

THE GENUS *NORMANDINA* (VERRUCARIACEAE, LICHENIZED ASCOMYCOTA) IN LITHUANIA
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Abstract

Motiejūnaitė J., Uselienė A., Uselis V., 2013: The genus *Normandina* (Verrucariaceae, lichenized Ascomycota) in Lithuania. [*Normandina* gentis (Verrucariaceae, lichenizuoti aukšliagybūnai) Lietuvoje]. – Bot. Lith., 19(2): 157–160.

Normandina pulchella (Borrer) Nyl. is reported here as new to Lithuania and the Baltic states. It was found on moss-covered bark of *Alnus glutinosa* in a well-preserved swampy black alder stand. Distribution and status of *N. pulchella* and *N. acroglypta* in Lithuania are discussed.

Keywords: lichens, *Normandina acroglypta*, *N. pulchella*, Lithuania.

Normandina Nyl. is a monophyletic genus of the Verrucariaceae family, which holds only two species: *N. acroglypta* (Norman) Aptroot and *N. pulchella* (Borrer) R.Sant. MUGGIA et al. (2010) showed that by the present molecular data, the two species did not separate by sequence characters. Both species, however, have marked morphological and some ecological differences. *N. pulchella* grows on corticolous or saxicolous bryophytes, rarely on bark, in

oceanic areas it commonly grows epiphytically on other lichens, especially these with cyanobacterial photobiont (ORANGE & APTROOT, 2009). Meanwhile *N. acroglypta*, although found on the same substrate types, is obviously parasitic when inhabiting corticolous or saxicolous mosses, its thalline verrucae develop inside the bryophyte, later breaking through the host tissues either as soralia or as fertile warts (Fig. 1). Similarly, parasitic habit of *N. acroglypta*

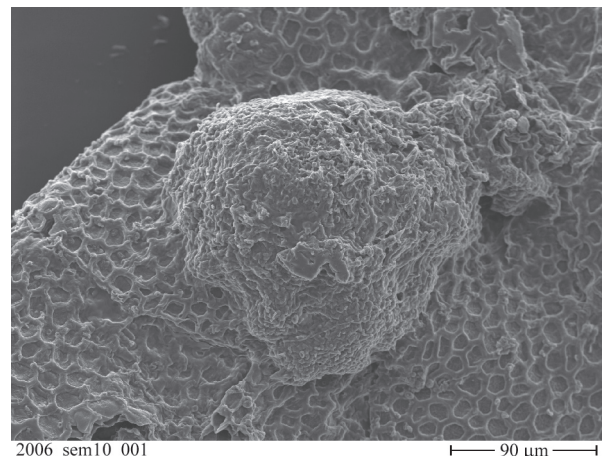
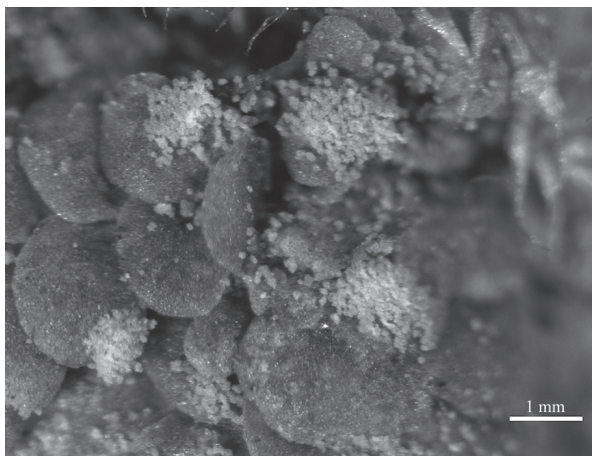


Fig. 1. Soralia (a) and fertile verruca (b) of *Normandina acroglypta* breaking through the tissues of liverworts (a, J. Motiejūnaitė, BILAS 8113; b, J. Motiejūnaitė, BILAS 8111).

when growing on other lichens has been noted by MUGGIA et al. (2010). The two species also differ in their distribution areas. *N. pulchella* prefers milder climate and is common in oceanic and suboceanic areas as well as temperate montane forests of Europe, avoiding lowland continental parts (WIRTH, 1995), meanwhile *N. acroglypta* is found as far north- and eastwards as Estonia (RANDLANE & SAAG, 2004) and NW Russia (STEPANCHIKOVA et al., 2009). Locality of *Normandina pulchella* closest to Lithuania was reported in Augustowska forest, NE Poland, where it was found in the Nature Reserve, in moist mixed hardwood forest, growing on cut trunk of an old oak (CZYŻEWSKA et al., 2005).

Normandina acroglypta (Norman) Aptroot

Though only recently recorded in Lithuania (MOTIEJŪNAITĖ, 2011), it is now known from a number of localities (Fig. 2), especially in central and northern Lithuania, where deciduous stands predominate. It inhabits acidic to subneutral bark and epiphytic liverworts and mosses. *N. acroglypta* does not show preference to old-growth or well-preserved stands, but apparently favours sheltered and humid conditions, especially swampy forests.

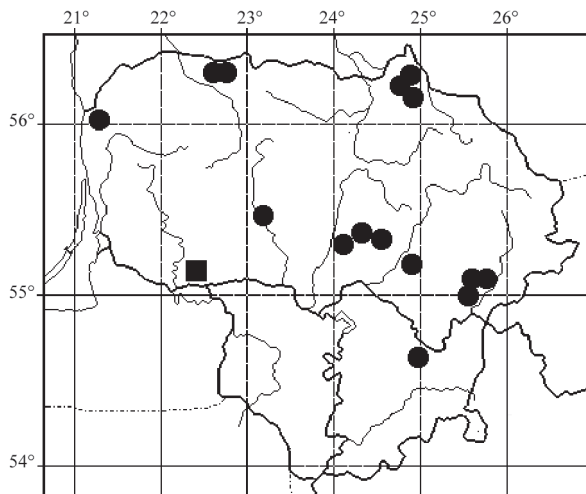


Fig. 2. Localities of *Normandina acroglypta* (●) and *N. pulchella* (■) in Lithuania.

Though the lichen is mostly found sterile, ascomata may occur, but usually are scattered and few. Ascospores of Lithuanian specimens are as described in ORANGE & APTROOT (2009), though most commonly were found to be 5-septate.

Specimens examined (excluding those cited in MOTIEJŪNAITĖ (2011) and MOTIEJŪNAITĖ et al. (2012):

Kėdainiai district, Lančiūnava forest, 55° 24' N 24° 11' E, on epiphytic mosses on trunk of old *Fraxinus excelsior* in ash-dominated forest, 1 October 1998, leg. J. Motiejūnaitė, BILAS 3146; forest ± 1.5 km SW of Medekšiai village, 18 September 1996, leg. J. Motiejūnaitė, BILAS 3777. **Biržai district**, Latveliai forest district, forest compartment No 240, on epiphytic mosses and bark on trunk of *Fraxinus excelsior* in young ash-dominated forest, 1 June 2005, leg. J. Motiejūnaitė, BILAS 7329; Latveliai forest district, Latveliai Botanical Sanctuary, forest compartment No 61, on epiphytic mosses on trunk of *Fraxinus excelsior* in mixed forest, 5 October 2005, leg. J. Motiejūnaitė, BILAS 8111; Tamošiūnai forest district, forest compartment No 156, on epiphytic bryophytes on trunk of *Alnus incana* in an alder-dominated stand, 5 May 2010, leg. J. Motiejūnaitė, BILAS 9755. **Ukmergė district**, Deltuva forest district, forest compartment No 51, on epiphytic mosses on trunk of *Fraxinus excelsior* in mixed forest, 25 May 2005, leg. J. Motiejūnaitė, BILAS 7389. **Trakai district**, Lentvaris forest district, Paneriai forest, forest compartment No 21, on epiphytic mosses on trunk of *Ulmus* sp. in mixed forest, 13 January 2008, leg. D. Stončius, BILAS 8112. **Vilnius district**, Sužionys forest district, Skerdimai forest, forest compartment No 11, on epiphytic mosses on trunk of *Ulmus* sp. in mixed forest, 15 September 2007, leg. J. Motiejūnaitė, BILAS 8812. **Širvintos district**, Gelvonai forest district, forest ± 2.5 km N of Verbūnai village, forest compartment No 58, on epiphytic mosses and bark on trunk of *Ulmus* sp. in an overgrown wooded meadow, 24 March 2006, leg. D. Stončius, BILAS 8756. **Kretinga district**, forest ± 1.5 km N of Darbėnai village, 56° 02' N, 21° 15' E, on epiphytic mosses on trunk of *Populus tremula* in mixed forest, 26 August 2009, leg. J. Motiejūnaitė, BILAS 9101. **Raseiniai district**, Skaraitiškė forest district, forest compartment No 14, on epiphytic mosses on trunk of deciduous tree, 15 October 2003, leg. A. Masaitis, BILAS 9467.

Normandina pulchella (Borrer) Nyl.

The species was found only once in Viešvilė State Strict Nature Reserve (Fig. 2), in meso-eutrophic swamp alder wood (Ass. *Carici elongatae-Alnetum*

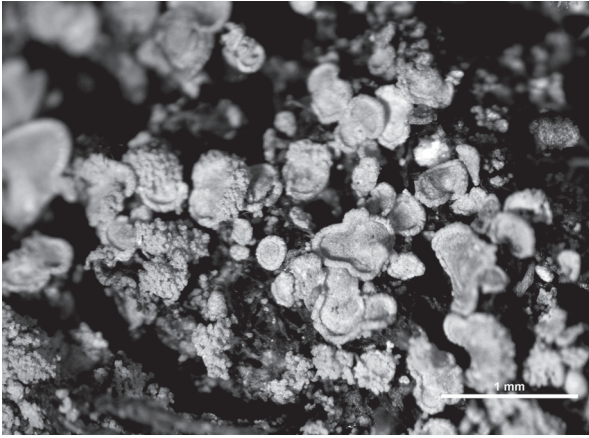


Fig. 3. Thallus of *Normandina pulchella* (A. Uselienė, BILAS 9915).

glutinosa W.Koch 1926) fed by a stream without clear bed boundaries. Water stands there all year round, trees are sparse due to excessive moisture. Stand age – 90 years, its history is unknown, but possibly it has never been cut. *Alnus glutinosa* is a dominant tree species with intermixed sparse *Picea abies* and *Betula pubescens*. Trunks of old alders are overgrown with mosses *Hypnum pallescens*, *H. cupressiforme*, *Pylaisia polyantha*, *Frullania dilatata*.

Normandina pulchella was found sterile, its thallus consisted of typical greenish gray, bluish gray, shell-like lobes with concentrically ridged upper surface and sharply raised margins (Fig. 3). Soralia were present, abundant, green.

Specimen examined:

Viešvilė State Strict Nature Reserve, forest compartment No 9, on epiphytic mosses and bark on trunk of old *Alnus glutinosa* growing in swampy alder stand, 9 March 2012, leg. A. Uselienė, BILAS 9915.

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Micrographs of lichen thalli were taken using digital camera Nikon DS-Fi1 mounted on a Nikon SMZ 800 binocular within R&D infrastructure of Joint Nature Research Centre (open access Centre of Biotaxonomy, Ecology and Molecular Research). SEM image were prepared using Philips

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***NORMANDINA* GENTIS (VERRUCARIACEAE, LICHENIZUOTI AUKŠLIAGRYBŪNAI) LIETUVOJE**

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Santrauka

Straipsnyje aprašyta pirmą kartą Lietuvoje ir Baltijos šalyse rasta *Normandina pulchella* (Borrer) Nyl. Ji buvo aptikta ant samanomis apaugusios *Alnus glutinosa* žievės mažai žmogaus paveiktame pelkiniame alksnyne. Aptiriamas abiejų *Normandina* genties rūšių – *N. pulchella* ir *N. acroglypta* paplitimas ir būklė Lietuvoje.