

Usnea Hill

(LECANORALES: PARMELIACEAE s. lato: USNEACEAE)

Thallus fruticose, shrubby, erect to longly pendent or decumbent, simple to mostly irregularly and complexly branched, or sometimes dichotomous; branches rounded to angled in cross-section, even and smooth or \pm pitted with a network of ridges, shiny or matt, occasionally with annularions or jointed, then divided into segments which may be swollen and constricted at their point of attachment, with or without short lateral branchlets (fibrils or cilia) and various surface features (tubercles, papillae, pseudocyphellae, isidia, pseudoisidia and soredia); cortex horny, brittle, of agglutinated hyphae, occasionally soon falling off; medulla lax (wooly) or compact; central axis cartilaginous, solid or with a hollow center, of longitudinal, tough, compacted, agglutinated hyphae, white, rarely pinkish to red or yellow; most species attached to substrate by a compact basal disklike holdfast (a few very long pendent species are unattached and draped over branches); surface straw yellow to gray-green or red, sometimes blackened towards the base, or ("Neuropogon") with black rings.

Apothecia, when present, lateral or terminal on branches; thalline margin well developed, persistent, smooth and waxy to wrinkled-verrucose or papillate, often with \pm short, ray-like projections; disk round, pale, flat or \pm concave, smooth or minutely warted, often pruinose; hypothecium pale; paraphyses branched, agglutinate; asci clavate to cylindrical, Lecanora-type, unitunicate, thick walled, I+ blue; tholus I+ blue; spores 8, ellipsoid to spherical, simple, hyaline, thin walled.

Pycnidia mainly terminal or subapical, immersed; fulcrum exobasidial; pycnosporos simple, colorless, bacilliform bifusiform, fusiform, or acicular, thickened at one or both ends, straight or curved. Usnic acid in cortex; medulla or axis often with various phenolic substances (depsides, depsidones or fatty acids). Photobiont Trebouxia. On wood, bark, and rock or rarely soil, in \pm well-lit situations, tropical to arctic-alpine.

The "beard lichens" somewhat resemble species of Alectoria, but these lack fibrils and lack an elastic, cartilaginous central axis, as is also true for Evernia and Ramalina, which also differ in mostly having a flattened, less branched thallus.

Preliminary Key to "Natural" Groups of Usnea in North America
(After unpublished ms. by Herre, & many other sources)

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Feb. 10, 1988

Key to Subgenera in US & Canada

1a Axis hollow, at least in thicker branches; cavity empty or \pm filled with cobwebby hyphae; surface papillose but not pitted. Southeastern US.

I. Subgenus Eumitra

1b Axis solid or only indistinctly torn, never with a distinct cavity. Apothecia distinctly stipitate (etc.; Latin not translated yet).

2a Thallus conspicuously black spotted, etc. Apothecial discs \pm black. Arctic-Alpine, rare in North America.

Subgenus Neuropogon: U. sphacelata

2b Thallus not black spotted. Apothecial discs pale, \pm yellow. Mostly Boreal to Subtropical, lowland to montane, very common.

II. Subgenus Usnea

Key to Sections of Subgenus Usnea in US & Canada

1a Central cord I+ blue. Cortex of main branches brittle and decomposing. Medulla reduced to minute clusters scattered along the solid axis which occupies almost the entire branch. Thallus pendulous, up to several meters long, composed of a few main branches which are very long and unbranched except for numerous corticate perpendicular branchlets (fibrils). Thallus gray green to whitish straw color.

Sect. Elongatae (Longissimae): U. longissima

1b Central cord usually I- (?); cortex not decomposing.

2a Thallus cortex at least partly colored with some shade of red or pink, or brown but with red visible in section.

II- . Rubigineae

2b Thallus cortex not red, but some shade of yellow or green (sometimes brownish or somewhat reddish in herbarium).

3a Medulla or central axis some shade of red or pink.

II- . Ceratinae
("strigosa group")

3c Medulla and central axis white.

4a Branches (at least main ones) not exactly terete, but either angular or \pm pitted.

5a Main branches \pm angular in cross-section. Thallus elongate, pendulous.

II- . Gonioides.

5b Main branches \pm terete, but \pm pitted, furrowed or excavated; soft; without papillae; the base not darkened. Medulla lax.

II- . Sect. Foveatae.

4b Main branches terete, not distinctly angular or pitted.

III & IV. Remaining sections.
(See separate set of "Natural" and "Artificial" Keys)

III. Natural Key to Miscellaenous Sections of Subg. Usnea

THIS IS BASED ON HERRE AND IS ALL SCREWED UP AND WORTHLESS AS IS.

1a Thallus in herbarium soon brown or yellow (not greyish green). Fresh specimens with cortex thin, papery, smooth to very smooth.

2a Thallus about 15 cm long, pendulous, hair-like, greenish straw colored, articulate, very smooth; apothecia only 2-4 mm wide. Southeastern US. U. trichinella Mot.

2b Thallus usually small to medium-sized, never hairlike, nearly always caespitose, divergently branched, smooth or indistinctly branched, never tuberculate.

Sect. Glabratae

3a Medulla thick and lax, usually wider than diameter

of axis. Thallus pale green when fresh, brown in herbarium.

4a Thallus sterile, with few or no branchlets and not spinulose; pale green to whitish green when fresh; segments \pm inflated.

Subsect. Pycnocladae

4b Thallus fertile or sorediose, very spinulose and strigose, bristly with minute pointed branchlets or cilia. Herbarium specimens usually dusky or yellowish straw colored.

Subsect.

Scabridae

3b Medulla thin and dense to very dense; thallus medium-sized to rather large, yellow or green in life, deep fuscous in herbarium. North American species sterile; sorediose or not. **Subsect. Osseoleucae**

1b Thallus unchanged in herbarium, only becoming dark brown after a very long time.

5a Thallus typically bearded, usually with abundant branches and branchlets, usually rather elongate but rarely short. **Sect. Barbatae**

6a Branchlets few.

7a Thallus large, strong; soredia none or so few as to be practically invisible; branches with tubercles or large blunt papillae; branchlets none to few and irregular; color pale olive to deep green. **Subsect. Tortuosae**

7b Thallus elongate, pendulous, usually much branched; with distinct wrinkles, papillae or tubercles, scabrous; medulla lax; apothecia often present **Subsect. Scabratae**

In: Purvis, et al., Lichen Flora of Great Britain and Ireland.
Rogers, 19 . Genera of Australian Lichens. Galloway, D. 1985.
Flora of New Zealand Lichens.