## CYPERACEAE

**Description:** Perennial or annual herbs, often with a grass-like or rush-like habit, tufted or rhizomatous, sometimes stoloniferous, rarely tuber-producing. **Culms** (aerial stems) usually solid, rarely hollow between transverse septa, triquetrous to terete, occasionally 4- or 5-angular. **Leaves** only at base of the culm or also cauline, the outer basal ones often reduced to +/- open sheathing scales in continuance of those on the rhizome; inner leaves, as well as the cauline ones, embracing the culm with closed tubular sheaths; blade usually narrow and grass-like, occasionally reduced; **ligule** present (membranous or ciliate) or absent. **Inflorescence** simple or compound, variously umbel-like, panicle-like or head-like, or reduced to a single spikelet; subtended by one or more leaf-like or occasionally glume-like or culm-like involucral bracts, lowest ones often much exceeding inflorescence and resembling the leaves, the others gradually smaller, upper ones (and sometimes all) small and glume-like. **Spikelets** either solitary or clustered, terete or compressed, 1-many-flowered; rachilla sometimes winged. **Flowers** small and inconspicuous, bisexual, or unisexual and monoecious or very rarely dioecious, each usually solitary within a bract called a glume. **Glumes** arranged either distichously or spirally on the rachilla of the spikelet, one or more of the lower or upper ones often empty. **Perianth** reduced to hypogynous scales, bristles or hairs, very rarely subpetaloid or disk-like, often absent. **Stamens** 3 or fewer, very rarely more; filaments free; **anthers** basifixed, oblong or linear, 2-locular, dehiscing by longitudinal slits, the connective often produced in a small apical appendage, glabrous or hispidulous. **Ovary** superior, 1-locular with one erect ovule; **style** terminal, filiform or variously thickened at the base, +/- deeply divided into 2 or 3 (rarely more) branches, rarely simple. **Fruit** a small seed-like nut, that from a 2-lobed style usually +/- 2-sided and that from a 3-lobed style +/- 3-angular or terete.

**Distribution and occurrence:** World: c. 90 gen., >3500 spp; cosmop., mostly in damp or swampy places. Aust.: c. 45 gen., 650 spp., all States.

In **ACT – 16 genera**
*Baumea* (now classified as *Machaerina* in PlantNet Flora Online), *Bulboschoenus, Carex, Cyperus, Eleocharis, Ficinia, Fimbristylis, Gahnia, Isolepis, Lepidosperma, Lipocarpha, Oreobolus, Schoenoplectiella, Schoenoplectus, Schoenus, Scirpus,* (*Uncinia flaccida* is the only species in ACT and it is now classified as *Carex austroflaccida* in PlantNet Flora Online).

In **Southern Tablelands – 18 genera**
*Bolboscheonus, Carex, Carpha, Caustis, Cyperus, Eleocharis, Gahnia, Gymnoscheonus, Isolepis, Lepidosperma, Machaerina* (formerly *Baumea*), *Oreobolus, Ptilothrix, Schoenopectiella, Schoenoplectus, Schoenus, Scirpus, Tetraria* (the former *Uncinia* species are now classified variously in *Carex* according to PlantNet Flora Online).

**Key to Cyperaceae Species – taxa not yet included in identification key –** *Schoenoplectiella*

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| 1 | Spikelets with several–many flowers producing nuts, usually only 1 or 2 lowest glumes empty | 2 |
| | Spikelets or pseudospikelets with 1 or 2 flowers producing nuts, usually several–many empty glumes at the base of the spikelet or pseudospikelet | 17 |
| 2 | Stems noded and leafy (also occasionally noded in aquatic species such as *Isolepis fluitans*, but then not large perennials, and bristles absent); hypogynous bristles or scales present | 3 |
| | Culms not noded; leaves all basal; hypogynous bristles or scales present or absent | 5 |
| 3 | Three hypogynous scales inflated and more or less petaloid; 3 hair-like bristles also present; glumes with a long mucro about as long as glume | *Fuirena* |
| | All hypogynous bristles hair-like; glumes with a mucro no more than half | 4 |

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| | glume length | |
| 4 | Spikelets less than 1 cm long; inflorescence branches scabrous; hypogynous bristles much longer than nut | ***Scirpus*** **ACT, ST** |
| | Spikelets 1–2.5 cm long; inflorescence branches not scabrous; hypogynous bristles shorter than or equalling nut | ***Bolboschoenus*** **ACT, ST** |
| 5 | Style base enlarged and persistent on nut | 6 |
| | Style base enlarged or not, but not persistent on nut | 7 |
| 6 | Inflorescence not subtended by leafy bracts; leaves reduced to sheaths, glabrous; hypogynous bristles usually present | ***Eleocharis*** **ACT, ST** |
| | Inflorescence subtended by leafy bracts; leaves with well-developed blade, hairy near mouth of sheath; hypogynous bristles always absent | *Bulbostylis* |
| 7 | Hypogynous bristles present | ***Schoenoplectus*** **ACT, ST** |
| | Hypogynous bristles absent | 8 |
| 8 | Style base enlarged but not persistent | 9 |
| | Style base not enlarged or persistent | 10 |
| 9 | Glumes spirally arranged and spikelets terete, or rarely distichous and spikelets compressed (but then inflorescence with numerous spikelets) | ***Fimbristylis*** **ACT** |
| | Glumes distichous or upper part of spikelet twisted so as to be more or less spiral; spikelets compressed; inflorescence of 1–6 spikelets | *Abildgaardia* |
| 10 | Style 2-fid | 11 |
| | Style 3-fid | 13 |
| 11 | Glumes distichously arranged in spikelet. (Subgenus 4 Pycreus) | ***Cyperus*** **ACT, ST** |
| | Glumes spirally arranged in spikelet | 12 |
| 12 | Involucral bracts glume-like or leaf-like, from shorter than inflorescence to twice as long as it (to 1.5 cm long); spikelets 2–8 mm long | ***Isolepis*** **ACT, ST** |
| | Involucral bracts culm-like, usually at least 4 times as long as inflorescence (to 25 cm long); spikelets 5–15 mm long | ***Schoenoplectus*** **ACT, ST** |
| 13 | Rachilla internodes thickened and clasping nut at maturity. (Subgenus 3 Torulinium) | ***Cyperus*** **ACT, ST** |
| | Rachilla neither thickened nor clasping nut | 14 |
| 14 | Glumes distichously arranged in spikelet (spiral in Cyperus hamulosus but then plant has smell of fenugreek). (Subgenus 1 Anosporum, Subgenus 2 Cyperus) | ***Cyperus*** **ACT, ST** |
| | Glumes spirally arranged in spikelet, not smelling of fenugreek | 15 |
| 15 | Nuts transversely wrinkled and/or stout perennials | ***Schoenoplectus*** **ACT, ST** |
| | Nuts variously marked but never transversely wrinkled; small annuals or perennials | 16 |
| 16 | Perennial with long-creeping, thick, woody rhizome to 1 cm diam.; minute hypogynous disc under nut | ***Ficinia*** **ACT** |
| | Plants in small tufts or with filiform rhizome; no disc under nut | ***Isolepis*** **ACT, ST** |

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| 17 | Female flowers enclosed in sac-like utricle | 18 |
| | Flowers not enclosed in a utricle | 19 |
| 18 | Slender achillas inside utricle with a stiff exserted hooked tip; inflorescence always a single spike (formerly genus Uncinia) | ***Carex*** **ACT, ST** |
| | No slender hooked achillas inside the utricle; inflorescence of (1–) several–many spikes | ***Carex*** **ACT, ST** |
| 19 | Female flowers apparently terminal, always only 1 per pseudospikelet (floral unit) | 20 |
| | Female or bisexual flowers lateral and axillary, one to many in a spikelet | 22 |
| 20 | Leaves flat, leafy, usually present along the culms as well as at the base; involucral bracts flat, leafy; nut much longer than glumes | *Exocarya* |
| | Leaves terete or reduced to sheaths, at base of culm only; involucral bracts terete but often broad and flattened at the base; nut shorter than to equalling glumes | 21 |
| 21 | Nut biconvex; style 2-fid; inflorescence spike-like; nut finely striate longitudinally but not ribbed | *Lepironia* |
| | Nut terete to obtusely trigonous, obovoid to globose; style (2- to) 3- or 4-fid; inflorescence globose, hemispherical, or ovoid; nut strongly ribbed longitudinally | *Chorizandra* |
| 22 | A hypogynous disk or 1 or 2 hyaline scales or 2–6 hypogynous bristles or scales present at base of nut (not always falling with nut) | 23 |
| | Hypogynous bristles, scales and disk absent | 37 |
| 23 | Nut more or less enclosed in 2, or occasionally 1, hyaline scales | ***Lipocarpha*** **ACT** |
| | Nut without hyaline scales | 24 |
| 24 | Style simple or 2-fid | 25 |
| | Style 3–8-fid | 26 |
| 25 | Style base differentiated, enlarged, and persistent; leaves without a ligule | *Rhynchospora* |
| | Style base not differentiated or enlarged or persistent; leaves with a membranous ligule | *Cyathochaeta* |
| 26 | Hypogynous disk present at base of nut | 27 |
| | Hypogynous bristles or scales present at base of nut | 28 |
| 27 | Glumes spirally arranged; most flowers bisexual; nut brownish, tough | *Cladium* |
| | Glumes distichous; flowers unisexual; nut with white to purplish, fragile pericarp | *Scleria* |
| 28 | Upper internodes of achillas prominently zigzag | ***Schoenus*** **ACT, ST** |
| | Upper internodes straight | 29 |
| 29 | Style base persistent, often enlarged in fruit | 30 |
| | Style base deciduous | 34 |
| 30 | Inflorescence head-like | 31 |
| | Inflorescence panicle-like, umbel-like, or spike-like | 32 |
| 31 | Ligule membranous, glabrous; inflorescence obconical or fan-shaped; leaf sheaths glabrous | ***Ptilothrix*** **ST** |

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| | Ligule membranous and ciliate; inflorescence globose; leaf sheaths long-ciliate on upper margins | ***Gymnoschoenus*** **ST** |
| 32 | Bristles 6, as long as, or longer than, the nut | ***Carpha*** **ST** |
| | Bristles 2 to 5, much shorter than the nut | 33 |
| 33 | Robust perennials with inflorescence c. 40 cm long. (Gahnia erythrocarpa) | ***Gahnia*** **ACT, ST** |
| | Slender perennials with inflorescences 1–4[–30] cm long | ***Tetraria*** **ST** |
| 34 | Glumes spirally arranged in the spikelet; hypogynous scales inflated | ***Lepidosperma*** **ACT, ST** |
| | Glumes more or less distichously arranged in the spikelet; hypogynous scales flat, not thickened | 35 |
| 35 | Hypogynous scales falling with the nut; leaf without pseudopetiole | 36 |
| | Hypogynous scales persistent on achillas after nut falls; leaf with pseudopetiole | ***Oreobolus*** **ACT, ST** |
| 36 | Spikelets usually in clusters of 3, at 5–9 nodes; upper flower fertile; hypogynous scales 1/3–2/3 length of nut | *Anthelepis* |
| | Spikelets usually solitary, or 2 or 3 in a terminal cluster; upper flower reduced and sterile; hypogynous scales <1/5 length of nut | *Tricostularia* |
| 37 | Style simple or 2-fid | 38 |
| | Style 3–8-fid | 41 |
| 38 | Style base enlarged, persistent; ligule absent | *Rhynchospora* |
| | Style base enlarged or not, but not persistent | 39 |
| 39 | Inflorescence umbel-like; ciliate ligule present | *Trachystylis* |
| | Inflorescence of 1 to 3 dense, clustered heads; ligule absent | 40 |
| 40 | Hyaline scales usually 2 enclosing nut, occasionally 1 or absent; apparent glumes (= spikelet bracts) flat with 0–2 nerves on each side of midrib; nut dorsiventrally compressed, trigonous or plano-convex | ***Lipocarpha*** **ACT** |
| | Hyaline scales absent; glumes keeled, with 2–5 nerves on each side of midrib; nut laterally compressed (i.e. with an edge next to rachilla), biconvex. (Subgenus 5 Kyllinga) | ***Cyperus*** **ACT, ST** |
| 41 | Upper internodes of rachillas zigzag | ***Schoenus*** **ACT, ST** |
| | Upper internodes of achillas straight | 42 |
| 42 | Annual; inflorescence of 1 to 3 clustered heads with numerous spikelets | ***Lipocarpha*** **ACT** |
| | Perennials; inflorescence panicle-like, spike-like, or occasionally reduced to a few clustered spikelets | 43 |
| 43 | Leaves reduced to blade no more than 1 cm long | 44 |
| | Leaves with well-developed blade to 1 m long | 46 |
| 44 | Persistent style base not separated from body of nut by a constriction | ***Machaerina*** **ACT, ST** |
| | Persistent style base separated from body of nut by a constriction | 45 |
| 45 | Leaves without a ligule | ***Caustis*** **ST** |
| | Leaves with a ligule. (Tetraria capillaris) | ***Tetraria*** **ST** |

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| 46 | Leaves 2-ranked, isobilateral | ***Machaerina*** **ACT, ST** |
| | Leaves 3-ranked, dorsiventral | 47 |
| 47 | Nut borne on inconspicuous hypogynous disk (disk may stay on achillas rather than fall with nut) | *Cladium* |
| | Nut not borne on a hypogynous disk | 48 |
| 48 | Spikelets disarticulating as a unit from axis at maturity. (Subgenus 2 Cyperus) | ***Cyperus*** **ACT, ST** |
| | Spikelets persistent, nuts falling separately from glumes at maturity | 49 |
| 49 | Leaves with a ligule | ***Gahnia*** **ACT, ST** |
| | Leaves without a ligule | ***Tetraria*** **ST** |