Nephroma Ach.

**Nephromataceae**

Munuaisjäkälät • njurlavar

Thallus foliose, large, loosely attached, cortex present on both the upper and lower surface. Upper surface brown, blue-grey or green, depending on light conditions of the habitat. In shade thalli are usually much paler than in sunny situations. Lower surface pale brown or black, smooth or variably hairy. Apothecia with a brown disc, lecanoroid, developing on the lower side of slightly elongated marginal lobes. Spores 4-celled, long-fusiform, pale brown. Photobiont usually only cyanobacterium (*Nostoc*), sometimes green alga (*Coccomyxa*), but in the latter cases cyanobacteria present in cephalodia. Many species contain triterpenoids: e.g. zeorin, peltidactylin, and dolichorrhizin. Epiphytic, saxicolous or terricolous. Seven species in Finland.

**Nephroma arcticum** (L.) Tønsr.

Pohjankorvajäkälä • norrlandslav

LC

Syn. *Opisteria arctica* (L.) Vain.

Thallus foliose, thalli can form contiguous, large, loose colonies to almost 1 m wide. Upper surface yellow-green, blue-green or bright green, often glossy. Lower surface dull, margins paler, darker towards the centre. Lobes to 2–5 cm wide, smooth or slightly pitted, tongue-like, margins ascending. Apothecia common, large, 1–3 cm diam. Spores 23–30 × 4–5 µm. Conidiomata rare, at lobe margins. Photobiont green; cyanobacteria in large, bluish cephalodia that are easily visible in moist thalli.

**Chemistry**

K−, KC+ yellow, PD+ orange. Zeorin, nephroarctin, phenarctin, methyl gyrophorate, and usnic acid.

**Habitats**

On mosses in *Pinus* forests and in arctic heaths particularly in North Finland. Typical in the *Hylocomium-Myrtillus* type *Picea* forests, but also in humid *Betula* forests at the timberline. In the south mostly on mosses over shady cliffs.

**Distribution**

Throughout Finland, rare in South Finland, more common from Middle Finland towards the north, often abundant in Lapland and Koillismaa. – Europe, Asia, North America.

**General**

*Nephroma arcticum* is easy to recognise by its yellowish green colour and large size. *Nephroma expallidum* has a darker and duller upper surface, and its lobes are narrower.
**Nephroma bellum** (Spreng.) Tuck.

**Silomunaisjäkälä • stuplav**


Thallus rosette-forming, to 10 cm diam. Upper surface blue-grey – grey-brown, usually smooth, medulla white. Lower surface darker brown in the centre, paler at margins, very smooth, but sometimes slightly short-tomentose. Lobes to 2 cm wide, margins often crisped and with lobules. Apothecia rare, to 1.5 cm diam. Spores 17–21 × 5–6 μm. Dominant photobiont green, cyanobacteria in cephalodia that are visible as warts on the upper surface.

**Chemistry** K−, PD− or PD+ orange. Triterpenoids, for instance dolichorrhizin and zeorin, and unidentified substances.

**Habitats** On trees, particularly on *Salix caprea* and *Populus tremula*, often also on *Juniperus communis* and on Betula snags, usually in shady sites. Also on mossy rocks and cliffs.

**Distribution** Throughout Finland. Probably declined during the last decades, but common in Middle and North Finland up to the timberline. – Europe, Asia, North America.

**General** *Nephroma bellum* differs from *N. laevigatum* by its white medulla and negative K reaction. It also resembles *N. parile*, but the lobes of the latter are sorediate. The southern populations of *N. bellum* are often small and in poor condition.

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**Nephroma expallidum** (Nyl.) Nyl.

**Tunturikorvajäkälä • grön njurlav**

*Syn. Opisteria expallida* (Nyl.) Vain.

Thallus rosette-forming, to 15 cm diam. Upper surface brownish or bluish green, usually finely verrucose, dull. Lobes to 2 cm wide, margins often crisped and with lobules. Apothecia rare, to 1.5 cm diam. Spores 17–21 × 5–6 μm. Dominant photobiont green, cyanobacteria in cephalodia that are visible as warts on the upper surface.

**Chemistry** K−, PD− or PD+ orange. Triterpenoids, for instance dolichorrhizin and zeorin, and unidentified substances.

**Habitats** Among mosses in arctic and alpine heaths and alpine meadows, in the forest zone the southernmost populations can often be found on village grasslands in Lapland.

**Distribution** In the northernmost Lapland, most common in the fjells. – Europe, Asia, North America.

**General** A partly brownish thallus colour and verrucose, dull upper surface distinguish *N. expallidum* from *N. arcticum*.
**Nephroma helveticum** Ach.

*Kalliomunuaisjäkälä*

Thallus rosette-forming, to 8 cm diam. Upper surface blue-grey – dark brown, medulla white. Lower surface dark brown or black, densely pubescent or tomentose. Lobes 0.5 cm wide, margins and sometimes also upper surface with phyllidia and isidia. Apothecia fairly common, to 8 mm diam., exciple pectinate and upper surface scabrid, faveolate or pubescent. Spores 21–7 × 6–8 µm. Photobiont cyanobacterium.

**Chemistry** K−, PD−. Triterpenoids, for instance peltidactylin.

**Habitats** On shady cliffs, on rockfaces and among mosses over rock outcrops.

**Distribution** Very rare. Found in only a few places. – Europe (very rare), Asia, North America.

**General** New records are likely on steep cliffs of East Finland. Isidia, the dark tomentum on the lower surface, and the chemical composition most reliably distinguish *N. helveticum* from its relatives.

--

**Nephroma laevigatum** Ach.

*Lännenmunuaisjäkälä • västlig njurlav*

**Syn.** *Nephroma lusitanicum* Schaer.

Thallus rosette-forming, to 15 cm diam. Upper surface blue-grey – grey-brown, smooth, medulla often yellowish. Lower surface pale brown at margins, dark brown or black in the centre. Lobes to 1.5 cm wide, margins sometimes with phyllidia. Apothecia common, to 10 mm diam. Spores 17–20 × 5–7 µm. Conidiomata not common. Photobiont cyanobacterium.

**Chemistry** K+ rapidly – very slowly purple, PD−. Triterpenoids and anthraquinones.

**Habitats** On bark or mosses on bases of old deciduous trees, on rockfaces and mosses over rocks. In shady and sheltered sites.

**Distribution** Here and there in South and Middle Finland, often sparse and populations declining. – Europe, Africa, Asia, North America. Oceanic.

**General** The yellowish colour of the medulla and the purple K reaction distinguish *N. laevigatum* from *N. bellum*.
**Nephroma parile** (Ach.) Ach.  
**Jauhemunuaisjäkälä • bärdlav**  


**Chemistry** K−, PD−. Triterpenoids. Two chemotypes: 1) dolichorrhizin; 2) peltidactylin. Both chemotypes can also contain other substances.

**Habitats** Particularly on bases of deciduous trees, and among mosses over rocks and rockfaces. Most common in old-growth forests.

**Distribution** Throughout Finland, fairly common, but declined during the past decades, particularly in the south. – Europe, Africa, Asia, North and South America.

**General** Soralia are the best diagnostic character of *N. parile*. They are absent from other Finnish *Nephroma* species. In North Finland, a slightly different form can be found. Its soredia mass is partly heavily corticate, its upper surface is more clearly faveolate and ridged, lower surface is dark-tomentose, and it belongs to the peltidactylin-containing chemotype. This form is known from at least North Norway, Switzerland, Greenland, and Canada, but its taxonomic status is still unclear.

**Nephroma resupinatum** (L.) Ach.  
**Nukkamunuaisjäkälä • luddlav**  

**Syn.** *Nephroma tomentosum* (Hoffm.) Flot.

Thallus rosette-forming, to 10 cm diam. Upper surface blue-grey – grey-brown, medulla white. Lower surface pale, distinctly tomentose, with scattered, whitish papillae. Lobes to 1.5 cm wide, particularly margins but also the upper surface tomentose and sometimes with phyllidia. Apothecia fairly common, 1–1.5 cm diam., upper surface tomentose, scabrid or ridged. Spores 21–24 × 4–6 µm. Conidiomata rare, at lobe margins. Photobiont cyanobacterium.

**Chemistry** K−, PD−. Lichen substances absent.

**Habitats** Particularly on bases of deciduous trees, also on mossy rocks and rockfaces. Prefers old-growth forests.

**Distribution** Fairly common throughout Finland, but probably declined during the past decades. – Europe, Asia, North America.

**General** The tomentose upper and lower surfaces, whitish papillae on the lower surface, phyllidia, and the absence of lichen substances distinguish *N. resupinatum* from *N. bellum*. These two species often grow together.
**Normandina** Nyl. *Verrucariaceae*

**Normandina pulchella** (Borrer) Nyl. *Verrucariaceae*

**Simpukkajäkälä • mussellav**

Thallus squamulose or crustose, blue-grey or green. Diffuse-sorediate or soralia on margins and upper surface of the squamules. Perithecia entirely or partially immersed. Spores usually longitudinally 8-celled, rarely somewhat muriform, slightly constricted at the septa, colourless. Conidiomata absent. *Photobiont* *Trebouxia*. Contain zeorin or lichen substances absent. On mosses or lichens, rarely on bark, in humid sites. Two species in Finland.

**Ochrolechia** A. Massal. *Ochrolechiaceae*

**Petäjänkermajäkälä • halmgul örnlav**


**Habitats** On bark of *Picea abies*, *Pinus sylvestris* and *Betula*, rarely on *Quercus robur* or on ligustrum. In open *Pinus* forests, herb-rich forests, and on trees in mires. Prefers open woodlands.

**Distribution** Fairly common throughout Finland, except for Fjeld Lapland. – Europe, a few records from Africa and Asia.

**Normandina Nyl.**

**Simpukkajäkälä**

Thallus squamulose or crustose, blue-grey or green. Diffuse-sorediate or soralia on margins and upper surface of the squamules. Perithecia entirely or partially immersed. Spores usually longitudinally 8-celled, rarely somewhat muriform, slightly constricted at the septa, colourless. Conidiomata absent. *Photobiont* *Trebouxia*. Contain zeorin or lichen substances absent. On mosses or lichens, rarely on bark, in humid sites. Two species in Finland.

**Ochrolechia alboflavescens** (Wulfen) Zahlbr. *Ochrolechiaceae*


**Habitats** On bark of *Picea abies*, *Pinus sylvestris* and *Betula*, rarely on *Quercus robur* or on ligustrum. In open *Pinus* forests, herb-rich forests, and on trees in mires. Prefers open woodlands.

**Distribution** Fairly common throughout Finland, except for Fjeld Lapland. – Europe, a few records from Africa and Asia.
General The best diagnostic characters of *O. alboflavescens* are its thick thallus and the presence of lichesterinic and protolichesterinic acids (thin-layer chromatography needed). *Ochrolechia turneri* can look similar and also has a yellow C reaction, but it typically grows on deciduous (often broad-leaved) trees, has a thinner thallus, and lacks lichesterinic acid. *Ochrolechia microstictoides* is another species with a yellow C reaction, but its thallus is thinner, soralia are irregular and contiguous, and it lacks protolichesterinic acid. *Ochrolecia alboflavescens* can sometimes lack soralia and produce numerous apothecia. This growth form is difficult to distinguish from *O. pallescens* without thin-layer chromatography.

**Ochrolechia androgyna** (Hoffm.) Arnold

**Tunturikermajäkälä • nordskalörnlav**

Syn. *Ochrolechia gonatodes* (Ach.) Räsänen, *Ochrolechia lapuënensis* (Vain.) Räsänen

Thallus variable, often verrucose, often developing spine-like extensions to 2 cm long, and then thallus appearing fruticose, occasionally thick-verrucose, often fairly thick; white-grey, yellowish grey or slightly reddish-brown, prothallus often indistinct. Spines often yellow-brown or brown-red. Usually esorediate, but sometimes with fairly abundant white – yellowish soralia. Apothecia common, large, 0.8–5 mm diam., pruina absent. Spores 20–50 × 12–30 µm. Conidiomata not common.

**Chemistry** K−, C+ red, PD−, UV+ pale blue. Gyrophoric acid, sometimes additional lecanoric acid.

**Habitats** On base trunks and branches of deciduous trees and conifers, on rotten wood and shady, siliceous rocks and on bare or mossy rockfaces.

**Distribution** Common throughout Finland. – Europe, Asia, Australia (Tasmania), North and South America, Antarctic. Essentially an arctic and subarctic species.

General The diagnostic characters of *O. frigida* include a pale thallus often with spine-like extensions, and a smothering growth over low vegetation. The taxonomy of this species is not entirely solved, and particularly the sorediate morphotypes have often been treated as a separate species, *O. lapuënensis*.

**Ochrolechia frigida** (Sw.) Lynge

**Tunturikermajäkälä • nordskalörnlav**

**Syn.** *Ochrolechia gonatodes* (Ach.) Räsänen, *Ochrolechia lapuënensis* (Vain.) Räsänen

Thallus variable, thin or verrucose, often developing spine-like extensions to 2 cm long, and then thallus appearing fruticose, occasionally thick-verrucose, often fairly thick; white-grey, yellowish grey or slightly reddish-brown, prothallus often indistinct. Spines often yellow-brown or brown-red. Usually esorediate, but sometimes with fairly abundant white – yellowish soralia. Apothecia common, large, 0.8–5 mm diam., pruina absent. Spores 20–50 × 12–30 µm. Conidiomata not common.

**Chemistry** K−, C+ red, PD−, UV+ pale blue. Gyrophoric acid, sometimes additional lecanoric acid.

**Habitats** On soil in alpine heaths and meadows, particularly in open, windy sites, further south most common on bogs. In the fells often aggressively growing over other lichens and shrubs, suppressing them. Occasionally on bases of trees and shrubs, and on rocks.

**Distribution** Common in the fells, rarer further south, but can be common on the vast bogs in Satakunta. – Europe, Asia, Australia (Tasmania), North and South America, Antarctic. Essentially an arctic and subarctic species.
Ochrolechia microstictoides Räsänen
Katajankermajäkälä • tunt örnılav

Thallus slightly cracked, thin at margins; white-grey – grey, prothallus often distinct. Soralia numerous, grey-white, rarely yellowish, variable in size and shape, often contiguous in the centre of the thallus to form a continuous cover. Apothecia very rare, 1–2 mm diam., sometimes slightly pruinose. Spores 45–52 × 17–25 µm. Conidiomata absent.

**Chemistry**

K−, C+ yellow (at least soralia), PD−, UV+ white. Lichesterinic and variolaric acids, and unidentified substances. Epiphymenium C+ red. Gyrophoric and lecanoric acids.

**Habitats**

On bark and lignum of trees. Requires acidic substrata, such as bark of conifers and *Betula*.

**Distribution**

Common throughout Finland, except for Fjeld Lapland. – Europe, Turkey.

**General**

The best diagnostic characters of *O. microstictoides* include its thin thallus and irregular, often contiguous soralia. It resembles *O. alboflavescens* and the rare *O. turneri*, but the soralia in the latter two are more clearly delimited. Furthermore, these species differ in their lichen substances. *Phlyctis argena* can be morphologically similar to *O. microstictoides*, but has a red K reaction.

Ochrolechia pallescens (L.) A. Massal.
Haavankermajäkälä • blek örnlav

Thallus uneven and cracked, fairly thick – thick, brown-grey, yellow-grey or pale grey, soredia absent, prothallus indistinct. Apothecia 1–3 mm diam., sometimes pale- or yellow-pruinose. Spores (35)45–70(75) × (12)25–40 µm.

**Chemistry**

K−, C+ yellow (at least the exciple, often also the thallus), PD−, UV−. Substances of the murolic acid group, variolaric acid, sometimes alectoronic acid, and unidentified substances. Exciple cross-section sometimes KC+ pink. Epiphymenium C+ red. Gyrophoric and lecanoric acids.

**Habitats**

On bark of old deciduous trees, particularly on *Populus tremula*, but also on *Salix caprae* and *Sorbus aucuparia*. In well-lit situations, preferably in old-growth forests.

**Distribution**

In South and Middle Finland, rare and declined. – Europe, North Africa. Some uncertain records also from India, Australia, and South America.

**General**

The diagnostic characters of *O. pallescens* include the esorediate thallus, pruinose apothecia, and its lichen substances. *Ochrolechia alboflavescens* sometimes produces numerous apothecia and no soralia, and in that case thin-layer chromatography is needed in distinguishing it from *O. pallescens*.

Ochrolechia upsaliensis (L.) A. Massal.
Kalkkikermajäkälä • uppsalalav

Thallus cracked, coarsely granulose, fairly thick, white-grey – yellow-grey – grey, prothallus distinct. Apothecia usually numerous; yellowish, 0.6–4 mm diam., pruinose. Spores very variable in shape and size, (20)40–75(80) × (12)25–35 µm.

**Chemistry**

K−, C+ yellow, PD−, UV−. Variolaric acid, substances of the murolic acid group (small amounts), and unidentified substances.
**Habitats** On plant debris and mosses on soil, particularly in the calcareous areas.

**Distribution** Rare in Kuusamo Region (Oulanka), fairly common in the fjells of Lapland. – Europe, northern parts of Asia, North America.

**General** The best diagnostic characters of *O. upsaliensis* are its yellowish, pruinose apothecia, and the yellow C reaction of the thallus. It resembles *O. frigida*, which is common on soil in Lapland. However, the thallus of the latter often develops spines, its apothecia are epruinose, and its C reaction is red.

**On siliceous rock outcrops and rocks, often in windy sites.**

**Distribution** Throughout Finland, fairly common on the south coast, fairly rare inland, common in the north, particularly in the fjells. – Europe, Asia, North and South America.

**General** *Ophioparma ventosa* is easy to recognize by its rough surface and red apothecia. It resembles *O. lapponica*, but the latter has smaller spores (12–21 × 3–5 µm) and always positive K and PD reactions.

**Habitats** On siliceous rock outcrops and rocks, often in windy sites.
Orphniospora Körb.  
FUSCIDEACEAE

Ruutujääkälä

Thallus areolate, grey or brown-black. Apothecia lecideoid, black, true exciple present in young apothecia, gradually disappearing. Paraphyses unbranched or branched, often indistinct, hypothyecium dark brown. Ascii clavate. Spores 1-celled (but sometimes with an indistinct septum), thick-walled, ellipsoid, colourless or dark brown. Conidiomata immersed. Conidia bacilliform. Photobiont green. Lichen substances absent. On siliceous rock outcrops. The spores of Rhizocarpon are 2-celled or multicellular, and those of Buellia 2–4-celled. Two species in Finland.

Orphniospora moriopsis (A. Massal.) D. Hawksw.

Mustaruutujääkä • svart rutlav

LC

Syn. Buellia atrata (Sm.) Anzi

Thallus brown-black, areoles 0.3–1 mm diam. Apothecia common, 0.5–1(1.2) mm diam., at first immersed, later mostly sessile. Epiphyecium olive-green, hymenium 80–110 µm. Spores dark brown, 11–18 × 6–10 µm. Conidia 3–4 × 1 µm.

Chemistry

Medulla I+ blue-violet. Epiphyecium K+ green, N+ red.

Habitats

On siliceous rock outcrops, usually in exposed sites.

Distribution

Probably throughout Finland, possibly fairly common but rarely observed. – Europe, Asia, Australia, North America.

General

Orphniospora moriopsis can resemble O. moriopsis, but the latter has a grey or blue-grey thallus and its epiphyecium has a violet K reaction.
**Checklist of the lichens of Finland**

This checklist includes all the lichens and lichenicolous species known in Finland, plus some related non-lichenized species, and some ‘lichén-like’ species.

The first list was published by Vitikainen et al. (1997) but it is outdated. Additionally, we provide habitat and substrate data, which were absent from the first list. The provided data is essentially based on herbarium specimens housed in H, TUR, and OULU, but also on literature and field observations. Please note, that this kind of a checklist is never final, it constantly changes while new data is accumulated.

Altorger 1952 species, subspecies, and varieties are included. The scientific name and authors, the vernacular Finnish and Swedish names (when available), and selected synonyms are given. Furthermore, the distribution (by biogeographical provinces) and habitats are listed for each taxon.

* = a lichenicolous, non-lichenized fungus; (*) = sometimes lichenized, but always a lichenicolous fungus; (f) = sometimes lichenized, but always a saprophytic fungus.

If more than three authors exist for a taxonomic name, only the first one is given. If a question mark precedes a synonym, the status of the name as a synonym has not been confirmed.

The abbreviations of the biogeographical provinces of Finland are listed in Table 1, on page 11; an uncertain rank is indicated with a question mark. It should be noted that the distribution of some lichens is poorly known, and therefore the list is not necessarily complete. The habitats are given both as abbreviations (symbols) and in words. The first symbol tells the primary habitat of the species, while the possible following ones are regarded as secondary. The abbreviations follow the Red List of Finnish Species (Rasti et al. 2010), thus derive from the Finnish language.

**Abbreviations**

- **H** = wooded pastures and pollard meadows, **J** = road-sides, railway embankments etc., **In** = seminatural dry grasslands, **Ip** = parks, yards and gardens, **Ir** = buildings (and constructions).
- **M** = forests and woodlands, **Mk** = heath forests; **Mkk** = sub-xeric, xeric and barren heath forests, **Mktv** = old-growth mesic and herb-rich heath forests, **Mkv** = old-growth heath forests, **Mv** = herb-rich forests, **Mrv** = dry mesic herb-rich forests, **Mpr** = burnt forest areas and other young stages of natural succession, **Mv** = old-growth forests.
- **R** = shores, **Ri** = shores of the Baltic Sea, **Rjh** = Baltic sand beaches, **Rik** = Baltic rocky shores, **Rin** = Baltic coastal meadows, **Ris** = Baltic gravel, shingle and boulder shores, **Rj** = lakeshores and riverbanks, **Rjk** = inland rocky shores, **Rjm** = inland alluvial forests, **Rjs** = inland gravel, shingle and boulder shores, **Rjt** = inland open alluvial shores, **Rk** = shore rock outcrops.
- **S** = mires (peatlands), **Sk** = Picea mires (swamp forests), **Skr** = eutrophic and mesotrophic Picea mires, **Sn** = treeless fens, **Sr** = Pinus mires (bog forests), **Srj** = ombrotrophic and oligotrophic Pinus mires (bogs).
- **T** = alpine heaths and meadows, **Tk** = alpine heaths, **Ti** = alpine rock outcrops and boulder fields.
- **Vj** = rivers, **Vkv** = rapid and water-falls, **Vp** = brooks.

**Scientific names with authors, and Finnish and Swedish names when available**

<table>
<thead>
<tr>
<th>Scientific names</th>
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