Diplotomma Flotow
(LECANORALES: PYXINACEAE)

After Poelt, Nordin, and others

Rev. 1/94

Thallus crustose, superficial, delimited, rosette-forming to irregularly spreading, rarely effuse, pale to dark gray, continuous or ± rimose-areolate to leprose-verruculose, immersed if on lichens. Dlimiting marginal prothallus present or absent. Ecorticate or with a corticiform layer, this layer (or the upper part of the thallus) densely packed with minute crystals, not dissolving in K. Photobiont chlorococcoid.

Apothecia immersed then emergent, round. Thalline exciple sometimes present, pale, thin, crenate, spurious, concolorous with disk; disk punctiform or flattened to subglobose, dark brown or black, not or ± white-gray pruinose. True exciple poorly developed, continuous with the hypothecium, brown or black. Epihymenium red-brown (or olive according to Awasthi). Hymenium colorless, I+ blue. Hypothecium pale to dark brown, semi-opaque. Paraphyses simple, capillary, with subclavately enlarged, pigmented apical cells. Asci ± ellipsoid-clavate, Lecanora-type. Spores 8, transversely (2-)3(-5)-septate or submuriform to muriform, with internally thickend walls (distoseptate), becoming red-brown to dark brown, ovoid-oblong to ± bean-shaped, with minutely ornamented cells, the lumina rounded.

Pycnidia with walls pale to dark brown above, colorless below; conidia ellipsoid, colorless, simple. On basic or nutrient-enriched bark, calcareous rocks, mortar and walls, more rarely asbestos-cement, or parasitic on lichens.

A segregate from Buellia. Differs from Buellia and Diploicia in the crystalline-granular cortex, immersed apothecia, septate to submuriform spores with distosepta and rounded lumina. Rhizocarpon may have rather similar ascospores bu the asci are of a different type.

This genus is being revised by Nordin, who does not accept it as distinct from Buellia. Therefore I have not revised the keys and descriptions here, but have revised the keys under Buellia.

1. Spores permanently (1-)3-septate. On limestone. Thallus whitish. Apothecia pruinose or not. 2
1. Spores weakly muriform when mature. 3

> **2. Medulla at least partly K+ yellow then red. Thallus cracked-areolate, thick, unclearly effigurate on the margin. Apothecia often with pseudothalline margin.** Highly nitrophilous. .....D. venustum (Körber) Körber
> **2. Medulla K-. Thallus thin, finely mealy. Apothecia usually pruinose, small, without pseudothalline margin.** Thallus to 2 cm across, chalky white, with a distinct margin, but without dark prothallus, cracked-areolate, with 0.5-2 mm wide areoles. Apothecia 0.3-1.2 mm wide, rounded; disc convex, black under white pruinsa. Hypothecium brown; hymenium I+ blue (to blue-green at lower concentrations of I); paraphyses 1-3 um wide, with 4-5 um wide dark brown apices; spores gray to grayh-brown. On calcareous stone walls, unweathered rocks and vertical rock faces, boreal to

temperate. Similar to D. alboatrum but spores lacking longitudinal septa and more frequently curved; possibly only a morph of that species. On calcareous rocks. ..... D. epipolium (Ach.) Arnold

3. On bark or wood (or calcareous rocks or mortar). 4
3. On siliceous rock. Thallus not definitely sorediate. Medulla I-. 6

4. Thallus sorediate, K+ yellow. ..... (See Buellia griseovirens).
4. Thallus not sorediate, K-, granular-warty-areolate, grayish to white. 5

5. Thallus P+ yellow. Apothecia not pruinose. Spores (17-)21-34(-41) x (10)-11-17(-21) um. Hymenium inspersed with oil drops. Thallus thin, smooth to rough, becoming minutely areolate, ashy to whitish, bordered and sometimes intersected by black hypothallus. Apothecia 0.35-1 mm diam., sessile; disk flat to slightly convex, dull black; exciple thick, black, somewhat raised, finally disappearing; hypothecium dark brown; paraphyses semi-distinct, appearing to be branchedl; asci clavate to inflated-clavate; spores 6-8, oblong to oblong-ellipsoid, 3-5-septate transversely and 1-2-septate longitudinally. On trees, Montana, Washington, California. A taxon of uncertain identity from Washington, with a P- thallus, may also key out here. ..... D. penichrum (Tuck.) Szat.
5. Thallus P-. Apothecia often pruinose. Spores 18-24 x 9-10 um. Hymenium not inspersed. Thallus thin to thick, often wide-spreading, white or pale to dark gray, smooth or rimose-cracked or granular, ± determinate; dark prothallus absent. Apothecia 0.3-0.8(-1.5) mm diam.; disc at first flat, pruinose, later ± convex and not pruinose; spurious thalline exciple sometimes present, white, sometimes ± crenulate; true exciple inconspicuous; epithecium brown; hymenium 45-75 um, colorless; hypothecium brown; asci (40-)55(-70) x (10.5-)17(-25) um; spores (11-)15-20(-30) x (5.5-)8-10(-17) um, at first (1-)3-septate, mostly submuriform at maturity. Thallus K-, KC-, C-. without substances. On nutrient-rich bark, calcareous rocks and mortar. Arctic-boreal to temperate. (Buellia oidalea will also key out here; the hymenium is not inspersed and the spores are 30-78 x 16-24 um). ..... D. alboatrum (Hoffm.) Flotow

6. Thallus whitish to ochraceous (when well developed) or pale gray (when thin), K+ yellow then red, P+ orange, C-, KC- (norstictic acid), often with a mealy upper surface. Thallus thick, regularly rimose or warted, or thin and cracked-areolate or disappearing, ± determinate; dark prothallus absent. Apothecia 0.2-0.6 mm diam.; disc flat, non-pruinose, later becoming convex; thalline exciple spurious, disappearing; true exciple indistinct; epithecium brown; hymenium (80-)105(-115) um tall; hypothecium brown; asci (40-)85(-80) x (13-)16(-20) um; spores (14.5-)18.5(-27.5) x (7.0-)10.0(-12.5) um, 3-septate to submuriform. Medulla I± blue. On sheltered, slightly basic, maritime rocks. British Columbia. ..... D. chlorophaeum (Hepp ex Leighton) Szat.
6. Thallus gray to gray-brownish, K-, ± areolate, with smooth upper surface; areoles ± convex. Prothallus indefinite. Apothecia black, pruinose or not; margin soon becoming ± thin. Spores 17-21 x 9-11 um. .....D. ambiguum (Ach.) Flagey

ADDITIONAL SPECIES:

Thallus at first white, parasitic on Xanthoria and Caloplaca, later perhaps free (Buellia margaritacea?). Apothecia at first immerse in the host, becoming adnate, to 0.5 mm broad; disc becoming convex and immarginate, blue pruinose and rough, finally blackening; margin black and extending under the apothecium; epithecium dark; hypothecium blackish brown; hymenium hyaline; paraphyses brown at the tip, clavate; spores 6-8 per ascus, elliptic or kidney-shaped, 3-septate to muriform with 1 longitudinal wall, 15-20 x 9-12 um. Alaska. ..... ["Buellia" nivalis (Bagl. & Car.) Hertel ex Hafellner]

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