

STICTA

David J.Galloway

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Sticta (Schreb.) Ach., *Methodus* 275 (1803); from the Greek *sticto* (spotted) referring to the spot-like cyphellae of the lower surface.

Lichen sect. *Sticta* Schreb., *Gen. Pl.* 768 (1791).

Type: *S. sylvatica* (Huds.) Ach.

Thallus lobate, spreading or sometimes stalked with a fruticose erect monophyllous to polyphyllous frond, sometimes arising from a holdfast or appearing \pm unattached, or \pm loosely attached, 2–10 (–20) cm wide. Lobes irregularly branching, rounded to imbricate to variously incised, often lacerate-notched, with or without isidia, soredia or phyllidia, tough, coriaceous to fragile, thin to thick. Upper surface smooth, wrinkled or obscurely ridged, sometimes shallowly faveolate or pitted, glossy or matt, often maculate, without pseudocyphellae. Medulla white, K–, rarely yellowish and/or K+ yellow-orange (*S. diversa* and *S. rutilans*). Cephalodia internal, often visible on both upper and lower surfaces as distinct rounded swellings, also occasionally present as external \pm "*Dendriscoaulon*"-like outgrowths from both upper and lower surfaces and margins. Lower surface pale or dark, glabrous or tomentose, occasionally with anchoring tufts or rhizines at centre and margins. Cyphellae always present, round to irregular, shallow to deeply excavate; margins smooth, swollen with a small pore (thelotremoid), or margins sharply defined, raised and with a wide pore; pit membrane white and K– to orange-yellow and K+ red. Ascomata often rather sparsely developed; disc matt or glossy, epruinose; margins entire or crenate; proper exciple \pm well-developed, smooth or verrucose-scabrid, without photobiont cells. Thecium I+ blue; hamathecium of simple septate filiform paraphyses, generally 2 μ m thick, swollen (to 5.5 μ m) and sometimes pigmented at apices. Ascospores fusiform-ellipsoidal to broadly ellipsoidal, 1–3 (rarely 5–7)-septate, colourless, sometimes pale brown or brown with age. Conidia bacilliform.

Sticta, a genus of c. 100 species, is most diverse and luxuriant in subtropical and tropical regions; it is also known from boreal and temperate parts of the Northern Hemisphere and from montane and temperate areas of the Southern Hemisphere. Twenty-three species are presently known from Australia with the greatest diversity being found in rainforest in eastern Queensland where further new discoveries can be expected.

Species of *Sticta* have cyanobacterial photobionts either as their primary photosynthetic partner, or secondarily associated in internal or external cephalodia. Since cyanobacteria need liquid water for photosynthesis, respiration and other vital activities, the genus is commonly found in habitats of high humidity, but is absent from the drier parts of the country. Species grow on living and dead bark, shrubs and stumps and on rocks in rainforest in Queensland, New South Wales, Victoria and Tasmania, and among rocks and on soil in alpine habitats in south-eastern Australia and Tasmania.

E.Cheel, Australian and South Sea Island Stictaceae, *Rep. Australas. Assoc. Advancem. Sci.* 13: 254–270 (1912); E.Cheel, Notes on Stictaceae, *Austral. Nat.* 3: 156–159 (1916); D.J.Galloway, *Fl. New Zealand Lichens* 550–562 (1985); D.J.Galloway, Studies on the lichen genus *Sticta* (Schreber) Ach.: I. Southern South American species, *Lichenologist* 25: 223–282 (1994); D.J.Galloway, Studies on the lichen genus *Sticta* (Schreber) Ach. IV. New Zealand species, *Lichenologist* 29: 105–168 (1997); D.J.Galloway, Studies on the lichen genus *Sticta* (Schreber) Ach.: V. Australian species, *Tropical Bryol.* 15: 117–160 (1998); G.Kantvilas & S.J.Jarman, *Lichens of Rainforest in Tasmania & SE Australia* 145–147 (1999).

1	Photobiont a green unicellular alga	2
1:	Photobiont a filamentous cyanobacterium	13
2	Thallus attached by a basal holdfast from which lobes are attached by short or long stalks(1).....	3
2:	Thallus without a basal holdfast, attached over the entire lower surface.....	10
3	Thallus phyllidiate(2).....	4
3:	Thallus without phyllidia	5
4	Stalk 2–10 mm long; cyphellae thelotremoid, 0.1–1 mm diam.; tomentum thick(3)	15. S. myrioloba
4:	Stalk 5–20 mm long; cyphellae punctiform, 0.1 mm diam.; tomentum thin, velvety	8. S. filix
5	Lobes arising from a long well-defined stalk(3:).....	6
5:	Lobes arising from a short stalk or ±directly from the holdfast	8
6	Stalk thick; lobes broadly rounded(5).....	11. S. latifrons
6:	Stalk narrow; lobes rather narrow, lanceolate or reniform	7
7	Stalk less than 3 mm tall; lobes reniform, 5–15 mm wide; cyphellae to 2 mm diam.(6:)	16. S. pedunculata
7:	Stalk 3–10 mm tall; lobes lanceolate, 2–8 mm wide; cyphellae to 0.1 mm diam.	18. S. sayeri
8	Lobes pendulous, ±dichotomously branched(5:).....	19. S. stipitata
8:	Lobes ±erect, irregularly branched or polyphyllous.....	9
9	Lobe margins with projecting tomentum; lower surface plane(8:).....	3. S. camarae
9:	Lobe margins without projecting tomentum; lower surface costate	10. S. hypopsiloides
10	Thallus without phyllidia(2:).....	4. S. caperata
10:	Thallus phyllidiate	11
11	Lobes glabrous below(10:).....	22. S. variabilis
11:	Lobes tomentose below	12
12	Thallus terricolous or saxicolous(11:).....	14. S. martinii
12:	Thallus corticolous.....	1. S. baileyi
13	Thallus attached by a basal holdfast(1:)	14
13:	Thallus without a basal holdfast, attached over whole or part of lower surface	18
14	Thallus without isidia; lobes broadly rounded(13).....	21. S. subtomentella
14:	Thallus isidiate; lobes rather narrow	15
15	Lobes margins with projecting black cilia(14:)	7. S. duplolibata
15:	Lobe margins without projecting cilia.....	16
16	Secondary marginal lobules and lobes present(15:).....	13. S. marginifera
16:	Secondary marginal lobules or lobes absent	17
17	Lobes narrow, 1–2 (–6) mm wide, ±canaliculate; margins not thickened below(16:)	5. S. cyphellulata
17:	Lobes rounded-flabellate, 5–10 mm wide; margins thickened below, noticeably down-rolled	2. S. brevipes
18	Thallus isidiate and/or phyllidiate(13:)	19
18:	Thallus sorediate, without isidia and phyllidia	22
19	Medulla K+ yellow or orange(18).....	20
19:	Medulla K–.....	21
20	Lobes 5–10 (–20) mm diam.; margins ragged, sparsely to densely isidiate(19).....	6. S. diversa
20:	Lobes 10–30 mm diam.; margins entire, without isidia.....	17. S. rutilans
21	Lower surface pale; cyphellae large; lobes broadly rounded, ±monophyllous(19:).....	9. S. fuliginosa
21:	Lower surface dark brown to black; cyphellae small; lobes not monophyllous	23. S. weigelii
22	Lobes ±cochleate or monophyllous; soralia marginal and laminal in ±erose patches; soredia not derived from isidia(18:)	12. S. limbata
22:	Lobes irregularly spreading, not monophyllous; soralia linear, eroding lower surface of margins, rarely laminal; soredia derived from minute granular to ±coralloid isidia.....	20. S. sublimbata