

Heteropladidium

After Breuss (1996), and others

Rev. November 3, 1997

Thallus mostly small-squamulose, in cross section mostly cellular. Photobiont cells mostly < 10 µm. Asci clavate. Spores biseriate, simple, hyaline. Pycnidia laminal, of Dermatocarpon-type (Xanthoria-type). Pycnospores oblong-ellipsoid or cylindrical.

1. Rhizohyphal web absent or reduced and not penetrating substrate. Attachment only by rhizines. Squamules 0.5-2 mm across, with central hyphal tuft, that can become thickened into a rhizine-like organ. Asci 50-60 x 20-25 µm. Spores 14-17 x 7-9 µm.

Utah. H. podolepis

1. Rhizohyphal web well developed and penetrating substrate, partly also with rhizines. Excipulum hyaline to brownish black but not carbonaceous. Pycnidia of Xanthoria-type. Asci even when young distinctly clavate. Spores (sub-)biseriate. Photobiont cells 5-13 µm. Pycnidia laminal. 2

2. On rock. Squamules not cushion-forming (except sometimes in H. congestum), not or little overlapping, brown, with uniform rhizohyphal web or rhizohyphae partly in bundles ("Rhizopts"). 3

2. On soil. Squamules not distinctly imbricate. Squamules < 2 mm across, closely adhering to the substrate. Spores broadly ellipsoid to almost globose. Pycnospores oblong-ellipsoid. On sand or sandstone. Rhizohyphae remarkably thick-walled, 5-7 µm thick. Squamules 0.5-2 mm across, 250-400 µm thick, densely crowded, partly forming ± convex aggregate to 4 cm diam.; medulla cellular. Spores 12-15 x 8-10 µm. H. congestum

3. With uniform rhizohyphal web. Squamules < 2 mm across. On loosely cemented sandstone. H. congestum

3. With central attachment organ. Rhizohyphal web rather sparse. Squamules medium to dark red-brown, 0.5-2 mm across. 4

4. Squamules ± strongly convex, ± shiny; lower side with central stalklike growth. Spores broadly ellipsoid, 13-17 x 8-11 µm. On granite and sandstone, southwestern. H. acarosporoides

4. Squamules plane, matt, with central hyphal fascicle, which can become thickened into a short rhizine-like strand. Spores 14-17 x 7-9 µm. H. podolepis

Heteropladidium acarosporoides (Zahlbr.) Breuss (syn. Dermatocarpon acarosporoides, Catapyrenium acarosporoides, and [probably; types not found] Endopyrenium novomexicanum and E. bajadanae)

Thallus of bullate verrucules, rounded, chinky or slightly lobed, brown to red-brown, shining, to 1.5 mm broad, underside dark. Perithecia 1 to few per verrucule, the ostiole dark and visible; exciple pale except toward the mouth or sometimes with the outermost layers darkened; hymenial gel I+ reddish; spores globose to subglobose, 10-14 µm diam. or some 14-15 x 8-10 µm. Pycnospores oblong-cylindrical, 3-4 x 1-1.5 µm. On granitic rocks and sandstone in full sun, 450-6300 ft. Arizona, California, New Mexico.

Heteroplacidium congestum (Breuss & McCune) Breuss

Thallus densely squamulose or subverruculose, forming patches or cushion-like aggregates to 4 cm across; squamules 0.5-2 mm wide, closely adhering to substrate, densely clustered but hardly overlapping, rounded to slightly lobate, often sub-angular by mutual pressure, flat to slightly convex; upper surface medium to blackish brown, matt; thallus 250-400 µm thick; upper cortex 20-40 µm, of roundish-angular cells 5-9 µm diam., covered by an amorphous necral layer 10-20 µm thick; algal layer 70-100 µm deep, uneven below; algae 6-13 µm diam.; medullary tissue subparaplectenchymatous; cells 6-10 µm diam.; lower cortex hardly discernible, of more closely packed roundish-angular cells; rhizohyphae hyaline, thick-walled, 5-6.5 µm diam. Pycnidia laminar, immersed, to 350 µm wide; spermatia oblong-ellipsoid to subcylindrical, 3-4 x 1.5-1.8 µm. Perithecia fully immersed, subglobose, to 400(-500) µm broad; wall pale when young, becoming dark brown at maturity; asci clavate, 65-85 x 20-25 µm; spores 8, biseriate, broadly ellipsoid or almost subglobose, 12-15 x 8-10 µm. On sandy soil or friable sandstone. Idaho, Utah.

Heteroplacidium podolepis (Breuss) Breuss

Squamules 0.5-2 mm across, shallowly lobed, adjacent to occasionally slightly overlapping, upper surface brown, matt, plane or wavy, fixed to substrate by a central hyphal tuft, that can become thickened into a rhizine-like organ of rhizophae; marginal parts free from substrate. Thallus sections c. 250-300 µm (somewhat thicker in fertile parts bulged by perithecia); upper cortex of cinereum-type, 40-50 µm, with cells 5-10 µm diam., epinecral layer lacking in young squamules, to 20 µm in older ones; algal layer c. 70-100 µm thick, algal cells 7-14 µm diam.; medulla of mixed type, globular cells 7-11 µm diam.; lower cortex hardly discernible, of ± densely packed globular cells, rhizohyphae hyaline, c. 5 µm diam.

Perithecia immersed, subglobose, to 400 µm broad, exciple pale; Asci clavate, 50-60 x 20-25 µm. Spores biseriate, 14-17 x 7-9 µm.

Pycnidia laminally immersed; spermatia bacilliform, 5-6 x 1.5 µm.

On rock. Utah.

Included under C. compactum by Thomson, but C. compactum belongs in Verrucaria.

Literature

Breuss, O. 1996. Eine verfeinertes Gliederungskonzept für Catapyrenium (lichenisierte Ascomyceten, Verrucariaceae) mit einem Schlüssel für die bisher bekannten Arten. Ann. Naturhist. Mus. Wien 98B Supplem.: 35-50.

Breuss, O. and B. McCune. 1994. Additions to the pyrenolichen flora of North America. The Bryologist 97(4): 365-370.