

LICHEN SERIES - *USNEA LAPPONICUM* (POWDERED BEARD LICHEN) SYNONYMS: *USNEA LARICINA*

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Many of you who hiked through our boreal forest might have noticed graceful garlands hanging from deciduous or coniferous trees and shrubs or on conifer snags and dead wood or wooden fence rails, where they receive more light and moisture which all lichens need for their metabolism and which are favored substrates for these garlands known as *Usnea* (beard lichen).

Powdered beard lichen is a somewhat shrubby, tufted to slightly pendant species, with few pale yellowish green main stems, a pale black base and many perpendicular side branches bearing numerous soredia, often encircling branches, and at times becoming deeply excavate, showing the white inner fungal cord, especially when mature; isidia are absent.

Usnea lapponicum, often known in older literature as *Usnea substerilis* and *Usnea sorediifolia*, is often confused with other beard lichens in similar habitat such as *Usnea substerilis* (embossed beard lichen) which does not have deeply excavate soredia but often develops isidia. *Usnea lapponicum*, *Usnea hirta* (bristly beard lichen) which is similar in colour, more tufted, not blackened at base, lacking papillae and soredia but with copious isidia on its branches; preferring hard weathered wood to grow on, and *Usnea subfloridana* (nit beard lichen) with clusters of peg-like isidia on its branches, which are often obscured and not easily seen.

Powdered beard lichen is often associated with *Evernia mesomorpha* (boreal oak moss), which by colour, pendent or tufted thallus, coarse soredia, and habitat can also resemble *Usnea*, although the species lacks an inner cord, characteristic of beard lichens, *Physcia aipolia* (hoary rosette lichen), *Ramalina dilacerata* (punctured ramalina) and some light coloured *Bryoria* – (horsetail lichens) which have a rather loose medulla.)

Another pendant species *Usnea cavernosa*-(pitted beard lichen) is identical in colour, but lacks sorediae, and has irregular, thicker, and foveolate branches. Apothecia are rare.

The presence of usnic acid gives these lichens their pale-yellow colour, and has antibiotic properties; Streptomycin derived from this acid, was widely used as a medical drug against tuberculosis and other infectious diseases, while some species are commercially used to obtain dyes, or used as nesting

material by certain forest birds.

The genus *Usnea* provides also a valuable winter nutrient to Woodland Caribou and other large undulates, and due to their large body mass, are important bioindicators of atmospheric and forest health.

As you can see *Usnea* is not only a very useful and important genus in the forest ecosystems, but also a graceful member of the forest lichen flora.

The generic name *Usnea* comes from the Arabic word for moss and the specific name *lapponica* refers to Lapland, where the species presumably was first discovered. The common name powdered beard lichen possibly refers to the powdery soredia and beard-like form.

It might also be interesting to know that the scientific name of this lichen is that of the fungus (mycobiont), while its partner the green alga (photobiont) has its own name: “trebauxia”. Spanish moss : *Tillandsia usneoides* (old man’s beard among others), a species of the Bromeliaceae and often mistaken for a lichen, is not a moss nor a lichen, but a blue-gray vascular epiphyte draping from trees up to 30 m. long favouring a warm, humid climate and often used by florists. The specific name *usneoides* refers to resembling *Usnea*, not in colour but in lacking roots, able to absorb dissolved nutrients from atmospheric moisture, needing sunlight and pendent habit much like beard lichens. Usneas can be recognized by their fruticose thallus, attached to the substratum by a single holdfast. The main axis often with a black base, can be smooth, papillate, tuberculate, caveate, or foveolate and has a tough inner cord. The long or short peripheral branches often differing from the main stem, have soredia or isidia; apothecia are mostly rare.

So, on your next ramble in the boreal forest enjoy these lichens and other equally important forest species be it vascular or non-vascular, for each is an irreplaceable and essential part of the forest ecosystems and health.

Glossary

Apothecia – a disk or cup-shaped fruiting body.

Caveate – deeply pitted or excavated.

Cortex – hard outer covering of lichen stems.

Foveolate – having small pits or depressions.

Fruticose – a lichen that is stalked, pendent, bushy or tufted.

Hold-fast – a thick attachment point of some lichens, esp. *Usnea*.

Isidia – tiny warty outgrowth with a hard outer cortex containing alga cells and serving as vegetative propagules.

Medulla – the white inner layer of fungal hyphae in the thallus. The inner cord in *Usnea*.

Mycobiont – the fungal partner in a lichen.

Papillae – small rounded or cylindrical bumps on the cortex.

Photobiont – the photosynthetic partner in a lichen e.g. green or blue-green algae.

Propagule – a vegetative unit containing algal cells and fungal filaments.

Soredia – localized powdery masses of algal cells entwined by fungal filaments without a cortex.

Thallus – the vegetative body of a lichen containing both algal and fungal components.



Powdered beard lichen

-Bernard de Vries