

Arctopeltis Poelt
(LECANORALES: LECANORACEAE)

After Poelt (1983)

Rev. 5/94

Thallus small, white to whitish brown, foliose, distinctly umbilicate with thick umbilicus, pulvinate, often plicate, mostly broadly set off from the substrate; cortex distinctly developed, of anticlinal, anastomosing, conglutinate hyphae, surrounding the thallus including the umbilicus; medulla relatively loose.

Apothecia very large, covering most of the thallus, substipitate, concave, lecanorine; margin thin; disc brown to black, often irregularly convex; hypothecium pale; hymenium moderately thin; paraphyses tips capitate, the apical cells mostly brown to green; asci lecanoraceous; spores 8, hyaline, nonseptate. ellipsoid, medium to large.

Pycnidia immersed; fulcra of "Placodium" type; pycnospores filiform.

Spot Tests and Chemistry: thallus C+ orange; cortex and medulla containing xanthonones.

Distribution and Ecology: On bird rocks on the Arctic coast.

This is a segregate from Lecanora, characterized by having an umbilicate thallus and containing xanthonones.

A. thuleana Poelt

THALLUS: scattered to crowded, sessile on the substrate, to 1.5(2) cm diameter, distinctly peltate, with wide round umbilicus; thallus initials rounded squamulose with distinctly setoff margins, which soon become crenately divided; the thallus begins already to fruit when the first few mm of diameter of have reached; **Thallus Center:** usually completely covered by apothecia; **Lobes:** on adult thalli, mostly only here and there distinct, 0.20-0.51 mm wide, usually further crenate; upper surface rather convex to mostly soon irregularly plicate, , Epruinose, usually slightly shiny, whitish to mostly somewhat brownish overlain; lower surface usually strongly plicate, smooth, whitish to pale brownish; **Upper Cortex:** distinctly delimited from the medulla, more or less uniform, to 1535 um, composed of predominantly anticlinal but netlike anastomosing hyphae with strongly swollen walls; outer part distinctly browned, with more or less thick epinecral layer; **Algal layer:** composed of groups of algae

occurring in parts of thallus exposed to light; algal cells trebouxoid, randnah (describing the shape? arrangement?);

Medulla: very loose, occasionally penetrated by indistinct cords; hyphae 5 um thick, with distinct outer boundaries, rather thick walled, with distinctly broad lumina; **Lower Cortex:** continuous with and similar in structure to upper cortex; 25 to 50 um or more thick.

APOTHECIA: very soon and very numerous developed, constricted, yet rather broadly sessile, to almost trumpetform elongated, to 0.7(1) cm, but mostly smaller; **Discs:** concave (at least when young), later often irregularly convex and distorted, pale to mostly dark brown or blackish greybrown, often slightly pruinose, matt; **Margins:** evenly thin, immediately adjacent to the disc often somewhat roughened, otherwise smooth, rarely slightly crenate; **Cortex** continuous with thallus cortex, similar in structure, to 100 um thick laterally, thinning out strongly over the parathecium; **Algal Layer:** composed of individual rich groups of algae below the hypothecium; **Excipulum:** parathecium of strongly swollen, conglutinate hyphae; **Hypothecium:** mostly only slightly and irregularly conically deepened; composed of strongly swollen and conglutinate hyphae; **Hymenium:** 5070 um high; **Paraphyses:** furcate, only rarely anastomosing; end cells clavatecapitate thickened, to 5 um thick, with brown (on exposed parts) to greyish or green, noncrystalline wall pigments, which can somewhat extend out into the gelatin; **Asci:** more or less clavate, Lecanora type; tholus well developed, with wide, ringform, strongly amyloid apical apparatus; outer layer with amyloid gelatin; **Spores:** to 8 per ascus, ellipsoid to narrowellipsoid, 914 x 46 um, rather thick walled.

SPERMOGONIA: immersed, little conspicuous, ellipsoid in section, undivided; **Spermatia:** threadlike, 1117 x 0.71 um; **Fulcra:** Placodium type (somewhat like Type III according to Vobis, 1980).

SPOT TESTS AND CHEMISTRY: Cortex K+ yellowish (sometimes indistinct), KC+ orange; Medulla K or K+ yellow and then also KC+ orange (O-methyl-dichloronorlichexanthone (Leuckert, Mass spectrometry on Hertel & Ullrich 16205 at M), also by TLC on other specimens; sometimes with unknown xanthone? (parietin contaminant?); variable and including unknown xanthenes and other compounds, according to Poelt (1983).

DISTRIBUTION AND ECOLOGY: Arctic, from Nova Zemlya and Fennoscandia west to Greenland and adjacent part of Canada, on siliceous rocks (granite, gneiss, etc.), on tops and steep sides of rocks, south faces, nitrophilous, on bird rocks, on the seashore; associated lichens include Xanthoria spp., Caloplaca spp., Acarospora molybdina, Physcia tribacia.

LITERATURE REPORTS: Poelt (1958); Poelt (1983).

Table 1. Comparison of Arctopeltis thuleana and Lecanora contractula.

	<u>Arctopeltis thuleana</u>	<u>Lecanora contractula</u>
THALLUS	peltatefoliose, to 2 cm diameter, usually discrete	crustosesquamulose, to 0.3 cm diameter, but often coalescing
APO.	+/- completely covering the thallus, constricted sessile to broadly pedicillate	often numerous, but some parts of squamules visible between, sessile
DISCS	+/- concave, at least when young,	flat, at least when young, later often irregularly convex; brown to gray black,
APO. MARGINS	thin	thick
CORTEX	continuous on both sides of thallus and apothecia margin, primarily anticlinal, of swollen & anastomosing hyphae, 2050 (100) um thick, with epinecral layer	absent or poorly developed on upper side of thallus, subparaplectenchymatous, thin (to 20 um), with epinecral layer; ± more differentiated on sides of squamules and on apothecia margins, absent below.
MEDULLA	loose	mod. loose (?) thick
SPORES	914 x 46 um	1012 x 46 um
SPERMATIA	1117 um long	1820 um long
CHEM.	cortex K+y, KC+o, medulla K or K+y, KC+o; an Omethyl dichloronorlichexanthone	cortex K+y, KC+o, medulla ?, 1,3OMethyl2,7 dichloronorlichexanthone
ECOLOGY	hard siliceous rock, strongly nitrophilous	siliceous rock, moderately nitrophilous

GEOGRAPHY coastal Arctic

coastal Arctic

Literature

Poelt, J. 1983. über den Formenkreis der Flechte Lecanora contractula. Int. J. Mycol. Lichenol. 1: 143-160.