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Notes on pyrenomycetous fungi in the Mountain Lake area of southwestern Virginia

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Abstract

Results of a survey for pyrenomycetous fungi carried out in the upland forests of the Mountain Lake area of southwestern Virginia are presented. The list of species found includes 31 different entities. Four species–*Diatrype aceris-rubri*, *Hypoxylon virginianum*, *Lopadostoma cryptosphaeroides*, and *Xylomelasma moderata*–are described as new to science.

Key words – ascomycetous fungi – *Diatrype* – *Hypoxylon* – *Lopadostoma* – upland forests – taxonomy – *Xylomelasma*

Introduction

A short survey of pyrenomycetous fungi carried out in the upland forests of the Mountain Lake area of southwestern Virginia from July 26 to August 5 in 2013 yielded a relatively small number of species. Nonetheless, the species that were collected do demonstrate some of the ecological and biogeographical regularities known for the distribution patterns of this group of fungi in eastern North America, and there were several taxonomic novelties.

Because of high degree of association of many species, especially diatrypaceous and xylariaceous ones, with certain genera of host plants, one of the first tasks involved in a survey of a limited area is to compare the expected and observed species diversity on the particular trees dominating the vegetation and then to come to some conclusions as to what accounts for the apparent difference.

The General Study Area

The Mountain Lake area of southwestern Virginia (latitude 37° 22’ N, longitude 80° 37’ W) is located on Salt Pond Mountain in Giles County, which is within the Ridge and Valley physiographic province of the southern Appalachian Mountains (Fenneman 1938, Stephenson 1988). Braun (1950) included the Mountain Lake area within the Ridge and Valley Section of the Oak-Chestnut Forest Region. The major species of trees present are various species of oak, of which chestnut oak (*Quercus prinus* L.) and northern red oak (*Q. rubra* L.) are the most important. American chestnut (*Castanea dentata* [Marsh.] Borkh.), formerly a dominant or codominant species in these forest communities, was almost completely eliminated by the chestnut blight, which was caused by the the diaporthaceous fungus *Cryphonectria parasitica* (Murrill) M.E. Barr during the first half of the twentieth century (Stephenson 1986).

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Materials & Methods

Microscopic analyses were carried out using standard techniques. Observations and measurements of asci and ascospores were made using Zeiss Primo Star and Leica DM 4500B microscopes. The photographs of stromata were taken using a Nikon D40x digital camera.

Taxonomic observations

Diatrype aceris-rubri Lar.N. Vasilyeva & S.L. Stephenson, **sp. nov.** Fig. 1A–B.
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Etymology – *aceris-rubrae* refers to the frequent association with *Acer rubrum*.

Stromata mostly small, rounded or irregular, 1.5–3 mm diam., or confluent and becoming larger and wider effused, erumpent from the bark, 0.7–1 mm thick, oulined by a black stromatic zone in the substrate, dark brown to blackened, ostioles stellate. Perithecia in one or two layers, 150–200 µm diam., clearly outlined by a black line and with white tissue above. Asi clavate, 35–40 × 5–7 µm in spore-bearing part, with stalks 25–30 µm and a tiny, J-positive apical ring. Ascospores allantoid, brownish, 7–9 × 1.8–2.2 µm.

Material examined – USA, Virginia, Giles County, Salt Pond Mountain, on the bark of *Acer rubrum* L., 29 July 2013, L. Vasilyeva, VLA P-2798 (holotype); Michigan, Cheboygan County, Douglas Lake, on *Acer rubrum*, 9 Aug 2010, L. Vasilyeva, VLA P-2799.

Notes – The effused stromata of *Diatrype aceris-rubrae* are similar to those of *D. spilomea* Syd., but the latter species has smaller ascospores (4.5–7 × 1–1.2 µm) (Rappaz 1987). *Diatrype rappazii* (Chleb.) Lar.N. Vassilyeva, sometimes reported from *Acer* spp., has larger ascospores (9–12 µm long in average) (Chlebicki & Krzyzanowska 1995) and strongly undulate stromatal surface. *Diatrype polycocca* Fuckel, known from Europe on *Acer opalus* Mill., has even larger ascospores (up to 15 µm long) (Rappaz 1987).

Hypoxylon virginianum Lar.N. Vassiljeva & S.L. Stephenson, **sp. nov.** Figs. 2A, 3A–D
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Etymology – *virginianum* refers to the holotype from Virginia.

Stromata effused-pulvinate, sometimes pulvinate or even hemisphaerical, surface reddish brown, with inconspicous or conspicuous perithecial mounds, often shining black at the tops, sometimes surrounded by young brick coloured tissue at the margins, red granules immediately beneath surface and between perithecia, with KOH-extractable pigments orange. Perithecia spherical, 250–300 µm diam., ostiloles umbilicate. Asci 60–70 × 5–6 µm in spore-bearing part, with stalks up to 60 µm and apical ring bluing in Melzer's iodine reagent, discoid, 2.2–2.5 × 1 µm. Ascospores brown to dark brown, unicellular, ellipsoid-inaequilateral, 9–11(–12.5) × 2–2.5 µm, with straight germ slit spore-length on the convex side; perispore dehiscent in 10% KOH, smooth.

Material examined – USA, Virginia, Giles County, Salt Pond Mountain, on the bark of *Acer pennsylvanicum* L., 1 Aug 2013, L. Vasilyeva, VLA P-2772 (holotype); John's Creek Trail, on *A. pennsylvanicum*, 28 Jul 2013, L. Vasilyeva; Pipeline Trail, on *A. pennsylvanicum*, 28 Jul 2013, L. Vasilyeva; Spring Road, on *A. pennsylvanicum*, 29 Jul 2013, L. Vasilyeva; Moonshine Dell Trail, on *A. pennsylvanicum*, 31 Jul 2013, L. Vasilyeva.

Notes – This species is the most common pyrenomycetous fungus occurring the bark of *Acer pennsylvanicum* in the vicinity of Mountain Lake and does not occur on other trees. It fits the description of *Hypoxylon rubiginosum* (Pers.) Fr. in many features (Ju & Rogers 1996) but differs in the presence of red granules immediately beneath stromatal surface and between perithecia, as well as in stromatal shape and colour (Fig. 2). *Hypoxylon rubiginosum* is supposed to be widely distributed in northern hemisphere, but it surely represents a species complex that includes entities restricted to certain areas and substrates.

Fig. 1A–B – Stromata of *Diatrype aceris-rubrae*. A, From Virginia (holotype). B, From Michigan. – Bar A–B: 1 mm.

Among synonymous names listed under *H. rubiginosum* (Ju & Rogers 1996), only *H. floridеum* Berk. & M.A. Curtis is relevant to the species described from eastern North America. The lectotype of the latter is kept in the Kew Herbarium at the Royal Botanic Gardens and reported from wood of unidentified tree (Ju & Rogers 1996). However, *H. floridеum* was described from *Acer rubrum* (Berkeley 1875), and this makes the comparison of *H. virginianum* and *H. floridеum* to be most necessary. The type specimen of *H. floridеum* from Ravenel's herbarium has dark vinaceous stromata spreading on wood which are more similar to *H. fendleri* Berk. *Hypoxylon floridеum* might be resurrected from '*H. rubiginosum*' complex, especially taking into account the "Florida-Texas" distribution pattern (Wu & Mueller 1997). The latter refers to the restriction of some species to the southeastern states of the United States of America, but *H. floridеum* differs from *H. virginianum* in stromatal features and seems to have more southern distribution.

Lopadostoma cryptosphaeroides Lar.N. Vassiljeva & S.L. Stephenson, **sp. nov.** Figs. 4A–C

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Etymology – *cryptosphaeroides* refers to the appearance of stromata which reminds of those of *Cryptosphaeria* members.

Stromata immersed in bark, aggregated under swollen and often blackened epidermis, erumpent with tiny, black, rounded or slightly elliptical ectostomatic disc 0.5–1 × 0.3–0.5 mm. Perithecia immersed at the bases of stromata, 400–500 µm diam. Asci narrow cylindric, 65–75 × 3.5–4 µm, with stalks up to 50 µm long and apical ring bluing in Melzer's iodine reagent, discoid, 2.2–2.5 × 1 µm. Ascospores fusiform, with rounded ends, brown, 9–12.5(–15) × 3–3.5 µm.

Material examined – USA, Virginia, Giles County, Salt Pont Mountain, on the bark of *Quercus* sp., 3 Aug 2013, L. Vasilyeva, VLA P-2796 (holotype); Maryland, Catoctin Mountain Park, on *Quercus* sp., 27 Apr 1997, L. Vasilyeva, VLA P-2797.

Notes – The genus *Lopadostoma* has not received much attention from taxonomists, and there are no good explanations as to its differences from *Anthostoma*. The members of *Anthostoma* seem to correspond to the section *Euanthostoma* within this genus described as having "stromate late effuso, eutypeo" (Saccardo 1882). The second section within *Anthostoma*, namely *Fuckelia*, was characterized as having "stromate valseo, v. erumpenti-verruciformi" (l.c.). The difference is not a bad one and serves as the basis for making some generic discriminations (for example, *Eutypa* and *Eutypella*). Earlier, Nitschke (1867) divided the genus *Anthostoma* into the sections *Anthostoma* ("stromata diatrypeum, ligno v. rarius cortici crassiori emmersum") and *Lopadostoma* ("stroma valseum"), the latter with a single species *A. turgidum* (Pers.) Nitschke.

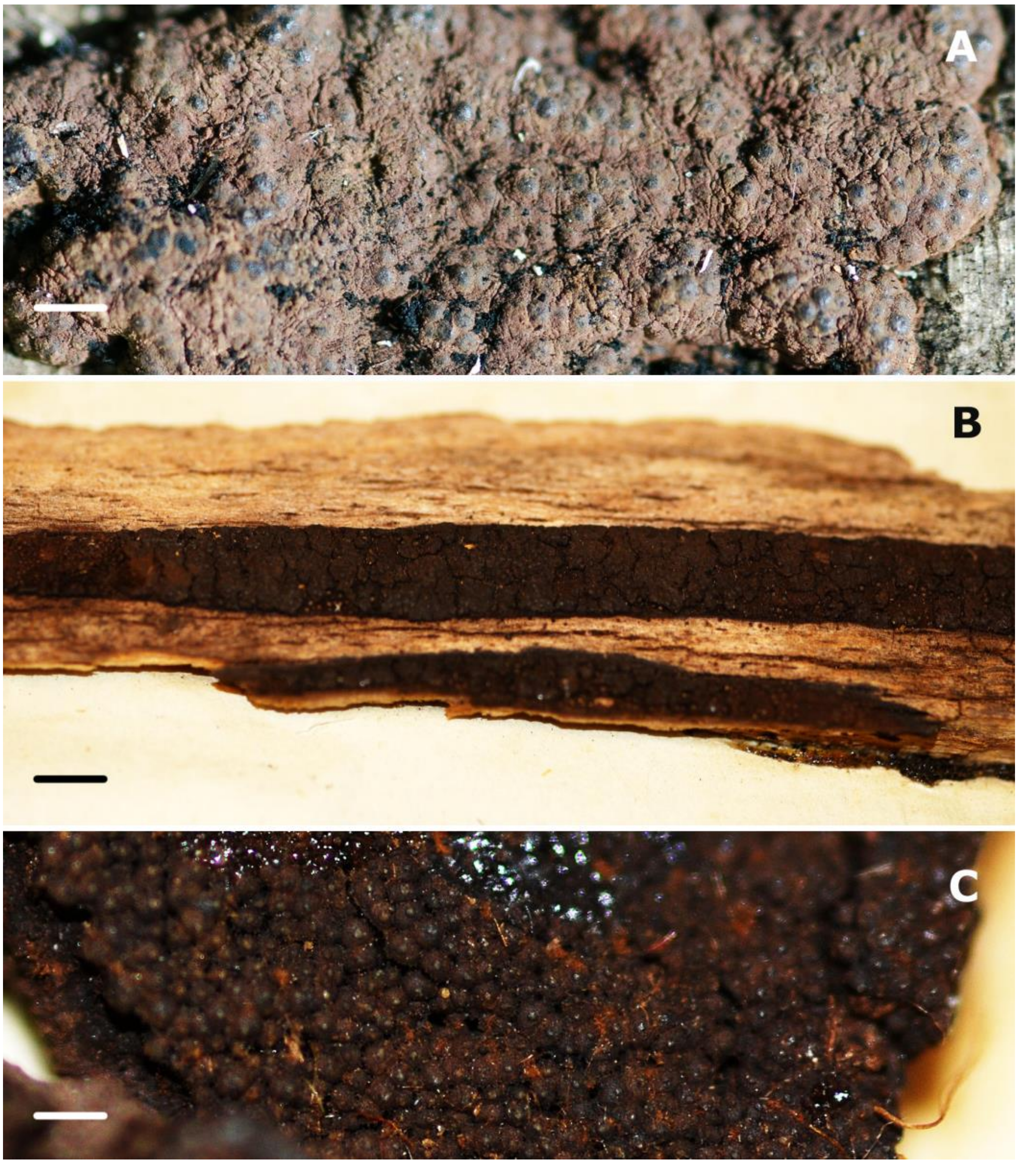

Fig. 2A–C – Stromata. A, *Hypoxylon virginianum*. B–C, *H. rubigibosum* (stromatal outline and surface – from the type, K). – Bars A, C: 1.2 mm; B: 10 mm.

Traverso (1906) made a genus of the section *Lopadostoma* and included four species—*L. gastrinum* (Fr.) Traverso, *L. massarae* (De Not.) Traverso, *L. taeniosporum* (Sacc.) Traverso, and *L. turgidum* (Pers.) Traverso. Currently, two of these (the first and last) are treated as *Anthostoma*, whereas the other two as *Lopadostoma* (www.speciesfungforum.org). This treatment is not supported by any taxonomic considerations, and one of the few papers dealing with *Anthostoma* and *Lopadostoma* (Martin 1969) has acknowledged *L. gastrinum* and *L. turgidum*.

Rappaz (1995) created a new genus *Barrmaelia*, which includes some species traditionally placed within *Anthostoma*, and prepared a key for "xylariaceous genera" where *Lopadostoma* is distinguished from *Barrmaelia* (along with *Leptosmassaria* and some species on *Anthostomella*) in having "ascospores 1 celled, smaller than 12 µm; asci with an apical ring I+, 1–1.5 µm high", whereas the compared entities have "ascospores and apical ring larger", and *Barrmaelia* in particular "has ascospores 1 celled' apical ring I–". This is really an unwarranted discrimination of genera, since it is carried out on the basis of characters that are usually of importance only for species delimitation within all genera of the Xylariaceae. Thus far, we are forced to look for descriptions of all species assigned to both genera when we find something suggesting either *Anthostoma* or *Lopadostoma*, since the concepts remain uncertain.

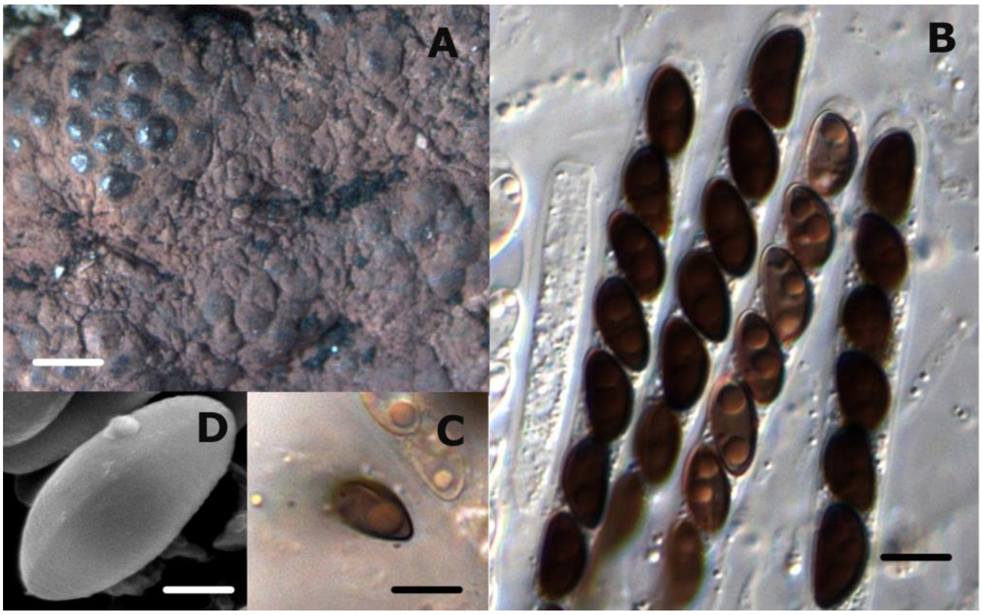

Fig. 3A–D – *Hypoxylon virginianum*. A, Stromatal surface. B, Asci and ascospores. C Spore with a germ slit visible on a convex side. D SEM image of a spore. – Bars A: 0.75 mm; B: 6 µm; C: 7.5 µm; D: 2.5 µm.

The North American representatives of the genera in question are six species of *Anthostoma* and four species of *Lopadostoma* (Farr et al. 1989). Of these, *Anthostoma quercina* (Petr.) Arx & E. Müll. based on *Leptomassaria quercina* Petr. and described from Maryland (Petrak 1952) is *Amphirosellinia quercina* (Petr.) Y.M. Ju et al. (Ju et al. 2004). Other species indicated in association with *Quercus* spp. (Farr et al. 1989) are *Lopadostoma gastrinum* and *L. sphinctrinum* (Fr.) P.M.D. Martin, the latter with a synonymous name *Anthostoma dryphilum* (Curr.) Sacc.

The synonymization of *A. dryophilum* and '*A. sphinctrinum* (Fr.) Sacc.' was made by Martin (1969) without any explanation, whereas Saccardo (1882) did not make a combination '*Anthostoma sphinctrinum*'; instead, he indicated *Sphaeria sphinctrina* Fr. as a synonym of *Anthostoma turgidum*. Both *S. sphinctrina* and *A. turgidum* seem to be restricted to *Fagus*, and it is possible that the specimen of *Lopadostoma* sp. on *Fagus* from Austria, differing from *L. turgidum* in narrow ascospores (Vasilyeva & Scheuer 1996), is exactly *L. sphinctrina*, and this corresponds to the range of ascospore size (9–9.5 × 3.5–4 µm) indicated by Martin (1969) for the latter species. *Anthostoma dryophilum* is hardly a synomym of *L. sphinctrina*; it was described with an ascospore length of 10.16–12.7 µm (Currey 1858) and seems to be restricted to *Quercus*.

Ellis & Everhart (1892) have reported *A. dryophilum* on *Quercus* spp. from New Jersey, Texas and Iowa, but the American specimens might not be conspecific with European ones. The mediated evidence for their difference is the reference to Ellis's exsiccate 'North American Fungi No. 87' as exemplified '*A. dryophilum*' from North America (Ellis & Everhart 1892). However this exsiccate specimen represents only *A. dryophilum* var. *minor* Cooke. The latter was described as having "stromata more effused and less prominent, covered except the small, tuberculiform disk, by the blackened epidermis". The appearance of such stromata could be observed here in the photo (Fig. 4C) illustrating a specimen on *Quercus* found in the Big Thicket National Preserve (Texas). The stromata of *Lopadostoma cryptosphaeroides* are similar in being somewhat effused under the blackened epidermis (Fig. 4A–B), but they are more robust and have larger ectostromatic discs. (The specimen from Texas also differs in smaller ascospores that are only 7–9 µm long.) However, although *L. cryptosphaeroides* might be considered as the 'major' variation of *A. dryophilum* var. *minor*, we cannot identify our specimens as true *A. dryophilum* since all available description of the latter do not mention the stromatal characters which are typical for *L. cryptosphaeroides*. When Currey (1858) described *A. dryophilum*, he indicated its resemblances to *Sphaeria verruciformis* Ehrh [i.e., *Diatrypella verruciformis* (Ehrh.) Nitschke] in "its external form", and this is completely different from the appearance of *L. cryptosphaeroides*.

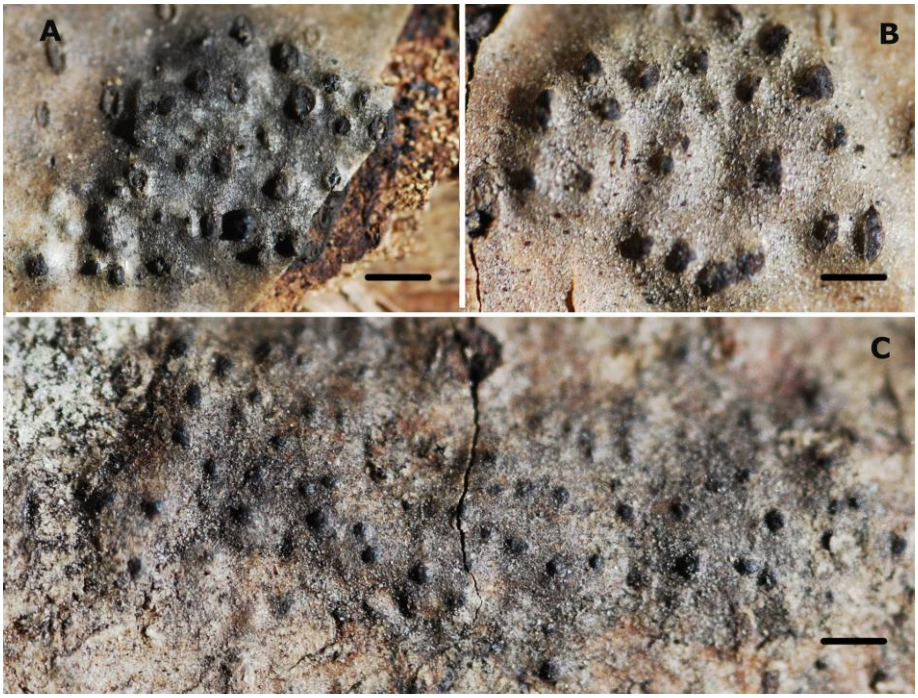

Fig. 4A–C – Stromata. A–B, *Lopadostroma cryptosphaeroides* from Virginia (holotype) and Maryland. C, *Lopadostoma* sp. from Big Thicket National Preserve (Texas) with the appearance of *L. dryophylum* var. *minor* (Ellis, North American Fungi N 87) but smaller ascospores. – Bars A: 2 mm; B: 1.2 mm; C: 1 mm.

Xylomelasma moderata Lar.N. Vassiljeva & S.L. Stephenson, **sp. nov**. Figs. 5A–B
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Etymology – *moderata* refers to the occurrence in temperate forests.

Perithecia solitary to gregarious, globose to subglobose, 400–500 µm diam., semi-immersed or immersed in the wood, glabrous or roughened, dark brown to black, surrounded by sparse mycelium; hyphae growing out of the bottom part of the outer perithecial wall; necks elongate, cylindrical, central or lateral, glabrous, 140–150 µm long, sometimes slightly swollen at the tips. Paraphyses not seen. Asci unitunicate, 8-spored, cylindrical, 60–80 × 7.5–9 µm, short-stipitate, floating freely within the centrum at maturity, with a distinct, refractive, nonamyloid apical annulus ca. 2.5 × 1 µm high. Ascospores unicellular, ellipsoidal to oblong, 12–14 × 4.5–5.5(–6) µm, pale brownish, obliquely 1-seriate in the ascus.

Material examined – USA, Virginia, Giles County, Salt Pond Mountain, on rotten wood, 5 Aug 2013, L. Vasilyeva, VLA P-2768 (holotype).

Notes – The genus *Xylomelasma* was established recently (Réblová 2006) with two species, X. *sordida* Réblová and *X. novaezelandiae* Réblová, both of which have smaller ascospores in comparison with *X. moderata*. Rather similar is also *Lentomitella tomentosa* Réblová & J. Fournier, which has somewhat larger ascospores than *X. moderata*. The latter species is placed apart from the members of *Xylomelasma* because of its hyaline ascospores. Nevertheless, *L. tomentosa* does not seem properly arranged within the genus *Lentomitella* because of aseptate spores in contrast to other species of that genus.

Discussion

As already noted, various species of oaks are the dominant trees in most of the forests present in the Mountain Lake area, and the usual complex of pyrenomycetous fungi associated with the substrates provided by oaks in the temperate forests of eastern North America were recorded. Among these were *Annulohypoxylon annulatum* (Schwein.) Y.M. Ju et al., *Biscogniauxia atropunctata* (Schwein.) Pouzar, *Camillea punctulata* (Berk. & Ravenel) Læssøe et al., *Diatrype atlantica* Lar.N. Vassiljeva, *Eutypa limiformis* (Schwein.) Berk., as well as *Lopadostoma*

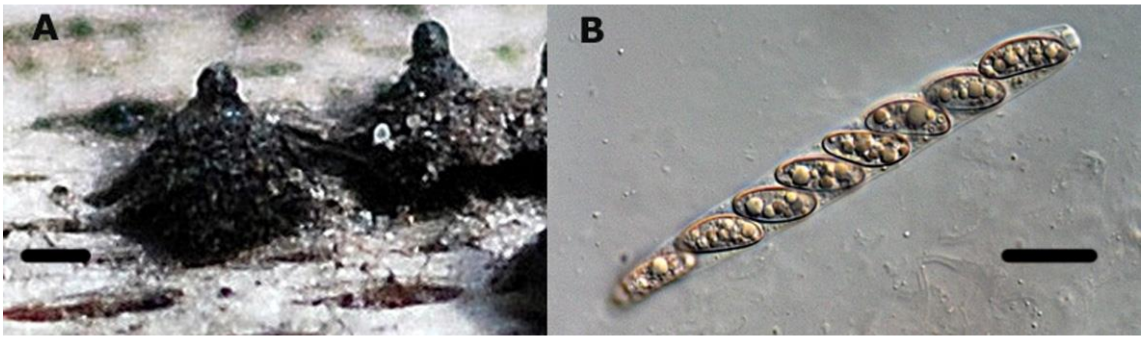

Fig. 5A–B – *Xylomelasma moderata*. A, Ascomata. B, Ascus with ascospores. Bars A: 150 µm; B: 13 µm.

cryptosphaeroides sp. nov. Almost all of these species are restricted to eastern North America except for *Annulohypoxylon annulatum,* which also is found in northeastern Asia on *Quercus* spp. and thus belongs to the special group of pyrenomycetous fungi that demonstrate an 'Asa Gray disjuction' in their distribution (Vasilyeva & Stephenson 2010). The same can be said for *Graphostroma platystoma* (Schwein.) Piroz. and *Nitschkia modesta* Lar.N. Vassiljeva et al., both observed in the Mountain Lake area. The latter species was described quite recently from northeastern Asia (Vasilyeva et al. 2010), and finding it in southwestern Virginia is the first record in North America.

Extremely poor was the collecting of species usually associated with *Fagus grandifolia* Ehrh. Only common *Diatrype decorticata* (Pers.) Rappaz and *Hypoxylon fragiforme* (Scop.) Kickx were encounteted, and both were in bad condition, either very old or immature, respectively. The high elevation of the Mountain Lake area (much of it at or above 1200 m) might be responsible for the shift of development of some species toward a later period of the year or for a reduction of the normal species complex. Perhaps the short period of survey was also influential because of a very peculiar situation in connection with substrates in many forests of eastern North America. This means that despite the abundance of promising (in respect to be possible substrates) trees lying on the ground, these logs were in such a weathered condition that they could not serve for the development of pyrenomycetous fungi at all. This also means that one should expect to spend much more time to find a log that can provide a niche for the expected species.

American chestnut was clearly the predomiant species in some forest communities in the Mountain Lake area prior to the arrival of the blight. For example, Braun (1950), who carried out a survey of forest composition on the slope of Bald Knob on Salt Pond Mountainin 1932, indicated that chestnut made up as much as 85 percent of the canopy. However, this tree now occurs only as stump sprouts that are dying from the chestnut blight fungus, and the vast majority of these stump sprouts do not exceed 2.5 cm DBH (Stephenson et al. 1991). The thin dead sprouts do not provide a substrate of sufficient size to be suitable for the development of the few saprotrophic pyrenomycetes known to be associated with *Castanea*.

Preliminary list of pyrenomycetous species in the Mountain Lake area

Coronophorales

Nitschkia modesta Lar.N. Vassilyeva, Chernyshev & S.L. Stephenson – on the bark and wood of unidentified trees, near the road from the Biological Station to Mountain Lake, 5.08.13.

Tympanosis confertula (Schwein.) Lar.N. Vassiljeva – on wood, Rhododendron Trail, 28.07.13.

Endoxylales

Xylomelasma moderata Lar.N. Vassiljeva & S.L. Stephenson– on decayed wood, near the road from the Biological Station to Mountain Lake, 5.08.13.

Diaporthales

Cryphonectria parasitica (Murrill) M.E. Barr – on a dead but still standing small tree of *Castanea dentata*, Hedwig Trail, 1.08.13.

Diatrypales

Diatrype atlantica Lar.N. Vassiljeva – on *Quercus* spp., Pipeline Trail, 29.07.13; Spring Trail, 2.08.13; Moonshine Dell Trail, 3.08.13; Sartain Branch Trail, 3.08.13.

Diatrype decorticata (Pers.) Rappaz – on *Fagus grandifolia*, in the vicinity of the Biological Station, 4.08.13.

Diatrype subaffixa (Schwein.) Cooke – on dead branches of *Prunus serotina*, Hedwig Trail, 30.07.13; Sartain Branch Trail, 3.08.13.

Diatrype aceris-rubri Lar.N. Vasilyeva & S.L. Stephenson – on dead branches of *Acer rubrum*, vicinity of the Mountain Lake Lodge, 29.07.13.

Diatrype undulata (Pers.) Fr. – on *Betula* spp., Rhododendron Trail, 26.07.13; Spring Trail, 2.08.13.

Eutypa lata (Pers.) Tul. & C. Tul. – on decayed wood of an unidentified tree, Rhododendron Trail, 28.07.13.

Eutypa leioplaca (Fr.) Cooke – on wood of *Acer pennsylvanicum*, Spring Road, 29.07.13; on *Acer rubrum*, near the road from the Biological Station to Mountain Lake, 5.08.13. 13

Eutypa limiformis (Schwein.) Berk. – on *Quercus* spp., Maple Trail, 4.08.13; Bear Cliffs Trail, 30.07.13.

Graphostroma platystoma (Schwein.) Piroz. – on dead branches of *Acer pennsylvanicum*, Bear Cliffs Trail, 29.07.13; on *Prunus serotina* Ehrh., Sartain Branch Trail, 3.08.13; on *Acer rubrum*, in the vicinity of the Biological Station, 4.08.13.

Lopadostoma cryptosphaeroides Lar.N. Vassiljeva & S.L. Stephenson – on bark of *Quercus* sp., Moonshine Dell Trail, 3.08.13.

Hypocreales

Cordyceps militaris (L.) Fr. – on insect pupae, White Pine Trail, 28.07.13; Pipeline Trail, 29.07.13; Spruce Bog Trail, 1.08.13.

Dialonectria episphaeria (Tode) Cooke – on old stromata of *Diatrype atlantica*, in the vicinity of the Biological Station, 26.07.13.

Hypocrea patella Cooke & Peck – on bark of *Quercus* sp., White Pine Trail, 28.07.2013.

Protocrea pallida (Ellis & Everh.) Jaklitsch, K. Põldmaa & Samuels – on an aphyllophoraceous fungus, Middle Jungle Trail, 5.08.13.

Xylariales

Annulohypoxylon annulatum (Schwein.) Y.M. Ju, J.D. Rogers & H.M. Hsieh – on *Quercus* spp., John's Creek Trail, 28.07.13; chestnut plot near the Moonshine Dell Trail, 4.08.13.

Biscogniauxia atropunctata (Schwein.) Pouzar– on *Quercus* spp., Maple Trail, 28.07.13; Spring Road, 29.07.13; in the vicinity of the Biological Station, 3.08.13 & 4.08.13.

Camillea punctulata (Berk. & Ravenel) Læssøe, J.D. Rogers & Whalley – on *Quercus* sp., in the vicinity of the Biological Station, 5.08.13.

Daldinia childiae J.D. Rogers & Y.M. Ju – on a dead but still standing trunk, Spruce Bog Trail, 1.08.2013.

Hypoxylon fragiforme (Scop.) Kickx – on *Fagus grandifolia*, in the vicinity of the Biological Station, 4.08.13.

Hypoxylon rutilum Tul. & C. Tul. – on *Fagus grandifolia*, in the vicinity of the Biological Station, 26.07.13.

Rather tentatively, we assigned one of the specimens found on *Fagus grandifolia* to *Hypoxylon rutilum*. This species is most found in Europe, and only one collection is known from

Asia (Ju & Rogers 1996). There were no reliable records from North America, but this species could be expected on *Fagus* here. Our specimen is not very similar to images of European specimens assigned to this species (http://pyrenomycetes.free.fr), but its features fit the description well and the general habitus of stromata is the same as illustrated by Miller (1961, Fig. 69).

Hypoxylon virginianum Lar.N. Vassiljeva & S.L. Stephenson – on bark of *Acer pennsylvanicum*, John's Creek Trail, 28.07.13; Pipeline Trail, 28.07.13; Spring Road, 29.07.13; Moonshine Dell Trail, 31.07.13.

Nemania serpens (Pers.) Gray – on decayed wood, Spring Road, 30.07.13; Spruce Bog Trail, 1.08.13.

Rosellinia subiculata (Schwein.) Sacc. – on decayed wood, Moonshine Dell Trail, 2.08.13.

Ustulina deusta (Hoffm.) Lind– on an old stump, in the vicinity of the Biological Station, 1.08.13.

Xylaria longiana Rehm – on bark of *Quercus* sp., in the vicinity of the Biological Station, 5.08.13.

The specimen of *Xylaria longiana* was assigned to this species mostly because of the consideration that it "grows on the wood of oaks in eastern North America" (http://www.mushroomexpert.com). Its stromata are similar to those illustrated by Michael Kuo (the above site) and the size of ascospore is the same (9–11 × 4–5 µm), but the stromata in our specimen are only up to 1.5 cm, whereas the description gives them as 2–8 cm tall. *Xylaira longiana* was described originally from Texas (Rehm 1906) with stromata 3–3.5 cm long and slightly smaller ascospores (8–9 × 4 µm). However, afterwards the concept of *X. longiana* included an ascospore range of 9–11 × 4–5 µm (Rogers 1986). As for the length of the stromata, it seems to be very variable in the same species (cf. Fournier et al. 2011, Fig. 1a).

Pleosporales

Apiosporina morbosa (Schwein.) Arx – on a living branch of *Prunus serotina*, in the vicinity of the Biological Station, 4.08.13.

Hysteriales

Glonium stellatum Muhl. – on a dead log on the forest floor, Sartain Branch Trail, 3.08.13.

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