



THAMNOLIA ¹

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Thamnolia Ach. ex Schaer., *Enum. Critic. Lich. Europ.*: 243 (1850).

Type: *T. vermicularis* (Sw.) Schaer.

Thallus fruticose, prostrate, decumbent or, more rarely, ascending, chalky white, sparsely branched, unattached to the substratum; branches terete to flattened, hollow or solid, lacking rhizines, cilia or lateral spinules; cortex composed of longitudinal hyphae. Photobiont trebouxoid, with cells globose, 7–15 µm diam. Ascomata unknown. Conidiomata pycnidia, immersed; conidia bacilliform. Chemistry: β-orcinol depsides (baeomycesic, squamatic or thamnolic acids).

Thamnolia is an obligately sterile genus of cold, polar or alpine environments. Its position in the Icmado-philaceae was established by molecular methods by Platt & Spatafora (2000) and subsequently confirmed by others in various later studies. About five species are recognised, including *Thamnolia vermicularis*, the aptly named “white worm lichen” which is widespread in both hemispheres. This taxon has two chemical strains, and the classification of these has posed an ongoing problem for taxonomists who have variously considered them as species, subspecies, varieties or simply as chemical races; most recently, Jørgensen (2019) considered them one taxon. An analogous situation occurs in *Siphula* where the thamnolic acid-containing *S. decumbens* and the baeomycesic/squamatic acid-containing *S. fastigiata* are morphologically identical but are nevertheless recognised at species rank.

The distribution of the two strains of *Thamnolia vermicularis* is not random, and various hypotheses have been advanced over the years to explain this; for example, by Sheard (1977), who considered it in the context of continental drift. Both chemical strains occur in Tasmania, where they can occasionally be sympatric but do not seem to grow intermixed, and where they nevertheless tend to display a degree of geographical separation. For this reason, a taxonomic distinction is maintained at varietal rank.

Key references: Sheard *et al.* (1977); Platt & Spatafora (2000); Lord *et al.* (2013); Onut-Brännström *et al.* (2018); Jørgensen (2019).

1 Thallus K+ strong yellow, P+ orange, UV± dull orange, containing thamnolic acid
Thallus K± faint yellow, P+ yellow, UV+ yellow, containing baeomycesic and
squamatic acids

1 *T. vermicularis* var. *vermicularis*

2 *T. vermicularis* var. *subuliformis*

1 *Thamnolia vermicularis* (Sw.) Schaer. var. *vermicularis*

Enum. Critic. Lich. Europ.: 243 (1850); —*Lichen vermicularis* Sw., *Method. Muscor.*: 37 (1781).

Thallus straggling and scattered over the substratum, occasionally in clumps or continuous swards and then with the apices ascending and pointed; branches to 100 mm long and to 2 mm wide, terete, hollow, smooth or longitudinally striate; axils closed. Conidia 3–5 × 1–2 µm.

Chemistry: thamnolic acid; thallus K+ yellow, KC–, C–, P+ orange, UV± dull orange.

1 This work can be cited as: Kantvilas G (2023). *Thamnolia*, version 2023:1. In MF de Salas (Ed.) *Flora of Tasmania Online*. 2 pp. (Tasmanian Herbarium, Tasmanian Museum and Art Gallery: Hobart). <https://flora.tmag.tas.gov.au/lichen-genera/thamnolia/>

2 Tasmanian Herbarium, Tasmanian Museum & Art Gallery, PO Box 5058, UTAS LPO, Sandy Bay, TAS 7005, Australia.

On soil and stones, overgrowing microshrubbery, herbs and bare ground at high elevations, frequently as scattered, individual branches. It has been recorded in most mountainous regions of the island but, in the South-West, it is hitherto unknown beyond the Mt Anne massif. Nor has it been recorded from the Ben Lomond Plateau or the Eastern Tiers, although it is present in the north-eastern mountains (for example, Mt Victoria and Mt Barrow). Unlike variety *subuliformis*, it is known from areas of metamorphosed quartzites and conglomerates, as well as from dolerite areas. Its most lowland, easterly locality is Brown Mtn (near Runnymede). The distribution of the two varieties overlaps on the Wellington Range and on the Central Plateau.

Mt Field West, 1410 m, 1966, G.C. Bratt 3605 & F.N. Lakin (HO); Frenchmans Cap, 42°16'S 145°50'E, 1440 m, 1981, G. Kantvilas 19/81 (HO); Mt Barrow, 42°23'S 147°25'E, 1350 m, 1983, G. Kantvilas 72/83 (HO).

2 *Thamnolia vermicularis* (Sw.) Schaer. var. *subuliformis* (Ehrh.) Schaer.

Enum. Critic. Lich. Europ.: 243 (1850); —*Lichen subuliformis* Ehrh., *Beitr. Naturk.* 3: 82 (1788).

Morphologically identical to variety *vermicularis*, although more likely to occur in extensive swards than as scattered, individual branches. It differs solely by its chemical composition.

Chemistry: baeomycesic and squamatic acids; thallus K⁺ pale yellow, KC⁻, C⁻, P⁺ yellow, UV⁺ pale yellow; the UV reaction is best observed on fresh, moist specimens.

This taxon has an alpine habitat ecology like variety *vermicularis*, but it is found mainly in more eastern Tasmanian locations, including the Central Plateau, the Ben Lomond Plateau and the Wellington Range, with a few unusual, disjunct, low-elevation populations in the Eastern Tiers, at York Plains and at Mt Henry (near Cranbrook). The most westerly locations are Cradle Mountain and Mt Rufus where both varieties occur. It has only been recorded from the Jurassic dolerite geological provenance.

Lake Augusta, 41°50'S 146°34'E, 1973, G.C. Bratt 73/1042 (HO); Lemont, Miena property, 42°20'S 147°38'E, 405 m, 2016, G. Kantvilas 120/16 (HO); Mt Henry, SW of summit, 41°50'S 148°00'E, 670 m, 2019, G. Kantvilas 303/19 (HO).

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