

**Gyalideopsis** Vezda  
(GOMPHILLACEAE? ASTEROTHYRIACEAE)

Thallus crustose, thin, often filmy, smooth or rarely  $\pm$  verrucose, effuse, ecorticate, often with hyphophores; hyphophores erect, spine-like, top-shaped, disc-like or scale-like, adnate to shortly stalked, curved. Photobiont trebouxoid. Apothecia orbicular, collapsed, red-brown to almost black, becoming plump and  $\pm$  translucent when wet, with a raised, persistent, entire proper margin. Thalline exciple absent. True exciple persistent, often slightly raised. True exciple and hymenium of a distinctive, loosely anastomosing network of thin, branched and anastomosing hyphae in a gelatinous matrix. Hypothecium hyaline to dark, plectenchymatous. Paraphysoids branched and anastomosing, tubular, with plenty of gelatinous substance. Asci cylindrical-clavate to ovate with an elongated base, rounded and markedly thickened at the apices, with an apical "nasse"; contents I+ wine red. Spores 2-8, transversely septate to densely muriform, colorless; individual cells  $\pm$  constricted at septa at their conjunction with adjacent cells; perispore thin to thick.

Pycnidia unknown, but hyphophores may have parallel roles. No substances. On rocks, trees and associated bryophytes in humid woodland situations, also on montane schist and epidiorite soils, and on leaves or decaying vegetation.

The genus superficially resembles Gyalecta, but is characterized by its excipulum structure, non-amyloid and heavily gelatinized hymenium with thin paraphysoids, asci with an apical nasse, spore features, and chlorococcoid photobiont.

After Kalb & Vezda (1988)

Rev. Dec. 1993

**1. On  $\pm$  mineral-rich soil.** Apothecia pure black, the lower part immersed in the thallus or substrate, not obconical, 0.8-1.2 mm diam., epruinose, with lobed thallus remains on the margins. Hypothecium K-. Hymenium 100  $\mu$ m. Asci (4-)6-8-spored; spores 20-27 x 8-11  $\mu$ m, weakly muriform. California. .... G. athalloides (Nyl.) Vezda (see Vezda, and Kalb & Vezda, 1988)

**1. On organic substrates (bark, moss, humus, or, in species not yet reported from North America, leaves), or rarely on wood or rock. .... 2**

**2. Hyphophores (always present) stipitate, 1.0-1.8 mm high, capitate, with branched, thin diahyphae. Apothecia (usually absent) 1.5-2 mm diam. Ascospores 2-8 per ascus, submuriform to muriform, (16-)20-26(-28) x (8-)9-12(-14)  $\mu$ m.** On decaying mosses or plant debris, more rarely directly on soil Chihuahua. .... G. mexicana Tretiach, Giralt & Vezda

**2. Hyphophores, if present, less than 0.4 mm high. Apothecia (usually present) under 1.0 mm diam. Ascospores 8 per ascus. .... 3**

**3. Apothecia 0.2-0.4 mm diam. Spores 20-30 x 6-13  $\mu$ m, ellipsoid or subclavate, muriform or submuriform, < 30-celled. Disc orange-red to black-brown (or pale?). Thallus filmy, often thin, continuous, skin-like, smooth or  $\pm$  verrucose, glaucous to pale gray, in patches to 1 cm diam., occasionally coalescing; prothallus often delimiting, pale gray or white. Hyphophores thin, ca. 0.1 mm long, usually abundant and crowded, sometimes absent, often flattened and translucent at**

the pointed apices. Apothecia frequent, scattered or occasionally crowded and contiguous, round or angular, translucent; margin smooth or irregularly uneven, pale (?--not clear whether this refers to disc or margin), dark brown when wet. On smooth bark, especially *Salix* and *Fagus*, in moist, sheltered woods, rarer on wood, mosses among boulder scree and on rock underhangs. .... *G. anastomosans* P. James & Vezda (see Tonsberg, 1991)

**3. Apothecia mostly over 0.5 mm diam., or if under 0.5 mm then spores over 30 um long and over 18 um wide.** On bark, sometimes overgrowing moss on bark. .... 4

**4. Apothecia weakly gray pruinose, 0.3-0.8 mm wide, thin, 0.1-0.15 mm high, broadly sessile (closely adnate), brown, round or with lobate margins (margins poorly developed in Florida material). Asci 1-spored; spores muriform, (34-)50(-75) x (18-)22(-30) um. Hyphophores 0.1-0.12 mm high, flabellately divided.** Paraphyses branched and interconnected. Hymenium and asci I-. On bark of various shrubs or trees, sometimes overgrowing mosses on bark; occasionally on ferns. Florida; Mexico. .... *G. vainoi* Kalb & Vezda (see Kalb & Vezda, 1988)

**4. Apothecia epruinose, (0.2-)0.5-0.7(-0.9) mm wide, 0.2-0.3 mm high, brown-black, long or permanently urceolate, closely adnate, margin raised, black. Asci 2-4(-6)-spored (6-8-spored according to Noble, 1982); spores weakly muriform, (12-)15-20 x (3-)4.5-6.5 um. Hyphophores (0.2-)0.3-0.35 mm high.** Thallus crustose, thin, smooth,  $\pm$  shiny, forming small orbicular patches 1-3 cm broad. Hyphophores more abundant in areas where ascocarps few, white, slender, recurved at the top, often forking towards the top into two or more branches, whitish with distinctly green areas. Apothecia abundant, scattered, constricted; proper margin thick and smooth when young, slightly reduced with age, concolorous with disc; disc concave becoming  $\pm$  plane,  $\pm$  round to sometimes slightly irregular, slightly roughened or granular, red-black to black when dry, paler, semi-translucent and swelling when wet. Hymenium 40-50 um high; paraphyses very slender, anastomosing, hyaline, tips coherent and brownish. Spores hyaline, flattened-ellipsoid, with 4(-6) longitudinal septa and the central 1 or 2 cells  $\pm$  longitudinally septate. Asci I+ orange-red, the hymenium usually shrinking violently with the IKI. On bark (alder), British Columbia, known only from the type locality. .... *G. alnicola* (also see Vezda, 1979)

### **G. mexicana**

Thallus mainly in small orbicular patches, crustose, thin, badly delimited, verrucose, whitish-glaucous to pale gray when dry, vivid green when wet; warts whitish,  $\pm$  0.2-0.5 mm diam. Hyphophores always present, usually abundant, crowded, erect, stipitate, 1.0-1.8 mm high; stalk translucent, ca. 100 um diam. at base, 50 um at apex, when immature with pointed apex; conidial mass apical, white or pale brown, translucent, globose or conic, to 0.2 mm diam. Diahyphae numerous, branched, ca. 150 um long, 1.5 um thick, septate near base, slightly constricted at septa. Apothecia usually absent, scattered or occasionally crowded, contiguous, rusty or deep brown, becoming reddish brown and translucent when wet, 1.5-2.0 mm diam., 0.2-0.4 mm high, constricted at base, sometimes substipitate. Disk flat or concave, with margin smooth, not elevated. Thalline exciple absent; true exciple formed by thin, branched, anastomosed hyphae, up to 100 um thick, hyaline, light brown near external surface, badly delimited from hymenium. Hymenium 70-100 um, hyaline; epithecium brown; hypothecium light brown, K-. Hamathecium of loosely anastomosing network of thin hyphae immersed in gelatinous matrix; lumina of paraphyses 1 um wide. Asci 2-8 spored, cylindric-clavate,

ascoplasm I+ orange-red. Ascospores colorless, ellipsoid, submuriform to muriform, with (2-)3-4(-7) transverse septa and 1-3 longitudinal ones, (16-)20-26(-28) x (8-)9-12(-14)  $\mu$ m.

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