https://doi.org/10.59893/abud.23(2).002
Acta Biol. Univ. Daugavp. 23(2) 2023
ISSN 1407 – 8953

COMPLETE CHECKLIST OF MYXOMYCETES IN LATVIA

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Kluša J. 2023. Complete checklist of myxomycetes in Latvia. *Acta Biol. Univ. Daugavp., 23(2):127-151.*

Abstract
This paper presents a list of myxomycete taxa recorded in Latvia up to November 20, 2023. It consists of 251 taxa (230 species, 20 varieties and one subspecies), including 141 taxa new for the country, identified after 2006 and not recorded in the latest checklist, published by Adamonytė in 2020. Fourty-seven of these, according to published data, are also new species to the Baltic states. Nivicolous species, as well as the frequency of occurrence and common Latvian names for all the taxa are published for the first time.

Keywords: Baltics, checklist, common names, Latvia, myxomycetes, occurrence, slime molds

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INTRODUCTION

The first checklist of myxomycetes (=Myxogastrea, plasmodial slime molds) in Latvia was published in 1890 and consisted of 40 species collected near Riga (Rotert 1890). In the 20th century, only a few publications have followed in which myxomycete finds in Latvia were mentioned, three in the first half of the century (Jaczewsky 1907, Bucholtz 1908, Kupffer 1931) and one in the second half of the century (Ruskule & Vimba 1987).

At the beginning of the 21st century, until 2006, the only studies of myxomycetes in Latvia were carried out by the Lithuanian mycologist Gražina Adamonytė, who, in cooperation with the Latvian mycologist Edgars Vimba, revised herbarium funds and made new collections (Adamonytė & Vimba 2003, Vimba & Adamonytė 2003, Adamonytė & Vimba 2005, Adamonytė 2006).

In 2020, Adamonytė published a list of Latvian myxomycetes species based on literature records, which included 108 species (Adamonytė 2020).

In December 2008, the nature data reporting portal dabasdati.lv was established in Latvia, open for anyone who wants to report observations of any group of organisms. The first reports of myxomycetes were published on this portal in the autumn of 2009. From 2016 onwards the number of myxomycete reports in dabasdati.lv has increased from several hundred to a few thousand observations per year. Up to November 20, 2023, more than 18 thousand observations of myxomycetes have been registered by more than 200 reporters. These reports represent 231 taxa including 141 taxa new for Latvia (Dabasdati.lv

2023) compared to the list published by Adamonytė (2020). Data of one of the new species was used in the study of distribution of the rare myxomycete species *Tubifera dudkae* (Leontyev 2022).

In 2023, the Latvian common names of all taxa of myxomycetes were introduced by a working group of four people, namely, the author of this article, as well as Sandis Laime, Inguna Riževa and Vija Sīmansone. In this paper they are published for the first time.

During 2020-2024, within the framework of the "LIFE project "Threatened species in Latvia: improved knowledge, capacity, data and awareness"" (project acronym: LIFE FOR SPECIES, project No.: LIFE19GIE/LV/000857), evaluation of species according to IUCN criteria has been taking place in Latvia. This activity includes creating a list of specially protected species. In its framework, five species of myxomycetes in Latvia were evaluated and recommended to be included in the list.

MATERIALS AND METHODS

In order to determine which taxa of myxomycetes are found in Latvia, the data of available literature (Rotert 1890, Jaczewsky 1907, Bucholtz 1908, Kupffer 1931, Ruskule & Vimba 1987, Adamonytė & Vimba 2003, Vimba & Adamonytė 2003, Adamonytė & Vimba 2005, Adamonytė 2006), the Dabasdati.lv portal (Dabasdati.lv 2023) and one personal communication (Ansis Opmanis) were used.

For all taxa the scientific name of a taxon, the common name in Latvian, the name of the collector, whose observation is the first identified record, the identifier and the year of collection and identification are provided. If several first observations of the same taxon are determined around the same time or if any earlier record was determined later then they are all described.

Regarding the species discovered by Wladislaw Adolfovich Rotert (Rotert 1890), Arthur Louis Arthurovič Jaczewsky (Jaczewsky 1907) and Karl Reinhold Kupffer (Kupffer 1931), only the year of publication is known. For the specimens identified by Skaidrīte Ruskule (Ruskule & Vimba 1987), the last of the time interval 1984 to 1986 mentioned in this work was used as the year of identification. For the specimens described from more recent literature (Adamonytė & Vimba 2003, Vimba & Adamonytė 2003, Adamonytė & Vimba 2005, Adamonytė 2006) publication year was used as the year of identification. If the identification of the species was not done by the author of the article and the exact year is unknown, then the mentioned [publication] year is marked with asterisk (*).

To determine whether the species is new in Latvia, it was compared with the list published by Adamonytė (2020). To determine whether the species is new for the Baltic States (i.e. Latvia, Lithuania and Estonia) according to published data, first World Reports of Myxomycetes (Gøtzsche 2016-2023) have been used. In addition, information from a 1995 publication on Lithuanian myxomycetes (Mazelaitis & Stanevičienė 1995) is used, which is not included in the mentioned compilation. After that, it was checked that these species do not have any reliable report on gbif.org website (GBIF 2023) on the territory of the Baltic States.

For each taxa new to Latvia at least one specimen was examined with a microscope (mostly in 2020-2023). Most of the specimens were examined with a microscope and have been identified or verified by the author of this article. Sandis Laime performed microscopy himself for all his records. Inguna Riževa, Vija Sīmansone, Laima Birziņa and Marita Krūze examined with a microscope some of their records. Some specimens were examined with a microscope by Edvin Johannesen. Author of this article studied all specimens under a Levenhuk 870T Biological Trinocular Microscope, using KOH 3% as a

slide mounting medium. Methylene blue was used to colorate hyaline structures in *Arcyria* spp., *Dianema* spp. and *Lycogala* spp. If microscopy was performed by another person, similar equipment and methodology was used.

Identification of taxa was primarily done using identification keys (Poulain et al. 2011, Neubert et al. 1993, Neubert et al.1995, Neubert et al. 2000, Nannenga-Bremekamp 2022) and original descriptions, available in the online database of Lado (2005-2023). The latest taxonomic changes are also taken into account (Leontyev et al. 2015, 2019b, 2023, García-Cunchillos et al. 2022, García-Martín et al. 2023).

A large part of the identifications of the new taxa was discussed with Edvin Johannesen (Norway, personal communication). There have been discussions about the identification of species both in the Facebook group "Slime Mold Identification & Appreciation" (communicating with foreign experts) and on the portal Dabasdati.lv (discussing with other interested people in Latvia). If a taxon was identified in a joint discussion of two people, both are mentioned as the identifiers.

The nomenclature was applied following an online nomenclatural information system of Eumycetozoa (Lado 2005-2023). Where in doubt, the names of taxa used in the list of myxomycetes of Norway (Johannesen & Vetlesen 2020) were consulted and used. Synonyms are provided for species whose scientific name has changed in recent years and is more widely known by this synonym.

Since all taxa of myxomycetes recorded in Latvia after 2006 are deliberately registered in Dabasdati.lv, and since the number of reports is large enough and the accuracy of the reports has been checked as far as possible, we could draw some conclusions about the frequency of occurrence of them. Frequency of occurrence is understood here as the frequency of observations, especially for species with small and inconspicuous fruiting bodies, because these could be more common than found and reported.

The very small fruiting bodies of some myxomycetes allows to detect them only by using a microscope in samples collected for larger myxomycetes. Also, the lack of experience to deliberately look for and find such species, as well as the lack of experience in growing them in moist chambers, is presumably the reason why, after 2006, several species which were found and identified by Adamonytė have not been found by us. Species mentioned in previous publications, but not found after 2006, are also marked in species list in this article.

Frequency of the occurrence are given for taxa found after 2006. The gradation is shown in the checklist as follows (observations until November 20, 2023, are taken into account):
"One locality" - all reports in all years (2006-2023) within 1 km^2 are considered as one locality (54 taxa);
"Very rare" - 2-10 localities (99 taxa);
"Quite rare" - more than 10 localities, less than 50 observations (29 taxa);
"Moderately common" 50-189 observations (30 taxa);
"Common" - 190-799 observations (16 taxa);
"Very common" - at least 800 observations (3 taxa).

Data deficiency (DD) is mentioned if a taxon has been described only recently and thus we cannot draw conclusions about its abundance. The IUCN category is indicated only for the five species of myxomycetes evaluated.

The checklist includes myxomycete species shown in alphabetical order. The first collectors and identifiers for previously discovered, but rare in Latvia species are also mentioned for the reviewed period after 2006. Other additional data (exact date of observation, parish or city, substrate, habitat) are presented for all mentioned collections after 2006 in

accordance with the reports on the portal Dabasdati.lv (Dabasdati.lv 2023) or personal messages. Parishes and cities are listed according to the current (2023) administrative-territorial division in Latvia (Valsts zemes dienests 2023). If the species is registered in less than 15 countries of the world according to the World Reports of Myxomycetes (Gøtzsche 2016-2023), then all or a selection of findings are indicated.

Herbarium name is given for taxa found after 2006. Specimens of most of the taxa have been stored in the herbarium of the Latvian National Museum of Natural History (NMKK). Personal collections of Julita Kluša (JK), Sandis Laime (SL) and Laima Birziņa (LB) are mentioned only in cases where there is no specimen sample in the public herbaria. It is planned to transfer the samples of all recorded taxa to a public herbarium.

The herbarium material of previously (up to 2006) reported species within this work was not revised. The cases when the specimen is not preserved, and when identification was doubtful, are mentioned in the checklist. I propose to remove one species (*Physarum altaicum*) from the list of myxomycetes in Latvia.

RESULTS

A complete list of myxomycete taxa reported from Latvia

All taxa new to Latvia are marked with ●.
Species new in the Baltics are marked with **B**.
Species not found after 2006 are marked with ^.
Latvian names are shown in **bold**.

Amaurochaete *atra* (Alb. et Schwein.) Rostaf., **melnā plaispika** - leg.&det. W.Rotert, 1890; (NMKK), moderately common.
B● *Amaurochaete fusiformis* (Nann.-Bremek. & Härk.) H. Marx & A. Kuhnt (syn. *Symphytocarpus fusiformis* Nann.-Bremek. & Härk.), **kūlīšu plaispika** - leg. J.Kluša, 10 Jul 2023, Pope p., 1.5-2.5 m high in a hollow and on bark of living *Tilia cordata* in a park-like graveyard, det. E.Johannesen, 2023; (JK), one locality.

● ***Angioridium*** *sinuosum* (Bull.) Grev. (syn. *Physarum bivalve* Pers.), **labirinta rāpulīte** - leg. J.Kluša, 11 Oct 2021, Jūrmala, on litter and mosses in black alder swamp forest, det. J.Kluša, conf. E.Johannesen, 2021; (NMKK), very rare.

Arcyria *affinis* Rostaf., **ciešā sprodzīte** - leg. E.Vimba, 1979, det. G.Adamonytė, 2003; leg. J.Kluša, 17 Aug 2020, Sigulda p., on a decaying log of *Betula* sp. in a mixed forest, det. J.Kluša, 2022; (NMKK), quite rare.
Arcyria cinerea (Bull.) Pers., **pelēcīgā sprodzīte** - leg.&det. W.Rotert, 1890; (NMKK), common.
^ *Arcyria congesta* (Alb. et Schwein.) O.F.Cook (syn. *Arcyodes incarnata* (Alb. & Schwein.) O.F. Cook), **sablīvētā sprodzīte** - leg. S.Ruskule, 1985, det. S.Ruskule, 1986.
Arcyria denudata (L.) Wettst., **irdenā sprodzīte** - leg.&det. W.Rotert, 1890; (NMKK), moderately common.
● *Arcyria ferruginea* Saut., **rūsainā sprodzīte** - leg. I.Riževa, 21 Oct 2020, Rīga, on a decaying log of *Pinus sylvestris* in a humid pine forest, det. I.Riževa, conf. J.Kluša, 2021; (NMKK), moderately common.
^ *Arcyria glauca* Lister, **zilganā sprodzīte** - leg. S.Ruskule, 1985, det. S.Ruskule, 1986. Doubtful. No sample to check. May be confused with *Arcyria cinerea.*
● *Arcyria globosa* Schwein., **lodveida sprodzīte** - leg.&det. S.Laime, 28 Sep 2023, Cēsis, on deciduous log in a mixed forest, conf. J.Kluša, 2023; (SL), one locality.
B● *Arcyria helvetica* (Meyl.) H. Neubert, Nowotny & K. Baumann, **stērbeļkausa sprodzīte** - leg. L.Birziņa, 14 Nov 2020, Ādaži p., on a small decaying deciduous log in a ditch by the slope, det. L.Birziņa & J.Kluša, 2023; (JK), one locality.
● *Arcyria imperialis* (G.Lister) Q.Wang & Yu Li, **ķeizariskā sprodzīte** - leg. M.Krūze,

04 Oct 2020, Smārde p., on a decaying log in a forest, det. M.Krūze & J.Kluša, 2020; (NMKK), quite rare.

Arcyria incarnata (Pers. ex J.F. Gmel.) Pers., **sprogainā sprodzīte** - leg.&det. W.Rotert, 1890; leg. L.Birziņa, 17 Sep 2021, Ādaži, 2 m high on a dead, decorticated branch of *Quercus robur* in the yard, det. L.Birziņa, conf. J.Kluša, 2022; (NMKK), quite rare.

Arcyria insignis Kalchbr. & Cooke, **smalkā sprodzīte** - leg. S.Ruskule, 1984, det. S.Ruskule, 1986; leg. J.Kluša, 09 Sep 2020, Sigulda p., on deciduous log in a mixed forest, det. J.Kluša, 2022; (JK), one locality.

● *Arcyria major* (G. Lister) Ing, **lielā sprodzīte** - leg. V.Sīmansone, 15 Jun 2022, Sēja p., at the base of *Betula* sp. in a mixed forest, det. J.Kluša, 2022; (NMKK), very rare.

Arcyria minuta Buchet, **mazā sprodzīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006; leg. J.Kluša, 10 Aug 2022, Jūrmala, on mosses in black alder swamp forest, det. J.Kluša, 2022; (NMKK), very rare.

Arcyria obvelata (Oeder) Onsberg, **bēšā sprodzīte** - leg.&det. W.Rotert, 1890; (NMKK), moderately common.

Arcyria oerstedii Rostaf., **Ersteda (maltāsgaļas) sprodzīte** - leg. E.Vimba, 1953, det. T.Sizova, 2003*; leg. J.Kluša, 28 Sep 2022, Jūrmala, on decaying log of *Picea abies* in a mixed forest, det. J.Kluša, 2022; (NMKK), quite rare.

Arcyria pomiformis (Leers) Rostaf., **apaļīgā sprodzīte** - leg.&det. W.Rotert, 1890; leg. S.Laime, 26 Sep 2021, Cēsis, on a decaying log of *Salix* sp. in a forest, det. S.Laime, conf. J.Kluša, 2021; (NMKK), very rare.

Arcyria stipata (Schwein.) Lister, **sardelīšu sprodzīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006; (NMKK), moderately common.

● ***Badhamia*** *affinis* Rostaf., **koku dzelksnīte** - leg. J.Kluša, 10 Oct 2021, Strazde p., 1.3 m high on trunk bark and mosses on *Tilia cordata* in the linden alley, det. J.Kluša, 2021; (NMKK), very rare.

● *Badhamia affinis* var. *microspora* (Meyl.) Nann.-Bremek. & Y. Yamam., **koku dzelksnītes sīksporu varietāte** - leg. I.Rožlapa, 28 Jan 2023, Rīga, on deciduous log in a damp place, det. J.Kluša, conf. E.Johannesen, 2023; (NMKK), one locality.

B● *Badhamia bethelii* (T. Macbr. ex G. Lister) J.M. García-Martín, J.C. Zamora & Lado (syn. *Physarum bethelii* T. Macbr. ex G. Lister), **Bethela pumpurīte** - leg. J.Kluša, 27 Jul 2023, Ziras p., on a small log of *Pinus sylvestris* in a drained boreal forest, det. J.Kluša, 2023; (NMKK), very rare.

● *Badhamia capsulifera* (Bull.) Berk., **kapsulu dzelksnīte** - leg. L.Birziņa, 22 Feb 2021, Ādaži, 1.5 m high on snag of *Salix* sp. in a deciduous forest by the river, det. L.Birziņa & J.Kluša, 2021; (NMKK), very rare.

● *Badhamia lilacina* (Fr.) Rostaf., **purvu dzelksnīte** - leg. E.Oļehnoviča, 17 Aug 2020, Dekšāre p., on litter among *Sphagnum* sp. at the edge of the raised bog, det. J.Kluša, 2020; (NMKK), moderately common.

● *Badhamia lilacina* var. *megaspora* Nann.-Bremek., **purvu dzelksnītes lielsporu varietāte** - leg. J.Kluša, 16 Sep 2023, Lēdurga p., on *Oxycoccus palustris* in a transitional mire, det. J.Kluša, 2023; (NMKK), one locality.

Badhamia macrocarpa (Ces.) Rostaf., **lielā dzelksnīte** - leg. E.Vimba, 1993, det. G.Adamonytė, 2003; leg. G.Kolle, 26 Sep 2019, Rīga, on a decaying stump of *Acer platanoides*, det. A.Opmanis, conf. J.Kluša, 2019; (NMKK), very rare.

B● *Badhamia melanospora* Speg., **krumpainā dzelksnīte** - leg. L.Birziņa, 11 Nov 2021, Ādaži, 1 m high on a thin trunk of dead *Acer negundo* in the deciduous forest by the river, det. L.Birziņa & J.Kluša, 2022; (NMKK), very rare.

B● *Badhamia nitens* Berk., **dzeltenā dzelksnīte** - leg. S.Laime, 14 Oct 2021, Cēsis, on bark of *Picea abies* in litter in a forest, det. S.Laime, conf. J.Kluša, 2021; (SL), one locality.

Badhamia panicea (Fr.) Rostaf., **klaipu dzelksnīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006; leg. B.Kološuka, 07 Nov 2019, Kalvene p., on sawn off *Populus*

tremula in the clearing, det. J.Kluša, 2020; (NMKK), very rare.
Badhamia utricularis (Bull.) Berk., **vīnogķekaru dzelksnīte** - leg. V.Tumšs, 1934, det. G.Adamonytė, 2005; (NMKK), moderately common.

Barbeyella *minutissima* Meyl., **sīkā barbejella** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006; leg. S.Laime, 10 Jan 2020, Cēsis, on mosses together with *Diderma tigrinum* on a decaying log of *Picea abies* in springy slope in a mixed forest, det. S.Laime, 2020; (JK), very rare (CR); 7 localities in Latvia, recommended for the list of specially protected species in Latvia.

● ***Brefeldia*** *maxima* (Fr.) Rostaf., **milzu brefeldija** - leg. I.Riževa, 03 Nov 2020, Rīga, on a decaying stump of *Populus* sp. in a mixed forest, det. J.Kluša, 2021; (NMKK), quite rare.

^ ***Calomyxa*** *metallica* (Berk.) Nieuwl., **mirdzošā pērlenīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006.

Ceratiomyxa *fruticulosa* (O.F. Müll.) T. Macbr., **zarainā ragainīte** - leg.&det. W.Rotert, 1890; (NMKK), very common. *Ceratiomyxa fruticulosa* var. *porioides* (Alb. & Schwein.) G. Lister, **porainā ragainīte** - leg.&det. W.Rotert, 1890; (NMKK), common.

Clastoderma *debaryanum* A. Blytt, **de Barī (bumbuļkāta) krādzīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006; leg. S.Laime, 13 Oct 2019, Cēsis, on decaying log of *Picea abies* in a forest, det. S.Laime, 2019; (JK), very rare.

Collaria *arcyrionema* (Rostaf.) Nann.-Bremek. ex Lado, **apkakles palampīte** - leg.&det. W.Rotert, 1890, leg. V.Baroniņa, 07 Jul 2020, Jūrmala, on a decaying log of *Populus tremula*, det. J.Kluša, 2020; (NMKK), quite rare.

● *Collaria rubens* (Lister) Nann.-Bremek. (syn. *Comatricha rubens* Lister), **sārtbrūnā palampīte** - leg. J.Kluša, 01 Nov 2021, Jūrmala, On *Nowellia curvifolia* and decaying deciduous log in a mixed forest, det. J.Kluša, 2022; (NMKK), very rare.

Colloderma *oculatum* (C. Lippert) G. Lister, **vienacainā kurkulīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006; leg. I.Riževa, 19 Oct 2021, Rīga, on a log of *Pinus sylvestris* with *Nowellia curvifolia* in a forest, det. I.Riževa & J.Kluša, 2021; (NMKK), very rare.
B● *Colloderma robustum* Meyl., **brūnā kurkulīte** - leg. J.Kluša, 07 Oct 2022, Krimulda p., on *Nowellia curvifolia* on a log of *Pinus sylvestris* in a mixed forest, det. J.Kluša, conf. E.Johannesen, 2022; leg. J.Kluša 09 Nov 2023, Jūrmala, on *Hypnum cupressiforme* on a log in a boreal forest by the peat pond, det. J.Kluša, 2023; (NMKK), very rare.

● ***Comatricha*** *alta* Preuss, **šmaugā kocīte** - leg. L.Birziņa, 17 Nov 2019, Garkalne p., on a log of *Tilia cordata* in a deciduous forest, det. J.Kluša, 2022; (NMKK), very rare.
Comatricha elegans (Racib.) G. Lister, **elegantā kocīte** - leg. E.Vimba, 1986, det. G.Adamonytė, 2003; leg. S.Laime, 09 Aug 2020, Cēsis, on a decaying log of *Salix* sp. in a forest, det. S.Laime, conf. J.Kluša, 2020; (NMKK), very rare.
● *Comatricha elegans* var. *microspora* H. Marx, **elegantās kocītes sīksporu varietāte** - leg. J.Kluša, 21 Sep 2023, Taurupe p., on a small deciduous log in a deciduous forest by the river, det. J.Kluša, 2023; (NMKK), one locality.
● *Comatricha ellae* Härk., **Ellas kocīte** - leg. R.Kaupuža, 13 Aug 2021, Salnava p., on a board of *Pinus sylvestris* from an old shed, det. J.Kluša, 2021; (NMKK), very rare.
● *Comatricha fragilis* Meyl., **trauslā kocīte** - leg. J.Kluša, 28 Sep 2022, Jūrmala, on a log of *Pinus sylvestris* in a boreal forest, det. J.Kluša, 2022; (NMKK), one locality.
● *Comatricha laxa* Rostaf., **daudzveidīgā kocīte** - leg. B.Kološuka, 04 Nov 2019, Kal-

vene p., on a log of *Fraxinus excelsior* in a woodpile in a mixed forest, det. J.Kluša, 2020; (NMKK), very rare.

B● *Comatricha meandrispora* A. Castillo, G. Moreno & Illana, **pudeļkāta kocīte** - leg. S.Laime, 24 Dec 2019, Cēsis, on a log of *Pinus sylvestris* on the boreal forest slope, det. S.Laime, conf. J.Kluša, 2022; leg. J.Kluša, 27 Aug 2023, Straupe p., on a log of *Pinus sylvestris* on the boreal forest slope, det. J.Kluša, 2023; (JK), very rare. This species is characterized by a suddenly tapered columella and by spores with an incomplete reticulum (Fig. 1).

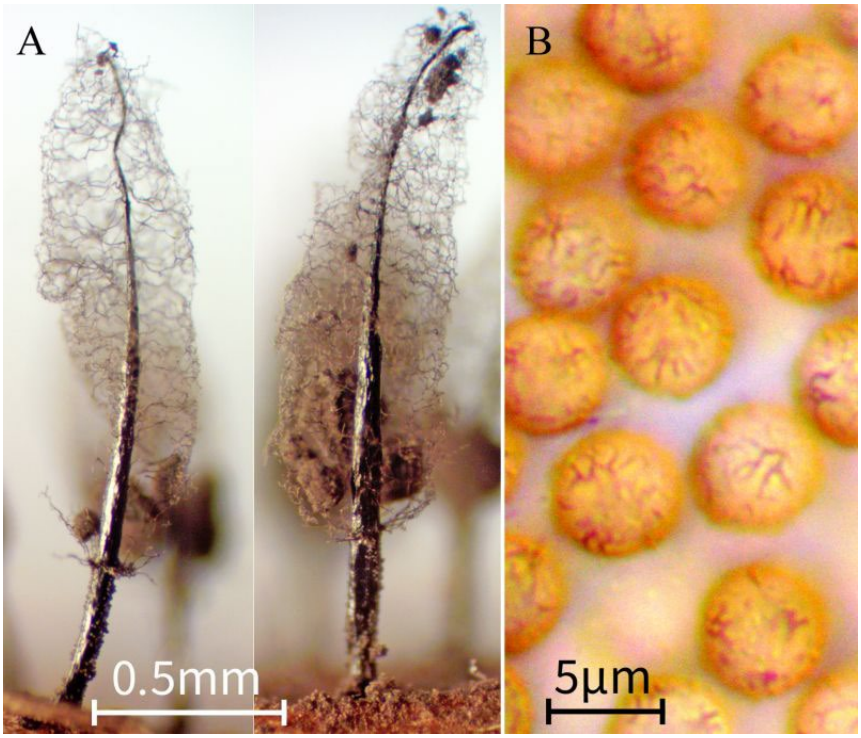

Figure 1. *Comatricha meandrispora*: A - two sporocarps with visible columella and capillitium, B - spores. Photo: J. Kluša.

● *Comatricha nigra* (Pers. ex J.F. Gmel.) J. Schröt., **melnā kocīte** - leg. I.Riževa, 05 Apr 2021, Ropaži p., on a log in the forest by the river, det. I.Riževa, conf. J.Kluša, 2021; (NMKK), moderately common.

● *Comatricha pulchella* (C. Bab.) Rostaf., **glītā kocīte** - leg. J.Kluša, 19 Sep 2022, Zebrene p., on a log of *Quercus robur* in a deciduous forest, det. J.Kluša, conf. E.Johannesen, 2022; (NMKK), very rare.

● *Comatricha tenerrima* var. *macrospora* Rammeloo, **smailās kocītes lielsporu varietāte** - leg. A.Piroga, 01 Nov 2021, Barkava p., on a log of *Populus tremula* in a mixed forest, det. E.Johannesen, 2021; leg. J.Kluša, 27 Sep 2023, Lielvārde p., on a log of *Betula* sp. in a mixed forest, det. J.Kluša, 2023; (NMKK), very rare.

B● ***Craterium*** *aureonucleatum* Nann.-Bremek., **zeltkodola krāterīte** - leg. A.Kalve, 27 Aug 2023, Valka p., on litter in a humid boreal forest, det. J.Kluša, 2023; (NMKK), one locality.

● *Craterium aureum* (Schumach.) Rostaf., **zeltainā krāterīte** - leg. J.Kluša, 03 Aug 2022, Krimulda p., on litter on *Picea abies* in

a humid mixed forest, det. J.Kluša, 2022; (NMKK), very rare.
Craterium leucocephalum (Pers. ex J.F. Gmel.) Ditmar, **baltā krāterīte** - leg.&det. W.Rotert, 1890; leg. J.Kluša, 21 Aug 2020, Sigulda p., on mosses on a sandstone outcrop in a ravine forest, det. J.Kluša, 2020; (NMKK), quite rare.
● *Craterium minutum* (Leers) Fr., **sīkā krāterīte** - leg. J.Kluša, 07 Oct 2021, Jūrmala, on mosses in black alder swamp forest, det. J.Kluša, 2021; (NMKK), quite rare.
● *Craterium minutum* cf. var. *brunneum* (Nann.-Bremek.) L.G. Krieglst., **brūnā krāterīte** - leg. J.Kluša, 12 Nov 2019, Jaunanna p., on litter in a boreal forest, det. J.Kluša, 2021; (NMKK), very rare.

Cribraria *argillacea* (Pers. ex J.F. Gmel.) Pers., **mālkrāsas lākturīte** - leg.&det. W.Rotert, 1890; (NMKK), moderately common.
● *Cribraria atrofusca* G.W. Martin & Lovejoy, **tumšbrūnā lākturīte** - leg. J.Kluša, 22 Sep 2020, Sigulda p., on a decaying log of *Picea abies* in a ravine forest, det. J.Kluša, conf. E.Johannesen, 2020; (NMKK), very rare.
Cribraria aurantiaca Schrad., **dzeltenoranžā lākturīte** - leg.&det. W.Rotert, 1890; leg. S.Laime, 09 Jul 2020, Cēsis, on a decaying log of *Pinus sylvestris* in a forest, det. S.Laime, conf. J.Kluša, 2020; (NMKK), quite rare.
● *Cribraria aurantiaca* var. *persoonii* (Nann.-Bremek.) Nann.-Bremek., **Persona lākturīte** - leg. A.Baroniņš, 14 Jul 2020, Brunava p., on a decaying log of *Alnus incana* in a forest, det. E.Johannesen, 2020; (NMKK), very rare.
Cribraria cancellata (Batsch) Nann.-Bremek., **tīklotā lākturīte** - leg.&det. W.Rotert, 1890, leg. S.Laime, 01 Feb 2020, Cēsis, on a decaying log of *Pinus sylvestris* in a forest by the stream, det. S.Laime, 2020; (NMKK), quite rare.
● *Cribraria cancellata* var. *fusca* (Lister) Nann.-Bremek., **kaustīklotā lākturīte** - leg. S.Laime, 22 Jul 2020, Cēsis, on a log of *Pinus sylvestris* in a forest, det. J.Kluša, 2021; leg. J.Kluša, 05 Jul 2021, Engure p., on a decaying log of *Picea abies* in a mixed forest, det. J.Kluša, 2021; (NMKK), quite rare.
B● *Cribraria costata* Dhillon & Nann.-Bremek., **ribainā lākturīte** - leg. J.Kluša, 07 Oct 2021, Jūrmala, on a decaying log in a humid boreal forest, det. E.Johannesen, 2021; (JK), one locality.
Cribraria ferruginea Meyl., **bezkausiņa lākturīte** - leg. S.Ruskule, 1985, det. S.Ruskule, 1986; leg. J.Kluša, 27 Sep 2020, Straupe p., on a log of *Quercus robur* in a mixed forest, det. J.Kluša, conf. E.Johannesen, 2020; (NMKK), very rare.
Cribraria macrocarpa Schrad., **lielā lākturīte** - leg.&det. W.Rotert, 1890; leg. S.Laime, 19 Oct 2019, Cēsis, on a decaying log of *Picea abies* on the forest slope, det. S.Laime, 2019; (SL), one locality.
B● *Cribraria* cf. *martinii* Nann.-Bremek., **Martina lākturīte** - leg. J.Kluša, 21 Jul 2022, Ance p., on a decaying log of *Picea abies* in a humid boreal forest, det. E.Johannesen, 2023; (JK), one locality; differs from a typical *C. martinii* by slightly larger dictydine granules (1-2.5 µm).
● *Cribraria microcarpa* (Schrad.) Pers., **sīkā lākturīte** - leg. S.Laime, 16 Sep 2020, Cēsis, decaying log of *Picea abies* in a forest, det. S.Laime, 2021; (JK), very rare.
● *Cribraria oregana* H.C. Gilbert, **Oregonas lākturīte** - leg. J.Kluša, 27 Jul 2023, Ziras p., on a decaying log of *Pinus sylvestris* in a boreal forest, det. J.Kluša, 2023; (NMKK), one locality.
● *Cribraria pertenuis* Flatau & Schirmer, **spradzeņu lākturīte** - leg. J.Kluša, 24 Aug 2022, Pope p., on a decaying log of *Picea abies* in drained boreal forest, det. J.Kluša, 2022; (JK), one locality.
● *Cribraria piriformis* Schrad., **bumbierveida lākturīte** - leg. A.Baroniņš, 01 Aug 2020, Jūrmala, on a decaying log of *Pinus sylvestris* in a forest; V.Baroniņa, 02 Aug 2020, Jūrmala, on a decaying log of *Pinus sylvestris* in a boreal forest, det. J.Kluša, 2020; (NMKK), quite rare.

Cribraria purpurea Schrad., **purpura lākturīte** - leg. S.Ruskule, 1985, det. S.Ruskule, 1986; (NMKK), common in specific, suitable habitats, on well rotted conifers, mostly spruce, overall distribution uneven. Can serve as woodland key habitat indicator species.
B● *Cribraria rubiginosa* Fr., **sarkanbrūnā lākturīte** - leg. J.Kluša, 07 Oct 2021, Jūrmala, on a decaying log of *Picea abies* in a boreal forest, det. J.Kluša, conf. E.Johannesen, 2022; leg. E.Veinberga, 20 Mar 2023, Salaspils p., on a log of *Pinus sylvestris* at the edge of a mixed forest, det. J.Kluša, 2023; (NMKK), very rare.
Cribraria rufa (Roth) Rostaf., **rūsganā lākturīte** - leg.&det. W.Rotert, 1890; (NMKK), moderately common.
● *Cribraria splendens* (Schrad.) Pers., **mirdzošā lākturīte** - leg. V.Baroniņa, 16 Aug 2021, Šēdere p., on a decaying log of *Picea abies* in a forest, det. J.Kluša, conf. E.Johannesen, 2022, very rare.
● *Cribraria* cf. *tenella* Schrad., **maigā lākturīte** - leg. M.Šlapakova-Pjankova, 22 Aug 2023, Čornaja p., on a decaying stump of *Picea abies* in a mixed forest, det. J.Kluša, 2023; (JK), one locality; differs from typical *C. tenella* by larger dictydine granules (basically 2-2.5 µm).
^ *Cribraria violacea* Rex, **violetā lākturīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006.
Cribraria vulgaris Schrad., **parastā lākturīte** - leg. K.Starcs, 1934, det. G.Adamonytė, 2005; leg. J.Kluša, 06 Aug 2020, Sigulda p., on a big and decaying log of *Quercus robur* in a ravine forest, det. E.Johannesen, 2021; (NMKK), very rare.

● ***Diachea*** *leucopodia* (Bull.) Rostaf., **baltkājas vizulīte** - leg. K.Aizpurve, 08 Sep 2018, Indrāni p., on *Oxalis acetosella* in a mixed forest, det. J.Kluša, 2020; (NMKK), quite rare.

Dianema *corticatum* Lister, **mizas sveķenīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006; leg. S.Laime, 01 Aug 2020, Cēsis, on a decaying log of *Pinus sylvestris* in a forest, det. S.Laime, conf. J.Kluša, 2020; (NMKK), very rare.
B● *Dianema depressum* (Lister) Lister, **plakanā sveķenīte** - leg. V.Sīmansone, 21 Sep 2023, Taurupe p., on a log of *Populus tremula* in a mixed forest, det. J.Kluša, 2023; (NMKK), one locality.
B● *Dianema nivale* (Meyl.) G. Lister, **sniega sveķenīte** - leg. M.Šlapakova-Pjankova, 14 Apr 2023, Ozolaine p., on a small deciduous branch in litter in old humid deciduous forest near melting snow, det. J.Kluša, conf. E.Johannesen, 2023; (JK), one locality.

● ***Dictydiaethalium*** *plumbeum* (Schumach.) Rostaf., **svinpelēkais sīkacis** - leg. J.Kluša, 22 Sep 2020, Sigulda p., on a log of *Populus tremula* in a mixed humid ravine forest, det. J.Kluša, 2020; (NMKK), very rare.

B● ***Diderma*** *chondrioderma* (de Bary & Rostaf.) G. Lister, **cietā olīte** - leg. J.Kluša, 07 Oct 2021, Jūrmala, on *Hylocomiadelphus triquetrus* in a drained black alder swamp forest, det. E.Johannesen, 2021; (NMKK), one locality.
^ *Diderma cinereum* Morgan, **pelēcīgā olīte** - leg. S.Ruskule, 1984, det. S.Ruskule, 1986. Doubtful. No sample to check. May be confused with *Diderma radiatum*.
B● *Diderma cingulatum* Nann.-Bremek., **gredzenotā olīte** - leg. I.Vīnšteina, 28 Aug 2021, Zvārde p., on litter and plants in the ditch next to an orchard, det. J.Kluša, 2021; (NMKK), very rare.
● *Diderma crustaceum* Peck, **garozas olīte** - leg. J.Kluša, 02 Oct 2020, Sigulda, on a sandstone outcrop in a ravine forest, det. E.Johannesen, 2021; (NMKK), very rare.
● *Diderma deplanatum* Fr., **sūnu olīte** - leg. J.Kluša, 04 Oct 2017, Baltinava p., on *Dicranum scoparium* in a forest, det. J.Kluša, 2020; (NMKK), very rare.
● *Diderma effusum* (Schwein.) Morgan, **izplūdusī olīte** - leg. J.Kluša, 03 Aug 2022, Krimulda p., on leaf of *Quercus robur* in litter next to log of *Picea abies* in a mixed forest, det. J.Kluša, conf. E.Johannesen, 2022; (NMKK), very rare.

Diderma floriforme (Bull.) Pers., **ziedu olīte** - leg. K.Starcs, 1934, det. W.T. Elliot, 2005*, leg. J.Kluša, 18 Oct 2021, Jūrmala, on mossy log in a wet reedbed, det. J.Kluša, 2021; (NMKK), one locality.

● *Diderma globosum* Pers., **apaļblīvā olīte** - leg. L.Jēka, 05 Oct 2022, Zlēkas p., on a small twig in litter on the forest slope, det. J.Kluša, 2022; (NMKK), very rare.

● *Diderma hemisphaericum* (Bull.) Hornem., **pogveida olīte** - leg. J.Kluša, 14 Sep 2021, Līgatne p., on litter and mosses in a ravine forest, det. J.Kluša, 2021; (NMKK), one locality.

● *Diderma montanum* (Meyl.) Meyl., **kalnu olīte** - leg. J.Kluša, 09 Mar 2020, Sigulda, on mosses on a sandstone outcrop in a ravine forest, det. J.Kluša, 2022; leg. S.Laime, 09 Oct 2021, Cēsis, on a log of *Salix* sp. in a forest, det. S.Laime, conf. J.Kluša, 2022; (NMKK), very rare.

B● *Diderma ochraceum* Hoffm., **dzeltenbrūnā olīte** - leg. J.Kluša, 22 Sep 2020, Sigulda p., on mosses on a log in a humid ravine forest, det. E.Johannesen, 2021; (NMKK), very rare (EN); 5 localities in Latvia, recommended for the list of specially protected species in Latvia.

Diderma radiatum (L.) Morgan, **starojošā olīte** - leg.&det. W.Rotert, 1890; (NMKK), moderately common.

● *Diderma roanense* (Rex.) T. Macbr., **plakanziedu olīte** - leg. J.Kluša, 11 Oct 2021, Jūrmala, on a decaying log of *Pinus sylvestris* in a drained boreal forest, det. J.Kluša, 2021; (NMKK), one locality.

B● *Diderma rufostriatum* Nann.-Bremek. & Lado, **gailenes olīte** - leg. M.Šlapakova-Pjankova, 6 Nov 2023, Vērēmi p., on *Cantharellus cibarius* in a mixed forest, det. J.Kluša, 2023; (JK), one locality. The spores are larger than in the original description (10-13 µm as opposed to 9-10.5 µm), but all other characters fit. Taking into account that the specimen was collected immature, and the species was described only in 1985, it has few localities in the world and is accordingly little studied, the deviations in the spore size might not be considered as significant.

Diderma spumarioides (Fr.) Fr., **putukrējuma olīte** - leg.&det. W.Rotert, 1890; leg. V.Baroniņa, 06 Aug 2020, Jaunbērze p., on mosses in an aspen forest, det. J.Kluša, 2020; (NMKK), very rare.

B● *Diderma subviridifuscum* Buyck, **iebrūnā olīte** - leg. A.Kalve, 08 Oct 2021, Valka p., on litter and mosses in a ditch near a coniferous forest, det. J.Kluša, conf. E.Johannesen; leg. A.Piroga, 12 Sep 2021, Nagļi p., on *Hylocomium splendens* and plants on roadside embankment with lingonberries, det. J.Kluša, 2021; leg. J.Kluša, 03 Sep 2023, Daugmale p., on *Calluna vulgaris* and *Vaccinium vitis-idaea* in young forest of *Pinus sylvestris*, det. J.Kluša, 2023; (NMKK), very rare.

● *Diderma subviridifuscum* Buyck var. *macrospora**, **iebrūnās olītes liesporu varietāte** - leg. J.Kluša, 25 Oct 2021, 14 Sep 2023, Jūrmala, on mosses, plants (*Carex* sp.) and on logs of *Populus tremula* un *Tilia cordata* in a mixed forest; leg. L.Jēka, 09 Sep 2023, Užava p., on mosses in deciduous forest, det. J.Kluša, 2023; (JK), very rare. *I would propose a new variety with significantly larger spores (13-17 µm) than the basic species (10-13 µm), observed in two localities in western Latvia, in nine samples in 2021 and 2023.

● *Diderma testaceum* (Schrad.) Pers., **kapsulu olīte** - leg. J.Kluša, 12 Aug 2019, Līdumnieki p., on mosses and plants in transitional mire, det. J.Kluša, 2021; (NMKK), quite rare.

● *Diderma tigrinum* (Schrad.) Prikhodko, Shchepin, Novozh. López-Vill., G. Moreno & Schnittler (syn. *Lepidoderma tigrinum* (Schrad.) Rostaf.), **tīģerkrāsas pārslainīte** - leg. A.Opmanis, 14 Oct 2008, Vecumi p., on *Dicranum* sp. on a decaying trunk of *Pinus sylvestris* in a bog woodland, det. G.Adamonytė, 2008; (NMKK), moderately common.

● *Diderma umbilicatum* Pers., **pērļainā olīte**- leg. L.Birziņa, 12 Dec 2020, Ādaži, on mosses and deciduous log in a deciduous forest, det. E.Johannesen, 2021; (NMKK), very rare.

B● ***Didymium*** *aggregatum* G. Moreno & Lizárraga, **ciešā cukurīte** - leg.

M.Šlapakova-Pjankova, 01 Jun 2023, Vērēmi p., on a decaying stump in a mixed dark forest, det. J.Kluša, conf. E.Johannesen, 2023; (NMKK), one locality.

Didymium bahiense Gottsb., **Baijas cukurīte** - leg. K.R.Kupfer, 1927, det. G.Adamonytė, 2003; leg. A.Piroga, 07 Oct 2021, Arona p., on the lower leaf stalks of cabbage in the garden; leg. V.Ērmane, 01 Sep 2021, Svitene p., on dried potato leaves in the garden, det. J.Kluša, 2021; (NMKK), very rare.

● *Didymium clavus* (Alb. & Schwein.) Rabenh., **plakangalvas cukurīte** - leg. S.Laime, 14 Oct 2021, Cēsis, on leaves of *Oxalis acetosella* and on litter in a forest, det. S.Laime, conf. J.Kluša; leg. J.Kluša, 10 Sep 2021, Krimulda p., on mosses on trunk of *Acer platanoides* in a forest, det. J.Kluša, 2021; (NMKK), very rare.

● *Didymium crustaceum* Fr., **drumstalu cukurīte** - leg. L.Birziņa, 10 Nov 2019, Garkalne p., on litter in a deciduous forest slope, det. J.Kluša, 2021; (NMKK), very rare.

Didymium difforme (Pers.) Gray, **nekārtnā cukurīte** - leg. S.Ruskule, 1984, det. S.Ruskule, 1986; leg. K.R.Kupfer, 1927, det. G.Adamonytė, 2003; leg. J.Kluša, 14 Sep 2021, Līgatne p., on litter in a ravine forest, det. J.Kluša, 2021; (NMKK), very rare.

Didymium iridis (Ditmar) Fr., **mirdzošā cukurīte** - leg. E.Vimba, 1979, det. T.Sizova, 2003*; leg. S.Laime, 15 sep 2023, Cēsis, on *Dicranum* sp. in a forest, det. J.Kluša, 2023; (SL), one locality.

B● *Didymium megalosporum* Berk. & M.A. Curtis, **iedzeltenā cukurīte** - leg. M.Riekstš-Hofmanis, 30 Aug 2023, Engures p., on pine bark mulch in a garden, det. J.Kluša, conf. E.Johannesen, 2023; (NMKK), one locality.

Didymium melanospermum (Pers.) T. Macbr., **sūnu cukurīte** - leg.&det. W.Rotert, 1890; leg. J.Kluša, 21 Nov 2019, Ranka p., on mosses in a forest, det. J.Kluša, 2020; (NMKK), quite rare.

Didymium minus (Lister) Morgan, **mazā cukurīte** - leg. E.Vimba, 1955, 1995, det. T.Sizova, 2003*; leg. K.Starcs, 1934, det. G.Adamonytė, 2005; leg. J.Kluša, 14 Sep 2021, Līgatne p., on litter in a ravine forest, det. J.Kluša, 2020; (NMKK), very rare.

Didymium nigripes (Link) Fr., **melnkājas cukurīte** - leg.&det. W.Rotert, 1890; leg. I.Leimanis, 02 Aug 2016, Sigulda, on *Lobaria pulmonaria* in a mixed forest, det. A.Opmanis, conf. J.Kluša, 2018; (NMKK), quite rare.

B● *Didymium proximum* Berk. & M.A.Curtis (syn. *Didymium ovoideum* Nann.-Bremek.), **ovālā cukurīte** - leg. A.Opmanis, 08 Sep 2018, Embūte p., on *Sphagnum fallax* in a wet depression in a boreal forest, det. J.Kluša, conf. E.Johannesen, 2022; (NMKK), one locality.

● *Didymium serpula* Fr., **plakancaurā cukurīte** - leg. J.Kluša, 06 Sep 2023, Jūrmala, on a tiny twig in litter in a black alder swamp forest, det. J.Kluša, 2023; (NMKK), very rare.

Didymium spongiosum (Leyss.) J.M. García-Martín, J.C. Zamora & Lado (syn. *Mucilago crustacea* F.H. Wigg.), **pārslainā cukurīte** - leg.&det. W.Rotert, 1890; (NMKK), moderately common.

● *Didymium spongiosum* (Leyss.) J.M. García-Martín, J.C. Zamora & Lado var. *dictyospora* R.E. Fr., **pārslainās cukurītes tīklsporu varietāte** - leg. J.Kluša, 19 Jul 2023, Užava p., on leaves of *Festuca ovina* and on needles of *Pinus sylvestris* under pine in a gray dune, det. E.Johannesen, 2023; (NMKK), one locality. This variety is characterized by subreticulate spores (Fig. 2).

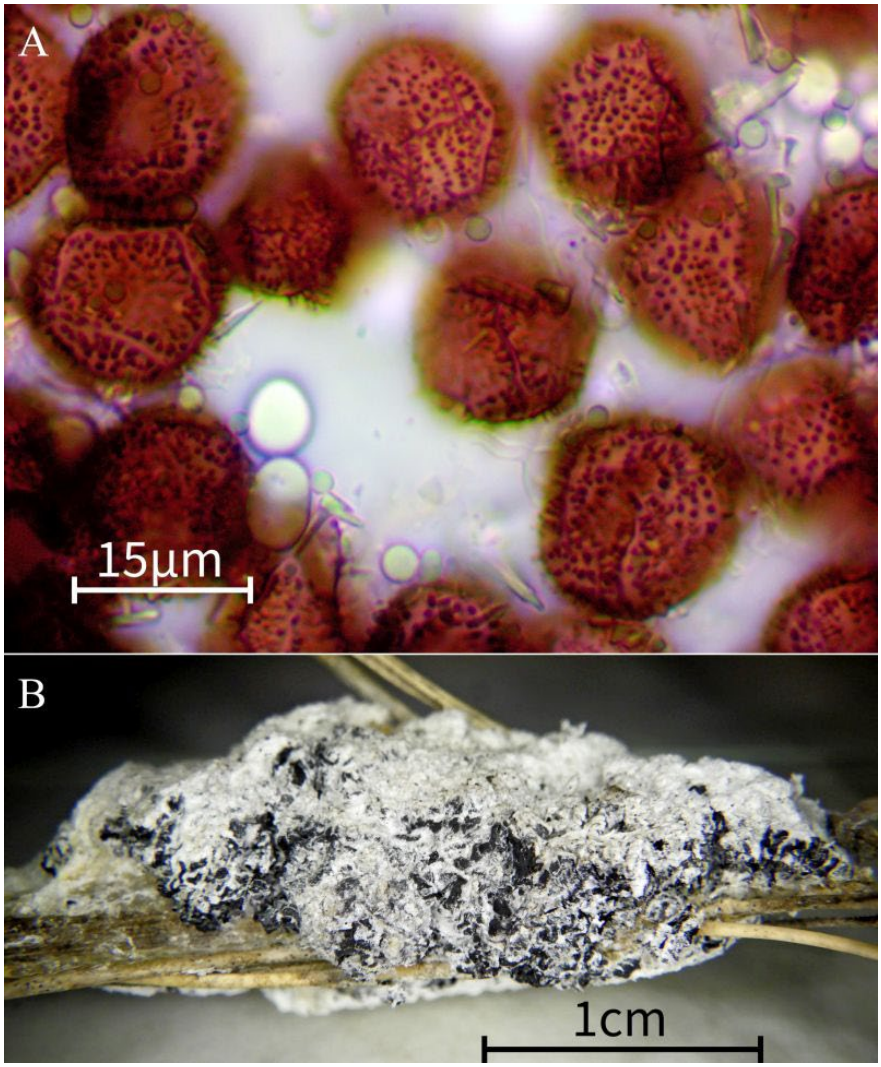

Figure 2. *Didymium spongiosum* var. *dictyospora*: A - spores, B - sporocarp. Photo: J. Kluša.

Didymium squamulosum (Alb. & Schwein.) Fr. & Palmquist, **zvīņainā cukurīte** - leg. S.Ruskule, 1985, det. S.Ruskule, 1986; leg. J.Kluša, 18 Aug 2022, Jūrmala, on a small twig in litter in aspen - conifer forest, det. J.Kluša, 2022; (NMKK), very rare.

^ ***Echinostelium*** *apitectum* K.D. Whitney, **sporgalvas adatīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006.

^ *Echinostelium brooksii* K.D. Whitney, **Brūksa adatīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006.

^ *Echinostelium minutum* de Bary, **sīkā adatīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006.

Enerthenema *papillatum* (Pers.) Rostaf., **nabas jāņodzīte** - leg.&det. W.Rotert, 1890; leg. L.Birziņa, 21 Nov 2020, Ādaži p., on branch of *Quercus robur* that fell into a ditch,

det. L.Birziņa, conf. J.Kluša, 2021; (NMKK), quite rare.

● ***Fuligo*** *gyrosa* (Rostaf.) E. Jahn (syn. *Physarum gyrosum* Rostaf.), **kruzuļotais ragansviests** - leg. A.Baroniņš, 30 Aug 2021, on mosses in a dune forest, Sala p. (Mārupe distr.), det. J.Kluša, conf. E.Johannesen, 2021; (NMKK), very rare.

Fuligo leviderma H. Neubert, Nowotny & K. Baumann, **gludais ragansviests** - leg. K.R.Kupfer, 1918, det. G.Adamonytė, 2003 (ascribed to *Fuligo* cf. *leviderma* because of specimen was heavily damaged by insects and could not be reliably identified); leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006; (NMKK), common.

B● *Fuligo luteonitens* L.G. Krieglst. & Nowotny, **dzeltenīgais ragansviests** - leg. J.Kluša, 21 Dec 2019, Lejasciems p., on a log of *Populus tremula* in aspen-spruce forest, det. J.Kluša, 2022; leg. I.Rožlapa, 29 Jan 2023, Rīga, on a deciduous log in a clump of trees, det. J.Kluša, 2023; leg. R.Ivulāns, 19 Aug 2023, Jaunpiebalga p., on a log of *Populus tremula* in aspen-spruce forest, det. J.Kluša, 2023; leg. A.Kalve, 04 Sep 2023, on a log of *Populus tremula* in a mixed forest, det J.Kluša, 2023; leg. J.Kluša, 03 Nov 2023, on a log of *Populus tremula* in a mixed forest, det J.Kluša, 2023; (NMKK), very rare.

Fuligo septica (L.) F.H. Wigg., **parastais ragansviests** - leg.&det. W.Rotert, 1890; (NMKK), common.

● *Fuligo septica* var. *flava* (Pers.) Lázaro Ibiza, **dzeltenais ragansviests** - leg. I.Riževa, 10 Jul 2020, Stopiņu p., on a decaying stump in a forest, det. I.Riževa, conf. J.Kluša, 2022; (JK), moderately common.

● *Fuligo septica* var. *rosea* Nann.-Bremek., **rozīgais ragansviests** - leg. J.Kluša, 24 Aug 2020, on a decaying stump in a ravine forest, Sigulda p., det. J.Kluša, 2020; (NMKK), very rare.

● *Fuligo septica* cf. *rufa* (Pers.) Lázaro Ibiza, **rūsganais ragansviests** - leg. I.Riževa, 28 Jun 2021, Mazozolu p., on a decaying stump in a forest, det. I.Riževa, conf. J.Kluša, 2022; (NMKK), moderately common. By *F. septica* cf. *rufa* we mean specimens with a yellow plasmodium, but over time it becomes yellow with rusty spots and rusty, thus different from other varieties that do not change color from yellow to rusty.

Fuligo septica var. *candida* (Pers.) R.E. Fr., **baltais ragansviests** - leg. E.Vimba, 1988, det. G.Adamonytė, 2003 (as *F.candida* Pers.); (NMKK), common.

● ***Gulielmina*** *vermicularis* (Schwein.) García-Cunch., J.C.Zamora & Lado (syn. *Perichaena vermicularis* (Schwein.) Rostaf.), **tārpveida garenmizaine** - leg. L.Birziņa, 31 Jan 2023, Ādaži, on snag of *Acer negundo* in an alluvial deciduous forest, det. L.Birziņa & J.Kluša, 2023; (NMKK), one locality.

Hemitrichia *calyculata* (Speg.) M.L. Farr, **apkaklītes pilienīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006; (NMKK), moderately common.

Hemitrichia clavata (Pers.) Rostaf., **vāles pilienīte** - leg.&det. W.Rotert, 1890; (NMKK), moderately common.

Hemitrichia decipiens (Pers.) García-Cunch., J.C. Zamora & Lado (syn. *Trichia decipiens* (Pers.) T. Macbr.), **maldinošā pilienīte** - leg.&det. W.Rotert, 1890; (NMKK), very common.

● *Hemitrichia decipiens* (Pers.) García-Cunch., J.C. Zamora & Lado var. *hemitrichoides* Brândza, **sīkā pilienīte** - leg. J.Kluša, 27 Sep 2023, Lielvārde p., on a deciduous log under bark in a mixed forest, det. J.Kluša, 2023; (NMKK), one locality.

● *Hemitrichia karstenii* (Rostaf.) Lister (syn. *Trichia contorta* var. *karstenii* (Rostaf.) Ing), **Karstena pilienīte** - leg. L.Birziņa, 12 Feb 2023, Garkalne p., on a fallen branch of *Tilia cordata* on a mixed forest slope, det. L.Birziņa, conf. E.Johannesen, 2023; (LB), one locality.

^ *Hemitrichia leiotricha* (Lister) G. Lister, **gludā pilienīte** - leg. S.Ruskule, 1984, det. S.Ruskule, 1986.

B● *Hemitrichia lutescens* (Lister) García-Cunch., J.C. Zamora & Lado (syn. *Trichia lutescens* (Lister) Lister), **gailošā pilienīte** -

leg. S.Laime, 13 Dec 2019, Cēsis, on a deciduous log on a forest slope, det. S.Laime, conf. J.Kluša, 2020; (SL), very rare. *Hemitrichia serpula* (Scop.) Rostaf. ex Lister, **režģa gļotsēne** - leg. S.Ruskule, 1984, det. S.Ruskule, 1986; (NMKK), moderately common in suitable, humid habitats on deciduous logs, overall distribution uneven.

● ***Lamproderma*** *arcyrioides* (Sommerf.) Rostaf., **tīklotā lampīte** - leg. M.Šlapakova-Pjankova, 27 Apr 2023, Ozolaine p., on a small deciduous branch in litter in old humid deciduous forest near melting snow, det. J.Kluša, 2023; (NMKK), one locality. *Lamproderma columbinum* (Pers.) Rostaf., **garkājas lampīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006; (NMKK), moderately common.

B● *Lamproderma echinosporum* Meyl., **ezīšsporu lampīte** - leg. M.Šlapakova-Pjankova, 29 Apr 2023, Žīguri p., on litter in the old boreal forest near melting snow, det. J.Kluša, conf. E.Johannesen, 2023; (NMKK), one locality.

B● *Lamproderma elasticum* Nann.-Bremek. & Bozonnet, **birstošā lampīte** - leg. V.Sīmansone, 19 Oct 2022, Sēja p., on a large log of *Fraxinus excelsior* in a deciduous forest, det. J.Kluša, conf. E.Johannesen, 2022; (NMKK), one locality. This species is characterized by columella with a bulbous end, peridium remaining as a collar and by nearly simple and easily falling apart capillitium (Fig. 3).

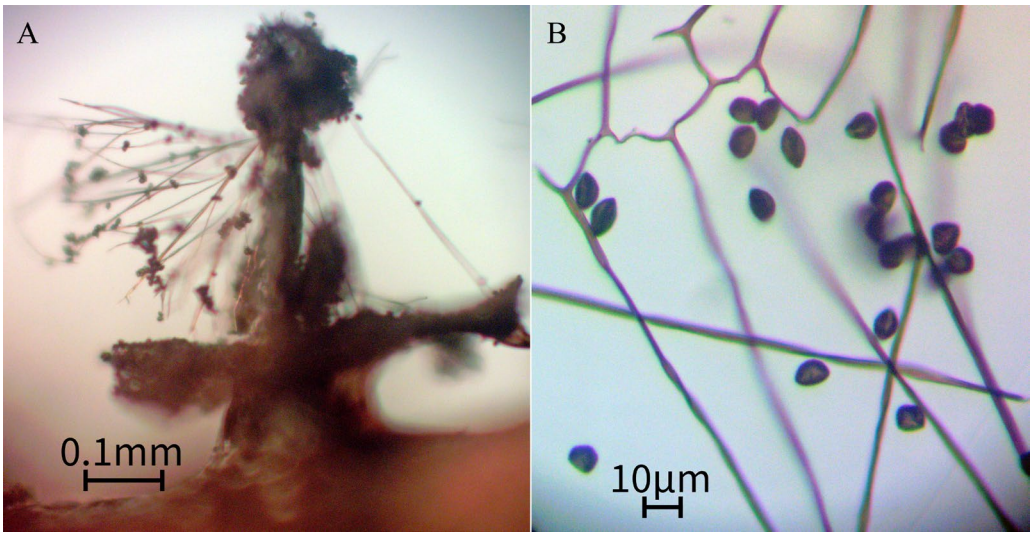

Figure 3. *Lamproderma elasticum*: A - sporocarp with visible peridium as a collar, columella and capillitium, B - capillitium and dry spores. Photo: J.Kluša.

● *Lamproderma gulielmae* Meyl., **brūndobuļu lampīte** - leg. J.Kluša, 30 Sep 2021, Straupe p., on leaf litter near large log of *Picea abies* in a ravine forest, det. J.Kluša, conf. E.Johannesen, 2021; (NMKK), very rare.

B● *Lamproderma nigrescens* (Rostaf.) Rostaf., **iesirmā lampīte** - leg. R.Kaupuža, 07 Dec 2020, Medņeva p., on *Plagiomnium undulatum* in an old aspen forest, det. J.Kluša, 2021; leg. V.Sīmansone, 09 Oct 2021, Sēja p., on a log of *Populus tremula* in a moist mixed forest, det. J.Kluša, 2021; leg. M.Krūze, 09 Nov 2021, Skrīveri p., on a log in a mixed forest, det. J.Kluša, 2021; (NMKK), very rare.

B● *Lamproderma ovoideum* Meyl., **ovālā lampīte** - leg. M.Šlapakova-Pjankova, 03

May 2023, Vērēmi p., on a deciduous twig in litter in a young forest after clearing, near melting snow, det. E.Johannesen, 2023; (JK), one locality.

● *Lamproderma pseudomaculatum* Mar. Mey. & Poulain, **plankumgaišā lampīte** - leg. M.Šlapakova-Pjankova, 14 Apr 2023, Ozolaine p., on leaf litter in old humid deciduous forest near melting snow, det. J.Kluša, conf. E.Johannesen, 2023; leg. R.Ivulāns, 16 Apr 2023, Liezēre p., on aspen leaf litter in a wet depression in aspen forest near melting snow, det. J.Kluša, 2023; leg. M.Šlapakova-Pjankova, 29 Apr 2023, Žīguri p., on a twig in litter in old boreal forest near melting snow, det. J.Kluša, conf. E.Johannesen, 2023; (NMKK), very rare.

Lamproderma violaceum Fr. ex Rostaf., **sirmā lampīte** - leg. E.Vimba, 1985, det. G.Adamonytė, 2003 (as *L. arcyrioides* (Sommerf.) Rostaf., not nivicolous); leg. M.Krūze, 07 Nov 2020, Sēme p., on litter at the decaying stump in a forest, det. E.Johannesen, 2020; (NMKK), very rare.

Leocarpus *fragilis* (Dicks.) Rostaf., **trauslā lāsenīte** - leg.&det. W.Rotert, 1890; (NMKK), common.

● ***Licaethalium*** *olivaceum* (Ehrenb.) Rostaf. (syn. *Reticularia olivacea* (Ehrenb.) Fr.), **olīvsporu gļotpūpēdis** - leg. S.Laime, 10 Oct 2019, Cēsis, At 1.6 m high on snag of *Pinus sylvestris* without bark in a bog woodland, det. S.Laime; 2023; leg. V.Sīmansone, 19 Nov 2021, Sēja p., on standing dead wood of *Pinus sylvestris* without bark in a bog woodland, det. V.Sīmansone, conf. J.Kluša, 2023; (JK), very rare (EN); 5 localities in Latvia, recommended for the list of specially protected species in Latvia.

^ ***Licea*** *kleistobolus* G.W. Martin, **krāterveida kriksīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006.

Licea minima Fr., **mazā kriksīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006; leg. J.Kluša, 07 Jun 2022, Jūrmala, on a log of *Pinus sylvestris* in a drained boreal forest, det. J.Kluša, conf. E.Johannesen, 2022; (NMKK), very rare.

^ *Licea operculata* (Wingate) G.W. Martin, **aizvākotā kriksīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006.

^ *Licea parasitica* (Zukal) G.W. Martin, **parazītiskā kriksīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006.

Licea pusilla Schrad., **lielsporu kriksīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006; leg. S.Laime, 24 Dec 2019, Cēsis, 1.5 m high on a log of *Pinus sylvestris* in a boreal forest, det. S.Laime, conf. J.Kluša, 2020; (NMKK), very rare.

^ *Licea pygmaea* (Meyl.) Ing, **sīkā kriksīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006.

Licea variabilis Schrad., **mainīgā kriksīte** - leg.&det. W.Rotert, 1890; leg. J.Kluša, 03 Nov 2022, Slampe p., 1.5 m high on a log of *Pinus sylvestris* without bark in a drained boreal forest, det. E.Johannesen, 2022; (NMKK), very rare.

Lignydium *muscorum* (Alb. & Schwein.) Kuntze (syn. *Fuligo muscorum* Alb. & Schwein.), **paciņu ragansviests** - leg. S.Ruskule, 1985, det. S.Ruskule, 1986; (NMKK), moderately common.

Lindbladia *tubulina* Fr., **parastā lindblādija** - leg.&det. W.Rotert, 1890; leg. I.Riževa, 20 Aug 2019, Rīga, on bark of trunk of *Pinus sylvestris* in a boreal forest, det. I.Riževa, conf. J.Kluša, 2021; (NMKK), quite rare.

● ***Lycogala*** *conicum* Pers., **koniskā vilkpienaine** - leg. J.Kluša, 19 Jun 2020, Susāji p., on a log of *Betula* sp. in a dry birch forest, det. J.Kluša, 2020; (NMKK), quite rare.

Lycogala epidendrum (aggr.) (L.) Fr., **koksnes vilkpienaine** - leg.&det. W.Rotert, 1890; (JK), very common. Given the fact that the genus *Lycogala* is currently being revised and several new species have been and will be described, it has been decided in this paper to treat L. epidendrum as a species complex.

Lycogala exiguum (aggr.) Morgan, **košā vilkpienaine** - leg. S.Ruskule, 1985, det.

S.Ruskule, 1986; leg. A.Kalve, 11 Jun 2022, on a decaying log of *Picea abies*, det. J.Kluša, 2023 (similar to *Lycogala aggregatum* Leontyev, Kochergina, Schnittler & C. Rojas, but its identity has not been proven yet); (JK), quite rare. Knowing that *L.exiguum* will be divided into several species, it is here treated as a species complex, assuming that it includes at least one species additional to *L.roseosporum* (already separated, see below).
● *Lycogala flavofuscum* (Ehrenb.) Rostaf., **milzu vilkpienaine** - leg. G.Geida, 03 Sep 2021, Skrīveri p., in the hollow of an old *Tilia cordata* in the arboretum, det. J.Kluša, 2021; (NMKK), very rare.
● *Lycogala roseosporum* Leontyev, Schnittler, Ishchenko & P. Vetlesen, **sārtsporu vilkpienaine** - leg. J.Kluša, 01 Jul 2023, Jūrmala, on a log of *Picea abies* in a mixed forest, det. J.Kluša, conf. D.Leontyev, 2023; leg. J.Kluša, 06 Jul 2023, Ugāle p., on a log by a stream in a mixed forest, det. J.Kluša, 2023; (NMKK), very rare (DD).

^ ***Macbrideola*** *cornea* (G. Lister & Cran) Alexop., **ragainā skrajzarīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006.

Metatrichia *floriformis* (Schwein.) Nann.-Bremek., **kazeņu daudzpilīte** - leg. E.Vimba, 1985, det. G.Adamonytė, 2003; (NMKK), moderately common.
Metatrichia vesparia (Batsch) Nann.-Bremek. ex G.W. Martin & Alexop., **šūnu daudzpilīte** - leg.&det. A.A.Jaczewski, 1907; (NMKK), common.

Nannengaella *contexta* (Pers.) J.M. García-Martín, J.C. Zamora & Lado (syn. *Physarum contextum* (Pers.) Pers.), **zemesriekstu pumpurīte** - leg.&det. W.Rotert, 1890; leg. J.Kluša, 28 Jul 2019, Isnauda p., on mosses on bark of *Populus tremula* in an aspen forest, det. J.Kluša, 2020; (NMKK), very rare.
Nannengaella globulifera (Bull.) J.M. García-Martín, J.C. Zamora & Lado (syn. *Physarum globuliferum* (Bull.) Pers.), **apaļgalvas pumpurīte** - leg.&det. W.Rotert, 1890; leg. A.Opmanis, 03 Aug 2020, Līgatne p., on a decaying log of *Picea abies* in an old woodpile in a yard, det. E.Johannesen, 2020; (NMKK), very rare.
B● *Nannengaella laevis* (Pers.) J.M. García-Martín, J.C. Zamora & Lado (syn. *Fuligo laevis* Pers.), **gluddzeltenais ragansviests** - leg. V.Sīmansone, 19 Sep 2023, Zebrene p., on a bark of standing dead wood of *Populus tremula* in a mixed forest, det. V.Sīmansone & J.Kluša, 2023; leg. A.Kalve, 04 Sep 2023, Valka p., on a log of *Populus tremula* in a mixed forest, det. J.Kluša, 2023; (NMKK), very rare.
Nannengaella leucopus (Link) J.M. García-Martín, J.C. Zamora & Lado (syn. *Physarum leucopus* Link), **baltkāta pumpurīte** - leg. S.Ruskule, 1985, det. S.Ruskule, 1986; leg. M.Krūze, 07 Sep 2020, Smārde p., on a log of *Betula* sp. and on a cap fungus on it in a forest, det. M.Krūze, conf. J.Kluša, 2020; (NMKK), very rare.
B● *Nannengaella mellea* (Berk. & Broome) J.M. García-Martín, J.C. Zamora & Lado (syn. *Physarum melleum* (Berk. & Broome) Massee), **meduskrāsas pumpurīte** - leg. S.Laime, 07 Sep 2023, Cēsis, on leaf litter on a mixed forest slope, det. S.Laime, conf. J.Kluša, 2023; (SL), one locality.

● ***Oligonema*** *affine* (de Bary) García-Cunch., J.C. Zamora & Lado (syn. *Trichia affinis* de Bary), **gludā bumbulīte** - leg. I.Riževa, 27 Sep 2021, Skrīveri p., on a log of *Populus tremula* in a humid mixed forest, det. I.Riževa & J.Kluša, 2023; (NMKK), one locality.
Oligonema favogineum (Batsch) García-Cunch., J.C. Zamora & Lado (syn. *Trichia favoginea* (Batsch) Pers.), **medainā bumbulīte** - leg.&det. K.R.Kupfer, 1931; (NMKK), common.
● *Oligonema flavidum* (Peck) Peck, **gaišdzeltenā bumbulīte** - leg. A.Baroniņš, 06 Aug 2020, Jaunbērze p., on a decaying log of *Populus tremula* in a humid deciduous forest, det. J.Kluša, 2020; leg. I.Riževa, 26 Aug

2020, Valgunde p., on a log of *Populus tremula* in a humid spruce forest, det. I.Riževa & J.Kluša, 2021; (NMKK), very rare (CR); two localities in Latvia, recommended for the list of specially protected species in Latvia.
Oligonema persimile (P. Karst.) García-Cunch., J.C. Zamora & Lado (syn. *Trichia persimilis* P. Karst.), **nolīdzinātā bumbulīte** - leg. & det. W.Rotert, 1890; (NMKK), moderately common.

^ ***Ophiotheca*** *chrysosperma* Curr. (syn. *Perichaena chrysosperma* (Curr.) Lister), **zeltsporu čūskaine** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006.
^ *Ophiotheca pedata* (Lister & G.Lister) García-Cunch., J.C. Zamora & Lado (syn. *Perichaena pedata* (Lister & G. Lister) Lister ex E. Jahn), **kājainā čūskaine** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006.

^ ***Paradiacheopsis*** *fimbriata* (G. Lister & Cran) Hertel ex Nann.-Bremek., **skropstainā rūķīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006.
B● *Paradiacheopsis rigida* (Brândză) Nann.-Bremek., **stingrā rūķīte** - leg. J.Kluša, 17 Nov 2021, Ugāle p., on a decaying log in a drained boreal forest, det. E.Johannesen, 2021; (JK), very rare.
^ *Paradiacheopsis solitaria* (Nann.-Bremek.) Nann.-Bremek., **vientuļā rūķīte** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006.

Perichaena *corticalis* (Batsch) Rostaf., **kārpainā mizaine** - leg. V.Tumšs, 1934, det. W.T. Elliot, 2005*, leg. I.Riževa, 13 Oct 2019, Suntaži p., on a decorticated log in a forest, det. I.Riževa, conf. J.Kluša, 2021; (NMKK), quite rare.
● *Perichaena depressa* Lib., **plakanā mizaine** - leg. I.Riževa, 28 Mar 2021, Jaunsāti p., on a log of *Populus tremula* in a small and drained forest, det. I.Riževa & J.Kluša, 2021; (NMKK), very rare.

Physarum *album* (Bull.) Chevall., **nokarenā pumpurīte** - leg.&det. W.Rotert, 1890; (NMKK), common.
^ *Physarum altaicum* Lavrov - leg. S.Ruskule, 1985, det. S.Ruskule, 1986. Doubtful. No sample to check. Since there is extremely little information about this species in the world and there is no possibility to check the correctness of the identification, with the permission of Ruskule, it should be removed from list of myxomycetes in Latvia.
● *Physarum auriscalpium* Cooke, **zeltītā pumpurīte** - leg. J.Kluša, 27 Aug 2020, Sigulda p., on a deciduous twig in litter in a ravine forest, det. J.Kluša, conf. E.Johannesen, 2020; (NMKK), one locality.
● *Physarum bitectum* G. Lister (expected transfer to the genus *Angioridium* (García-Martín et al 2023)), **dubultā rāpulīte** - leg. J.Kluša, 07 Oct 2021, Jūrmala, on mosses, plants and litter in a black alder swamp forest, det. J.Kluša, 2021; (NMKK), very rare.
Physarum cinereum (Batsch) Pers., **pelēcīgā pumpurīte** - leg.&det. K.R.Kupfer, 1931; leg. E.Veinberga, 12 Aug 2021, Salaspils p., on leaves of *Taraxacum officinale* and zucchini in a garden, det. J.Kluša, 2021; (NMKK), very rare.
^ *Physarum citrinum* Schumach., **citrondzeltenā pumpurīte** - leg. K.R.Kupfer, 1913, det. G.Adamonytė, 2003.
Physarum compressum Alb. & Schwein., **saplacinātā pumpurīte** - leg. S.Ruskule, 1985, det. S.Ruskule, 1986; leg. J.Kluša, 15 Oct 2013, Skrīveri p., on mosses on log in a mixed forest, det. J.Kluša, 2013, one locality, not examined with a microscope.
● *Physarum confertum* T. Macbr., **kaudzīšu pumpurīte** - leg. E.Oļehnoviča, 25 Jun 2020, Cirma p., on *Trientalis europaea* in a humid boreal forest, J.Kluša, 17 Aug 2020, Sigulda p., on mosses on a sandstone outcrop in a ravine forest, det. J.Kluša, 2020; (NMKK), very rare.
B● *Physarum conglomeratum* (Fr.) Rostaf.(expected transfer to the genus *Nannengaella* (García-Martín et al 2023)), **konglomerāta pumpurīte** - leg. J.Kluša, 10 Aug

2022, Jūrmala, on litter and mosses in a black alder swamp forest, det. J.Kluša, 2022; (NMKK), very rare.

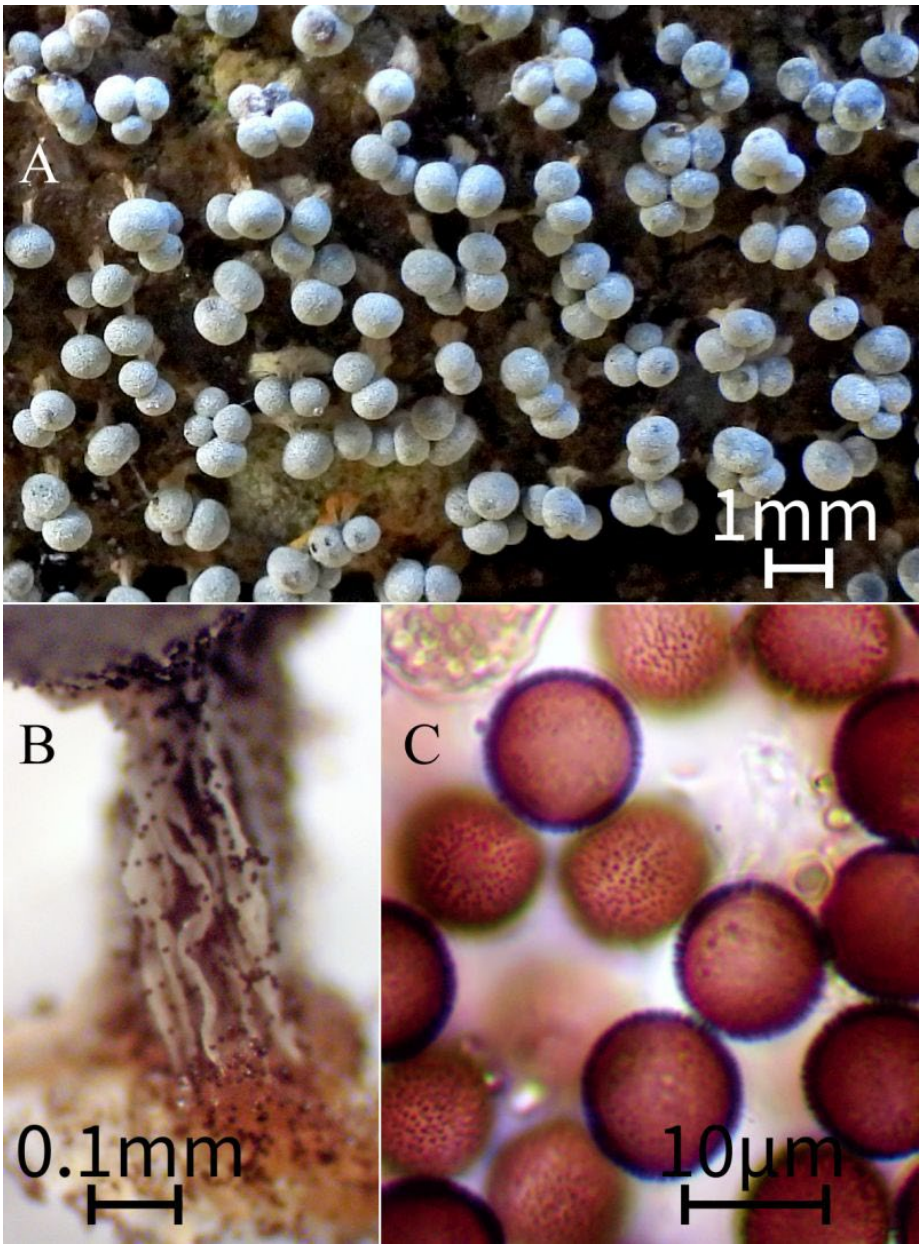

Figure 4. *Physarum* cf. *notabile*: A - sporocarps, B - stalk, C - spores. Photo: J. Kluša.

B● *Physarum diderma* Rostaf., **olveida pumpurīte** - leg. J.Kluša, 14 Sep 2021, Līgatne p., on *Leucodon sciuroides* on a large log of *Populus tremula* in a ravine forest, det. J.Kluša, conf. E.Johannesen, 2021; (NMKK), very rare.

Physarum flavicomum Berk., **zeltmatu pumpurīte** - leg. K.R.Kupfer, 1923, det. G.Adamonytė, 2003; leg. S.Laime, 09 Oct 2021, Cēsis, on a log of *Pinus sylvestris* in a forest, det. S.Laime & J.Kluša, 2021; (JK), very rare.

B● *Physarum flavidum* (Peck) Peck, **gaišdzeltenā pumpurīte** - leg. A.Opmanis, 11 Aug 2023, Kolka p., on *Vaccinium myrtillus* in a boreal forest, det. E.Johannesen, 2023; (NMKK), one locality.

● *Physarum leucophaeum* Fr., **pelēkbaltā pumpurīte** - leg. J.Kluša, 24 Oct 2019, Valle p., on a log of *Alnus incana* in a forest, det. E.Johannesen, 2021; (NMKK), quite rare.

B● *Physarum licheniforme* (Schwein.) Lado, **ķērpjveida pumpurīte** - leg. J.Kluša, 16 Oct 2019, Aloja p., on a large log of *Fraxinus excelsior* with bark in a deciduous forest, det. E.Johannesen, 2021; (NMKK), one locality.

B● *Physarum* cf. *luteolum* Peck, **dzeltenklaipu pumpurīte** - leg. J.Kluša, 22 Sep 2023, Taurupe p., on leaf and twig in a black alder swamp forest, det. J.Kluša, conf. E. Johannesen, 2023; (NMKK), one locality. Ascribed as "cf." because the spores have groups of darker warts, which is not typical for *Physarum luteolum*.

● *Physarum murinum* Lister, **pelītes pumpurīte** - leg. V.Baroniņa, 01 Sep 2021, Sala p. (Mārupe distr.), on a decaying stump of *Pinus sylvestris* in a drained boreal forest, det. J.Kluša, conf. E.Johannesen, 2022; (NMKK), very rare.

● *Physarum* cf. *notabile* T. Macbr., **daudzveidīgā pumpurīte** - leg. V.Sīmansone, 04 Oct 2020, Sēja p., on a log of *Populus tremula* in aspen-spruce forest; leg. E.Oļehnoviča, 11 Oct 2020, Vaive p., on mosses in a forest by the river, det. J.Kluša, 2023; (NMKK), quite rare; 12 samples from different localities in Latvia (2020-2022, mostly October), often several sporocarps grow closely together, with fused stalks; stalks white, spores dark with white line; sporocarps look like *Ph. leucopus*, spores look like *Ph. notabile* (Fig. 4). E.Johannesen (pers. comm.): "Should be barcoded".

B● *Physarum nucleatum* Rex, **kodolainā pumpurīte** - leg. J.Kluša, 29 Aug 2018, Zentene p., on mosses and log in a mixed forest with springs, det. E.Johannesen, 2021; (NMKK), one locality.

B● *Physarum ovisporum* G. Lister, **plaissporu pumpurīte** - leg. J.Kluša, 11 Sep 2020, Sigulda p., on a log of *Populus tremula* in a ravine forest, det. E.Johannesen, 2021; (NMKK), quite rare.

● *Physarum penetrale* Rex, **čupačupa pumpurīte** - leg. J.Kluša, 18 Aug 2022, Jūrmala, on a small deciduous twig in a mixed forest, det. J.Kluša, 2022; (JK), very rare.

B● *Physarum pezizoideum* (Jungh.) Pavill. & Lagarde (syn. *Trichamphora pezizoidea* Jungh.), **kausveida pumpurīte** - leg. I.Riževa, 21 Jun 2020, Ķeipene p., on old fungi on a mossy deciduous log in the remains of a park, det. I.Riževa, conf. J.Kluša, 2020; (JK), one locality.

Physarum psittacinum Ditmar, **papagaiļu pumpurīte** - leg.&det. K.R.Kupfer, 1931; leg. S.Laime, 09 Jul 2020, Cēsis, on litter and mosses in a forest, det. S.Laime, conf. J.Kluša, 2020; (NMKK), quite rare.

^ *Physarum robustum* (Lister) Nann.-Bremek., **raupjā pumpurīte** - leg. E.Vimba, 1964, det. T.Sizova, 2003.

● *Physarum rubiginosum* Fr., **apelsīnu pumpurīte** - leg. A.Baroniņš, 12 Oct 2020, Smārde p., on *Pleurozium schreberi* in a boreal forest, det. J.Kluša, conf. E.Johannesen, 2023; M.Šlapakova-Pjankova, 2 Jul 2023, Čornajas p., on *Hylocomium splendens* and a herbal leaf in a boreal forest, det. J.Kluša, 2023; (NMKK), very rare.

B● *Physarum straminipes* Lister, **īpašā pumpurīte** - leg. V.Sīmansone, 05 Oct 2021, Sēja p., on a log of *Populus tremula* in a humid mixed forest, det. E.Johannesen, 2021; (NMKK), very rare.

Physarum virescens Ditmar, **zaļganā pumpurīte** - leg.&det. W.Rotert, 1890; (NMKK), moderately common.

Physarum viride (Bull.) Pers., **dzeltenzaļā pumpurīte** - leg.&det. W.Rotert, 1890; leg. J.Kluša, 07 Jun 2022, Jūrmala, on a log of *Pinus sylvestris* without bark in a drained

boreal forest, det. J.Kluša, 2022; (NMKK), quite rare.
● *Physarum viride* var. *aurantium* (Bull.) Lister, **dzeltenoranžā pumpurīte** - leg. J.Kluša, 10 Aug 2022, Jūrmala, on a log of *Quercus robur* in a mixed forest, det. J.Kluša, 2022; (NMKK), very rare.

Reticularia *jurana* Meyl., **trauslais gļotpūpēdis** - leg. K.R.Kupfer, 1923, det. G.Adamonytė, 2003; leg. A.Arnicāns, 22 Jun 2020, Rīga, on a log without bark in a pine forest with some deciduous trees, det. J.Kluša, 2020; (NMKK), very rare.
● *Reticularia liceoides* (Lister) Nann.-Bremek., **bezzaru gļotpūpēdis** - leg. V.Sīmansone, 27 Aug 2023, Straupe p., on a large log of *Pinus sylvestris* on a boreal forest slope, det. J.Kluša, 2023; (JK), one locality.
Reticularia lycoperdon Bull., **parastais gļotpūpēdis** - leg.&det. W.Rotert, 1890; (NMKK), common.

Siphoptychium *violaceum* Leontyev, Schnittler & S. L. Stephenson, **violetā šūnaine** - leg. G.Adamonytė, 2005, det. G.Adamonytė, 2006 (as *Tubifera dictyoderma* Nann.-Bremek. & Loer.); leg. S.Laime, 07 Sep 2019, Cēsis, on a log of *Pinus sylvestris* in a boreal forest, det. D.Leontyev, 2020; (NMKK), common in good habitats on decaying spruce, overall distribution uneven, grows in similar biotopes as *Cribraria purpurea*, often both on the same log.

● ***Stemonaria*** *irregularis* (Rex) Nann.-Bremek., R. Sharma & Y. Yamam., **izlocītā ērkulīte** - leg. J.Kluša, 12 Aug 2019, Līdumnieki p., on a decaying stump of *Populus tremula* on a mixed forest slope, det. J.Kluša, 2021; (NMKK), very rare.

Stemonitis *axifera* (Bull.) T. Macbr., **pušķainā vālenīte (šokolādes gļotsēne)** - leg.&det. W.Rotert, 1890; (NMKK), common.
Stemonitis axifera var. *smithii* (T. Macbr.) Hagelst., **Smita vālenīte (šokolādes gļotsēne)** - leg. S.Ruskule, 1985, det. S.Ruskule, 1986; leg. S.Laime, 22 Jul 2020, Cēsis, on a log of *Pinus sylvestris* in a forest, det. S.Laime, conf. J.Kluša, 2020; (NMKK), quite rare.
● *Stemonitis flavogenita* E. Jahn, **virsgala vālenīte (šokolādes gļotsēne)** - leg. R.Kaupuža, 15 Feb 2022, Vecumi p., on a standing dead *Picea abies* tree in old deciduous forest, det. J.Kluša, 2022; (NMKK), very rare.
Stemonitis fusca Roth, **tumsnējā vālenīte (šokolādes gļotsēne)** - leg.&det. W.Rotert, 1890; (NMKK), moderately common.
● *Stemonitis fusca* var. *nigrescens* (Rex) Torrend, **tumsnējsīkā vālenīte (šokolādes gļotsēne)** - leg. V.Sīmansone, 22 Aug 2023, Sēja p., on leaf litter in an aspen-spruce forest, det. J.Kluša, 2023; (JK), one locality.
B● *Stemonitis herbatica* Peck, **augu vālenīte (šokolādes gļotsēne)** - leg. A.Opmanis, 16 Jun 2020, Līgatne p., on *Dicranum scoparium* on a log of *Picea abies* in a ravine forest , det. J.Kluša, 2020; (NMKK), very rare.
B● *Stemonitis lignicola* Nann.-Bremek., **koksnes vālenīte (šokolādes gļotsēne)** - leg. S.Laime, 09 Aug 2020, Cēsis, on a log of *Salix alba* in a forest, det. S.Laime, conf. J.Kluša, 2020; (NMKK), very rare.
B● *Stemonitis* cf. *marjana* Y. Yamam., **Marjas vālenīte (šokolādes gļotsēne)** - leg. I.Ojere, 23 Jul 2023, Carnikava p., on a log of *Pinus sylvestris* in a pine forest, det. E.Johannesen, 2023; leg. A.Baroniņš, 15 Aug 2020, Slampe p., on a log of *Pinus sylvestris* in a forest, det. E.Johannesen, 2023; (NMKK), very rare. Two localities and both specimens with slight deviations from the species description - in one case grows in large tufts, in the other case sporocarps are too large compared to the description. However, considering that the original description was based only on the type collection, the mentioned deviations might not be considered as very significant.
● *Stemonitis pallida* Wingate, **bālā vālenīte (šokolādes gļotsēne)** - leg. M.Krūze, 09 Aug 2020, Smārde p., on a log in a boreal forest, det. M.Krūze & J.Kluša, 2020; (NMKK), very rare.

● *Stemonitis splendens* Rostaf., **spīgainā vālenīte (šokolādes gļotsēne)** - leg. M.Šlapakova-Pjankova, 06 Mar 2023, Rēzekne, on an old deciduous trunk, det. J.Kluša, conf. E.Johannesen, 2023; (NMKK), one locality.
● *Stemonitis virginiensis* Rex, **Virdžīnijas vālenīte (šokolādes gļotsēne)** - leg. I.Riževa, 15 Aug 2021, Aizkraukle p., on a decaying log without bark in a bog woodland, det. I.Riževa & J.Kluša, 2021; (NMKK), one locality.

● ***Stemonitopsis*** *aequalis* (Peck) Y. Yamam. var. *microspora* Nann.-Bremek. & Y. Yamam., **noliektās cilindrītes sīksporu varietāte** - leg. J.Kluša, 28 Sep 2023, Skrīveri p., on *Rigidoporus crocatus* on a decaying log in a mixed forest, det. J.Kluša, 2023; (NMKK), one locality.
● *Stemonitopsis amoena* (Nann.-Bremek.) Nann.-Bremek., **graciozā cilindrīte** - leg. E.Oļehnoviča, 17 Jun 2020, Lendži p., on a log of *Pinus sylvestris* in a forest, det. J.Kluša, 2021; (NMKK), very rare.
● *Stemonitopsis gracilis* (G. Lister) Nann.-Bremek., **sīkslaidā cilindrīte** - leg. S.Laime, 22 Jul 2020, Cēsis, on a log of *Pinus sylvestris* on a mixed forest slope, det. S.Laime, conf. J.Kluša, 2020; (NMKK), very rare. *Stemonitopsis hyperopta* (Meyl.) Nann.-Bremek., **neievērotā cilindrīte** - leg. K.R.Kupfer, 1913, det. G.Adamonytė, 2003; (NMKK), moderately common.
● *Stemonitopsis hyperopta* var. *landewaldii*, **Landevalda cilindrīte** - leg. A.Opmanis, 30 Jul 2021, Līgatne p., on a board of *Pinus sylvestris* from an old bench, det. J.Kluša, conf. E.Johannesen, 2023; (NMKK), very rare.
B● *Stemonitopsis subcaespitosa* (Peck) Nann.- Bremek., **ciņkāta cilindrīte** - leg. E.Oļehnoviča, 14 Aug 2020, Drabeši p., on a log of *Picea abies* on a boreal forest slope, det. J.Kluša, 2022; (NMKK), one locality. *Stemonitopsis typhina* (F.H. Wigg.) Nann.-Bremek., **sudrabainā cilindrīte** - leg.&det. W.Rotert, 1890; (NMKK), moderately common.
● *Stemonitopsis typhina* (F.H. Wigg.) Nann.-Bremek. var. *similis* (G. Lister) Nann.-Bremek. & Y. Yamam., **līdzīgā cilindrīte** - leg. A.Piroga, 12 Jul 2023, Arona p., on the soil, possibly on heavily decomposed wood remains, det. J.Kluša, 2023; (JK), very rare.

Symphytocarpus *amaurochaetoides* Nann.-Bremek., **krēpjainā kūlīte** - leg. K.R.Kupfer, 1913, det. G.Adamonytė, 2003; leg. L.Mihailova, 13 Aug 2022, Usma p., on a decorticated log in a boreal forest, det. J.Kluša, 2022; (NMKK), quite rare. *Symphytocarpus flaccidus* (Lister) Ing & Nann.-Bremek., **saplacinātā kūlīte** - leg. K.R.Kupfer, 1918, det. G.Adamonytė, 2003; leg. I.Riževa, 11 Jun 2021, Stopiņi p., on a stump of *Pinus sylvestris* in a boreal forest, det. I.Riževa, conf. J.Kluša, 2022; (NMKK), moderately common.
● *Symphytocarpus impexus* Ing & Nann.-Bremek., **pinkainā kūlīte** - leg. J.Kluša, 27 Aug 2023, Straupe p., on mossy log in a boreal forest, det. J.Kluša, 2023; (JK), one locality.
● *Symphytocarpus trechisporus* (Berk. ex Torrend) Nann.-Bremek., **sfagnu kūlīte** - leg. I.Riževa, 18 Jul 2021, Rīga, on *Sphagnum* sp. in a swampy ditch in a forest, det. I.Riževa, conf. E.Johannesen, 2021; leg. J.Kluša, 31 Jul 2022, Usma p., on *Sphagnum sp.* and *Polytrichum sp.* in the edge of bog woodland road, det. E.Johannesen 2022; leg. K.Bondare, 25 Aug 2023, Salaspils p., on *Sphagnum* sp. at the edge of a swamp; leg. I.Zepa, 29 Aug 2023, Vaidava p., on *Sphagnum* sp. and litter in a bog woodland near transitional mire, det. J.Kluša, 2023; (NMKK), very rare (CR). Four localities in Latvia. Recommended for the list of specially protected species in Latvia.

● ***Trichia*** *ambigua* Schirmer, L.G. Krieglst. & Flatau, **šaubīgā pilienīte** - leg. L.Birziņa, 23 Mar 2021, Garkalne p., under bark of a decaying log of *Betula* sp. at the edge of the raised bog, det. L.Birziņa & J.Kluša, conf. E.Johannesen, 2021; leg. J.Kluša, 07 Apr 2021, Sējas p., on a deciduous log on a forest

slope by a stream, det J.Kluša, conf. E.Johannesen, 2021; (NMKK), very rare.
Trichia botrytis (J.F. Gmel.) Pers., **plaisājošā pilienīte** - leg.&det. K.R.Kupfer, 1931; (NMKK), moderately common.
● *Trichia botrytis* var. *cerifera* G. Lister, **dzeltenzaļā pilienīte** - leg. J.Kluša, 12 Nov 2021, Jūrmala, on a decaying, decorticated deciduous log in a humid forest, det. J.Kluša, conf. E.Johannesen, 2021; (NMKK), one locality.
Trichia contorta (Ditmar) Rostaf., **greizā pilienīte** - leg. S.Ruskule, 1985, det. S.Ruskule, 1986; leg. I.Riževa, 21 Nov 2021, Stopiņi p., on a log in a forest, det. I.Riževa, conf. J.Kluša, 2021; (NMKK), quite rare.
● *Trichia contorta* var. *iowensis* (T. Macbr.) Torrend, **spuraingreizā pilienīte** - leg. V.Sīmansone, 14 Nov 2021, Sēja p., on bark of a log of *Populus tremula* in an aspen forest, det. J.Kluša, 2021; (NMKK), very rare.
● *Trichia crateriformis* G.W. Martin (expected transfer to the genus *Hemitrichia* due to its similarity to *Hemitrichia decipiens* of which it was previously a variety), **krāterformas pilienīte** - leg. E.Oļehnoviča, 14 May 2020, Renda p., on a log of *Populus tremula* in a forest, det. J.Kluša, 2020; (NMKK), common.
Trichia scabra Rostaf., **nelīdzenā pilienīte** - leg.&det. W.Rotert, 1890; (NMKK), moderately common.
Trichia varia (Pers. ex J.F. Gmel.) Pers., **daudzveidīgā pilienīte** - leg.&det. W.Rotert, 1890; (NMKK), common.

B● ***Tubifera*** *applanata* (Leontyev & Fefelov) Leontyev & Fefelov, **plakanā aveņgļotsēne** - leg. I.Riževa, 26 Jul 2022, Rīga, on a stump in a forest, det. D.Leontyev, 2023; (NMKK), one locality.
B● *Tubifera dudkae* (Leontyev & G.Moreno) Leontyev, G. Moreno & Schnittler, **Dudkas aveņgļotsēne** - leg. J.Kluša, 19 Jun 2021, Sigulda, on a large log of *Quercus robur*, a forest of mixed trees on one side, a large river Gauja on the other, det. D.Leontyev, 2021; leg. J.Kluša, 13 Aug 2022, Usma p., on a large log of *Quercus robur* in an oak forest, det. J.Kluša, 2022; leg. D.Eihe, 03 Aug 2023, Carnikava p., on a decorticated log of *Pinus sylvestris* in a yard with mixed trees, det. D.Leontyev, 2023; (NMKK), very rare.
Tubifera ferruginosa (Batsch) J.F. Gmel., **parastā aveņgļotsēne** - leg.&det. W.Rotert, 1890; (NMKK), common.
● *Tubifera ferruginosa subsp. acutissima* Leontyev, Schnittler & S.L. Stephenson, **smailā aveņgļotsēne** - leg. J.Kluša, 24 Sep 2022, Usma p., on a coniferous stump in a boreal forest, det. J.Kluša, 2022; (NMKK), very rare (DD).
B● *Tubifera magna* Leontyev, Schnittler, S.L. Stephenson & T. Kryvomaz, **platā aveņgļotsēne** - leg. J.Kluša, 15 Jul 2020, Kazdanga p., on a large log of *Quercus robur* in a deciduous forest park, det. J.Kluša, conf. D.Leontyev, 2022; (JK), one locality.
B● *Tubifera montana* Leontyev, Schnittler & S.L. Stephenson, **oranžā aveņgļotsēne** - leg. J.Kluša, 08 Sep 2021, Sigulda, on mosses on a log in a mixed forest, det. J.Kluša, 2022; (NMKK), moderately common.

CONCLUSIONS

In recent years there have been major changes in myxomycete taxonomy, which affect both the nomenclature and the number of described species. In particular, in the revision of the genus *Lycogala*, which started several years ago and is still ongoing (Leontyev et al. 2023), several new species have been described., but this work has not yet been completed, because dozens of more new species are likely to be described. A revision of the genus *Arcyria* s. lat. is also known to be in progress (Yatsiuk et al. 2023), which is expected to result in the description of several more species of this and related genera in the family *Arcyriaceae*. These are certainly not the only groups of species in which changes are expected (for example, work on *Cribraria* is known to be ongoing in Geneva), which will also affect the list of myxomycetes in Latvia.

A significant number of specimens, several hundred, or even several thousand, are collected by various researchers (mostly between 2020 and 2023), kept in their private herbaria and have not yet been studied under the microscope. These may represent species yet unrecorded in Latvia. The greatest opportunities to discover new species are among the small-sized species of myxomycetes.

Although there is currently no professional scientist working with slime molds in Latvia, citizen science is actively developing. More and more people are becoming interested in myxomycetes. The Facebook group for Latvia "Gļotsēņu apbrīnotājiem un pētniekiem" ("For slime mold admirers and researchers") already has more than 800 members. Photos and descriptions of Latvian myxomycetes are available at the website myx.dziedava.lv (Kluša 2010-2023), which helps the Latvian audience to identify species. More enthusiasts start to work with microscopes, which could also advance the study of myxomycetes.

It seems obvious that the number of known myxomycetes species in Latvia will continue to grow.

ACKNOWLEDGEMENTS

First of all, many thanks to Edvin Johannesen for the help in identifying myxomycetes and for his many tips which greatly helped to improve our knowledge and skills to identify so many new taxa. I am also very grateful for his critical reading of the final draft of the manuscript.

Thanks also to the other members of the Facebook group "Slime Mold Identification & Appreciation" for discussions on the identification of myxomycetes, and special thanks to Dmytro Leontyev for identifying observations within the group of species he is studying.

Many thanks to my support team in my research of myxomycetes—Sandis Laime, Inguna Riževa, Evita Oļehnoviča and especially Vija Sīmansone for her support and help in research and data collection. Special thanks to Sandis Laime for his valuable suggestions and corrections at the beginning of the work. Thanks also to Valda and Andris Baroniņi, Marita Krūze, Laima Birziņa and Marina Šlapakova-Pjankova for their involvement in the identification and study of myxomycetes.

Thanks to everyone who reported observations of myxomycetes in the dabasdati.lv portal, which allowed us to accumulate so many observations and enabled us to better understand their occurrence.

I am very grateful to all the people (47 in total during four years) interested in myxomycetes of Latvia, who did not only look for and collect myxomycetes, but also followed the development of their findings, and handed them over to me personally or sent them to me, so that I could study and identify them, occasionally resulting in the discovery of new taxa for Latvia.

Thanks to the Latvian National Museum of Natural History for the support in preparing myxomycete specimens for the herbarium, with special thanks to Inita Dāniele.

Also, many thanks to Ansis Opmanis for support and for providing material of myxomycetes, as well as teaching the general basics of biology and systematics. Thanks to Ruslans Matrozis for the opportunity to read S. Ruskule's diploma thesis.

Thanks to the late Māris Zeltiņš for repairing my microscope so that I could work with it much better.

I am grateful to my son Dzintars Klušs for helping me with technical problems in collecting data of myxomycetes.

Finally, sincere thanks to three anonymous reviewers for their valuable comments, corrections and suggestions which have significantly improved the manuscript.

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Received: 01.11.2023.
Accepted: 08.12.2023.