Таким образом, по состоянию на 2015 год для Мурманской области известно 11 видов из рода *Peniophora*, причем многие из них характеризуются единичными находками, и вопрос о распространении их в регионе остается открытым.

Литература

Исаева Л. Г., Химич Ю. Р. Каталог афиллофороидных грибов Мурманской области. Апатиты: Изд. Кольского научного центра РАН, 2011. 68 с.

Сафонов М.А., Маленкова А.С. Дереворазрушающие грибы искусственных хвойных насаждений в Южном Приуралье // Вестник ОГУ. 2011.№ 12. С. 140-141.

Химич Ю.Р. Афиллофороидные грибы на древесных интродуцентах зеленых насаждений города Апатиты // Вестник Мурманского государственного технического университета. 2013. Т. 16. № 3. С. 526-529.

Химич Ю.Р., Змитрович И.В., Руоколайнен А.В. Афиллофороидные грибы заповедника «Пасвик» // Микология и фитопатология. 2015 (в печати).

Eriksson J., Hjortstam K., Ryvarden L. The Corticiaceae of North Europe. Vol. 5: Mycoaciella-Phanerochaete. Oslo:Fungiflora, 1978. P. 889-1047.

Kotiranta H., Saarenoska R., Kytövuori I. Aphyllophoroid fungi of Finland. A check-list with ecology, distribution, and threat categories // Norrlinia. 2009. Vol. 19. P. 1-223.

Ryvarden L., Stokland J., Larsson K. H. A critical checklist of corticoid and poroid fungi of Norway // Synopsis Fungorum. 2003. Vol. 17. P. 3–79.

Yurchenko E.O. The genus *Peniophora* (Basidiomycota) of Eastern Europe. Morphology, taxonomy, ecology, distribution. Minsk: «Belorusskaya nauka», 2010. 338 p.

SOME MICROMYCETES ON TREES AND BUSHES IN FORESTS OF BOZTEPE DISTRICT KIRŞEHIR PROVINCE (TURKEY)

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НЕКОТОРЫЕ МИКРОМИЦЕТЫ ДЕРЕВЬЕВ И КУСТАРНИКОВ В ЛЕСАХ РАЙОНА БОЗТЕПЕ ПРОВИНЦИИ КЫРШЕХИР (ТУРЦИЯ)

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В результате полевых и лабораторных исследований, проведённых в 2012–2014 гг., выявлены 74 вида микромицетов, развивающихся на различных видах деревьев и кустарников. Большая часть (93,4%) микромицетов с 69-ю видами относится к отделу Ascomycota. Из этого отдела по числу порядков, семейств, родов и видов наиболее богат класс Dothideomycetes (58% от всех сумчатых). Другой класс Sordariomycetes представлен 19 видами (27,5%) из 14 родов, 11 семейств, 5 порядков. Класс Leotiomycetes составляет 8,7% от всех сумчатых. Incertae sedis представлен 3 видами. Отдел Basidiomycota включает 5 видов ржавчинных грибов.

The Boztepe district belong to Kırşehir province of Turkey, situated in the central Kızılırmak section of the Central Anatolia Region. The geographical coordinates of the studied area are 39° 11'–39° 27' N, 34° 12'–34° 36' E and take place entirely in the Irano-Turanian phytogeographic region. On the northern and north-eastern dry stream beds forest-steppe plant formations are common. Microclimate has been created by these areas for the Euro-Siberian and Mediterranean elements. According to the grid square system adopted by Davis (1965) Boztepe distict is located in the square B5.

Tree and shrub vegetation is represented by the following families species: Pinaceae (*Cedrus libani* A. Richard, *Pinus nigra* Arn., *P. sylvestris* L.), Ephedraceae (*Ephedra major* Host), Cupressaceae (*Juniperus communis* L., *J. oxycedrus* L.), Aceraceae (*Acer negundo* L.), Berberidaceae (*Berberis cretica* L., *B. craetegina* DC.), Elaeagnaceae (*Elaeagnus angustifolia* L.), Rhamnaceae (*Rhamnus petiolaris* Boiss., *R. catarthica* L.), Rosaceae (*Amygdalus communis* L., *A. lycioides* Spach, *A. nana* L., *A. orientalis* Miller, *Cerasus mahaleb* (L.) Miller var. mahaleb, *Cotoneaster nummularia* Fisch. et Mey., *Crataegus orientalis* Pallas ex Bieb. var. orientalis, *C. aronia* (L.) Bosc. ex DC. var. aronia, *C. monogyna* Jacq. subsp. monogyna, *C. pentagyna* Waldst. & Kit. ex Willd, *C. meyeri* A. Pojark, *Malus*

domestica Borkh., *M. sylvestris* Miller, *Prunus divaricata* Ledeb. subsp. divaricata, *P. mahaleb* L., *P. spinosa* L. subsp. dasyphylla (Schur.) Domin, *Pyrus elaeagnifolia* Pallas subsp. elaeagnifolia, *Rosa canina* L., *R. gallica* L., *Rubus canescens* DC.), Caprifoliaceae (*Lonicera etrusca* Santi. var. etrusca), Oleaceae (*Jasminum fruticans* L., *Fraxinus excelsior* L.), Plumbaginaceae (*Acantholimon acerosum* (Wild.) Boiss. var. acerosum, *A. puberulum* Boiss. et Bal. var. puberulum), Ulmaceae (*Ulmus minor* Miller subsp. minor, U. suberosa Ehrh.), Fagaceae (*Quercus petraea* (Mattuschka) Liebl., *Q. pubescens* Willd., *Q. robur* L. ssp. pedunculiflora (C. Koch.) Menitsky), Salicaceae (*Populus alba* L., *P. nigra* L., *Salix alba* L., *S. cinerea* L.), Fabaceae (*Astragalus asciocalyx* Bunge, *A. macrocephalus* Willd subsp. finitimus (Bunge) Chamberlain, *A. melanophrurius* Boiss., *A. oleifolius* DC., *A. ornithopodioides* Lam., *A. plumosus* Willd. var plumosus, *A. pycnocephalus* Fischer var. pycnocephalus, *Robinia pseudoacacia* L.), Juglandaceae (*Juglans regia* L.), Sumaroubaceae (*Ailanthus altissima* (Miller) Swingle), Moraceae (*Morus alba* L.), Solanaceae (*Lycium barbarum* L.) and Tamaricaceae (*Tamarix parviflora* DC.).

The material of this study comprises microfungi specimens collected on trees and bushes in 2012–2014. As a result of field and laboratory studies, a total 74 species of micromycetes identified on different trees and bushes. Microfungi are mainly represented by Ascomycota members with 69 species which constitute 93.4% of the total amount of determined species. Dothideomycetes class of Ascomycota is very rich in terms of orders, families, genera and species and constitute 58% of 69 identified ascomycetous species. Another class Sordariomycetes is represented by 19 species (27.5%) of 14 genera, 11 families, 5 orders. Leotiomycetes class constitute 8.7% of total number of species. Incertae sedis is represented by 3 species. Micromycetes belonging to Basidiomycota are represented by five rust fungi species. These microfungi and their host are given below. **Ascomycota:** *Acremoniula rhamni* E. Hüseyin, F. Selçuk & K. Ekici – on wood of dead twigs of Rhamnus petiolaris (Rhamnaceae), *A. uniseptata* E. Hüseyin, F. Selçuk & H. Akgül – on wood of dead twigs of R. petiolaris (Rhamnaceae), *Alternaria alternata* (Fr.) Keissl. – on living leaves of R. catarthica (Rhamnaceae), *Amphisphaeria vibratilis* (Fuckel) E. Müll. – on wood of dead branches of Crataegus aronia var. aronia (Rosaceae), *Aposphaeria allantella* Sacc. & Roum. – on wood of dead branches of Ulmus minor subsp. minor (Ulmaceae) and R. petiolaris (Rhamnaceae), *A. collabascens* Schulzer & Sacc. – on wood of dead branches of Prunus mahaleb (Rosaceae), *A. collabens* (Berk. & M. A. Curtis) Sacc. – on wood of dead branches of U. suberosa (Ulmaceae) and Pyrus elaeagnifolia subsp. elaeagnifolia (Rosaceae), *A. protea* Peyronel – on wood of dead branches of Quercus pubescens (Fagaceae), *Bispora antennata* (Pers.: Fr.) E. W. Mason – on dead fruits of Rosa canina (Rosaceae), *Camarosporium crataegi* Oudem. – on wood of Cotoneaster nummularia (Rosaceae), *C. elaeagni* Potebnia – on dead thin branches of Elaeagnus angustifolia (Elaeagnaceae), *C. karstenii* Sacc. & P. Syd. – on wood of P. elaeagnifolia subsp. elaeagnifolia (Rosaceae), *C. oreades* (Durieu & Mont.) Sacc. – on living leaves of Q. robur subsp. pedunculiflora (Fagaceae), *C. passerinii* Sacc. – on bark of thin branches of Morus alba (Moraceae), *Cladosporium herbarum* (Pers.) Link – on overwintered leaves of Salix alba (Salicaceae) and on living leaves of R. petiolaris (Rhamnaceae), *C. phyllophilum* McAlpine – on overwintered fruits of Crataegus meyeri (Rosaceae), *Coniothyrium castagnei* Sacc. – on bark of thin branches of Jasminum fruticans (Oleaceae), *C. foedans* Sacc. – on bark of thin branches of Robinia pseudoacacia (Fabaceae), *C. montagnei* Castagne – on bark of thin branches of E. angustifolia (Elaeagnaceae), *C. tamaricis* Oudem. – on bark of thin branches of Tamarix parviflora (Tamaricaceae), *Cucurbitaria rhamni* (Nees) Fuckel – on dead branches of R. petiolaris (Rhamnaceae), *Cytospora ceratophora* Sacc. – on bark of dead branches of Amygdalus nana (Rosaceae), *C. elaeagni* Allesch. – on bark of dead branches of E. angustifolia (Elaeagnaceae), *C. leucosperma* (Pers.) Fr. – on bark of dead branches of Prunus divaricata subsp. divaricata (Rosaceae), *C. salicis* (Corda) Rabenh. – on bark of dead branches of S. cinerea (Salicaceae), *Erysiphe alphitoides* (Griffon & Maubl.) U. Braun & S. Takam. – on living leaves of Q. pubescens (Fagaceae), *Eutypa lata* (Pers.) Tul & C. Tul. – on dead wood of P. elaeagnifolia subsp. elaeagnifolia (Rosaceae) and R. petiolaris (Rhamnaceae), *Eutypella quaternata* (Pers.) Rappaz. – on dead wood of P. elaeagnifolia subsp. elaeagnifolia (Rosaceae), *Fusarium oxysporum* E. F. Sm. & Swingle – on dead wood of R. petiolaris (Rhamnaceae), *Gibberella zeae* (Schwein.) Petch (Anamorph *Dichomera saubinetii* (Mont.) Cooke) – on wood of dead branches of C. pentagyna (Rosaceae), *Hendersonia acantholimonis* Petr. – on leaves of Acantholimon puberulum var. puberulum (Plumbaginaceae), *H. sarmentorum* Westend. – on wood of dead branches of R. petiolaris (Rhamnaceae), *H. vagans* Fuckel – on dead wood of M. alba (Moraceae). *Leptosphaeria castagnei* (Durieu & Mont.) Sacc. – on dead branches of Jasminum fruticans (Oleaceae), *Lewia scrophulariae*

(Desm) M. E. Barr & E. G. Simmons – on fallen leaves of Populus alba (Salicaceae) and A. acerosum var. acerosum (Plumbaginaceae), *Lophiostoma compressum* (Pers.) Ces. & De Not. – on dead branches of P. elaeagnifolia subsp. elaeagnifolia (Rosaceae), *Manoharachariella elsadii* F. Selçuk & E. Hüseyin – on dead wood of P. elaeagnifolia subsp. elaeagnifolia (Rosaceae), *Marssonina tranzschelii* Karak. – on living leaves of S. cinerea (Salicaceae), *Melanconium stromaticum* Corda – on bark of dead branches of P. elaeagnifolia subsp. elaeagnifolia (Rosaceae), *Melanomma pulvis-pyrius* (Pers.) Fuckel on dead wood of M. alba (Moraceae), *Metasphaeria vulgaris* Feltgen – on wood of R. canina (Rosaceae) ve R. petiolaris (Rhamnaceae), *Microdiplodia mori* Allesch. – on bark of dead branches of M. alba (Moraceae), *Mollisia cinerea* (Batsch) P. Karst. – on dead wood of P. elaeagnifolia subsp. elaeagnifolia (Rosaceae) and R. petiolaris (Rhamnaceae), *Mycosphaerella maculiformis* (Pers.) J. Schröt. – on fallen leaves of Populus alba (Salicaceae), *M. populi* (Auersw.) J. Schröt.– on fallen leaves of P. nigra (Salicaceae), *M. pyri* (Auersw.) Boerema (Anamorph *Septoria pyricola* Desm.) – on living leaves of P. elaeagnifolia subsp. elaeagnifolia (Rosaceae), *Ophiognomonia leptostyla* (Fr.) Sogonov (Anamorph *Neomarssoniella juglandis* (Lib.) U. Braun) – on living leaves of Juglans regia (Juglandaceae), *Phoma aculeorum* Sacc. – on dead branches of R. canina (Rosaceae), *P. dealbata* Pass. – on wood of A. communis (Rosaceae), *P. elaeagnella* Cooke – on bark of dead branches of E. angustifolia (Elaeagnaceae), *P. herbarum* Westend. – on wood of Malus domestica (Rosaceae), *P. minutula* Sacc. – on bark of dead branches of Lonicera etrusca var. etrusca (Caprifoliaceae), *P. rubiginosa* Brunaud – on dead branches and prickles of R. canina (Rosaceae), *P. salicina* Sacc. & D. Sacc. – on bark of dead branches of S. cinerea (Salicaceae), *Pleospora herbarum* (Pers.) Rabenh. – on overwintered fallen leaves of C. aronia var. aronia (Rosaceae) and on dead thin branches of L. etrusca var. etrusca (Caprifoliaceae), *Phyllactinia mali* (Dubby) U. Braun – on living leaves of P. elaeagnifolia subsp. elaeagnifolia (Rosaceae) and C. meyeri (Rosaceae), *Podosphaera clandestina* var. *clandestina* (Wallr.: Fr.) Lév. – on living leaves of C. meyeri (Rosaceae), *P. leucotricha* (Ellis & Everh) E. S. Salmon – on living leaves of M. sylvestris (Rosaceae), *Polystigma rubrum* (Pers.) DC. (Anamorph *Polystigmina rubra* (Pers.) Sacc.) – on living leaves of P. divaricata (Rosaceae), *Pseudovalsa umbonata* (Tul. & C. Tul.) Sacc. (Anamorph *Coryneum depressum* J.C. Schmidt) – on bark of dead branches of Q. petraea (Fagaceae), *Rosellinia conglobata* (Fr.) Sacc. – on wood of dead branches of U. minor subsp. minor (Ulmaceae), *Stegonsporium mori* (Nomura) Sacc. & Trott. – on bark of dead branches of M. alba (Moraceae), *Stigmina carpophila* (Lév.) M.B. Ellis – on living leaves of P. mahaleb (Rosaceae), *Strickeria obducens* f. *obducens* (Fr.) G. Winter – on wood of dead branches of R. canina (Rosaceae), *Taphrina pruni* Tul. – on living fruits of P. spinosa subsp. dasyphylla (Rosaceae), *Valsa ceratosperma* (Tode) Maire (Anamorph *Cytospora rosarum* Grev.) – on bark of dead branches of R. canina (Rosaceae), *V. mali* Miyabe & G. Yamada (Anamorph *Cytospora mali* Grove) – on bark of dead branches of M. domestica (Rosaceae), *V. sordida* Nitschke (Anamorph *Cytospora chrysosperma* (Pers.) Fr.) – on bark of dead branches of P. alba (Salicaceae), *Venturia inaequalis* (Cooke) G. Winter (=*Fusicladium dendriticum* (Wallr.) Fuckel) – on living leaves of M. domestica (Rosaceae); **Basidiomycota:** *Gymnosporangium confusum* Plowr. – on living leaves of C. orientalis var. orientalis (Rosaceae), *G. fusisporum* E. Fisch. – on living leaves of C. nummularia (Rosaceae), *Phragmidium mucronatum* (Pers.) Schltdl. – on living leaves of R. canina (Rosaceae), *Puccinia coronifera* Kleb. – on living leaves of R. catarthica (Rhamnaceae), *P. jasmini* DC. – on living leaves of J. fruticans (Oleaceae).

Founded microfungi are in consort relationships with 33 host-plants species from 20 genera of 11 families. Most of the fungi diversity registered on members of Rosaceae (35 species) and Rhamnaceae (12). On members of Salicaceae inhabit eight species, on Moraceae five and on Fagaceae, Elaeagnaceae and Oleaceae by 3-4. Fabaceae, Tamaricaceae, Juglandaceae, Caprifoliaceae and Plumbaginaceae families represented by 1-2 species. The ratio of host-plant to microfungi is 1:2.2 generally. This ratio varies from 1:1 to 1:6.

Many plants serve as a substrate for several micromycetes species. Such as, on Rhamnus petiolaris was observed the development of *Acremoniula rhamni*, *A. uniseptata*, *Aposphaeria allantella*, *Cucurbitaria rhamni*, *Fusarium oxysporum*, *Hendersonia sarmentorum* etc., on Pyrus elaeagnifolia subsp. elaeagnifolia – *Aposphaeria collabens*, *Camarosporium karstenii*, *Eutypa lata*, *Eutypella quaternata*, *Lophiostoma compressum*, on Crataegus aronia var. aronia – *Amphisphaeria vibratilis*, *Pleospora herbarum*, on Elaeagnus angustifolia – *Camarosporium elaeagni*, *Coniothyrium montagnei*, *Cytospora elaeagni* and so on. Some microfungi species were seen on different host species of the same genera and on hosts from different families and genera. For example; *Aposphaeria allantella* registered

on wood of dead branches of Ulmus minor subsp. minor (Ulmaceae) and Rhamnus petiolaris (Rhamnaceae), *Eutypa lata* – on dead wood of Pyrus elaeagnifolia subsp. elaeagnifolia (Rosaceae) and R. petiolaris (Rhamnaceae).

In some cases, observed living together of two or three species of fungi on the same substrate. For example; *Acremoniula rhamni* was founded developing together with *A. uniseptata* on wood of Rhamnus petiolaris, *Hendersonia vagans* – with *Melanomma pulvis-pyrius* on wood of Morus alba, *Lewia scrophulariae* – with *Mycosphaerella maculiformis* – on fallen leaves of Populus alba. In addition to this, developments of microfungi, which belong to same genus or different genera, but situated on the same substrate next to one another and have a definite border, are found out. For instance; *L. scrophulariae* and *M. maculiformis* developed together without getting in each other. Sometimes especially members of Hyphomycetes species may develop on the same substrate in a way that colonies are mixed with one another, such as *A. rhamni* and *A. uniseptata*.

The *Manoharachariella elsadii* (Selçuk, Ekici, 2014) *Acremoniula rhamni* (Selçuk et al., 2015) and *A. uniseptata* (Hüseyin et al., 2015) described as a new.

From total 74 species of microfungi 54 (73%) are saprobic and the remaining 20 species (23%) are pathogens or parasites. But, the effect of parasites and pathogens on forest situation are imperceptible nearly, except *Puccinia jasmini.* The species of *Cytospora, Erysiphe, Gymnosporangium, Phragmidium, Phyllactinia, Podosphaera, Marssonina, Mycosphaerella* and *Venturia* (in anamorphic stage), *Puccinia* and *Taphrina* genera are most important parasites and pathogens. Saprobic micromycetes represented by *Acremoniula*, *Aposphaeria*, *Camarosporium*, *Cladosporium*, *Coniothyrium*, *Eutypa*, *Eutypella*, *Hendersonia*, *Leptosphaeria*, *Melanomma*, *Melanconium*, *Phoma*, *Strickeria* and other genera species.

When micromycetous mycobiota of the study area analyzed in terms of trophic structure: 23 (31.1%) species are phyllotrophs, 25 (33.8%) species – xylotrophs, 24 (29.7%) species – lignotrophs and 4 species (5.4%) – carpotrophs.

Thirty-nine species of registered microfungi are coloured spores. Such as species of *Amphisphaeria*, *Camarosporium*, *Hendersonia*, *Lophiostoma*, *Manoharachariella*, *Rosellinia*, *Strickeri* genera etc. For example; *Amphisphaeria vibratilis*, *Camarosporium passerini*, *Coniothyrium montagnei, Hendersonia acantholimonis, Lophiostoma compressum, Manoharachariella elsadii, Rosellinia conglobata, Strickeria obducens* f. *obducens.* They are mainly in the southern and south-eastern slopes occur. On the northern and north-western slopes, as well as shaded habitats occur mainly microfungi with colourless spores. These are species of the genera *Aposphaeria*, *Cytospora*, *Eutypa*, *Eutypella*, *Mycosphaerella*, *Phoma* etc. For instance; *Aposphaeria protea, Cytospora salicis, Eutypella quaternata, Leptosphaeria castagnei, Mycosphaerella populi, Phoma elaeagnella, P. aculeorum, Taphrina pruni, Valsa sordida*.

ПРЕДВАРИТЕЛЬНЫЕ ИТОГИ ИЗУЧЕНИЯ ОБЪЁМНЫХ ПОКАЗАТЕЛЕЙ ГНИЛЕВОГО ПОРАЖЕНИЯ СТАРОВОЗРАСТНЫХ ДУБОВЫХ ДРЕВОСТОЕВ ТЕЛЛЕРМАНОВСКОГО ОПЫТНОГО ЛЕСНИЧЕСТВА ИНСТИТУТА ЛЕСОВЕДЕНИЯ РАН

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PRELIMINARY RESULTS OF STUDY OF DECAY VOLUMETRIC PARAMETERS IN THE OLD-GROWTH OAK STANDS IN THE TELLERMAN EXPERIMENTAL FOREST DISTRICT OF THE FOREST SCIENCE INSTITUTE OF RAS

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The analysis of the qualitative composition of the liquid timber and estimation of volume trees with decay in the overmature forest with a predominance of English oak. The analysis shows that at the age of 230 years old tree stand lost biological stability, it transformed into a stand without the participation in the composition of English oak. Output of industrial timber is reduced by more than 2 times and reduced its quality.This article suggests to prevent from dead-ripe stage of oak stands above the age of natural maturity. Subsequently, it is necessary to create an afforestation with English oak after cutting.