

CAREX

Synonym: *Uncinia*

Description: Perennial herbs, tufted or with creeping rhizome, monoecious, rarely dioecious. **Culms** mostly trigonous, rarely noded above base, often covered at the base by persistent leaf sheaths or their fibrous remains. **Leaves** mostly basal, 0-several cauline; ligule present. **Inflorescence** panicle-like, raceme-like or spike-like, more rarely reduced to a single spike. **Spikes** 1- many, terete, sessile or peduncled, with few- many spikelets, wholly male, wholly female, or bisexual; involucre bracts leaf-like or occasionally glume-like, sometimes absent. **Spikelets** unisexual, consisting of a solitary flower, in the axils of the spirally arranged glumes, in some species (the *Uncinia* clade) with hook-like tip of rachillas protruding beyond the perigynium (utricle) in the female spikelets. **Stamens** 3. **Gynoecium** enclosed in a bottle-shaped prophyll (perigynium utricle); style 2- or 3-fid, protruding through the small terminal mouth of the perigynium/utricle. Perigynia (utricles) membranous, papery, leathery, or corky, 2-keeled, narrowed to a beak with truncate or 2-fid apex. **Nut** trigonous or lenticular, enclosed in perigynium (also known as a utricle).

Distribution and occurrence: World: >2000 species, cosmopolitan, mostly outside the tropics.

Australia: c. 86 species (c. 30 species endemic), all States except N.T. The tribe Cariceae is currently being studied world-wide by the Global Carex Group and all genera (including *Uncinia*) are now included in an expanded monophyletic genus *Carex* - see Global Carex Group (2015 - DOI: 10.1111/boj.12298) for details.

The inflorescence structure is complex in this genus. What are here termed spikes and spikelets have in the past often been called, respectively, spikelets and flowers. Note: glume length includes mucro; perigynium (utricle) length includes the beak (which is described in the terms used by Jermy et al., 1982); leaves are often not obviously septate-nodulose until dried. The axis of the spikelet is conspicuously elongated beyond the apex of the perigynium, ending in a hook that walkers know all too well, in species formerly included in *Uncinia*. The online key (copied below) is based on the updated key published in *Telopea* 6(1): 573-577 (1996), plus correction in *Telopea* 7(1): 95 (1997) and later updates, including the addition of species formerly in *Uncinia*. The European species *Carex divisa* is included in the key but no description is given since it is not known to have become naturalised in NSW. It is, however, naturalised in Vic, Tas, SA and WA so could occur in southern NSW. Hybrids seem to be much less common in Australia than in the Northern Hemisphere.

In the Census of Plants in the Australian Capital Territory v4 2017 *Carex rara* subsp. *capillaceae* is listed. It is not in the PlantNet Flora Online key.

Key to the genus <i>Carex</i>		
1	Axis of spikelet protruding with a conspicuous hooked apex beyond the perigynium (utricle) (formerly genus <i>Uncinia</i>)	41
	Axis of spikelet not protruding or hook-like	2
2	Style 3-fid; nut trigonous	3
	Style 2-fid (rarely some styles 3-fid within an inflorescence in <i>Carex gaudichaudiana</i>); nut lenticular or plano-convex	17
3	Inflorescence of a single spike, less than 1.5 cm long	4
	Spikes several to numerous; inflorescence 3–90 (rarely 1–3) cm long	6
4	Male part of the spike as long as or longer than the female part and not less conspicuous	<i>Carex capillacea</i> ST
	Male part of the spike from slightly to much shorter than the female part, always inconspicuous and usually the spike appears to be wholly female	5
5	Spike 7–12 mm long, with many female flowers; lowest bract glume-like	<i>Carex cephalotes</i> ST

	Spike 4–5 mm long, with about 3–6 female flowers; lowest bract leaf-like, exceeding the spike	<i>Carex archeri</i> ST
6	Spikes in clusters of 2–5 (or occasionally some solitary) at distant nodes	7
	Spikes solitary at nodes (nodes may be close together)	9
7	Female glumes white with greenish midrib, 1.2–1.5 mm wide	<i>Carex hubbardii</i>
7	Female glumes pale yellow-brown to red-brown with greenish midrib, 1.5–4 mm wide	8
8	Female glumes yellow-brown to red-brown, 3.5–5.5 mm long, 1.5–2 mm wide; spikes lax-flowered below, rather dense-flowered above, 3–5 mm thick in mature fruiting stage, upper gynaeandrous (sometimes with male apices), uppermost with a long, usually very long, male basal part, the lower gynaeandrous or female	<i>Carex longebrachiata</i> ST
	Female glumes pale yellow-brown, 4–8 mm long, 2.5–4 mm wide; spikes dense-flowered, 5–8 mm thick in mature fruiting stage, the uppermost 1–4 wholly male, rarely with a few female flowers in the terminal spike, the remainder wholly female or with male bases and/or apices	<i>Carex iynx</i> ACT, ST
9	Perigynia (utricles) hispid; nut with persistent enlarged disk-like junction of nut body and style-base	<i>Carex breviculmis</i> ACT, ST
	Perigynia glabrous or minutely papillose, sometimes minutely hispid on the margins of the beak; nut without enlarged junction with style-base	10
10	Perigynia corky, with impressed nerves	11
	Perigynia neither corky nor with impressed nerves	12
11	Culms extending above the leaf sheaths for a considerable distance; male spikes 3–15; female spikes mostly spread at some distance from one another; female glumes mucronate, dark to very dark red-brown; perigynia 4–5 mm long, yellow-brown usually tinged dark red-brown; leaves with marginal prickles more or less regularly antrorse	<i>Carex bichenoviana</i> ACT, ST
	Culms usually hidden in the leaf sheaths; male spikes 1–4; female spikes usually approximate; female glumes not mucronate, yellow-brown to red-brown; perigynia 4–8 mm long, yellow-brown occasionally tinged dark red-brown; leaves with marginal prickles irregular and at 90° to leaf	<i>Carex pumila</i> ST
12	Leaves prominently septate-nodulose (septa less obvious when fresh); beak of perigynium with apex deeply divided into 2 stiff slender teeth c. 1 mm long	<i>Carex fascicularis</i> ACT, ST
	Leaves not septate-nodulose; beak of perigynium with apex truncate, split or shortly divided into 2 membranous, short but broad teeth	13
13	Male glumes with a mucro as long as or longer than the body of the glume; perigynia glabrous	<i>Carex brownii</i>
	Male glumes not mucronate or with mucro shorter than the body of the glume; perigynia glabrous, minutely papillose or minutely hispid on margins and beak	14
14	Perigynia minutely papillose, with beak to 0.3 mm long; leaf sheath and ligule occasionally red-dotted; culms 10–70 cm long	15
	Perigynia not minutely papillose, with beak 0.5–2 mm long; leaf sheath and ligule not red-dotted; culms 1–10 cm long	16
15	Terminal spike gynaeandrous; leaves shorter than or scarcely exceeding culms; perigynia not or faintly nerved, 3–4.5 mm long	<i>Carex buxbaumii</i> ST

	Terminal spike male or at least male in the uppermost portion; leaves much exceeding culms; perigynia strongly numerous-nerved, 2.3–3 mm long	<i>Carex maculata</i>
16	Inflorescence 1–3 cm long, hidden amongst leaves; perigynia 4–6.5 mm long, glabrous, with beak 1–2 mm long	<i>Carex jackiana</i> ST
	Inflorescence 8–35 cm long, mostly exceeding leaves (lowest spikes may be amongst the leaves); perigynia 3.3–4 mm long, minutely hispid on upper margins (occasionally glabrous), with beak 0.5–0.8 mm long	<i>Carex blakei</i> ACT, ST
17	Inflorescence of a single spike	18
	Spikes 2–numerous	20
18	Plants long-rhizomatous; female bracts 3–4 mm long; perigynium slightly hispidulous on upper margins	19
	Plants short-rhizomatous; female bracts 2.5–3 mm long; perigynium glabrous	<i>Carex cephalotes</i> ST
19	Female flowers above male in spike; perigynia 2.5–3 mm long, weakly several-nerved; culms 25–40 cm long	<i>Carex raleighii</i> ST
	Male flowers above female in spike; perigynia 5.5–7 mm long, with 8–10 strong nerves abaxially, adaxially several weak nerves or none; culms 80–160 cm long	<i>Carex klaphakei</i>
20	Spikes long-cylindrical (i.e. much longer than broad), mostly 2–17 cm long (rarely some as short as 0.5 cm but then glumes dark red-brown or blackish), clearly distinct and often distant from each other	21
	Spikes ovoid or short-cylindrical (mostly c. 0.5 cm long, occasionally to 1.5 cm long) or ovate in outline, often densely clustered in an inflorescence that is itself ovoid or short-cylindrical	25
21	At least lower spikes obviously pedicellate, drooping to spreading	22
	Spikes sessile to subsessile ('pedicels' may be up to 1 cm long in <i>C. polyantha</i>), erect to spreading	23
22	Perigynia white-hispid, with beak c. 1 mm long with 2-fid or split apex; spikes clustered at nodes or rarely solitary at lower nodes	<i>Carex brunnea</i>
	Perigynia minutely papillose; beak to 0.3 mm long with truncate or obliquely truncate apex; spikes solitary at nodes	<i>Carex loboilepis</i>
23	Leaves 4–9 mm wide; spikes mostly 3–17 cm long; perigynia nerveless or with few rather faint nerves	<i>Carex polyantha</i> ACT, ST
	Leaves 2–4 mm wide; spikes 0.5–6 cm long; perigynia distinctly several- to numerous-nerved	24
24	Uppermost spike male; inflorescence 7–18 cm long; mouth of perigynium notched to obliquely truncate, pallid, occasionally minutely hispid, 0.2–0.3 mm diam	<i>Carex gaudichaudiana</i> ACT, ST
	Uppermost spike gynandrous or occasionally male; inflorescence 2–8 cm long; mouth of perigynium truncate, blackish, smooth, c. 0.15 mm diam	<i>Carex hypandra</i> ST
25	All spikes androgynous (male portion often not conspicuous), or upper spike(s) androgynous or male and lower spikes androgynous or occasionally female	26
	All spikes gynaecandrous (male portion often not conspicuous) or lower wholly female	35
26	Spikes very numerous, forming a long narrow spike-like panicle 6–30 cm long,	27

	with appressed secondary branches to 4 cm long; leaves often obviously septate-nodulose; culms 2–4 mm in diameter	
	Spikes 2–15 in an inflorescence, forming a short clustered panicle 0.8–3 cm long (or an interrupted spike-like panicle in <i>C. divulsa</i>), without secondary branches; leaves not septate-nodulose; culms to 2 mm in diameter	30
27	Perigynia glabrous, margins not winged	<i>Carex declinata</i>
	Perigynia hispid on slightly winged margins at least near apex	28
28	Culms trigonous to triquetrous at least above; glumes uniformly whitish, or yellow-brown without or with very narrow whitish or hyaline margins above	29
	Culms terete; female glumes orange-brown with broad white or hyaline margins above	<i>Carex tereticaulis</i> ACT, ST
29	Perigynia with thickened truncate base, dark yellow-brown at maturity; inflorescence often more than 12 cm long (4–45 cm); plants forming large tussocks	<i>Carex appressa</i> ACT, ST
	Perigynia without thickened truncate base, blackish at maturity; inflorescence 3–12 cm long; culms in slender tufts spread along long rhizome	<i>Carex incomitata</i> ACT, ST
30	Inflorescence 6–18 cm long, narrow, with upper spikes contiguous but lower spikes 2–6 cm apart; rhizome short; culms tufted	<i>Carex divulsa</i>
	Inflorescence 1–8 cm long, pyramidal or ovoid, with spikes mostly close-packed; rhizome long; culms usually solitary and spread out along rhizome	31
31	Inflorescence 2–8 cm long; perigynia winged	32
	Inflorescence 1–3 cm long; perigynia not winged	33
32	Female glumes 3.5–4.5 mm long; leaves more or less straight throughout their length	<i>Carex disticha</i> ACT, ST
	Female glumes 5–6 mm long; leaves curly towards apex	<i>Carex arenaria</i>
33	Perigynia 5.5–7 mm long, with obtuse base, abaxial face with 8–10 strong nerves; spikes 1–3; culms 80–160 cm long, relatively soft and flexible (usually supported by surrounding plants)	<i>Carex klaphakei</i>
	Perigynia 3–4 mm long, with more or less narrow stipe-like base, faces nerveless or with a few faint nerves; spikes 3–12; culms 8–80 cm long, stiffly erect	34
34	Perigynia 1.8–3.2 mm in diameter, with acute base; leaves 1.5–3 mm wide; rhizome short	<i>Carex divisa</i>
	Perigynia 1.0–1.2 mm in diameter, with narrow base; leaves to 1.7 mm wide; rhizome long	<i>Carex chlorantha</i> ACT, ST
35	Lowest involucral bract much shorter than inflorescence, glume-like or leaf-like	36
	Lowest involucral bract exceeding (usually by far) the whole inflorescence, leaf-like	38
36	Perigynia winged on upper margins	<i>Carex leporina</i>
	Perigynia not winged on margins	37
37	Perigynia strongly reflexed at maturity, with smooth surface; beak about as long as the body of the perigynium, 2-fid or notched with teeth 0.25–0.5 mm long	<i>Carex echinata</i> ST
	Perigynia spreading at maturity, minutely hispid and colliculate near apex; beak much shorter than the body of the perigynium, truncate or shortly split abaxially	<i>Carex canescens</i> ST

38	Glumes orange-brown or pale red-brown, with more or less broad whitish or hyaline margins; perigynia never transversely wrinkled	39
	Glumes whitish to pale yellow-brown with green midrib; perigynia often transversely wrinkled at maturity	40
39	Inflorescence longer in outline than wide; culms 25–40 cm long; leaves c. 1 mm wide; perigynia 2.5–3 mm long, 1–1.4 mm in diameter	<i>Carex raleighii</i> ST
	Inflorescence broader in outline than long (or about the same length and breadth); culms 4–20(–35) cm long; leaves 1–2.5 mm wide; perigynia 3.2–4.5 mm long, 1.5–2 mm in diameter	<i>Carex hebes</i> ACT, ST
40	Perigynia with beak 0.3–1.1 mm long	<i>Carex inversa</i> ACT, ST
	Perigynia with beak c. 2 mm long	<i>Carex lophocarpa</i>
41	Female glumes persistent; perigynia hispid (formerly <i>Uncinia sinclairii</i>)	<i>Carex parvispica</i> ST
	Female glumes deciduous; perigynia glabrous	42
42	Leaves thickly U-shaped to crescent-shaped in cross section, tough (formerly <i>Uncinia sulcata</i>)	<i>Carex austrosulcata</i> ST
	Leaves nearly flat or broadly V-shaped or filiform, more or less soft	43
43	Inflorescence 3–7 cm long; spikelets more or less spread out along axis (basal internodes 5–12 mm long); fibrous bases to more or less large tussocks	44
	Inflorescence 0.7–3 cm long; spikelets more or less crowded on axis (may be more spread out towards base but internodes no more than c. 4 mm long); small tussocks (bases not fibrous) or culms spread out along rhizomes	45
44	Leaves 1.5–2.2 mm wide; nut 2.5–3 mm long, 0.8–1.3 mm diam.; hooked rachilla protruding from perigynium for 4–6.5 mm (formerly <i>Uncinia nemoralis</i>)	<i>Carex nemoralis</i>
	Leaves 0.5–1.0 mm wide; nut c. 2.2 mm long, c. 0.7 mm diam.; hooked rachilla protruding from perigynium for 3.5–4 mm (formerly <i>Uncinia debilior</i>)	<i>Carex debilior</i>
45	Leaves 2–3.5 mm wide; culms usually scabrous below inflorescence, 0.8–1.1 mm diam. (formerly <i>Uncinia compacta</i>)	<i>Carex austrocompacta</i> ST
	Leaves 0.5–1.8 mm wide; culms mostly smooth below inflorescence, 0.2–0.7 mm diam.	46
46	Stamens 3; inflorescence 1.5–2.5(–3) cm long; perigynia 1.5–1.8 mm diam.; leaves shorter than culms, 0.8–1.8 mm wide; culms 0.3–0.7 mm diam. (formerly <i>Uncinia flaccida</i>)	<i>Carex austroflaccida</i> ACT, ST
	Stamens 2; inflorescence 0.7–1.5 cm long; perigynia 0.8–1 mm diam.; leaves exceeding or equalling culms, 0.5–1 mm wide; culms 0.2–0.4 mm diam. (formerly <i>Uncinia tenella</i>)	<i>Carex austrotenella</i> ST

Carex appressa, Tall Sedge

Description: Rhizome short; shoots densely tufted. Culms erect, triquetrous above, may be subterete below, scabrous above, 40–120 cm long, 2–4 mm diam. Leaves shorter than to equalling culms; blade 2–12 mm wide; sheath grey-brown; ligule rounded to truncate. Inflorescence erect, narrow, 4–45 cm long, compound, with numerous short spikes solitary at nodes or on appressed spike-like secondary branches to 3 cm long; lowest involucre bract very short. Spikes sessile, contiguous, erect to spreading at maturity, to 1 cm long; all spikes androgynous. Glumes acute, occasionally shortly mucronate, yellow-brown, occasionally with white margins near apex; female glumes 2–2.5 mm long. Perigynia (utricles) ovoid,

with thickened truncate base, several-nerved, 2-3 mm long, 1.0-1.7 mm diam., hispid on narrowly winged or ribbed margins, greenish brown to dark yellow-brown; beak c. 1 mm long, with apex 2-fid. Style 2-fid. Nut ovoid, lenticular in cross section, yellow-brown.

Flowering: spring-summer.

Distribution and occurrence: All regions except NFWP and SFWP; all States except N.T.; N.G., N.Z., N.Cal. Widespread in damp places. NSW subdivisions: NC, CC, SC, NT, CT, ST, NWS, CWS, SWS, NWP, SWP. Other Australian states: Qld Vic. Tas. W.A. S.A.

Leaves are often prominently septate-nodulose, as in the related *C. declinata*. The beak of the perigynium (utricle) is hispid on the margins and shorter than in *C. declinata*. There are probably several taxa currently included under this name. This species grows with *C. tereticaulis* in some places, and they hybridise there.

Carex archeri, Archer's Sedge

Description: Rhizome long; shoots +/- loosely tufted. Culms erect, slender, terete, smooth, 3-25 cm long, c. 0.5 mm diam. Leaves usually shorter than culms; blade to 0.5 mm wide; sheath dark yellow-brown; ligule truncate to rounded. Inflorescence erect, c. 0.5 cm long, with 1 few-flowered spike; lowest involucrel bract exceeding inflorescence. Spike androgynous (very short male portion). Glumes obtuse to acute, red-brown with narrow hyaline margins; female glumes 2.5-4 mm long. Perigynia (utricles) ellipsoid to ovoid, +/- falcate, nerveless or faintly nerved, 3-5 mm long, c. 1 mm diam., glabrous or minutely hispid on upper margins, red-brown to dark red-brown; beak 1.3-2.5 mm long, with apex notched. Style 3-fid. Nut narrow-ellipsoid, trigonous in cross section, pale yellow-brown. Often only 3 female spikelets in spike.

Flowering: summer.

Distribution and occurrence: Mt Kosciusko area. Also in Vic and Tas. Alpine areas. NSW subdivisions: ST. Other Australian states: Vic. Tas.

Threatened species: NSW TSCA: Endangered

Carex austrocompacta (formerly *Uncinia compacta*)

Synonyms: *Uncinia compacta* R.Br.

Description: Loosely tufted perennial with slender rhizome. Culms trigonous, usually scabrous above, 8-35 cm high, 0.8-1.1 mm diam. Leaves quite thick and stiff, often broadly keeled, shorter than or equalling culms, 2-3.5 mm wide. Inflorescence ± dense, 0.8-2.5 cm long including male portion 6-11 mm long. Female glumes deciduous, acute, faintly few-nerved, 4-5 mm long, straw-coloured to yellow-brown, often tinged red-brown on sides, membranous, with narrow hyaline margins. Stamens 3. Perigynia (utricles) obliquely spreading at maturity, trigonous, ovoid to ellipsoid, tapering to base and apex, 4.5-5 mm long, 1.8-2 mm diam., smooth and shining, shorter than or equalling glumes. Nut obovoid, c. 3 mm long, c. 2 mm diam., dark brown, glistening, minutely pusticulate.

Flowering: summer.

Distribution and occurrence: Grows in the Kosciusko area. Also in Vic and Tas. NSW subdivisions: ST. Other Australian states: Vic. Tas.

Carex austroflaccida (formerly *Uncinia flaccida*)

Synonyms: *Uncinia flaccida* S.T.Blake

Description: Tufted slender perennial, with slender, short rhizome. Culms very slender, trigonous, usually smooth, 15-40 cm high, 0.3-0.7 mm diam. Leaves flat or folded, usually shorter than culms, 0.8-1.8 mm wide. Inflorescence ± loose, 1.5-2.5(-3) cm long including male portion 6-11 mm long. Female glumes deciduous, acute, faintly several-nerved, 4-5 mm long, straw-coloured, membranous. Perigynia (utricles) obliquely spreading at maturity, trigonous, ovoid to ellipsoid, gradually narrowed to base, about as long as glumes, 4.5-5.5 mm long, 1.5-1.8 mm diam., smooth and shining, yellow-brown. Stamens 3. Nut ellipsoid, c. 3 mm long, c. 1.5 mm diam., dark grey-brown, glistening, rather smooth, minutely isodiametrically reticulate.

Flowering: summer.

Distribution and occurrence: Grows in alpine areas, commonly beside rocks. Also in Vic and Tas. NSW subdivisions: ST. Other Australian states: Vic. Tas.

***Carex austrosulcata* Small Hook-sedge (formerly *Uncinia sulcata*)**

Synonyms: *Uncinia sulcata* K.L.Wilson, *Uncinia* sp. A *sensu* Jacobs & Pickard (1981)

Description: Tufted perennial with short rhizome. Culms trigonous, stiff, smooth, 10–15 cm high, 1–1.3 mm diam. Leaves stiff, erect, thickly U-shaped to crescent-shaped, often longer than culms, 1–1.5 mm wide. Inflorescence ± dense, 1.5–3 cm long including male portion 5–14 mm long. Female glumes deciduous, acute, 5.2–6.7 mm long, papery, straw-coloured. Perigynia (utricles) obliquely spreading at maturity, trigonous, ovoid to ellipsoid, gradually narrowing to base, acuminate to oblique mouth, shorter than glumes, 4.5–5.5 mm long, 1.8–2.1 mm diam., smooth, yellow-brown, shining. Nut ellipsoid, c. 3 mm long, c. 2 mm diam., dark brown, glistening, minutely pusticulate.

Flowering: summer.

Distribution and occurrence: Kosciusko area; also adjoining high altitude areas in Victoria. Grows in alpine grassland. NSW subdivisions: ST. Other Australian states: Vic.

***Carex austrotanella* (formerly *Uncinia tenella*)**

Synonyms: *Uncinia tenella* R.Br.

Description: Small, densely tufted perennial, with very slender rhizome. Culms subterete, compressed, smooth, filiform, to 15 cm high, 0.2–0.4 mm diam. Leaves filiform, about as long as culms, 0.5–1 mm diam. Inflorescence ± loose, with 6–12 female spikelets and 3 or 4 male spikelets at apex, 0.7–1.5 cm long, with male portion 2–4 mm long. Female glumes deciduous, acute, with a ± prominent midrib, otherwise nerveless, 3.5–4 mm long, whitish to pale brown, membranous. Perigynia (utricles) obliquely spreading, trigonous, narrow-ellipsoid, about as long as glume, 3.5–4 mm long, 0.8–1 mm diam., smooth, shining, yellow-brown. Stamens 2. Style 3-fid. Nut trigonous, narrow-ellipsoid, 2–2.7 mm long, 0.8–1 mm diam., yellow-brown to grey-brown, glistening, minutely pusticulate.

Flowering: in summer.

Distribution and occurrence: South from Point Lookout on higher tablelands (not alpine). Grows mostly in Nothofagus rainforest. NSW subdivisions: NT, CT, ST. Other Australian states: Vic. Tas.

Carex bichenoviana

Description: Rhizome long; shoots loosely tufted. Culms erect, trigonous, smooth, 20–40 cm long, 1.0–1.8 mm diam. Leaves exceeding culms, to 60 cm long; blade 2–8 mm wide; sheath dark yellow-brown, occasionally red-tinged; ligule obtuse to truncate or retuse. Inflorescence erect, narrow, often longer than the culm, 6–30 cm long, with few to numerous spikes clustered or solitary at nodes; lowest involucrel bracts exceeding inflorescence. Spikes sessile, erect at maturity, 1–5 cm long; upper 3–15 spikes male, +/- contiguous; lowest 1–7 spikes female or androgynous, +/- distant. Glumes obtuse to retuse or acute, mostly shortly mucronate, dark to very dark red-brown, with whitish margins near apex; female glumes 3–4 mm long. Perigynia (utricles) broad-ovoid to ellipsoid, not nerved or with few, more or less impressed nerves, 4–5 mm long, 2.0–2.5 mm diam., glabrous, thick, corky, inflated, yellow-brown, usually tinged dark red-brown; beak c. 1 mm long, with apex 2-fid. Style 3-fid. Nut broad-ellipsoid, trigonous in cross section, yellow-brown to red-brown.

Flowering: spring-summer.

Distribution and occurrence: South from Glen Innes on the tablelands, extending west to Condobolin. Grows in seasonally moist places such as stream banks, on sandy to silty soils. NSW subdivisions: NT, CT, ST, NWS, CWS, SWS, SWP. Other Australian states: Vic. Tas. S.A.

nland counterpart of *C. pumila*, from which it differs in the rather regular antrorse prickles on the leaf margins (*C. pumila* has irregularly blunt prickles on the margins of leaves and bracts), the darker red-brown glumes, which are mucronate, more obtuse and often erose. In specimens from the tablelands, the inflorescence is smaller and leaves are curly toward the apex, thickened and narrow.

Carex blakei

Description: Rhizome long; shoots +/- densely tufted. Culms mostly enclosed in leaf sheaths, much shorter than inflorescence, erect, trigonous, smooth or scabrous, 2–10 cm long, 1–2 mm diam. Leaves usually shorter than inflorescence; blade 4–6 mm wide; sheath yellow-brown to red-brown; ligule truncate or rounded. Inflorescence erect, narrow, 8–35 cm long, with 3–6 spikes solitary at nodes, with very long

internode between the lowest and next node; involucre bracts of upper nodes exceeding inflorescence but lowest bract shorter than inflorescence. Spikes sessile, upper contiguous, lower very distant, spreading to erect at maturity, 1-2.5 cm long; uppermost spike (rarely 2 or 3) male; lower spikes female. Glumes obtuse to retuse, erose, shortly mucronate, pale brown tinged red-brown, to evenly dark red-brown; female glumes c. 3 mm long. Perigynia (utricles) ellipsoid, faintly numerous-nerved, 3.3-4.0 mm long, 1.4-2 mm diam., often minutely hispid on shoulders and beak, pale brown, red-dotted.; beak 0.5-0.8 mm long, with apex 2-fid to notched. Style 3-fid. Nut obovoid, trigonous in cross section, dark yellow-brown.

Flowering: summer.

Distribution and occurrence: Tablelands south from Brindabella Range into Victoria. Grows in or near swamps, especially sphagnum bog areas at high elevation. NSW subdivisions: ST. Other Australian states: Vic.

Carex breviculmis

Description: Rhizome short; shoots densely tufted. Culms erect, terete to trigonous, smooth or scabrous, 3-10(-20) cm long, c. 0.7 mm diam. Leaves exceeding culms, to 35 cm long; blade 2-3 mm wide; sheath yellow-brown; ligule obtuse to truncate. Inflorescence erect, narrow, c. 4 cm long, with 2-5 spikes solitary at nodes; lowest involucre bract exceeding inflorescence. Spikes sessile, contiguous, erect at maturity, 1.2-1.8 cm long; uppermost spike male; lower spikes female. Glumes obtuse to acuminate, often long-mucronate (mucro to 2 mm long), whitish to pale brown with green midrib; female glumes 2.5-4.5 mm long. Perigynia (utricles) ellipsoid, prominently numerous-nerved, 2-3.3 mm long, 1.0-1.5 mm diam., hispid, pale green to yellow-brown; beak c. 0.5 mm long, with apex notched. Style 3-fid. Nut obovoid to ellipsoid, trigonous in cross section, pale yellow, with enlarged disk-like junction with persistent style base.

Flowering: spring-summer.

Distribution and occurrence: All Coastal, Tablelands and Western Slopes regions, and LHI; widespread in eastern Australia; also in New Zealand, Malesia, Asia. Grows in grassland and open woodland (rather dry sites) especially on tablelands. NSW subdivisions: NC, CC, SC, NT, CT, ST, NWS, CWS, SWS, LHI. Other Australian states: Qld Vic. Tas.

**Carex buxbaumii*

Description: Loosely tufted; rhizome short. Culms triquetrous, smooth below, scabrous above, 25-70 cm long, c. 1.3 mm diam. Leaves shorter than to scarcely exceeding culms, 1.5-3 mm wide. Inflorescence 4-10 cm long, with 2-5 spikes solitary at nodes; lowest involucre bract shorter than to exceeding inflorescence. Spikes sessile, more or less contiguous, spreading slightly at maturity, 0.7-2.5 cm long; uppermost spike gynaeandrous; lower spikes female. Male and female bracts ('glumes') acuminate to acute, often long-mucronate (mucro to 1.5 mm long), red-brown to dark red-brown with paler midrib; female bracts 3-6 mm long. Perigynia (utricles) ovoid to narrow-ellipsoid, nerveless or indistinctly nerved, 3.0-4.5 mm long, c. 2 mm diam., minutely papillose, pale green to brown; beak a minute notch to 0.2 mm long. Style 3-fid. Nut obovate to elliptical in outline.

Distribution and occurrence: Naturalised in Cathedral Rock Nat. Park (NTablelands) and Scabby Range Nature Reserve (ST); also sparingly naturalised in NE Vic and Tas. Native of Europe. Swampy flats at higher altitdue. NSW subdivisions: *NT, *ST. Other Australian states: *Vic. *Tas.

Carex canescens

Synonyms: *Carex curta* Gooden.

Description: Rhizome short; shoots loosely tufted. Culms erect, trigonous, usually scabrous above, 5-30 (rarely to 50) cm long, 0.7-1.3 mm diam. Leaves shorter than to equalling culms; blade 1.5-4 mm wide; sheath pale brown; ligule obtuse to rounded. Inflorescence small, erect, 1-3 (rarely to 5) cm long, with 3-8 spikes solitary at nodes; lowest involucre bract shorter than inflorescence. Spikes sessile, +/- contiguous, erect to spreading at maturity; spikes gynaeandrous, 0.5-0.9 cm long (uppermost spike occasionally with additional female flowers at the base). Glumes obtuse to acuminate, occasionally shortly mucronate, hyaline, often tinged yellowish, with green or pale brown midrib (often very faint); female glumes c. 2 mm long. Perigynia (utricles) ovoid to ellipsoid, strongly several-nerved, 2-3mm long, 1.0-1.5mm diam, minutely hispid and colliculate on shoulders and beak, yellow to yellow-brown; beak 0.2-0.5mm long

with apex notched or shortly split abaxially. Style 2-fid. Nut ovoid to ellipsoid, lenticular in cross section, pale yellow-brown.

Flowering: summer.

Distribution and occurrence: Grows in damp alpine and subalpine flats; in the Mt Kosciusko area. NSW subdivisions: ST, SWS. Other Australian states: Vic. Tas.

Carex capillacea

Description: Rhizome short; shoots densely tufted. Culms erect, slender, terete to trigonous, smooth, 3-15 (rarely to 30) cm long, c. 0.5 mm diam. Leaves usually shorter than culms; blade c. 0.5 mm wide; sheath green to pale brown; ligule obtuse. Inflorescence erect, 0.5-1 cm long, with 1 spike; lowest involucre shorter than inflorescence. Spike androgynous, with male portion as long as female. Glumes obtuse, orange-brown; female glumes 1.3-2 mm long. Perigynia (utricles) ovoid, strongly nerved, 1.8-2.4 mm long, c. 1 mm diam., glabrous, pale brown, sometimes red-dotted; beak 0.2-0.5 mm long, with apex notched. Anthers c. 0.8 mm long excluding appendage c. 0.1 mm long. Style 3-fid. Nut ovoid, trigonous in cross section, pale brown, occasionally red-dotted.

Flowering: summer.

Distribution and occurrence: Point Lookout area (Northern Tablelands), and south from the Brindabella Range (Southern Tablelands). Grows in high altitude to alpine swamps, commonly with *Sphagnum*. NSW subdivisions: NT, ST. Other Australian states: Vic.

The spikes of this species have a longer male portion than *C. cephalotes* or *C. archeri*.

Carex cephalotes, Wire-head Sedge

Description: Rhizome short; shoots densely tufted. Culms erect, terete, smooth, 5-20 (rarely to 30) cm long, 0.5-1 mm diam. Leaves usually shorter than culms; blade 0.5-1.2 mm wide; sheath yellow-brown; ligule rounded to truncate. Inflorescence erect, 0.5-1.2 cm long, with 1 spike; lowest involucre shorter than inflorescence. Spike androgynous (very short male portion). Male glumes obtuse, +/- hooded, yellow-brown; female glumes obtuse to acute, yellow-brown tinged darker brown, with hyaline margins, 2.5-3 mm long. Perigynia (utricles) ellipsoid to ovoid, nerveless or irregularly few-nerved, 2.5-4 mm long, 1.0-1.4 mm diam., glabrous, greenish brown, orange-brown near apex; beak c. 0.5 mm long, with apex split, white. Style 2-fid, rarely 3-fid. Nut ellipsoid to ovoid, lenticular or rarely trigonous in cross section, pale yellow-brown.

Flowering: summer.

Distribution and occurrence: Grows in alpine herbfields, possibly confined to the Kosciusko area. NSW subdivisions: ST. Other Australian states: Vic.

Both 2-fid and 3-fid styles may be found in the one inflorescence.

Carex chlorantha

Description: Rhizome long; shoots loosely tufted. Culms erect, trigonous, smooth below, scabrous above, 10-35 cm long, to 1 mm diam. Leaves usually shorter than culms; blade 0.7-1.7 mm wide; sheath pale brown; ligule rounded or obtuse. Inflorescence erect, narrow, 1.5-2.5 cm long, with 6-12 spikes solitary at nodes; lowest involucre shorter than inflorescence. Spikes sessile, contiguous, appressed or slightly spreading at maturity, to 0.5 cm long; uppermost spike androgynous; lower spikes female or androgynous. Glumes acute, dark yellow-brown to red-brown, with broad whitish or hyaline margins; female glumes 3.3-4 mm long. Perigynia (utricles) ovoid, nerveless, 3.0-4.0 mm long, 1.0-1.2 mm diam., shortly hispid on angles, green to red-brown; short beak c. 1 mm long, with apex split abaxially or 2-fid. Style 2-fid. Nut ovoid, lenticular in cross section, yellow-brown.

Flowering: spring-summer.

Distribution and occurrence: Widespread but not common; south from Glen Innes on the tablelands, extending east to near Dorrigo, the eastern edge of SWS, and possibly in Sydney region (old records only). Grows in wet areas in grassland. NSW subdivisions: NC, ?CC, NT, ST, SWS. Other Australian states: Vic. Tas.

**Carex disticha*

Description: Rhizomatous perennial, with culms spread out along relatively stout rhizome. Culms 20–100 cm tall, triquetrous, scabrous on the angles. Leaves shorter than culms, blades 2–4 mm wide, mid-green; ligule obvious, broadly acute, 3–7 mm long; sheaths green to pale brown. Inflorescence dense, 2–7 cm long, head-like with short lateral branches more or less upright and appressed to main axis; involucre bracts glume-like except for lowest, which is leaf-like, shorter than the inflorescence; spikes numerous, short, closely packed, more or less sessile; terminal spike female or with a few male spikelets at apex, intermediate spikes male, lower spikes female or gynaeandrous; male glumes 4–5 mm long, acute, pale red-brown with obvious hyaline margins; female glumes 3.5–4.5 mm long, acute, pale red-brown with obvious hyaline margins. Perigynia (utricles) ovate in outline, pale red-brown at maturity, with lateral scabrous wings and several more or less prominent nerves on both faces, 4–5 mm long; beak c. 1 mm long, split for c. 0.1 mm. Style 2-fid. Nut ovate in outline, lenticular in cross-section, shortly stalked, mid-brown.

Distribution and occurrence: Occasionally naturalised on the South Coast (Batemans Bay area and Tantawangalo/Bemboka area) and Southern Tablelands (area including SE Forests National Park Tantawangalo Section); also in Vic. Native to Europe. First collected in NSW in 2002 from the Tantawangalo area and in 2004 from near Nimmitabel. It could be more widely naturalised but overlooked since it may be confused with the native species *Carex appressa* (which grows with it but forms big tussocks without the extended rhizomes), *C. chlorantha* (which is rhizomatous but much smaller) or *C. gaudichaudiana*. In and around swamps. NSW subdivisions: *SC, *ST. Other Australian states: *Vic.

Carex echinata, Star Sedge, Star Sedge

Description: Rhizome very short; shoots densely tufted. Culms erect, trigonous to subterete, smooth, 4–30 (occasionally to 70) cm long, c. 0.5 mm diam. Leaves shorter than to exceeding culms; blade 0.5–1.5 mm wide; sheath pale brown; ligule rounded. Inflorescence small, narrow, erect, 1–3 cm long, with 3–5 spikes solitary at nodes; lowest involucre bract very short. Spikes sessile, +/- distant, spreading widely at maturity, 0.3–0.7 cm long; uppermost spike gynaeandrous; lower spikes female. Glumes acute to obtuse, pale red-brown with green midrib and broad hyaline margins; female glumes 1.5–2.5 mm long. Perigynia (utricles) ovoid, +/- falcate, with truncate thickened base, faintly nerved, 2.5–3.5 mm long, 1.0–1.3 mm diam., hispid on upper margins, yellow-brown; prominent beak c. 1 mm long, with apex 2-fid or notched. Anthers c. 0.8 mm long excluding appendage c. 0.1 mm long. Style 2-fid. Nut ovoid to broad-ellipsoid, lenticular in cross section, yellow-brown.

Flowering: summer.

Distribution and occurrence: Near Ebor (NT), Clarence (CT), and in the Mt Kosciusko area (ST). Grows in high altitude areas to alpine areas. NSW subdivisions: NT, CT, ST. Other Australian states: Vic. Mature inflorescences have utricles spreading, forming star-shaped clusters.

Carex fascicularis, Tassel Sedge

Description: Rhizome short; shoots densely tufted. Culms erect, trigonous, smooth below, scabrous above, to 100 cm long, 2.5–3.5 mm diam. Leaves mostly equalling culms; blade 6–11 mm wide; sheath yellow-brown; ligule acute. Leaves septate-nodulose. Inflorescence spreading, 6–25 cm long, with 3–6 spikes solitary at nodes; lowest involucre bracts exceeding inflorescence. Spikes long-pedicellate, contiguous, drooping at maturity, 2.5–7 cm long; uppermost spike male; lower spikes female or occasionally with a few male flowers at the apex. Glumes acute, with scabrid mucro to 4 mm long, whitish to pale brown; female glumes 3–6 mm long. Perigynia (utricles) ovoid to ellipsoid, stipitate, strongly numerous-nerved, 5–7.5 mm long, 1.3–2 mm diam., glabrous, dark brown; beak 2–3 mm long, with apex deeply split. Style 3-fid. Nut obovoid, trigonous in cross section, yellow-brown.

Flowering: spring-summer.

Distribution and occurrence: Grows in swampy areas; widespread on coast and tablelands. NSW subdivisions: NC, CC, SC, NT, CT, ST, NWS, CWS, SWS. Other Australian states: Qld Vic. Tas. W.A. S.A.

Leaves septate-nodulose.

Carex gaudichaudiana

Description: Rhizome long; shoots +/- loosely tufted. Culms erect, triquetrous, scabrous, 10-90 cm long, c. 1 mm diam. Leaves exceeding culms; blade 2-4 mm wide; sheath pale yellow-brown to orange-brown; ligule acute. Inflorescence erect, 7-18 cm long, with 3-8 spikes solitary at nodes; lowest involucral bract shorter than inflorescence. Spikes sessile, distant, erect to spreading at maturity; upper 1 or 2 spikes male, 2.5-6 cm long; lower spikes female or often male at apex or base, 1.5-4.5 cm long. Glumes often shortly mucronate, very dark red-brown with paler midrib; male glumes obtuse; female glumes obtuse to acute, 2.8-3.5 mm long. Perigynia (utricles) ovoid to ellipsoid, numerous-nerved, 2.7-4.5 mm long, 1.5-2.0 mm diam. Minutely papillose at least near the apex, pale green to brown, often red-dotted; short beak c 0.3mm long, with apex notched to truncate and occasionally minutely hispid. Style 2-fid, rarely 3-fid in some flowers in an inflorescence. Nut globose to obovoid, lenticular in cross section, dark yellow-brown.

Flowering: spring-summer.

Distribution and occurrence: Widespread on coast and tablelands, only on eastern edge of NWS and SWS. One of our more widespread species: in eastern Australia, New Zealand and the highlands of New Guinea. Grows in swamps and creek banks, from low altitude to alpine areas. NSW subdivisions: NC, CC, SC, NT, CT, ST, NWS, SWS. Other Australian states: Qld Vic. Tas. S.A.

Uppermost male spikes usually much longer than the lower spikes.

Carex hebes

Description: Rhizome short; shoots loosely tufted. Culms erect, trigonous to subterete, occasionally scabrous above, 4-20 (rarely to 35) cm long, 0.7-1 mm diam. Leaves usually shorter than culms; blade 1-2.5 mm wide; sheath pale brown; ligule rounded. Inflorescence spreading, 0.5-1.2 cm long, with 2-5 spikes solitary at nodes; lowest involucral bract exceeding inflorescence. Spikes sessile, contiguous, spreading at maturity, 0.5-1.1 cm long; all spikes gynaeandrous. Glumes acute to obtuse, occasionally shortly mucronate, orange-brown, with usually broad white or hyaline margins; female glumes c. 3.5 mm long. Perigynia (utricles) ovoid to ellipsoid, weakly several-nerved, 3.2-4.5 mm long, 1.5-2 mm diam., minutely hispid on slightly winged shoulders and beak, green to pale brown; beak 0.3-0.8mm long, with apex shortly split or 2-fid. Style 2-fid. Nut ellipsoid to obovoid, lenticular in cross section, yellow-brown.

Flowering: summer.

Distribution and occurrence: South from Brindabella Range. Also in high altitude areas in Vic. Grows in alpine and subalpine heath and grassland (drier sites). NSW subdivisions: ST. Other Australian states: Vic.

This is very close to *C. raleighii*. *C. hebes* is generally bigger in its parts than *C. raleighii*, except that *C. raleighii* is often taller. The fruit inside the utricle is bigger in *C. hebes* and more or less truncate at the apex and obtuse at the base, whereas the fruit apex is more obtuse to broad-acute at the apex and more elongate at the base in *C. raleighii*. Fine details of the utricle also differ slightly: the wing on the neck of the utricle is slightly broader in *C. hebes*, and the base of the utricle is more truncate in *C. hebes*.

However, there is not a complete correlation of characters, and further study is needed to assess whether these are two distinct species or one species that varies according to habitat.

Carex hypandra, Alpine Fen-sedge

Description: Rhizome short; shoots densely tufted. Culms erect, trigonous, smooth below, scabrous above, 10-35 cm long, c. 1.5 mm diam. Leaves exceeding to equalling culms; blade 2-3.5 mm wide; sheath yellow-brown to black at very base; ligule acute to obtuse. Inflorescence erect, narrow, 2-8 cm long, with 4-6 spikes solitary at nodes; lowest involucral bract exceeding inflorescence. Spikes sessile, +/- contiguous, erect at maturity, 0.5-2 cm long; uppermost spike gynaeandrous or occasionally male; lower spikes female. Glumes obtuse to truncate, very dark brown to black; female glumes 2-3 mm long. Perigynia (utricles) broad-ellipsoid to ovoid, strongly several-nerved, 2.4-3.3 mm long, 1.4-2 mm diam., minutely papillose near apex, otherwise colliculate, yellow-green tinged red-brown; short beak to 0.3 mm long, with apex truncate. Anthers 1.3-2 mm long excluding appendage to 0.2 mm long. Style 2-fid. Nut broad-ellipsoid, lenticular in cross section, yellow-brown.

Flowering: summer.

Distribution and occurrence: Mt Kosciusko area. Grows in alpine swamps. NSW subdivisions: ST. Other Australian states: Vic. Tas.

Very close to *C. gaudichaudiana*, and grows near it at Mt Kosciusko, where they may hybridize. Differs from *C. gaudichaudiana* in its more congested inflorescence, with the uppermost spike usually gynaeandrous, and in the slightly shorter but relatively broad utricle with the mouth narrower, truncate, blackish and smooth (in *C. gaudichaudiana* notched to obliquely truncate, pallid and more or less minutely hispid).

Carex incomitata

Description: Rhizome short; shoots loosely tufted. Culms erect to spreading, +/- trigonous, scabrous at least near apex, 25-90 cm long, c. 2.5 mm diam. Leaves shorter than to equalling culms; blade 4-8 mm wide; sheath pale grey-brown; ligule obtuse. Inflorescence erect, narrow, 3-12 cm long, compound, with numerous short spikes solitary at nodes or on appressed, spike-like secondary branches to c. 1 cm long; lowest involucral bract very short. Spikes sessile, contiguous, appressed to erect at maturity, c. 0.5 cm long; all spikes androgynous. Glumes obtuse to truncate, erose, shortly mucronate, whitish with green midrib; female glumes 1.5-2.5 mm long. Perigynia (utricles) ellipsoid, slightly winged or ribbed on upper margins, strongly several-nerved, 1.8-3 mm long, c. 1.5 mm diam., slightly hispid on shoulders and beak, green to blackish; short beak c. 0.3 mm long, with apex notched. Anthers 1.2-1.8 mm long excluding appendage to 0.1 mm long. Style 2-fid. Nut obovoid to ellipsoid, lenticular in cross section, pale yellow-brown. Leaves are often prominently septate-nodulose as in the related *C. appressa*. Occurs in drier habitats than that species, from which it differs in the loosely tufted habit, the usually shorter inflorescence, the utricle not thickened at the base, and the leaves with denser, retrorse marginal prickles (except near the apex, where the prickles may be erect or antrorse; the prickles are regularly antrorse in *C. appressa*).

Flowering: spring-summer.

Distribution and occurrence: Scattered on tablelands, extending to SC ranges and the ranges of the Western Slopes. Grows in open slopes in grassy woodland and forest. NSW subdivisions: NC, SC, NT, CT, ST, NWS, CWS, SWS. Other Australian states: Vic.

Leaves are often prominently septate-nodulose as in the related *C. appressa*. Occurs in drier habitats than that species, from which it differs in the loosely tufted habit, the usually shorter inflorescence, the utricle not thickened at the base, and the leaves with denser, retrorse marginal prickles (except near the apex, where the prickles may be erect or antrorse; the prickles are regularly antrorse in *C. appressa*).

Carex inversa

Synonyms: *Carex inversa* var. major Boott *Carex inversa* R.Br. var. *inversa*

Description: Rhizome long; shoots +/- loosely tufted. Culms erect, terete, smooth, 10-50 cm long (rarely as short as 1 c. and enclosed by leaves), c. 1 mm diam. Leaves shorter than culms; blade 0.7-2 mm wide; sheath dark brown, persisting as fibrous remains; ligule obtuse to rounded. Inflorescence erect, 0.7-3 cm long, with 2-6 spikes solitary at nodes; lowest involucral bracts exceeding inflorescence. Spikes sessile, +/- contiguous, spreading to erect at maturity, to 1 (rarely to 1.5) cm long; all spikes gynaeandrous. Glumes acuminate to obtuse, mostly short- to long-mucronate, whitish to pale yellow-brown (rarely orange-brown) with green midrib; female glumes 2-3 (rarely to 5) mm long. Perigynia (utricles) broad-obovoid to ellipsoid, +/- strongly several-numerous-nerved, often transversely wrinkled between nerves, 2.2-4.5 mm long, 1.0-2.1 mm diam, densely minutely hispid on narrowly winged margins and beak, green to yellowish; beak 0.3-1.1 mm long, with apex split. Style 2-fid. Nut obovoid to broad-ellipsoid, lenticular in cross section, pale to dark yellow-brown.

Flowering: spring-summer.

Distribution and occurrence: West to about Cobar and Deniliquin. All regions except NFWP and SFWP; all States except N.T.; LHI, N.I., N.Z. Widespread in grassland and open forest (drier sites). NSW subdivisions: NC, CC, SC, NT, CT, ST, NWS, CWS, SWS, NWP, SWP, LHI. Other Australian states: Qld Vic. Tas. W.A. S.A.

A variable species with the perigynia varying in size, rugosity, thickness of nerves, relative length of beak.

Carex iynx

Description: Rhizome short; shoots densely tufted. Culms erect, terete to trigonous, smooth to scabrous, 20-100 cm long, c. 1.7 mm diam. Leaves exceeding culms; blade 3-6 mm wide; sheath dark yellow-brown, persisting as fibrous remains; ligule retuse. Inflorescence spreading to drooping, 20-45 cm long, usually longer than culm, with 1-5 spikes per node; lowest involucral bract shorter than inflorescence. Spikes long-pedicellate, distant, spreading to erect at maturity, 3-5.5 cm long; upper 1-4 spikes male; lower spikes female or gynaeandrous or androgynous or with female flowers above and below and male in the middle. Glumes retuse to obtuse, often erose, long-mucronate, pale yellow-brown; female glumes 4-8 mm long (including mucro to 1.5 mm long). Perigynia (utricles) ellipsoid, several-nerved (faintly so adaxially), 5-7 mm long c. 1.5 mm diam., hispid above, pale green to brown; beak 1.0-1.5 mm long, with apex 2-fid. Style 3-fid. Nut obovoid, trigonous in cross section, yellow-brown.

Flowering: spring-summer.

Distribution and occurrence: From Oberon (CT) south along the tablelands. Grows near watercourses. NSW subdivisions: SC, CT, ST. Other Australian states: Vic. Tas. ?S.A.

Carex jackiana

Description: Rhizome long; shoots + densely tufted, often forming a dense stand 1 m diam. Culms very short, hidden amongst leaves, + trigonous, + smooth, 1-6[-50] cm long, c. 0.7 mm diam. Leaves much exceeding culms, to 30 cm long; blade 2.5-5 mm wide; sheath yellow-brown; ligule obtuse to retuse. Inflorescence erect, narrow, 1-3 cm long, with 3-7 spikes solitary at nodes; lowest involucral bracts exceeding inflorescence. Spikes sessile, contiguous, erect at maturity, 0.8-1.5 cm long; uppermost spike male or rarely gynaeandrous; lower spikes female. Glumes acute to acuminate, often long-mucronate (mucro to 2 mm long), whitish to pale red-brown with green midrib; female glumes 2.5-5 mm long. Perigynia (utricles) ovoid, thickened at base, many-nerved, 4-6.5 mm long, 1.3-2 mm diam., glabrous, greenish to pale yellow-brown; beak 1-2 mm long, with apex split to notched. Anthers 1.5-2 mm long excluding appendage to 0.1 mm long. Style 3-fid. Nut obovoid to ellipsoid, trigonous in cross section, pale yellow-brown.

Flowering: summer.

Distribution and occurrence: Mt Kosciusko area. Grows in wet places in alpine and subalpine areas. NSW subdivisions: ST. Other Australian states: Vic.

Culms and inflorescences are shorter than in the (typical) trop. material.

Carex longebrachiata

Description: Rhizome short; shoots densely tufted. Culms erect, terete to trigonous, smooth below, scabrous above, 40-80 cm long, c. 1.3 mm diam. Leaves exceeding culms; blade 2-4 mm wide; sheath yellow-brown; ligule retuse. Inflorescence drooping, 40-90 cm long, usually longer than culm, with 1-8 spikes per node; lowest involucral bract shorter than inflorescence. Spikes long-pedicellate, drooping at maturity, distant, 2.5-5.5 cm long; uppermost spike usually gynaeandrous with long male portion, occasionally androgynaeandrous, rarely male; lower spikes gynaeandrous with short male portion, or female. Glumes acute to obtuse, shortly mucronate, yellow-brown to red-brown; female glumes 3.5-5.5 mm long. Perigynia (utricles) narrow-obovoid, prominently several-nerved abaxially (faint adaxially), 4.5-7 mm long, 1.5-1.8 mm diam., hispid above, pale brown; beak 1.5-2.5 mm long, with apex 2-fid or split. Style 3-fid. Nut obovoid, trigonous in cross section, yellow-brown.

Flowering: spring-summer.

Distribution and occurrence: Coastal areas south from Lismore, extending to NT and the upper Hunter Valley. Grows on lowlying flats and margins of rainforest. NSW subdivisions: NC, CC, SC, NT, CT, ST, NWS, CWS. Other Australian states: Vic.

Very close to *C. iynx* and possibly not distinct, but differs especially in the terminal spike being usually gynaeandrous, in the generally more slender spikes (3-5 mm diam. at maturity versus 5-8 mm diam. in *C. iynx*), and the usually narrower and shorter glumes (both in absolute terms and relative to perigynium length: extending no higher than the base of the beak of the perigynium). The leaf sheaths are paler yellow-brown and have less fibrous material remaining around them than in *C. iynx*. Leaves are rather stiffer and loosely inverted-W in cross section in *C. longebrachiata* (V-shaped in *C. iynx*).

****Carex parvispica* (formerly *Uncinia sinclairii*)**

Synonyms: *Uncinia sinclairii* Boott

Description: Tufted perennial with short rhizome. Culms subtrigonus, smooth, stiff, 5–15 cm long, 1.3–2 mm diam. Leaves flat, keeled, rather stiff, shorter than or equalling culms, 2–4 mm wide. Inflorescence dense, 1–2 cm long including inconspicuous male portion 5–8 mm long. Female glumes persistent, obtuse, the central nerves conspicuous, c. 5 mm long, papery, straw-coloured to golden brown. Perigynia (utricles) usually ± erect at maturity, plano-convex, ellipsoid to ovoid, slightly exceeding or equalling glumes, 5–6 mm long, 1.5–2 mm diam., pale brown-hispid above, yellow-brown. Nut ellipsoid, c. 3 mm long, c. 2 mm diam., dark brown, glistening, minutely pusticulate.

Flowering: summer.

Distribution and occurrence: Only near Mt Kosciusko, possibly introduced from N.Z. Grows in alpine grassland. NSW subdivisions: *ST

Carex polyantha

Description: Rhizome long; shoots densely tufted. Culms erect, trigonus, smooth below, scabrous above, 20–80 cm long, c. 2.5 mm diam. Leaves about as long as culms; blade 4–9 mm wide; sheath orange-brown; ligule acute to retuse. Inflorescence erect, 10–55 cm long, with 5–8 spikes solitary at nodes; lowest involucral bracts exceeding inflorescence. Spikes sessile, distant, erect to spreading at maturity, 2–17 cm long, upper 1–5 spikes male or occasionally androgynous; lower spikes female or androgynous. Glumes very narrow, acute to acuminate, dark red-brown with paler midrib; female glumes 2–3.5 mm long. Perigynia (utricles) obovoid to ovoid, nerveless or faintly nerved, 2–3 mm long, c. 1.5 mm diam., glabrous, occasionally minutely papillose at apex, rarely scattered hispid at apex, pale brown but densely red-dotted; short beak c. 0.3 mm long, with apex truncate or notched. Style 2-fid. Nut obovoid, lenticular in cross section, pale yellow.

Utricle body usually tapers more abruptly to the beak than in *C. gaudichaudiana* and *C. hypandra*.

Flowering: spring-summer.

Distribution and occurrence: On the coast and tablelands, only on the eastern edge of NWS (Warrabah N.P.). Grows in swamps and creek banks. NSW subdivisions: NC, CC, SC, NT, CT, ST, NWS. Other Australian states: Qld Vic.

Perigynium body usually tapers more abruptly to the beak than in *C. gaudichaudiana* and *C. hypandra*.

Carex pumila

Description: Rhizome very long; shoots loosely tufted. Culms erect, terete to trigonus, smooth, 5–20 cm long, c. 1 mm diam. Leaves exceeding culms, to 50 cm long; blade 2.5–6 mm wide; sheath yellow-brown; ligule rounded to truncate. Inflorescence erect, narrow, 5–10 cm long, with 4–7 spikes solitary at nodes; lowest involucral bracts exceeding inflorescence. Spikes sessile, erect at maturity; 1–4 upper spikes male, 1–4 cm long, +/- contiguous; lower spikes female, +/- distant, 1.5–2 cm long, more than twice the diam. of the male spikes. Glumes acute to obtuse, yellow-brown to red-brown with whitish margins near apex; female glumes 3.5–4 mm long. Perigynia (utricles) broad-ovoid, obscurely nerved, 4.5–8 mm long, 2.0–3.5 mm diam., glabrous, thick, corky, yellow-brown, occasionally tinged dark red-brown; beak c. 1 mm long, with apex 2-fid. Style 3-fid. Nut ovoid, trigonus in cross section, yellow-brown.

Flowering: spring-summer.

Distribution and occurrence: Grows on coastal sand dunes. NSW subdivisions: NC, CC, SC, ST, LHI. Other Australian states: Qld Vic. Tas. S.A.

Carex raleighii

Description: Slender, loosely tufted perennial; long, slender rhizome. Culms slender, weak, terete to trigonus, smooth, 25–40 cm long, 0.3–0.7 mm diam. Leaves shorter than to equalling culms, c. 1 mm wide. Inflorescence erect, 0.5–1 cm long, with 1–4 spikes solitary at nodes; lowest involucral bract exceeding inflorescence. Spikes sessile, contiguous, spreading to erect at maturity, to c. 1 cm long; all spikes androgynous. Male and female bracts ('glumes') acute, orange-brown with broad white to hyaline margins near apex; female bracts 3.5–4 mm long. Style 2-fid. Perigynia (utricles) 2.5–3.0 mm long, 1.0–1.4 mm diam., ovoid to ellipsoid, weakly several-nerved, slightly hispid on narrowly winged shoulders and beak, green to pale brown; beak 0.7–1 mm long, with apex split. Nut elliptical to obovate in outline.

Distribution and occurrence: Rare; Snowy Mountains and one record from lower altitude on the upper reaches of Tantawangalo Creek (in SE Forests National Park); also Vic and Tas. Scattered and inconspicuous on high altitude subalpine swampy flats. NSW subdivisions: ST. Other Australian states: Vic. Tas.

Threatened species: NSW BCA: Endangered

Very close to *C. hebes*, differing in having taller but more slender culms and leaves, with the inflorescence longer than broad and usually with fewer spikes and the utricles smaller with a longer, narrower beak. *C. hebes* is generally bigger in its parts than *C. raleighii* (except for height). The fruit inside the utricle is bigger in *C. hebes* and more or less truncate at the apex and obtuse at the base, whereas the fruit apex is more obtuse to broad-acute at the apex and more tapering to broad-acute at the base in *C. raleighii*. Fine details of the utricle also differ slightly: the wing on the neck of the utricle is slightly broader in *C. hebes*, and the base of the utricle is more truncate in *C. hebes*. However, there is not a complete correlation of characters, and further study is needed to assess whether these are two distinct species or one species that varies according to habitat. Note that the spikes are gynaeandrous, as in *C. hebes*, NOT androgynous as erroneously reported in *Telopea* 6(4): 573 (1996).

Carex tereticaulis

Description: Rhizome thick, long; shoots +/- densely tufted. Culms erect, terete to subtrigonal, glabrous, 40-120 cm long, 2-4 mm diam. Leaves reduced, much shorter than culms; blade to 20 cm long, 2-4 mm wide; sheath very dark yellow-brown; ligule acute to obtuse. Inflorescence erect, narrow, 1.5-6 (rarely to 10) cm long, compound with numerous short spikes clustered at nodes or on spike-like secondary branches to c. 1.5 cm long; lowest involucral bract very short. Spikes sessile, contiguous, erect at maturity, c. 0.5 cm long; all spikes androgynous. Glumes obtuse to acute, orange-brown with white or hyaline margins; female glumes 2.5-2.8 mm long. Perigynia (utricles) ellipsoid, rather thickened at base, strongly several-nerved, 2.2-4 mm long, 1.3-2.3 mm diam., hispid on upper winged to ribbed margins, pale brown tinged orange-brown to dark yellow-brown; short beak c. 0.7 mm long with apex 2-fid. Style 2-fid. Nut broad-ellipsoid to obovoid, lenticular in cross section, dark brown.

Flowering: spring-summer.

Distribution and occurrence: From Guyra (NT) south along the tablelands and west along the Murray River valley to the Barham area, with few old records from the Sydney region. Grows in low-lying, seasonally inundated habitats. NSW subdivisions: CC, NT, ST, SWS, SWP. Other Australian states: Vic. Tas. W.A. S.A.