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ADDITIONAL DATA REPORT ON THE MYCOBIOTA
OF “THE NORTHERN COAST OF THE NEVA BAY” NATURE SANCTUARY:
XYLOTROPHIC BASIDIOMYCETES OF THE PARK
AT THE “BLIZHNE DUBKI” ESTATE

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In 1723, between Lakhta and Lisiy Nos settlements, east of the village of Verpelevo, the Peter’s estate “Blizhnie Dubki” was created including a rectangular park of regular style, approximately 250 × 300 m in size. To date, the park has been abandoned, although its drainage system continues to function. The vegetation in this drained territory is restored mainly via sub-nemoral groupings. The present notice is devoted to report a new for the Northern Coast of the Neva Bay sanctuary species of xylotrophic basidiomycetes collected on the territory of the old park. The presented list contains 36 species new for the sanctuary that belong to 9 orders of the *Agaricomycetes* class. Among them, *Truncospora atlantica* is new to Russia, and *Pseudotomentella griseopergamacea*, new to the European Russia. For both the Leningrad and the Saint Petersburg regions, such species as *Porostereum spadiceum* and *Trametopsis cervina* is reported for the first time. In Europe, these two species are common in the central and southern belts of the temperate zone. For the Saint Petersburg Region such species as *Amaurodon viridis*, *Antrodia macra*, *A. heteromorpha*, *Perenniporia subacida*, *Postia rennyi*, *Sarcoporia polyspora* are reported for the first time. Within Saint Petersburg red data species, *Crustoderma dryinum*, *Hydnocristella himantia*, and *Hyalodon piceicola* were recorded for old park territory. The data obtained indicate that the fungal species complexes in old oak plantings are rather unique. A competitive pressure within the nemoral groupings is weakened that is a reason for invasion on these areas of alien southern and even sub-Atlantic species.

Keywords: aphylloroid fungi, *Quercus robur*, Saint Petersburg protected areas, *Truncospora atlantica*

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The stands of English Oak (*Quercus robur*) of anthropogenic origin existed on the northern shore of the Gulf of Finland since pre-Petrine times. These were confined to loamy ridges formed as a result of the Baltic transgression. Such drained areas with heavy soils ecologically approach a central part of nemoral floodlands, the main habitat of *Quercus robur* in its optimum range (Zmitrovich, 2011). Beginning with a Peter the Great time, the oak plantings were renewed or increased and, as a result, along all the areas between contemporary Sestroretsk and Olgino settlements it can seemed a lonely growing old oaks and whole oak plantations, among which the Sestroretsk town “Dubki” Park is most famous. Oaks in the conditions of artificial drainage and elimination of competition from aspen, birch and spruce renewal reach a great age (250–300 years) in the oceanic sector of the taiga zone. This is also facilitated by fairly mild winters.

In 1723, between Lakhta and Lisiy Nos, east of Verpelevo village, the Peter’s estate “Blizhnie Dubki” was created with a rectangular park of regular style, approximately 250 × 300 m in size. To date, the park has been abandoned, although its drainage system continues to function. The vegetation in this drained territory is restored mostly via sub-nemoral groupings, and so far the fragments of following communities are observed on the territory of the old park: 1) black alder and birch-black alder moist high-grass forests, 2) fragments of oak stands mixed with black alder, 3) mossy lime forests, 4) black alder-spruce-linden nemoral grass forests and 5) mesophylic meadows (Khramtsov et al., 2013). Formally, this nature object lies on the territory of Saint Petersburg and consists a part of the nature sanctuary “The Northern Coast of the Neva Bay” (Fig. 1).

Some information on fungi and, in particular, a xylotrophic basidiomycetes confined to oak groves on the

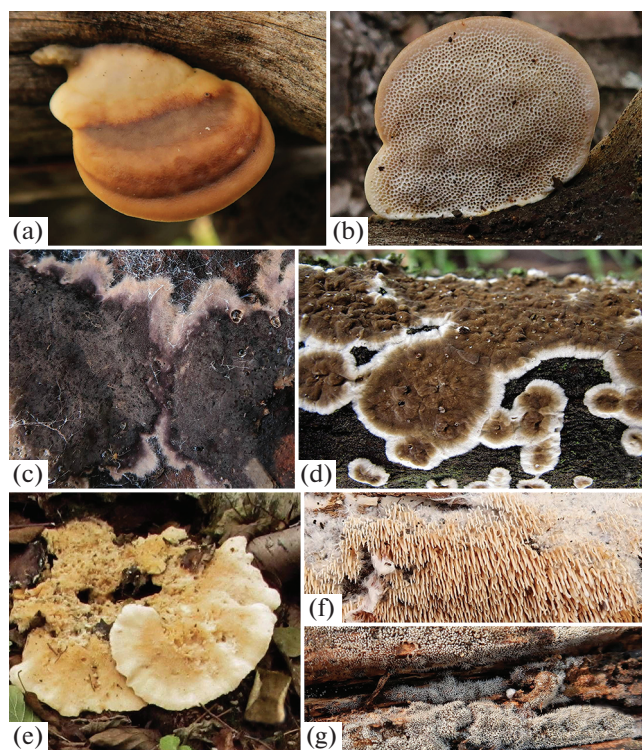


Fig. 1. New for Russia (a, b), European Russia (c), St. Petersburg and the Leningrad regions (d, e) as well as the red data book (f, g) xylotrophic basidiomycetes revealed of the territory of old park at the “Blizhnie Dubki” estate: a, b – *Truncospora atlantica* upperside (a) and hymenophore (b); c – *Pseudotomentella griseopergamacea*; d – *Porostereum spadiceum*; e – *Trametopsis cervina*; f – *Hydnocristella himantia*; g – *Hyalodon piceicola*.

northern coast of the Neva Bay can be found in a number of works (Khramtsov et al., 2013; Kotkova, 2014), although data related to the territory of the old park at “Blizhnie Dubki” estate are hardly estimating.

On the same time, this area has an interest to specialists due to high productivity of stands, the abundance of wood debris and the presence of broadleaf species located here on the border of their distribution range. In particular, an interesting find of southern temperate Giant Polypore [*Meripilus giganteus* (Fr.) P. Karst.] was made here (Zmitrovich et al., 2019).

The present notice is devoted to new species of xylotrophic (presumably debris-associated) basidiomycetes which are reported for the first time for the “The Northern Coast of the Neva Bay” sanctuary from the old park area.

The authors’ investigations were carried out (June–October 2015 and August–November 2016) by the radial routes method according to generally accepted schedules. Basidiomata were photographed in living state before their separation from the substrate or immediately after a separation. The Canon G7 X Mark II camera was used for the material shooting.

The micromorphological analysis of the basidiomata was carried out using an AxioImager.A1 light microscope at the Laboratory of Systematics and Geography of the Fungi (BIN RAS). Micro-preparations for general hyphal morphology study were prepared using a 5% KOH solution. Such media as Meltzer’s reagent, Congo Red, and 5% NH₄OH solution were used to testing of thickened wall structures (thick-walled generative hyphae, basidiospore surface sculpture). The basidiospores measurements were carried out into the distilled water.

The material collected is loaned in the Mycological Herbarium of the BIN RAS (LE F).

In total, the present list contains 36 species new for the “Northern Coast of the Neva Bay” sanctuary which belong to 9 orders (*Auriculariales*, *Atheliales*, *Cantharellales*, *Gomphales*, *Hymenochaetales*, *Polyporales*, *Russulales*, *Thelephorales*, and *Trechisporales*) of the *Agaricomycetes* (Table 1).

Among the species revealed, the trametoid *Truncospora atlantica* is new for Russia and the corticioid *Pseudotomentella griseopergamacea* is new for the European Russia.

Truncospora atlantica was initially described by Torrend (1910) as *Polyporus ochroleucus* var. *lusitanica*. Later it was reported as *Perenniporia ochroleuca* from several European countries (Goncalves Silva et al., 2012; Ryvardeen, Melo, 2017). However, it differs from *Truncospora ochroleuca*-coll. in having distinctly narrower tramal and contextual skeletal (Spirin et al., 2015).

Pseudotomentella griseopergamacea was described from the United States with *Pinus resinosa* cortex (Larsen, 1971). Subsequently, it was reported to Denmark, Canada, Estonia, Finland, Norway, Sweden as well as the Far East of Russia (*Pseudotomentella griseopergamacea*, 2020).

A range of species (*Amaurodon viridis*, *Anurodia macra*, *A. heteromorpha*, *Perenniporia subacida*, *Postia rennyi*, *Sarcoporia polyspora*) are reported here for the first time for the Saint Petersburg Region. All these, however, aren’t a zone-alien element and are quite well presented in boreal forests the Leningrad Region.

Only two zone-alien species (absent in the Leningrad Region) are reported for the first time for the Saint Petersburg Region, namely the stereoid *Porostereum spadiceum* and the trametoid *Trametopsis cervina*. In Europe, these species are rather common in central and southern belts of the temperate zone. Their main substrate is a rather large-sized fallen broadleaf trees. They can also be found on broadleaf understory species (on *Alnus* spp. in boreal zone). In principle, the trametoid *Brunneoporus malicola* gravitates to these species according to their distribution patterns and substrate preferences, but this species was already observed at the Saint Petersburg area (Kotkova, 2014).

Among the species protected at the Saint Petersburg Region (Red data book, 2018), such corticioids as

Table 1. Checklist of xylotrophic basidiomycetes revealed in old park of the “Blizhnie Dubki” estate (the “Northern coast of the Neva Bay” sanctuary)

Species list	Herbarium documentation	Finds coordinates	Substrate	Conservation status on St. Petersburg territory (Red data book, 2018)
<i>Auriculariales</i>				
<i>Hyalodon piceicola</i> (Kühner ex Bourdot) Spirin et Malysheva	LE F-330301	59°59 N, 30°02 E	<i>Quercus robur</i>	VU (3)
<i>Atheliales</i>				
<i>Amphinema byssoides</i> (Pers.) J. Erikss.	LE F-330302	59°59 N, 30°01 E	<i>Acer platanoides</i>	—
<i>Cantharellales</i>				
<i>Sistotrema muscicola</i> (Pers.) S. Lundell	LE F-330303	60°00 N, 30°01 E	<i>Quercus robur</i>	—
<i>Gomphales</i>				
<i>Hydnocristella himantia</i> (Schwein.) R.H. Petersen	LE F-330304	59°59 N, 30°01 E	<i>Quercus robur</i>	VU (3)
<i>Hymenochaetales</i>				
<i>Hymenochaete cinnamomea</i> (Pers.) Bres.	LE F-330305	60°00 N, 30°01 E	<i>Tilia cordata</i>	—
<i>Xylodon asperus</i> (Fr.) Hjortstam et Ryvarde	LE F-330306	59°59 N, 30°01 E	<i>Alnus incana</i>	—
<i>X. brevisetus</i> (P. Karst.) Hjortstam et Ryvarde	LE F-330307	59°59 N, 30°01 E	<i>Populus tremula</i>	—
<i>X. verruculosus</i> (J. Erikss. et Hjortstam) Hjortstam et Ryvarde	LE F-330308	60°00 N, 30°02 E	<i>Quercus robur</i>	—
<i>Polyporales</i>				
**** <i>Antrodia heteromorpha</i> (Fr.) Donk	LE F-330309	60°00 N, 30°01 E	<i>Quercus robur</i>	—
**** <i>A. macra</i> (Sommerf.) Niemelä	LE F-330310	60°00 N, 30°01 E	<i>Populus tremula</i>	—
<i>A. ramentacea</i> (Berk. et Broome) Donk	LE F-330311	60°00 N, 30°02 E	<i>Pinus sylvestris</i>	—
<i>A. xantha</i> (Fr.) Ryvarde	LE F-330312	60°00 N, 30°02 E	<i>Pinus sylvestris</i>	—
<i>Antrodiella romellii</i> (Donk) Niemelä	LE F-330313	60°00 N, 30°02 E	<i>Quercus robur</i>	—
<i>Brunneoporus malicola</i> (Berk. et M.A. Curtis) Audet	LE F-330314	60°00 N, 30°02 E	<i>Tilia cordata</i>	—
<i>Ceriporia excelsa</i> S. Lundell ex Parmasto	LE F-330315	59°59 N, 30°02 E	<i>Pinus sylvestris</i>	—
<i>C. purpurea</i> (Fr.) Donk	LE F-330316	59°59 N, 30°02 E	<i>Quercus robur</i>	—
<i>C. viridans</i> (Berk. et Broome) Donk	LE F-330317	59°59 N, 30°02 E	<i>Quercus robur</i>	—
<i>Crustoderma dryinum</i> (Berk. et M.A. Curtis) Parmasto	LE F-330318	60°00 N, 30°02 E	<i>Pinus sylvestris</i>	VU (3)
<i>Cystidiopostia hibernica</i> (Berk. et Broome) B.K. Cui, L.L. Shen et Y.C. Dai	LE F-330319	60°00 N, 30°02 E	<i>Pinus sylvestris</i>	—
<i>Mycocacia fuscoatra</i> (Fr.) Donk	LE F-330320	59°59 N, 30°01 E	<i>Quercus robur</i>	—
**** <i>Perenniporia subacida</i> (Peck) Donk	LE F-330323	60°00 N, 30°02 E	<i>Pinus sylvestris</i>	—
<i>Phanerochaete calotricha</i> (P. Karst.) J. Erikss. et Ryvarde	LE F-330324	60°00 N, 30°01 E	<i>Quercus robur</i>	—
*** <i>Porostereum spadiceum</i> (Pers.) Hjortstam et Ryvarde	LE F-330325	60°00 N, 30°01 E	<i>Tilia cordata</i>	—
**** <i>Postia rennyi</i> (Berk. et Broome) Rajchenb.	LE F-330326	60°00 N, 30°02 E	<i>Pinus sylvestris</i>	—

Table 1. (Contd.)

Species list	Herbarium documentation	Finds coordinates	Substrate	Conservation status on St. Petersburg territory (Red data book, 2018)
<i>Rhizochaete violascens</i> (Fr.) K.H. Larss.	LE F-330327	60°00 N, 30°02 E	<i>Pinus sylvestris</i>	—
*** <i>Sarcoporia polyspora</i> P. Karst.	LE F-330321	60°00 N, 30°02 E	<i>Pinus sylvestris</i>	—
*** <i>Trametopsis cervina</i> (Schwein.) Tomšovský	LE F-330328	60°00 N, 30°02 E	<i>Alnus incana</i>	—
* <i>Truncospora atlantica</i> Spirin et Vlasák	LE F-330322	60°00 N, 30°02 E	<i>Pinus sylvestris</i>	—
<i>Tyromyces lacteus</i> (Fr.) Murrill	LE F-330329	59°59 N, 30°01 E	<i>Populus tremula</i>	—
<i>Russulales</i>				
<i>Scytinostroma hemidichophyticum</i> Pouzar	LE F-330330	59°59 N, 30°01 E	<i>Acer platanoides</i>	—
<i>Thelephorales</i>				
*** <i>Amaurodon viridis</i> (Alb. et Schwein.) J. Schröt.	LE F-330336	60°00 N, 30°02 E	<i>Quercus robur</i>	—
** <i>Pseudotomentella griseopergamacea</i> M.J. Larsen	LE F-330331	60°00 N, 30°02 E	<i>Pinus sylvestris</i>	—
<i>Tomentella bryophila</i> (Pers.) M.J. Larsen	LE F-330332	60°00 N, 30°02 E	<i>Quercus robur</i>	—
<i>T. coerulea</i> Höhn. et Litsch.	LE F-330333	60°00 N, 30°02 E	<i>Acer platanoides</i>	—
<i>T. lapida</i> (Pers.) Stalpers	LE F-330334	60°00 N, 30°02 E	<i>Quercus robur</i>	—
<i>Trechisporales</i>				
<i>Trechispora cohaerens</i> (Schwein.) Jülich et Stalpers	LE F-330335	60°00 N, 30°02 E	<i>Quercus robur</i>	—

Note. The species new to Russia is marked with one asterisk; the species new to European Russia is marked with two asterisks; species new both to St. Petersburg and Leningrad Region are marked with three asterisks; species new to St. Petersburg only are marked with four asterisks.

Crustoderma dryinum (an azonal species of pine forests), *Hydnocrisella himantia* (a species of nemoral links, confined to debris mainly of broadleaf species), and heterobasidiomycete *Hyalodon piceicola* (a species of coniferous or broadleaf-coniferous productive forests) were revealed.

The data obtained indicate that the fungal species complexes formed in old oak plantings present rather unique issue. A competitive pressure within the nemoral groupings is weakened that is a reason for invasion on these areas of alien southern and even sub-Atlantic species. The presence of rare and biogeographically interesting fungal species is one of the arguments for the protection of this nature area.

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ДОПОЛНИТЕЛЬНЫЕ СВЕДЕНИЯ О МИКОБИОТЕ ЗАКАЗНИКА “СЕВЕРНОЕ ПОБЕРЕЖЬЕ НЕВСКОЙ ГУБЫ”: КСИЛОТРОФНЫЕ БАЗИДИОМИЦЕТЫ ПАРКА ПРИ УСАДЬБЕ “БЛИЖНИЕ ДУБКИ”

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В 1723 г. между Лахтой и Лисьим Носом, восточнее деревни Верпелево была создана усадьба Петра I “Ближние Дубки” с регулярным парком прямоугольной формы, размерами примерно 250 × 300 м. К настоящему времени парк оказался заброшен, хотя его дренажная система продолжает функционировать. Растительность на этой дренированной территории восстанавливается преимущественно через субнеморальные группировки. Данная заметка посвящена новым для заказника “Северное побережье Невской губы” видам ксилотрофных базидиомицетов, собранных на территории старого парка. Всего в представленном списке приводится 36 новых для заказника видов, принадлежащих 9 порядкам класса *Agaricomycetes*. Среди них – новый для территории России вид *Truncospora atlantica* и новый для европейской территории России вид *Pseudotomentella griseopergamacea*. Для территории Санкт-Петербурга впервые представлены такие виды как *Amaurodon viridis*, *Antrodia macra*, *A. heteromorpha*, *Perenniporia subacida*, *Postia rennyi*, *Sarcoporia polyspora*, распространенные, однако, в Ленинградской обл. Новыми для Санкт-Петербурга и Ленинградской обл. оказались *Porostereum spadiceum* и *Trametopsis cervina* – виды, распространенные на европейской территории России в центральной и южной полосах умеренной зоны. Из видов, охраняемых на территории Санкт-Петербурга, были отмечены *Crustoderma dryinum*, *Hydnochristella himantia* и гетеробазидиомицет *Hyalodon piceicola*. Полученные данные свидетельствуют о том, что сложившиеся в старых дубовых посадках видовые комплексы грибов уникальны. Конкурентное давление внутри неморальных группировок здесь ослаблено, что ведет к внедрению далеких южных и субатлантических видов.

Ключевые слова: афиллофороидные грибы, охраняемые природные территории Санкт-Петербурга *Quercus robur*, *Truncospora atlantica*