3. ANEILEMA, R. Br.

(Aphylax, *Salisb.*, name only.)

Perianth-segments all free, 3 outer ones membranous, concave, slightly imbricate, 3 inner petal-like, obovate, nearly equal. Perfect stamens 3 or sometimes only 2, on one side of the flower; anthers ovate or oblong, the cells opening in longitudinal slits; staminodia 3 or 4 or only 2, with variously shaped imperfect anthers. Ovary 3-celled or rarely 2-celled, with 1 to 5 ovules in each cell superposed in 1 or 2 rows; style subulate, with a small stigma. Capsule oblong ovoid or nearly globular, opening in 3 or rarely 2 valves. Seeds 1 or more in each cell, superposed in a single row, almost cubical, usually rugose.—Weak herbs, with ascending or erect stems. Flowers small, in a loose terminal panicle, singly pedicellate along the branches within a small concave bract, or 2 together within the terminal bract.

The genus is widely spread over the tropical regions of both hemispheres, but more abundant in the Old World than in the New. Of the six Australian species one is widely spread over tropical Asia and eastern Africa, the others as far as hitherto known are endemic.

Filaments all glabrous. Ovary with only 2 perfect cells. Stems weak, ascending.
- Leaves ovate-lanceolate. Ovules 3 or 4 in each cell.
  - Panicle slender, thyrsoid, usually pedunculate. Capsule oblong . . . . . 1. *A. acuminatum.*
  - Inflorescence sessile, of 2 short 2-flowered branches. Ovary with a third imperfect cell . . . . . 2. *A. biflorum.*
- Leaves lanceolate. Ovules 2 in each cell. Capsule as broad as long . . . . . 3. *A. sclerocarpum.*
- Leaves linear or narrow-lanceolate. Ovules 1 in each cell. Panicle long and slender. Flowers small . . . . 4. *A. siliculosum*

Filaments all or some of them bearded. Ovary 3-celled. Stems erect. Radical leaves linear, tufted.
- Filaments all bearded. Panicle irregular, the pedicels distant along the branches . . . . . 5. *A. gramineum.*
- Filaments of the perfect stamens bearded, of the staminodia glabrous. Pedicels close together along the branches, leaving a thickened denticulate rhachis . 6. *A. giganteum.*

5. **A. gramineum,** *R. Br. Prod.* 270.—Rarely quite glabrous, usually with a scabrous pubescence at least on the leaf-sheaths and some long hairs or cilia on the margins of the sheaths and base of the leaves. Fibrous roots often much thickened, almost tuberous. Radical leaves tufted, grass-like, with short broad sheaths, mostly 3 or 4 in. long, but in very luxuriant specimens at least twice that length, varying from 3 or 4 lines broad and tapering to a long point to very narrow almost subulate. Stems erect, 6 in. to nearly 2 ft. high, with few long leaves dilated into short sheaths. Panicle very irregularly and loosely branched, rarely much longer than broad, often forked at the base but the branches otherwise simple, long or short, on a flexuose rhachis, the pedicels rather distant along the branches with a scarious bract under each. Outer perianth-segments varying from under 3 lines to nearly 4 lines, the inner ones longer, usually pale blue and much veined, but in some specimens appearing of a different colour without conspicuous veins. Filaments all bearded, 3 with perfect anthers, 3 with small abortive ones. Ovary 3-celled, with 4 or 5 ovules in each cell. Capsule oblong or ovoid, rather longer than the perianth. Seeds pitted-rugose.—F. Muell. Fragm. viii. 62.

N. Australia. North coast and islands of the Gulf of Carpentaria, *R. Brown;* Victoria River and Sea Range, *F. Mueller;* Port Darwin, *Schultz, n.* 88.

Queensland. Broad Sound, *R. Brown;* Brisbane River, Moreton Bay, *A. Cunningham, F. Mueller,* and others; Peak Downs and Mackenzie River, *F. Mueller;* Rockhampton, *Bowman, O'Shanesy,* and others; Port Curtis, *M'Gillivray;* Keppel Bay, *Thozet;* Rockingham Bay, *Dalachy.*

N. S. Wales. Hunter's River. *R. Brown;* Clarence River, *Beckler;* Richmond River, *Woolls;* New England, *C. Stuart, C. Moore.*

6. CARTONEMA, R. Br.

Perianth-segments all free, 3 outer ones herbaceous, lanceolate, 3 inner very broad, petal-like, sessile, withering after flowering but persistent. Stamens 6, nearly equal; anthers oblong or rarely short, opening in terminal pores at length continued into lateral slits. Ovary 3-celled, with 2 superposed ovules in each cell. Style filiform, with a small terminal pedicellate stigma. Capsule 3-valved.—Herbs with leafy stems, simple or branched at the base. Leaves narrow. Flowers in simple terminal spikes or racemes, solitary within small or narrow bracts.

The genus is limited to Australia, the four species regarded by some botanists as varieties of a single one.

Spikes dense. Outer perianth segments 8 to 9 lines long. Filaments broad and thin. Anthers narrow, oblong	1. *C. philydroides.*
Spikes dense. Outer perianth-segments 6 to 7 lines long. Filaments narrow. Anthers narrow, oblong .	2. *C. spicatum.*
Spikes elongated the flowers all distant. Outer perianth-segments 3 to 4 lines long. Filaments shorter than the anthers	3. *C. parviflorum.*
Spikes dense. Outer perianth-segments 3 to 4 lines long. Anthers ovate, much shorter than the filaments	4. *C. brachyantherum.*

3. **C. parviflorum,** *Hassk. in Flora,* 1869, 365.—Less hairy than *C. spicatum*, and taller, chiefly from the length of the spike, the leaves very long and narrow. Spike loose from the first with the flowers all distant and often lengthening to 1 ft. or even more. Outer perianth-segments 3 to 4 lines long, inner ones usually more or less dotted. Filaments very short, anthers oblong, the cells opening in some specimens in terminal pores only, in others the slit extending to the base. Capsule small, glabrous.

N. Australia. Islands of the north coast, *R. Brown;* Victoria River, *F. Mueller;* north-west coast, *Bynoe;* Glenelg district, *Martin;* Port Darwin, *Schultz, n.* 280; Liverpool River, *Gulliver.*

This was included by Brown in his *C. spicatum*, both forms bear in his herbarium the specific name of *villosa,* which was, however, never published.

4. **C. brachyantherum,** *Benth.*—A dwarf plant, the stems not above 1 to 2 in. high below the spike, the leaves mostly exceeding the spikes. Spikes about $1\frac{1}{2}$ in. long, dense and hairy as in *C. spicatum*, but the flowers very much smaller, like those of *C. parviflorum*, and the anthers different from those of all other species, being shorter than broad, the cells opening laterally to the base. Capsule glabrous.

Queensland. Port Denison, *Fitzalan.*

2. **C. spicatum,** *R. Br. Prod.* 271. *partly.*—Stems branching at the base, usually hairy, rarely 6 in. high below the spike. Leaves linear, tapering from a base of $1\frac{1}{2}$ to 3 lines broad just above the sheath to a long point, the longer ones usually exceeding the spike. Spikes 1 to 3, sometimes very compact and only 2 in. long, rarely elongated to 6 in., and rather loose. Bracts linear-subulate, shorter than the perianth. Outer perianth-segments subulate-acuminate, 5 to 6 lines long, very hairy; inner segments obovate, nearly as long, often but not always spotted. Filaments slightly flattened, at first shorter but at length rather longer than the oblong-linear anthers, which open in terminal pores rarely splitting down the sides of the cells. Ovary and capsule glabrous.—Kunth, Enum. iv. 115; Bauer, Illustr. Fl. Nov. Holl. t. 7.

N. Australia. Arnhem S. Bay, *R. Brown;* North Goulburn Island, *A. Cunningham;* Escape Cliffs, *Hulse;* Port Darwin, *Schultz, n.* 25.

2. COMMELYNA, Linn.

Perianth-segments all free, 2 of the outer ones larger than the third outermost, and one of the inner frequently differently shaped or more sessile than the two others. Perfect stamens usually 3, the central one with a larger anther than the two others; staminodia 3 or rarely 2, with deformed anthers. Ovary 3-celled or rarely 2-celled; ovules in each of 2 cells 2 superposed, 1 only in the third smaller cell, or ovules 1 in each of 3 cells, or the 3rd cell entirely wanting. Style filiform, with a small stigma. Capsule usually 3-celled, the 2 biovulate cells opening loculicidally, the 3rd uniovulate cell remaining long closed at the back of one of the valves, but sometimes all 3 cells open loculicidally or the 3rd cell is deficient. Seeds smooth or pitted, rugose or reticulate.—Weak herbs, often creeping at the base. Flowers in a complicate oblique leafy bract or spatha, usually 2 or more on a peduncle included in the spatha, with a second peduncle in the same spatha articulate halfway up and bearing a single usually male flower, or reduced to a short barren bristle. Fruiting pedicels recurved so as to ripen the capsule within the spatha.

The genus is widely spread over the warmer regions of both hemispheres, supplying several common weeds of cultivation. The three Australian species may be all endemic, they are very near corresponding Asiatic species to which they have been sometimes referred, but I have been unable to match them precisely.

Spatha not cordate, closed at the base, forming an oblique turbinate inverted cone open at the top only	1. *C. ensifolia.*
Spatha cordate at the base, with rounded auricles closely appressed but not connate.	
Leaves ovate-lanceolate or rarely narrow, contracted above the sheath. Spatha acute, rarely acuminate. Seeds pitted.	2. *C. cyanea.*
Leaves very narrow, not contracted above the sheath. Spatha with a long point. Seeds smooth or slightly rugose	3. *C. lanceolata.*

1. **C. ensifolia,** *R. Br. Prod.* 269.—Glabrous or with a slight pubescence on the leaf-sheaths and a few cilia at the base of the leaves, or rarely a more copious pubescence chiefly on the leaves and spathas. Stems weak, from a procumbent or creeping base ascending to 1 ft. or rather more. Leaves lanceolate, acuminate, mostly 3 to 4 in. long, very narrow or almost linear or rarely more than $\frac{1}{2}$ in. broad, shortly contracted at the base above the membranous often scarious sheath. Spathas usually solitary, sessile or shortly pedunculate, opposite the last leaves, cucullate, very broadly falcate but scarcely acuminate, $\frac{3}{4}$ to 1 in. long, the closed base 4 to 6 lines long. Each spatha, besides a small rudimentary pedicel, contains a single peduncle shorter than the spatha, bearing 1 to 5 or rarely 6 flowers on pedicels which bear them beyond the spatha, but are recurved within it immediately after flowering. Outer perianth-segments unequal, the largest 3 lines long; inner ones about twice as long, blue, one rather smaller than the other. Stamens 3 perfect, 1 anther larger than the 2 others. Ovary 2- or 3-celled with 1 ovule in each cell. Capsule with 2 dehiscent cells, the 3rd sometimes small, barren, or deficient, sometimes ripening the seed and then dehiscent. Seeds smooth.—F. Muell. Fragm. viii. 60; *C. undulata*, R. Br. Prod. 270.

N. Australia. Islands of the gulf of Carpentaria, *R. Brown*, *Henne*, and others; Port Essington, *Armstrong;* Port Darwin, *Schultz*, *n.* 70, 161; Upper Victoria River, *F. Mueller*, Camden Harbour, *Walter;* Central Australia, *M'Dougal Stuart's and Gosse's Expeditions.*

Queensland. From the Maranoa, *Mitchell*, and Peak Downs, *F. Mueller*, over the whole tropical part of the colony to Cape York, *numerous collectors.*

N. S. Wales. Between the Darling and Cooper's Creek, *Neilson.*

Some of the Queensland specimens have broader leaves and 2 spathas at the ends of the stems, but opposed to distinct leaves, and not clustered as they usually are in *C. obliqua*, Don, which is the only Indian species which this one otherwise resembles.

3. **C. lanceolata,** *R. Br. Prod.* 269.—Resembles the slender narrow-leaved forms of *C. cyanea*, but the leaves appear to be always narrow-linear or linear-lanceolate, and the upper ones at least gradually enlarged at the base into a very short sheath without any contraction above it. Spathas narrow and usually produced into a long point, cordate at the base with free rounded auricles. Flowers like those of *C. cyanea*, but one of the outer segments decidedly smaller and narrower than the others, the inner ones nearly equal. Larger anther sagittate, with shorter diverging auricles. Capsules ripening 1 or 2 seeds in each of 2 cells, the 3rd cell remaining small and empty. Seeds smooth or coarsely wrinkled, without the raised reticulations of *C. communis*, or the pitted surface of *C. cyanea*.—*C. agrostophylla*, F. Muell. Fragm. viii. 59.

N. Australia. Sturt's Creek, Albert and Roper Rivers, *F. Mueller*.
Queensland. Bustard Bay, *Banks and Solander*, Port Curtis and Fitzroy Island, *M'Gillivray*. The seeds of these Queensland specimens are rather more rugose than the north-western ones, though otherwise very much like. The character, however, in all the species of *Commelyna* as derived from the markings of the seed must be taken with great caution, as they can be observed in very few specimens only, and may not be so constant as they have been supposed to be.

1. CYANOTIS, Don.

(Zygomenes, *Salisb.*, name only).

Flowers regular. Outer perianth-segments more or less united in a 3-lobed calyx, inner segments more or less united in a tube at the base with 3 spreading lobes. Stamens 6, inserted on the inner segments; filaments bearded towards the top; anthers all perfect, the cells opening inwards in longitudinal slits. Ovary 3-celled, with 2 superposed ovules in each cell. Capsule 3-valved. Seeds laterally attached, one at the lower angle, the other at the upper angle.—Creeping or ascending herbs. Flowers in short dense spikes or clusters, in a complicate falcate leafy bract or spatha, or within loose leaf-sheaths.

The genus is dispersed over the tropical regions of Asia and Africa, the only Australian species is a common Indian one from Ceylon and the Peninsula to the Malayan Archipelago and South China.

1. **C. axillaris,** *Rœm. and Schult.; Kunth, Enum.* iv. 105.—A glabrous annual, with long creeping or shortly ascending branches. Leaves linear or linear-lanceolate, 2 to 4 in. long. Flowers 2 or 3 together within the short loose leaf-sheaths. Outer perianth-segments nearly 3 lines long, shortly united at the base; inner perianth deep blue, the tube slender, cylindrical, longer than the outer segments. Filaments thickened above a dense tuft of jointed hairs.—*Tradescantia axillaris,* Roxb. Corom. Pl. t. 107; *Zygomenes axillaris,* Salisb. in Trans. Hort. Soc. i. 271; F. Muell. Fragm. viii. 62; *Cyanotis axillaris,* Clarke, Comm. et Cyrt. Beng. t. 35 (copied from Roxburgh).

N. Australia. Sturts' Creek, *F. Mueller.*
Queensland. Elliott and Burdekin Rivers, *Bowman.*

The species is a common Indian one. Salisbury, in giving to it the name of *Zygomenes*, gave no indication of the extent or character he proposed to assign to it as a genus; it cannot therefore be taken as such a publication as necessarily to supersede the universally adopted name *Cyanotis.*

COMMELINACEAE

Murdannia graminea