

**MACHAERINA** (previously BAUMEA – still listed as *Baumea* in the Census of the Flora of the Australian Capital Territory V 4, 2017)

**Description:** Perennials with short rhizomes. **Culms** erect, tufted, noded or nodeless. **Leaves** distichous, isobilateral, glabrous, flattened to terete, or reduced. **Inflorescence** panicle-like; involucre bracts culm-like. **Spikelets** usually clustered, 1-5 bisexual flowers; rachilla persistent. **Glumes** few, obscurely distichous, keeled, usually lowest 1-3 empty, often shorter than fertile glumes. **Perianth** absent. **Stamens** 3. **Style** 3-fid, deciduous; style base thickened, persistent on nut, fused as hemispherical to conical apex, often minutely hispid or papillose. **Nut** trigonous to terete, prominently to obscurely 3-ribbed, smooth at maturity, otherwise irregularly wrinkled.

**Distribution and occurrence:** World: c. 55 species, tropical & temperate regions. Australia: 17 species (11 species endemic), all States.

This concept now includes *Baumea*. Both have been included in *Cladium s.lat.* in the past but that is not closely related.

Key to the genus <i>Machaerina</i>		
1	Leaf blades flat, or 4-angled in cross section, or all reduced to flattened mucros on sheaths	2
	Leaf blades terete or ovate in cross section (rarely somewhat angular or flattened at apex)	9
2	All leaves reduced to flattened mucros; culms 1–3-noded	<i>Machaerina juncea</i>
	Basal leaves well-developed (cauline leaves reduced if present); culms nodeless or 1- (rarely 2-) noded	3
3	Leaves square to rhomboid (occasionally narrowly so) in cross section, faces concave or occasionally flat	<i>Machaerina tetragona</i>
	Leaves flattened (at least near apex in <i>Machaerina rubiginosa</i> ) or narrow-rhomboid, faces flat or convex	4
4	Leaves scabrous	5
	Leaves smooth	6
5	Glumes 3.0–3.8 mm long; spikelets 3.5–4.5 mm long; nut 1.7–2.0 mm long, 0.8–1.1 mm diam.; culms 1.2–4 mm diam.; sheaths pale brown; leaves with raised 'midvein' even if otherwise flat	<i>Machaerina planifolia</i> <b>ST</b>
	Glumes 6–10 mm long; spikelets 6–11 mm long; nut 2.7–3.5 mm long, 1.0–1.6 mm diam.; culms 1–2 mm diam.; sheaths reddish; leaves without a raised midvein	<i>Machaerina johnsonii</i>
6	Nut 2.2–4 mm long, 1.2–2.0 mm diam., pale red-brown to bright orange or dark red-brown to blackish	7
	Nut 1.5–2.2 mm long, 1.0–1.3 mm diam., red-brown to black	8
7	Nut pale red-brown to bright orange; spikelets 2- or 3-flowered, in dense clusters; glumes 5; culms 1- or 2-noded (rarely nodeless); leaves often terete near base	<i>Machaerina rubiginosa</i> <b>ACT, ST</b>
	Nut dark red-brown to blackish; spikelets 1-flowered, spread out along branches; glumes 3 or 4; culms nodeless; leaves flat throughout	<i>Machaerina muelleri</i>
8	Culms 15–35 cm high; leaves 0.7–2.5 mm wide	<i>Machaerina acuta</i> <b>ST</b>
	Culms 100–180 cm high; leaves 20–30 mm wide	<i>Machaerina</i>

		<i>insularis</i>
9	Leaves hollow, perfectly transversely septate	<i>Machaerina articulata</i> ACT, ST
	Leaves pith-filled, occasionally irregularly transversely septate	10
10	Spikelets few, not in dense clusters, 1-flowered; glumes 2–4 (mostly 3)	11
	Spikelets numerous, often clustered, 1–4-flowered; glumes 4–6	12
11	Leaves much exceeding culms (to twice as long), c. 0.5 mm diam.; nut 2.0–2.3 mm long, 1.0–1.3 mm diam.; culms smooth	<i>Machaerina nuda</i>
	Leaves shorter than to slightly exceeding culms, 0.7–1.5 mm diam.; nut 2.5–3.5 mm long, 1.3–1.8 mm diam.; culms scaberulous or smooth	<i>Machaerina gunnii</i> ACT, ST
12	Nut strongly wrinkled, minutely papillose at base and apex, minutely hispid at extreme apex, 1.3–2.2 mm long	<i>Machaerina teretifolia</i>
	Nut smooth at maturity or somewhat reticulate, minutely hispid at apex, 2.0–4.0 mm long	13
13	Nut straw-coloured to whitish, triquetrous, 2.0–2.5 mm long, 1.0–1.3 mm diam.; spikelets not densely clustered; leaf blades and involucre bracts terete at apex	<i>Machaerina arthropylla</i>
	Nut pale red-brown to bright orange at maturity, trigonous, 2.2–4.0 mm long, 1.2–2.0 mm diam.; spikelets in dense, discrete clusters on inflorescence branches; leaf blades and involucre bracts flattened at least at apex	<i>Machaerina rubiginosa</i> ACT, ST

### *Machaerina acuta*

**Synonyms:** *Baumea acuta* (Labill.) Palla

**Description:** Slender, tufted perennial with long rhizome. Culms rigid, flat to biconvex, nodeless, +/- striate, glabrous, smooth, 15–35 cm high, 0.8–1.5 mm diam. Leaves basal; blade flat to biconvex, shorter than to exceeding culms, 0.7–2.5 mm wide; sheath straw-coloured to pale red-brown, dull. Inflorescence oblong in outline, narrow, erect, 2–6(-14) cm long, c. 1 cm diam.; lowest involucre bract shorter than to exceeding inflorescence. Spikelets few, 1-flowered, 4.5–6 mm long. Glumes 3 or 4, acute, red-brown, with margins ciliate or glabrous; fertile glumes 4–5 mm long. Anthers 1.3–2.0 mm long, excluding appendage 0.2–0.5 mm long. Nut obovoid to ellipsoid, 1.5–2.2 mm long, 1.0–1.3 mm diam., irregularly wrinkled to smooth or minutely reticulate or colliculate, minutely hispid at apex, +/- shining, red-brown to black.

**Flowering:** spring-summer.

**Distribution and occurrence:** Grows in swamps and damp heath on open sandy soils; mainly coastal, extending to Carrai S.F. Grows on the ranges west of Kempsey and to the Budawang Ra. NSW subdivisions: NC, CC, SC, ST. Other Australian states: Qld Vic. Tas. W.A. S.A.

### *Machaerina articulata*

**Synonyms:** *Baumea loculata* Boeckeler, *Baumea articulata* (R.Br.) S.T.Blake, *Cladium articulatum* R.Br.

**Description:** Perennial with stout rhizome. Culms rigid, terete, transversely septate (not obvious when fresh), nodeless, striate, smooth or scabrous, 90–200 cm high, 4–10 mm diam. Leaves basal; blade culm-like, equalling or exceeding culm, to 10 mm diam.; sheath straw-coloured, dull. Inflorescence oblong in outline, loose, drooping, 15–45 cm long, to 10 cm diam.; lowest involucre bract shorter than inflorescence. Spikelets numerous, 2–5-flowered, 3.5–5 mm long. Glumes 4–7, acute, often mucronate, red-brown, glabrous; fertile glumes 3.5–5 mm long. Anthers 1.3–1.7 mm long, excluding appendage 0.2–0.3 mm long. Nut ellipsoid to ovoid, 1.8–2.3 mm long, 1.2–1.4 mm diam., strongly and irregularly wrinkled, ± smooth at apex and base and on the 3 angles, hispid or papillose at apex, ± dull, pale to dark red-brown.

**Flowering:** spring–summer.

**Distribution and occurrence:** Grows in standing water of lagoons, deeper swamps, and streams; mostly coastal, but inland to Boonoo Boonoo Falls and Torrington district. NSW subdivisions: NC, CC, SC, NT, CT, ST, NWS. Other Australian states: Qld Vic. Tas. W.A. S.A.

### *Machaerina gunnii*

**Synonyms:** *Baumea gunnii* (Hook.f.) S.T.Blake, *Cladium gunnii* Hook.f.

**Description:** Slender, tufted perennial with very short rhizome. Culms slender, rigid, +/- terete, nodeless, striate, glabrous, scaberulous to smooth, 20-100 cm high, 0.8-1.5 mm diam. Leaves basal; blade culm-like, as long as to slightly exceeding culm, 0.7-1.5 mm diam., or reduced; sheath reddish or straw-coloured (but then usually with reddish tinges), dull. Inflorescence interrupted-oblong in outline, narrow, erect, 4-30 (rarely to 60) cm long, to 1.5 cm diam.; lowest involucre bract much shorter than inflorescence. Spikelets few, 1-flowered, 4.5-8 mm long. Glumes 2-4, acute, red-brown to grey-brown, with margins glabrous; fertile glumes 4.5-7 mm long. Anthers c. 2 mm long, excluding appendage c. 0.5 mm long. Nut ovoid or globose, 2.5-3.6 mm long, 1.3-1.8 mm diam., +/- smooth, minutely hispid or papillose at extreme apex only, +/- shining, yellow-brown to black.

**Flowering:** spring-summer.

**Distribution and occurrence:** Grows in swamps and by watercourses; south from La Perouse on coast, south from Backwater on tablelands, with an apparently isolated occurrence on Koonyum Ra. NSW subdivisions: NC, CC, SC, NT, CT, ST. Other Australian states: Qld Vic. Tas. S.A.

### *Machaerina planifolia*

**Synonyms:** *Baumea planifolia* (Benth.) K.L.Wilson

**Description:** Perennial with long rhizome. Culms rigid, oval to nearly flat, nodeless or rarely 1-noded, striate, glabrous, scabrous to smooth, 15-65(-120) cm high, 1.2-4.0 mm diam. Leaves basal; blade flat or narrow-rhomboid in cross section, strongly scabrous, broader and shorter than culms, to 6.5 mm wide; sheath pale brown, dull. Inflorescence ovate to oblong in outline, erect, 4-10(-14) cm long, 1-3.5 cm diam.; lowest involucre bract much shorter than inflorescence. Spikelets numerous, 1-flowered, 3.5-4.5 mm long. Glumes 3 or 4, long-acute with apex often excurved, unevenly coloured pale to mid red-brown (rarely darker), with margins glabrous or sparsely ciliate; fertile glumes 3.0-3.8 mm long. Anthers 1.2-1.6 mm long, excluding appendage 0.3-0.7 mm long. Nut ovoid to ellipsoid, 1.7-2.0 mm long, 0.8-1.1 mm diam., with irregular coarse reticulations or ridges, +/- minutely white-papillose between ridges, minutely hispid or papillose at apex, pale to dark brown.

**Flowering:** spring-summer.

**Distribution and occurrence:** Grows in swamps and near mountain streams, on sandy soils; on the eastern margin of tablelands, and coastal ranges. NSW subdivisions: CC, SC, NT, CT, ST. Other Australian states: Qld Vic.

### *Machaerina rubiginosa*

**Synonyms:** *Baumea rubiginosa* (Spreng.) Boeckeler

**Description:** Perennial with short stout rhizome. Culms rigid, terete to biconvex, 1- or 2-noded, rarely nodeless, striate, glabrous, smooth, 20-110 cm high, 1-5 mm diam. Leaves basal and cauline; basal blades flattened at least near apex, often subterete below, usually broader than and often exceeding culms, 1.5-7 mm wide, cauline blades much reduced; sheath straw-coloured, rarely with reddish tinges, dull. Inflorescence interrupted-oblong in outline, narrow, erect, with dense clusters, 7-25(-40) cm long, 1-2.5 cm diam.; lowest involucre bract much shorter than inflorescence. Spikelets 2- or 3-flowered, 4-7 mm long. Glumes 5, acute to long-acute, red-brown, with margins ciliate; fertile glumes 3.7-6 mm long. Anthers 1.5-2.5 mm long, excluding appendage 0.2-0.3 mm long. Nut ellipsoid to obovoid, 2.2-4 mm long, 1.2-2.0 mm diam., smooth, with hispid apex, shining, pale red-brown to bright orange.

**Flowering:** spring-summer.

**Distribution and occurrence:** Grows in swamps and other damp areas, on sandy soil; widespread on the coast and eastern edge of tablelands, extending inland to near Mudgee and Holbrook. NSW subdivisions: NC, CC, SC, NT, CT, ST, CWS, SWS. Other Australian states: Qld Vic. Tas. W.A. S.A. N.T.