarium of the Central Botanical Garden of the National Academy of Sciences of Belarus (MSKH).

According to the results of the previous study, *P. stuppeum* occurred in 16 localities in the southern part of Belarus and inhabited natural or semi-natural deciduous forests, almost exclusively oak woods within specially protected areas. The preferred phorophyte was *Quercus robur* L. (17 specimens). Additionally, *P. stuppeum* was collected on *Populus tremula* L. (3 specimens), *Alnus glutinosa* (L.) Gaertn. (2), *Fraxinus excelsior* L. (2), *Acer platanoides* L. (1) and *Carpinus betulus* L. (1) (TSURYKAU et al., 2015). In the new localities in the Ivanava and Žytkavičy dis-

tricts (Fig. 1), the species was recorded in old-growth spruce (2 localities) and oak forests (1).

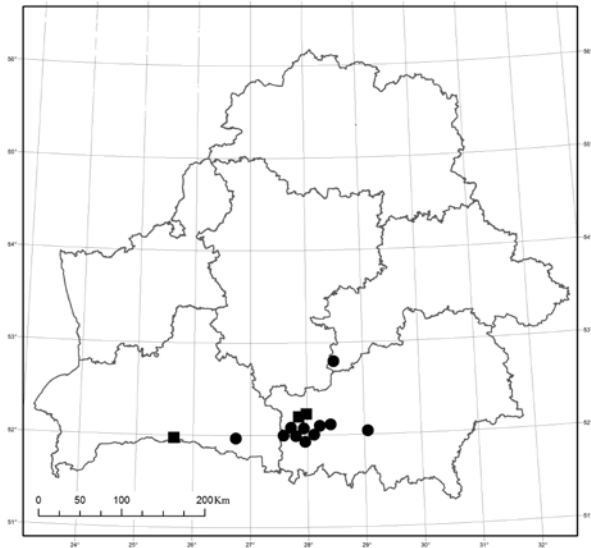


Fig. 1. Distribution of *Parmotrema stippeum* in Belarus: ● – the earliest known records (TSURYKAU et al., 2015); ■ – new localities

The lichen grew on bark of old *Quercus robur* (2 specimens); it was also observed on *Picea abies* (L.) H. Karst. (1), a phorophyte, which is uncommon for *P. stippeum*, at least in Eastern Europe. Unfortunately, most publications on the *Parmotrema* genus in Europe do not contain complete data on the substrate selectivity of *P. stippeum*. In Poland, *P. stippeum* was recorded exclusively on the bark of deciduous phorophytes – *Fagus sylvatica* L. and *Pyrus communis* L. (JABŁOŃSKA et al., 2009). In the Ukraine, in addition to deciduous trees, the species inhabits moss-covered rocks and boulders (OXNER, 1993).

*Parmotrema stippeum* is common in the mountains of North and Central America, and in Europe; in Africa and Asia it is rarer (HALE, 1965). The species is rather rare in Europe and was reported from Austria (HAFELLNER & TÜRK, 2001), Czech Republic (LIŠKA et al., 2008), France (ROUX, 2012), Germany (SCHOLTZ, 2000), Italy (COASSINI-LOKAR et al., 1987), Poland (JABŁOŃSKA et al., 2009), Portugal (HALE, 1965), Romania (PI ÚT, 2002), Spain (LLIMONA & HŁADUN, 2001), Switzerland (SCHEIDEGGER et al., 2002) and the Ukraine (OXNER, 1993). In Russia, *P. stippeum* was reported from the Caucasus and the Far East (URBANAVICHUS & URBANAVICHENE, 2008).

Specimens examined: Belarus, Brest region, Ivanava district, Zavy a forest district, forest section 61, 3 km SE of Zavy a village, old-growth *Oxalis acetosella*-type spruce forest, 51°59' N, 25°43' E, on twigs of *Picea abies*, 26 November 2014, leg. P. Bely, MSKH 6126; Gomel region, Žytkavičy district, 2.9 km SE of Čaracjanka village, old-growth *Oxalis acetosella*-type spruce forest, 52°09' N, 27°51' E, on twigs of *Quercus robur*, 5 November 2015, leg. P. Bely, MSKH 6292; 0.8 km N of Ockovanoe village, old-growth *Oxalis acetosella*-type oak forest, 52°09' N, 27°48' E, on twigs of *Quercus robur*, 5 November 2015, leg. P. Bely, MSKH 6291.

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## NAUJI DUOMENYS APIE KERPĖS *PARMOTREMA STUPPEUM* (PARMELIACEAE, ASCOMYCOTA) PAPLITIMĄ IR EKOLOGIJĄ BALTARUSIJOJE

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### Santrauka

Straipsnyje skelbiama informacija apie naujas Baltarusijoje retos lapiškųjų kerpių rūšies *Parmotrema stuppeum* radvietes. Aptariamos anksčiau

žinomos ir naujos šios rūšies radvietės. Pateikiami nauji duomenys apie *P. stuppeum* ekologijos ypatybes Baltarusijoje.