

Kaernefeltia Thell & Goward

After Thell & Goward (1996)

Rev. February 25, 1998

Thallus terete-foliose or fruticose, decumbent or caespitose, pale olive-brown to greenish black; lobes ridged or knobby, ca. 0.5-11.0 mm broad; pseudocyphellae sparse, immersed, cilia and rhizinae sparse or absent, light brown; isidia-like protuberances flattish, occasionally branched, sparse to frequent or absent; cortex 1-layered, paraplectenchymatous with rounded cells, or 2-layered with prosoplectenchymatous layer beneath; medulla lax, medullary hyphae 3.0-5.5 μ m; algae green, globose, to 20 μ m diam.

Apothecia usually frequent, laminal to marginal, lateral or terminal, disc brown, convex or becoming convex; margin and base with \pm distinct lobules. hymenium and subhymenium 40-50 μ m high; exciple 2-layered, strongly gelatinized, upper layer composed of \pm horizontally arranged, pachydermatous hyphae, lower layer paraplectenchymatous, composed of pachydermatous hyphae; asci clavate, 25-40 μ m high, tholus amyloid, to 5 μ m thick, axial body 3.5-5.0 μ m broad, spores 8, hyaline, simple, oblong-ellipsoid to rather broadly ellipsoid, 6.0-10.5 x 2.5-5.0 μ m; paraphyses slightly capitate, 1.5-3.0 μ m; paraphyses slightly capitate, 1.5-3.0 μ m thick, 2.5-5.0 μ m at the tips.

Pycnidia laminal or terminal, immersed or somewhat raised, 60-115 μ m diam., pycnoconidia bifusiform, disc-bar-shaped, 5-7 x c. 1 μ m.

Lichesterinic and protolichesterinic acids, and 2-3 other low R_f fatty acids present in the medulla.

1. Apothecia sparse. Thallus with dark upper surface; branches usually moderately smooth, lacking any trace of pruina. Spores > 4 μ m wide. Epihymenium K+ pale yellowish purple or brown. Lobes usually broad and flattened, but sometimes narrow. In \pm dry areas, often well away from the coast. Widespread and very common on branches of conifers (especially Douglas fir and pines) in drier, more exposed areas, SW Canada south to California and Wyoming; Mexico. K. merrillii

1. Apothecia usually richly present. Thallus usually pale brownish, especially in the central portions of the thallus; branches rather knobby, often covered in whitish pruina. Spores 2.5-3.5 μ m wide. Epihymenium K+ reddish purple. Lobes narrow, terete or slightly flattened, becoming \pm elongated. Hypermaritime. On conifers or fenceposts along coast from Queen Charlotte Islands to Los Angeles region. Hypermaritime. Rather rare. Very variable. K. californica

K. californica (Tuck.) Thell & Goward

Thallus fruticose, to 1.5 cm high, tufted or decumbent, gray or grayish brown or pale to dark olive-brown, always paler in central parts; lobes rounded-angular to flattened in transverse section, to 1.0(-1.5) mm wide, frequently ridged and knobby, in part covered in whitish pruina; pseudocyphellae occasional, \pm distinct, immersed; cilia occasionally present, barely separable from smaller side lobes; isidia absent; rhizines absent; cortex usually 2-layered, outer layer paraplectenchymatous, (5-)20-30 μ m thick, composed of 2-3 layers of isodiametric cells, inner layer prosoplectenchymatous, \pm arranged in bundles, to c. 100 μ m thick, occasionally absent,

especially near lobe tips; medulla lax and with a hollow center; medullary hyphae 3.0-4.5(-5.5) um diam.; algal cells to 12 um diam., concentrated near cortex.

Apothecia frequent, terminal, subterminal or lateral, disc to 3 mm diam., concave becoming convex; hymenium 40-55 um; upper excipular layer 20-30(-55) um; lower layer (35-)40-50(-70) um; paraphyses slightly swollen, 1.5-2.0 um, tips 2.5-3.0 um; asci 25-40 x 8-12 um; spores oblong-ellipsoid, 7.0-8.5 x 3-4 um.

Pycnidia laminal, immersed or on short projections, 60-80(-115) um diam.

California to British Columbia.

K. merrillii (Du Rietz) Thell & Goward

Thallus foliose to subfruticose, loosely adnate to erect, dark olive-green above, pale brown to dark brown below; lobes dorsiventral, smooth or occasionally ridged or foveolate, c. 0.5-11.0 mm wide (narrow-lobed specimens are more common near the lower and upper elevation limits), non-pruinose; pseudocyphellae sparse on upper surface; cilia sparse; isidia-like protuberances present on some broad-lobed specimens, flat or cylindric, single or in sparse clusters on upper surface; rhizines frequent on broad-lobed specimens, simple or dichotomously branched, light brown; cortex 1-layered, in narrow-lobed specimens rarely 2-layered, with a thin, lower (inner) prosoplectenchymatous layer; upper and lower cortex paraplectenchymatous, 12-20 um thick, the lower cortex somewhat thinner than upper, composed of 3-4 layers of isodiametric cells 3-8 um diam., these somewhat larger in lower cortex; medulla lax, hyphae 3-5 um diam.; algae to 20 um diam., concentrated near upper cortex.

Apothecia frequent (less so in narrow-lobed specimens), marginal to laminal, disc to 6 mm diam., dark olivaceous, concave then becoming convex; hymenium 40-55 um; upper excipular layer 20-30 um thick, lower layer 40-60 um; asci 40-50 x c. 15um; spores ellipsoid, 7.0-10.5 x 4.0-5.5 um; paraphyses slightly swollen, 2-3 um thick, tips to 5 um.

Pycnidia laminal, immersed, 70-130 um diam.

Literature

Hale & Cole, 1988. Lichens of California.

Thell, A. and T. Goward. 1996. The new cetrarioid genus Kaernefeltia and related groups in the Parmeliaceae (lichenized Ascomycotina). The Bryologist 99: 125-136