

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

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Abstract: Twelve lichen species and two lichenicolous fungi, of them seven that belong to *Micarea prasina* group, are reported for the first time for St. Petersburg or the whole Leningrad Region. The lichenicolous fungus *Intralichen baccisporus* is new to Russia, and the lichen *Micarea nowakii* – for European Russia. A comparative table of characteristics for seven species of *Micarea prasina* group is presented.

Keywords: lichen diversity, Konevets, Moschny, Tuters

INTRODUCTION

The project on lichen inventory in St. Petersburg and Leningrad Region started at the end of 20th century (Musyakova & Himelbrant, 1998). Its main object is comprehensive regional study of the diversity, ecology of lichens and allied fungi, and their use in nature conservation. In this article we continue to publish new and noteworthy records on lichens and allied fungi from the Leningrad Region and St. Petersburg (see e.g., Stepanchikova et al., 2010, 2018; Kuznetsova et al., 2012; Himelbrant et al., 2017, 2019). This paper is mainly dedicated to the new records of *Micarea* species and some other crustose lichens or lichenicolous fungi that are difficult to find and identify. Newly published records also include some additions to comprehensively studied lichen floras of the islands of Konevets (Himelbrant et al., 2018, 2019; Suija et al., 2020), Lavansaari (Stepanchikova et al., 2019), and Tuters (Stepanchikova et al., 2017; Himelbrant et al., 2019).

MATERIAL AND METHODS

The lichen specimens were mainly collected by Dmitry E. Himelbrant, Irina S. Stepanchikova, Ekaterina S. Kuznetsova, Agata A. Rodionova, Ludmila V. Gagarina, and Gulnara

Tagirdzhanova in 2015–2020 in the Leningrad Region and St. Petersburg. The specimens are deposited in the lichen herbaria of St. Petersburg State University (LECB), Komarov Botanical Institute (LE), and University of Helsinki (H). The cited specimens were identified by the authors of the paper. Chromatography was performed by Sergey V. Chesnokov and Liudmila A. Konoreva according to the standard techniques of high performance thin-layer chromatography using solvent system C (Orange et al., 2001). Additionally, we present a comparative table of characteristics (Table 1) for seven species of *Micarea prasina* group which are reported here, based on literature (Czarnota, 2007; Guzow-Krzemińska et al., 2016; Launis & Myllys, 2019; Launis et al., 2019a,b; Kantelinen et al., 2021) and own observations. The photo of *Sclerophora peronella* in the field was taken by Irina S. Stepanchikova with Olympus Tough TG-5 camera.

The names of the main collectors in the species list are abbreviated as follows: AR – Agata A. Rodionova, DH – Dmitry E. Himelbrant, EK – Ekaterina S. Kuznetsova, IS – Irina S. Stepanchikova, and LG – Ludmila V. Gagarina. The subdivision of the Leningrad Region (LR) was published in our previous paper (Stepanchikova et al., 2010); the biogeographical border between the eastern and western parts of the region is the Volkhov

River (see Kuznetsova et al., 2007). The following abbreviations are used here: ELR – Eastern Leningrad Region, SPb – St. Petersburg, WLR – Western Leningrad Region. The biogeographical provinces of Eastern Fennoscandia are abbreviated traditionally (Kotiranta et al., 1998): Ik – Isthmus karelicus, Ka – Karelia australis. All geographical coordinates are given in the spatial reference system WGS 1984. Lichenicolous fungi are marked with #. The nomenclature of taxa generally follows Nordin et al. (2011), Diederich et al. (2018), and Lawrey & Diederich (2018).

RESULTS AND DISCUSSION

Altogether 14 species are reported here, including 12 lichens and two lichenicolous fungi. *Intralichen baccisporus* is new to Russia, and *Micarea nowakii* – for European Russia. Six species (*Micarea fallax*, *M. laeta*, *M. microareolata*, *M. pusilla*, *M. soralifera*, *M. tomentosa*, and *Sclerophora peronella*) are new for the Leningrad Region; four species (*Elixia flexella*, *Erythricium aurantiacum*, *Lepraria borealis*, and *Micarea adnata*) are new for St. Petersburg. *Parmelina tiliacea* is first reliably recorded in the Leningrad Region.

Altogether 33 species of *Micarea* are known from the Leningrad Region and St. Petersburg now, of them 12 belong to *Micarea prasina* group which is actively studied last years, including 7 presented here (see the main distinguishing characters in Table 1). Nowadays 33 species of *Micarea prasina* group have been described worldwide, and 25 of them are known from Northern and Central Europe (Kantelinen et al., 2021). Taking in account an overall diversity and high amount of recently described species in the group, as well as the presence of suitable habitats in the Leningrad Region, we expect the regional list of *Micarea prasina* group to be increased in the nearest years. Three best studied and richest local lichen floras of the region are updated again: the lichen list of Konevets Island (Konevitsa) includes now 442 species, Moschny Island (Lavansaari) – 352 species, and Tuters Island (Tytärsaari) – 336 species. Ca 1150 species, including 980 lichens, 140 lichenicolous and 30 saprobic fungi, are currently recorded in the Leningrad Region and St. Petersburg.

THE SPECIES

ELIXIA FLEXELLA (Ach.) Lumbsch – SPb, Kolpino District, between Ivanovskoe and Kolpino, Ust'-Tosnenskoe Bog Proposed Protected Area, N to electric power line, 59°45'37.1"N, 30°42'21.0"E, alt. 13 m, pine forest with *Sphagnum* spp., *Polytrichum* sp., *Eriophorum vaginatum* L., and *Chamaedaphne calyculata* (L.) Moench, on wood of *Pinus sylvestris* L., 13.05.2019, IS & DH (LECB); same place, 59°45'18.8"N, 30°43'38.2"E, alt. 14 m, pine forest with *Vaccinium uliginosum* L., *Ledum palustre* L., *Sphagnum* spp., and *Polytrichum* sp., 23.05.2019, IS & DH (LECB). – New to SPb. Distribution in North-Western European Russia outside of SPb: Republic of Karelia (Himelbrant & Kuznetsova, 2002). Distribution in Fennoscandia and Baltic countries: Norway, Sweden, Finland (Nordin et al., 2011), and Estonia (Randlane et al., 2019). Very characteristic lignicolous lichen with indistinct thallus, narrowly elongate to angular or roundish apothecia firstly having slit-like disc and enrolled margin, hymenium 1+ pale blue, asci *Elixia*-type, and 8 small simple hyaline spores 5–8 × 3–4.5 µm (Smith et al., 2009).

#ERYTHRICIUM AURANTIACUM (Lasch) D. Hawksw. & A. Henrici – SPb, Petrodvorets District, between Kikenka River and Volodarsky, Kikenka River valley N to railway, 59°50'39.7"N, 30°03'02.7"E, abandoned garden, on thallus of *Physcia* cf. *aipolia* (Ehrh. ex Humb.) Fűrnr. on bark of young *Quercus robur* L., 09.10.2016, IS & DH (LECB); Pushkin District, Pavlovsk, W to Michurina Str. and S to Tyz'va River, Alexandrova Dacha Park, 59°40'41.7"N, 30°25'35.9"E, linden alley and group of larches, on thallus of *Xanthoria parietina* (L.) Th. Fr. on bark of *Tilia cordata* Miller, 12.09.2017, IS & DH (LECB). – New to SPb, known from WLR (Stepanchikova et al., 2019). Distribution in North-Western European Russia outside of LR: not reported. Distribution in Fennoscandia and Baltic countries: Sweden (Nordin et al., 2011), Estonia (Randlane et al., 2019), Latvia (Motiejūnaitė et al., 2016), Lithuania (Motiejūnaitė, 2017).

#INTRALICHEN BACCISPORUS D. Hawksw. & M. S. Cole – WLR, Ka, Kingisepp District, N part of Moschny Island (former Lavansaari), Lankoori Spit, 60°01'44.8"N, 27°48'44.8"E, alt. 1 m, vicinity of old granite pier, in apothecia of *Candelarella aurella* (Hoffm.) Zahlbr. on granite boulder

Table 1. The main features of some species of *Micarea prasina* group in the Leningrad Region based on literature (Czarnota, 2007; Guzow-Krzeminska et al., 2016; Launis & Myllys, 2019; Launis et al., 2019a,b; Kantelinen et al., 2021) and personal observations

Main features	<i>M. fallax</i>	<i>M. laeta</i>	<i>M. microareolata</i>	<i>M. novakii*</i>	<i>M. pusilla</i>	<i>M. sordifera</i>	<i>M. tomentosa</i>
Thallus colour	vivid green to pale olive green	vivid green to olive green	pale olive green	olive grey to dark grey	whitish green to olive green	greyish green to dull green	bright green
Thallus appearance	poorly developed, warted-granular, small-areolate, or membranous	often as continuous crust, less often as granular, small warted or warted-areolate	small areolate or small warted to granular	endoxylic or finely warted	usually inconspicuous, membranous, or warted-granular	thin film over the substratum or minutely areolate, sorediate	thin, granular or small goniocysts
Soralia	absent	absent	absent	absent	absent	present	absent
Apothecia abundance	common	common	numerous	common	numerous, very small	rare, poorly visible	rather scanty
Apothecia colour	cream white, pale brownish to medium brown, sometimes with pale greyish tinge	whitish or brownish	whitish cream	dark grey to black or rarely in part slightly greyish	white or cream white	pale greyish brown or greyish	slightly brownish or straw-coloured to medium brown
Apothecia diameter	0.2–0.3 mm	0.2–0.4 mm	0.2–0.4 mm	0.2–0.25 mm	0.05–0.15(–0.2) mm	0.1–0.3 mm	0.15–0.3 mm
Apothecia shape	adnate, convex to hemispherical	adnate, convex to hemispherical	adnate, convex to hemispherical	convex to subglobose	convex to hemispherical	immarginate, convex	convex to hemispherical, ±adnate
Ascospores septation	0–1-septate	0–1-septate	0–1-septate	0(–1)-septate	0–1-septate	0–1-septate	(0–)1-septate
Ascospores size	8–11 × 3–4 μm	7.5–10 × 3–4 μm	7.5–12 × 2–3 μm	6–8 × 2–3 μm	7–10 × 2–3 μm	6–12 × 2.5–4.5 μm	7.5–9 × 2.5–3.5 μm
Pycnidia shape	small and inconspicuous	small and inconspicuous	small and inconspicuous	shortly stalked	small and inconspicuous	not seen	globose, sessile, often distinctly tomentose
Pycnidia colour	whitish	whitish	whitish	black to olive black	whitish	–	slightly greyish to slightly brownish
Secondary metabolites	micareic acid	methoxymicareic acid	methoxymicareic acid	micareic acid	methoxymicareic acid	micareic acid	not detected by TLC
Sedifolia-grey pigment	absent, rarely present in epihymenium	absent	absent	present in epihymenium	absent	present in epihymenium and soralia	absent
Crystalline granules (visible in polarized light)	present in hymenium and thallus	present in hymenium and thallus	present in hymenium and thallus	often absent in apothecia sections and thallus, rarely produced in hymenium of some apothecia	absent in apothecia sections / present in thallus	absent in apothecia sections and thallus	absent in apothecia sections and thallus

* – data on crystalline granules of *M. novakii* are based on the studied specimen.

manured by birds, 15.08.2017, IS & DH, det. U. Schiefelbein (H). – New to Russia. Distribution in Fennoscandia and Baltic countries: not reported. This rarely reported species was described from Nebraska in North America (Hawksworth & Cole, 2002). In Europe the species is known from Austria, Belgium, Luxembourg, Netherlands (Sérusiaux et al., 2003), British Isles (*Intralichen...*, 2021), Germany (Brackel, 2014; Rettig, 2016), and Italy, Sicilia (Brackel, 2008). This dematiaceous hyphomycete is characterized by multicellular, subglobose aggregated conidia produced in chains, which links it to *Intralichen christiansenii* (D. Hawksw.) D. Hawksw. & M. S. Cole and *I. lichenicola* (M. S. Christ. & D. Hawksw.) D. Hawksw. & M. S. Cole. However, conidia of these two species are up to 4-celled, but appear to clump together to form multicellular propagules recalling the irregularly ellipsoid conidia of *I. baccisporus* (Hawksworth & Cole, 2002). *Intralichen baccisporus* occurs mainly in the hymenium of *Caloplaca* and *Candelariella* species (Sérusiaux et al., 2003; Brackel, 2014). Records from other host species need to be proved.

LEPRARIA BOREALIS Loht. & Tønsberg – SPb, Petrodvorets District, Lomonosov, ca. 600 m SE to Zavarina Str., 59°54'50.9"N, 29°43'02.2"E, pine forest with spruce and birch, with green mosses and *Vaccinium myrtillus* L., on granite boulder, 20.05.2015, IS & DH (LECB); same place, between Ilikovskaya road and Oranienbaumsky prospect, vicinity to electric power line, 59°53'09.3"N, 29°45'02.6"E, steep bank of brook in birch-pine forest, on granite boulder, 27.09.2015, IS & DH (LECB); same place, SW to Oranienbaumsky Park, 59°54'36.1"N, 29°43'48.8"E, on large granite boulder "Cherepakh", 20.05.2015, IS & DH (LECB). Thalli contain atranorin, jackinic/rangiformic and norjackinic/norrangiformic acids. – New to SPb, known from ELR and WLR (Himmelbrant et al., 2015; Stepanchikova et al., 2017). Distribution in North-Western European Russia outside of LR: Republic of Karelia (Kukwa et al., 2003). Distribution in Fennoscandia and Baltic countries: Norway, Sweden, Finland (Nordin et al., 2011), Estonia (Randlane et al., 2019), Lithuania (Motiejūnaitė, 2017). The species belongs to *Lepraria neglecta* group and is recognized by some authors as a chemotype of *L. neglecta* (Nyl.) Lettau. Chemically similar to *Lepraria jackii*

Tønsberg s. l. which differs by having greenish to yellow-green thallus, smaller soredia (soredia up to 50 µm diam. and consoredia 80 µm diam. in *L. jackii* vs. soredia 70 µm diam. and consoredia 160–200 µm diam. in *L. borealis*), and preference for tree bark as a substrate (Makarova & Himmelbrant, 2008).

MICAREA ADNATA Coppins – SPb, Petrodvorets District, Strel'na, between Strelka River and Novye Zavody Street, 59°50'02.9"N, 29°59'11.4"E, pine forest with young oaks (*Quercus robur*) and rowan (*Sorbus aucuparia* L.) undergrowth, with *Oxalis acetosella* L., *Vaccinium myrtillus*, and green mosses, on bark of *Pinus sylvestris*, 03.06.2017, DH & IS (LECB). – New to SPb. Distribution in North-Western European Russia outside of SPb: Republic of Karelia (Alstrup et al., 2005). Distribution in Fennoscandia and Baltic countries: Norway and Sweden (Nordin et al., 2011). Characterized by continuous, often waxy in appearance, to sometimes granular thallus, apothecia-like sporodochia, straw-coloured to brownish apothecia often with white arachnoid rim, ellipsoid 0–1-septate ascospores, and producing no lichen substances; for detailed description see Czarnota (2007).

MICAREA FALLAX Launis & Myllys – WLR, Ik, Priozersk District, N part of Konevets Island, 60°52'45"N, 30°37'31"E, old-growth spruce forest with *Sphagnum* spp. and dwarf shrubs, on wood of *Picea abies* (L.) H. Karst. (log), 28.07.2017, EK, IS & DH (LECB); Vsevolozhsk District, W to Toksovo, 60°09'20.2"N, 30°29'40.6"E, alt. 65 m, pine forest with *Vaccinium myrtillus*, *V. vitis-idaea* L., *Sphagnum* spp., and *Polytrichum* sp., on bark of *Pinus sylvestris*, 25.04.2016, DH & LG (LECB). Thalli contain micareic acid. – New to LR, known from SPb (Stepanchikova et al., 2020). Distribution in North-Western European Russia outside of LR: not reported. The nearest localities in European Russia are in the Arkhangelsk Region (Tarasova et al., 2020). Distribution in Fennoscandia and Baltic countries: Sweden and Finland (Launis et al., 2019a).

MICAREA LAETA Launis & Myllys – WLR, Ka, Kingisepp District, N part of Bolshoy Tuters Island (former Tytärsaari), 300 m SE to Cape Severny (Tiukinniemi), 59°51'51"N, 27°11'53"E, middle-aged spruce forest with single aspens (*Populus tremula* L.), with *Vaccinium myrtillus*, *Maianthemum bifolium*, and green mosses, on

bark of *Picea abies*, 01.06.2015, IS (LECB) (published by Stepanchikova et al. (2017) as *Micarea micrococca* (Körb.) Gams ex Coppins). Thallus contains methoxymicareic acid. – New to LR, known from SPb (Stepanchikova et al., 2021). Distribution in North-Western European Russia outside of LR: not reported. The nearest locality in European Russia is in the Arkhangelsk Region (Tarasova et al., 2020). Distribution in Fennoscandia and Baltic countries: Sweden and Finland (Launis et al., 2019b; Kantelinen et al., 2021).

MICAREA MICROAREOLATA Launis et al. – WLR, Ik, Priozersk District, N part of Konevets Island, 60°52'45"N, 30°37'31"E, old-growth spruce forest with *Sphagnum* spp. and dwarf shrubs, on wood of *Picea abies* (log), 28.07.2017, EK, IS & DH (LECB); Vsevolozhsk District, NE to Mistolovo, 60°08'13.9"N, 30°24'58.0"E, alt. 30 m, birch forest with pines, with *Oxalis acetosella* and green mosses, on bark of *Betula* sp., 15.05.2016, DH & LG (LECB) (published by Himelbrant & Gagarina (2018) as *Micarea micrococca* (Körb.) Gams ex Coppins); Gatchina District, between Zhabino and Shundorovo villages, 59°36'49.3"N, 29°36'41.6"E, alt. 144 m, spruce forest with honeysuckle (*Lonicera* sp.), with green mosses and grasses, on bark of *Betula* sp., 08.09.2016, IS & DH (LECB). Thalli contain methoxymicareic acid. – New to LR, known from SPb (Stepanchikova et al., 2020). Distribution in North-Western European Russia outside of LR: not reported. The nearest localities in European Russia are in the Arkhangelsk Region (Tarasova et al., 2020) and the Kaliningrad Region (Konoreva et al., 2020). Distribution in Fennoscandia and Baltic countries: Sweden and Finland (Launis et al., 2019b).

MICAREA NOWAKII Czarnota & Coppins – SPb, Petrodvorets District, Lomonosov, ca. 600 m S to Zavarina Str., 59°54'50.9"N, 29°43'02.2"E, pine forest with spruce and birch, with green mosses and *Vaccinium myrtillus*, on lignum of *Salix caprea* L., DH, IS & Gulnara Tagirdzhanova, 20.05.2015 (LE L-12946). Thallus contains micareic acid. – New to European Russia, recently reported from Russian Caucasus (Urbanavichus et al., 2020). Distribution in Fennoscandia and Baltic countries: Finland (Myllys & Launis, 2018), Sweden (Svensson & Westberg, 2010).

MICAREA PUSILLA Launis et al. – WLR, Ka, Kingisepp District, central part of Moschny Island

(former Lavansaari), W to Taipale Isthmus, 60°00'08.4"N, 27°50'43.1"E, black alder (*Alnus glutinosa* (L.) Gaertn.) forest with ferns surrounded by spruce forest, on bark of *Alnus glutinosa*, 20.08.2017, IS & DH (LECB); same place, N shore, E to Cape Mustaniemi, 60°01'16.2"N, 27°50'39.8"E, seashore pine forest with sparse rowan undergrowth, with green mosses and *Vaccinium myrtillus*, on lignum of *Pinus sylvestris*, 18.08.2017, IS & DH (LECB); Ik, Vsevolozhsk District, W to Mustajarvi Lake, 60°12'21.9"N, 30°35'20.9"E, alt. 83 m, pine forest with birches, rowans, *Vaccinium myrtillus*, and ferns, on bark of *Pinus sylvestris*, 23.04.2016, DH & LG (LECB). Thalli contain methoxymicareic acid. – New to LR, known from SPb (Stepanchikova et al., 2021). Distribution in North-Western European Russia outside of LR: not reported. The nearest localities in European Russia are in the Arkhangelsk (Tarasova et al., 2020) and Kaliningrad (Konoreva et al., 2020) regions. Distribution in Fennoscandia and Baltic countries: Finland (Launis et al., 2019a).

MICAREA SORALIFERA Guzew-Krzem. et al. – WLR, Ka, Kingisepp District, central part of Moschny Island (former Lavansaari), W to Taipale Isthmus, 60°00'08.4"N, 27°50'43.1"E, black alder forest with ferns surrounded by spruce forest, on lignum of *Picea abies*, 20.08.2017, IS & DH (LECB) (published by Stepanchikova et al. (2019) as *Micarea prasina* Fr. s. str.). Thallus contains micareic acid. – New to LR, known from SPb (Stepanchikova et al., 2020). Distribution in North-Western European Russia outside of LR: not reported. The nearest localities in European Russia are in the Kaliningrad Region (Konoreva et al., 2020). Distribution in Fennoscandia and Baltic countries: Sweden and Finland (Svensson et al., 2017; Myllys & Launis, 2018).

MICAREA TOMENTOSA Czarnota & Coppins – WLR, Ik, Priozersk District, N part of Konevets Island, 60°52'48.3"N, 30°37'03.1"E, old-growth spruce forest with green mosses, dwarf shrubs, and *Oxalis acetosella*, on upturned roots of *Picea abies*, 26.07.2017, EK, IS & DH (LECB); same place, E part of Konevets Island, SW of bay Valkoinenhiekka, 60°51'32.5"N, 30°36'56.3"E, old-growth spruce forest with birch and black alder, with *Sphagnum* spp., *Vaccinium myrtillus* and patches of green mosses, on wood of *Picea abies* (log), 03.08.2017, EK, IS & DH (LECB). No lichen substances detected. – New to LR,

known from SPb (Stepanchikova et al., 2020). Distribution in North-Western European Russia outside of LR: not reported. The nearest localities in European Russia are in the Arkhangelsk Region (Tarasova et al., 2020), the Kaliningrad Region (Konoreva et al., 2020), and the Moscow Region (Muchnik et al., 2019). Distribution in Fennoscandia and Baltic countries: Sweden, Finland, Norway (Thor & Svensson, 2008; Myllys & Launis, 2018; Klepsland, 2020), and Estonia (Randlane et al., 2019). *Micarea tomentosa* can be confused with *M. hedlundii* Coppins and *M. fennica* Launis & Myllys due to the pycnidia covered by tomentum (Czarnota, 2007). *Micarea hedlundii* is distinguished by the presence of Intrusa-yellow pigment in the thallus (Czarnota, 2007), and *M. fennica* produces micareic acid (Launis & Myllys, 2019).

PARMELINA TILIACEA (Hoffm.) Hale – WLR, Luga District, Cheremenetsky Protected Area, Golubkovo village, 58°33'14.3"N, 29°58'06.6"E, alt. 58 m, old broadleaved manor park, on bark of old *Tilia cordata* branch, 15.05.2020, DH, AR & IS (LECB); same place, 58°33'17.0"N, 29°58'08.6"E, alt. 52 m, old broadleaved manor park on slope facing a lake, on bark of *Corylus avellana* L., 15.05.2020, DH, AR & IS (LECB). – The first reliable record in LR. Previously reported from ELR, Staraya Ladoga (Malysheva, 2001), WLR, Koporje (Malysheva, 1999), and SPb (Weinmann, 1837), however no specimens were found in revised herbaria, and the presence of this easily identified species in the region was doubtful. Distribution in North-Western European Russia outside of LR: Republic of Karelia (Fadeeva et al., 2007), Novgorod (Kataeva, 2002) and Pskov (Istomina & Likhacheva, 2010) regions. Distribution in Fennoscandia and Baltic countries: Norway, Sweden, and Finland (Nordin et al., 2011), Estonia (Randlane et al., 2019), Latvia (Āboliņa et al., 2015), and Lithuania (Motiejūnaitė, 2017).

SCLEROPHORA PERONELLA (Ach.) Tibell (Fig. 1) – WLR, Luga District, Cheremenetsky Protected Area, Golubkovo village, 58°33'17.0"N, 29°58'08.6"E, alt. 52 m, old broadleaved manor park on slope to the lake, on bark of old dead *Tilia cordata*, 15.05.2020, DH, AR & IS (LECB). – New to LR. Distribution in North-Western European Russia outside of LR: Republic of Karelia (Fadeeva et al., 2007). Distribution in Fennoscandia and Baltic countries: Norway, Sweden, Finland (Nordin et al., 2011), Estonia (Randlane

et al., 2019), Latvia (Āboliņa et al., 2015), and Lithuania (Motiejūnaitė, 2017). Characterized by the pale carneous stalked apothecia with reddish-brown central core of stalk (when wet), and very small spores 3.0–3.5 µm diam. (Tibell, 1999).



Fig. 1. *Sclerophora peronella* in Golubkovo manor park (LECB). Scale bar = 1 mm.

ACKNOWLEDGEMENTS

Authors thank Ludmila V. Gagarina (Komarov Botanical Institute, Russia) and Gulnara Tagirdzhanova (University of Alberta, Canada) for participation in the field studies. We are grateful to anonymous reviewer for valuable corrections and comments. The study was carried out within the framework of the institutional research project “Flora and systematics of algae, lichens, and bryophytes of Russia and phytogeographically important regions of the world” (no. 121021600184-6) of the Komarov Botanical Institute of the Russian Academy of Sciences.

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