

Pseudosagedia (Müll. Arg.) Choisy
(TRICHOTHELIALES: TRICHOTHELIACEAE)

After Harris, 1975, Purvis & James, 1992, Awasthi, and others;
Need to incorporate more stuff from Hafellner & Kalb;

Harris's undescribed "Porina" spp. may not belong here

Harris (1995) synonymizes this genus under Trichothelium, and Esslinger's (1998) updated checklist follows that, but McCarthy synonymizes it under Porina.

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A segregate from Porina; differs in that the perithecial wall lacks yellow to orange, K+ orange-red pigments; need to see either Müll. Arg. or Choisy treatments (or Oxner, 1956 or Kopaczewskaja, et al., 1977, but quite frankly I'd rather translate French than Russian!) for a fuller description of the genus; the following is based on Hafellner & Kalb's description of subg. Limosagedia, expanded to include only the additional info. on pigmentation of the typical subgenus and some info. on habitat, etc. from some of the species in the typical subgenus [info. on the typical subgenus is in square brackets]. The basic stuff about the asci, etc. probably applies to both subgenera; most further modifications probably deal with thallus, spores, etc.

Thallus crustose, endolithic or epilithic, on limestone [or corticolous, or foliicolous], continuous or minutely rimose, not distinctly corticate. Isidia lacking. Photobiont trentepohloid.

Perithecia black, partly immersed to almost sessile, naked; in vertical section peridium pale [or inner part blackish-violet, with Pseudosagedia-violet], at least in the upper part covered by a dark purplish involucrellum; colored part of involucrellum K+ blue then blackish (Sagedia-red sensu Bachmann, 1890) [or not]. Asci of Porina-type, unitunicate, apically with chitinous ring structure, in general 8-spored. Paraphyses mostly simple. Short paraphyses in ostiolar region present. Ascospores colorless, transversely 3-7(-8)-septate, at least young ascospores with perispore sheath. Pycnospores bacillar.

1. Inner perithecial wall (peridium) with non-crystallized blackish-violet pigments (Pseudosagedia-violet); pigments of outer perithecial wall (involucrellum) never K+ blue. subg.

Pseudosagedia

1. Inner perithecial wall pale; outer perithecial wall at least externally K+ blue. subg. Limosagedia

subg. Pseudosagedia:

P. aenea, P. chlorotica, P. guentheri, P. nitidula

subg. Limosagedia:

P. linearis

Pseudosagedia violet: dull brown to blackish with purple to violet tinge, K+ darkening, purple to violet tinge disappearing, N+ reddish brown.

Sagedia-red: purple-red to dark violet, K+ blue then blackish, N+ dark red.

I. On leaves (obligately foliicolous).

Spores 2-many-septate. Perithecial wall partially black, exposed or covered by thalline tissue, K-. Perithecia globose, constricted at base, under 0.3 mm diam. Spores 3-5-septate; ascocarps black with a thin or thick thallus covering. 2

2. Spores 3-septate. Perithecia covered by \pm thick thalline tissue, thus similar in color to thallus. Outer perithecial wall black; inner wall light brown. Spores oblong to fusiform, 18-25 x 4-5 μ m. See Santesson, 1952. Florida. P. thaxteri (R. Sant.) Hafellner & Kalb

2. Spores (3-)5-septate. Perithecia blackish to grayish, with thin thalline covering, exposed and black and shiny near ostiole. Perithecial wall usually not differentiated into outer and inner walls. Spores fusiform, 20-28(-32) x 3.5-5.5 μ m (immature 3-septate), mature 5-septate. Florida. P. nitidula (Müll. Arg.) Hafellner & Kalb

II. On rock.

1. On calcareous rocks. Thallus immersed or partly superficial, pink-brown to reddish or rusty brown, thin, scurfy, effuse, sometimes mottled. Perithecia 0.2-0.4 mm diam., black, immersed in pits or \pm superficial; involucrellum black-violet-purple, K+ blue-gray; true exciple \pm pale brown or colorless. Ascospores 3-septate, 18-22 x 6-7 μ m, elongate-fusiform, straight or slightly curved. Pycnidia \pm immersed in pits, black; microconidia 4-4.5 x 1 μ m, cylindrical or \pm curved. On \pm sheltered and often shaded, hard limestones. British Columbia. P. linearis (Leighton) Hafellner & Kalb

1. On siliceous rocks. Thallus superficial. Mostly in or near streams or lakesides. 2

2. Some ascospores with 1(-2) longitudinal septa. Ascospores with 7 transverse septa. P. guentheri v. lucens (Taylor) ined.

2. All ascospores without longitudinal septa. Perithecia at least black in upper part. 3

3. Ascospores 3-septate. Perithecia scattered. 4

3. Ascospores more than 3-septate. According to Harris, his spp. 7-9 are related to, and perhaps varieties of, P. guentheri. 5

4. Microconidia 2-3(-4) x 1 μ m. Spores 16-25(-32) x 4-6 μ m (25-35 x 3-4 μ m in f. tenuifera (Nyl.) ined.). Thallus dark, \pm olive (to gray, dark green, brown or blackish), with an oily appearance. Perithecia 0.2-0.3 mm diam. Thallus superficial, thin or disappearing, usually well defined, continuous, \pm smooth or cracked. Perithecia half-immersed to sessile, 1/2-1 mm apart; involucrellum present, shiny, black, extending \pm halfway down exciple; true exciple with outer layers brown-black, the inner layers \pm colorless. Ascospores 3-septate, fusiform, rounded or pointed at one or both ends. Pycnidia ca. 100 μ m diam. On acidic to moderately basic rocks, loose pebbles and flints, either fully exposed or in deep shade and, at times, \pm permanently inundated. Massachusetts (and N. Carolina?). P. chlorotica (Ach.) Hafellner & Kalb

4. Microconidia cylindrical, 5-10 μ m long. Spores 18-25 x 5.5-7 μ m. On rock. P. aff. chlorotica (Harris, 1975)

5. Spores 33-40 x 6.5-8(-10) μ m, 7(-11)-septate, cylindrical to narrowly ovate. Involucrellum or ascocarp wall dark brown or black. On rock. New England. "Porina" sp. 7 (Harris, 1975)

5. Spores 6.5 μ m or less in width. 6

6. Spores 45-60 x 5-6 μ m, dactyloid, tapering to a long tail, 7(-12)-septate. Involucrellum or ascocarp wall dark brown to black. On rock. New England. "Porina" sp. 9 (Harris, 1975)

6. Spores mostly under 45 um long. 7

7. Spores fusiform-clavate. Perithecia scattered or often 2-5(-7) contiguous, occasionally fused and forming gnarled clusters. Perithecia ca. 0.4 mm diam. Ascospores 35-45 x 5-6 um. Thallus superficial, thin, smooth, continuous or \pm finely cracked, pale gray, often with a violet tinge, to dark purple-gray or blackish purple. Perithecia 0.4-0.7 mm diam., 1/4-1/2-immersed; involucrellum smooth, \pm shiny, occasionally \pm nodular, black, \pm purple or violet-tinged; true exciple colorless or straw-colored; ostiole inconspicuous or slightly papillate. Asci 100-140 x 10-120 um. Ascospores (30-)34-45 x 5-6 um, (5-)7-septate. Pycnidia usually present, sometimes predominating, black, opaque above, paler below; microconidia 4.5 x 0.7-1 um, straight or slightly curved. On moist, siliceous rocks at the margin of lakes and in streams. P. guentheri (Flotow) Hafellner & Kalb

7. Spores cylindrical. Involucrellum or ascocarp wall dark brown to black. Spores 30-47 x 4.5-6 um, 7(-13)-septate. On rock. New England. "Porina" sp. 8 (Harris, 1975)

III. On bark.
Spores 5- or more-septate.

1. Thallus red-brown or dark brown (to ± olive in shade). Perithecia 0.1-0.3 mm diam. Thallus mainly superficial, thin, forming small, ± delimited patches, sometimes almost disappearing. Prothallus absent. Perithecia globose, emergent, mostly scattered, rarely two contiguous, neat; involucrellum present, black, exposed, shiny; true exciple semi-opaque, ± colorless with brown inclusions; ostiole inconspicuous. Ascospores 13-17(-24) x 4.5-5 µm, 3-septate, ellipsoid, rounded or somewhat pointed at one or both ends. Macroconidia 12-16 x 4.5 µm, 1-septate; microconidia 2 x 0.5 µm, straight or ± curved, ellipsoid with rounded ends. On young, smooth bark, especially Corylus and Fraxinus, occasionally on smooth, older bark. California to British Columbia; Florida; Texas. P. aenea (Wallr.) Hafellner & Kalb

1. Thallus dark, ± olive (to gray, dark green, brown or blackish), with an oily appearance. Usually on rock, but rarely on the shaded, smooth trunks of trees. Massachusetts, North Carolina (and Pacific NW?). (P. chlorotica)

Literature

Awasthi, D. D. 1991. A Key to the Microlichens of India, Nepal and Sri Lanka. Bibl. Lich. 40.

Choisy, M. 1949. Catalogue des lichens de la region lyonnaise. Bull. Mens. Soc. Linn. Lyon 18: 105-120.

Fink, B. 1935. Lichen Flora of the United States.

Galloway, D. 1985. Flora of New Zealand Lichens.

Hafellner, J. and K. Kalb. 1995. Studies in Trichotheliales ordo novus. Bil. Lichenol. 57: 161-186.

Müller Argovensis, J. 1862. Principes de classification des lichens et énumération des lichens des environs de Genève. Mem. Soc. Phys. Hist. Nat. Genève 16: 343-435.

Purvis, O. W. and P. W. James. 1992. Porina. In: Purvis, et al., Lichen Flora of Great Britain and Ireland.

Upreti, D. K. 199_. Notes on corticolous and saxicolous species of Porina from India. The Bryologist.