

MYRIOTREMA

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Myriotrema Fée, *Essai Crypt. Écorc.* xlix, 103 (1825); from the Greek *myrios* (innumerable) and *trema* (a hole), in reference to the numerous ascomata of some species.

Thelotrema sect. *Myriotrema* (Fée) G.Salisb., *Nova Hedwigia* 29: 407 (1978). T: *M. olivaceum* Fée.

Coscinedia A.Massal., *Atti Reale Ist. Veneto Sci. Lett. Arti*, ser. 3, 5: 256 (1860). T: *C. micropora* (Mont.) A.Massal. [= *M. microporum* (Mont.) Hale]

Ocellis Clem., *Gen. Fungi* 80 (1909). T: *O. myriopora* (Tuck.) Clem. [= *M. myrioporum* (Tuck.) Hale]

Thallus endophloeodal to epiphloeodal, usually a shade of olive or grey, with greenish to yellowish or whitish tones. True cortex and protocortex present. Photobiont trentepohlioid. Prothallus thin to indistinct, pale to darkish brown. Ascomata \pm rounded, rarely \pm irregular, elongate or lirelliform, perithecioid or apothecioid, solitary to fused, rarely forming stroma-like structures. Proper exciple non-amyloid to amyloid basally, hyaline to pale yellowish, rarely orange internally, yellowish to reddish or greyish to brownish marginally, apically often darkened or covered by granules. Hymenium non-amyloid, usually not inspersed, rarely inspersed, conglutinated; paraphyses often with \pm thickened apices, distinctly or irregularly septate, usually \pm bent and interwoven, occasionally parallel, often \pm richly branched; lateral paraphyses and true columella absent, but fused ascomata often with columella-like structures. Epithymenium hyaline, with or without granules. Asci (1–) 8-spored, clavate; wall and apex non-amyloid. Ascospores 1–2-seriate, transversely septate to submuriform or muriform, hyaline to brown, amyloid or non-amyloid, halonate or not. Conidiomata pycnidial, with fusiform or bacilliform conidia.

Chemistry: β -Orcinol depsidones or unknown compounds present, or secondary metabolites absent.

Recognised as a section of *Thelotrema* by Salisbury (1978), *Myriotrema* was reintroduced by Hale (1980, 1981) for taxa without lateral paraphyses and a non-carbonised proper exciple. Subsequently, Frisch *et al.* (2006) excluded several species on morphological grounds, partially supported by molecular data, and transferred them to other genera, e.g. *Fibrillithecis*, *Leptotrema*, *Leucodecton*, *Ocellularia* and *Stegobolus*. In its current circumscription, the genus is still considered to be heterogeneous, and further studies are required to elucidate phylogenetic relationships. *Fibrillithecis*, *Leptotrema* and *Leucodecton* are separated from *Myriotrema* principally by the structure of the proper exciple. However, the relationship with *Ocellularia* is less well understood, and the current placement of several taxa in *Ocellularia*, particularly those lacking a columella and having indistinct carbonisation, requires further study.

A genus of c. 25 species; mostly corticolous in the tropics and subtropics. Seventeen are known from Australia, including two endemic taxa.

M.E.Hale, Morden-Smithsonian Expedition to Dominica: The lichens (Thelotremataceae), *Smithsonian Contr. Bot.* 16: 1–46 (1974); P.G.Patwardhan & C.R.Kulkarni, A contribution to our knowledge of the lichen flora of India. I. Family Thelotremataceae, *Kawaka* 5: 1–17 (1977); M.E.Hale, A revision of the lichen family Thelotremataceae in Panama, *Smithsonian Contr. Bot.* 38: 1–60 (1978); G.Salisbury, *Thelotrema* Achariana et Feeana, *Nova Hedwigia* 29: 405–427 (1978); M.E.Hale, Generic delimitation in the lichen family Thelotremataceae, *Mycotaxon* 11: 130–138 (1980); M.E.Hale, A revision of the lichen family Thelotremataceae in Sri Lanka, *Bull. Brit. Mus. (Nat. Hist.), Bot.* 8: 227–332 (1981); A.Frisch, K.Kalb & M.Grube (eds), Contributions towards a new systematics of the lichen family Thelotremataceae, *Biblioth. Lichenol.* 92: 1–556 (2006).

1	Thallus isidiate; asci 1–2-spored	2
1:	Thallus lacking isidia; asci 8-spored	3
2	Isidia cylindrical, to 1.3 mm long; ascospores strongly amyloid; thallus containing the stictic acid chemosyndrome (1).....	4. M. eminens
2:	Isidia irregular, to 0.3 mm wide; ascospores non-amyloid; thallus containing norstictic acid	5. M. frustillatum
3	Ascospores submuriform to muriform (1:)	4
3:	Ascospores transversely septate, rarely with a single longitudinal septum	9
4	Hymenium interspersed (3)	16. M. trypaneoides
4:	Hymenium not interspersed	5
5	Ascospores brown (4:)	6
5:	Ascospores hyaline	7
6	Thallus ±dull; ascospores 10–25 µm long, with 4–8 × 1–4 (–5) locules (5)	10. M. phaesporum
6:	Thallus glossy; ascospores 20–35 µm long, with 6–12 × 1–7 locules	3. M. desquamans
7	Ascomata to c. 0.2 mm diam.; secondary metabolites absent (5:).....	14. M. subconforme
7:	Ascomata > 0.2 mm diam.; depsidones present	8
8	Ascomata to c. 0.4 mm diam.; thallus containing the psoromic acid chemosyndrome (7:).....	13. M. rugiferum
8:	Ascomata to c. (0.5–) 0.8 mm diam.; thallus containing the hypoprotocetraric acid chemosyndrome	17. M. viridialbum
9	Ascospores with (1–) 2 locules (3:).....	8. M. myrioporum
9:	Ascospores with more than 2 locules	10
10	Proper exciple distinctly free, at least in older stages (9:)	11
10:	Proper exciple fused to indistinctly free	13
11	Ascomata ±emergent; ascospores with 2–6 (–8) × 1 (–2) locules (10)	6. M. glaucophaenum
11:	Ascomata immersed to slightly raised; ascospores with up to 4 (–5) locules	12
12	Thallus to 600 µm thick, containing olivaceic, O-methyl-olivaceic, norsubnotatic and norisonotatic acids in variable concentrations (11:).....	9. M. olivaceum
12:	Thallus to 800 µm thick, containing the psoromic acid chemosyndrome	7. M. microporum
13	Thallus thin; ascomata ±rounded to elongate or distinctly lirelliform; ascospores non-amyloid to faintly amyloid (10:).....	12. M. protoalbum
13:	Thallus thick; ascomata ±rounded; ascospores strongly amyloid	14
14	Thallus ±rugose and verrucose to verruculose, often rimose; thalline rim margin thick (13:)	15. M. temperatum
14:	Thallus continuous to rugose, non-rimose; thalline rim margin thin	15
15	Ascospores with 3 or 4 transverse locules; thallus containing the hypoprotocetraric acid chemosyndrome (14:)	11. M. polytretum
15:	Ascospores with 3–8 × 1 (–2) locules; thallus chemistry different	16
16	Thallus with numerous calcium oxalate crystals; secondary compounds absent (15:).....	1. M. album
16:	Thallus with sparse calcium oxalate crystals, or crystals lacking, containing the psoromic acid chemosyndrome	2. M. clandestinum