

Bacidia pycnidiata discovered in European Russia

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Abstract: *Bacidia pycnidiata* Czarnota & Coppins (*Ramalinaceae*) is reported for the first time for European Russia from a single locality in the Republic of Mordovia. Description of the locality, ecology, and general distribution are presented.

INTRODUCTION

Bacidia pycnidiata Czarnota & Coppins (*Ramalinaceae*) was recently described from the Czech Republic and Poland (Czarnota & Coppins, 2006), and it was characterized then by Central European distribution. However, almost immediately, *B. pycnidiata* was reported from several other countries – Estonia (Suija et al., 2007), Belgium (Ertz et al., 2008), Finland (Pykälä, 2008), and Lithuania (Motiejūnaitė et al., 2011); it was also found in central Poland (Łubek, 2009, 2012), and additionally in the Czech Republic (Vondrák et al., 2010). The recent records from Ukraine (Dymytrova, 2013), North Caucasus (Urbanavichus & Urbanavichene, 2013) and current finding in Mordovia significantly expand the boundaries of the known distribution of this taxon (Fig. 1).

Bacidia pycnidiata has characteristic flask-shaped whitish or cream pycnidia (Fig. 2) with long and ostiolar necks (Czarnota & Coppins, 2006). In Central Europe *Bacidia pycnidiata* showed preference for moderately shaded, old-growth or undisturbed broad-leaved forests, where it grows on mossy bark of deciduous trees, and very rarely on mossy soil or limestone.

RESULTS AND DISCUSSION

For the first time for European Russia, *Bacidia pycnidiata* was found in the Mordovskii Reserve, the north-western Republic of Mordovia. The republic is located in the eastern part of the East European Plain of Russia. The north-western part of the republic is situated in the Oka Don Plain. The Mordovskii Reserve is located on

the right bank of the river Moksha. Vegetation includes mixed coniferous-deciduous, pine and broadleaved forests. Climate of the study area is moderately continental with the annual precipitation around 550–700 mm.

Specimens examined: Russia, Republic of Mordovia, Temnikov District, Mordovskii Reserve, 54°45'55.4"N, 43°05'04.2"E, alt. 110 m, deciduous forest with lime-tree and maple, on bryophytes (*Brachytheciastrum* sp.) over trunk of *Tilia cordata* Mill. (0.30 m diam.), 09 Sept 2013, Urbanavichus & Urbanavichene (LE); Mordovskii Reserve, 54°54'59.2"N, 43° 27'48.0"E, mixed coniferous-deciduous forest with lime-tree and spruce, on bryophytes (*Sanionia uncinata* (Hedw.) Loeske) over trunk of *Tilia cordata* (0.25 m diam), 29 Apr 2014, Urbanavichus & Urbanavichene (LE).

Bacidia pycnidiata is, in this case, a part of *Lobarion pulmonariae* Ochsner., as associated with *Lobaria pulmonaria*, and the following epiphytic lichens: *Agonimia allobata* (Stizenb.) P. James, *Acrocordia gemmata* (Ach.) A. Massal., *Arthonia byssacea* (Weigel) Almq., *Cetrelia monachorum* (Zahlbr.) W. L. Culb. & C. F. Culb., *Cladonia coniocraea* (Flörke) Spreng., *Cresponea chloroconia* (Tuck.) Egea & Torrente, *Flavoparmelia caperata* (L.) Hale, *Graphis pulverulenta* (Pers.) Ach., *Lepraria lobificans* Nyl., *Leptogium cyanescens* (Rabenh.) Körb., *Lobaria pulmonaria* (L.) Hoffm., *Pachyphiale fagicola* (Hepp) Zwackh, *Peltigera neckeri* Hepp ex Müll. Arg., *Pertusaria albescens* (Huds.) M. Choisy & Werner, *P. coccodes* (Ach.) Nyl., *Phlyctis argena* (Ach.) Flot., *Ramalina polinaria* (Westr.) Ach., *Scytinium subtile* (Schrad.) Otálora, P. M. Jørg. & Wedin and *S. teretiusculum* (Wallr.) Otálora, P. M. Jørg. & Wedin.



Fig. 1. Known distribution of *Bacidia pycnidiata* according to Urbanavichius & Urbanavichene (2013), amended. The locality in Mordovskii Reserve is marked with ○.

The tree was in old forest and at shady site. Thus, *B. pycnidiata* seems to be dependent on old trees in rather a stable, humid forest with closed canopy. Caucasian specimen of *Bacidia pycnidiata* (Urbanavichius & Urbanavichene, 2013) was recorded as lichenicolous on thallus of *Nephroma parile* (Ach.) Ach., on an old, mossy trunk of *Acer pseudoplatanus* L., in mixed coniferous-deciduous forest near Azishsky pass (Lagonaki Highland, NW Caucasus).

In Russia (in Mordovia as well as in Caucasus), *B. pycnidiata* has been found only in old-growth forests, on wet mosses or/and epiphytic thalli of macrolichens. Apparently, the ability of mosses or thalli of macrolichens to maintain humidity facilitates the development of *B. pycnidiata*. We suggest that *Bacidia pycnidiata* distribution and characteristics of habitats are

associated with zonal and mountainous mesophytic (with tendency to hygrophytic) broad-leaved and mixed forests. The same has been shown for many nemoral herbaceous plants and mosses, which distributions coincide with the areas of broad-leaved and mixed forests (Kurinaev, 1968: 342).

Similar habitat requirements of *B. pycnidiata* have been recorded by Dymytrova (2013) from the central part of Ukraine. An oak, ash and oak-alder forests surrounded by wetlands in “Lisnyky” Botanical Preserve (Kiev area), are essential for maintenance of lichen biodiversity (Dymytrova, 2013). Czarnota et al. (2014) characterized *Bacidia pycnidiata* as an occasional lichenicolous species on thallus of *Peltigera didactyla* (With.) J. R. Laundon with a large ecological plasticity and synanthropic tendency.

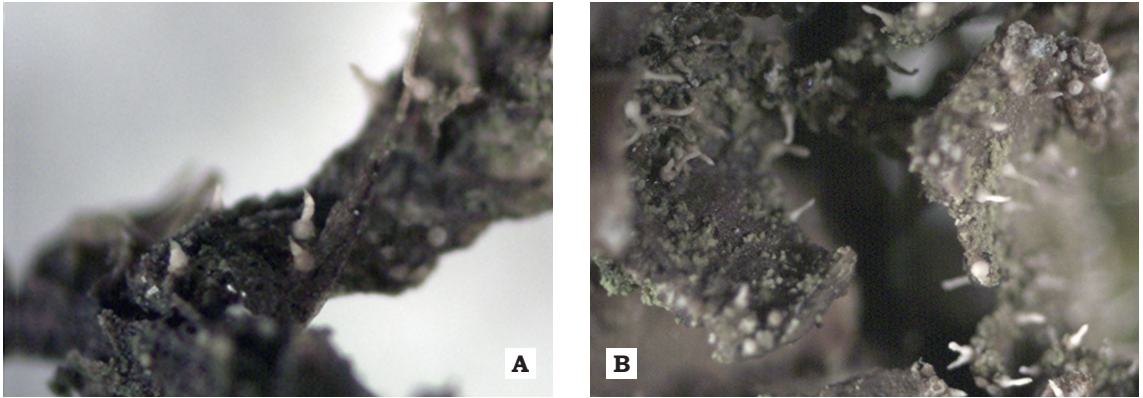


Fig. 2. The anamorphic stage of *Bacidia pycnidiata* with whitish pycnidia. A – on the twig of *Brachytheciastrum* sp. in Mordovskii Reserve; B – on the thallus of *Nephroma parile* in NW Caucasus.

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REFERENCES

- Czarnota, P. & Coppins, B. J. 2006. A new *Bacidia* with long-necked pycnidia from Central Europe. *The Lichenologist* 38 (5): 407–410. <http://dx.doi.org/10.1017/S0024282906005986>
- Czarnota, P. & Hernik, E. 2014. Some peltigericolous microlichens from southern Poland *Acta Bot. Croat.* 73 (1): 1–12.
- Dymytrova, L.V. 2013. Lichens of the Lisnyky Botanical Preserve (Kyiv) and their indicator values. *Ukrainian Botanical Journal* 70 (4): 522–534.
- Ertz, D., Diederich, P., Brand, A. M. & van den Boom, P., Sérusiaux, E. 2008. New or interesting lichens and lichenicolous fungi from Belgium, Luxembourg and northern France. XI. *Bulletin de la Société des naturalistes luxembourgeois*. 109: 35–51.
- Kurnaev, S. F. 1968. *The main forest types middle part of the Russian Plain*. (In Russian). Moscow. 355 pp.
- Lubek, A. 2009. New records of lichens from the Polish uplands. *Acta Mycologica* 44 (2): 275–282. <http://dx.doi.org/10.5586/am.2009.026>
- Motiejūnaitė, J., von Brackel, W., Stončius, D. & Preikša, Ž. 2011. Contribution to the Lithuanian flora of lichens and allied fungi. III. *Botanica Lithuanica* 17 (1): 39–47.
- Pykälä, J. 2008. Additions to the lichen flora of Finland. III. *Graphis Scripta* 20: 19–27.
- Suija, A., Leppik, E., Randlane, T. & Thor., G. 2007. New Estonian records: lichens and lichenicolous fungi. *Folia Cryptogamica Estonica* 43: 73–76.
- Urbanavichus, G. P. & Urbanavichene, I. N. 2013. Addition to the lichen flora of Russia. II. *Bacidia pycnidiata*. (In Russian). *Novosti sistematiki nizshih rastenii* 47: 297–301.
- Vondrák, J., Halda, J. P., Maliček, J. & Müller, A. 2010. Lichens recorded during the Spring Bryolichenological Meeting in Chøiby Mts (Czech Republic), April 2010. *Bryonora* 45: 36–42.

