

Dactylina Nyl.
(LECANORALES)

After Bird (1970), and Thomson (1984);
Need to incorporate more info. from Kärnefelt & Thell

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Thallus \pm turf-like, fruticose; segments (podetia) erect to decumbent, to a few cm high, cylindrical, sparsely to uniformly thickly to bushily branched dichotomously, thickish; surface \pm pale yellow; interior hollow, radially constructed; rhizines absent. Cortex dense, 1-layered, of anticlinal, strongly cemented hyphae (palisade plectenchymatous) or 2-layered with and underlying prosoplectenchymatous layer. Epicortex ca. 5 μ m thick. Medulla of pachydermatous hyphae close under the cortex, the interior becoming hollow or loosely arachnoid. Photobiont Trebouxia, dispersed or in small glomerules in the outer medulla. Apothecia very rare, lecanorine, on lateral branches, terminal; hypothecium hyaline to yellowish; paraphyses simple, capitate; asci clavate; axial body narrow (3-4 μ m); spores 8, colorless, simple, globose or subglobose, 4-6.5 μ m diam., thick walled.

Pycnidia immersed to somewhat protruding, globose; fulcrum exobasidial; pycnosporos oblong citriform to almost bacillariform, 4-6 x 1 μ m.

Usnic and gyrophoric acids in cortex; medulla with gyrophoric, physodalic and physodic acids, with hiascic, lecanoric and orcellinic acids as accessory compounds.

On soil, in exposed sites, arctic-alpine. Type species: D. arctica.

This genus used to be easily recognized by its inflated, yellowish fruticose thallus growing on the ground, without ascocarps; however, one species is now in Allocetraria, which differs especially in having dorsiventral, compact lobes, containing lichesterinic and protolichesterinic acids in the medulla, and various more esoteric characters. The only other thing it might possibly be confused with is the Cladonia uncialis group, which generally has much narrower and more strongly branched thalli.

1. Podetia simple to sparingly branched, turgid, hollow, usually over 2 cm tall (to 8 cm), yellow or brownish yellow. At least the cortex C+ reddish (gyrophoric acid). Medulla with hiascic, lecanoric, and orsellinic acids as accessory substances. Cortex 1-layered. Spores 4-5 μ m diam. On soil, usually most luxuriant in areas exposed to snowmelt, often just above the snowbank and among arctic heather (Cassiope), but sometimes scattered on dry tundras. 2

1. Podetia \pm strongly branched, usually less than 2 cm tall, yellow or brownish yellow or partly violet pruinose, hollow or with cobwebby hyphae filling the center. Thallus C- (without gyrophoric), but sometimes KC+ reddish (physodalic acid).

Calciphilous. 3

2. Medulla P+ orange-red (physodic and physodalic acids present); cortex C+ pink, medulla C- (gyrophoric acid limited to the inner cortex above the algal layer). Pycnospores oblong citrifomr, 5-6 x 1 um. Apothecia unknown. With an unknown substance. Arctic, southwest to Alberta and British Columbia. D. arctica ssp. beringica

2. Medulla, P- (physodic and physodalic acid absent); cortex and medulla both C+ red (gyrophoric acid distributed throughout). Pycnospores oblong citriform to almost bacillariform, 5.5-7 x ca. 1 um. Apothecia rare, more frequent when growing adjacent to late snow patches, above the patches where the snow melts away. Without the unknown substance. Arctic-alpine, southwest to Washington state.
..... D. arctica ssp. arctica

3. 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 and protolichesterinic acids. Apothecia rare. 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. Allocetraria madreporiformis

3. Podetia dichotomously or sympodially branched, yellowish or brownish, usually with a light violet pruina toward the tips, the branches commonly muricate knobbed with short lateral branches, hollow at least in part; pycnidia common; medulla P+ red or P-; acetone extract UV+ yellowish or UV-, containing usnic + or - physodalic and physodic acids; KC+ red when physodalic acid is present, otherwise KC-. Cortex 2-layered. Spores 4.5-6.5 um diam. Pycnospores oblong citriform 5-7 x 1 um. On soil, variable; in very dry Empetrum-Arctostaphylos heaths (podetia short and fragile, the branches becoming scattered rather than in dense tufts); in more moist Carex and Eriophyllum tussock tundras on the tops of the tussocks among the sedges (tending to be larger, more luxuriant, and tuft-forming). Apothecia occasional, more frequent when growing adjacent to late snow patches, above the patches where the snow melts away. Arctic, southwest to Alberta and British Columbia, with two populations further south (Montana and Wyoming). D. ramulosa

Literature

Bird, C. 1970. Keys to the Lichens of West-Central Canada. Processed

publication. Calgary, Alberta.

Kärnefelt, I. and A. Thell. 1996. A new classification for the Dactylina/Dufourea complex. Nova Hedwigia 61 (in press).

Poelt, J. 1969. Bestimmungsschlüssel europäischer Flechten.

Thomson, J. W. 1984. American Arctic Lichens I. The Macrolichens. Columbia University Press, New York.

Thomson, J. W. and C. D. Bird. 1978. The lichen genus Dactylina in North America. Can. J. Bot. 56(14): 1602-1624.