

New records of lichens and allied fungi from the Leningrad Region, Russia. III

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Abstract: Eight species of lichen-forming, eight lichenicolous and three non-lichenized fungi are reported from the Leningrad Region. *Arthonia caerulescens*, *A. ligniaria*, *Hawksworthiana peltigericola*, *Micarea pycnidiophora* and *Trichonectria rubefaciens* are new to Russia; *Micarea lutulata*, *Protoparmelia oleagina* and *Stictis radiata* are new to the North-Western European Russia; *Lichenocodium lecanorae*, *Phaeocalicium populneum*, *Phaeosporobolus usneae*, *Ramboldia cinnabarina*, *Stictis brunnescens* and *Strigula stigmatella* are new to the Leningrad Region. Most noteworthy records are briefly discussed.

Kokkuvõte: Samblike ja nendega seotud seente uued leiud Leningradi oblastist, Venemaal. III

Esitatakse andmeid 8 lihheniseerunud, 8 lihhenikoalse ning 3 mittelihheniseerunud seene leidudest Leningradi oblastist. *Arthonia caerulescens*, *A. ligniaria*, *Hawksworthiana peltigericola*, *Micarea pycnidiophora* ja *Trichonectria rubefaciens* on esmasleiud Venemaal; *Micarea lutulata*, *Protoparmelia oleagina* ja *Stictis radiata* on uued Venemaa Euroopa-osa loodepiirkonnale; *Lichenocodium lecanorae*, *Phaeocalicium populneum*, *Phaeosporobolus usneae*, *Ramboldia cinnabarina*, *Stictis brunnescens* ja *Strigula stigmatella* on uued Leningradi oblastile.

INTRODUCTION

The present article belongs to a series of publications on new records of lichens and allied fungi in the Leningrad Region (Kuznetsova et al., 2007; Stepanchikova et al., 2009, 2010, 2011a, b). The reported 19 species are new to Saint-Petersburg, the Eastern, Western or the whole Leningrad Region, North-Western European Russia or Russian Federation.

MATERIAL AND METHODS

The material has mainly been collected in the period 2006–2011 in the Eastern and Western Leningrad Region and within the border of Saint-Petersburg (ELR, WLR, SPb, respectively). The specimens are deposited in the herbaria of St. Petersburg State University (LECB), Nature Research Centre, Institute of Botany in Vilnius (BILAS) and Botanical Museum of the University of Helsinki (H). Furthermore, some specimens

from H and the Vainio herbarium of University of Turku (TUR-V) have also been investigated. Lichen substances in the thallus of *Ramboldia cinnabarina* were analyzed by using standard technique of thin-layer chromatography in solvent system C (Orange et al., 2001). The illustration of *Protoparmelia oleagina* was made by using dissecting microscope Carl Zeiss STE-MI-2000 CS with camera AxioCam ICc 3. Brief discussions are included on the most interesting records (new to Leningrad Region, NW European Russia, or Russian Federation).

The names of the main collectors in the species list are abbreviated as follows: DH – Dmitry E. Himelbrant; EK – Ekaterina S. Kuznetsova; EV – Edward A. Vainio; IS – Irina S. Stepanchikova. The districts of the Leningrad Region (LR) are abbreviated as follows: B – Boksitogorsk District; K – Kingisepp District; P – Podporozh'e District;

PR – Priozersk District; T – Tikhvin District; V – Volkhov District; VB – Vyborg District; VS – Vsevolozhsk District. The subdivision of LR was published in our previous paper (Stepanchikova et al., 2010: Fig. 1). North-Western European Russia includes four regions: Leningrad Region (including Saint-Petersburg), Pskov Region, Novgorod Region and Republic of Karelia (see e.g. Andersson et al., 2009). The biogeographical provinces of Eastern Fennoscandia are abbreviated traditionally (e. g. Kotiranta et al., 1998): Ik – Isthmus karelicus, Ka – Karelia australis, Kl – Karelia ladogensis. Lichenicolous fungi are marked with # and non-lichenized fungi with +. The nomenclature of the species follows Nordin et al. (2011), of *Micarea pycnidiphora* – Smith et al. (2009) and of *Stictis* – Wedin et al. (2006).

THE SPECIES

ABROTHALLUS CETRARIAE Kotte – ELR, P: ca. 7 km W of Lake Ivinsky Razliv and mouth of Svir' River (61°06'16"N, 34°42'09"), spruce forest, dry branches of *Picea* sp., on thallus of *Platismatia glauca* (L.) W. L. Culb. & C. F. Culb., 30.09.2008, leg. DH & IS (BILAS). The specimen cited above contains also anamorph of this species – *Vouauxiomyces santessonii* D. Hawksw. The anamorphic stage of the species was collected also separately in ELR, B: 3.5 km E of Krasnoborsky village, bank of the Kolp' River (59°56'57"N, 35°19'59"E), old-growth spruce forest, dry branches of *Picea* sp., on thallus of *P. glauca*, 25.09.2011, leg. IS (BILAS). New to ELR. Previously reported from WLR (Alstrup & Ahti, 2007). Distribution in Fennoscandia and Baltic

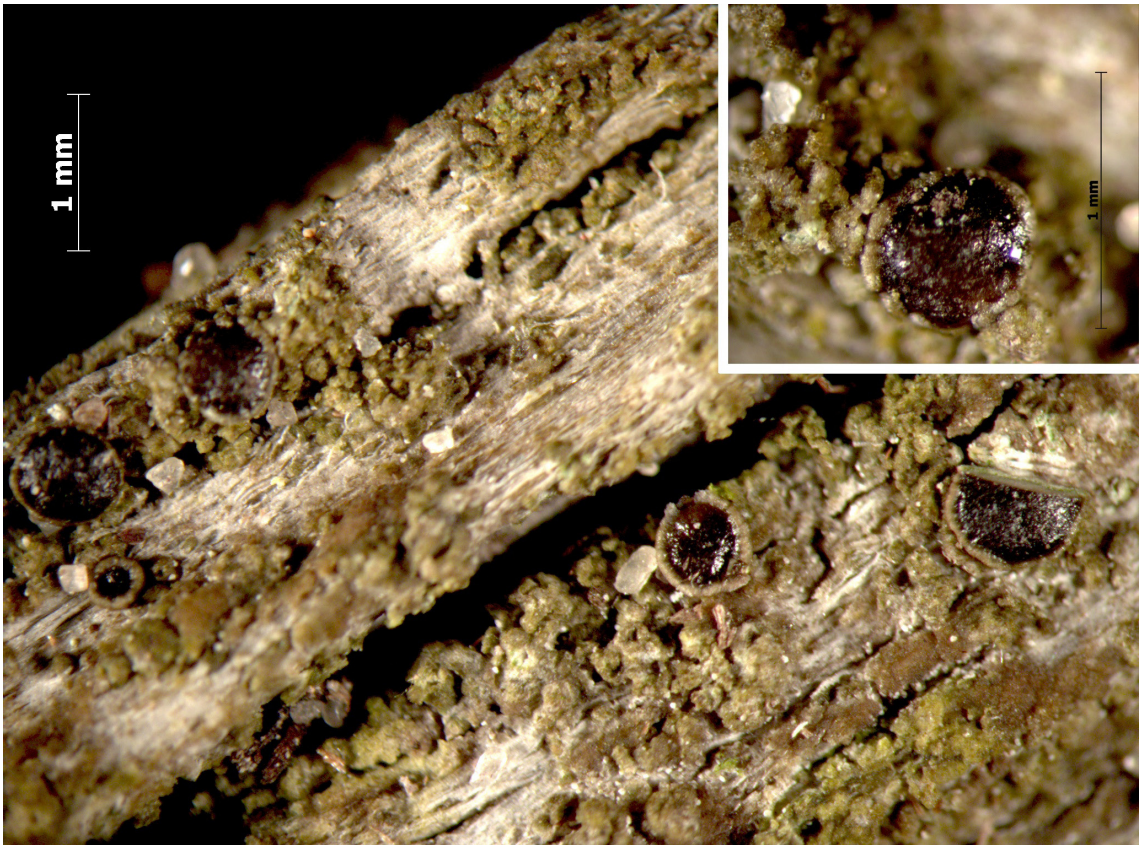


Fig. 1. Thallus and apothecia of *Protoparmelia oleagina*.

countries: Norway, Sweden, Finland (Nordin et al., 2011), Estonia (Randlane et al., 2011, as *V. santessonii*), Lithuania (Motiejūnaitė, 1999). Distribution in North-Western European Russia outside of LR: Republic of Karelia (Fadeeva et al., 2007), Pskov Region (Zhurbenko, 2009, as *V. santessonii*).

ARTHONIA APOTHECIORUM (A. Massal.) Almq. – WLR, Ka, VB: Vyborg (Viipuri), Vyborg Castle (60°42'57"N, 28°43'44"E), brick, on apothecia of *Lecanora albescens* (Hoffm.) Branth & Rostr., 1869, leg. O. A. J. Carlenius (H 8003932); same place, concrete, on apothecia of *L. albescens*, 04.1875, EV (TUR-V 05021, as additional to *L. albescens*); Ka, PR: central part of Melnikov (Räisälä), vicinity of Lutheran church – former Kirkonkylä (60°55'23"N, 29°45'39"E), bark of *Sorbus aucuparia*, on apothecia of *Lecanora carpinea* (L.) Vain., 23.07.1915, leg. I. Linkola (H 8003843). New to North-Western European Russia. Recently reported from Russian European Arctic (Urbanavichus, 2010) and Ural Mountains (Urbanavichus & Urbanavichene, 2011). Distribution in Fennoscandia and Baltic countries: Sweden (Nordin et al., 2011). The species has dark rounded, more or less flat to slightly convex apothecia, and colourless spores consisting of two even-sized cells. It grows on hymenium of *Lecanora* spp., predominantly *L. dispersa*-group (Foucard, 2001; Smith et al., 2009).

ARTHONIA CAERULESCENS (Almq.) R. Sant. – WLR, Ka, VB: ca. 1.5 km NE of Sovetsky (St. Johannes), former Rokkala (60°33'N, 28°43'E), bark of deciduous tree, on apothecia of *Lecanora varia* (Hoffm.) Ach., 02.05.1895, leg. B. R. Poppius (H 8003973, as additional to *L. varia*; H 8003925); Ik, PR: vicinity of Gromovo (Sakkola), former Kylmäoja, bark of *Populus tremula*, on apothecia of *L. varia*, 20.08.1917, leg. V. Räsänen (H). New to Russia. Distribution in Fennoscandia and Baltic countries: Sweden (Nordin et al., 2011), Estonia (Randlane et al., 2011). The species is characterized by growing on apothecia of *L. varia*, having black rounded apothecia with dark blue-green epihymenium, pale hypothecium, 2-celled colourless spores and hymenium turning blue in lugol (Foucard, 2001).

ARTHONIA LIGNIARIA Hellb. – WLR, Ka, VB: Vyborg (Viipuri), Hietala (60°45'N, 28°41'E), on lignum, 06.1875, leg. EV (TUR-V 23574, previously

determined by EV as *Lecidea globulosa?* f. *fuscopallens*). New to Russia. Distribution in Fennoscandia and Baltic countries: Sweden, (Nordin et al., 2011), Estonia (Randlane et al., 2011). The species has black rounded apothecia and superficially it is rather close to *A. mediella* Nyl. s. l., but *A. ligniaria* has larger spores (to 22–24 × 7–9 μm), tall hypothecium, apically branched paraphysoids and hymenium not turning blue or red in lugol (Coppins, 1989). Old collections of *A. ligniaria* sometimes have been misidentified as *Biatora globulosa* (Flörke) Fr., such mistake was also noted by Arup & Ekman (1991).

CALOPLACA CRENULATELLA (Nyl.) H. Olivier – SPb, Petrograd District, Elagin Island, SE coast (59°58'33"N, 30°15'49"E), park, on concrete, 10.05.2005, leg. DH, EK, L. Konoreva & IS, det. J. Pykälä (H). New to SPb, known from WLR (Alexeeva & Himelbrant, 2007). Distribution in Fennoscandia and Baltic countries: Norway, Sweden, Finland (Nordin et al., 2011), Estonia (Randlane et al., 2011), Lithuania (Motiejūnaitė et al., in prep.). Distribution in North-Western European Russia outside of LR: not reported.

HAWKSWORTHIANA PELTIGERICOLA (D. Hawksw.) U. Braun – ELR, B: near Ur'ja village between Lukino and Pashozero villages, bank slope of the Ur'ja River (60°01'20"N, 34°41'08"E), elm forest, mossy lignum, on thallus of *Peltigera praetextata* (Flörke ex Sommerf.) Zopf, 25.09.2011, leg. IS (BILAS); same place (60°01'22"N, 34°40'40"E) and biotope, on thallus of *P. praetextata*, 25.09.2011, leg. IS (BILAS, two specimens). New to Russia. Distribution in Fennoscandia and Baltic countries: Sweden (Nordin et al., 2011). The species superficially is very similar to *Refractohilum peltigerae* (Keissler) D. Hawksw., causing same type of gall deformations of the host thallus, covered with frost-like growth. However, the main difference from the latter fungus as well as from the other species of the genus *Refractohilum* is different type of conidiogenesis. Conidiogenous cells in *Refractohilum* are monoblastic, incorporated into conidiophores, terminal, percurrently proliferating with distinct terminal anellations (Hawksworth, 1977); in *Hawksworthiana*, conidiogenous cells are monoblastic to 2–3-polyblastic, ampuliform to subcylindrical, swollen at the bases, tapering towards the apices, with conspicuous scars and lacking anellations (Hawksworth, 1980).

LICHENOCONIUM LECANORAE (Jaap) D. Hawksw. – WLR, Ka, PR: central part of Melnikovo (Räisälä), vicinity of Lutheran church – former Kirkonkylä (60°55'24"N, 29°45'39"E), bark of *Sorbus aucuparia*, on thallus of *Lecanora carpinea*, 23.07.1915, leg. I. Linkola [H 8003843, as additional to *Arthonia apotheciorum*; previously determined by anonymous as *Pharcidia epicymatica* (Wallr.) Wint.]; VS: S shore of Verojärvi Lake (60°08'53"N, 30°32'22"E), lignum, on *Lecanora pulicaris* (Pers.) Ach., 10.07.2011, leg. IS (BI-LAS). New to LR. Distribution in Fennoscandia and Baltic countries: Norway, Sweden, Finland (Nordin et al., 2011), Estonia (Randlane et al., 2011), Lithuania (Motiejūnaitė, 1999). Distribution in North-Western European Russia outside of LR: Republic of Karelia (Fadeeva et al., 2007). *Lichenocoonium lecanorae* is a coelomycete mainly parasitic on *Lecanora*. Two similar species of the genus that may grow on the same host genus are *L. erodens* M. S. Christ. & D. Hawksw. which differs by smaller conidia and conidiomata, and *L. usneae* (Anzi) D. Hawksw. (very rarely found on *Lecanora*) – by shorter conidiogenous cells (Cole & Hawksworth, 2004).

MICAREA LITHINELLA (Nyl.) Hedl. – WLR, Ka, VB: Vyborg (Viipuri), Hietala (60°45'N, 28°41'E), on stone, ?1875, leg. EV [TUR-V 25006, together with *Porpidia crustulata* (Ach.) Hertel & Knoph]. New to WLR, known to date in Russia from one locality in ELR (Czarnota, 2007; Kuznetsova et al., 2007). Distribution in Fennoscandia and Baltic countries: Norway, Sweden, Finland (Nordin et al., 2011), Estonia (Randlane et al., 2011), Lithuania (Motiejūnaitė et al., 2005). This species is an early colonizer of siliceous pebbles found often over root-systems of windthrows, on banks of forest roads or close to small riverbeds in rather humid and shaded conditions (Czarnota, 2007). Its epilithic habitus and pale, beige to orange immarginate small apothecia with ovoid ascospores distinguish this species from the other representatives of the genus *Micarea*. The most similar species is *M. farinosa* Coppins which, however, has farinose thallus (Smith et al., 2009).

MICAREA LUTULATA (Nyl.) Coppins – WLR, Ka, VB: vicinity of Vyborg (Viipuri), on siliceous stone, 06.1875, leg. EV (TUR-V 25265, previously determined by EV as *Lecidea conferenda* Nyl.). New to North-Western European Russia. Distribution in Fennoscandia and Baltic countries:

Norway, Sweden, Finland (Nordin et al., 2011), Estonia (Randlane et al., 2011). The species is characterized by having distinct crustose thallus, apothecia with dark brown, K– hypothecium and lack of true exciple, simple ellipsoid spores and by growing on siliceous rocks (Czarnota, 2007; Smith et al., 2009).

MICAREA PYCNIDIOPHORA Coppins & James – SPb, Ik, Kurortny District, vicinity of Zelenogorsk (60°12'56"N, 29°43'46"E), heavily trampled spruce forest, on bark of *Picea* sp., 24.09.2008, leg. DH & IS (H). New to Russia. Distribution in Fennoscandia and Baltic countries: not reported. This species is characterized by having dull or grey-green thallus and numerous whitish-ended shortly stipitate pycnidia. It resembles most Western European *M. stipitata* Coppins & P. James by similarly elongated pycnidia but its conidia are smaller, pycnidia shorter, almost barrel-like, and pycnidial walls contain gyrophoric acid reacting C+ red (Smith et al., 2009).

+ PHAEOCALICIUM POPULNEUM (Brond. ex Duby) Alb. Schmidt – ELR, B: E of Krasny Bor, San'kov Bor and Krasnoborsky villages, S of the Mezchnik River (59°55'12"N, 35°21'12"E), spruce forest with aspens, on bark of *Populus tremula*, 26.07.2011, leg. IS (LECB-2011-99). New to LR. Distribution in Fennoscandia and Baltic countries: Norway, Sweden, Finland (Nordin et al., 2011), Estonia (Randlane et al., 2011). Distribution in North-Western European Russia outside of LR: Republic of Karelia (Fadeeva et al., 2007). The species is characterized by 2-celled brown spores with weakly pigmented septa; moreover it is confined to *Populus tremula* (Titov, 2006).

PHAEOSPOROBOLUS USNEAE D. Hawksw. & Hafellner – ELR, B: canyon of the Ragusha River (59°16'20"N, 33°55'57"E), young spruce forest, branches of *Picea* sp., on thallus of *Bryoria capillaris* (Ach.) Brodo et D. Hawksw., 16.07.2006, leg. EK, det. M. Kukwa (H). New to LR. Distribution in Fennoscandia and Baltic countries: Norway, Sweden, Finland (Nordin et al., 2011), Estonia (Randlane et al., 2011), Lithuania (Motiejūnaitė et al., 2008). Distribution in North-Western European Russia outside of LR: Republic of Karelia (Fadeeva et al., 2007). This species is characterized by having multicelled conidia and inhabiting thalli of pendulous macrolichens (Zhurbenko, 2009; Nordin et al., 2011).

PROTOPARMELIA OLEAGINA (Harm.) Coppins – WLR, K: Kurgal'sky Peninsula, ca. 500 m NW of Konnovo village (59°41'22"N, 28°91'15"E), pine forest on sand, on lignum of *Pinus sylvestris*, 24.10.2011, leg. EK (H). New to North-Western European Russia. Distribution in Fennoscandia and Baltic countries: Norway, Sweden, Finland (Nordin et al., 2011). Distribution in European Russia outside of LR: Republic of Komi, Murmansk Region (Hermansson et al., 2006; Zhdanov, 2011a,b). *P. oleagina* (Fig. 1.) is characterized by smooth grey to (olivaceous-)brown thallus with isidioid structures on the surface (Aptroot et al., 1997; Foucard, 2001).

RAMBOLDIA CINNABARINA (Sommerf.) Kalb, Lumbsch & Elix – ELR, B: canyon of the Ragusha River (59°16'45"N, 33°55'53"E), slope elm forest close to the river, on bark of *Padus avium*, 19.07.2006, leg. EK, det. M. Kukwa (H). Specimen contains fumarprotocetraric acid. New to LR. Distribution in Fennoscandia and Baltic countries: Norway, Sweden, Finland (Nordin et al., 2011), Estonia (Randlane et al., 2011). Distribution in North-Western European Russia outside of LR: Republic of Karelia (Fadeeva et al., 2007). This crustose sorediate species is characterized by smooth whitish thallus, well-delimited granular soralia and presence of fumarprotocetraric acid (Foucard, 2001).

+ STICTIS BRUNNESCENS Gilenstam – WLR, K: Kurgal'sky Peninsula, vicinity of Tiskolovo village (59°43'41"N, 28°02'25"E), aspen forest with hazel, on bark of *Populus tremula*, 24.10.2011, leg. EK (H). New to LR. Distribution in Fennoscandia and Baltic countries: Norway, Sweden, Finland (Wedin et al., 2006). Distribution in European Russia outside of LR: Murmansk Region (Wedin et al., 2006), Tver' Region (Notov et al., 2011). This species is characterized by ochraceous, glossy apothecial disc. It differs from closely related *S. radiata* (see below) in the partly brown apothecial margin (in section) and loose gelatinized periphysoid layer (Wedin et al., 2006).

+ STICTIS RADIATA Pers. – WLR, Ka, VB: Vyborg (Viipuri), Vanhaviipuri (old part of town) (60°43'N, 28°45'E), on bark of *Picea* sp., 05.1875, leg. EV (TUR-V 20728, 20738). New to North-Western European Russia. Distribution in Fennoscandia and Baltic countries: Sweden (Wedin et al., 2006). Distribution in European Russia outside of LR: Murmansk Region (Karsten, 1866). *S.*

radiata is characterized by ochraceous glossy apothecia with colourless margin and compact periphysoid layer (Wedin et al., 2006).

STRIGULA STIGMATELLA (Ach.) R. C. Harris – ELR, T: near Ur'ja village between Lukino and Pashozero villages, bank slope of the Ur'ja River (60°01'20"N, 34°41'08"E), elm forest, mossy bark on the base of *Sorbus aucuparia*, 25.09.2011, leg. IS (H: ex LECB-2011-145). New to LR. Distribution in Fennoscandia and Baltic countries: Norway, Sweden, Finland (Nordin et al., 2011), Estonia (Randlane et al., 2011), Latvia (Piterāns, 2001), Lithuania (Motiejūnaitė, 1999). Distribution in North-Western European Russia outside of LR: Republic of Karelia (Fadeeva et al., 2007). It differs from *Strigula jamesii* (Swinscow) R. C. Harris in its longer 7–8(–10)-celled spores (Foucard, 2001).

TRICHONECTRIA RUBEFACIENS (Ellis & Everh.) Diederich & Schroers – ELR, V: Zagubsky Peninsula (60°26'32"N, 32°40'39"E), group of young limes in birch-spruce forest, bark of *Tilia cordata*, on thalli of *Parmelia sulcata* Taylor, 01.10.2011, leg. DH, EK, IS (BILAS); same place, 2.5 km S of Cherny cape (60°27'27"N, 32°37'51"E), bark of *T. cordata*, on thalli of *P. sulcata*, 01.10.2011, DH, EK, IS (BILAS). New to Russia. Distribution in Fennoscandia and Baltic countries: Sweden (Nordin et al., 2011), Lithuania (Motiejūnaitė et al., in prep.). *T. rubefaciens* is a strongly pathogenic lichenicolous fungus occurring on a wide range of the lichen-forming family *Parmeliaceae* and occasionally on *Ramalina* (Etayo, 1998). It differs from *T. anisospora* (Lowen) van den Boom & Diederich by consistently sessile ascomata and host range (*T. anisospora* is obligately parasitic on *Hypogymnia physodes*). Neotropical *T. australis* Etayo grows on *Usnea* and has shorter ascospores (Etayo & Sancho, 2008).

XANTHORIICOLA PHYSICIAE (Kalchbr.) D. Hawksw. – ELR, V: Zagubsky Peninsula, coast of Ladoga Lake (60°27'56"N, 32°37'15"E), aspen grove with young maples, bark of *Alnus glutinosa*, on thallus of *Xanthoria parietina* (L.) Th. Fr., 01.10.2011, leg. DH, EK, IS (BILAS). New to ELR, recently published new to Russia from WLR (Stepanchikova et al., 2011b). Distribution in Fennoscandia and Baltic countries: Norway, Sweden, Finland (Nordin et al., 2011), Estonia (Randlane et al., 2011), Latvia (Czarnota & Kukwa, 2010), Lithuania (Motiejūnaitė, 1999).

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