

Sclerophyton Eschw. (s. lato)

After Egea & Torrente (1995), Harris (1990),
Fink, Hasse, and Herre

Rev. October 16, 1997

Thallus crustose, superficial, thin, uniform. In section heteromerous, composed of a plectenchyma with distinct cortex of mainly intertwined hyphae with hyaline tips, or with epinecral layer with some scattered hyphae; cortex and epinecral layer embedded in a yellow-brown gelatinous substance. Medulla white and cretaceous, interspersed with granules and crystals of unknown nature, soluble in K. Photobiont Trentepohlia-like.

Ascomata immersed, often forming groups or lines, dendroid-elongate, perithecioid to stellate and lirellate, aggregated or not, usually surrounded by thin but slightly elevated white rim (false thalline margin), rarely apothecioid with true thalline margin. True exciple thin, to 15 μ m thick, pale to dark brown, composed by plectenchyma of conglutinated hyphae with individual hyphae not easily discerned. Hypothecium pale brown and merging with medulla or dark brown and extending down to medulla or substrate. Hymenium hyaline. Paraphysoids thick (2-2.5 μ m), richly branched, anastomosing. Asci 8-spored, bitunicate with fissitunicate dehiscence; endoascus 2-layered, both layers hemiamyloid (K/I+ blue), but with thin, strongly amyloid band in the internal endoascus, with \pm distinguishable ring structure and small ocular chamber. Spores oblong-ovoid to elongate-fusiform or long-clavate, the upper apex rounded and narrowing to lower end, hyaline to black-gray to dark brown when ripe, septate to muriform, constricted at one or more septa, thick-walled, the cells \pm lenticular with thickened septa, usually with thick gelatinous sheath.

Pycnidia punctiform, immersed or subimmersed, unilocular, with colorless walls or reddish brown at the upper part. Conidia filiform and curved or rarely straight.

Containing erythrin, lecanoric, psoromic, and conpsoromic acids.

Mostly on bark or wood in tropical areas; some species dubiously included in the genus occur on shaded overhanging maritime rocks in temperate to boreal areas.

The genus consists of two main groups; the typical group with hyaline spores and another group with brown spores. The former group can be confused with Enterographa, while the latter group is similar to Llimonaea.

1. Spores hyaline, more than 4-celled, with tapering ends; hypothecium hyaline.

Hamathecium of slender paraphyses. (see Enterographa)

1. Spores hyaline or dark when ripe, 4- or more-celled, with rounded ends; hypothecium dark. Hamathecium of thick paraphysoids. 2

2. Thallus soresiate. Asci lecanoralean. Thallus dirty white to yellowish white, thick crustaceous, becoming rough and thickly sprinkled with small soredia, \pm marginally zonate, with poorly defined hypothallus. Apothecia black, minute to small (or medium-sized), circular to elongate and difform, with slightly developed white exciple. Spores 3-septate, 4-7.5 x 12.5-18 μ m. On bark. Florida and California. "S. occidentale Herre" (belongs in a separate genus according to Harris, 1990)

2. Thallus not soresiate. Asci arthonialean. 3

3. Ascomata dendroid. Ascospores triseptate, brownish when old, with a larger terminal cell. Florida and Louisiana. Spores to 3-septate, 15-20 x 5 um (11-15 x 4-5.5 um according to Fink), pale. Thallus thin, whitish, often chinky and wrinkled; ascomata inconspicuous, lirelliform, immersed in an often somewhat raised thalloid veil, 1-5 mm long, 0.04-0.07 mm wide, narrow and much elongated, flexuous and dendroid, \pm branched (asteriform), the disk exposed, orange or red-brown (brownish black according to Fink); exciple not evident; hypothecium blackish brown, extended into a like-colored stroma. Thallus K-, P+ yellow (psoromic acid). On bark. S. inscriptum (Nyl.) Müll. Arg.

3. Ascomata not dendroid. Ascospores pluriseptate. Sonoran Desert. 4

4. Ascomata lirellate or apothecioid at maturity. Thallus C+ reddish. On rock. 5

4. Ascomata punctiform. Thallus C-. On bark or rock. 6

5. Ascospores 22-30(-32) x 5-8(-9) um, with (3-)5-7 transverse septa. Thallus P-. S. californicum

5. Ascospores 30-40 x 8-12 um, with 6-9(-10) transverse and 1-2 longitudinal septa. Thallus P+ orange. S. cerebriforme

6. Thallus P-. Ascospores 6-8(-9)-septate, hyaline, becoming brown when old. Corticolous, California. S. sp.

6. Thallus P+ orange. Ascospores 4-7-septate, brown at maturity. 7

7. Ascospores 30-42(-45) x 6-8 um, 5-7-septate. Corticolous. Baja California. S. rostratum

7. Ascospores (17-)19-26 x 5-7 um, 4-6(-7)-septate. Saxicolous. Baja California. S. circumscriptum

S. californicum (Tuck.) Hasse

Thallus crustose, epiphloedal or epilithic, creamy white to yellowish or greenish, effuse, continuous to cracked-areolate, sometimes bullate, with smooth or slightly verruculose surface, often surrounded by a thin, smooth, black prothallus. In section up to 1.5 mm high, with a cortex up to 25 um high, composed of mainly intertwined hyphae with hyaline tips.

Ascomata perithecioid to lirellate or apothecioid. Perithecioid and lirellate ascomata usually aggregated into stroma-like structures, 1-3 mm diam., with slightly constricted base, usually with more than 7 ascomata surrounded by a thin, slightly elevated thalline margin. The lecanoroid ascomata are roundish to \pm irregular, 0.4-1.2 mm diam., sessile with a constricted base and conspicuous, smooth, entire or crenulate, thalline margin. Disc plane, black, with a whitish pruina. Proper exciple to 15 um thick, dark brown. Hypothecium carbonaceous or dark brown, extending to medulla or substrate. Hymenium 140-160 um, I+ reddish, K/I+ pale blue. Asci 56-70 x 16-19 um. Ascospores ellipsoid to oblong-fusiform, 22-30(-32) x 5-8(-9) um, (3-)5-7-setate, hyaline when young, brown at maturity, \pm constricted at each septum, with thick gelatinous sheath.

Pycnidia pyriform, 250 um tall, 180 um wide, with colorless walls or reddish brown at upper part. Conidia 18-25 x 1 um, filiform, curved.

Thallus and medulla K- or K+ yellowish, C+ reddish, KC- [?], P-; erythrin and lecanoric acids.

On moderately shaded, vertical or overhanging surfaces of volcanic rocks. Coastal, California, Baja California.

S. cerebriforme Egea & Torrente

Thallus crustose, epilithic, white to greenish, effuse, continuous to rimose or verrucose, sometime bullate, with smooth surface, often surrounded by thin, smooth, black prothallus. In section up to 600 µm high, with cortex to 40 µm high, composed mainly of intertwined hyphae with hyaline tips.

Ascomata lirellate to dendroid, immersed, usually aggregated into rounded or elongate, slightly elevated stroma-like structures, usually with many ascomata surrounded by thin, white rim. Disc narrow, slit-like, plane, black, with whitish pruina. Proper exciple to 15 µm thick, dark brown. Hypothecium dark brown, extending to the substrate. Hymenium 300-350 µm, I+ reddish, K/I+ pale blue. Asci 125-160 x 25-30 µm. Ascospores oblong-ellipsoid to fusiform, 30-40 x 8-12 µm, with 6-9(-10) transverse and 1-2 longitudinal septa, hyaline when young, brown at maturity, with thick gelatinous sheath.

Pycnidia subglobose, 250 µm tall, 200 µm wide, with colorless walls or reddish brown at upper part. Conidia 13-20 x 1 µm, filiform, curved.

Thallus and medulla K- or K+ yellowish, C+ reddish, KC-, P+ orange; erythrin and lecanoric acid.

On rock, coast of California and Baja California.

S. circumscriptum (Taylor) Zahlbr.

Thallus crustose, epilithic, white, creamy or grayish, effuse, continuous to rimose, with smooth or slightly farinose surface, often surrounded by thick, smooth, black prothallus. In section up to 300 µm high, ecorticate but with an epinecral layer with some scattered hyaline hyphae.

Ascomata perithecioid, to 0.3 mm diam., immersed, rounded, oval, or elongate, usually numerous, scattered or often in groups or dispersed in flexuose or radiating lines, not aggregated in stroma-like structures. Thalline margin undifferentiated. Disc plane, black, with whitish pruina. Proper exciple to 15 µm thick, brown above, pale below. Hypothecium pale brown, fusing with medulla. Hymenium 100-150 µm, I+ blue, K/I+ pale blue. Asci cylindric, 70-95 x 15-19 µm. Ascospores oblong-ovoid to oblong-fusiform, (17-)19-26 x 5-7 µm, 4-6(-7)-septate, dark brown, constricted at each septum when mature, with thick gelatinous sheath.

Pycnidia not found.

Thallus and medulla K- or K+ yellowish, C-, KC-, P+ yellow [Egea & Torrente say orange]; psoromic and 2'-O-demethylpsoromic acids.

On rocks, coast of Baja California.

S. inscriptum (Nyl.) Müll. Arg.

Thallus crustose, epiphloeoidal, creamy white to yellowish or greenish, effuse, continuous to rimose, with smooth or verruculose surface, often surrounded by thin, smooth, black prothallus. In section up to 200 µm high, composed of plectenchyma with epinecral layer with some scattered hyaline hyphae.

Ascomata very narrow, much elongated, branched, 1-6 x 0.07-0.3 mm, flexuose and dendroid-lirellate, immersed, surrounded by thin but slightly elevated, white rim. Disc narrow and slit-like, plane, orange to red-brown or dark brown. Proper exciple undifferentiated in upper part, pale to dark brown below. Hypothecium pale to dark brown. Hymenium 100-125 µm, I+, K/I+ dark blue. Asci 60-70 x 15-17 µm. Ascospores with large terminal cell, oblong-ovoid to

oblong-ellipsoid, (13-)15-17 x 5-6 μ m, 3-septate, hyaline when young and with external brown pigmentation when old, constricted at one septum, with thin gelatinous sheath.

Thallus and medulla K- or K+ yellowish, C-, KC-, P+ yellow; psoromic acid.

On bark. Florida and Louisiana.

S. rostratum Egea & Torrente

Thallus crustose, epiphloeoidal, creamy white to greenish, effuse, rimose or areolate, with smooth or verruculose surface, often surrounded by thin, smooth, black prothallus. In section up to 400 μ m high, composed of plectenchyma with cortex to 30 μ m high, of mainly intertwined hyphae with hyaline tips.

Ascomata punctiform, up to 0.5 mm diam., immersed or subimmersed, rounded, oval, or elongate, scattered or often united and lirellate, aggregated into slightly elevated stroma-like structures without constricted base, surrounded by thin thalline margin or sometimes undifferentiated. Disc plane, black, with a whitish pruina. Proper exciple up to 10 μ m thick, pale brown. Hypothecium pale brown, fusing with the medulla. Hymenium hyaline, 300-350 μ m, I+ reddish, K/I+ pale blue. Subhymenium to 50 μ m, pale brown. Asci 100-120 x 20-23 μ m. Ascospores ellipsoid-fusiform, with lower end tapering to narrow apex, 30-42(-45) x 6-8 μ m, 5-7-septate, hyaline when young, brown at maturity, constricted at one or rarely more septa, with thick gelatinous sheath.

Pycnidia subglobose, 350 μ m tall and 250 μ m wide, with colorless walls or reddishbrown at upper part. Conidia 14-18 x 1 μ m, filiform, curved.

On dry, rough bark in coastal scrub community, Baja California.

S. sp. (S. californicum sensu Hasse, pr. p.)

Thallus crustose, epiphloeoidal, white to yellowish, effuse, rimose, with smooth or verruculose surface, often surrounded by very thin, smooth, black prothallus. In section up to 200 μ m high, ecorticate but with epinecral layer with some scattered hyaline hyphae.

Ascomata perithecioid, to 0.4 mm diam., immersed, rounded, oval or elongate, not aggregated into stroma-like structures. Thalline margin undifferentiated. Disc plane, black. Proper exciple 10 μ m thick, hyaline to pale below. Hypothecium hyaline to pale brown, fusing with medulla. Hymenium 150 μ m, I+ blue, K/I+ pale blue. Ascospores oblong-fusiform to fusiform, 24-33(-35) x 5-7(-8) μ m, 6-8(-9)-septate, hyaline, when old becoming brown in inner part of cell walls, constricted at one septum, with thick gelatinous sheath.

Thallus and medulla K- or K+ yellowish, C-, KC-, P-; an unidentified substance of R_F 3,2,3, pinkish.

On bark, southern California.

Spores 3-7-septate, ellipsoid to oblong-ellipsoid or fusiform, 20-30 x 5-8.5 μ m. Thallus moderately thick to thick, yellowish white and blackening, becoming rough and crumbly; apothecia 0.5-1.2 mm, round to irregular or elongated, 1-several more or less crowded on each small, blackish stroma; disc dull black or densely white pruinose; exciple thick, colored like the thallus; hypothecium dark brown. On bark, southern California. California.

"S. californicum (Tuck.) Hasse" (belongs in a separate genus according to Harris, 1993, but some material is S. sp. sensu Egea & Torrente)

Literature

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