

# Lignicolous Jelly Fungi and Aphyllorales in Iceland.

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**ABSTRACT:** All available material of the lignicolous fungi of the classes Dacrymycetales, Tremellales and Aphyllorales collected in Iceland and preserved in the Icelandic Institute of Natural History - Akureyri (AMNH) and in the Botanical Museum, Copenhagen (C) has been revised. Altogether 56 species are listed, whereof 6 old records are considered doubtful, since no specimens from Iceland are available. 22 of the species are new records to the Icelandic flora, although some of them have been collected long ago.

Iceland is poor in woodland. Only about 1 per cent of the total area is covered with wood of some kind. Most of it is lower than 2 m on average. Real woods, with about 10 m tall trees, are mainly found in the valleys of the eastern part of North-Iceland (Þingeyjarsýsla) and in the East.

The only species forming woods in Iceland is the icelandic birch, generally called *Betula pubescens*, but is really a complex of many species (*Betula coriacea*, *B. concinna*, *B. tortuosa* etc.), which seem to be interfertile, and can even interbreed with the dwarf birch, *Betula nana*. *Sorbus aucuparia*, *Salix phylicifolia*, and *Salix lanata* are sparsely present in most of the woods, and *Populus tremula* occurs in a few localities.

In the last 90 years many foreign tree species have been planted in gardens and reforestation areas all around the country, especially in the southwestern and northeastern regions. Trees originating from North-America (Rocky Mountains, Alaska), Northern Europe, and even from Siberia, are now cultivated in Iceland. Among successful, introduced trees are the conifers *Picea abies*, *Picea engelmannii*, *Picea sitchensis*, *Pinus aristata*, *Pinus contorta*, *Pinus mugo* and *Larix russica*; and the broadleaved *Populus trichocarpa*, as well as species of the genera *Alnus* and *Salix*.

Large quantities of driftwood have in the past millennia been transported to the north and east coast of Iceland by sea currents from the northern part of Russia and Siberia. For centuries timber has also been imported mainly from Scandinavia for use in buildings.

The oldest records of aphylloraceous fungi in Iceland date back to the 18th century (Flora Danica, ZOËGA 1772). Only very few species were encountered until Ólafur Davíðsson started his intensive collections in 1897. He collected resupinate fungi on wood mainly in Hálsskógur, Þing-

eyjarsýsla (INa) and in Húsafellsskógur (IVe), and sent them for identification to Emil Rostrup in Copenhagen.

Of the fungal groups treated here, 23 species were reported by ROSTRUP (1903). Most of his material is still available for study in the herbariums of the Icelandic Institute of Natural History, Reykjavík (ICEL) and in the Botanical Museum in Copenhagen (C).

Another important collection of resupinate fungi in Iceland was made by the Danish mycologists Poul Larsen 1922 and Fabritius Buchwald 1923. Larsen collected all over Iceland, but Fabritius in the Southeast. The results were published by LARSEN (1932), who listed all species previously recorded without revision, and added 4 new to the flora, a total of 27 species.

A few species were added by JØRSTAD (1962), HALLGRÍMSSON (1963, 1966, 1975 and 1988); ROLL-HANSEN (1973 and 1992); and GÖTZSCHE (1985), bringing the total number up to about 30 species.

In the years 1987-1989 the second author examined most of the lignicolous Aphyllphorales and jelly fungi kept in the herbarium of the Icelandic Institute of Natural History, Akureyri, approximately 60 samples of Aphyllphorales and 50 samples of Dacrymycetales-Tremellales. Most of those were collected by the first author in the years 1960-1980, mainly

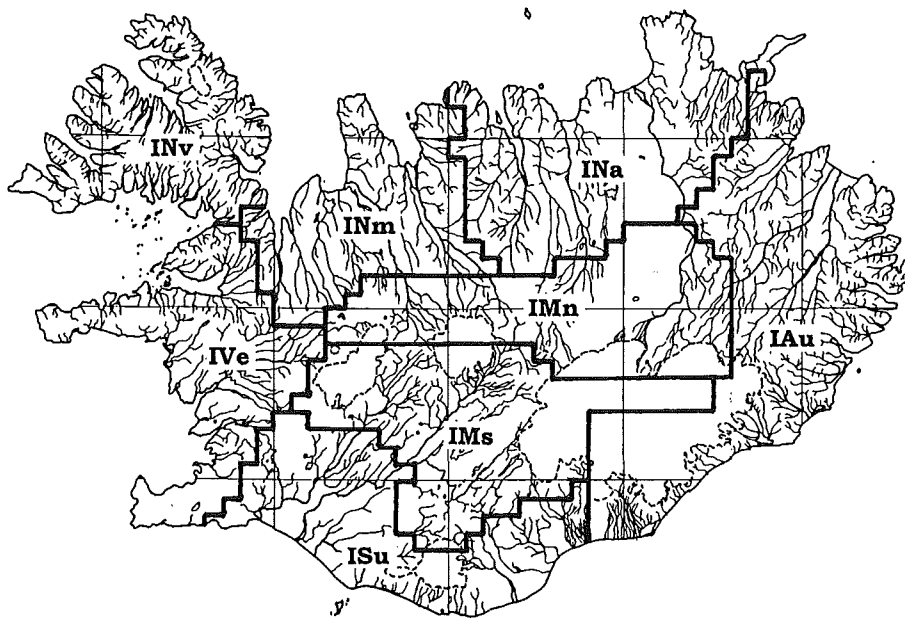


FIGURE 1. Subdivision of Iceland into plant geographical regions. No records are from INm and IMs.

in North- and East-Iceland. In addition about 25 samples of Aphylophorales and jelly fungi from Iceland in the Botanical Museum in Copenhagen have been revised by the second author and Henning Knudsen, the Curator of the Museum. Knudsen has also revised some samples of polyporaceous fungi from the herbarium of Icelandic Institute of Natural History in Akureyri (AMNH).

The few samples of lignicolous Aphylophorales and jelly fungi which are kept in the herbarium of the Icelandic Institute of Natural History, Reykjavík (ICEL), are for the most part duplicates of the samples in Copenhagen. They were examined by the first author several years ago.

In this article 4 species of Dacrymycetales, 5 of Tremellales and 46 species of Aphylophorales are listed, a total of 55 species, whereof 6 species are considered as dubious (not printed in bold). Specimens with uncertain identification are marked with a star (\*) in front of the locality.

Similar treatments of lignicolous fungi have recently been published for SW-Greenland (KNUDSEN et al. 1993) and Faeroe Islands (VESTERHOLT & PEDERSEN 1993) and it is therefore interesting to compare the mycofloras of these countries to the Icelandic one.

In the Faeroes 45 species of Aphylophorales have been recorded, and about 85 species in Greenland, and in addition 18 species of Dacrymycetales-Tremellales, which is a surprisingly high number for this arctic island, where there are only small patches of birchwood in the innermost valleys. This would indicate that with more intensive collection of these fungal groups in Iceland, many more species could be found.

A great majority (about 30 species) of the Icelandic lignicolous Aphylophorales and jelly fungi have been collected on the native birch (*Betula pubescens*), usually found on the underside of much decayed sticks and logs lying on the ground in woodlands. A few are mainly encountered on tree stumps, for instance *Trametes zonatella* and *Stereum* spp., or even on trunks of old standing trees (*Phellinus hundellii*, *Stereum rugosum*), or dead branches of living trees (*Exidia repanda*, *Femsjonina pezizaeformis*). Very few of these fungi seem to be able to invade the wood of healthy trees. *Stereum rugosum* is probably the only one on birch.

Eight species have been found in nature on other trees than birch in Iceland. Two species are recorded on *Sorbus aucuparia*, two on *Salix* spp., two on *Pinus*, one on *Picea* and one on *Larix*. *Cytidia salicina* is the only species that only grows on *Salix*, and *Stereum sanguinolentum* the only species confined to conifers.

In third place are 10 species growing on imported timber and driftwood. Very few of them seem to be able to grow on wood of the native trees as well, as for instance *Dacrymyces stillatus*. Among these fungi are some very efficient decay fungi, although great attacks of such fungi are rarely recorded in Iceland.

At last two species of the listed fungi are parasites on other Tremellales or Aphylophorales, and 2-3 terricolous fungi are incorporated for completion of some groups. The nomenclature follows that of JÜLICH (1984).

**DACRYMYCETALES Lindau****Dacrymycetaceae Bref.*****Calocera ?furcata* (Fr.) Fr.**

New to Iceland. On imported coniferous timber. Rare.

**Material:** IVE: Fossvogur, Reykjavík, on a fence, 23. 9. 1977, leg. Skarp-héðinn Þórisson, det. K.H. (LH-45293). (Originally determined by H. Kr. as *C. viscosa* (Pers.: Fr.) Fr. The specimen is not fully ripe).

***Dacrymyces stillatus* Nees: Fr.**

Recorded by ROSTRUP (1903, p. 293, s.n. *D. deliquescens* (Bull.) Duby) on birch from Hálskógur (INa), and Húsafellsskógur (IVe), and on driftwood at Gásir (INa, s.n. *D. stillatus* Nees), all collected by Ólafur Davíðsson. LARSEN (1932) lists both species and adds a new locality, Reykjavík (IVE), for *D. deliquescens*.

On timber and woodwork of all kinds, very common in lowland regions all around Iceland. Most of the wood is imported coniferous wood, but the species is occasionally found on wood of the native *Betula pubescens*.

The specimens on deciduous wood are by some authors separated from *D. stillatus* as *D. lacrymalis* (Pers.: S.F. Gray) Sommerf. We have not found any significant differences between those and the ones growing on coniferous wood. In fact both are quite variable.

**Material:** 20 samples are kept in AMNH from all parts of the country except INv, INm, IMn and IMS, and at least 2 are in Copenhagen.

***Ditiola radicata* (Alb. & Schwein.: Fr) Fr.**

New to Iceland. On imported coniferous wood. Rare.

**Material:** INa: Akureyri, 24.7. 1962, leg. H.Hg., det. K.H. (8864). - Glerárdalur, Akureyri, 10.9. 1980, leg. H.Hg., det. K.H. (7723).

***Femsjonia pezizaeformis* (Lév.) P. Karst.**

New to Iceland. On dead branches and sticks of *Betula pubescens*. Common in the birch-forest at Egilsstaðir (IAu), but not found anywhere else.

**Material:** IAu: Egilsstaðaskógur, 11. 8. 1984, leg. H. Gøtzsche. (HFG-84,48). - Egilsstaðaskógur, 4.9. 1985, leg. H.Hg., det. K.H. (10126). - Miðhúsaskógur, Egilsstaðir, 30.7. 1987, leg. H.Hg., det. K.H. (11153) - Hamraskógur, Egilsstaðir, 5.9. 1987, leg. H.Hg., det. K.H. (11490). - Sel-skógur, Egilsstaðir, 25.9. 1987, 26.9. 1987 and 28.8. 1988, leg. H.Hg., det. K.H. (11619, 11644 and 12025).

## TREMELLALES Rea

### Tremellaceae Fr.

*Exidia cartilaginea* Lund. & Neuh.

Recorded from Iceland by LARSEN (1932), (s.n. *E. albida* (Huds.) Bref.), found by him in Þingvellir (ISu), and Vífilsstaðir, Hafnarjörður (IVe), on dead logs of birch.

The specimens are probably lost and no material is at hand from Iceland.

*Exidia repanda* Fr.: Fr.

First recorded in Iceland by ROSTRUP (1903, p. 293), collected by Ólafur Davíðsson in Þórðarstaðaskógur (INa) and Húsafellsskógur (IVe). LARSEN (1932), JØRSTAD (1962) and GØTZSCHE (1985), add many new localities. KRISTINSSON (1977) and HALLGRÍMSSON (1979) state it as common.

*E. repanda* is commonly found on dead branches of *Betula pubescens*, and on sticks and logs on the ground, especially in wet periods. It is very common in all birch copses in Iceland.

*Tremella encephala* Pers.

New to Iceland. Parasite on *Stereum sanguinolentum* on *Pinus* sp.

**Material:** INa: Grund, Eyf., 12. 8. 1961, leg. H.Hg., det. K.H. (324).

*Tremella mesenterica* Retz.: Hook.

Recorded by ROSTRUP (1903, p. 293), collected by Ólafur Davíðsson on birch in Hálsskógur (INa), and Húsafellsskógur (IVe). CHRISTIANSEN (1941) found it in Slúttnes, Mývatnssveit (INa).

On branches and stumps of *Betula pubescens*. Rare.

**Material:** INa: Hálsskógur, Fnjóskadal, Þing., 11.9. 1900, leg. Ólafur Davíðsson, det. E. Rostrup (ÓD-1257, ICEL). - Garðsárgil, Eyf., 5. 8. 1987, leg. H.Hg., det. K.H. (11201).

*Tremella penetrans* (Hauerslev) Jülich

New to Iceland. Parasite on *Dacrymyces stillatus*, on imported coniferous wood.

**Material:** IAU: Hrafnsgærði, Fellum, 1.10. 1985, leg. H.Hg., det. K.H. (10254).

## APHYLLOPHORALES Rea

## Coniophoraceae Ulbr.

***Coniophora puteana*** (Schumach.: Fr.) P. Karst.

Recorded by ROSTRUP (1903, p. 294), collected in Grímsey (INa) by Ólafur Davíðsson. On imported coniferous wood, probably common.

**Material:** INa: Grímsey, 22.7. 1898, leg. Ólafur Davíðsson, det. E. Rosstrup, rev. H. Knudsen. - \*Arnarhóll, Eyf., 1.10. 1961, leg. et det H. Kr. - Akureyri, 1962, leg. H. Hg., det. K. H. (10332). - IAu: Droplaugarstaðir, Fljótsdal, 30.8. 1986, leg. H.Hg., det. K.H. (10043); Droplaugarstaðir, Fljótsdal, 23.9. 1987, leg. H.Hg., det. K.H. (11600). - \*Hrafnsgærði, Fellum, 29.8. 1987, leg. H.Hg., det K.H. as *Coniophora* sp. (11461).

***Hypochniciellum molle*** (Fr.: Fr.) Hjortstam

New to Iceland. On imported timber and drift-wood.

**Material:** INa: Akureyri, 27.10. 1985, leg. H.Hg., det. K.H. (10299). - IAu: Brekka, Mjóafjörður, 29.8. 1989, leg. H.Hg., det. H. Knudsen s.n. *Leucogyrophana mollis* (Fr.: Fr.) Parmasto (12393).

***Serpula lacrimans*** (Wulfen: Fr.) Schröt.  
(*Merulius lacrymans* (Wulfen) Schumach.)

Reported by ROSTRUP (1903), from Möðruvellir in Hörgárdalur (INa), leg. Stefán Stefánsson. According to PÉTURSSON (1957), this fungus rarely causes damage to woodwork in houses in Iceland. No collections are at hand.

Corticaceae Herter *sensu lato****Cerocorticium confluens*** (Fr.: Fr.) Jülich & Stalpers  
(*Radulomyces confluens* (Fr.) M. P. Christ.)

New to Iceland. All collections were found on bark and wood of the native *Betula pubescens*, on sticks, logs and stumps. Seems to be rather common in INa and IAu.

**Material:** INa: Akureyri, the Botanic garden, 29.7. 1985, leg. H.Hg., det K.H. (9684). - Akureyri, the Botanic Garden, 5.9. 1988, leg. H.Hg. & H.Kr., det. K.H. (12072). - \*Vaglaskógur, leg. H.Hg. & H.Kr. (10817); - IAu: Hrafnsgærði, Fellum, 13.8. 1987, leg. H.Hg., det. K.H. (11316, 11317). - Mörkin, Hallormsstað, 29.5. 1988, leg. H.Hg., det. K.H. (11761). - Rana-skógur, Fljótsdal, 15.6. 1988, leg. H.Hg., det K.H. (11763).

***Chondrostereum purpureum*** (Pers.: Fr.) Pouzar  
(*Stereum purpureum* Pers., *St. vorticosum* Fr.)

Reported by ROSTRUP (1903, p. 293) from Hálsskógur (INa), 11.9. 1900, leg. Ólafur Davíðsson; by JØRSTAD (1962), from Vaglaskógur (INa), leg. B. Lyngé, and by F. ROLL-HANSEN (1971), also from Vaglaskógur. Further mentioned by HALLGRÍMSSON (1975, 1979) and KRISTINSSON (1977).

Grows on *Betula pubescens*, mainly on stumps, restricted to the eastern part of N-Iceland.

**Material:** INa: Hálsskógur, 11.9. 1900, leg. Ólafur Davíðsson, det. E. Rostrup as *Stereum vorticosum* (Ó.D. 1240) (C), "Too old for determination" (K.H.). - Akureyri, in the Botanic Garden, 7.8. 1961, leg. H.Hg., det. H.Hg. (8874); - Akureyri, the Botanic Garden, 5.9. 1988, leg. H.Hg., det. K.H. (12073). - Fellsskógur, S. Þing., 24.8. 1963, leg. et det. H.Hg. (2294). - Vaglaskógur, 28.7. 1962, leg. et det. H.Hg. (909p).

***Cylindrobasidium evolvens*** (Fr.: Fr.) Jülich

New to Iceland. On *Betula pubescens*. Rare in IAu.

**Material:** IAu: Droplaugarstaðir, Fljótsdal, 13.9. 1985, leg. H.Hg., det. K.H. (10235). - Hrafnsgerði, Fellum, 22.5. 1988, leg. H.Hg., det. K.H. (11740).

***Cystostereum murraini*** (Berk. & Curt.) Pouzar

Recorded by ROSTRUP (1903) as *Stereum tuberculosum* Fr., a specimen collected by Ólafur Davíðsson in Hálsskógur, (INa), on *Betula pubescens*, 11.9. 1900 (Ó.D.-1238, ICEL). This specimen is kept in ICEL. It is very peculiar and seems to be indeterminable.

***Cytidia salicina*** (Fr.: Fr.) Burt  
(*Cytidia rutilans* (Pers.) Quél.)

Recorded by ROSTRUP (1903, p. 293), (s. n. *Corticium salicinum* Fr.), from Bæjarstaður, Örnefi (IAu), and GØTZSCHE (1985), from Skaftafell, (IAu).

In Iceland only found on bark of dead and living *Salix phylicifolia*, mainly in IAu and ISu. Rare.

**Material:** INa: Helluvað, Mývatnssveit, 1974, leg. et det. H.Hg. (8816). - IAu: Bæjarstaður, Örnefi, 10.8. 1901, leg. H. Jónsson, det. E. Rostrup, conf. H. Knudsen, (C). - Skaftafell, Örnefi, 21.7. 1981, leg. et det. H. Gøtzsche (C). - ISu: Skriðufell, 25.8. 1984, leg. Steen Elborne, det. H. Gøtzsche (C).

***Hyphoderma pallidum*** (Bres.) Donk.

New to Iceland. On imported coniferous timber. Rare.

**Material:** IAu: Egilsstaðir, 12.5. 1988, on processed wood in a sewage well, leg. H.Hg., det. K.H. (11752).

***Hyphoderma praetermissum*** (P. Karst.) J. Erikss. & Strid

New to Iceland. On *Pinus* sp. and on driftwood (conifer). Rare.

**Material:** INa: Gróðrarstöðin, Akureyri, 17.9. 1984, leg. H.Hg., det. K.H. (9552p.). - IAu: Hrafnsgerði, Fellum, 22.5. 1988, leg. H.Hg., det. K.H. (11741).

***Hyphoderma radula*** (Fr.: Fr.) Donk  
(*Basidioradulum radula* (Fr.: Fr.) Nobles)

Recorded by ROSTRUP (1903, p. 294 s.n. *Radulum orbiculare* Fr.), LARSEN (1932); JÖRSTAD (1962 s.n. *Radulum radula* (Fr.) Luc. & Gill.), HALLGRÍMSSON (1975, 1979 s.n. *R. orbiculare*), and KRISTINSSON (1977 s.n. *R. orbiculare*).

On bark of *Betula pubescens*, on logs and branches lying on the ground in birch-forests, frequent to common throughout Iceland.

**Material:** About 17 specimens are kept in AMNH, six of which have been verified by K. Hauerslev and H. Knudsen.

***Hyphoderma setigerum*** (Fr.: Fr.) Donk

Recorded by JÖRSTAD (1962) from Hreðavatn (IVe) and Vaglaskógur (INa). On the bark of *Betula pubescens* logs and sticks. Rather common in INa and IAu.

**Material:** INa: Akureyri 17.7. 1984, 29.7. 1985 and 27.10. 1985, leg. H.Hg., det. K.H. (9334, 9695 and 10308). - Garðsárgil, 5.8. 1987, leg. H.Hg., det. K.H. (11202). - IAu: Egilsstaðaskógur 3.7. 1985, 26.9. 1988 and 4.9. 1988, leg. H.Hg., det. K.H. (9652, 11646 and 11490B). - Hallormsstaðarskógur, 25.8. 1989, leg. H.Hg., det. H. Knudsen (12370); Hallormsstaðarskógur, 7.8. 1993, leg. et det. J. Vesterholt, (JV93-534).

***Hyphodontia sambuci*** (Pers.) J. Erikss.  
*Hyphoderma sambuci* (Pers.) Jülich

First record in Iceland, but previously collected by Ólafur Davíðsson in Hálsskógur, S. Þing., 11.9. 1900, determined as *Hypochnus* sp. (C) according to H. Knudsen (pers. comm.), on *Betula pubescens*.

**Material:** INa: Gróðrarstöðin, Akureyri, on *Betula* or *Salix* 17.9. 1984, leg. H. Hg., det. K.H. (9552).

***Hyphodontia subalutacea*** (P. Karst.) J. Erikss.  
(*Grandinia subalutacea* (P. Karst.) Jülich)

New to Iceland. On bark of *Betula pubescens*. Rare.

**Material:** IVe: Norðtunguskógur, 13.8. 1989, leg. H.Hg., det. K.H. (3852).

***Hypochnicium punctulatum*** (Cooke) J. Erikss.

First record in Iceland, although previously collected in Hálsskógur (INa), 11.9. 1900 by Ólafur Davíðsson. The specimen was identified by Rostrup as *Corticium granulatum* (Bon.) Wint. (ROSTRUP 1903, p. 293), and revised by K. Hauerslev (C, ICEL).



***Meruliopsis corium*** (Fr.: Fr.) Ginns  
(*Byssomerulius corium* (Fr.) Parmasto)

Recorded by LARSEN (1932, p. 521). Collected by N. F. Buchwald in Bæjarstaðaskógur, Öraefi (IAu), on *Betula pubescens*. Specimen not seen.

***Paullicorticium niveocreameum*** (Höhn. & Litsch.) Oberw.  
(*Sistotremastrum niveocreameum*).

First record in Iceland. Collected at Bæjarstaður (IAu), 17.8. 1924, by N. F. Buchwald as *Corticium* sp., rev. H. Knudsen (C).

***Peniophora incarnata*** (Pers.: Fr.) P. Karst.

Recorded by ROSTRUP (1903, p. 293 as *Corticium incarnatum* Fr.), from Bíldsfell on *Sorbus aucuparia* and Þingvellir on *Betula pubescens* (ISu, leg. Feddersen). Probably rather frequent in Iceland.

**Material:** INa: Akureyri, 10.8. 1962, 1970, 12.9. 1975, leg. H.Hg., det. K.H. (1284, 8883, 8885 and 10333). - IAu: Droplaugarstaðir, Fljótisdal, 13.8. 1988, leg. H.Hg., det. K.H. (12134). - Bæjarstaðaskógur, 17.8. 1924, leg. N. F. Buchwald, det. H. Knudsen. All specimens on *Betula pubescens*.

***Peniophora laurentii*** Lund.

New to Iceland. On logs of *Betula pubescens* on the ground. Rare.

**Material:** IAu: Egilsstaðir, 17.5. 1988, leg. H.Hg., det. K.H. (11751).

***Phlebia merismoides*** (Fr.: Fr.) Fr.  
*Phlebia radiata* Fr.

Collected and recorded by GRÖNLUND (1879, p. 74), from Viðidalur (INa); collected by N.F. Buchwald in Bæjarstaðaskógur (IAu), 17.8. 1924 (LARSEN 1932, conf. K.H. (C)). Also mentioned by H. HALLGRÍMSSON 1975, in Vagla-skógur (INa). On *Betula pubescens*, logs and stumps. Probably rare.

***Scopuloides rimosa*** (Cooke) Jülich

New to Iceland. On decayed log of *Betula pubescens*. Rare.

**Material:** IAu: Tunguásskógur, Héraði, 20.8. 1986, leg. H.Hg., det. K.H. (10605).

***Stereum hirsutum*** (Willd.: Fr.) S.F.Gray

Correctly recorded by ROSTRUP (1903, p. 294), from Hálsskógur on birch (INa), leg. Ólafur Davíðsson, 10.8. 1900 (C). Two other specimens, from Húsafellsskógur and Möðruvellir also recorded by ROSTRUP (1903) are *Stereum rugosum*. (Two samples in ICEL, Ó.D. 1373 and Ó.D. 1382, labelled *Stereum hirsutum* are probably also *Stereum rugosum*).

On trunks and sticks of *Betula pubescens*, seems to be rare in Iceland.

**Material:** INa: Vaglaskógur, 24.9. 1968, leg. et det. H.Hg. (5505). - IAu: Hallormsstaður, 3.9. 1961, leg. et det. H.Hg. (8873).

***Stereum rugosum*** (Pers.: Fr.) Fr.

Recorded by LARSEN (1932, p. 520), from Hallormsstaður (IAu), and Norðtunga (IVe). JØRSTAD (1962) and ROLL-HANSEN (1971) added many localities, and HALLGRÍMSSON (1975) reported it as common where birch is growing.

It was collected by Ólafur Davíðsson 11.9. 1900, according to specimens in C and ICEL, wrongly identified as *Stereum hirsutum*.

*St. rugosum* grows on bark of logs, stumps and sticks of *Betula pubescens*, and may also be encountered on trunks of old but still living trees. ROLL-HANSEN (pers. comm.) considers this species as possibly the most common rot fungus on birch in Iceland.

**Material:** About 25 samples are kept in AMNH.

***Stereum sanguinolentum*** (Alb. & Schwein.: Fr.) Fr.

The first record is that of ROLL-HANSEN (1971), based on specimens from Grund in Eyjafjörður, collected by H. Hallgrímsson 1961 and 1969 on *Pinus*. ROLL-HANSEN (1992), added two new localities and two new hosts for the fungus: Hallormsstaður (IAu) 15.8. 1989, on *Larix russica* and *Pseudotsuga menziesii*, and Skorradalur (IVe) 17.8. 1989, on *Pinus contorta*.

**Material:** INa: Grund, 12.8. 1961, and 23.7. 1969 on *Pinus mugo*, leg. H.Hg., det. F. Roll-Hansen (116, 5749). - IAu: Hallormsstaður, Mörkin, on conifer stump, 24.8. 1988, leg. H.Hg., det. K.H. (11935).

***Trechispora farinacea*** (Pers.: Fr.) Liberta *sensu auct.*

First record in Iceland. This species was, however, collected by Ólafur Davíðsson on birch in Húsafellsskógur (IVe) as early as 18. 8. 1900, incorrectly determined by Rostrup as *Hydnum argutum* Fr., according to a revised identification of the specimen in C by H. Knudsen (pers. comm.).

On *Betula pubescens* and on imported coniferous wood. Frequent in INa and IAu.

**Material:** INa: Akureyri, 17.9. 1984, leg. et det. H.Hg. (9551). - IAu: Hrafnsgerði, Héraði, 13.9. 1985, 22.5. 1988, leg. H.Hg., det. K.H. (10215, 11745). - Selskógur, Egilsstaðir, 2.8. 1988, leg. H.Hg., det. K.H. (11805).

***Tubulicrinis subulatus*** (Bourd. & Galzin) Donk

First record in Iceland. On imported coniferous wood.

**Material:** IAu: Minnidalur, Mjóafjörður, 25.8. 1988, leg. H.Kr., det. K.H. (11951b).

## Polyporaceous Aphyllophorales

### Hymenochaetaceae Donk

#### *Coltricia perennis* (L.: Fr.) Murr.

Recorded by LARSEN (1932, p. 522) from Lómagnúpur (ISu) collected by N. F. Buchwald "on the ground in an *Empetrum-Calluna* heath." HALLGRÍMSSON (1966) reported it from Stórutjarnir (INa) and Hafnarfjörður (IVe).

This fungus grows exclusively on the ground, usually in sandy habitats. It is rather frequent in IAU, but probably rare in other regions.

**Material:** IVE: Hafnarfjarðarhraun, 1.5. 1961, leg. Bergþór Jóhannsson, det. H.Hg. (9591). - INa: Vaglaskógur, 27.7. 1966, leg. H.Hg. & Morten Lange (9593). - Stóru-Tjarnir, Ljósavatnsskarði, 5.8. 1963, leg. et det. H.Hg. (9589). - Dimmuborgir, Mývatnssveit, 11.7. 1974, leg. Hálfán Björnsson, det. H.Hg. (8805). - Bláhvammur, Mývatnssveit, 17.8. 1977, leg. et det. H.Hg. (9592). - Seljahjallagil, Mývatnssveit, in a wood, 18.8. 1974, leg. H.Kr., det. H.Hg. (9590). - Hljóðaklettur, in a path, 23.8. 1993, leg. H.Kr., det. G.G.E. (14017). - IAU: Egilsstaðir, 2.8. 1988 leg. et det. H.Hg. (11915). - Nýjagras, Hjaltastaðapinghá, 26.8. 1988, leg. et det. H.Hg. & H.Kr., conf. by H. Knudsen (11980). - Kóreksstaðir, Hjaltastaðapinghá, 17.7. 1992, leg. et det. H.Hg. (10827). - Hólmaháls, Reyðarfjörður, 7.8. 1993, leg. H. Knudsen (C), (10874). - Hvammur, Lóni, 14.8. 1988, leg. Hálfán Björnsson, det. H.Hg. & H. Knudsen (12349).

#### *Inonotus radiatus* (Sowerby.: Fr.) P. Karst.

New to Iceland. Two samples in C from Hálsskógur (INa), collected by Ólafur Davíðsson in August and Sept. 1900, determined as *Polyporus croceus* by ROSTRUP (1903), were later determined as this species by H. Knudsen (pers. comm.).

*Polyporus croceus* (Pers.) Fr. was listed by ROSTRUP (1903, p. 295), and LARSEN 1932, based on this specimen. It should consequently be deleted from the Icelandic flora.

A collection by Steen Elborne in Vaglaskógur (INa), 15.8. 1984 (SAE-90-91-Isl.) on *Betula pubescens* det. as *Inonotus* sp., probably belongs to this species.

#### *Phellinus* cf. *laevigatus* (Fr.) Bourd. & Galzin

Recorded with doubt by ROLL-HANSEN & ROLL-HANSEN (1973), from Vaglaskógur (INa), based on a collection by Helgi Hallgrímsson (AMNH) listed below.

**Material:** INa: Vaglakógur, 28.7. 1962, leg. H.Hg., det. F. Roll-Hansen (13682).

#### *Phellinus lundellii* Niemelä

Recorded by HALLGRÍMSSON (1966), as *Polyporus ignarius* L., from Vaglaskógur and Hallormsstaðaskógur. ROLL-HANSEN (1973) listed it under the

name *Phellinus ignarius* f. *nigricans* (Fr.) Bond. On *Betula pubescens* logs, stumps and even on the trunk of old trees. Rather frequent in IAu.

**Material:** INa: Vaglaskógur, 15.9. 1992, leg. H.Hg. & H.Kr. (10816). - IAu: Hallormsstaður, Atlavík, 29.5. 1988, leg. H.Hg., det. H. Knudsen (11760). - Hallormsstaður, 4.8. 1993, leg. et det. H. Knudsen (C). - Rana-skógur, Fljótsdal, 15.6. 1988, leg. H.Hg., det. H. Knudsen (11764). - Egilsstaðir, 28.8. 1988, leg. H.Hg., det. H. Knudsen (12027).

### **Polyporaceae sensu lato**

#### *Antrodia* sp.

Probably recorded by ROSTRUP (1903, p. 295), as *Polyporus vaporarius* Fr., from Möðruvellir, Hörgárdalur, in a house. The sample is not to be found.

**Material:** Two samples in AMNH, 11739 Droplaugarstaðir, Fljótsdal (IAu), 22.5. 1988 and 12051 Arnarhóll (INa), 1.9. 1988, leg. H. Hg. & H. Kr. may represent some *Antrodia* sp.

#### ***Ceriporia reticulata*** (Hoffm.: Fr.) Dománzki.

New to Iceland. On bark and wood of *Betula pubescens*. Frequent in the birch copses throughout Iceland.

**Material:** IVe: Skorradalur, Stálpastaðir, 13.8. 1989, leg. H.Hg., det. H. Knudsen (13072). - Staðarfell, 18.8. 1989, leg. H.Hg., det. H.Knudsen (13161). - IAu: Egilsstaðaskógur, 3.7. 1985, 25.9. 1987 and 28.8. 1988, leg. H.Hg., det. K.H. (9650, 11616, 12024). - Selskógur, Egilsstaðir, 25.9. 1987, leg. H.Hg., det. K.H. (11716). - Hallormsstaður, 26.9. 1990, leg. et det. H.Hg. (12957).

#### *Perenniporia medulla-panis* (Jacq.: Fr.) Donk

Recorded by ROSTRUP (1903, p. 295), as *Polyporus medulla-panis*, from Möðruvellir, Hörgárdal (INa), collected by Stefán Stefánsson "on beams in a cellar". The sample is not at hand, and this determination has not been verified.

#### *Trametes hirsuta* (Wulf.: Fr.) Pilat

Recorded by LARSEN (1932, p. 522 s.n. *Polystictus hirsutus* (Wulfen) Fr.) from Egilsstaðir (IAu), and by HALLGRÍMSSON (1966 s.n. *Polyporus hirsutus*) as common on birch-stumps in Iceland, which is based on an erroneous interpretation of *Trametes zonatella*. Since no correctly identified specimens of *Trametes hirsuta* are at hand, the species must be regarded as dubious in the Icelandic flora.

#### ***Trametes pubescens*** (Schumach.: Fr.) Pilat

One collection from Hallormsstaður 1993, leg. Jan Vesterholt (JV93-530), has been determined by Leif Ryvarden as this species. Some specimens previously referred to *Trametes hirsuta* may belong here.

***Trametes zonatella*** Ryv.*(Trametes multicolor* (Schaeff.) Jülich).

Recorded by JØRSTAD (1962), as *Polyporus zonatus* (Nees) Fr., from Vaglaskógur (INa), leg. B. Lyngé; and by ROLL-HANSEN (1973a, 1973b, s.n. *Coriolus zonatus* (Nees: Fr.) Quéf.). Also recorded by HALLGRÍMSSON (1966, s.n. *Polyporus hirsutus* (misidentification)), HALLGRÍMSSON 1979, and KRISTINSSON (1977 s.n. *Coriolus hirsutus*).

On *Betula pubescens*, usually on stumps, but also on fallen logs and old or dead trunks and branches, common in birch copses and woods throughout Iceland.

**Material:** About 25 specimens are in AMNH, all from INa and IAu.

***Tyromyces chioneus*** (Fr.: Fr.) P. Karst.

Recorded by ROLL-HANSEN (1971) as *T. lacteus* (Fr.) Murr. or *T. albellus* (Peck) Bondartsev, and (1973a) under the last name, referring to samples from Fnjóskadalur (INa), leg. H.Hg. These samples had incorrectly been identified and recorded as *Polyporus betulinus* Bull.: Fr. (HALLGRÍMSSON 1966), (= *Piptoporus betulinus* (Bull: Fr.) P. Karst.), a species that has never been found in Iceland. *Tyromyces chioneus* grows on logs and stumps of *Betula pubescens*, and is rather common in Fnjóskadalur (INa), and Fljótsdalshérað (IAu).

**Material:** INa: Vaglaskógur, 28.8. 1962, leg. H.Hg., det. Roll-Hansen (1979). - IAu: Egilsstaðaskógur, 30.7. 1987, 4.9. 1987, and 2.8. 1988, leg. H.Hg., det. H. Knudsen (11152, 11492, 11803). - Hallormsstaður, 24.8. 1988, 25.8. 1989, leg. H.Hg., det. H. Knudsen (11942, 12377), 4.8. 1993, leg. H. Knudsen (C), 2.8. 1966 and 4.8. 1966, leg. M. Lange (C). About 22 specimens are in AMNH, all from INa and IAu.

**Polyporaceae sensu strictu*****Lentinus lepideus*** (Fr.: Fr.) Fr.

Recorded by HALLGRÍMSSON (1988) from several localities in different parts of Iceland. Collected on logs of driftwood and imported coniferous wood in roof-beams and telegraph-poles, rare.

**Material:** IVE: Reykjavík, 1975, det. H.Hg. (11660). - (Mosfellsbær, July 1986, photo H.Kr.). - IAu: Egilsstaðir, 18.8. 1987, leg. et det. H.Hg. (11314). - Kvísker, Örnefi, 30.9. 1975, leg. Pétur Holm, det. H.Hg. (11661).

***Polyporus brumalis*** (Pers.: Fr.) Fr.

First record by ROSTRUP (1903, p. 295), from Hálsskógur and Vaglaskógur (INa), leg. Ólafur Davíðsson and Stefán Stefánsson. Also recorded by LARSEN (1932) from Hallormsstaður (IAu), CHRISTIANSEN (1941) from Vaglaskógur (INa), HALLGRÍMSSON (1966, 1979) as common in INa and IAu, ROLL-HANSEN (1973a, 1973b) in Vaglaskógur, and KRISTINSSON (1977).

This species grows on sticks and fallen branches of *Betula pubescens*. Common in birch-woods in INa and in the northern part of IAu.

**Material:** About 38 specimens in AMNH, all in INa and IAu except one: INv: Norðdalur, Trostansfjörður, 1.9.1971, leg. et det. H.Hg. (7420).

***Polyporus melanopus* (Pers.) Fr.**

Probably first recorded by CHRISTIANSEN (1941), as *Polyporus varius* Fr. (see the following species), and HALLGRÍMSSON (1966, 1979) used that name for the species complex in a broad sense.

*P. melanopus* is usually found on the ground near trees of *Betula pubescens*, probably in connection with the roots, but it may also be found on stumps or even in heather-moors with *Betula nana* and *Salix* spp.

**Material:** IVe: Rauðavatn, Reykjavík, 25.8. 1988 leg. Eiríkur Jensson, det. H.Hg. (12473). - INa: Vaglaskógur, 6.9. 1988, leg. H.Hg., det. H. Knudsen (12113). - Reykjahlíðarskógur, 28.7. 1971, leg. & det. H.Hg. (7138). - Vogar, Mývatnssveit, 1.8. 1972, leg. et det. H.Hg. (8178). - Auðnir, Laxárdalur, Sept. 1988, leg. Jón Benediktsson, det. H.Kr. (13690). - IAu: Egilsstaðaskógur, 18.8. 1987, leg. H.Hg., det. H. Knudsen (11326). - Egilsstaðir, 3.8. 1993, leg. H. Knudsen. - Selskógur, Egilsstaðir, 27.7. 1993, leg. et det. H.Hg. (10836). - Hallormsstaðaskógur, 24.8. 1988, leg. H.Hg., det. H. Knudsen (11956). - Hallormsstaður, 1.8. 1966, leg. M. Lange (C), 4.8. 1993, leg. H. Knudsen. - Staffell, Fellum, 16.9. 1993, leg. et det. H.Hg. (13277). - ISu: Þórsmörk, on *Betula* and *Salix*, 8.8. 1959, leg. et det. M. Lange (ML-535).

*Polyporus varius* (Pers.) Fr.

Recorded by CHRISTIANSEN (1941, p. 199), from Reykjahlíð at Mývatn (INa), in lava-field, determined by N. F. Buchwald (C) (see under *P. melanopus*). The description of this species given by Christiansen could equally fit *P. melanopus*, with exception of the stipe, which is said to be "pale ochraceous at the apex, black lower down."

**Thelephoraceae Cheval.**

***Sarcodon leucopus* (Pers.) Maas G. & Nannf.**

(? *Sarcodon laevigatus* (Fr.) P. Karst.)

First record by HALLGRÍMSSON (1963) as *S. laevigatus* (Sw. ex Fr.) P. Karst., collected in Mývatnssveit 1962. In 1964 another locality was added (HALLGRÍMSSON 1964). These samples were sent to Maas Geesteranus (Utrecht), who determined them as *S. leucopus*. Characteristic for the Icelandic specimens is the very strong and peculiar odour, which is also reported for *S. laevigatus*. According to GULDEN & STORDAL (1973), these two species are probably synonymous.

In Iceland *S. leucopus* has always been collected in dry and sunny hill-sides covered with *Arctostaphylos uva-ursi*, and no other woody plants. Presumably there is a mycorrhizal connection between these two plants. It

has only been found in the northeastern part of Iceland, where the climate is most continental.

**Material:** INa: Vagnbrekka, Mývatnssveit, 3.9. 1962, leg. H.Hg., det. Maas Geesteranus (1839). - Saurbrúargerði, Grýtubakkahreppi, 12.7. 1964, leg. H.Hg., det. Maas Geesteranus (4104). - Vesturdalur, Kelduhverfi, 14.8. 1971 and 15.7. 1974, leg. et det. H.Hg. (7185, 8694). - IAu: Teigur, Vopnafjörður, 20.8. 1987 and 27.8. 1992, leg. Hildigunnur Valdimarsdóttir, det. H.Hg. (10826). - Egilsstaðir, 22.8. 1987 and 1.9. 1987, leg. H.Hg., det. K. H. (11365).

***Thelephora caryophyllea* (Schaeff.) Fr.**

Probably recorded as early as 1769 in Flora Danica t. 409, fig. 2 (s.n. *Peziza radiata*), and by ZOËGA (1772, p. 20, as *Peziza zonalis*). On the basis of this old record, ROSTRUP (1885) is listing *T. caryophyllea*, and in 1903 also *T. terrestris*, collected in Þrastarhólsskarð, Arnarneshreppi (INa), by Ólafur Davíðsson. According to a revised determination of this specimen in (C), by H. Knudsen (pers. comm.), it belongs to *T. caryophyllea*. LARSEN (1932), and JØRSTAD (1962) also report finds of *T. terrestris*, but their specimens are not available.

*T. caryophyllea* grows on sparsely vegetated, often mossy and gravelly ground, and also on naked ruderal places in towns and villages. It is common in all regions of Iceland, and is probably the only member of Aphyllophorales which can also be found at higher elevations.

**Material:** INa: Vaglar, Þelamörk, 24.7. 1972, leg. et det. H.Hg. (8140). - Glerá, Akureyri, 21.8. 1962, leg. et det. H.Hg. (1541). - Kotárborgir, Akureyri, 1.4. 1982, leg. et det. H.Hg. (13701). - Glerárdalur, 300 m, 24.6. 1963, leg. et det. H.Hg. (2118). - Vaglaskógur, 13.8. 1961, leg. et det. H.Hg. (120). - Þeistareykir, 400 m, 8.8. 1974, leg. et det. H.Hg. (8781). - IAu: Egilsstaðir, 16.8. 1988, leg. et det. H.Hg., conf. K.H. (11870). - Egilsstaðir, 27.8. 1988, leg. et det. H.Hg. (11986). - Hallormsstaður, Mörkin, 25.7. 1987, leg. H.Hg., det. K.H. (11095). - ISu: Reykjakot, Rjúpnabrekka, 7.8. 1959, leg. et det. M. Lange (440). - IMn: Kringilsárrani, 600 m, leg. Kristbjörn Egilsson, det. H.Hg. (13700).

***Thelephora terrestris* Pers.: Fr.**

Erroneously recorded by ROSTRUP (1903, see *Thelephora caryophyllea* above). It was recorded by LARSEN (1932) from Hallormsstaður (IAu) and JØRSTAD (1962) from Reykjadalur (INa), leg. B. Lyngé. Since the specimens are not at hand, these finds have not been verified.

***Tomentella atramentaria* Rostr.**

Recorded by ROSTRUP (1903, p. 293) as *T. ferruginea* Pers., from Hálskógur, leg. Ólafur Davíðsson 11.9. 1900 (ÓD-1261 in C and ICEL), confirmed by K. Hauerslev.

On sticks of *Betula pubescens*.

***Tomentella bryophila*** (Pers.) M.J. Larsen.

Collected by Ólafur Daviðsson in Hálsskógur and recorded by Rostrup under the same epithet as the preceding species, as it was contained in the same sample (H. Knudsen, pers. comm.).

It grows on decaying sticks of *Betula pubescens*.

**Material: IV:** Norðtunga, Mýrasýslu, 13.8. 1989, leg. H.Hg., det. K.H. (13061).

***Tomentellopsis echinospora*** (Ellis) Hjortstam.

New to Iceland. On dead leaves, decaying sticks etc. of *Betula pubescens*.

**Material: IAu:** Selskógur, Egilsstaðir, 25.9. 1987, leg. H.Hg., det. K.H. (11621).

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## LIST OF SYNONYMS AND MISAPPLIED NAMES FROM THE LITERATURE REFERRED TO IN THIS ARTICLE.

- Coniophora cerebella* Pers.: *Coniophora puteana*  
*Coriolus hirsutus* (Wulf.: Fr.) Quel.: *Trametes hirsuta*.  
*Coriolus zonatus* (Nees: Fr.) Quel.: *Trametes multicolor*.  
*Corticium granulatum* (Bon.) Wint.: *Hypochnicium punctulatum*.  
*Corticium incarnatum* Fr.: *Peniophora incarnata*.  
*Corticium radiosum* Fr.: ?  
*Corticium salicinum* Fr.: *Cytidia salicina*.  
*Dacrymyces deliquescens* (Bull.) Duby: *Dacrymyces stillatus*.  
*Hydnum argutum* Fr.: Misapplied name for *Trechispora farinacea*.  
*Merulius corium* Fr.: *Meruliopsis corium*.  
*Merulius lacrymans* (Wulf.) Schum.: *Serpula lacrimans*.  
*Peniophora setigera* (Fr.) Höhn. & Litsch.: *Hyphoderma setigerum*  
*Peziza radiata* (Flora Danica): *Thelephora caryophyllea*.  
*Peziza zonalis* (Zoega): *Thelephora caryophyllea*.  
*Phellinus ignarius* f. *nigricans* (Fr.) Bond.: *Phellinus lundellii*  
*Polyporus betulinus* (Bull.: Fr.) P. Karst.: Misapplied name for *Tyromyces chioneus*.  
*Polyporus croceus* (Pers.) Fr.: Misapplied name for *Inonotus radiatus*.  
*Polyporus ignarius* L.: Misapplied name for *Phellinus lundellii*  
*Polyporus medulla-panis* (Pers.) Fr.: *Perenniporia medulla-panis*.  
*Polyporus perennis* (L.) Fr.: *Coltricia perennis*.  
*Polyporus vaporarius* Fr.: *Antrodia sinuosa* ?



- Polyporus zonatus (Nees) Fr.: *Trametes multicolor*.  
 Polystictus hirsutus (Wulf.) Fr.: *Trametes hirsuta*.  
 Poria medulla-panis Fr.: *Perenniporia medulla-panis*.  
 Poria vaporarius Fr.: *Antrodia sinuosa?*  
 Radulum orbiculare Fr.: *Hyphoderma radula*.  
 Radulum radula (Fr.) Luc. & Gill.: *Hyphoderma radula*.  
 Stereum purpureum (Pers.: Fr.) Fr.: *Chondrostereum purpureum*.  
 Stereum tuberculosum Fr.: *Cystostereum murrayi*  
 Stereum vorticosum Fr. (St. "corticolum"): *Chondrostereum purpureum*.  
 Thelephora radiata Fr.: *Thelephora caryophyllea*.  
 Tomentella ferruginea (Pers.) Pat: Misapplied name for *Tomentella atramentaria* and *Tomentella bryophila*.  
 Tremella lutescens Pers.: *Tremella mesenterica*.

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