

## **Allocetraria Kurokawa & Lai**

After various authors;

Need to incorporate more info. from Kärnefelt & Thell and from Thell, et al.

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Thallus foliose or fruticose, suberect to erect; upper surface yellow to yellowish green or brown; lower surface of the same color as upper or light tan or brown to black; lobes prostrate, unbranched or dichotomously branched, in most of the species quite narrow, elongated, and characteristically convex; dorsiventral, compact (solid); soredia or isidia present in one species each; rhizines sparse; pseudocyphellae usually present on lower surface, either punctiform and irregular or sublinear along the margins; cilia absent. Upper and lower cortex 1-layered, usually  $\pm$  palisade plectenchymatous; epicortex ca. 0.5  $\mu$ m thick; medulla white or colored from light yellow to bright orange; medullary hyphae 3-6  $\mu$ m diam.; algae near the upper cortex.

Apothecia rare, lateral and marginal or submarginal to almost laminal, with brown disc and yellowish thalline margin, up to 7-8 mm diam.; exciple 2-layered, 30-120  $\mu$ m thick; asci usually rather narrowly clavate to cylindrical, 30-70 x 8-18  $\mu$ m; tholus small; ocular chamber cylindrical and broad; axial body broad to very broad, 5-9  $\mu$ m; ascospores globose to subglobose, rarely broadly ellipsoid,  $\pm$  uniseriate, 5-10 x 5-8  $\mu$ m; paraphyses usually straight, sparsely branched with swollen tips.

Pycnidia marginal to submarginal, rarely laminal, immersed or on emergent projections, dark pigmented; pycnospores filiform, usually slightly sublageniform, 10-19 x 0.5-2  $\mu$ m.

Cortex with usnic acid and sometimes anthraquinones. Medulla with different fatty acids (caperatic, lichesterinic, protolichesterinic) together with secalonic acids and related pigments. One species contains fumarprotocetraric acid.

On soil or bark (or sometimes rock).

A segregate from Cetraria.

**1. On bark or rock. Sorediate. Lobes flattened.** Soredia light yellow (white according to Hale), mostly marginal in linear soralia. Thallus C-, K+ pale yellow or K-, P+ pale yellow or P- (usnic in cortex; caperatic, lichesterinic, protolichesterinic and secalonic acids in medulla). Thallus foliose to subfoliose, adnate, 3-7 cm broad; lobes often  $\pm$  parallel, concave, ca. 1-4 mm wide, weakly wrinkled, usually with abundant soralia; upper surface greenish yellow; lower surface brown to light tan, somewhat wrinkled, sparsely rhizinate. Pseudocyphellae absent. Upper and lower cortex paraplectenchymatous but with the hyphae sometimes anticlinally arranged; both cortical layers ca. 20  $\mu$ m, composed of ca. 3 rather

gelatinized cell layers each; cells near the surface somewhat smaller than other cells; medulla often yellowish in lower parts. Apothecia rare, lateral, marginal to laminal, to 6 mm diam.; spores globose, ca. 5 µm diam. Erect black marginal pycnidia sometimes present, immersed to raised (globose or spinulose [v. spinulosa Merr.]), pigmented or not, sometimes with cortical tissue beneath; pycnospores 11-12 x ca. 1 µm. Common on the bark of conifers and hardwoods and on rocks in northern woods. .... A. oakesiana (Tuck.) Randlane & Thell

1. **On soil. Not sorediate. Lobes swollen.** Podetia ± strongly branched, usually less than 2(-3) cm tall, yellow or brownish yellow or partly violet pruinose, hollow or with cobwebby hyphae filling the center (but "compact" according to Kärnefelt & Thell). Thallus C- (without gyrophoric), but sometimes KC+ reddish (physodalic acid). Calciphilous. Podetia sparingly dichotomously branched, the branches with few lateral branches, yellow or yellowish green, filled with cobwebby hyphae; pycnidia rare; thallus C-, P-; acetone extract UV-; containing usnic, lichesterinic, and protolichesterinic acids. Apothecia rare; spores ellipsoid, 6-9 x 4-5 µm. Pycnospores filiform, 10.5-18 x 0.5-1.5 µm. On soil, occurring as smaller individuals in very dry heath tundras and becoming more abundant in moister open tundras but seldom in the very wet tussock types of tundras; usually more robust near snowbank accumulations in sheltered habitats. Arctic-alpine, southwest to Utah and New Mexico. .... A. madreporiformis (Ach.) Kärnef. & Thell (Syn.: Dactylina madreporiformis)

1. **Podetia flattened.** Alberta, Colorado. .... A. madreporiformis f. irregularis (Vainio)

1. **Podetia terete.** ..... 2

2. **With terminal mounds of soredia.** Colorado, very rare. .... A. madreporiformis f. sorediata (Imshaug)

2. **Without soredia.** .... A. madreporiformis f. madreporiformis

## Literature

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