

N10

ASCLEPIADACEAE

Calotropis procera

Corolla nearly rotate, deeply divided into 5 lobes contorted in the bud, the right-hand edges usually overlapping. Corona membranous, forming a loose cup or tube round the anthers, the margin 10-lobed with the addition of 5 or 10 inner lobes (reduced in *C. erubescens* to prominent ribs). Anthers terminating in a membrane. Pollen-masses 2 to each anther, pendulous. Stigma short, obtuse, truncate or minutely 2-lobed.—Herbs with twining, trailing or rarely erect stems. Leaves herbaceous, cordate, usually several-nerved at the base. Flowers in the Australian species in loose irregular cymes rarely contracted into umbels (in other species usually umbellate), on solitary interpetiolar peduncles.

The genus, as limited by Decaisne, is confined to the Old World, extending as far as the Mediterranean region of Europe. The Australian species are all endemic. Decaisne, who had no opportunity of examining any specimens, thought, from Brown's short characters, that they should be rather referred to *Cynoctonum*, but the *C. floribundum* and *C. pedunculatum* have the inner lobes of the corona characteristic of *Cynanchum* very prominent. In *C. erubescens* they are considerably reduced, thus almost connecting the two genera, but yet sufficiently conspicuous to retain the species in *Cynanchum*.

- Corona-lobes 10, truncate or crenulate, not exceeding the anthers,
and 10 inner scarcely prominent keels 1. *C. erubescens*.
- Corona-lobes 20, subulate-acuminate, much exceeding the anthers.
No stipule-like leaves 2. *C. floribundum*.
- Corona-lobes 20, 10 short obtuse denticulate or partially acuminate,
and 10 inner rather longer acuminate keels. A pair of stipule-
like leaves usually at the base of the petioles. 3. *C. pedunculatum*.
- Glabrous or the inflorescence minutely pubescent 4. *C. puberulum*.
- Whole plant softly pubescent

2. **C. floribundum**, *R. Br. Prod.* 463. Erect or the branches sometimes slightly flexuose or twining, the inflorescence and sometimes the foliage hoary-pubescent, the older leaves usually glabrous. Leaves on rather long petioles, cordate, ovate or lanceolate, acuminate, 1 to 2 in. long. Cymes rather dense, rarely contracted to umbels. Calyx-segments ovate-lanceolate, acute, ciliate, about 1 line long. Corolla deeply divided into lobes of 2 to 3 lines. Corona deeply divided into 20 subulate-acuminate lobes exceeding the anthers, of which 10 outer ones parallel to the gynostegium, and 10 inner at right angles to them forming prominent keels. Pollen-masses oblong. Follicles fusiform, acuminate, more or less winged, 1 to 2 in. long.—*Cynoctonum floribundum*, Dene. in DC. Prod. viii. 529.

N. Australia. Nichol Bay, N.W. coast, *Gregory's Expedition*.

Queensland. Wentworth and Gilbert rivers, *F. Mueller*; Suttor river and Broad Sound, *Bowman*.

S. Australia. Head of Spencer's Gulf, *R. Brown*; low hills, Elder's Range, Lake Torrens, etc., *F. Mueller*; Mount Searle, *Warburton*; Cooper's Creek, *Bowman*.

The species is very variable in the breadth of the leaves, the size of the flowers, and the pubescence of the inflorescence, but readily recognized by the prominent subulate points of the corona-lobes.

3. **C. pedunculatum**, *R. Br. Prod.* 463. A twiner, either glabrous or the inflorescence minutely pubescent. Leaves on rather long petioles, deeply cordate, ovate, acuminate, $1\frac{1}{2}$ to $2\frac{1}{2}$ in. long, usually with two small accessory stipule-like leaves at their base on the side opposite to the peduncle. Cymes several-flowered, on peduncles often as long as the leaves or even longer. Calyx-segments narrow, acute, about half as long as the corolla. Corolla deeply divided into narrow rather acute lobes of 2 to 3 lines. Corona shortly 20-lobed, 10 outer lobes short obtuse or denticulate or some of them shortly acuminate, the 10 inner keels in pairs one on each side of the lobes opposed to those of the corolla, more or less acuminate and usually longer than the outer ones. Fruit not seen.—*Cynoctonum pedunculatum*, Dene. in DC. *Prod.* viii. 529.

N. Australia. Montague Sound, N.W. coast, *A. Cunningham*; Victoria river, *F. Mueller*; islands of the Gulf of Carpentaria, *R. Brown*.

1. **GYMNANTHERA**, R. Br.

Corolla with a cylindrical tube and spreading lobes, contorted in the bud, the right-hand edges overlapping. Filaments distinct, inserted in the throat. Corona of 5 scales, inserted in the corolla-throat behind the filaments. Pollen-masses 4 to each anther, granular, attached in fours (2 from each adjoining anther) to filiform appendages of the style.—Twiner with milky juice. Leaves herbaceous. Cymes loose, on interpetiolar or almost axillary peduncles.

The genus is limited to a single species, endemic in Australia. It is the only Australian *Asclepiadea* with granular pollen-masses.

ASCLEPIADACEAE

1. **G. nitida**, *R. Br. Prod.* 464. A tall glabrous twiner, woody at the base. Leaves opposite, on rather long petioles, from ovate to oblong-elliptical, obtuse acute or mucronate, 2 to 3 or rarely 4 in. long, of a rather firm consistence. Flowers of a greenish-white, the cymes shortly pedunculate, with rather elongated branches and numerous small bracts. Pedicels 3 to 4 lines long. Calyx-segments ovate, $\frac{3}{4}$ line long, with an irregular broken ring

of small glands inside at the base, often united into small lobed scales alternating with the segments. Corolla-tube about 3 lines long, the lobes nearly as long, broadly ovate. Corona-scales broad, mucronate or denticulate. Filaments broad and flat, connivent but not connate. Anthers acuminate, glabrous, the cells subdivided by vertical partitions between the pollen-masses. Stigma very shortly 2-lobed. Follicles divaricate, rather slender, 2 to 3 in. long.—Dene. in DC. *Prod.* viii. 493.

N. Australia. Islands of the Gulf of Carpentaria, *R. Brown*; Sandy Island, Victoria river, *F. Mueller*; Sweera Island, *Henne*; Forster's Range and Daly waters, *Waterhouse*.
Queensland. Port Curtis, *M'Gillivray*; Nerook Creek, Sattör river, and Mount Wyatt, *Bowman*.

9. GYMNEMA, R. Br.

(Bidaria and Gongronema, Endl.)

ASCLEPIADACEAE

Corolla with a short broad tube, the limb spreading, divided into 5 lobes, contorted in the bud. Corona none or reduced to 5 scarcely prominent protuberances at the base of the gynostegium. Anthers terminating in a membrane. Pollen-masses 2 to each anther, obovoid or oblong, erect. Stigma short and obtuse or conical, or rarely elongated.—Stems erect or twining. Leaves herbaceous. Flowers small, umbellate, the umbels either solitary or 2 together on short interpetiolar peduncles or axillary and opposite.

The genus is dispersed over the tropical and subtropical regions of the Old World. Of the six Australian species, one is a common East Indian one, another extends to the islands of the South Pacific, the remaining four are endemic.

SECT. I. **Gymnema**.—Corolla with small scales in the throat alternating with the lobes. No corona.

- Leaves ovate to ovate-lanceolate. Umbels mostly in pairs 1. *G. sylvestre*.
- Leaves narrow-lanceolate. Umbels mostly solitary 2. *G. Muellieri*.

SECT. II. **Bidaria**.—Corolla without scales in the throat. Corona none or of very obscure glands at the base of the gynostegium.

- Leaves ovate, $\frac{1}{2}$ to 1 in. long 3. *G. brevifolium*.
- Leaves oval-oblong or lanceolate, 1 to 2 in. long, the veins very oblique 4. *G. trinerve*.
- Leaves narrow-linear 5. *G. stenophyllum*.

SECT. III. **Gongronema**.—Corolla without scales in the throat. Corona consisting of small glands or protuberances at the base of the gynostegium. Small glands at the base of the upper surface of the leaves.

- Leaves obovate-oblong or elliptical 6. *G. micradenia*.

2. **G. Muelleri**, *Benth.* A more or less pubescent twiner, woody at the base. Leaves lanceolate, acutely acuminate, rounded or narrowed at the base, narrow and 2 to 6 in. long on luxuriant branches, ovate-lanceolate and 1 to 2 in. on shorter less twining branches. Umbels dense, on very short peduncles, solitary and interpetiolar or rarely axillary and opposite. Calyx-segments ovate, obtuse, about 1 line long. Corolla-tube rather shorter than the calyx, bearded inside with reflexed hairs, the throat with very few prominent hirsute scales alternating with the lobes and decurrent halfway down; lobes ovate, obtuse, shorter than the tube. No corona. Stigma short, obtuse.

N. Australia. Upper Victoria river, *F. Mueller.*

NSB

ASCLEPIADACEAE

Gymnema
stenophyllum

N10

ASCLEPIADACEAE

Hoya sp.

8. MARSDENIA, R. Br.

(Leichhardtia, R. Br.)

ASCLEPIADACEAE

Corolla with a short broad tube or nearly rotate, the limb spreading, divided into 5 lobes contorted in the bud, the right-hand edge usually overlapping. Corona of 5 segments adnate to the gynostegium at the base, sometimes with free basal auricles or almost peltate, the upper end erect and free, shorter than the anthers or scarcely exceeding them. Anthers terminating in a membrane. Pollen-masses 2 to each anther, oblong or rarely obovoid, erect. Stigma (or summit of the style) obtuse or terminating in a cone or in a long beak.—Stems twining or rarely erect. Leaves herbaceous. Flowers in an irregular cyme or panicle or more frequently in a simple umbel on an interpetiolar peduncle.

The genus, as at present constituted, is dispersed over the tropical regions of the New as well as the Old World, with one species extending to the East Mediterranean region. The Australian species are, however, as far as hitherto ascertained, all endemic.

Flowers small in compound cymes. Corolla rotate. Leaves broad or narrow, not cordate.

Stigma short and very obtuse.

Erect or scarcely twining. Leaves usually broad. Corolla-lobes shortly bearded

1. *M. cinerascens*.

Twiner. Leaves usually narrow. Corolla-lobes glabrous

2. *M. flavescens*.

Stigma narrow-conical or rostrate. Leaves narrow. Corolla-lobes bearded at the base

3. *M. cymulosa*.

Flowers often rather large, in cymes or in simple umbels. Corolla more or less urceolate (except *M. Hullsii*). Leaves large, cordate.

Flowers in cymes. Stigma short 4. *M. velutina*.

Flowers in simple umbels.

Stigma very short and obtuse. Corolla $\frac{1}{4}$ in. long 5. *M. Hullsii*.

Stigma narrow-conical or rostrate. Corolla $\frac{1}{2}$ in. long 6. *M. arayacea*.

Flowers in simple umbels. Corolla more or less urceolate (except in *M. longiloba*). Leaves broad or narrow, not cordate.

Stigma long and rostrate.

Leaves ovate, shortly and obtusely acuminate. Corolla-lobes shortly bearded below the middle 7. *M. rostrata*.

Leaves lanceolate, acute. Corolla-throat densely bearded 8. *M. Fraseri*.

Stigma narrow-conical, not much exceeding the anthers.

Leaves oval oblong or lanceolate.

Corolla glabrous inside, the lobes twice as long as the tube 9. *M. longiloba*.

Corolla bearded in the throat, the lobes scarcely longer than the tube 10. *M. suaveolens*.

Leaves linear. Corolla-lobes shorter than the tube or not longer.

Corolla-lobes not 1 line long; tube pubescent inside 11. *M. leptophylla*.

Corolla glabrous inside, the lobes nearly 2 lines long 12. *M. Leichhardtiana*.

Stigma very short and obtuse.

Glabrous or nearly so. Leaves mostly lanceolate, acute. Corolla-throat with a prominent ring inside and more or less bearded 13. *M. viridiflora*.

Glabrous or nearly so. Leaves lanceolate acute. Corolla glabrous inside with an inflexed scale at the throat at each sinus 14. *M. coronata*.

Pubescent. Leaves ovate to broadly lanceolate. Corolla glabrous inside 15. *M. microlepis*.

N50

ASPLEPIADACEAE

Marsdenia Brockmaniana

1. **M. cinerascens**, *R. Br. Prod.* 461. Shrubby, diffuse, suberect or shortly twining, the young shoots and inflorescence usually hoary-pubescent, the adult foliage glabrous. Leaves on rather long petioles, in some specimens broadly ovate or almost orbicular, in others oval-oblong or oblong-lanceolate, obtuse or shortly acuminate, $1\frac{1}{2}$ to 2 in. long or rarely longer. Flowers small, in compound cymes shorter than the leaves, on axillary or interpetiolar peduncles, or in much longer irregular terminal panicles, consisting of several umbels as in *M. flavescens*. Calyx-segments broad, obtuse, hirsute, about $\frac{1}{2}$ line long. Corolla nearly rotate, spreading to about $1\frac{1}{2}$ lines diameter, the lobes ovate-oblong, obtuse, shortly bearded inside. Corona-segments short, broad, obtuse, spreading at the tips. Pollen-masses obovoid, smaller than in most species. Stigma very obtuse, truncate. Follicles tomentose, 2 in. long, acuminate from a rather broad base.—*Dcne.* in *DC. Prod.* viii. 614.

N. Australia. N.W. coast, *Bynoe*; Cygnet Bay and S. Goulburn Island, *A. Cunningham*; islands of the Gulf of Carpentaria, *R. Brown*; Port Essington, *Armstrong*. Allied to *M. flavescens*, and approaching also *Tylophora flexuosa*; the pollen-masses almost intermediate between those of *Tylophora* and *Marsdenia*.

4. **M. velutina**, *R. Br. Prod.* 461. A tall climber, shortly but softly pubescent. Leaves on long petioles, broadly ovate-cordate, shortly acuminate, 3 to 4 in. long. Flowers in compact cymes, either almost sessile or on dichotomous interpetiolar peduncles nearly as long as the petioles. Pedicels 1 to 3 lines long. Calyx-segments broad, obtuse, the margins more or less scarious, about $1\frac{1}{2}$ lines long. Corolla pubescent outside, the broad tube as long as the calyx, thickened inside at the throat into a prominent glabrous ring; lobes spreading, obtuse, rather longer than the tube. Corona-segments vertically adnate, laterally compressed, with 2 prominent angles or keels on the back, more or less confluent at the base with those of the adjoining segments, tapering at the top into free incurved points as long as or rather longer than the anthers. Pollen-masses linear-oblong. Stigma thick, obtuse or shortly 2-lobed, not exceeding the anthers. Fruit not seen.—Dene. in DC. *Prod.* viii. 614.

N. Australia. Islands of the Gulf of Carpentaria, *R. Brown*; Port Essington, *Armstrong*; Adams Bay, *Hulls*. In foliage this plant resembles *Parsonsia velutina*, but the flowers are very different.

13. **M. viridiflora**, *R. Br. Prod.* 461. A twiner, quite glabrous or with a rusty pubescence on the young shoots and inflorescence. Leaves either long-lanceolate with a broad sometimes almost hastate base with rounded auricles, or all linear-lanceolate, rarely almost ovate, acute or rarely obtuse, 2 to 4 in. long. Flowers green, in simple umbels, solitary or rarely 2 together on short interpetiolar peduncles. Pedicels slender, 3 to 4 lines long. Calyx-lobes ovate, very obtuse, about 1 line long. Corolla-tube broad, rather shorter than the calyx, half closed at the throat by a prominent ring and bearded inside, the hairs either in tufts opposite each sinus or forming a complete ring; lobes ovate, obtuse, spreading to nearly 3 lines diameter. Corona-segments auriculate at the base, the free erect part obtuse, much shorter than the anthers. Stigma very short, obtuse. Follicles about 3 in. long, above 1 in. broad, scarcely acuminate.—Dene. in *DC. Prod.* viii. 615.

N. Australia. Victoria river, *F. Mueller* (a single specimen in *Herb. Hook.*); Adams Bay, *Hulls*.

Queensland. Keppel Bay and Broad Sound, *R. Brown*; Brigalow scrub, from the Dawson and Burdekin to the Burnett rivers, *F. Mueller*; Rockhampton, *Dallachy* and others; Suttor river and Nercool Creek, *Bowman*.

N. S. Wales. Cumberland and Camden, "Native Potato," *Woolfs*.

10. **MICROSTEMMA**, R. Br.

Corolla rotate, deeply divided into 5 acuminate lobes, valvate in the bud. Corona an undulate ring round the gynostegium below the anthers, and more prominent between the anthers than opposite to them. Anthers without terminal membranes. Pollen-masses 2 to each anther, ovoid, erect, laterally attached below the middle. Stigma short, obtuse.—Herbs, with tuberous rhizomes and erect stems. Leaves linear or none. Flowers in sessile umbels.

The genus is limited to Australia, but is nearly allied to the Asiatic *Pentasacme*. It was accidentally omitted in De Candolle's 'Prodromus.'

2. **M. glabriflorum**, *F. Muell. Fragm. i. 58.* Very near *M. tuberosum*, with a similar habit and inflorescence, but the flowers smaller, the corolla not bearded inside, and the coronal ring rather more prominent.

N. Australia. Sea range, Victoria river, *F. Mueller.* Only two small specimens were found, and those had but very few flowers. It may prove to be a variety of *M. tuberosum*.

3. **SARCOSTEMMA**, R. Br.

Corolla rotate or nearly so, the lobes contorted in the bud, the right-hand edge overlapping. Corona double, the outer one annular or cup-shaped, usually at the base of the gynostegium, the inner one of 5 segments at the back of the anthers, fleshy or saccate at the base, with a free erect point. Anthers terminating in a membrane. Pollen-masses 2 to each anther, oblong or clavate, pendulous. Stigma short, obscurely notched.—Stems in the Australian typical section leafless and somewhat fleshy. Flowers in sessile lateral umbels.

The genus in its typical form is spread over tropical Asia and southern and eastern Africa, the Australian species is endemic, but nearly allied to a widely spread Asiatic one. The other sections, in which the stems are leafy, are limited to South America.

ASCLEPIADACEAE

1. **S. australe**, *R. Br. Prod.* 463. A glabrous leafless somewhat fleshy twiner, woody at the base, the branches terete, often articulate at the nodes, the leaves replaced by minute opposite scales. Umbels sessile on one side of the nodes between the scales. Pedicels about $\frac{1}{4}$ in. long. Calyx-segments ovate, obtuse, scarcely $\frac{1}{2}$ line long. Corolla deeply divided into ovate obtuse lobes of about 2 lines. Outer corona adnate to the base of the gynostegium and about half its length, much undulate and sinuate but not lobed; segments of the inner corona saccate, nearly as long as the anthers. Follicles rather narrow, 2 to 3 in. long.—Endl. *Iconogr.* t. 64.

N. Australia. Intercourse Island, Dampier's Archipelago, *A. Cunningham*.

Queensland. Albany Island, *W. Hill*; E. coast, *R. Brown*; Curtis Island, *Henne*; Howick's group, *F. Mueller*; Port Denison, *Fitzalan*; dry ridges near Rockhampton, *Dallachy, O'Shanesy*.

N. S. Wales. New England, *C. Stuart*; Hastings river, *Beckler*; Mount Goungbery, *Victorian Expedition*.

S. Australia. Bird Island, *R. Brown*; Lake Torrens, *F. Mueller*; Lake Gillies, *Burkitt*; Mount Searl, *Warburton*.

W. Australia. Murchison river, *Oldfield, Drummond, 6th Coll.* n. 144.

7. TYLOPHORA, R. Br.

ASCLEPIADACEAE

Corolla rotate or nearly so, deeply divided into 5 lobes contorted in the bud, the right-hand edge usually overlapping. Corona of 5 segments, adnate to the back of the anthers, usually prominent and thick or slightly inflated at the base, with short erect adnate or recurved tips. Anthers terminating in a small membrane. Pollen-masses 2 to each anther, small, nearly globular, horizontal or slightly ascending. Stigma short, obtuse or minutely 2-lobed. — Stems erect or more frequently twining. Leaves herbaceous. Flowers in one or more clusters or umbels, along a small or branched interpetiolar peduncle.

The genus is spread over tropical Asia and Africa and southern Africa, but the Australian species appear to be all endemic. It comes very near to those species of *Marsdenia* which have rotate corollas, and is most readily distinguished by the small globular pollen-masses.

Stems erect, pubescent.

- Leaves narrow-lanceolate 1. *T. erecta*.
- Leaves ovate-lanceolate 2. *T. macrophylla*.

Twining.

- Flowers (nearly 1 in. diameter) solitary or very few in a simple umbel. Corona-segments horizontal 3. *T. grandiflora*.
- Flowers (4 to 5 lines diameter) in 1, 2 or several umbels. Leaves broad, cordate. Corona-segments vertical.
- Calyx hirsute. Corona-segments slightly saccate, not spurred 4. *T. floribunda*.
- Calyx glabrous. Corona-segments spurred at the base 5. *T. calcarata*.
- Flowers (about 3 lines diameter) in 1 or 2 umbels. Leaves ovate to lanceolate, not cordate 6. *T. barbata*.
- Flowers (2 to 3 lines diameter) in several umbels or clusters in a divaricate almost filiform cyme.
- Corolla-lobes oval-oblong, obtuse 7. *T. Woolfsii*.
- Corolla-lobes tapering into a long linear point 8. *T. paniculata*.
- Flowers (scarcely 1½ lines diameter) in several umbels, sessile along slender simple peduncles 9. *T. flexuosa*.

9. **T. flexuosa**, *R. Br. Prod.* 460. A rather slender twiner, glabrous or the inflorescence pubescent. Leaves ovate-lanceolate to linear-lanceolate, acutely acuminate, cordate when broad, the larger ones 2 to 3 in. long or even more, the upper ones small and narrow. Flowers very small, in little clusters or sessile umbels along a slender flexuose peduncle, often longer than the leaves. Pedicels filiform, 1 to 2 lines long. Calyx-segments about $\frac{3}{4}$ line long. Corolla scarcely $1\frac{1}{2}$ lines diameter. Corona-segments rather thick, but not very prominent, acuminate, the adnate points reaching to about half the length of the anthers.—Dcne. in *DC. Prod.* viii. 612; *Hoya flexuosa*, Spreng. *Syst.* i. 843.

N. Australia. Upper Victoria river, *F. Mueller*; islands of the Gulf of Carpentaria, *R. Brown*.