Мікологія, ліхенологія, альгологія, бріологія

First data about fungal diversity of the "Trekhizbenskyi Step" division of the Luhansk Nature Reserve

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ОРДИНЕЦЬ О., АКУЛОВ О., ХЕЛЛЕМАН С. (2013). **Перші відомості про різноманіття грибів відділення «Трьохізбенський степ» Луганського природного заповідника.** *Чорноморськ. бот. журн.*, **9** (1): 57-83.

Сто п'ятдесят видів грибів були виявлені нами на території відділення «Трьохізбенський степ» Луганського природного заповідника. З них 52 види є представниками відділу Ascomycota і 98 – Basidiomycota. Всі види зареєстровані на території заповідника вперше. Одинадцять видів вперше виявлені в Україні. Знахідки *Perrotia* cf. *succina* (W. Phillips) Dennis та *Streptotinia caulophylli* M.E. Elliott є новими для території Європи. *Phaeosphaeria sp*. зібрана на *Chamaecytisus ruthenicus* (Fisch. ex Vorosch.) Klask., вірогідно є новим для науки видом. Для всіх таксономічно значущих знахідок наведені детальні морфологічні описи та ілюстрації.
Ключові слова: Ascomycota, Basidiomycota, Perrotia, Phaeosphaeria, Streptotinia, різноманіття, поширення, нові знахідки, піщаний степ, Україна

ORDYNETS O., AKULOV O., HELLEMAN S. (2013). **First data about fungal diversity of the "Trekhizbenskyi Step" division of the Luhansk Nature Reserve.** *Chornomors`k bot. z.*, **9** (1): 57-83.

One hundred and fifty fungal species were revealed by us in the "Trekhizbenskyi Step" division of the Luhansk Nature Reserve. Of them, 52 species are those belonging to *Ascomycota* and 98 to *Basidiomycota*. All the species are reported from the research area for the first time. Eleven species are recorded in Ukraine for the first time. The records of *Perrotia* cf. *succina* (W. Phillips) Dennis and *Streptotinia caulophylli* M.E. Elliott are new to Europe. *Phaeosphaeria sp*. collected from *Chamaecytisus ruthenicus* (Fisch. ex Vorosch.) Klask. is supposed to be a new species. Detailed morphological descriptions and illustrations are provided both for taxonomically significant records and the species that are firstly revealed in Ukraine.
Key words: Ascomycota, Basidiomycota, Perrotia, Phaeosphaeria, Streptotinia, diversity, distribution, new records, sandy steppe, Ukraine

ОРДЫНЕЦ А., АКУЛОВ А., ХЕЛЛЕМАН С. (2013). **Первые сведения о разнообразии грибов отделения «Трехизбенская степь» Луганского природного заповедника.** *Черноморск. бот. журн.*, **9** (1): 57-83.

Сто пятьдесят видов грибов были обнаружены нами на территории отделения «Трехизбенская степь» Луганского природного заповедника. Из них 52 вида являются представителями отдела Ascomycota и 98 – Basidiomycota. Все виды зарегистрированы на территории заповедника впервые. Одиннадцать видов впервые обнаружены в Украине. Найденные *Perrotia* cf. *succina* (W. Phillips) Dennis и *Streptotinia caulophylli* ME Elliott являются новыми для территории Европы. *Phaeosphaeria sp*., собранная на *Chamaecytisus ruthenicus* (Fisch. ex Vorosch.) Klask., вероятно является новым для науки видом. Для всех таксономически значимых находок приведены подробные морфологические описания и иллюстрации.
Ключевые слова: Ascomycota, Basidiomycota, Perrotia, Phaeosphaeria, Streptotinia, разнообразие, распространение, нове находки, пещаная степь, Украина

Чорноморськ. бот. ж., **9** (1): 57-83.

Introduction

In Ukraine, about 40% of the territory (i.e. about 241451 square kilometers) belongs to the steppe natural zone. Despite being an arid region, this area has a great potential for maintaining and conservation of biodiversity. Unfortunately, at present this potential is quite poorly implemented. The reason for this is that almost all the steppe lands are severely managed. Near-natural ecosystems remained only at small patches of the territory, which are inaccessible or of little use for agricultural or sylvicultural human activity [TKACHENKO et al., 1987; VITER, 2010]. At least some of these sites have already rightfully received the status as conservation areas, having become a nature reserve or national park. However, the system of the nature conservation areas is still very poorly developed. The protected areas are very few, of rather small size (that is insufficient for conservation purposes) and highly isolated from each other. Thus, the development of the network of nature conservation areas in the Steppe zone of Ukraine is of actual value.

Taking into account the stated above, the area called "Trekhizbenskyi Step" (hereinafter abbreviated as TS) is worth of consideration. It is a fourth and the youngest division of the Luhansk Nature Reserve of the Ukrainian Academy of Sciences. It was created in 2008 by the Decree of the President of Ukraine №1169. With its surface area of 3281 ha, TS is the largest division of the Lunansk Nature Reserve. Moreover, with the division establishment, the total area of the Luhansk Nature Reserve was increased more than twice and is now covering 5403 ha. TS is located in the Luhansk administrative region which is situated in Eastern Ukraine [SOVA et al., 2008].

The uniqueness of the TS is in that it is one of the few large areas in the Ukrainian Steppe zone which is comparatively weakly disturbed by human activities. In contrast to common practice, the territory was not transformed into artificial forest stands of *Pinus sylvestris* L. Instead, the original vegetation was maintained. It is presented by sandy steppe interspersed with arboreal and shrubby communities. Thus the TS area can serve as a model one for studying the biota that develops in very specific environmental conditions of the Steppe zone.

The fungal diversity of Ukraine is still insufficiently and unevenly investigated. As to the TS territory, there is an exclusive situation. Untill recently there were no any literature data on the fungal diversity of this important area. To date, only information on 51 species of lichenized and lichenicolous *Ascomycota* Bold ex Caval.-Sm. have been reported [RUSINA et al., 2010]. With this work we make further contribution to the fungal diversity investigation in TS. The study continues the research of fungal diversity in the ecosystems located in the middle part of the Siverskyi Donets River basin [ORDYNETS, 2009; ORDYNETS, AKULOV, 2011; ORDYNETS et al., 2011].

Description of the study area

The TS is located in the Luhansk administrative region, Slovianoserbsk district, to the North of Trehizbenka and Kriakivka villages (48°48' N, 38°55' E) (fig. 1). As to geomorphology, the TS territory is a part of the East European Plain, namely of the Prydniprovska lowland. The reserve occupies the massively developed Siverskyi Donets River sandy terrace. The relief is flat to wavy, with local elevations. The altitude ranges from 50 to 120 m a.s.l. The massive sandy accumulations are covered by the slight turfy sandy-loam or sandy soils. In the depressions, under more humid conditions, the richer soils have been formed [BONDARCHUK, 1959; SOVA et al., 2008].

The climate of the area is moderately continental. The average annual temperature is 7-8 °C. The average annual precipitation is about 400 mm, while the evaporation is 580-650 mm [POPOV et al., 1968].

As to the mycofloristical zoning of Ukraine, the territory belongs to the Starobilsk gramineous-meadow Steppe region [HELIUTA, 1989].

The landscape of the TS territory is of the forest-steppe type. The well preserved sandy steppe communities occupy the highest places and are formed by the psammophytic grasses and herbs. The sandy steppe is interspersed with numerous focal woody and shrubby communities. They occupy the depressions of the sandy terrace where the soil richness and water supply are sufficient [SOVA et al., 2008]. Among these communities, poplar groves are the most frequent. They are composed mainly of *Populus nigra* L., but *P. alba* L. and *P. tremula* L. trees also occur there. As these groves are rather dry, the herbaceous layer is poorly developed there. However, understory of *Crataegus* spp. may be observed. In the deeper depressions of the sandy terrace the birch-polar groves with *Betula pendula* Roth, *B. pubescens* Ehrh. and *Populus tremula* L. are present. The hygrophilous *Carex nigra* (L.) Reichard, as well as *Polygonum* spp., *Tussilago farfara* L., *Scrophularia nodosa* L., and *Prunella vulgaris* L. form their rich herbaceous layer [POPOVYCH, 1990; SOVA et al., 2008].

The willow shrubby communities of *Salix acutifolia* Willd. and *Salix rosmarinifolia* L. are numerous as well. They form large massifs with rather specific environmental conditions and thus enhance the habitat diversity of the area. Their dense herbaceous layer is composed mostly of grasses such as *Calamagrostis epigeios* (L.) Roth, *Poa angustifolia* L., and *Melica trannsilvanica* Schur [SOVA et al., 2008].

Besides the deciduous groves and shrubby communities, the young focal coniferous forest of *Pinus sylvestris* L. is occasionally present at the TS territory as well [SOVA et al., 2008].

In addition to the TS reserve's territory per se, the short characterization of its buffer zone should also be given. This zone embraces the continuous pine stands and windbreaks of *Robinia pseudoacacia* L.on the sandy terrace as well forests in the Syverskyi Donets floodplain (fig. 1). The latter are oak forests (composed of *Quercus robur* L., *Fraxinus excelsior* L., *Acer campestre* L., and *Ulmus laevis* Pall.), and poplar-willow forests (with *Populus alba* L., *Salix alba* L., *Salix fragilis* L. and *Acer negundo* L.) [POPOVYCH, 1990].

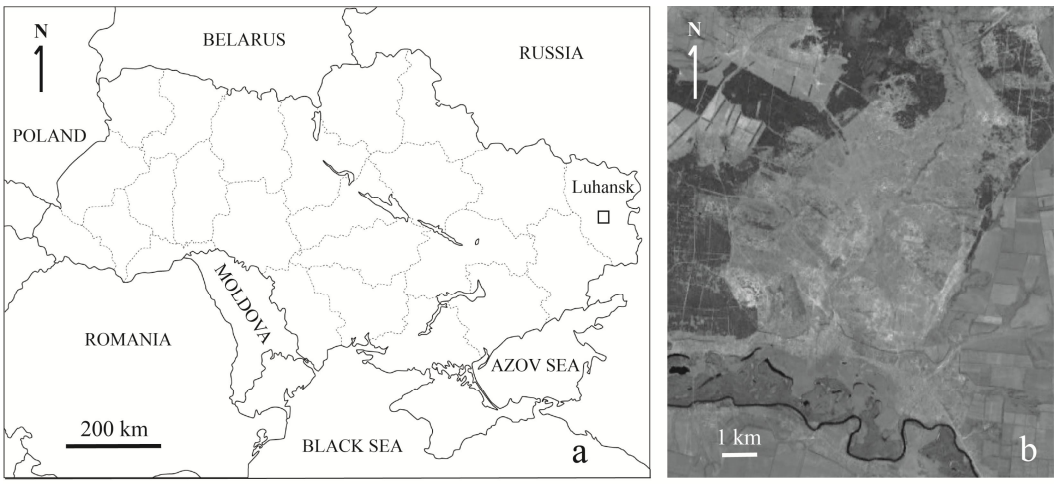

Fig. 1. Area of investigation: a – location on the map of Ukraine (shown with an asterisk within Luhansk administrative region), b – sparce trees and shrubs among sandy steppe – typical landscape of the "Trekhizbenskyi Step" area.

Materials and methods

The field research was carried by us in May 2011. In addition to the TS territory proper, the reserve's buffer zone was surveyed as well. The latter is an inalienable part of the landscape, and a pool of the fungal diversity for the reserve. During the field studies, the important morphological and ecological features of the records were noted.

The micromorphological investigation of the specimens was performed using Zeiss Primo Star 5 light microscope. The specimens were examined in 5% aqueous potassium

hydroxide solution, Melzer's reagent, Lugol reagent and 1% Congo red solution in concentrated ammonia [KIRK et al., 2008].

For identification of the specimens a number of monographs and articles on systematic and biodiversity of fungi was used [DENNIS, 1956; WEHMEYER, 1973; GRELET, 1979; SIVANESAN, 1984; SPIELMAN, 1985; BARAL AND KRIEGLSTEINER, 1985; RAPPAZ, 1987; RAPPAZ, 1987; HUHTINEN, 1989; RYVARDEN AND GILBERTSON, 1993, 1994; ROBERTS, 1994A,B; ELLIS AND ELLIS, 1997; HANSEN AND KNUDSEN, 2000; RAITVIIR, 2004; BERNICCHIA AND GORJÓN, 2010; YURCHENKO, 2010].

The nomenclature of the species follows Index Fungorum database (http://www.indexfungorum.org, accessed 17 December, 2011). Their systematic characterization is in accordance with Kirk et al. [2008]. The names of the substrata-forming plant species are as in Mosyakin and Fedoronchuk [1999], so the authors of these plant names are skipped in the text below. The possibility of the species occurrence on Ukraine's territory was checked using the "Fungi of Ukraine" database [ANDRIANOVA et al., 2006], the annotated checklist of the aphyllophoroid fungi of Ukraine[AKULOV et al., 2003a] and other recently puplished articles and monographs devoted to biodiversity of Ukrainian fungi [DUDKA et al., 2009].

The specimens collected are deposited at the mycological herbarium (fungarium) of the Department of Mycology and Plant Resistance of V.N. Karazin Kharkiv National University– CWU (Myc).

Results and discussion

The identified taxa are listed in systematic order and among the taxa of the same range in alphabetical order. For each species, data on the habitat occupied, features of the substrata colonized, and accession numbers in the CWU (Myc) fungarium were given. Detailed morphological descriptions and images were provided for both taxonomically significant records and the species that are firstly revealed in Ukraine.

Ascomycota Bold ex Caval.-Sm.

Pezizomycotina O.E. Erikss. et Winka

Eurotiomycetes O.E. Erikss. et Winka

Chaetothyriomycetidae Doweld

Pyrenulales Finkex D. Hawksw. et O.E.Erikss.

Massariaceae Nitschke

AGLAOSPORA profusa (Fr.) De Not.

Windbreak in the reserve's buffer zone, on thin dead branches of *Robinia pseudoacacia*, CWU (Myc) AS 4717.

Leotiomycetes ErikssonetWinka

Helotiales Nannf.

Helotiaceae Rehm.

ASCOCORYNE sarcoides (Jacq.) J.W. Groves et D.E. Wilson in the anamorphic stage ***Coryne dubia*** (Pers.) Gray

Sandy steppe, on fallen decorticated branches of *Populus nigra*, CWU (Myc) AS 4412.

CYATHICULA coronata (Bull.) De Not.

Sandy steppe, on overvintered stems of undetermined herbaceous plant, CWU (Myc) AS 4415.

CYATHICULA cyathoidea (Bull.) Thüm.

Sandy steppe, on overvintered stems of undetermined herbaceous plant, CWU (Myc) AS 4404. Floodplain parvifoliate forest in the reserve's buffer zone, on overvintered stems of *Panthernocissus sp*., CWU (Myc) AS 4405.

Hyaloscyphaceae Nannf.

CISTELLA grevillei (Berk.) Raitv. (fig. 2,8)

Windbreak in the reserve's buffer zone, on overwintered stems of *Chelidonium majus* together with *Streptotinia* cf. *caulophylli* M.E. Elliott in the anamorphic stage *Streptobotrys* cf. *caulophylli* Hennebert., CWU (Myc) AS 4806; on overwintered stems of *Chelidonium majus* together with *Glomerella cingulata* (Stoneman) Spauld. et H. Schrenk in the anamorphic stage *Colletotrichum gloeosporioides* (Penz.) Sacc., CWU (Myc) AS 4807.

Apothecia superficial, scattered to gregarious, sessile. Disk up to 1 mm in diameter when fresh, whitish to pale yellowish. Receptacle cup-shaped, concolorous with the hymenium, covered at the flanks and margin with short whitish hairs. Hairs cylindrical to subclavate, 0–2-septate, hyaline, 10–35 × 3,5–6 µm, apically finely spine, smooth below. Asci arising from croziers, cylindrical to cylindric-clavate, 8-spored, 31–42 (–45) × 4–5,5 (–6) µm, apical pore blue in Melzer reagent. Spores ellipsoid-fusoid, straight, hyaline, aseptate, 6,9–10,1 (–11) × 1,5–1,9 µm. Paraphyses cylindric-lanceolate, pointed at apex, on average 2,5 µm in width.

This species colonise dead stems of different herbaceous plants in Europe, Asia and North America. In Ukraine it is registered for the first time.

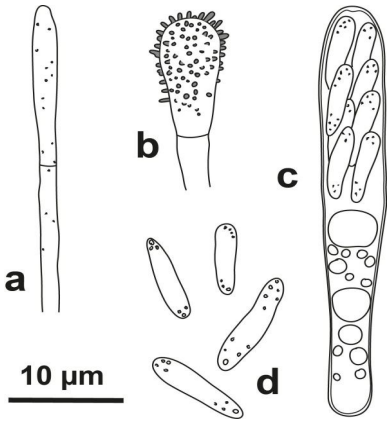

Fig. 2. *Cistella grevillei*, CWU (Myc) AS 4807: a – paraphyse, b – marginal hears of apothecium, c – ascus, d – ascospores.

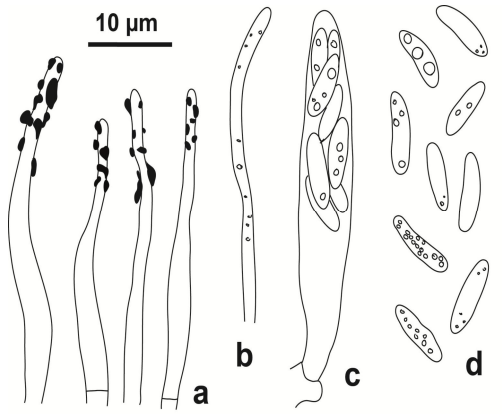

Fig. 3. *Hyaloscypha aureliella*, CWU (Myc) AS 4403: a – marginal hears of apothecium, b – paraphyse, c – ascus, d – ascospores.

HYALOSCYPHA aureliella (Nyl.) Huhtinen together with anamorph ***Cheiromycella microscopica*** (P. Karst.) S. Hughes. (fig. 3,10).

Sandy steppe, on the fallen decorticated trunks of *Pinus sylvestris*, CWU (Myc) AS 4403, 4406, 4729.Continuous mature pine stands in the reserve's buffer zone, on fallen trunk of *Pinus sylvestris* together with *Botryobasidium curtisii* Hallenb. in the anamorphous stage *Haplotrichum curtisii* (Berk.) Hol.-Jech. and *Hyphodontia pallidula* (Bres.) J. Erikss., CWU (Myc) AS 4788; on fallen trunk of *Pinus sylvestris* and basidiomata of *Hyphodontia pallidula* (Bres.) J. Erikss., CWU (Myc) AS 4805.

Apothecia gregarious, superficial, whitish to light yellowish, up to 1.2 µm in diameter when fresh and 200-500 µm in diameter when dry, cupulate, with gradually tapering base. Disc shallow to plano-convex, bordered by dense hears that rise above the level of the hymenium. Hairs white to yellowish, densely covered by brownish resinous exudate, 25–60 (–110) × 2,5–5,2 (–7,8) µm, narrowly conical, slightly flexulose, blunt, mostly aseptate. The resinous exudate is persistent in water, but totally dissolved in KOH, Melzer's and Lugol reagents. Asci arising from croziers, 34–54 (–63) × 5–8 (–8,4) µm when fresh in water and 32–48 (–65) × 5,0–6,4 (–6,8) µm in Melzer, eight-spored, cylindrical-clavate with a slightly conical apex, amyloid when fresh. Paraphyses filiform, unpigmented, branched dichotomously. Ascospores 6,5–10 × 2–3 (–3,2) µm when fresh in water, elliptic to oblong elliptic, with rounded and slightly tapered apices, aseptate, irregularly biseriate, situated in the apper part of asci.

This species obligately develops on decorticated fallen trunks and larger branches of conifers (especially *Pinus*). It is the most widespread and common *Hyaloscypha* species, but till now it has not been registered in Ukraine.

H. daedaleae Velen. (fig. 7)

Floodplain oak forest in the reserve's buffer zone, on fallen decorticated branches of *Quercus robur*, CWU (Myc) AS 4411.

Apothecia single to gregarious, superficial, watery grayish to yellowish-brown, up to 1 μm in diameter when fresh and 200-700 μm in diameter when dry, cupulate, than often clearly undulate-crenulate, from sessile to shortly stipitate. Disc shallow to plano-convex, bordered by copious zone of short hairs, which rise only slightly above the level of the hymenium. Hairs extremely dense, snow-white to yellowish, 25–35 (–46) × 2–3 (–4) μm, narrowly conical to conical, straight to undulating, mostly aseptate, loosely granulated in the apical and central parts. Asci arising from croziers, 34–53 (–64) × 4,8–6,5 μm when fresh in water and 29–49 (–53) × 4,3–6,3 (–6,8) μm in Melzer, eight-spored, cylindrical-clavate with a slightly conical apex, amyloid when fresh. Paraphyses cylindrical to slightly clavate, unpigmented, branched dichotomously. Ascospores 5–9 (–10) × 1,8–3 (–3,8) μm when fresh in water, mostly cuneiform-subfusiform, aseptate, biseriate, situated obliquely iside the asci.

This species utill now is known only from Europe. It obligately develops on the decorticated wood of *Quercus*, and rarely on the oak inhabiting fungi *Daedalea quercina* (L.) Pers. and *Hymenochaete rubiginosa* (Dicks.) Lév. *Hyaloscypha daedaleae* is registered in Ukraine for the first time.

PERROTIA cf. succina (W. Phillips) Dennis (fig. 4, 13)

Sandy steppe, on the bark of dead skeletal branches of *Salix acutifolia*, CWU (Myc) AS 4408.

Apothecia scattered, cupulate on a short cylindrical base, 1–2,5 mm up to 5 mm in diameter in the original diagnose, erumpent from the bark of the host plant, at first globose, then expanded or nearly plane. Hymenium of fresh apothecia is light colored with a pinkish tinge, but in dry samples turns yellow.

Outer side of apothecia clothed with long undulating hairs 130–170 μm long, cylindrical, obtuse, slightly narrowed towards apex, (2,3–) 2,5–3,5 (–4,7) μm wide in the middle part, thin-walled in the upper part, thick-walled with 1,7 μm thick septae at the base. Each hair bears a copious, coarse incrustation of brown granules which dissolve partly in 5% KOH after boiling, but not so in 3% ammonia. Encrusting granules are more abundant at the base and in the middle part of the hairs, and more scarce at the tips; therefore the shade of hairs varied from brown at the base through ochraceous tints to yellow at the apex. After dissolving of incrustation the hair walls remain unpigmented. Ectal Excipulum is made up of a gelatinized textura angularis / globulosa orientated in a high angle to the outside at the base to a moderate angle at the margin. Medullary excipulum is made of a loose textura intricate in the upper part and in the lower part of a gelatinized textura intricata that is turning lilac in IKI after KOH pre-treatment.

Asci cylindric-clavate, 8-spored, (58–) 64–75 × 6,7–7,7 μm alive in water, 52–66 × 6,5–7 (–8) μm in 3% ammonia, apex rounded, there is no apical ring present nor an apical dome, and the apex remains unstained in IKI and Melzer after KOH pretreatment, asci arising from open croziers. Paraphyses cylindrical, obtuse, 2 μm thick, branched near the base, containing sparse small yellow pigmented guttules when seen in water or 5% KOH. Ascospores mostly uniseriate, elliptical to ovoid, aseptate, (7,0) 8–12 (–12,5) × 3–4 (4,5) μm in water, without any visible contents.

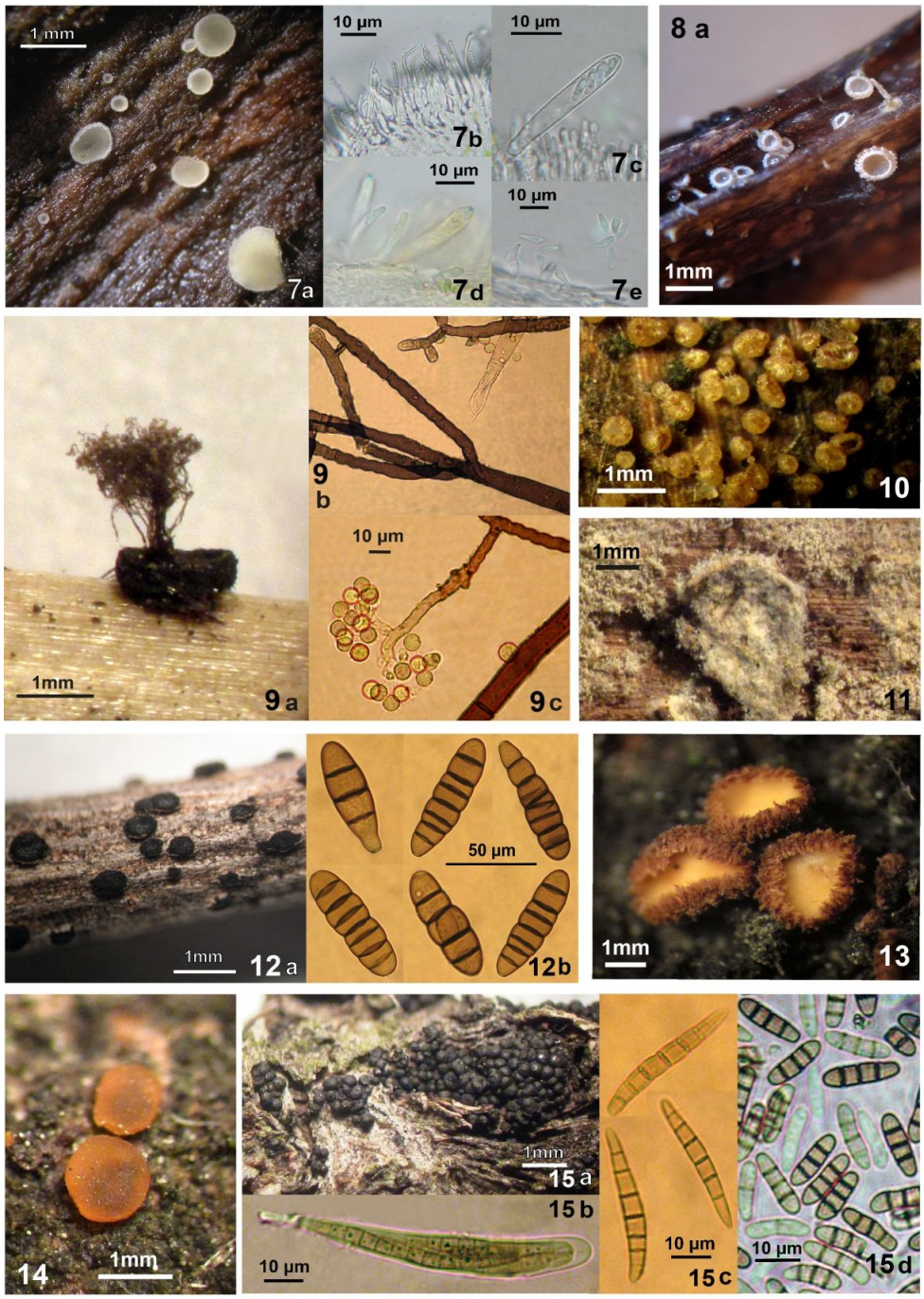

Fig. 7. ***Hyaloscypha daedaleae*****, CWU (Myc) AS 4411: a – macroscopic view of ascomata, b – marginal hears of apothecium, c – amyloid reaction at apices of asci, d – ascus, e – ascospores.**
Fig. 8. ***Cistella grevillei*****, CWU (Myc) AS 4807: a – macroscopic view of ascomata.**
Fig. 9. ***Streptotinia caulophylli*** **in the anamorphous stage** ***Streptobotrys caulophylli*****, CWU (Myc) AS 4806: a – macroscopic view of conidioma and sclerotium, b – branching conidiophore, c – terminal conidiogenous branch and conidia.**
Fig. 10. ***Hyaloscypha aureliella*****, CWU (Myc) AS 4403: macroscopic view of ascomata.**
Fig. 11. ***Engyodontium album*****, CWU (Myc) AS 5987: macroscopic view of conidioma soc** ***Haplotrichum capitatum*****.**
Fig. 12. ***Stigmina pulvinata*****, CWU (Myc) AS 4768: a – macroscopic view of conidiomata, b – conidia.**
Fig. 13. ***Perrotia*** **cf.** ***succina*****, CWU (Myc) AS 4408: macroscopic view of ascomata.**
Fig. 14. ***Orbilia aurantiorubra*****, CWU (Myc) AS 4407: macroscopic view of ascomata.**
Fig. 15. ***Phaeosphaeria sp.*** **together with anamorph** ***Hendersonia*** **sp., CWU (Myc) AS 4777: a – macroscopic view of ascomata, b – ascus, c – ascospores, d – conidia.**

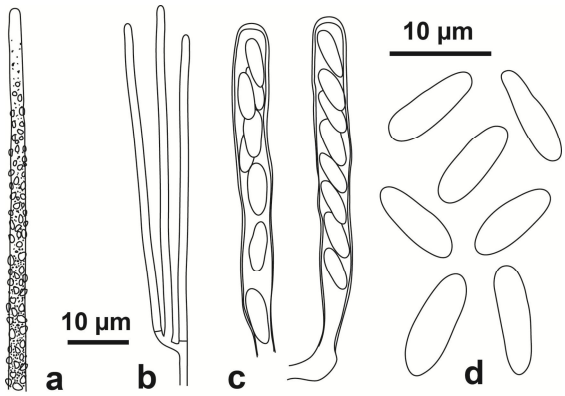

Fig. 4. *Perrotia* cf. *succina*, CWU (Myc) AS 4408: a – marginal hair of apothecium, b – paraphyses, c – asci, d – ascospores.

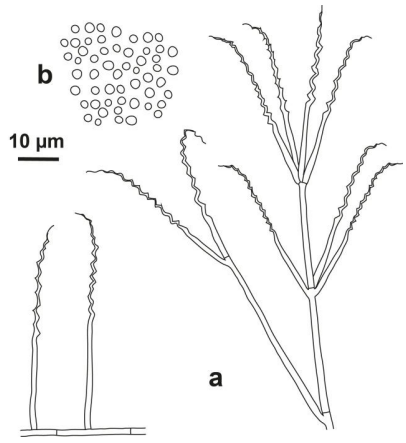

Fig. 5. *Engyodontium album*, CWU (Myc) AS 5987: a – conidiophores, b – conidia.

Literature sources indicate somewhat different data on the size of asci and ascospores in *Perrotia succina*. Thus, according to Phillips [PHILLIPS, 1877], ascospores 10–14 × 3–5 µm, he did not give any ascus measurements, but judging from his linedrawings in ratio to the spores inside, they should be approximately 85 µm long; Seaver [SEAVER, 1951], in his description of *Lachnella succina* (Phill.) Seaver gives the measurements up to 80 × 10–12 µm for asci and 10–14 µm for the spores; according Dennis [DENNIS, 1963] asci are up to 110 × 10 µm, ascospores 10–12 × 3–4 µm. The collection from Ukraine examined by us seems to be a little premature, and characterized by a smaller size of these structures, particularly the ascus size. But it should be noted that paraphyses are exceeding the premature asci with 15 µm so in full turgor the asci would be at least 15 µm longer. Asci have strongly elastic walls and may expand over 20% in length when reaching full turgor before ejecting their spores [BARAL, 1992].

Untill now *Perrotia succina* is known from different woody substrates from USA (California), Australia, India and South Africa, but has not been registered in Europe. However, there is no other known species of *Perrotia* with these character combinations. Considering the smaller asci and spores we cannot be sure whether we evidence a geographical variety, a new species, or only an unripe collection. For a more definite answer additional mature specimens of this species will be required from Europe, as well as re-examination of samplesof *Perrotia succina* in old collections.

Dermateaceae Fr.

CALLORIANEGLECTA (Lib.) B. Heinin the anamorphous stage **CYLINDROCOLLAURTICAE** (Pers.) Bonord.

Floodplain parvifoliate forest in the reserve's buffer zone, on overwintered stems of *Urticadioica*, CWU (Myc) AS 4400.

MOLLISIA rosae (Pers.) P. Karst. (= *Tapezia rosae* (Pers.) Fuckel)

Sandy steppe, on dead stems of *Rosa sp*., CWU (Myc) AS 4409, 4410.

Sclerotiniaceae Whetzel

STREPTOTINIA caulophylli M.E. Elliott in the anamorphous stage **STREPTOBOTRYS caulophylli** Hennebert. (fig. 9)

Windbreak in the reserve's buffer zone, on overwintered stems of *Chelidonium majus* together with *Cistella grevillei* (Berk.) Raitv., CWU (Myc) AS 4806.

Sclerotia black, characteristically flattened, loaf shaped or hemisphaerical, sometimes oblong, 500–1000 × 400–700 µm, firmly attached to the substrate, with gelatinous matrix. Conidiophores erect, single or in dense groups, up to 700 µm tall, with large loose conidial heads. Stipes brown, straight, cylindrical, septate, with a slightly swollen basal cell,

13-15 μm wide near the base. Stipe at about half of the height alternately branched. Side branches and branchlets streptoform (i.e. twisted tightly), brown, 6,9–7,9 (–11,2) μm wide. Terminal conidiogenous cells lighter and densely branched, producing 2 to 6 simultaneous conidial buds on short pedicels, collapsing at maturity, leaving the branchlets with terminal perpendicular stumps which do not proliferate. Conidia holoblastic, regularly globose, subhyaline to brown, minutely echinulate, (7,1–) 7,4–8,8 (–10) –15 μm in diameter, bearing an inconspicuous frill at the basal septum.

Streptobotrys caulophylli was described from *Berberidaceae* representative *Caulophyllum thalictroides* (L.) Michx. [ELLIOTT, 1962]. It is also known from representatives of *Ranunculaceae*: *Thalictrum polygamum* Muhl. [ELLIOTT, 1969], *Lamptocapnos spectabilis* (L.) Fukuhara and *Aquilegia vulgaris* L. [HONG et al., 2004].

One of the principal characteristics of *Streptotinia* is the *Botrytis*-like conidial state - *Streptobotrys* in which the conidiophores are streptoform. Whetzel [WHETZEL, 1945] collected *Botrytis* conidiophores with streptoform braches from numerous hosts, including *Papaveraceae* representatives *Glaucum flavum* Crantz and *Dicranostigma franchettianum* Fedde. Whetzel believed that his material included several undescribed species, and he even placed tentative specific names on some of the specimens. However, this work was not completed.

Elliott [ELLIOTT, 1969] found morphologically indistinguishable from *Streptobotrys caulophylli* species on *Sanguinaria canadensis* L. (*Papaveraceae*). She carried out series of experiments with cultures of *Streptobotrys* isolated from *Caulophyllum*, *Thalictrum* and *Sanguinaria*. Apothecia were regularly produced in culture after mating isolates from both *Caulophyllum* and *Thalictrum*, but never were produced for isolates from *Sanguinaria*. As a result, she could not get a definite answer whether the samples from *Sanguinaria* are really *Streptobotrys caulophylli* or it is the undescribed double-species. In this regard, our finding from *Chelidonium majus* L. (*Papaveraceae*) is of particular interest.

Streptotinia caulophylli M.E. Elliott is known from Canada, USA and Korea. In Europe before this species was not detected.

Helotiales incertae sedis

TRIMMATOSTROMA salicis Corda

Sandy steppe, on thin dead twigs of *Salix rosmarinifolia* still attached to the tree, CWU (Myc) AS 4765.

Rhytismatales M.E. Barr ex Minter

Rhytismataceae Chevall.

NAEMACYCLUS fimbriatus (Schwein.) DiCosmo, Peredo et Minter

Sandy steppe, on fallen cones of *Pinus sylvestris*, CWU (Myc) AS 4369.

PROPOLIS farinosa (Pers.) Fr.

Sandy steppe, on fallen decorticated trunk of *Populus nigra*, CWU (Myc) AS 4418; on fallen decorticated trunk of *Salix acutifolia*, CWU (Myc) AS 4395, 4401.

THERRYA fuckelii (Rehm) Kujala

Sandy steppe, on thin fallen branches of *Pinus sylvestris*, CWU (Myc) AS 4369, 4417.

Pezizomycetes O.E. Erikss. et Winka

Pezizales J. Schröt in Engler et Prantl

Morchellaceae Rchb.

MORCHELLA elata Fr.

Sandy steppe, on the ground between *Salix acutifolia* and *Populus nigra* trees, CWU (Myc) D 0009.

M. esculenta var. esculenta (L.) Pers.

Sandy steppe, on the ground between *Salix acutifolia* and *Populus nigra* trees, CWU (Myc) D 0010.

M. esculenta var. abietina (Leuba) Sacc. et Trotter

Sandy steppe, on the ground between *Pinus sylvestris* trees, CWU (Myc) D 0012.

Pezizaceae Dumort.

PEZIZA varia (Hedw.) Alb. et Schwein.

Sandy steppe, on the rotten wood of *Populus nigra*, immersed in the soil, CWU (Myc) AS 4815.

Sordariomycetes O.E. Erikss. et Winka

Hypocreomycetidae O. E. Erikss. et Winka

Hypocreales Lindau, in Engler et Prantl

Cordycipitaceae Kreiselex G.H. Sung, J.M. Sung, Hywel-Joneset Spatafora

ENGYODONTIUM album (Limber) de Hoog (fig. 5, 11)

Sandy steppe, on basidiomata of *Stereum hirsutum* (Willd.) Pers. on fallen trunk of *Betula pendula* soc *Botryobasidium candicans* J. Erikss.in the anamorphic stage *Haplotrichum capitatum* (Link) Link, CWU (Myc) 5987.

Mycelium on natural substrate thin, lanose to arachnoid, purely white. Conidiophores ascending, 2–4 μm wide, somewhat stiff, bearing conidiogenous cells both single and in whorls of 2–3 (–4). Conidiogenous cells consisting of an elongate to subcylindrical, tapering basal part, 10–27 × 1,3–2,0 μm, and a well developed rachis, up to 35 μm long and 1 μm wide, geniculate, denticulate; refined up to 0,5–0,7 μm and curved at tips after conidia liberation. Conidia hyaline, smooth-walled, globose to subglobose, sometimes with an apiculate base, 1,7–2,3 (–2,5) × 1,5–2,1 (–2,5) μm. Perfect state unknown.

Engyodontium album is known as widely distributed saprobe from different plant and animal tissues in Europe, Asia and North America. This species was described as contaminant of *Penicillium* cultures, so it's possible that it may be fungicolous [LIMBER, 1940]. Further confirmation of this is our finding *E. album* on fungi. In the territory of Ukraine it is registered for the first time.

LECANICILLIUM aphanocladii Zare et W. Gams

Continuous mature pine stands in the reserve's buffer zone, on basidiomata of *Serpula himantiodes* (Fr.) P. Karst. from wood of *Pinus sylvestris*, CWU (Myc) AS 4793, 4796.

Hypocreaceae DeNot.

HYPOMYCES aurantius (Pers.: Fr.) Tul**.** in the anamorphous stage **CLADOBOTRYUM varium** Nees

Sandy steppe, on basidiomata of *Trichaptumbiforme* (Fr.) Ryvarden from wood of *Betula pendula*, CWU (Myc) AS 4390; on basidiomata of *Auricularia mesenterica* (Dicks.) Fr. from fallen trunk of *Populus nigra*, CWU (Myc) AS 4799; on basidiomata of *Trametes trogii* Berk. from fallen trunk of *Populus nigra*, CWU (Myc) AS 4800; on detritus of *Salix acutifolia*, CWU (Myc) AS 4798. Continuous mature pine stands in the reserve's buffer zone, on basidiomata of *Tricholomopsis rutilans* (Shaeff.) Singer from wood of *Pinus sylvestris*, CWU (Myc) AS 4392; on basidiomata of *Dichomitus squalens* (P. Karst.) D.A. Reid from wood of *Pinus sylvestris*, CWU (Myc) AS 4393; on basidiomata of *Serpula himantioides* (Fr.) P. Karst.from wood of *Pinus sylvestris*, CWU (Myc) AS 4787, 4792 and 4794; on basidiomata of *Antrodia sp.* from wood of *Pinus sylvestris*, CWU (Myc) AS 4803.Floodplain parvifoliate forest in the reserve's buffer zone, on basidiomata of *Pleurotussp*. from wood of *Populusnigra*, CWU (Myc) AS 4391; on basidiomata of *Bjerkandera adusta* (Willd.) P. Karst. on fallen decorticated trunk of *Populus sp.* together with *Paecilomyces sp.*, CWU (Myc) AS 4801. Windbreak in the reserve's buffer zone, on basidiomata of *Irpex lacteus* (Fr.) Fr. from fallen branches of *Robinia pseudoacacia* L., CWU (Myc) AS 4802.

HYPOMYCES semitransluscens G.R.W. Arnold in the anamorphous stage **CLADOBOTRYUM fungicola** (G.R.W. Arnold) Rogerson et Samuels

Sandy steppe, on basidiomata of *Fomes fomentarius* (L.) Fr. from wood of *Populusnigra*, CWU (Myc) AS 4771.

SPHAEROSTILBELLA berkeleyana (Plowr. et Cooke) Samuels et Cand.

Sandy steppe, on basidiomata of *Stereum hirsutum* (Willd.) Pers. from fallen trunk of *Betula pendula*, CWU (Myc) AS 4785.

Nectriaceae Tul. et C. Tul.

APHANOCLADIUM album (Preuss.) W. Gams

Sandy steppe, on sporocarps of the myxomycete *Comatricha* cf. *nigra* (Pers. exJ.F. Gmel.) J. Schröt., CWU (Myc) AS 4787. Continuous mature pine stands in the reserve's buffer zone,on sporocarps of myxomycete (*Physarales*), CWU (Myc) AS 4795; on sporocarps of myxomycete (*Physarales*) together with *Botryobasidium candicans* J. Erikss.in the anamorphic stage *Haplotrichum capitatum* (Link) Link, CWU (Myc) AS 4797.

FUSARIUM oxysporum Schltdl.

Sandy steppe, on basidiomata of *Morchella esculenta* (L.) Pers. on the ground between *Populus nigra* trees, CWU (Myc) AS 4814.

COSMOSPORA episphaeria (Tode) Rossman et Samuels

Sandy steppe, on ascomata of *Diatrype stigma* (Pers.: Fr.) Fr. from fallen branches of *Betula pendula*, CWU (Myc) AS 4714.

Sordariomycetidae O.E. Erikss. et Winka

Diaporthales Nannf.

Melanconidaceae G. Winter

MELANCONIS stilbostoma (Fr.) Tul. et C. Tul. in the anamorphous stage **MELANCONIUM bicolor** (Nees) Fr.

Sandy steppe, on thin dead branches of *Betula pendula* still attached to the tree, CWU (Myc) AS 4682, 4713.

Pseudovalsaceae M.E. Barr

STIGMINA pulvinata (Kunze) M.B. Ellis (= *Coryneum pulvinatum* Kunze ex Link) (fig. 12)

Sandy steppe, on thin dead twigs of *Ulmus sp.* stillattached to the tree, CWU (Myc) AS 4768 and 4784.

Conidiomata abundant, blackish, pulvinate, up to 600 μm in diameter. Conidium mid brown, with (3) 5–7 transverse and occasionally 1–2 longitudinal or oblique septa, (48,5) 62,9–73,3 × (15,7) 19,7–20,9 μm.

Ellis [ELLIS, 1976] noted *Stigmina pulvinata* as a fairly common species, which colonizes *Ulmus* twigs in Europe. At the same time Sutton [SUTTON, 1975] makes critical revision of the collections in K that had been identified previously as *Coryneum pulvinatum*. He noted that all available for study European specimens of "*Coryneum pulvinatum*" is a mixture of different species. A single studied by him sample of this species collected from *Ulmus* (France, vicinities of Paris, 1840) really was *Stigmina compacta* (Sacc.) M.B. Ellis (= *Coryneum compactum* Sacc.). For this reason, there is no description of this species in Sutton`s summarizing monograph.

Stigmina pulvinata sensu Ellis is mentioned for Ukraine for the first time. Given the results of Sutton`s study, it should be noted that for an objective evaluation of the distribution of this species in Europe and the degree of its rarity, critical revision of all samples in various European collections is required.

Valsaceae Tul. et C. Tul.

DIAPORTHE inaequalis (Curr.) Nitschke

Sandy steppe, on dead branches of *Chamaecytisus ruthenicum*, CWU (Myc) AS 4770.

D. oncostoma (Duby) Fuckelin the anamorphous stage **PHOMOPSIS oncostoma** (Thüm.) Traverso

Windbreak in the reserve's buffer zone, on thin dead branches of *Robinia pseudoacacia* L., CWU (Myc) AS 4731.

PHOMOPSIS platanoidis (Cook) Died.

Windbreak in the reserve's buffer zone, on fallen decorticated trunk of *Acer negundo*, CWU (Myc) AS 4774.

VALSA ambiens subsp. ambiens (Pers.: Fr.) Fr. in the anamorphous stage **CYTOSPORA ambiens** (Pers.) Fr.

Sandy steppe, on thin dead branches of *Betula pendula* still attached to the tree, CWU (Myc) AS 4681.

VALSA sordida Nitschkein the anamorphous stage **CYTOSPORA chrysosperma** (Pers.: Fr.) Fr.

Sandy steppe, on thin dead branches of *Populus nigra* still attached to the tree, CWU (Myc) AS 4775.

VALSA sp. in the anamorphous stage **CYTOSPORA salicis** (Corda) Rabenh.

Sandy steppe, on thin dead branches of *Salix acutifolia* still attached to the tree, CWU (Myc) AS 4776.

Sordariales Chadef. ex D. Hawksw. et O.E. Erikss.

Chaetosphaeriaceae Réblová, M.E. BarretSamuels

CHAETOSPHAERIA pulviscula (Curr.) C. Booth in the anamorphous stage **MENISPORA caesia** Preuss

Floodplain oak forest in the reserve's buffer zone, on fallen decorticated branches of *Quercus robur*, CWU (Myc) AS 4766.

CHAETOSPHAERIA sp. in the anamorphous stage **MENISPORA ciliata** Corda

Floodplain oak forest in the reserve's buffer zone, on fallen decorticated branches of *Quercus robur*, CWU (Myc) AS 4767.

Xylariomycetidae O.E. Erikss. et Winka

Xylariales Nannf.

Diatrypaceae Nitschke

DIATRYPE stigma (Hoffm.: Fr.) Fr.

Sandy steppe, on fallen branches of *Betula pendula*, CWU (Myc) AS 4714.

DIATRYPELLA favacea (Fr.) DeNot.

Sandy steppe, on thin branches of *Betula pendula* still attached to the tree, CWU (Myc) AS 4715, 4716.

Xylariaceae Tul. et C.Tul.

HYPOXYLON rubiginosum (Pers.) Fr.

Sandy steppe, on dead skeletal branches of *Salix acutifolia*, CWU (Myc) AS 4780, 4781.

Glomerellaceae Locq. ex Seifert et W. Gams

GLOMERELLA cingulata (Stoneman) Spauld. et H. Schrenk in the anamorphous stage **COLLETOTRICHUM gloeosporioides** (Penz.) Sacc.

Windbreak in the reserve's buffer zone, on overwintered stems of *Chelidonium majus* together with *Cistella grevillei* (Berk.) Raitv., CWU (Myc) AS 4807.

Orbiliomycetes O. E. Erikss. et Baral

Orbiliomycetetidae O. E. Erikss. et Baral

Orbiliales Baral, O. E. Erikss., G. MarsonetE. Weber

Orbiliaceae Nannf.

ARTHROBOTRYS superba Corda

Sandy steppe, on ascomata of undetermined pyrenomycetes, on the fallen trunks of *Betula pendula* (CWU (Myc) AS 4778) and *Populus nigra* (CWU (Myc) AS 4779).

ORBILIA aurantiorubra Boud. (fig. 6, 14)

Sandy steppe, on dead decorticated branches of *Salix rosmarinifolia* still attached to the tree, CWU (Myc) AS 4407.

Apothecia rose-orange when fresh, up to 1,5 mm in diameter, dissiccation-tolerant, margin crenulate due to glassy processes on the excipulum marginal cells. Asci cylindric-

clavate, 8-th spored, apices of dead asci thin-walled flattened in front view. Ascospores helicoidally twisted within living asci, 10–15,5 × 1,2–1,5 µm, apex sharply pointed, with long, tear-shaped sporebodies 1,8–5 × (0,5–) 0,7–1 (–1,3) µm, base of spore strongly bent. Paraphyses covered by a glassy, calyptra-like exudate 0,5–2 µm thick forming well-developed epithecium over the hymenium. Apices of paraphyses cylindric to slightly swollen, 2,5–3,5 µm wide. Some of the excipulum cells are containing ring shaped SCB's (KOH Soluable Cytoplasmic Bodies) in living fruitbodies.

This species occurs on wood and bark of deciduous trees (predominantly *Salix,* sometimes *Ulmus*) and is known from Central Europe and Eastern Asia. In the Eastern Europe this species is recorded for the first time.

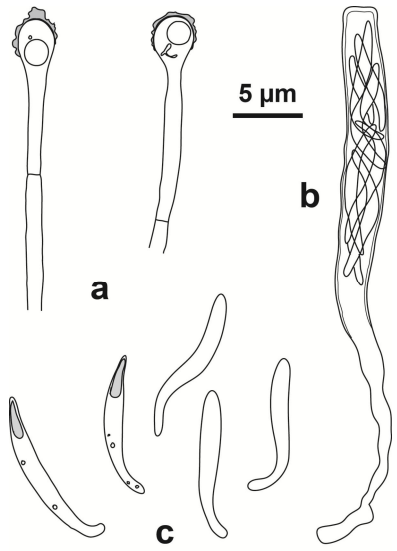

Fig. 6. *Orbilia aurantiorubra*, CWU (Myc) AS 4407: a – paraphyses, b – ascus, c – ascospores.

Dothideomycetes O.E. Erikss. et Winka

Dothideomycetidae P.M. Kirk, P.F. Cannon, J.C. David, Stalpersex Schoch, Spatafora, Crous et Shoemaker

Botryosphaeriales C.L. Schoch, Crous et Shoemaker

Botryosphaeriaceae Theiss. et P. Syd.

APLOSPORELLA clintoni (Peck) Petr. et Sydow (= *Sphaeropsis clintoni* Peck)

Windbreak in the reserve's buffer zone, on fallen decorticated trunk of *Acer negundo*, CWU (Myc) AS 4773, 4774.

FUSICOCCUM obtusulum (Sacc. et Briard) Grove

Windbreak in the reserve's buffer zone, on thin dead branches of *Acer negundo*, CWU (Myc) AS 4808.

SPHAEROPSIS sapinea (Fr.) Dyko et B. Sutton (= *Diplodia pinea* (Desm.) J. Kickx)

Sandy steppe, on fallen branches of *Pinus sylvestris*, CWU (Myc) AS 4369.

CapnodialesWoron.

Davidiellaceae C.L. Schoch, Spatafora, Crous et Shoemaker

DAVIDIELLA sp. in the anamorphic stage **CLADOSPORIUM lycoperdinum** Cooke

Sandy steppe, on ascomata of *Daldinia* cf. *loculata* (Lév.) Sacc. from fallen trunk of *Betula pendula* CWU (Myc) AS 4790.

MYCOSPHAERELLA tassiana (De Not.) Johanson in the anamorphous stage **Cladosporium herbarum** (Pers.) Link

Sandy steppe, on basidiomata of *Inonotus rheades* (Pers.) P. Karst. from fallen trunk of *Populus nigra* together with *Penicillium sp*., CWU (Myc) AS 4789 and 4791.

Patellariales D. Hawksw. et O.E. Erikss.

Patellariaceae Corda

PATELLARIA artata (Hedw.) Fr.

Sandy steppe, on fallen decorticated trunk of *Populusnigra*, CWU (Myc) AS 4367 and 4387; on dead branches of *Salixacutifolia*, CWU (Myc) AS 4804. Windbreak in the reserve's buffer zone, on fallen decorticated trunk of *Acer negundo*, CWU (Myc) AS 4386. Floodplain parvifoliate forest in the reserve's buffer zone, on fallen decorticated trunk of *Populus alba*, CWU (Myc) AS 4368.

Pleosporomycetidae C.L. Schoch, Spatafora, CrousetShoemaker

Pleosporales Luttr. ex M.E. Barr

Cucurbitariaceae G. Winter

CUCURBITARIA laburni (Heyder ex Pers.) Ces. et De Not. together with anamorph **CAMAROSPORIUMLABURNI** Sacc. etRoum.

Sandy steppe, on dead branches of *Chamaecytisus ruthenicum*, CWU (Myc) AS 4777.

CUCURBITARIA elongata (Fr.) Grev.

Windbreak in the reserve's buffer zone, on thin dead branches of *Robinia pseudoacacia* L., CWU (Myc) AS 4769.

Phaeosphaeriaceae M.E. Barr

HENDERSONIA vulgaris var.populi Desm.

Sandy steppe, on fallen trunk of *Populusnigra*, CWU (Myc) AS 4772.

PHAEOSPHAERIA sp. together with anamorph **STAGONOSPORA sp.** (fig. 15)

Sandy steppe, on the dead branches of *Chamaecytisus ruthenicum*, CWU (Myc) AS 4777.

Pseudothecia globose, with papillate tips, black, 200–300 μm in diameter, single or arranged in dense groups, intermixted with *Stagonospora*pycnides. Pseudoparaphyses abundant, narrow, filiform, 1,8–2 mm wide. Asci cylindric, short-stalked, 100–120 × 10,5–12 μm, with thickened (up to 10 μm) apexes. Ascospores 2–3-seriate inside the ascus, (32–) 39–42 × (4,6–) 5,1–6,0 μm, dull brown, elongate fusoid, inequilateral, slightly curved, (3) 5–6 (8) septate, not constricted, at the ends narrowed and rounded, guttulate when young. Conidia of *Stagonospora*-type, formed in the numerous small black pycnides, (14,5–) 16,6–18 × 4,4–4,7 (–5,1) μm, brown when mature, cylindric, with rounded tips, straight or slightly curved, (2–) 3 (–4)-septate.

According to modern data, leptosphaeriaceous fungi with brownish ascospores and *Stagonospora* anamorph belong to *Phaeosphaeria*. Miyake [ZHANG et al., 2009]. There is no known *Phaeosphaeria* species which such combination of characters [SHOEMAKER, BABCOCK, 1988; BARR, 1992; FARR, ROSSMAN, 2006]. However, before describing it as new for science additional study is necessary.

Basidiomycota Bold ex R.T. Moore

Agaricomycotina R. Bauer, Begerow, J.P. Samp., M. Weiss et Oberw.

Dacryomycetomycetes Hibbett, Matheny, Binderet M. Weiss

Dacryomycetales Henn., in Engleret Prantl

Dacrymycetaceae J. Schröt.

DACRYMYCESSTILLATUS Nees

Sandy steppe, on fallen trunk of *Populus tremula*, CWU (Myc) AS 4402.

Agaricomycetes Matheny, Hibbett et Binder

Agaricales Underw.

Clavariaceae Chevall.

MUCRONELLA calva (Alb. et Schwein.) Fr.

Continuous mature pine stands in the reserve's buffer zone, on fallen trunk of *Pinus sylvestris*, CWU (Myc) 6076.

Cyphellaceae Lotsy

GRANULOBASIDIUM vellereum (Ellis et Cragin) Jülich

Floodplain parvifoliate forest in the reserve's buffer zone, on fallen trunk of *Acer negundo*, CWU (Myc) 5436.

Pterulaceae Corner

RADULOMYCES confluens (Fr.: Fr.) M.P. Christ.

Sandy steppe, on hung branch of *Populus sp.*, CWU (Myc) 5481, on fallen branches of *Populussp*., CWU (Myc) 5485, 5486, 5489, 5490, 5492, on fallen trunk (CWU (Myc) 5487) and branches (CWU (Myc) 5491 and 5493) of *Crataegus sp*., on dead standing trunk of *Chamaecytisus ruthenicum*, CWU (Myc) 5484, on fallen trunk of *Salix acutifolia*, CWU (Myc) 5483, on fallen branch of *Salix rosmarinifolia*, CWU (Myc) 5488.

RADULOMYCES molaris (Chaillet ex Fr. : Fr.) Christ.

Sandy steppe, on the fallen branch of *Betula pendula*, CWU (Myc) 5494.

Schizophyllaceae Quél.

SCHIZOPHYLLUM amplum (Lév.) Nakasone

Sandy steppe, on fallen trunk of *Populus sp*., CWU (Myc) 5391, on dead still-attached branch of *Salix acutifolia*, CWU (Myc) 4445, on fallen branch of *Salix rosmarinifolia*, CWU (Myc) 4446.

SCHIZOPHYLLUM commune Fr.

Sandy steppe, on standing trunk of a living tree and on fallen branches of *Populus* sp., CWU (Myc) 4409, on fallen trunk of *Betula pendula*, CWU (Myc) 4373, on dead tilted trunk of *Salix acutifolia*, CWU (Myc) 4526. Floodplain parvifoliate forest in the reserve's buffer zone, on dead tilted trunk of *Populus alba*, CWU (Myc) 4450.

Typhulaceae Jülich

TYPHULA micans (Pers.) Berthier

Sandy steppe, on dead stems of undetermined herbaceous plant, CWU (Myc) 5513.

Atheliales Jülich

Atheliaceae Jülich

PILODERMA reticulatum (Parmasto) Jülich

Sandy steppe, on fallen trunk of *Populus sp.*, CWU (Myc) 5496.

Auriculariales J. Schröt emend Bandoni

Auriculariaceae Fr.

AURICULARIA mesenterica (Dicks.) Pers.

Sandy steppe, on fallen trunks and branchesof *Populus nigra*, CWU (Myc) 5985, 5986.

EICHLERIELLA deglubens (Berk. et Broome) Lloyd

Sandy steppe, on fallen trunks and branchesof *Populus nigra*, CWU (Myc) 4735-4738 and 5512.

Auriculariales incertae sedis

BASIDIODENDRON eyrei (Wakef.) Luck-Allen

Sandy steppe, on fallen trunk of *Populus nigra*, CWU (Myc) 5425.

Boletales E.-J. Gilbert

Coniophoraceae Ulbr.

CONIOPHORA arida (Frher.) P. Karst.

Continuous mature pine stands in the reserve's buffer zone, on fallen trunks of *Pinus sylvestris*, CWU (Myc) 5396 and 5397.

Serpulaceae Jarosch et Bresinsky

SERPULA himantioides (Fr.) P. Karst.

Continuous mature pine stands in the reserve's buffer zone,on fallen trunk of *Pinus sylvestris*, CWU (Myc) 5283.

Cantharellales Gäum.

Botryobasidiaceae (Parmasto) Jülich

BOTRYOBASIDIUM candicans J. Erikss.in the anamorphous stage *Haplotrichum capitatum* (Link) Link

Sandy steppe, on basidiomata of *Stereum hirsutum* (Willd.) Pers. on fallen trunk of *Betula pendula* soc *Engyodontium album* (Limber) de Hoog, CWU (Myc) 5987. Continuous mature pine stands in the reserve's buffer zone,on fallen trunk of *Pinus sylvestris*, CWU (Myc) 5426; on fallen trunk of *Pinus sylvestris* and basidiomata of *Trichaptum fuscoviolaceum* (Ehrenb.) Ryvarden, CWU (Myc) 5988; on fallen trunk of *Pinus sylvestris* together with basidiomata of *Lagarobasidium detriticum* (Bourdot) Jülich, CWU (Myc) 5989; on sporocarps of myxomycete (Physarales) together with *Aphanocladium album* (Preuss.) W. Gams., CWU (Myc) AS 4797.

BOTRYOBASIDIUM conspersum J. Erikss.in the anamorphous stage *Haplotrichum conspersum* (Link) Holubová-Jechová

Continuous mature pine stands in the reserve's buffer zone, on fallen trunk of *Pinus sylvestris*, CWU (Myc) 5448.

BOTRYOBASIDIUM curtisii Hallenb. in the anamorphous stage *Haplotrichum curtisii* (Berk.) Hol.-Jech.

Continuous mature pine stands in the reserve's buffer zone,on fallen trunk of *Pinus sylvestris* together with *Hyaloscypha aureliella* (Nil.) Huhtinen and *Hyphodontia pallidula* (Bres.) J. Erikss., CWU (Myc) AS 4788.

BOTRYOBASIDIUM robustius Pouzar et Hol.-Jech. in the anamorphous stage *Haplotrichum rubiginosum (*Fr.) Hol.-Jech.

Sandy steppe, on fallen trunk of *Populus sp.*, CWU (Myc) 5427.

Hydnaceae Chevall.

SISTOTREMA brinkmannii (Bres.) J. Erikss.

Sandy steppe, on fallen branch of *Populus nigra*, CWU (Myc) 5497, on dead basidiomata of *Trametes trogii* Berk., CWU (Myc) 5498; on basidiomata of *Exidia sp.* on fallen trunk of *Betula pendula*, CWU (Myc) 5990.

Tulasnellaceae Juel

TULASNELLA brinkmannii Bres. (fig. 18)

Sandy steppe, on fallen trunk of *Populus sp.*, CWU (Myc) 5508.

Basidiomata effused, adnate, very thin. Hymenophore smooth. Hymenial surface white. Margin not differentiated.

Hyphal system monomitic. Generative hyphae 4–5 µm in diameter, thinwalled, hyaline, without clamp-connections. Subhymenium rather well developed, consists of numerous frequently branching hyphae. Cystidia absent. Probasidia subglobose to broadly clavate, 11–14 × 9–10 µm, without basal clamp. Protosterigmata are four per basidium, firstly globose, then fusiform. Basidiospores sigmoid, 10–17 × 3,5–5 µm, smooth, thin-walled, hyaline, inamyloid, indextrinoid, germinating with sporidia.

Tulasnella brinkmannii is a unique species with its basidiospore size range and shape. The spores of other long-spored *Tulasnella* J. Schröt. species are substantially longer [ROBERTS, 1994b].

New for Ukraine.

TULASNELLA eichleriana Bres.

Sandy steppe, on fallen trunks of *Betula pendula*, CWU (Myc) 6069 and 6070, on dead basidioma of *Trichaptum biforme* (Ehrenb.: Fr.) Ryvarden from wood of *Betula pendula*, CWU (Myc) 5511. Continuous mature pine stands in the reserve's buffer zone, on fallen trunk of *Pinus sylvestris*, CWU (Myc) 6071.

T. hyalina Höhn. et Litsch. (fig. 19)

Sandy steppe, on fallen trunk of *Betula pendula*, CWU (Myc) 6067.

Basidiomata effused, adnate, thin, semitranslucent and gelatinous when fresh, dirty ochraceous and subceraceous when dry. Hymenophore smooth, cracked when dry. Margin not differentiated.

Hyphal system monomitic. Generative hyphae 2–4 µm in diameter, with occasional swellings up to 6 µm, hyaline, with clamp-connections. Subhymenium rather well developed, consists of numerous frequently branching hyphae generating clusters of basidia. Gloeocystidia rather numerous in hymenium, broadly cylindric or somewhat fusiform, irregularly slightly constricted, sometimes apically furcated, up to 50 × 10 µm, thin-walled, usually with yellowish refractive contents. Probasidia broadly clavate, up to 8 µm wide, with clamp-connections at the base. Protosterigmata four per basidium, firstly globose, then fusiform, up to 15 µm long in the observed material. Basidiospores globose, 5,5–7 µm in diameter, with prominent apiculus, smooth, thin-walled, hyaline, inamyloid, indextrinoid, germinating with sporidia.

Tulasnella hyalina is a remarkable taxon due to its conspicuous moderately long gloeocystidia, hyphaewith clamp-connections and rather large globose basidiospores. However, the species seems to be uncommon in Europe [ROBERTS, 1994a].

New for Ukraine.

TULASNELLA pallida Bres.

Sandy steppe, on fallen trunks of *Populus nigra*, CWU (Myc) 6072 and 6075, on fallen trunks of *Betula pendula*, CWU (Myc) 6073 and 6074.

Corticiales K.H. Larss.

Corticiaceae Herter

CORTICIUM roseum Pers.

Sandy steppe, on dead still-attached (CWU (Myc) 5432) and hung (CWU (Myc) 5429) branches of *Salix acutifolia*,on hung (CWU (Myc) 5433) and fallen (CWU (Myc) 5430 and 5431) branches of *Salix rosmarinifolia*.

DENDROTHELE acerina(Pers.) P.A. Lemke

Floodplain oak forest in the reserve's buffer zone, on standing trunk of living tree of *Acer campestre*, CWU (Myc) 4501.

D. alliacea (Quél.) P.A. Lemke

Floodplain oak forest in the reserve's buffer zone, on standing trunk of living tree of *Ulmus laevis*, CWU (Myc) 4502.

MUTATODERMA mutatum (Peck) C.E. Gómez

Floodplain parvifoliate forest in the reserve's buffer zone, on dead tilted trunk of *Populus alba*, CWU (Myc) 5437.

VUILLEMINIA comedens (Nees : Fr.) Maire

Floodplain oak forest in the reserve's buffer zone, on fallen branch of *Quercus robur*, CWU (Myc) 4469.

Gloeophyllales Thorn

Gloeophyllaceae Jülich

GLOEOPHYLLUM trabeum (Pers.) Murrill

Sandy steppe, on fallen trunk of *Populus sp.*, CWU (Myc) 5402.

Hymenochaetales Oberw.

Hymenochaetaceae Imazeki et Toki

FOMITIPORIA punctata (Fr.) Murrill

Floodplain oak forest in the reserve's buffer zone, on dead standing trunk of *Acer tataricum*, CWU (Myc) 4334.

FUSCOPORIA contigua (Pers.) G. Cunn.

Sandy steppe, on fallen branch of *Populus sp.*, CWU (Myc) 5408. Floodplain oak forest in the reserve's buffer zone, on fallen branch of *Quercus robur*, CWU (Myc) 4312.

F. ferruginosa (Schrad.) Murrill

Floodplain parvifoliate forest in the reserve's buffer zone, on fallen branch of *Acer negundo*, CWU (Myc) 4624.

HYMENOCHAETE fuliginosa (Pers.) Lév.

Floodplain oak forest in the reserve's buffer zone, on fallen branch of *Quercus robur*, CWU (Myc) 5405; on fallen decorticated branches of *Quercus robur* together with *Trechispora stevensonii* (Berk. et Broome) K.H. Larss., CWU (Myc) AS 5994.

H. rubiginosa (Dicks. : Fr.) Lév.

Floodplain oak forest in the reserve's buffer zone, on stub of *Quercus robur*, CWU (Myc) 4928.

INONOTUS rheades (Pers.) Bondartsev et Singer

Sandy steppe, on hung in the trees' crowns trunks of *Populus nigra*, CWU (Myc) 4296.

PHELLINUS igniarius (L.) Quél.

Sandy steppe, on dead standing trunks and stubs of *Salix acutifolia*, CWU (Myc) 5410.

Schizoporaceae Jülich

BASIDIORADULUM crustosum (Pers.) Zmitr., Malysheva et Spirin

Sandy steppe, on fallen *Populus sp.* trunk, CWU (Myc) 5440, on hung in the tree crown branches of *Populus nigra*, CWU (Myc) 5441 and 5443, on fallen branch of *Crataegus sp.*, CWU (Myc) 5441, on fallen branch of *Salix acutifolia*, CWU (Myc) 5444.

HYPHODONTIA arguta (Fr.) J. Erikss.

Floodplain parvifoliate forest in the reserve's buffer zone, on fallen branch of *Acer negundo*, CWU (Myc) 5439.

HYPHODONTIA microspora J. Erikss. et Hjortstam (fig. 17)

Sandy steppe, on fallen trunk of *Populus sp.*, CWU (Myc) 5446, on fallen branch of *Betula pendula*, CWU (Myc) 5445.

Basidiomata effused, adnate, thin, waxy when fresh, cracked when dry. Hymenophore grandinioid to odontioid, with cylindrical aculei up to 1 mm long. Hymenial surface yellowish. Margin well differentiated, up to 2 mm wide, white.

Hyphal system monomitic. Generative hyphae 2–3 µm in diameter, in the subiculum and trama straight, somewhat thickwalled, hyaline, with clamp-connections. Cystidia located in the aculeal cores and projecting in the aculeal apices, cylindrical, up to 150 × 8 µm, with thickened wall along the full length except the apical part, nonseptate, hyaline, sometimes apically covered with a sheath of a resinous substance that dissolves in potassium hydroxide solution. Basidia terminal, subclavate to subcylindrical, with weak medial constriction, up to 11 × 4 µm, with 4 sterigmata. Basidiospores ellipsoid-subcylindric, 3,5–4 × 1,7–2,1 µm, smooth, thin-walled, hyaline, inamyloid, indextrinoid.

Hyphodontia microspora is a well distinguished species owing to its small aculei, hyphaewith clamp-connections, tubular tramal cystidia and small basidiospores.

New for Ukraine.

HYPHODONTIA nespori (Bres.) J. Erikss. et Hjortstam

Continuous mature pine stands in the reserve's buffer zone, on fallen branch of *Pinus sylvestris*, CWU (Myc) 5447.

H. pallidula (Bres.) J. Erikss.

Continuous mature pine stands in the reserve's buffer zone, on fallen trunk of *Pinus sylvestris*, CWU (Myc) 5448; on fallen trunk of *Pinus sylvestris* together with *Botryobasidium curtisii* Hallenb. in the anamorphous stage *Haplotrichum curtisii* (Berk.) Hol.-Jech. and *Hyaloscypha aureliella* (Nyl.) Huhtinen, CWU (Myc) AS 4788; on fallen trunk of *Pinus sylvestris* together with *Hyaloscypha aureliella* (Nyl.) Huhtinen, CWU (Myc) AS 4805.

H. sambuci (Pers.: Fr.) J. Erikss.

Sandy steppe, on fallen trunk of *Populus sp.*, CWU (Myc) 5449. Floodplain oak forest in the reserve's buffer zone, near the former riverbed of the Syverskyi Donets River, on dead overwintered standing stems of *Typha angustifolia* CWU (Myc) 5450, 5451.

LAGAROBASIDIUM detriticum (Bourdot) Jülich (fig. 16)

Continuous mature pine stands in the reserve's buffer zone, on fallen trunk of *Pinus sylvestris* together with *Botryobasidium candicans* J. Erikss. in anamorphic stage*Haplotrichum capitatum* (Link) Link, CWU (Myc) 5989.

Basidiomata effused, hypochnoid, thin. Hymenophore smooth to slightly papillose. Hymenial surface whitish. Margin not differentiated.

Hyphal system monomitic. Generative hyphae 2–3 µm in diameter, thin-walled, hyaline, with clamp-connections. Subicular hyphae loosely arranged. Hyphae both in subiculum and subhymenium covered with characteristic star-shaped crystals not soluable in 5% KOH. Cystidia tubular with widened apical part, up to 110 × 10 µm, smooth, apically thin-walled, in lower part with distinct wall, hyaline, without inclusions, basally clamped. Basidia terminal, suburniform, 15–20 × 4 µm, with clamp-connections at the base, with 4 sterigmata. Basidiospores broadly ellipsoid, 4,5–5,5 × 3,5–4,5 µm, smooth, thick-walled, hyaline, usually with one single oildrop, inamyloid, indextrinoid.

Lagarobasidium detriticum is a well defined species with its characteristic large apically widened cystidia, star-shaped crystals on hyphae and small thick-walled basidiospores.

New for Ukraine.

OXYPORUS corticola (Fr.) Ryvarden

Floodplain parvifoliate forest in the reserve's buffer zone, on fallen trunk of *Populus alba*, CWU (Myc) 5992.

SCHIZOPORA paradoxa (Schrad. : Fr.) Donk

Sandy steppe, on fallen branch of *Betula pendula*, CWU (Myc) 5088.

Polyporales Gäum.

Fomitopsidaceae Jülich

ANTRODIA malicola (Berk. et M.A. Curtis) Donk

Sandy steppe, on fallen trunks of *Populus tremula*, CWU (Myc) 5389 and 5390, on fallen trunk (CWU (Myc) 5422) and branch (CWU (Myc) 5421) of *Salix acutifolia*.

A. pulvinascens (Pilát) Niemelä

Sandy steppe, on fallen trunk of *Populus tremula*, CWU (Myc) 5423, on fallen trunk of *Populus nigra*, CWU (Myc) 5991.

A. ramentacea (Berk. et Broome) Donk

Sandy steppe, on fallen branch of *Salix rosmarinifolia*, CWU (Myc) 5424.

LAETIPORUS sulphureus (Bull.) Murrill

Floodplain oak forest in the reserve's buffer zone, on stub of *Quercus robur*, CWU (Myc) 4304.

Ganodermataceae (Donk) Donk

GANODERMA resinaceum Boud.

Floodplain parvifoliate forest in the reserve's buffer zone, on standing trunk of the living tree of *Salix alba*, CWU (Myc) 5400.

Meruliaceae Rea

BJERKANDERA adusta (Willd. : Fr.) P. Karst.

Floodplain parvifoliate forest in the reserve's buffer zone, on fallen trunk of *Salix fragilis*, CWU (Myc) 4581.

B. fumosa (Pers.) P. Karst.

Floodplain parvifoliate forest in the reserve's buffer zone, on standing trunk of a living tree of *Acer negundo*, CWU (Myc) 5329.

GLOEOPORUS dichrous (Fr.) Bres.

Sandy steppe, on hung in the tree crown branch of *Populus nigra*, CWU (Myc) 5047.

G. taxicola (Pers.) Gilb. et Ryvarden

Continuous mature pine stands in the reserve's buffer zone, on stub of *Pinus sylvestris*, CWU (Myc) 5404.

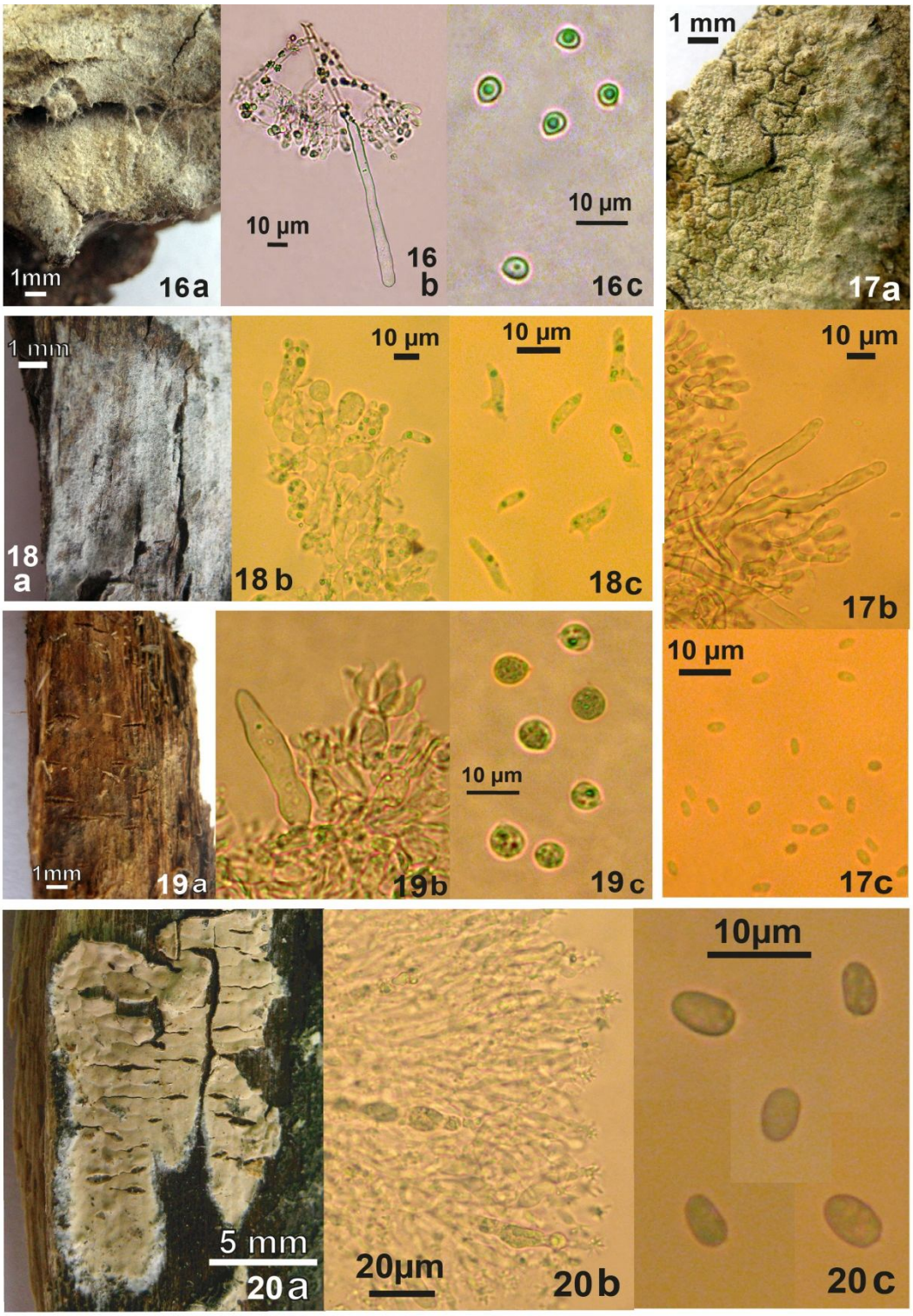

Fig. 16. ***Lagarobasidium detriticum***, **CWU (Myc) 5989: a – macroscopic view of basidioma, b – a portion of hymenium (with typical cystidium) and subhymenium (with characteristic star-shaped crystals on hyphae), c – basidiospores.**
Fig. 17. ***Hyphodontia microspora***, **CWU (Myc) 5445: a – macroscopic view of basidioma, b – aculeal cystidia and hymenium, c –basidiospores.**
Fig. 18. ***Tulasnella brinkmannii***, **CWU (Myc) 5508: a – macroscopic view of basidioma, b – hymenium, c –basidiospores.**
Fig. 19. ***Tulasnella hyalina***, **CWU (Myc) 6067: a – macroscopic view of basidioma, b – hymenium with gloeocystidium and mature basidium, c – basidiospores.**
Fig. 20. ***Acanthophysellum dextrinoideocerrusatum***, **CWU (Myc) 5419: a – macroscopic view of basidioma, b – hymenium with acanthophyses and gloeocystidia, c – basidiospores.**

HYPHODERMA setigerum (Fr. : Fr.) Donk

Continuous mature pine stands in the reserve's buffer zone, on hung in the trees' crowns trunk of *Pinus sylvestris*, CWU (Myc) 5438.

IRPEX lacteus Fr.: Fr.

Sandy steppe, on fallen trunk of *Betula pendula*, CWU (Myc) 4298, on fallen branch of *Salix acutifolia*, CWU (Myc) 5406. Floodplain oak forest in the reserve's buffer zone, on hung in the tree crown branch of *Fraxinus excelsior*, CWU (Myc) 4299. Floodplain parvifoliate forest in the reserve's buffer zone, on dead tilted trunk of *Populus alba*, CWU (Myc) 5060.

MERULIUS tremellosus Schrad.

Sandy steppe, on fallen branch of *Betula pendula*, CWU (Myc) 4945.

RADULODON aneirinus (Sommerf.) Spirin

Sandy steppe, on fallen branch of *Populus sp.*, CWU (Myc) 5428, on dead standing (CWU (Myc) 5510) and fallen (CWU (Myc) 5476) trunk of *Salix acutifolia*.

STECCHERINUM fimbriatum (Pers.: Fr.) J. Erikss.

Sandy steppe, on fallen trunk of *Populus sp.*, CWU (Myc) 5414, on fallen branch of *Rosa sp*., CWU (Myc) 4451, on fallen branches of *Salix rosmarinifolia*, CWU (Myc) 4452.

Phanerochaetaceae Jülich

CERIPORIA purpurea (Fr. : Fr.) Donk

Sandy steppe, on fallen trunk (CWU (Myc) 5392) and fallen branch (CWU (Myc) 5393) of *Populus sp.*

PHANEROCHAETE sordida (P. Karst.) J. Erikss. et Ryvarden

Sandy steppe, on fallen trunks of *Populus sp.*, CWU (Myc) 5470 and 5471, on fallen branches of *Salix acutifolia*, CWU (Myc) 5472, 5473 and 5474.

P. tuberculata (P. Karst.) Parmasto

Sandy steppe, on fallen branch of *Populus sp.*, CWU (Myc) 5475.

PHLEBIOPSIS gigantea (Fr.) Jülich

Continuous mature pine stands in the reserve's buffer zone, on stub of *Pinus sylvestris*, CWU (Myc) 5281.

POROSTEREUM spadiceum (Pers.: Fr.) Hjortstam et Ryvarden

Sandy steppe, on fallen trunks and branches of *Populus nigra*, CWU (Myc) 4252, on fallen branch of *Betula pendula*, CWU (Myc) 4957. Floodplain oak forest in the reserve's buffer zone, on fallen branch of *Quercus robur*, CWU (Myc) 5413.

Polyporaceae Fr. ex Corda

AURANTIPORUS fissilis (Berk. et M.A. Curtis) H. Jahn ex Ryvarden

Sandy steppe, on hung in the crown of another tree trunk of *Populus sp*., CWU (Myc) 5157.

CORIOLOPSIS gallica (Fr.) Ryvarden

Floodplain parvifoliate forest in the reserve's buffer zone, on fallen branch of *Populus alba*, CWU (Myc) 5398.

CERRENA unicolor (Bull.) Murrill

Sandy steppe, on dead tilted trunk of *Salix acutifolia*, CWU (Myc) 5395.

DICHOMITUS campestris (Quél.) Domański et Orlicz

Sandy steppe, on dead still-attached branch of *Crataegus sp*., CWU (Myc) 5399.

D. squalens (P. Karst.) D.A. Reid

Continuous mature pine stands in the reserve's buffer zone, on fallen trunk of *Pinus sylvestris*, CWU (Myc) 5434.

FOMES fomentarius (L.) J. Kickx f.

Sandy steppe, on dead standing trunks and stubs of *Populus nigra*, CWU (Myc) 5043.

LENZITES warnieri Durieu et Mont.

Sandy steppe, on hung and fallen trunks of *Populus nigra*, CWU (Myc) 4305.

POLYPORUS alveolaris (DC.) Bondartsev et Singer

Floodplain oak forest in the reserve's buffer zone, on dead still-attached branch of *Acer tataricum*, CWU (Myc) 4376.

P. arcularius (Batsch) Fr.

Sandy steppe, on the fallen branch of *Populus nigra*, CWU (Myc) 3948, on fallen branch of *Betula pendula*, CWU (Myc) 5411.

P. squamosus (Huds.) Fr.

Floodplain parvifoliate forest in the reserve's buffer zone, on dead tilted and fallen trunks of *Acer negundo*, CWU (Myc) 4638.

SKELETOCUTIS carneogrisea A. David

Continuous mature pine stands in the reserve's buffer zone, on basidiomata of *Trichaptum fuscoviolaceum* (Ehrenb. : Fr.) Ryvarden and on wood of a fallen trunk of *Pinus sylvestris*, CWU (Myc) 5403.

TRAMETES ljubarskyi Pilát

Sandy steppe, on fallen trunk of *Populus sp*., CWU (Myc) 5418.

T. ochracea (Pers.) Gilb. et Ryvarden

Sandy steppe, on dead tilted trunks and stubs of *Betula pendula*, CWU (Myc) 5239.

T. trogii Berk.

Sandy steppe, on dead tilted and fallen trunks of *Populus nigra*, CWU (Myc) 4290.

TRICHAPTUM biforme (Ehrenb. : Fr.) Ryvarden

Sandy steppe, on fallen trunk of *Betula pendula*, CWU (Myc) 5511.

T. fuscoviolaceum (Ehrenb. : Fr.) Ryvarden

Continuous mature pine stands in the reserve's buffer zone, on fallen trunks of *Pinus sylvestris*, CWU (Myc) 5401 and 5403.

Russulales Kreisel ex P.M. Kirk, P.F. Cannon et J.C. David

Auriscalpiaceae Maas Geest.

AURISCALPIUM vulgare Gray

Continuous mature pine stands in the reserve's buffer zone, on fallen cones of *Pinus sylvestris* among coniferous litter, CWU (Myc) 4896.

Peniophoraceae Lotsy

PENIOPHORA cinerea (Pers. : Fr.) Cooke

Sandy steppe, on fallen trunk of *Populus sp.*, CWU (Myc) 5455, on fallen branches of *Rosa sp*., CWU (Myc) 5453 and 5454, on fallen branch of *Salix rosmarinifolia*, CWU (Myc) 5452.

P. limitata (Chaillet ex Fr. : Fr.) Cooke

Floodplain oak forest in the reserve's buffer zone, on fallen branch of *Fraxinus excelsior*, CWU (Myc) 4246.

P. nuda (Fr.) Bres.

Sandy steppe, on dead still-attached (CWU (Myc) 5461), hung in the crown (CWU (Myc) 5459) and fallen branches (CWU (Myc) 5460) of *Crataegus sp*., on fallen branch of *Rosa sp.* CWU (Myc) 5457, on fallen trunk of *Salix rosmarinifolia*, CWU (Myc) 5458, on fallen branch of *Salix acutifolia*, CWU (Myc) 5462. Floodplain parvifoliate forest in the reserve's buffer zone, on dead still-attached branch of *Ulmus laevis*, CWU (Myc) 5463.

P. incarnata (Pers.) P. Karst.

Floodplain parvifoliate forest in the reserve's buffer zone, on standing trunk of a living tree of *Acer negundo*, CWU (Myc) 5456.

P. quercina (Pers. : Fr.) Cooke

Floodplain parvifoliate forest in the reserve's buffer zone, on fallen branch of *Quercus robur*, CWU (Myc) 4431.

Stereaceae Pilát

ACANTHOPHYSELLUM dextrinoideocerussatum (Manjón, M.N. Blanco et G. Moreno) Sheng H. Wu, Boidin et C.Y. Chien (fig. 20)

Sandy steppe, on fallen trunk of *Populus sp.*, CWU (Myc) 5419, on fallen branch of *Salix acutifolia,* CWU (Myc) 5420.

Basidiomata effused, adnate, thin, waxy when fresh, cracked when dry. Hymenophore smooth to slightly tuberculate. Hymenial surface pale lilaceous. Margin well differentiated, up to 2 mm wide, white.

Hyphal system monomitic. Generative hyphae 2–3 µm in diameter, thinwalled, with oil drops, hyaline, with clamp-connections. Gloeocystidia numerous, running through almost all the basidiomata's depth, oblong, up to 110 × 10 µm, with frequent constrictions, apically capitate, obtuse or pointed, filled with abundant yellowish granular content. Acanthophyses with tubular body which is basally somewhat widened, up to 35 × 4 µm, hyaline, with numerous indextrinoid branches in the apicam part. Basidia terminal, subclavate, up to 45 × 6 µm, with 4 sterigmata. Basidiospores ellipsoid-subovoid, with small apiculus, 6,5–7,5 × 4–5 µm, smooth, thin-walled, hyaline, amyloid.

Acanthophysellum dextrinoideocerussatum for a long time has been considered to be conspecific with *A. cerrusatum* (Bres.) Parmasto. Only in 1990 it was described as a separate species (firtstly as *Aleurodiscus dextrinoideocerussatus* Manjón, M.N. Blanco et G. Moreno) basing upon dextrinoid reaction of its acanthophyses [MORENO et al., 1990]. Later Boidin and Gilles confirmed validity of this species but showed that its distinctive feature is really the smaller basidiospores, in comparance with *A. cerrusatum* (Bres.) Parmasto. Simultaneously, French authors showed that a character of acanthophyses dextrinoidity was too inconstant and variable to separate two species from each other [BOIDIN, GILLES, 2001]. This fact also gave them the reason to reduce another small-spored species, *Acanthophysellum minor* (Pilát) Sheng H. Wu, Boidin et C.Y. Chien, to the synonyms of *A. dextrinoideocerussatum* [BOIDIN, GILLES, 2001].

As there was a confusion in distinguishing *A. dextrinoideocerussatum,* its true distribution still is not well known and should be clearified. According to Bernicchia and Gorjón [BERNICCHIA, GORJÓN, 2010], *A. dextrinoideocerussatum* (including *A. minor*) is a rare species that is known only from the countries of Mediterranean basin. To the present it was reported from Portugal, Spain, France, Italy, Croatia and the Caucasus region. Tellería and Melo [MELO, 1995] noted that in the Iberian Peninsula the species is mostly found in dry and sunny habitats. The same ecological feature may be attributed to our records of *A. dextrinoideocerussatum*.

New for Ukraine.

GLOEOCYSTIDIELLUM porosum (Berk. et M.A. Curtis) Donk

Sandy steppe, on fallen trunk of *Betula pendula*, CWU (Myc) 5435.

STEREUM hirsutum (Willd.) Pers.

Sandy steppe, on dead standing trunk of *Betula pendula*, CWU (Myc) 5415.

S. sanguinolentum (Alb. et Schwein.) Fr.

Continuous mature pine stands in the reserve's buffer zone, on stub of *Pinus sylvestris*, CWU (Myc) 5416.

S. subtomentosum Pouzar

Sandy steppe, on fallen branch of *Betula pendula*, CWU (Myc) 5417, and on fallen branch of *Rosa sp.*, CWU (Myc) 4459.

Thelephorales Corner ex Oberw.

Thelephoraceae Chevall.

THELEPHORA terrestris Ehrh. : Fr.

Continuous mature pine stands in the reserve's buffer zone, on sandy soil, CWU (Myc) 5155.

Trechisporales K.H. Larss.

Hydnodontaceae Jülich

SISTOTREMASTRUM niveocremeum (Höhn. et Litsch.) J. Erikss.

Sandy steppe, on fallen trunk of *Populus sp*., CWU (Myc) 5499, on fallen trunk of *Salix acutifolia*, CWU (Myc) 5500.

SUBULICYSTIDIUM longisporum (Pat.) Parmasto

Sandy steppe, on fallen trunks of *Populus nigra*, CWU (Myc) 5503 and 6077. Floodplain parvifoliate forest in the reserve's buffer zone, on fallen trunk of *Acer negundo*, CWU (Myc) 5502.

TRECHISPORA stevensonii (Berk. et Broome) K.H. Larss.

Floodplain oak forest in the reserve's buffer zone, on fallen decorticated branches of *Quercus robur* together with *Hymenochaete fuliginosa* (Pers.) Lév., CWU (Myc) AS 5994; on fallen trunk of cf. *Fraxinus excelsior*, CWU (Myc) AS 5993.

Agaricomycetes incertae sedis

PENIOPHORELLA pallida (Bres.) K.H. Larss.

Continuous mature pine stands in the reserve's buffer zone, on fallen trunk of *Pinus sylvestris*, CWU (Myc) 5464.

P. praetermissa (P. Karst.) K.H. Larss.

Sandy steppe, on the fallen trunks of *Populus nigra*, CWU (Myc) 5467 and 5468. Continuous mature pine stands in the reserve's buffer zone, on fallen trunk of *Pinus sylvestris*, CWU (Myc) 5465 and 5466.

P. pubera (Fr.) P. Karst.

Continuous mature pine stands in the reserve's buffer zone, on fallen trunk of *Pinus sylvestris*, CWU (Myc) 5469.

In all, 150 species of fungi were revealed by us in the "Trekhizbenskyi Step" division of the Luhansk Nature Reserve. Of these, 52 species belong to *Ascomycota* and 98 to *Basidiomycota*.

The total number of fungal species revealed in the TS is not great, which might be explained by the specific environmental conditions of the study area. The climate of the region is one of the most continental in Ukraine, i.e. one of the most dry and severe. The TS territory is mostly located on massive sandy accumulations and is characterized by poor development of woody vegetation.

The recording of such species as *Acanthophysellum dextrinoideocerrusatum*, *Botryobasidium curtisii*, *B. robustius*, *Coriolopsis gallica*, *Lenzites warnieri*, *Trametes ljubarskyi* and *Skeletocutis carneogrisea* reflects the arid character of the TS mycobiota and relates it to the South-European and other belonging to Mediterranean Basin mycotas [RYVARDEN and GILBERTSON, 1993, 1994; STOJCHEV et al., 1998; BERNICCHIA and GORJÓN, 2010; ALLI, 2011; DOĞAN et al., 2012].

All the species identified are reported from the research area for the first time. Furthermore, 11 species are recorded in Ukraine for the first time. These are *Acanthophysellum dextrinoideocerrusatum*, *Cistella grevillei*, *Engyodontium album*, *Hyaloscypha aureliella*, *Hyaloscypha daedaleae*, *Hyphodontia microspora*, *Lagarobasidium detriticum, Orbilia aurantiorubra*, *Stigmina pulvinata*, *Tulasnella brinkmannii* and *T. hyalina*. In addition, *Acanthophysellum dextrinoideocerrusatum* is the first record of the genus *Acanthophysellum* Parmasto in Ukraine.

The findings of *Perrotia* cf. *succina*, *Streptotinia caulophylli* and *Phaeosphaeria* sp. are particularly noteworthy. The first species is known by a few finds from the tropical latitudes, and so far has not been reported in Europe. *Streptotinia caulophylli* is known from some representatives of *Berberidaceae* and *Ranunculaceae* from Canada, USA and Korea. Morphologically indistinguishable from it species on *Sanguinaria canadensis* (Papaveraceae) is known only from Canada. But apothecia never were produced after mating isolates from *Sanguinaria* with isolates from typical substrata. Therefore our finding of this species from

Papaveraceae representative *Chelidonium majus* from Europe is of special interest. The *Phaeosphaeria* sp. sample apparently, is a species not known to the science yet and not formally described. All mentioned above specie are accompanied with detailed original descriptions and illustrations.

It should be also noted that our research focused predominantly on aphyllophoroid fungi, fungicolous fungi and xylotrophic representatives of *Ascomycota*. Other ecological groups of fungi have not been the object of this study and therefore are present by sporadic random records. Given the specificity of the "Trekhizbenskyi Step" division of the Luhansk Nature Reserve we suggest there is a considerable prospectivity of investigation of biodiversity of fungi that are associated with steppic herbaceous plants.

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