Flora of Tasmania online

3 ATHEROSPERMATACEAE [1]

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Evergreen trees or shrubs, usually aromatic, bisexual, monoecious or dioecious (not in Australia); stem nodes sometimes conspicuously swollen or flattened. Leaves opposite-decussate, exstipulate, petiolate; lamina simple, often gland-dotted. Inflorescence usually axillary, more rarely terminal, cymose or thyrsiform, or flowers solitary; bracts and bracteoles present or absent. Flowers pedicellate, actinomorphic or sometimes slightly irregular. Perianth regular, in 1 or more whorls of 4–20 segments; segments usually tepaloid, free. Stamens 4-many; staminal filaments present or absent (not in Australia); anthers basifixed, 2-celled, dehiscing by valves, appendages apical or absent; staminodes present or absent. Carpels 4–30, superior, free; ovules 1 per loculus, placentation ± basal; style single, unbranched, terminal or arising from near base of carpel. Fruit a cluster of achenes borne on or within the enlarged hypanthium, surface smooth or with fine, plumose hairs; hypanthium usually dehiscent into 1–4 valves.

A family of 7 genera and about 16 species, in cooler rainforests of New Guinea, eastern Australia, New Caledonia, New Zealand and southern Chile. In Australia there are 4 genera (3 endemic) and 10 species (all endemic). Atherospermataceae are placed in the Laurales and are closely related to the monotypic Gomortegaceae (Chile), and these two families to Siparunaceae (S America, W Africa) (see Renner 1999; Renner *et al.* 2000; Soltis *et al.* 2001). The family has been included, in the past, as a subfamily of the Monimiaceae.

Key reference: Foreman & Whiffin (2007).

External resources: accepted names with synonymy & distribution in Australia (APC); author & publication abbreviations (IPNI); mapping (AVH, NVA); nomenclature (APNI, IPNI).

1 ATHEROSPERMA

Atherosperma Labill., *Nov. Holl. Pl.* 2: 74, t. 224 (1806).

Synonymy: *Antherosperma* Poir., *Encycl. (Lamarck)* 8: 817 (1808), orth. var.

Monoecious shrubs to tall trees. Leaves dentate or entire, strongly aromatic. Flowers solitary, axillary, unisexual; 2 large bracts enclosing mature flower bud, persistent through anthesis. Hypanthium campanulate. Perianth 8, tepaloid, in 2 ± distinct, slightly unequal whorls. Male flowers: stamens usually 12–20, spirally arranged, each with 2 narrow glandular appendages at base of filaments; connective not prolonged above anthers; staminodes absent. Female flowers: staminodes usually 24–40, in 3 subspiral whorls; carpels up to 30; style terminal. Fruiting hypanthium enlarged, subglobose, densely pubescent, ± indehiscent, with enlarging inner staminodes surrounding the exserted styles. Achenes on inner surface of hypanthium ellipsoid or slightly conical, uniformly plumose.

A monotypic genus endemic to Australia.

1 Atherosperma moschatum Labill., *Nov. Holl. Pl.* 2: 74, t. 224 (1806) [as *A. moschata*] subsp. **moschatum**

Sassafras

Atherosperma dilatatum Gand., *Bull. Soc. Bot. France* 66: 233 (1919). *Atherosperma muticum* Gand., *Bull. Soc. Bot. France* 66: 232 (1919). *Atherosperma tasmanicum* Gand., *Bull. Soc. Bot. France* 66: 233 (1919).

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2 Tasmanian Herbarium, Tasmanian Museum & Art Gallery, Private Bag 4, Hobart, Tasmania 7001, Australia.

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Illustrations (usually as *A. moschatum*): Curtis, *The Student's Flora of Tasmania* 3: 594, fig. 125 (1963); Morley & Toelken (Eds), *Flowering Plants in Australia* 40, fig. 13 c, e-f (1983); Harden, *Fl. New South Wales* 1, rev. edn: 130–131 (2000); Foreman, *Fl. Victoria* 3: 29, fig. 2d-g; 85, pl. 2 (1996); Woolmore *et al.* (Eds), *King Island Flora* 59 (2002); Wilson (Ed.), *Fl. Australia* 2: 94, fig. 21j-n (2007); Simmons *et al.*, *A Guide to Flowers and Plants of Tasmania,* 4th edn, 45 (2008).

Evergreen shrub or conical tree with aromatic bark and leaves; plants monoecious or more commonly in Tasmania, dioecious; trunk erect, tapering, to 15(–30 outside Tas.) m high, bark smooth, grey; branches spreading, nodes sometimes flattened, young branchlets pubescent or tomentose. Leaves opposite, petiolate; lamina 2.5–11 cm long, 0.8–5 cm wide, lanceolate, oblanceolate to elliptic, somewhat leathery, margin usually regularly to irregularly toothed, rarely smooth; adaxial surface dark green, shining, sparsely hairy at first, becoming glabrous; abaxial surface light green to whitish, glabrous to densely hairy, venation conspicuous. Flowers pleasantly perfumed; shortly pedicellate, enclosed between two opposite concave villous bracts. Tepals cream to white, often streaked with purple, 6–10 mm long. Staminate flowers c. 2 cm diam.; tepals 8 in 2 whorls, outer tepals broader than the inner, abaxial surface densely silky-hairy, inner surface glabrous with prominent veins, inner segments thinner than the outer segments with fewer and shorter hairs on the outer surface; receptacle flat, hairy; stamens c. 12; anthers opening by valves. Pistillate flowers: tepals often greenish, smaller than those of male flowers, villous on both surfaces, separating from the receptacle as the fruits mature; receptacle deeply perigynous, abaxial surface villous; staminodes in 2–3 rows, inserted around the mouth of the receptacle, flattened, lanceolate, villous, tapering to a sterile indehiscent anther; carpels c. 30, inserted on the floor of the receptacle, interspersed with long stiff hairs; ovaries villous; styles long, plumose. Achenes villous, plumose, style exserted. Flowering (Jun.) Aug.-Oct.; fruiting Sep.–Apr.

Tas. (all regions except MIS); also NSW (SE), Vic. Widespread in rainforest, wet sclerophyll forest, fern gullies, subalpine woodland, from near sea level to c. 1050 m altitude. Shapcott (1994) investigated the genetic variation of the species across its entire range. *Atherosperma moschatum* subsp. *integrifolium* (A.Cunn. ex Tul.) Schodde, the other subspecies recognised for the species, is endemic to New South Wales where it is found from Barrington Tops to the Blue Mountains. The subspecies is distinguished from the typical subspecies by having smooth margins (versus toothed). Specimens of the typical variety with smooth leaf margins are occasionally found and the work presented by Shapcott (1994) was inconclusive whether the northern populations warranted taxonomic recognition. Further work is required to test the current classification. *Atherosperma elongatum* Gand. and *A. integrifolium* A.Cunn. ex Tul. are placed in synonymy under *A. moschatum* subsp. *integrifolium*.

The species is often used in woodwork and is renowned for its distinctive smell.

REFERENCES

APC (Australian Plant Census) http://www.chah.gov.au/apc/about-APC.html

APNI (Australian Plant Name Index) http://www.anbg.gov.au/cgi-bin/apni

AVH (Australia's Virtual Herbarium) (Council of Heads of Australasian Herbaria) http://www.anbg.gov.au/avh.html

Foreman DB, Whiffin T (2007) Atherospermataceae. *Flora of Australia* **2** 91–103.

IPNI (International Plant Name Index) http://www.ipni.org/index.html or http://www.us.ipni.org/index.html

NVA (Natural Values Atlas) (Department of Primary Industries and Water: Hobart) http://www.dpiw.tas.gov.au/inter.nsf/WebPages/LJEM-6TV6TV?open

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INDEX