

the asci and forming an epithecium. Asci clavate, bitunicate, 1-. Ascospores ellipsoid, 1-septate, dark brown, with germ pores at the ends.

Anamorph: *Corniculariella* P. Karst.

Notes: The generic name *Holmiella* was introduced for the single species *Triblidium sabinum* De Not. (syn. *Eurythidiella sabina* (De Not.) Höhn). Rehm (1896) placed this species in the genus *Caldesia* Trev., excluding other species from this genus. He used the name *Caldesia* in a new and different sense from that of Trevisan, who had included lichen-forming species of *Arthonia* in *Caldesia*. Petrini *et al.* (1979) stated: "Rehm (1896) drastically emended *Caldesia* Trev. (Trevisan 1871) by specifically excluding all six of the original species and retaining the genus for the sole species *C. sabina* (De Not.) Rehm. He therefore effectively described the new genus *Caldesia* Rehm based on *C. sabina* which is illegitimate because it is a later homonym of *Caldesia* Trev.". However both *Caldesia* Trev. and *Caldesia* Rehm are later homonyms of *Caldesia* Par. The nomenclature of *Caldesia* is also discussed by Butler (1940) and Pirozynski & Reid (1966).

The species of *Holmiella* show affinities to those of *Rhytidhysterium*, especially *R. hysterinum*, and historically were grouped together in the genera *Triblidia* and *Eurythidiella*.

Two species are recognized in the genus *Holmiella* here.

Holmiella sabina (De Not.) Petrini, Samuels & E. Müll., *Ber. Schweiz. Bot. Ges.* **89** (1/2): 84 (1979).

Triblidium sabinum De Not., *Comment. Soc. Crit. Ital.* **2** (3): 491 (1867). (Figs 17-18)

Synonyms: Pirozynski & Reid (1966), Pirozynski (1974), Petrini *et al.* (1979) and Sivanesan (1984) together list 13 synonyms.

Type: Italy: Aosta distr., "Sub. *Juniperus sabina*, Cogne, 28. S. 1863", A. Carestia 314 (RO - holotype).

Ascomata arising singly or in groups, at first closed, hemispherical and immersed, later erumpent to superficial, opening in the early stages of development by a wide longitudinal cleft or cracking irregularly into 3-6 or more lobes to expose a flat black disc, apothecioid, sessile, circular, elongated or angular, subgelatinous when rehydrated, 0.5-1.2(-1.5) mm diam, 0.3-0.6 mm tall; margin raised, of triangular lobes and, eventually, dentate; outer surface of receptacle black, smooth. **Exciple** pseudoparenchymatous, two-layered; the outer layer composed of dark brown thick-walled isodiametric cells 4-10 µm diam, 20-35 µm thick; the inner layer of *textura epidermoidea*, composed of thin walled hyaline to light brown cells, merging with the host tissues, 20-35 µm thick. **Subhymentum** of isodiametric or slightly elongated and more or less horizontally oriented light brown cells. **Hypothecium** prosenchymatous, composed of loose *textura intricata*, colourless, 70-250 µm tall below the subhymentum

base to 0.5 mm diam, with light brown hyphae incorporating host cells. **Hamathecium** of filiform septate paraphyses, branched and interwoven, anastomosing, 1.5-2.5 µm wide, staining blue in methyl blue, tips not or slightly enlarged up to 3.0-4.0 µm thick, exceeding the asci by up to 20-50 µm and embedded in a yellowish brown amorphous substance to form an epithecium which turns green-blue in 5% KOH and pinkish-brown in lactic acid. Asci clavate to broadly clavate, bitunicate in structure, fissitunicate dehiscence not observed, with an ocular chamber in the apical dome, 4-8-spored, no blue reaction obtained with Lugol's solution and Melzer's reagent with and without 5% KOH pretreatment, 100-160 × 25-40 µm. **Ascospores** irregularly arranged in the ascus, broadly ellipsoid, 1-septate in the middle and slightly constricted at the septum, cells equal in size or one cell slightly longer, thick-walled (four layers, *vide* Petrini *et al.* 1979), a polar germ pore in each end, hyaline and septate germ tubes produced from one or both germ pores, a single globule in each cell, dark brown, 25-40 × 13-20 µm.

Anamorph: *Corniculariella* P. Karst. Conidiomata were found on wood of *Juniperus sabina*, and also cultivated from isolated ascospores or tissues of needles and wood of *Juniperus*. The anamorph has been described and illustrated by Petrini *et al.* (1979). **Conidiomata** pycnidial, globose, ca 200 µm diam, black, superficial or immersed, opening by a splitting of the upper surface, wall ca 50 µm wide, composed of *textura epidermoidea*. **Conidogenous cells** enteroblastic, cylindrical to subcylindrical, 10-17 µm long, arising directly from the cells of the wall or terminally from short conidiophores, arising from the entire inner wall of the conidioma. **Conidia** straight to sharply curved, unicellular, hyaline, 1.5-1.9 × 0.5-1 µm, extruded from pycnidia in a hyaline slime.

Habitat: Dead wood, twigs and bark of *Juniperus* spp. Petrini *et al.* (1979) reported that *H. sabina* was an endophyte within living tissues of *Juniperus communis*, and probably other species of *Juniperus*.

Distribution: North America, Asia (Pakistan), Bermuda, and Europe.

Selected illustrations: Rehm (1896: 283 figs 1-5 as *Caldesia sabina*, Müller & von Arx (1962: 253 fig. 91 as *Eurythidiella sabina*), Pirozynski & Reid (1966: 658-659 figs 1-3, pl. 1, figs 4-8 as *Eurythidiella sabina*), Pirozynski (1974 as *Eurythidiella sabina*), Holm & Holm (1977: fig. 5a), Petrini *et al.* (1979: 85-87 figs 1-3).

Selected specimens examined: Greece: Halkidiki, near Polygyros, on dead twig of *Juniperus oxycedrus*, 2 April 1988, D.W. Minter (IMI 342149). Italy: holotype of *T. sabinum* (see above); Aosta, Riva-Valdobbia, on *Juniperus sabina* twigs, 13 May 1867, A. Carestia 522 (RO, PAD). Pakistan: Ziarat, on bark of *Juniperus macrocarpa*, 23 September 1969, T. Mahmood (IMI 177087).

Notes: *Holmiella sabina* is characterized by apothecioid black ascomata, a flat disc with a dentate margin, the hypothecium of *textura intricata*, thick epithecium, bitunicate asci, brown 1-septate ascospores with germ pores, and specificity to *Juniperus*.

There were some complications with the typification of *H. sabina*. The information on the specimen in the original description of the species was: "Sutani di *Juniperus Sabina* in val Cogne, Aosta, Carestia (Carest. et DNtrs herb.)",