

1. **H. ficulneus**, *Linn.*; *DC. Prod.* i. 448. An erect annual of several feet, glabrous except a few scattered hairs on the leaves, and a velvety pubescence on the racemes and calyces. Leaves orbicular, 2 to 3 in. diameter, the lower ones with 5 or 7 short broad lobes, the upper ones more deeply divided, with obovate or oblong lobes, all usually crenate. Flowers white, turning at length reddish, on short pedicels, in a terminal leafless raceme. Bracteoles few, small and so deciduous as only to be seen on the very young buds. Calyx about $\frac{1}{2}$ in. long, shortly 5-toothed, splitting laterally and deciduous. Petals 1 in. or rather more, glabrous. Capsule ovoid-oblong, acute, 5-angled, pubescent. Seeds hairy.—*Abelmoschus ficulneus*, *W. et Arn. Prod.* i. 53; *Wight, Ic.* t. 154; *A. alborubens*, *F. Muell. Fragm.* i. 67.

N. Australia. In basaltic tropical and subtropical plains, *F. Mueller*.

Queensland. Fitzroy plains, *F. Mueller*; Rockhampton, *Thozet*.

The species is common in some parts of the E. Indian peninsula, and includes *H. strictus*, *Roxb. Fl. Ind.* iii. 206, and probably also *H. prostratus*, *Roxb. l. c.* 208. The plant figured by *Reichenbach, Icon. Exot.* t. 181, with persistent broad bracts, is a different species.

6. ABUTILON, Gærtn.

Bracteoles none. Calyx 5-lobed. Staminal column divided at the top into several filaments. Ovary-cells 5 or more, verticillate, each with 3 or more, rarely 2, ovules. Style-branches as many as cells, filiform or club-shaped, with terminal stigmas. Fruit-carpels united at the base or entirely seceding, rounded or angular or with diverging points (not connivent) at the top, opening in 2 valves, without internal appendages. Seeds nearly reniform, the upper ones usually ascending, the lower ones pendulous or horizontal.—Herbs or shrubs, rarely trees, usually clothed with a soft stellate tomentum. Leaves usually cordate, angular or lobed, rarely narrow; petioles usually long (except in *A. crispum*). Stipules in all the Australian species subulate and deciduous. Flowers in the Australian species axillary, yellow or rarely white, the pedicels articulate above the middle or near the top.

A large genus, distributed over the tropical and warm regions of the globe, chiefly

American. Of the 18 Australian species, three are widely distributed over tropical Asia and Africa, one, *A. Avicennæ*, is Mediterranean and Asiatic, but scarcely tropical; one, *A. auritum*, extends only to the Indian Archipelago; one, *A. crispum*, is common to both the New and the Old World, and the remaining 12 are endemic. The genus has frequently been united with *Sida*, but the characters derived from the diverging carpels with more than 1 ovule in each, as contrasted with the converging uniovulate carpels of *Sida*, are too constant and convenient to be neglected, in groups so very numerous in species. The differential characters given to several of the following species from the tropical regions, or from the deserts of the interior, are as yet very unsatisfactory, owing to the imperfect state of many of the specimens, often mere fragments.

§ 1. Capsule truncate or concave at the top. Carpels (usually 2- or 3-seeded) angular-pointed or awned at the upper outer edge, persistent, or rarely at length deciduous leaving the filiform placenta attached to the axis.

Carpels (usually 10 or fewer) not exceeding the calyx-lobes, the points erect, or rarely divergent. Stems usually (perhaps always) shrubby.

Calyx-lobes shorter than the tube.

Petals adnate high up the glabrous staminal tube. Calyx tubular, 1 in. long

1. *A. tubulosum*.

Petals shortly adnate to the pubescent base of the staminal tube.

Calyx 1 in. long, campanulate, lobes acute, nearly as long as the tube. Petals twice as long

2. *A. amplum*.

Calyx $\frac{1}{2}$ to $\frac{3}{4}$ in., lobes acuminate or rather obtuse, spreading, much shorter than the tube.

Petals above 1 in. long

3. *A. leucopetalum*.

Petals shortly exceeding the calyx

4. *A. Mitchelli*.

Calyx about $\frac{1}{2}$ in., rather inflated, truncate, sinuate, or with very short obtuse lobes.

Petals very small. Staminal column much longer than the calyx

5. *A. micropetalum*.

Petals very small or shortly exceeding the calyx, the staminal column not long

6. *A. cryptopetalum*.

Petals twice as long as the calyx. Leaves deeply lobed

7. *A. geranioides*.

(The last 2 species with more slender branches and a closer hoary tomentum than *A. micropetalum*.)

Calyx-lobes longer than the tube or cup, acuminate. Calyx-lobes very concave and prominently keeled. Carpels about 10, scarcely acuminate

8. *A. otocarpum*.

Calyx-ribs or angles scarcely prominent. Carpels 4 or 5, acuminate

9. *A. subviscosum*.

Carpels usually exceeding the calyx-lobes, the points often divergent. Herbs usually tall, sometimes hard, almost woody at the base. Stems coarse and erect. Leaves broadly cordate.

Capsule truncate. Carpels numerous, the points very short. Tomentum close and dense, usually without spreading hairs.

Stipules small and subulate. Flowers mostly axillary

10. *A. indicum*.

Stipules broadly semisagittate. Flowers in terminal leafless racemes or panicles

11. *A. auritum*.

Capsule truncate. Carpels about 10, with long divergent points. Pubescent or loosely tomentose

12. *A. Avicennæ*.

Capsule contracted and angular at the top. Carpels numerous, without points. Tomentum dense, mixed with long spreading hairs

13. *A. graveolens*.

Stems rather slender. Leaves ovate or cordate-lanceolate. Capsule truncate, with short divergent points

14. *A. oxycarpum*.

§ 2. Carpels (often 1-seeded by abortion) rounded or angled at the top, quite distinct, and seceding from the axis when fully ripe (Gayoides, Endl.)

Carpels numerous (about 20), closely packed, very hirsute. Tall herbs, with large, broadly cordate leaves.

Carpels angular at the top, leaving persistent filiform placentas

13. *A. graveolens*.

Carpels rounded at the top, completely deciduous

15. *A. muticum*.

Carpels rarely more than 10, glabrous or slightly tomentose, not scarious. Leaves mostly cordate-orbicular.

Densely velvety-tomentose (shrubby?). Petals shortly exceeding the calyx

16. *A. Cunninghamsi*.

Low undershrub, shortly tomentose or pubescent, often with spreading hairs. Petals fully twice as long as the calyx

17. *A. Fraseri*.

Carpels 10 to 15, slightly hispid, enlarged and scarious when ripe. Slender undershrub, with cordate, often almost sessile leaves

18. *A. crispum*.

Distinct as the two sections are in some instances, they are closely connected by *A. graveolens*, and some other intermediate species.

2. **A. amplum**, *Benth.* Tall and shrubby, the foliage and inflorescence softly tomentose-hirsute, not so white as in the allied species, and apparently somewhat viscid. Leaves deeply cordate, ovate, acuminate, crenate, 2 to 4 in. long, soft but green. Pedicels shorter than the leaves. Buds acuminate, prominently angled. Calyx, when open, broadly tubular-campanulate, about 1 in. long, tomentose-hirsute, with 10 slightly prominent ribs, the lobes broadly lanceolate, nearly as long as the tube. Petals (yellow?) often twice as long as the calyx, much broader than in *A. tubulosum*, the claws adhering to the lower part only of the staminal column, and there very pubescent. Capsule angular, softly villous, about half the length of the calyx; carpels about 5, scarcely acuminate.

N. Australia. Harding river, S.E. of Nichol Bay, *P. Gregory's Expedition*.—F. Mueller is disposed to consider this as a variety of *A. tubulosum*, but the shape of the petals and their pubescent base are more those of *A. leucopetalum*, and the calyx is different from both. Further and more complete specimens may, however, considerably modify the circumscription of *A. tubulosum*, *amplum*, *leucopetalum*, and *Mitchelli*, which are all nearly allied to each other.

11. **A. auritum**, *G. Don, Gen. Syst.* i. 500. A tall herb or perhaps undershrub, softly clothed with a soft tomentum. Stipules broad, semi-sagittate, often 4 to 6 lines long, and persistent. Leaves deeply cordate, acuminate, denticulate, 2 to 4 in. long, softly pubescent-tomentose above, white underneath. Flowers rather small, of a brown-reddish yellow, on very short pedicels, in almost leafless, terminal, branching racemes or panicles, with a broad, whitish, deciduous, stipular bract under each pedicel. Calyx obtusely 5-angled, softly tomentose, deeply divided into broad acuminate lobes. Petals not twice as long. Stamens not very numerous. Capsule longer than the calyx, hirsute, truncate; carpels numerous, with short divaricate points. —*Sida aurita*, Wall.; DC. Prod. i. 468; Bot. Mag. t. 2495.

N. Australia. Keppel Bay, *R. Brown*; Percy Island, *A. Cunningham*.
The species is also found in Java and in the Philippine Islands.

18. **A. crispum**, *G. Don, Gen. Syst.* i. 502. A herb or undershrub, with slender spreading branches, closely tomentose, often viscid, with long spreading hairs intermixed. Leaves cordate, acuminate, crenate, softly tomentose, the upper ones on short petioles or quite sessile. Pedicels slender, often exceeding the upper leaves. Flowers small, yellow. Calyx 2 or rarely 3 lines long, deeply divided into lanceolate or triangular acuminate lobes, reflexed under the fruit. Petals not much longer. Fruit nearly globular, hispid with scattered hairs, 4, 5, or sometimes above 6 lines diameter; carpels about 10 to 15, distinctly separating from the axis, very thin, shining inside and almost scarious when ripe, and almost always 1-seeded, although the ovary has 2 or 3 ovules.—*A. Gray, Gen. Ill.* t. 126; *Wight, Ic. Pl.* t. 68; *Sida crispata*, *Linn.*; *DC. Prod.* i. 469; *Bastardia crispata*, *St. Hil. Fl. Bras. Mer.* i. 194.

N. Australia. Sources of Hooker's Creek, and Macarthur river, *F. Mueller*; Maitland river, *F. Gregory's Expedition*.

The species is widely spread over tropical America, and is also found in East India and tropical Africa.

16. **A. Cunninghamii**, *Benth.* Allied to *A. Fraseri*, but apparently shrubby, much branched, and densely clothed with soft, short, but velvety tomentum, without spreading hairs. Leaves cordate-orbicular, very obtuse, crenate, 1 to 2 in. diameter, thick and soft. Flowers on rather long peduncles in the upper axils. Calyx 4 to 5 lines long, densely tomentose, deeply divided into broad acuminate lobes. Petals about $\frac{1}{2}$ in. long. Carpels 10 or fewer, distinct and seceding completely from the axis, rounded at the top, densely but closely tomentose, and not scarious.

N. Australia. Enderby Island, N.W. coast, *A. Cunningham*; Albert river, *Henne*.
Queensland. Estuary of the Burdekin, *Herb. Mueller*.

17. **A. Fraseri**, Hook.; *Walp. Ann.* ii. 158. A low branching under-shrub, rarely exceeding 1 ft., shortly tomentose or pubescent, with longer hairs occasionally intermixed. Leaves cordate, from orbicular to ovate, crenate, often all under 1 in. diameter, but sometimes $1\frac{1}{2}$ in. Pedicels rarely exceeding the petioles. Flowers rather large. Calyx 3 to 4 lines long, tomentose-pubescent and sometimes hirsute, divided to about the middle. Petals more than twice as long. Fruit usually exceeding the calyx, slightly tomentose or pubescent, 3 to 4 lines diameter, depressed in the centre; carpels 6 to 10, very distinct, and seceding completely from the axis, obtuse or almost pointed at the top, not scarious. Seeds 1 or 2 in each carpel, glabrous or minutely pubescent.—*Sida Fraseri*, Hook. in Mitch. Trop. Austr. 368.

N. Australia. *M'Douall Stuart's Expedition.*

Queensland. On the Maranoa, *Mitchell*; Sutton river and Broad Sound, *F. Mueller*; Comet river, *Leichhardt*.

N. S. Wales. Peel's range, *A. Cunningham*; Darling river, *Dallachy and Goodwin*; Goginya mountains, *Victorian Expedition*.

S. Australia. Subsaline barren plains and hills from Flinders range to Spencer's Gulf, *F. Mueller*.

W. Australia. Murchison river?, from a single specimen in leaf only, and therefore doubtful, in *Herb. Mueller*.

Var. *parviflora*. Leaves very obtuse. Flowers much smaller.—*A. diplotrichum*, *F. Muell.* in *Linnaea*, xxv. 380.—S. Australia.

Var. *halophilum*. Leaves usually orbicular, very obtuse, often truncate or retuse, the

10. **A. indicum**, G. Don, *Gen. Syst.* i. 504. A tall biennial or peren-

nial, clothed with a whitish tomentum, usually very close and short. Leaves cordate-orbicular, irregularly crenate, toothed or almost lobed, usually acuminate, attaining sometimes 5 to 6 in., the upper ones much smaller. Pedicels shorter than the leaves. Calyx campanulate, 5 to 6 lines long, angular in the bud, the ribs scarcely prominent when in flower, deeply divided into acuminate lobes. Petals yellow, longer than the calyx. Capsule hairy, exceeding the calyx, truncate, and attaining sometimes 7 or 8 lines diameter at the top; carpels about 20, acute-angled or minutely acuminate at their upper outer edge, like all the preceding species not readily separating at maturity. Seeds 3 or fewer in each carpel.—*Sida indica*, Linn.; DC. Prod. i. 471; Wight, *Ic. Pl. t. 12*; *Sida asiatica*, Linn.; DC. Prod. i. 470; *Abutilon asiaticum*, G. Don, *Gen. Syst.* i. 503.

N. Australia. Point Cunningham and Cygnet Bay, *A. Cunningham*; Gulf of Carpentaria, *Landsborough*.

Queensland. Keppel Bay and Shoalwater Bay, *R. Brown*; Percy Island, *A. Cunningham*; Port Denison, *Fitzalan*.

The species is widely spread over tropical Asia and Africa.

3. **A. leucopetalum**, *F. Muell. Herb.* A tall shrub, clothed with a soft velvety tomentum like *A. tubulosum*, but internixed with long spreading hairs on the branches, and paler on the under side of the leaves. Leaves deeply cordate, from orbicular to nearly lanceolate, often shortly acuminate, irregularly crenate or almost lobed, mostly shorter than in *A. tubulosum*. Flowers large and white, on short pedicels. Calyx broadly tubular-campanulate, $\frac{1}{2}$ to $\frac{3}{4}$ in. long, 10-ribbed, scarcely acuminate in the bud, the lobes obtuse or shortly acuminate, shorter than the tube. Petals more than twice as long as the calyx, adnate only to the pubescent base of the staminal tube. Capsule as in *A. tubulosum*, but fully as long as the calyx-tube.—*Sida leucopetala*, *F. Muell. Fragm. ii. 12.*

N. Australia. Hooker's Creek and Upper Victoria river, *F. Mueller.*

N. S. Wales. Barrier range, *Victorian Expedition.*

S. Australia. Cooper's Creek, *Herb. Mueller.*

NIB

MALVACEAE

Abutilon longlobum
F. Muell.

8. **A. otocarpum**, *F. Muell. in Trans. Phil. Soc. Vict.* 1855, 13, and in *Hook. Kew Journ.* viii. 10. A tall shrub, densely clothed with a soft velvety tomentum, the branches and petioles almost villous. Leaves deeply cordate, orbicular or broadly ovate, mostly $1\frac{1}{8}$ to $2\frac{1}{2}$ in. long, rarely acuminate, crenate, very soft and thick. Pedicels much shorter than the leaves, often crowded at the ends of the branches. Calyx 4 to 6 lines long, very prominently 5-angled, deeply divided into very concave, almost boat-shaped, strongly keeled, acuminate lobes, making the calyx intruded at the base. Petals slightly exceeding the calyx. Capsule villous, shorter than the calyx-lobes, narrowed at the top, depressed in the centre; carpels about 10, rather obtuse or scarcely pointed on the upper outer edge. Seeds 3 or fewer.

N. Australia. In the desert on Sturt's Creek, and on Gilbert river, *F. Mueller*; Nichol Bay, *F. Gregory*.

Queensland. Stokes range, *Wheeler*.

N. S. Wales. Mount Murchison, *Dallachy and Godwin*; Barrier range, Mount Goningbear, etc., *Victorian Expedition*. In these specimens the tomentum is closer, the flowers rather smaller, and the capsule closely tomentose, with the carpels more acute than in the Western ones, but they have the same remarkable calyx.

14. **A. oxycarpum**, *F. Muell. Herb.* Herbaceous, diffuse or erect, attaining 2 or 3 ft., clothed with a close tomentum or soft velvety pubescence, sometimes almost hirsute, the branches usually slender and divaricate. Leaves from cordate-ovate to ovate-lanceolate, crenate, obtuse or acuminate, 1 to 3 in. long. Pedicels slender, often 2 together, 1 to 2 in. long. Flowers small, yellow. Calyx deeply cleft, about 2 lines long. Petals not twice as long. Capsule closely tomentose or pubescent, about 4 lines long, truncate and somewhat dilated at the top; carpels rarely above 10 and often much fewer, with short divaricate points at the outer angle, not separating till the seeds shed, and then leaving the filiform placentas attached to the axis. Seeds 2 or rarely 3.—*Sida oxycarpa*, *F. Muell. Fragm. ii. 12.*

N. Australia. Fitzroy and Mackenzie rivers, *F. Mueller.*

Queensland. Keppel Bay, *R. Brown*; Brisbane river, *Fraser, F. Mueller*; Rockhampton, *Thozet.*

N. S. Wales. Portland Head and Richmond district, *R. Brown*; from Hastings river, *Beckler*; Clarence river, *Wilcox*; to Illawara, *Backhouse*; and in the interior to the Blue Mountains, *Miss Atkinson*; Liverpool plains, *A. Cunningham*; Macquarie river, *Mitchell*; Darling river, *F. Mueller.*

W. Australia. Swan River, *Drummond.*

There are two principal forms in our herbaria: 1, *acutatum*, softly tomentose, pubescent or almost hirsute; leaves ovate-lanceolate, or lanceolate, acuminate; the most common Brisbane and N. S. Wales form; and 2, *incanum*, tomentum close and white; leaves broadly cordate-ovate, obtuse or acuminate; chiefly within the tropics and in the west. Both are readily recognized by the small calyx, usually not half so long as the capsule.

Var. (?) *malvaefolium*. Less tomentose, but hirsute with long spreading hairs. Leaves cordate-ovate, very obtuse, crenate, and more or less distinctly 3-lobed. Sepals almost as long as the carpels.—Mount Murchison in N. S. Wales, *Dallachy*. This may prove to be a distinct species.

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MALVACEAE

Abutilon propinquum
W.V. Fitz

NIB

MALVACEAE

Decaschistia byrnesii
ssp. *lananoulacea*
Fryxell

13. **GOSSYPIUM**, Linn.

(*Sturtia*, *R. Br.*)

Bracteoles 3, large and cordate. Calyx much shorter, truncate or shortly 5-lobed. Staminal column bearing numerous filaments outside, below or up to the top. Ovary 5-, rarely 4-celled, with several ovules in each cell. Style club-shaped at the top, furrowed, with decurrent stigmas. Capsule loculicidally 5-, rarely 4-valved. Seeds angular or nearly globular, very woolly or nearly glabrous; cotyledons very much folded, enclosing the radicle. — Tall herbs, shrubs, or almost trees. Leaves 3- to 9-lobed, or rarely entire. Flowers large, yellow or purple. Bracteoles entire, toothed or cut, usually, as well as the calyx and cotyledons, marked with black dots.

The genus, besides the Australian species, which is endemic, comprises the cultivated *Cotton*, whose various forms, described as species, races, or varieties, are distributed either as indigenous or introduced plants over the warmer regions both of the New and the Old World, but not hitherto found in a wild state in Australia.

3. **F. australis**, *Benth.* An undershrub of several feet, hoary with a dense but very short tomentum. Leaves broadly or narrow-ovate, obtuse, $1\frac{1}{2}$ to $2\frac{1}{2}$ in. long, entire or more or less sinuate or 3-lobed. Flowers rather large, pink, on very short pedicels, which are often clustered 2 or 3 together at the top of axillary peduncles, with a bract or small leaf under each. Bracteoles 3, linear, distinct. Calyx from $\frac{1}{2}$ to $\frac{3}{4}$ in. long, tomentose and marked with black glandular dots, the lobes lanceolate or almost linear, varying very much in length. Petals $1\frac{1}{2}$ in. long, slightly tomentose outside. Capsule obovoid-oblong, shortly acuminate, tomentose, 3- or 4-valved. Seeds numerous, woolly.—*Gossypium australe*, F. Muell. *Fragm.* i. 46, and iii. 6.

N. Australia. Barren plains, not rare, *F. Mueller*; N.W. coast, *Bynoe*; Maitland river, *F. Gregory's Expedition*; Gulf of Carpentaria, *Landsborough*.

In habit and foliage this much resembles the Brazilian *F. plomidifolia*, St. Hil., which has, however, more numerous bracteoles and yellow flowers.

NIB

MALVACEAE

Gossypium pulchellum
C.A. Gardn. Comb
no.

N 18

MALVACEAE

Gossypium robinsonii
F. Muell.

9. HIBISCUS, Linn.

(Abelmoschus, Medik.; Paritium, A. St. Hil.)

Bracteoles several, rarely reduced to 5 or fewer, usually narrow, free or more or less united, sometimes very small. Calyx 5-lobed or 5-toothed. Staminal column bearing usually numerous filaments on the outside below the truncate or 5-toothed summit. Ovary 5-celled, with 3 or more ovules in each cell; style-branches 5, spreading, or rarely erect and subconnate or exceedingly short, with terminal dilated or capitate stigmas. Capsule membranous or coriaceous, loculicidally 5-valved, the endocarp not usually separating, and rarely produced into spurious dissepiments apparently doubling the number of cells. Seeds reniform or nearly globular, glabrous pubescent or woolly.—Herbs, shrubs, or trees, hispid tomentose or glabrous, the hairs almost always stellate. Leaves various, often deeply divided. Stipules in the Australian species subulate or small and deciduous, except in *H. tiliacens*

Flowers usually large, the petals almost always marked with a deeper colour at the base. Filaments usually short and numerous, crowded along the greater part of the elongated staminal column, rarely elongated, fewer and placed close round the top of the short column. Bracteoles usually persistent, but in a few species so deciduous as only to be seen on the very young buds.

A very large genus, widely dispersed over the tropical regions of the globe, a few extending into more temperate climates both in the northern and southern hemispheres. Of the Australian species four are generally distributed over E. India and Africa; of three others belonging to the section *Abelmoschus*, one is found in the Indian Peninsula, another is cultivated, if not wild, in the Indian Archipelago, the third is nearly allied to a corresponding E. Indian species, but in some respects distinct, an eighth species, of the section *Paritium*, is a common maritime tropical tree; the remaining 18 are all endemic.

§ 1. *Bracteoles free (sometimes very deciduous). Calyx 5-toothed, splitting open on one side and deciduous. Tall annuals.* (Abelmoschus, Medik.)

- Glabrous or the inflorescence tomentose. Bracteoles small, falling off from the young bud. Flowers white 1. *H. ficulneus*.
- Hispid. Bracteoles 8- to 12, linear, persistent. Flowers red 2. *H. rhodopetalus*.
- Glabrous or slightly setose. Bracteoles 5, broad-lanceolate, persistent 3. *H. Manihot*.

§ 2. *Bracteoles free. Calyx shortly 5-lobed, inflated. Herb with deeply lobed leaves.* (Trionum, Medik.) 4. *H. trionum*.

§ 3. *Bracteoles free. Calyx deeply 5-lobed, the lobes 1- or 3-nerved, without thickened margins. Seeds bordered or covered by long woolly hairs. Low or slender shrubs or undershrubs.* (Bombicella, DC.)

- Staminal tube short with long filaments round the summit 5. *H. brachysiphonius*.
- Staminal tube slender, the short filaments extending to the middle or lower.
- Plant loosely scabrous-hispid. Leaves deeply divided 6. *H. Drummondii*.
- Plant densely and rigidly velvety-tomentose. Leaves ovate or lanceolate, mostly undivided. Bracteoles small 7. *H. microchlanus*.
- Plant closely and densely tomentose. Leaves orbicular, mostly broadly 3-lobed 8. *H. Pinonianus*.

§ 4. *Bracteoles free. Calyx deeply 5-lobed, the lobes with a central nerve and thickened nerve-like margins. Seeds glabrous. Tall herbs or shrubs, often more or less armed with short prickles (except the last two species).*

- Herb, glabrous or with scattered hairs. Calyx ribs ciliate.
- Flowers white or pink 9. *H. radiatus*.
- Tall shrubs, glabrous or with scattered hairs.
- Flowers axillary, without bracts under the pedicels.
- Flowers yellow. Calyx ciliate or setose 10. *H. divaricatus*.
- Flowers white. Calyx densely tomentose 11. *H. heterophyllus*.
- Flowers in a terminal raceme, with a trifid bract under each pedicel. Calyx densely hirsute 12. *H. diversifolius*.
- Tall shrub, densely velvety-tomentose or villous. Flowers large, pink. Calyx densely hirsute 13. *H. splendens*.
- Tomentose or densely villous shrubs, without prickles. Calyx tomentose or villous.
- Flowers 1½ to 2 in. long 14. *H. zonatus*.
- Flowers about ½ in. long 15. *H. Coatesii*.

§ 5. *Bracteoles free. Calyx deeply 5-lobed, the lobes 1- or 3-nerved, without thickened margins. Seeds glabrous or shortly pubescent.*

- Low or slender shrubs or undershrubs, glabrous, scabrous-pubescent or bristly hispid.
- Leaves undivided.
- Scabrous-pubescent. Leaves ovate-lanceolate or oblong 16. *H. leptocladus*.
- Glandular viscid and rigidly setose. Leaves broad-cordate or orbicular 17. *H. setulosus*.
- Leaves deeply divided.
- Glabrous or nearly so. Calyx ½ in. long. Capsule hispid 18. *H. pentaphyllus*.
- Hirsute and densely setose. Calyx not ½ in. Capsule glabrous 19. *H. geranioides*.
- Small velvety-tomentose shrubs or undershrubs. Leaves shortly lobed.
- Bracteoles several, subulate 23. *H. Krichauffianus*.
- (See also 8, *H. Pinonianus*, and 7, *H. microchlanus*.)
- Bracteoles 5, broadly ovate 22. *H. Normani*.
- Tall shrub, scabrous, tomentose or hirsute. Leaves deeply divided 25. *H. Huegelii*.
- Tall coarse herbs or shrubs, densely tomentose and often setose.
- Bracteoles small, subulate. Capsule very prominently angled 20. *H. vitifolius*.
- Bracteoles dilated above the middle. Capsule not angled 21. *H. panduriformis*.

§ 6. *Bracteoles united at least at the base. Calyx 5-lobed.*

- Tomentose shrubs or undershrubs. Leaves crenate or broadly and shortly lobed.
- Involucral teeth or lobes short or broad. Filaments long and few. Calyx lobes obscurely nerved 24. *H. Sturtii*.
- Involucral bracts united at the base only. Filaments short and numerous. Calyx lobes 1-nerved, with thickened margins 14. *H. zonatus*.
- Tall shrub, glabrous, scabrous or tomentose-hirsute. Leaves deeply divided

7. **H. microchlænus**, F. Muell. *Fragm.* ii. 116 (under *H. solanifolius*). Apparently shrubby, densely clothed with a scabrous, rigid-velvety, or softer and almost floccose stellate tomentum. Leaves on rather short petioles, from ovate to oblong-lanceolate, 1 to $1\frac{1}{2}$ in. long, obtuse, slightly toothed, thickly and rigidly tomentose. Flowers apparently pink or purple, on pedicels rather longer than the petioles. Bracteoles 7 to 9, sometimes very minute, sometimes half as long as the calyx. Calyx $\frac{1}{2}$ in. or rather more, densely scabrous-tomentose, deeply divided into lanceolate 1-nerved lobes. Petals 1 to $1\frac{1}{2}$ in. long, more or less stellate-tomentose outside where exposed in the bud. Capsule globular, glabrous or slightly hairy. Seeds more or less bordered or covered with long woolly hairs.—*H. brachychlænus*, F. Muell. *Fragm.* iii. 5.

N. Australia. Upper Victoria river, F. Mueller; Maitland river, Nichol Bay, Walcott; Fortescue river, M. Brown.

9. **H. radiatus**, Cav. Diss. 150, t. 54, f. 2. An erect annual (or rarely perhaps perennial) of 2 to 3 ft., glabrous or hispid in the lower part with a few rigid hairs, and often bearing also small conical prickles. Lower leaves broad and shortly lobed, upper ones deeply 3- to 5-lobed or the uppermost undivided, the lobes narrow, toothed and unequal, the central one often 2 to 3 in. long. Flowers white or pink with a dark centre, on axillary pedicels usually very short, rarely attaining 1 in. Bracteoles about 10, narrow-linear, often spreading or reflexed, and ciliate with a few rigid hairs. Calyx about $\frac{3}{4}$ in. long, deeply divided into lanceolate acuminate lobes, of a thin texture, but marked with a prominent midrib and thickened marginal nerves, more or less rigidly ciliate. Petals 1 to $1\frac{1}{2}$ in. long. Capsule globose, glabrous in the Australian specimens. Seeds few, glabrous.—DC. Prod. i. 449; Bot. Mag. t. 1911; F. Muell. Fragm. ii. 117.

N. Australia. Arnhem's Land, islands of Carpentaria Bay, etc., R. Brown; Victoria and Fitzmaurice rivers, Macadam range, etc., F. Mueller.

Queensland. Percy Islands and other points of the N.E. coast, A. Cunningham; Palm Islands and Curtis Island, Henne.

The species extends over F. India and tropical Africa, but the extra-Australian specimens I have seen have always hirsute and less obtuse capsules. *H. Lindleyi*, Wall. Pl. As. Rar. i. 4, t. 4, is probably a purple-flowered variety. *H. cannabinus*, Linn., cultivated in Asia and Africa for its fibre, differs from *H. radiatus* only in the glands on the calyx.

15. **H. Coatesii**, *F. Muell. Fragm.* iii. 5. A shrub, evidently very nearly allied to *H. zonatus*, with the same shaped leaves and flowers, but much more densely tomentose, hirsute with rather long rigid or woolly hairs, and the flowers much smaller. Calyx about $\frac{1}{2}$ in. long, very hirsute, the lobes much narrower than in *H. zonatus*, the corolla apparently about $\frac{3}{4}$ in. long.

N. Australia. Hammersly range, near Nichol Bay, *F. Gregory's Expedition*. The specimen is very incomplete. It may possibly prove to be a variety of *H. zonatus* (*Herb. F. Muell.*)

1. ***H. ficulneus***, Linn.; DC. *Prod.* i. 448. An erect annual of several feet, glabrous except a few scattered hairs on the leaves, and a velvety pubescence on the racemes and calyces. Leaves orbicular, 2 to 3 in. diameter, the lower ones with 5 or 7 short broad lobes, the upper ones more deeply divided, with obovate or oblong lobes, all usually crenate. Flowers white, turning at length reddish, on short pedicels, in a terminal leafless raceme. Bracteoles few, small and so deciduous as only to be seen on the very young buds. Calyx about $\frac{1}{2}$ in. long, shortly 5-toothed, splitting laterally and deciduous. Petals 1 in. or rather more, glabrous. Capsule ovoid-oblong, acute, 5-angled, pubescent. Seeds hairy.—*Abelmoschus ficulneus*, W. et Arn. *Prod.* i. 53; Wight, *Ic. t.* 154; *A. alborubens*, F. Muell. *Fragm.* i. 67.

N. Australia. In basaltic tropical and subtropical plains, *F. Mueller*.

Queensland. Fitzroy plains, *F. Mueller*; Rockhampton, *Thozet*.

The species is common in some parts of the E. Indian peninsula, and includes *H. strictus*, Roxb. *Fl. Ind.* iii. 206, and probably also *H. prostratus*, Roxb. *l. c.* 208. The plant figured by Reichenbach, *Icon. Exot.* t. 161, with persistent broad bracts, is a different species.

19. **H. geranioides**, *A. Cunn. Herb.* A low branching annual of 1 to 2 feet, densely hispid with long rigid stellate hairs or bristles. Leaves deeply divided into 3 or 5 oblong-linear or cuneate segments, mostly about 1 in. long, lobed or coarsely toothed, the lobes or teeth obtuse, hispid on both sides. Flowers small for the genus, on hispid pedicels often as long as the leaves. Bracteoles 8 to 10, linear-subulate, hispid. Calyx 4 to 5 lines long, hirsute, deeply divided into lanceolate-acuminate, 3-nerved lobes. Petals about $\frac{3}{4}$ to 1 in. long, dark at the base. Filaments short, along the upper part of the column. Stigmas capitate. Capsule small, globular, glabrous. Seeds glabrous.

N. Australia. Islands of the Gulf of Carpentaria, *R. Brown*; Vansittart's Bay, N.W. coast, *A. Cunningham*.

N 13

MALVACEAE

Hibiscus goldsworthii

F. muell.

NIB

MALVACEAE

Hibiscus haynaldii

F. Muell.

16. **H. leptocladus**, *Benth.* Apparently a low herb or undershrub, with slender branches, rough with short rigid stellate hairs. Leaves on rather long petioles, ovate-lanceolate, lanceolate or oblong, 1 to 2 in. long, irregularly toothed, narrowed or rounded at the base, roughly pubescent on both sides with rigid stellate hairs. Flowers apparently pink, on rather long pedicels in the upper axils. Bracteoles about 7 to 9, linear-subulate, rarely exceeding half the length of the calyx. Calyx about $\frac{1}{2}$ in. long, pubescent or hispid with stiff stellate hairs, deeply divided into lanceolate-acuminate, 1- or 3-nerved lobes, without thickened margins. Petals 1 to $1\frac{1}{2}$ in. long, glabrous. Capsule nearly globular. Seeds 2 or 3 in each cell, glabrous.

N. Australia. Islands of Carpentaria Bay, *R. Brown*; Victoria river, *Bynoe, F. Mueller.*
This species resembles in some respects *H. microclenus*, but is much more slender and less tomentose, and both petals and seeds appear to be quite glabrous.

NIB

MALVACEAE

Hibiscus meraukensis
Hook.

Brockmania membranacea
W.V. Fitzg.

= *Hibiscus merankensis*

21. **H. panduriformis**, *Burm. Fl. Ind.* 151, t. 47, f. 2. A tall, coarse herb or shrub, densely covered with a tomentum, usually thick and velvety on the upper side of the leaves, closer and whiter on the under side and on the petioles and branches, where it is often intermixed with long spreading bristly stellate hairs. Leaves broad-cordate, 3 or 4 in. long and broad, or rarely narrow, usually 5-angled or broadly lobed and irregularly crenate. Flowers yellow, on very short pedicels in the axils of the upper reduced leaves, the side-branches often assuming the appearance of several-flowered peduncles. Bracteoles 6 to 8, linear or linear-spathulate, often as long as the calyx, more herbaceous than in most species and always dilated above the middle. Calyx 7 to 9 lines long, densely tomentose-hirsute, the lobes lanceolate, 1-nerved. Petals 1 to 2 in. long, densely hirsute where exposed in the bud. Capsule

ovoid-globular, very hispid. Seeds shortly pubescent or rarely glabrous.—*DC. Prod.* i. 455; *F. Muell. Fragm.* ii. 115; *H. tubulosus*, *Cav. Diss.* 161, t. 68, f. 2; *DC. Prod.* i. 447.

N. Australia. Victoria river, *F. Mueller*; Maitland river, *F. Gregory's Expedition*; Albert river, *Henne*. The species is widely spread over tropical Asia and Africa. Burmann's figure represents a narrow-leaved form, not as yet found in Australia, and rare in India.

25. **H. Huegelii**, *Endl. in Hucg. Enum.* 10. A tall shrub, more or less scabrous or tomentose with scattered stellate hairs, or rarely glabrous, and never hoary. Leaves deeply 3- or 5-lobed, 1 to 2 or even 3 in. long, the lobes obovate, oblong, cuneate or rarely lanceolate, more or less pinnatifid, 3-lobed or coarsely toothed, often undulate, and the lobes or teeth obtuse or rarely rather acute. Flowers large, violet purple (or rarely yellow?), the pedicels rather long, bearing sometimes a small bract, and still more rarely a second flower at the joint. Involucral bracteoles more or less united at the base into a short broad cup, with 7 to 10 linear or subulate teeth or lobes very variable in length, rarely nearly free to the base. Calyx $\frac{3}{4}$ to nearly 1 in. long, tomentose or softly villous, deeply divided into lanceolate-acuminate 3- or 5-nerved lobes. Petals 2 to 3 in. long, softly tomentose or villous outside where exposed in the bud. Styles united almost to the stigmas, which are large and spreading. Capsule ovoid-globose, tomentose or villous, the cells hairy inside. Seeds glabrous.

S. Australia. Goose Island Bay and Memory Cove, *R. Brown*; Mount Arden, Mount Remarkable, and Port Lincoln, *F. Mueller*; Streaky Bay, Venus Bay, etc., *Warburton*.

W. Australia. From Cape Riche, *Preiss*, n. 1340, to Swan River, *Fraser, Drummond, Preiss*, n. 1336, 1339, 1341, and others; and Murchison river, *Drummond, Oldfield*, etc.

A variable species, of which the following are the most conspicuous forms in our herbaria:—

a. angulatus. Glabrous, except a close tomentum on the flowers; branches strongly angular, by prominent lines decurrent from the stipules. Flowers large.—Murchison river.

b. glabrescens. Stem and leaves glabrous or slightly tomentose, the branches terete or with slightly raised angles. Flowers large, tomentose, drying of a pale colour.—Swan River. To this form should be referred the original specimen of *H. Huegelii*. My suspicion that the statement that it had a yellow flower, purple in the centre, originated in a mistake, has been fully confirmed by Dr. Fenzl, who has sent me full notes on the varieties exemplified in the Vienna Herbarium.

c. Wrayæ. More or less abundantly sprinkled or clothed with a scabrous tomentum or stellate hairs. Flowers large, of a bluish-purple. Bracts united. Calyx densely tomentose-villous.—*H. Wrayæ*, *Lindl. Bot. Reg.* 1840, t. 69; *Paritium Wrayæ*, *Walp. Rep.* i. 311; *H. Huegelii*, *Miq. in Pl. Preiss.* i. t. 239; *H. Pinonianus*, *Miq. l. c.* 240, but not of *Gaudichaud*.—S. and W. Australia.

d. leptochlamys. Like the last, but more villous, and the bracteoles longer, free to the base.—Murchison river. The stigmas appear to be erect and closed, almost as in *Fugosia*, but I am not sure that they are perfect in the very few flowers we have.

e. grossulariaefolius. Like *Wrayæ*, but the flowers rather smaller. Leaves often, but not

2. **H. rhodopetalus**, *F. Muell. Herb.* An erect or decumbent coarse annual, of $1\frac{1}{2}$ to 3 ft., more or less hirsute with long bristly hairs. Leaves (except the lowest) more or less deeply 5-lobed, the lobes of the lower ones short and broad, of the upper ones oblong or lanceolate, often 2 to 3 in. long, more or less toothed, the lowest leaves often entire and cordate, and the uppermost lanceolate-hastate. Flowers large, red, on axillary pedicels longer than the petioles. Bracteoles 8 to 12, linear, distinct, persistent, usually shorter than the calyx. Calyx pubescent, 6 to 7 lines long, minutely 5-toothed, splitting laterally and deciduous. Petals $1\frac{1}{2}$ to above 2 in. long. Capsule oblong-ovoid, acute, 5-angled, longer than the bracteoles, very hispid. — *Abalmoschus rhodopetalus*, *F. Muell. Fragm. ii. 112.*

N. Australia. Arnhem's Land, *R. Brown*; Port Moller, *M. Gillivray* (with very narrow leaf-lobes).

Queensland. Woody streams, Point Pearce and Brisbane river, *F. Mueller.*

This species is very nearly allied to the common East Indian *H. Abalmoschus*, *Linn.*, differing chiefly, as observed by *F. Mueller*, in the colour of the flowers, red not yellow, and in smaller, more divided leaves.

17. **H. setulosus**, *F. Muell. Fragm.* i. 221. A much-branched, viscid, strong-scented shrub of several feet, covered with resinous glands, the branches very hispid with long spreading bristles. Leaves broadly cordate or orbicular, mostly 1 to $1\frac{1}{2}$ in. long, toothed, more or less hirsute or pubescent with scattered rigid stellate hairs. Flowers rather large, pink with a dark centre, on axillary pedicels about as long as the petioles. Bracteoles linear, rigid, about as long as the calyx. Calyx about $\frac{3}{4}$ in. long, pubescent and glandular like the leaves, deeply divided into lanceolate 3-nerved lobes. Petals about $1\frac{1}{2}$ in. long. Staminal column conspicuously produced above the filaments and 5-toothed. Capsule globular, hispid, shorter than the calyx. Seeds glabrous or minutely scabrous.

N. Australia. Rocks on the Macarthur and Seven Emu rivers, Gulf of Carpentaria, *F. Mueller.*

24. **H. Sturtii**, Hook. in *Mitch. Trop. Austr.* 363. A rather rigid, simple or branched undershrub, rarely exceeding 1 ft., clothed with a whitish tomentum, either short and rather close, or dense and velvety or sometimes almost floccose. Leaves broadly cordate or ovate, rarely ovate-lanceolate, mostly 1 to $1\frac{1}{2}$ in. long, obtuse, irregularly crenate-toothed, usually rather thick and soft. Flowers few in the upper, axils rather small, white or pink. Involucre obconical or campanulate, with 7 or 8 teeth or short lobes, very variable in shape, but usually nearly as long as the calyx. Calyx very tomentose, the lobes shorter or rarely longer than the cup, thick and soft, obscurely 3-nerved. Petals varying from $\frac{3}{4}$ to fully $1\frac{1}{2}$ in. long. Staminal column slender, with scattered filaments as in most species, but the filaments not so numerous and longer than usual, showing an approach to those of *H. brachysiphonius*. Capsule globular, silky. Seeds glabrous or rarely woolly.—F. Muell. *Fragm.* ii. 13.

N. Australia. N.W. coast, *A. Cunningham*; Victoria river, *F. Mueller*; N. of M'Donnell range, *M'Doual! Stuart*.

Queensland. Mackenzie, Burdekin, Suttor, and Dawson rivers, Peak Downs, etc., *F. Mueller*; Fitzroy Island, *M'Gillivray*; Maranoa and Belyando rivers, *Mitchell*.

N. S. Wales. In marshes and meadows of the interior, *Sturt*, *Fraser*, *Mitchell*, etc.; Clarence river, *Beckler*; New England, *C. Stuart*.

This very variable species, remarkable for its cup-shaped short-lobed involucre, presents in our specimens the following principal forms:—

a. grandiflora. Involucre shorter than the calyx, with triangular or lanceolate, somewhat

NIB

MALVACEAE

Hibiscus superbus

C.A. Gardn.

4. **H. trionum**, Linn.; DC. Prod. i. 453. An erect annual or perennial of short duration, usually 1 to 2 ft. high, scabrous-pubescent or shortly hirsute. Leaves 2 to 3 in. long, deeply 3- or 5-lobed with oblong or lanceolate irregularly-toothed lobes. Flowers rather large, pale-yellow with a dark purple centre, on axillary pedicels. Bracteoles 7 to 12, linear-setaceous. Calyx about $\frac{1}{2}$ in. long when in flower, twice that size in fruit, inflated, membranous with about 20 raised veins, glabrous or slightly hirsute, very shortly 5-lobed. Capsule ovoid-globose, hirsute, enclosed in the calyx. Seeds glabrous.—Reichb. Fl. Germ. v. 181; F. Muell. Fragm. ii. 115; *H. Richardsoni*, Sweet; Lindl. Bot. Reg. t. 875; *H. trionioides*, G. Don, Gen. Syst. i. 483; *H. tridactylites*, Lindl. in Mitch. Three Exped. i. 85.

N. Australia. Victoria river and Sturt's Creek, F. Mueller.

Queensland. Between the Burnett and Dawson rivers, F. Mueller.

N. S. Wales. Hunter's and Nepean rivers, R. Brown; Clarence and Hastings rivers, Beckler; Darling river, Dallachy and Goodwin.

S. Australia. Cooper's Creek, Herb. F. Mueller.

Common throughout Africa and southern Asia, extending northwards to China and the Amur. Found also in New Zealand.

20. **H. vitifolius**, *Linn.*; *DC. Prod.* i. 450. A coarse, erect, divaricately-branched herb of several feet, in India usually shortly tomentose, more hispid in Africa, and in the Australian specimens still more beset with rigid hairs. Leaves broadly cordate, 2 to 3 in. long and broad, usually broadly 3- or 5-lobed and toothed, very densely and softly villous-tomentose. Flowers rather large, pale yellow with a purple centre, on short pedicels, the upper ones forming a short dense leafy raceme. Bracteoles 7 to 10, linear-subulate, shorter than the calyx. Calyx deeply divided into broadly lanceolate lobes, often enlarging after flowering. Capsule depressed globular, beaked in the centre, 5 to 8 lines diameter, hirsute with scattered hairs, the 5 acute angles raised into wings and transversely veined. Seeds glabrous.—*F. Muell. Fragm.* ii. 114.

Queensland. Keppel Bay, *R. Brown*; Percy Island, *A. Cunningham*; Dawson river *F. Mueller*; Palm Islands, *Henne*; outskirts of the northern brush, *Leichhardt*. A very common species in E. India, extending into the warmer regions of Africa, and introduced into the W. Indies, readily known by its winged capsules.

14. **H. zonatus**, *F. Muell. Fragm.* i. 221. A shrub with a scabrous tomentum, sometimes short and close, sometimes dense and velvety, the rather slender branches occasionally hirsute or bristly. Leaves from orbicular-cordate to ovate, the larger ones attaining 3 or 4 in., and shortly and broadly 3-, 5-, or 7-lobed, the upper ones entire or toothed and often narrow.

Flowers rather large, pink, on very short pedicels in the upper axils. Bracteoles narrow and rigid, rarely exceeding half the length of the calyx, free or slightly united at the base. Calyx nearly $\frac{3}{4}$ in. long, densely tomentose, deeply divided into lanceolate lobes, prominently 1-nerved and with thickened margins, as in the preceding species. Petals $1\frac{1}{2}$ to 2 in. long, nearly glabrous. Style-branches short, spreading. Capsule very hispid, nearly globular, shorter than the calyx. Seeds glabrous.

N. Australia. Islands of the Gulf of Carpentaria, *R. Brown*; W. coast of the Gulf, *Leichhardt*; rocky banks of the Seven Emu, Macarthur and Nicholson rivers, *F. Mueller*.

2. **MALVASTRUM**, A. Gray.

Bracteoles either none or 1 to 3, small and distinct. Calyx 5-lobed. Staminal column divided to the top into several filaments. Ovary-cells 5 or more, 1-ovulate. Style-branches of the same number as the cells, filiform or club-shaped, with terminal small or capitate stigmas. Fruit-carpels seceding from the short axis, indehiscent or slightly 2-valved, occasionally produced at the top into erect connivent beaks. Seed ascending, reniform.—Herbs or undershrubs. Leaves entire or divided. Flowers red or yellow, shortly pedunculate or sessile, axillary or in terminal spikes.

A considerable genus, chiefly American, with a few South African species. The two Australian species are both American, but now scattered over some of the warmer regions of the

Old World. The genus, formerly confounded with *Malva* and *Sida*, is readily distinguished from the former by the styles, from the latter by the ascending ovules and seeds.

Tomentum stellate. Flowers mostly in a short terminal spike . . . 1. *M. spicatum*.
Hairs appressed, parallel. Flowers mostly axillary. Calyx broad . . . 2. *M. tricuspidatum*.

1. **M. spicatum**, *A. Gray, Pl. Fendl. 22, and Bot. Amer. Expl. Exped. i. 147.* An erect branching herb of 1 to 2 ft., becoming almost woody at the base, scabrous or softly tomentose with stellate hairs. Leaves petiolate, ovate or ovate-lanceolate, acute or obtuse, 1 to 2 in. long, irregularly serrate or crenate, very rarely obscurely 3-lobed. Flowers rather small, yellow, sessile in a dense terminal spike, rarely exceeding 1 to $1\frac{1}{2}$ in. in length, and often leafy at the base. Bracts narrow, shorter than the calyx, usually 2-lobed. Bracteoles 3, filiform, closely appressed to the calyx. Calyx softly pubescent, the lobes acuminate, and often bordered by long hairs. Petals about 4 to 5 lines long. Carpels 8 to 12, not close-pressed, angular on the edges, pubescent on the top, without points.—*Malva spicata*, Linn.; Cav. Diss. t. 20, f. 4; DC. Prod. i. 430; *M. ovata*, Cav. Diss. 81, t. 20, f. 2; *M. timoriensis*, DC. Prod. i. 430; *M. brachystachya*, F. Muell. in Linnæa, xxv. 378.

N. Australia. Victoria river and Gulf of Carpentaria, *F. Mueller.*

Queensland. Broad Sound and Keppel Bay, *R. Brown*; Brisbane river, *Fraser*; subtropical interior, *Mitchell*; Moreton Bay and Gilbert river, *F. Mueller.*

N. S. Wales. Clarence river, *Beckler*; New England, *C. Stuart*; Darling river and other parts of the W. interior, *Victorian Expedition, Dallachy*, etc.

S. Australia. Flinders range, *F. Mueller.*

The species is common in tropical America, and has been found also in the Cape de Verd Islands and in Timor.

NIB

MALVACEAE

modiola caroliniana
(L.) G. Don

8. **PAVONIA**, Cav.

(*Greevesia*, F. Muell.)

Bracteoles 5 or more, free or united at the base. Calyx 5-toothed or 5-lobed. Staminal column bearing several filaments on the outside, below the truncate or 5-toothed summit. Ovary-cells 5, 1-ovulate; style-branches 10, with terminal capitate stigmas. Fruit-carpels seceding from the axis, indehiscent or 2-valved at the top, with or without 1 or 3 awns or points, but not covered by the hooked bristles of *Urena*. Seeds ascending.—Herbs or shrubs, tomentose, hirsute, or glabrous. Leaves often angled or lobed. Flowers on axillary pedicels or in terminal heads or clusters.

A large genus, chiefly South American, with a few species scattered over the warmer regions of the Old World. The Australian species is the same as one of the South American ones.

1. **P. hastata**, Cav. Diss. 138, t. 47, f. 2. A low spreading shrub, more or less hoary, with a minute close stellate tomentum. Stipules subulate. Leaves petiolate, from ovate-cordate to oblong-hastate, obtuse, 1 to 2 in. long, coarsely crenate, scabrous above, hoary-tomentose underneath; when hastate, the lateral lobes short and obtuse. Pedicels usually shorter than the leaves. Bracteoles 5, ovate, herbaceous, nearly as long as the calyx. Calyx tomentose, 2 to 3 lines long, divided to the middle into 5 ovate lobes. Petals in the perfect flowers twice as long as the calyx, of a reddish-purple with a dark centre, but in other flowers, equally fertile, they are very small and closed over the stamens, which are then reduced to 5, whilst they are much more numerous in the perfect flowers. Carpels obovoid, indehiscent, usually pubescent, strongly reticulate and with a slightly raised dorsal rib.—DC. Prod. i. 443; Reichb. Icon. Exot. t. 227; *Grevesia cleisocalyx*, F. Muell. in Kew Journ. viii. 8 (founded on clandestine-flowered specimens).

Queensland. Moreton Bay, *F. Mueller*; Brisbane river, *Hill*; Expedition Range, *Leichhardt*.

N. S. Wales. Nepean, Hawkesbury and Patterson rivers, *R. Brown*; Hunter's river, *U. S. Exploring Expedition*; Liverpool Plains, *A. Cunningham*; Clarence river, *Beckler*.

Also a native of Montevideo in South America, where, as well as in Australia, it produces both kinds of flowers, although the clandestine ones appear never to have been observed until pointed out by *F. Mueller*.

4. SIDA, Linn.

Bracteoles none, or small and distant from the calyx. Calyx 5-toothed or 5-lobed. Staminal column divided at the top into several filaments. Ovary-cells 5 or more, verticillate, 1-ovulate. Style-branches as many as cells, filiform or slightly clavate, with terminal, capitate or truncate stigmas. Fruit-carpels either obtuse or with connivent points, seceding from the axis, indehiscent or opening shortly at the top in 2 valves. Seed pendulous or horizontal, with a dorsal raphe.—Herbs or shrubs, usually clothed with a soft or whitish stellate tomentum. Stipules in all the Australian species except *S. Hookeriana*, subulate and deciduous. Flowers sessile or pedunculate, axillary or in terminal heads, spikes, or racemes, of various colours and sometimes large, but most frequently rather small, yellow, or whitish.

The genus, even as now limited to the exclusion of the *Abutilons*, is large, and widely spread over the warmer regions of the globe, but most abundant in America. Of the Australian species three are common tropical weeds, the remainder all endemic.

§ 1. *Calyx without prominent ribs or angles. Carpels strongly reticulate on the sides (except S. pleiantha), indehiscent, or nearly so, never aristate. Perennials or shrubs. Leaves undivided.*

- Flowers 1 or 2 together, on slender pedicels, articulate near the top.
- Calyx-lobes obtuse, not protruding beyond the broad part of the fruit.
- Carpels strongly wrinkled on the back. Fruit $2\frac{1}{2}$ to 4 lines diameter 1. *S. corrugata*.
- Carpels not, or very slightly wrinkled. Fruit not exceeding 2 lines diameter. Leaves and flowers very small 2. *S. intricata*.
- Calyx-lobes acute or scarcely acuminate, remaining herbaceous, and not much enlarged after flowering.
- Leaves ovate or ovate-lanceolate, cordate at the base 3. *S. macropoda*.
- Leaves lanceolate or oblong-lanceolate, not cordate 4. *S. virgata*.
- Calyx-lobes acuminate, with long, subulate, woolly points 5. *S. cryphiopetala*.
- Calyx-lobes enlarged and thinner or scarious after flowering.
- Leaves lanceolate or oblong. Carpels 6 to 8.
- Fruiting calyx about $\frac{1}{4}$ in. diameter, slightly spreading; lobes narrow, ovate-lanceolate 6. *S. petrophila*.
- Fruiting calyx $\frac{3}{4}$ in. diameter, very spreading; lobes broadly ovate, scarious 7. *S. calyxrhymenia*.
- Leaves cordate-ovate or orbicular. Carpels above 15. Fruiting calyx 2 in. diameter 8. *S. physocalyx*.
- Flowers clustered, several together. Pedicels short, not articulate.
- Flowers nearly sessile. Tomentum dense, or rarely scanty. Carpels reticulate on the side 9. *S. subspicata*.
- Flowers pedicellate. Tomentum thin or floccose. Carpels not reticulate 10. *S. pleiantha*.

§ 2. *Calyx 5-angled, prominently 10-ribbed. Carpels not reticulate on the sides, and opening in 2 short valves at the top. Herbs or undershrubs. Leaves undivided.*

- Leaves ovate or narrow, whitish with a close tomentum on both sides.
- Carpels 5 11. *S. spinosa*.
- Leaves ovate or narrow, whitish with a close tomentum underneath.
- Carpels about 10 12. *S. rhombifolia*.
- Leaves broad, cordate (or rarely narrow). Tomentum soft, loose, or velvety. Carpels about 10 13. *S. cordifolia*.

§ 3. *Calyx with 15 or 20 nerves prominent when in fruit. Carpels numerous. Styles free to the base. Leaves undivided.*

- Calyx enlarging little after flowering, open at the top 14. *S. platycalyx*.
- Fruiting calyx very large, membranous, quite closed over the fruit 15. *S. inclusa*.

§ 4. *Calyx 10-ribbed at the base, each lobe having also 2 intramarginal veins. Annual, with deeply-lobed leaves 16. S. Hookeriana.*

7. **S. calyxhymenia**, *J. Gay, in DC. Prod. i. 462.* An erect shrub, hoary all over with a stellate tomentum much closer than in *S. virgata*, which this species generally resembles in habit and foliage. Leaves shortly petio- late, lanceolate or oblong-linear, or the lower ones ovate-lanceolate, mostly 1 to 1½ in. long, slightly toothed, obtuse at the base. Pedicels 1 to 3 to-

gether, mostly shorter than the leaves. Calyx tomentose, not prominently ribbed, at first campanulate as in *S. virgata*, but with the lobes more obtuse and very soon enlarging; when in fruit very spreading, fully $\frac{3}{4}$ in. diameter, the broadly ovate lobes thin and transparent. Petals yellow, rather longer than the calyx before it enlarges. Stamens 10 to 15. Fruit nearly globular, with a raised conical centre, the circumference wrinkled and grooved between the carpels. Carpels 5, reticulate on the sides.—*Fleischeria pubens*, Steud. in Pl. Preiss. i. 237; Steetz, l. c. ii. 366.

S. Australia. A specimen in Herb. Muell. from Margaritte river, *Babbage's Expedition*, appears to belong to this species, but the calyx is not yet sufficiently advanced to determine it absolutely.

W. Australia. Swan River, *Drummond*; shady rocks of Mount Mathilde, *Preiss*, n. 1662; Murchison river, *Oldfield*.

NIG

MALVACEAE

Sida cardiophylla
F. Muell.

NIG

MALVACEAE

Sida carpinifolia L

N16

MALVACEAE

Sida clementii
Domin.

13. **S. cordifolia**, Linn.; DC. *Prod.* i. 464. A rather coarse, branching, erect or rarely decumbent herb or undershrub, more or less clothed with a soft stellate tomentum or velvety hairs, the branches often also hirsute with spreading hairs. Leaves on rather long petioles, broadly cordate or almost orbicular or rarely ovate-lanceolate, 1 to $1\frac{1}{2}$ or rarely 2 in. long, usually soft and thick. Flowers small, yellow, on short axillary pedicels or clustered into short leafy racemes. Calyx 10-ribbed at the base, softly tomentose. Carpels about 10 or sometimes fewer, smooth or slightly wrinkled, opening at the top in 2 valves, and in the usual form terminating in rather long erect-connivent awns.

N. Australia. Port Essington, *Armstrong*; N. coast, *Bynoe*.

Queensland. Peak Downs, *F. Mueller*.

The species is very abundant in almost all tropical countries, and includes *S. althæifolia*, Lam., and several other supposed species.

Var. (?) *mutica*. Carpels without the awns which generally distinguish the species. The leaves are very soft and velvety, but small and narrow, the specimens have, however, lost those of the primary branches.—Macarthur river, Gulf of Carpentaria, *F. Mueller*.

1. **S. corrugata**, Lindl. in *Mitch. Three Exped.* ii. 13. Rootstock and often the base of the stem woody, the branches usually diffuse or procumbent and under 1 ft. long, or in some varieties elongated, slender, and divaricate, attaining fully 2 ft., more or less hoary as well as the leaves with stellate hairs or short pubescence. Leaves orbicular, ovate or lanceolate, crenate, mostly $\frac{1}{2}$ to 1 in. long, cordate or obtuse at the base, on petioles shorter than the laminae, and sometimes very short. Pedicels axillary, 1 to 3 together, filiform or slender, rarely as long as the leaves, articulate below the top. Calyx tomentose, 2 to $2\frac{1}{2}$ lines long, the lobes broad and obtuse, spreading under the fruit. Petals yellow, about twice the length of the calyx. Stamens 10 to 15. Fruit depressed-globular, varying from $2\frac{1}{2}$ to near 5 lines diameter, tomentose or nearly glabrous, the obtuse often-raised centre marked with radiating furrows formed by the grooved connivent summits of the carpels, the circumference deeply wrinkled. Carpels 6 to 10, indehiscent, strongly reticulate on the sides. Seeds glabrous or slightly tomentose.—F. Muell. Pl. Vict. i. 163.

N. Australia. Upper Victoria river and Sturt's Creek, F. Mueller.

Queensland. On the Maranoa, Mitchell; in the interior, Leichhardt.

N. S. Wales. Broadland on the Hawkesbury river, R. Brown; desert land of the interior from Peel's range and the Bogau to the S. Australian frontier, A. Cunningham, Fraser, Mitchell and others.

Victoria. Desert tracts, basaltic downs and ridges from Bacebus Marsh to the N.W. part of the colony, F. Mueller.

S. Australia. S. coast, R. Brown; Flinders range, A. Cunningham; and N.W. interior, Sturt.

W. Australia. Between Moore and Murchison rivers, Drummond, 5th Coll. n. 106; Dirk Hartog's Island, A. Cunningham.

This plant assumes forms apparently so distinct that it is difficult to believe that some of them ought not to be considered as species. In attempting, however, to fix their limits, so many intermediate specimens have presented themselves, that I feel compelled to follow F. Mueller in uniting them under one name. The following appear to be the most marked:—

a, orbicularis. Stems short, diffuse, and tomentose. Leaves orbicular or broadly ovate, deeply and coarsely crenate, cordate at the base. Flowers and fruits rather large. *S. corrugata*, Lindl. l. c.; *S. interstans* and *S. spodochroma*, F. Muell. in *Linnaea*, xxv. 383. Chiefly in Victoria and N. S. Wales.

b, ovata. Stems usually more slender and elongated. Leaves mostly cordate-ovate, with small and regular crenatures, often softly tomentose. Petioles often short, and some-

times very short. Flowers and fruits rather small. *S. filulifera*, Lindl. in *Mitch. Three Exped.* ii. 45; *S. filiformis*, A. Cunn. in *Mitch. Trop. Austr.* 361.—N. Australia (including a var. with very short pedicels), Queensland, N. S. Wales, Victoria, and S. Australia. *S. pedunculata*, A. Cunn. *ms.*, from Peel's range, is a remarkable form, densely tomentose, with the lower leaves 2 in. long, and the lower peduncles elongated, bearing a leafless raceme of several flowers, with rigid stipulary bracts; the inflorescence in the upper part quite normal. *S. nematopoda*, F. Muell. in *Linnaea*, xxv. 382, has smaller and less wrinkled fruits, although still much more so than in *S. intricata*, and the foliage is quite that of the present variety.

c, angustifolia. Stems slender, often nearly glabrous as well as the leaves. Leaves cordate-lanceolate, deeply toothed. Flowers and fruits small. Extends over the whole range of the species, and the only form hitherto found in W. Australia.—*S. humillima*, F. Muell. in *Trans. Phil. Soc. Vict.* i. 12, is a small hoary form, with larger leaves, approaching sometimes the first variety. Some specimens of A. Cunningham's from Dirk Hartog's Island have the leaves more densely white-tomentose.

d, trichopoda. Like the last, but the lanceolate or oblong-linear leaves are never cordate at the base, and the slender pedicels mostly exceed the leaves.—*S. trichopoda*, F. Muell. in *Linnaea*, xxv. 384. On nearly the whole range of the species, excepting W. Australia.

e, goniocarpa. F. Muell. Foliage of the last var., but the fruit larger, the angles of each carpel bordered by vertical wings, forming on the fruit as many very prominent angles as there are carpels. Naugavera in N. S. Wales, *Victorian Expedition*.

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Queensland. On the Maranoa, Mitchell; in the interior, Leichhardt.

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b. ovata. Stems usually more slender and elongated. Leaves mostly cordate-ovate, with small and regular crenatures, often softly tomentose. Petioles often short, and sometimes very short. Flowers and fruits rather small. *S. fibulifera*, Lindl. in *Mitch. Three Exped.* ii. 45; *S. filiformis*, A. Cunn. in *Mitch. Trop. Austr.* 361.—N. Australia (including a var. with very short pedicels), Queensland, N. S. Wales, Victoria, and S. Australia. *S. pedunculata*, A. Cunn. ms., from Peel's range, is a remarkable form, densely tomentose, with the lower leaves 2 in. long, and the lower peduncles elongated, bearing a leafless raceme of several flowers, with rigid stipular bracts; the inflorescence in the upper part quite normal. *S. nematopoda*, F. Muell. in *Linnaea*, xxv. 382, has smaller and less wrinkled fruits, although still much more so than in *S. intricata*, and the foliage is quite that of the present variety.

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NIG

MALVACEAE

Sida echinocarpa

F. Muell.

NIG

MALVACEAE

Sida hackettiana
W. U. Fitzg.

2. **S. intricata**, *F. Muell. in Trans. Phil. Soc. Vict.* i. 19, and in *Hook. Kew Journ.* viii. 9. This form also is now reduced by F. Mueller (*Pl. Vict.* i. 163) to the *S. corrugata*. I am inclined however to keep it distinct, as the characters appear on the dried specimens to be tolerably constant. It is a small or slender, very much branched tomentose undershrub, resembling the var. *ovata* of *S. corrugata* in general characters, but with much smaller leaves and very much smaller flowers, on short slender pedicels, the fruits not above 2 lines diameter, consisting of 5 to 8 tomentose carpels, not furrowed at their points, and smooth or only very slightly wrinkled on the back.

N. Australia. Stony ridges of the Upper Victoria river, *F. Mueller*.

N. S. Wales. From Molle's Plains, *A. Cunningham*, to the Darling and Murray rivers, *F. Mueller*.

S. Australia. In the interior near Mount Hope, *F. Mueller*.

W. Australia, *Drummond*, 5th Coll. n. 105.

NIG

MALVACEAE

Sida lepidota F. Muell.

3. **S. macropoda**, *F. Muell. Herb.* An erect, branching shrub, densely clothed with a stellate tomentum, thick and often yellowish on the branches, almost velvety on the leaves. Leaves ovate-cordate, obtuse, 1 to 2 in. long, crenate, thick and soft, deeply wrinkled above, prominently veined underneath. Pedicels filiform, sometimes exceeding the leaves. Calyx-lobes acuminate or acute, closed over the fruit or spreading. Petals yellow, only shortly exceeding the calyx. Fruit 3 or 4 lines diameter, with the radiating striæ in the centre and the carpels wrinkled on the back as in *S. corrugata*, from which this species differs in stature, foliage, and the acute calyx-lobes.

N. Australia. Summits of Sea range, head of Hooker's Creek, Arnhem's Land and Gulf of Carpentaria, *F. Mueller.* A specimen of *Leishhardt's*, from the Brigalow scrub on Bokhara Creek, appears to be the same species.

Var. (?) *cardiophylla*, *F. Muell.* Tomentum more dense, but closer; leaves shorter, and nearly orbicular; pedicels shorter.—Sturt's Creek, *F. Mueller.* This may possibly be a distinct species, but the specimens are not sufficiently advanced to determine. In other specimens in young bud only, these buds are sessile or nearly so; the pedicel probably grows out rapidly before the flower expands, and may sometimes remain very short.

6. **S. petrophila**, *F. Muell. in Linnæa*, xxv. 381. A hoary tomentose erect shrub of 2 to 4 ft., with the habit, foliage, and inflorescence of *S. calyxhymenia*, but the flowers are not nearly so broad, the unexpanded bud rather ovoid than depressed-globular, the petals longer than the calyx, and the fruiting calyx not nearly so much enlarged, the ovate-lanceolate lobes not exceeding 3 lines in length, not half so broad as in *S. calyxhymenia*, and of a much thicker consistence. Fruit depressed, tomentose, wrinkled on the circumference and furrowed between the carpels as in *S. calyxhymenia*, but the carpels are usually about 7.

N. S. Wales. Mount Caley, *A. Cunningham*; Peel's range, *Fraser*; Tognya hills, Darling river, *Victorian Expedition*.

S. Australia. Flinders range, and towards Lake Torrens, *A. Cunningham*, *F. Mueller*; between Stokes range and Cooper's Creek, *Wheeler*; towards Spencer's Gulf, *Warburton*.

14. **S. platycalyx**, *F. Muell. Herb.* Shrubby and densely clothed with a soft floccose or velvety stellate tomentum. Leaves ovate-cordate or nearly orbicular, obtuse, crenate, 1 in. long or more, soft and thick. Pedicels as long as the leaves, soft, articulate above the middle. Calyx broadly campanulate, about 5 lines long, with a broadly obtuse base, the lobes erect or spreading, shorter than the tube, densely tomentose outside, each sepal marked with 3 prominent ribs, with another almost equally prominent at the junction of the sepals. Petals broad, shorter than the calyx. Stamens very numerous, the staminal tube almost truncate at the top. Carpels about 24, closely packed in a tomentose ring round the base of the styles, which are free almost to the base with small capitate stigmas. Fruit not seen.

N. Australia. Sturt's Creek, *F. Mueller.*

8. **S. physocalyx**, *F. Muell. Fragm.* iii. 3. A shrub, densely clothed with a soft, woolly, almost floccose tomentum. Leaves petiolate, cordate-ovate or orbicular, very obtuse, 1 to 2 in. long, crenate, thick and soft. Stipules remarkably long and filiform. Flowers not seen. Fruiting calyx pedunculate in the upper axils, very much enlarged, thin, scarious, and reticulate, broadly 5-lobed, the angles very prominent, so as to give the sides a cordate form, expanding to 2 in. diameter. Carpels numerous (above 15), glabrous, tuberculate or almost muricate, forming a depressed disk-like fruit of about 5 lines diameter.

N. Australia. Hammersley range, N.W. coast, *F. Gregory's Expedition.*

12. ***S. rhombifolia***, Linn.; DC. Prod. i. 462. A perennial or under-shrub, very variable in stature, sometimes tall and erect with the larger leaves ovate and 3 in. long, the Australian specimens more generally representing the more spreading forms, with rigid virgate minutely tomentose branches, and small narrow leaves, rarely exceeding 1 in., varying from ovate-lanceolate to narrow-lanceolate, or from nearly obovate to oblong-cuneate, always shortly petiolate, toothed, nearly glabrous above and more or less whitened underneath with a short tomentum. Pedicels mostly longer than the petiole and sometimes as long as the leaf, articulate about the middle. Flowers rather small, yellow. Calyx broad, glabrous or slightly hoary, prominently 10-ribbed at the base. Carpels about 10, with or without terminal erect-coni-vent awns, angled at the back, neither wrinkled nor reticulate, opening at the top in two very short valves.

N. Australia. Port Essington, *Armstrong*.

Queensland. Brisbane river, *F. Mueller*.

N. S. Wales. Blue Mountains, *Miss Atkinson*; Paramatta, introduced from the Mauritius, and now a troublesome weed, *C. Moore*. The species is one of the commonest tropical weeds, both in the New and the Old World, and includes *S. relusa*, Linn., *S. rhomboides*, Roxb., *S. philippica*, and *S. compressa*, DC., and several other published forms.

Var. (?) *incana*. Leaves whitish on both sides as in *S. spinosa*, but carpels about 10, with long awns.—Nicholson river, *F. Mueller*; Comet river, *Leichhardt*; the specimens not complete.

11. **S. spinosa**, Linn.; DC. *Prod.* i. 460. An annual or sometimes perennial, and woody at the base, with the habit and inflorescence of the narrow-leaved forms of *S. rhombifolia*, but the whole plant, including both sides of the leaves, whitish with a minute tomentum, which is soft and more dense on the calyx. Leaves from ovate to lanceolate. Carpels almost always 5 only, more erect and less readily detached than in *S. rhombifolia*, often slightly reticulate, awnless or with short awns.—A. Gray, *Gen.* III. t. 123.

N. Australia. N. coast, *R. Brown*; Upper Victoria river, *F. Mueller*; Quail Island, *Flood*. The species is not uncommon in tropical Asia, more rare in America. It derives its name from the stipules in falling off often leaving a prominent tubercular base, more distinct in this than in any other species, although the character is even here not constant.

9. **S. subspicata**, *F. Muell. Herb.* An erect shrub, sparingly tomentose and green, or densely tomentose like *S. virgata* and *S. macropoda*, but at once known by the inflorescence. Leaves from cordate-ovate to lanceolate, 1 to 2 in. long, obtuse, crenate, cordate or rounded at the base, slightly wrinkled above, with the veins prominent underneath, scabrous, velvety or densely tomentose. Flowers small, nearly sessile, clustered or rarely solitary, the upper clusters forming often an irregular terminal spike, with few small floral leaves. Calyx not ribbed, the lobes acute, at least as long as the tube and closing over the fruit, but not covering it. Petals nearly twice as long. Stamens often under 10. Fruit nearly globular, but grooved between the carpels; carpels 5 or 6, tomentose, reticulate on the side, but not wrinkled on the back, and not acuminate.

N. Australia. Gulf of Carpentaria, *R. Brown*; Hooker and Sturt's Creeks, *F. Mueller*.

Queensland. Keppel Bay, *R. Brown*; N.E. coast, *A. Cunningham*; Brisbane river, *Fraser, F. Mueller*; Burnett and Dawson rivers, *F. Mueller*; Rockhampton, *Thozet*.

N. S. Wales. Kirkton, Upper Hunter river, *Backhouse*; Clarence river, *Beckler*.

4. **S. virgata**, Hook. in Mitch. Trop. Austr. 361. This resembles at first sight, especially in the leaves, the *S. calyphymenia*, and in some respects some narrow-leaved forms of *S. corrugata*; but the calyx does not enlarge as in the former, and its lobes are not obtuse as in the latter, and the stellate tomentum is dense and soft, almost woolly, and often fulvous. It appears to be an erect shrub, with long twiggy branches. Leaves shortly petiolate, lanceolate or oblong-linear, often exceeding 1 in., obtuse at the base, denticulate, less tomentose above than underneath. Pedicels slender, but rarely as long as the leaves. Calyx very tomentose, not prominently ribbed, the acute lobes about as long as the cup. Petals yellow, twice as long as the calyx, varying from 3 to 4 lines. Fruit about 3 lines diameter, depressed, with the centre slightly projecting. Carpels 6 to 8 or rarely more, their radiating summits scarcely furrowed, wrinkled on the back, strongly reticulate on the sides.

N. Australia. Sandstone table-land of the Upper Victoria river, *F. Mueller*.

Queensland. On the Maranoa, *Mitchell*.

S. Australia. In the interior at Depot Creek, *F. Mueller*.

Var. *phaeotricha*. Stellate hairs very fulvous, almost woolly; carpels very tomentose, less wrinkled, the centre of the fruit more prominent.—*S. phaeotricha*, *F. Muell.* in *Linnaea*, xxv. 382. In the interior of S. Australia.

12. **THESPESIA**, Corr.

Bracteoles 1 to 5, small or deciduous. Calyx truncate, minutely 5-toothed or rarely 5-lobed. Staminal column bearing numerous filaments on the outside, below or up to the summit. Ovary 5-celled, with few ovules in each cell. Style club-shaped at the top, 5-furrowed or obscurely divided into erect stigmatic lobes. Capsule hard, almost woody, indehiscent or loculicidally 5-valved. Seeds obovoid, glabrous or woolly. Cotyledons very much folded, enclosing the radicle, often black-dotted.—Trees or tall herbs. Leaves large, entire or angularly lobed. Flowers large, usually yellow.

A small genus, limited to tropical Asia, the Pacific isles, and eastern Africa, the Australian species being one which extends over the whole range. Closely allied to *Hibiscus*, *Fugosia*, and *Gossypium*, it differs from the former chiefly in the style, from the two latter generally either in the calyx or bracts, and from all in the more woody capsule.

NIS

MALVACEAE

Thespesia lompas

MALVACEAE

Thespesia macrophylla
Blume

1. **T. populnea**, *Corr.*; *DC. Prod.* i. 456. A tree, with the young parts and under side of the leaves sprinkled with minute rust-coloured scales, otherwise glabrous. Leaves broad-cordate, acuminate, entire, 4 or 5 in. long. Flowers reddish-yellow, rather large, on axillary pedicels usually shorter than the petioles. Bracteoles 1 to 3, lanceolate and deciduous, or sometimes wanting. Calyx very open, 6 to 8 lines diameter, truncate, with minute teeth. Petals broad, $1\frac{1}{4}$ to 2 in. long. Capsule fully $1\frac{1}{2}$ in. diameter, hard

and woody, indehiscent or opening longitudinally when very dry.—Wight, Ic. t. 8.

N. Australia. Islands of the Gulf of Carpentaria, *R. Brown, Henne.*

Queensland. N.E. coast, *A. Cunningham, M'Gillivray.*

The species is widely spread over the seacoasts of tropical Asia, extending from eastern Africa to the Pacific Islands. It is also introduced into the West Indies.

NIB

MALVACEAE

Thespesia populneoides
(rox.) Kostel.

7. **URENA**, Linn.

Bracteoles 5, united in a 5-cleft involucre, adnate to the calyx at the base. Calyx 5-toothed or 5-lobed. Staminal column bearing several filaments or almost sessile anthers outside, below the truncate or 5-toothed summit. Ovary-cells 5, 1-ovulate; style branches 10, with terminal capitate stigmas. Fruit-carpels seceding from the axis, indehiscent, muricate or covered with hooked bristles. Seeds ascending.—Rigid tall herbs or shrubs, more or less scabrous-tomentose. Leaves usually angled or lobed, at least the lower ones. Flowers sessile or on very short peduncles, often clustered, axillary or in terminal leafy racemes.

Besides the one or two species common in all tropical regions, the genus comprises two or three tropical Asiatic ones which appear distinct. As a genus, *Urena* scarcely differs from *Pavonia*.

1. **U. lobata**, Linn.; DC. Prod. i. 441, var. *grandiflora*. A hard, erect herb or shrub of 2 to 4 ft., covered on the stems and under side of the leaves with a whitish close often scabrous tomentum. Leaves petiolate, the lower ones nearly orbicular, the upper ones ovate or lanceolate, palmately 3- to 7-veined, irregularly toothed, angular, or broadly and shortly lobed, glabrous above or slightly scabrous-tomentose. Flowers sessile or nearly so. Involucre deeply cleft into narrow-lanceolate lobes, in the single Australian specimen nearly $\frac{1}{2}$ in. long, and fully twice as long as the calyx, but often not longer than the calyx or shorter. Petals pink, about 1 in. long in this specimen, but often much smaller. Carpels in our specimen shortly mucronate.—Bot. Mag. t. 3043 (with short involucres).

Queensland. Sutton and Burdekin rivers, *Leichhardt*.

The species is widely spread over tropical America, Africa, and Asia, and is very variable in the shape of the leaf and proportions of the involucre, calyx, and petals, as well as in the carpels, more or less glochidiate or mucronate; and most probably the *U. sinuata*, Linn., almost equally common, is only a variety with deeply-cut leaves.