SECT. 2. **Brachychiton.**—*Radicle next the hilum. Seeds and inside of the carpels usually villous, often cohering. Leaves entire or lobed (digitate only on some branches of* S. rupestris). *Calyx-lobes spreading.*

Calyx-lobes (where known) with induplicate margins. Seeds (where known) scarcely cohering. Leaves tomentose or pubescent, at least underneath. Flowers large, sessile. (*Brachychiton*, Schott.)

- Leaves green and softly tomentose or pubescent on both sides.
  - Leaves broad, entire or obscurely 5- or 7-lobed. Calyx broadly campanulate . . . . . 3. *S. ramiflora.*
  - Leaves 3-lobed. Calyx tubular-campanulate . . . . . 4. *S. Bidwilli.*
  - Leaves palmately 5- or 7-lobed . . . . . 7. *S. lurida.*
- Leaves white underneath.
  - Leaves angular or obscurely 5- or 7-lobed . . . . . 5. *S. discolor.*
  - Leaves palmately 5- or 7-lobed, with acuminate lobes . . . . 6. *S. incana.*

Calyx-lobes strictly valvate. Outer coating of the seeds usually remaining adherent to the endocarp. Leaves glabrous. Flowers in short panicles.

- Calyx narrow, lobes lanceolate, shorter than the tube. Leaves palmately 5- or 7-lobed (*Trichosiphon*, Schott) . . . . . 8. *S. trichosiphon.*
- Calyx broadly campanulate, deeply lobed (*Pœciloderm*is, Schott).
  - Leaves large, palmately 5- or 7-lobed. Flowers quite glabrous . 9. *S. acerifolia.*
  - Leaves entire, ovate or cordate, or 3-lobed, acuminate. Flowers tomentose outside when young, glabrous inside. Follicles stipitate . . . . . 10. *S. diversifolia.*
  - Leaves cordate-acuminate, entire. Flowers tomentose outside, hirsute inside at the base. Follicles nearly sessile . . . . 11. *S. caudata.*
  - Leaves entire and lanceolate, or digitate. Flowers tomentose outside. Follicles long-stipitate . . . . . 12. *S. rupestris.*

N.I.B.

STERCULIACEAE

Brachychiton australe
(Schott.) Terr.

6. **S. incana,** *Benth.* A tree, densely clothed with a close, soft tomentum, very white on the under side of the leaves. Leaves deeply divided into 5 or 7 palmate broadly lanceolate lobes, the larger leaves fully 8 in. diameter. Flowers not known. Follicles sessile, ovoid, shortly acuminate, thick and woody, softly tomentose outside, densely tomentose-hirsute inside as well as the seeds, which however do not appear to cohere as in some species.—*Brachychiton incanum*, R. Br. in Benn. Pl. Jav. Rar. 234; *Sterculia acerifolia*, A. Cunn. in Loud. Hort. Brit. 392 (in part).

W. Australia. Cambridge Gulf, N.W. coast, *A. Cunningham.* The specimens are in leaf and fruit.

NIB

STERCULIACEAE

Brachychiton paradoxum
Schott.

8. **S. trichosiphon,** *Benth.* A tree, quite glabrous, leafless when in flower. Leaves 4 to 8 in. long and broad, more or less deeply cut into 5 or rarely 7 palmate lobes, sometimes broad and shortly acuminate, sometimes lanceolate with long points, and glabrous on both sides. Racemes short, mostly simple. Calyx narrow, tubular-campanulate, about $\frac{3}{4}$ in. long, the lobes lanceolate, spreading, much shorter than the tube. Staminal column swollen and hairy in the middle. Stigma peltate. Follicles shortly stipitate, glabrous, oblong-triangular, 2 to 3 in. long.—*Trichosiphon australe*, Schott, Melet. 34; *Brachychiton platanoides*, R. Br. in Benn. Pl. Jav. Rar. 234.

N. Australia. Abel Tasman river, *F. Mueller;* Nicol Bay, *F. Gregory.*

Queensland. Northumberland Island (*R. Brown*), Burdekin and Suttor and Dawson rivers, *F. Mueller;* Wide Bay, *Bidwill.* The few flowers I have seen were much damaged by insects. I have not seen R. Brown's specimens.

NIB

STERCULIACEAE

Brachychiton tuberculat

NEB

STERCULIACEAE

Brachychiton viridiflora

NIB

STERCULIACEAE

Brachychiton viscidulum

STERCULIACEAE

8. **DICARPIDIUM**, F. Muell.

Calyx 5-lobed. Petals oblong-spathulate, persistent. Stamens 5, very shortly united at the base, without intervening staminodia, anther-cells parallel. Ovary sessile, 2-celled with 2 ovules in each cell; styles 2, distinct, thickened upwards. Fruit-carpels separating, 2-valved, with 1 or 2 seeds in each. Seeds ascending; albumen fleshy; embryo straight, with flat cotyledons.—An undershrub, with the habit of *Waltheria*, from which the genus only differs in the carpels, two instead of one. The flowers are also more or less unisexual, but that is perhaps sometimes the case in *Waltheria*.

The genus is limited to the single Australian species.

1. **D. monoicum,** *F. Muell. in Hook. Kew Journ.* ix. 302. An undershrub of 1 to 2 ft., hirsute all over with rigid stellate hairs, the branches rather slender, diffuse or erect. Leaves nearly sessile, oblong, mostly about 1 in. long, toothed, plicate, and densely hirsute. Flowers small, almost sessile, solitary, or 2 or 3 together in the upper axils, each within a bract and 2 bracteoles, the males with small carpels and short styles, the ovules, although apparently perfect, not setting; the female flowers rather smaller, with smaller anthers, but perfecting their fruit. Carpels small, tomentose.

N. Australia. Macarthur river and Seven Emu creek, *F. Mueller.*

4. HELICTERES, Linn.

(Methorium, *Schott.*)

Calyx tubular, 5-cleft at the top, often oblique. Petals 5, equal or the 2 upper ones broader, the claws elongated, and all or two of them often with a lateral appendage. Staminal column adnate to the gynophore, truncate at the top, or more frequently bearing 5 teeth or small lobes (staminodia), with 1 or 2 stipitate anthers between each, anther-cells divaricate, often confluent into one. Ovary nearly sessile on the top of the staminal column, 5-lobed, 5-celled, with several ovules in each cell. Styles 5, subulate, more or less connate, slightly thickened and stigmatic at the top. Fruit-carpels distinct or separating, opening along their inner edge, straight or spirally twisted. Seeds with little albumen, cotyledons leafy, folded round the radicle.—Trees or shrubs, with stellate or branched tomentum. Leaves entire, serrate or obscurely lobed. Flowers axillary, solitary or clustered. Bracteoles none or distant from the calyx. Capsules usually tomentose, the clusters of tomentum often forming long woolly processes. The appendages on the claws of the petals appear to vary in different flowers of the same species.

A considerable genus, dispersed over the tropical regions both of the New and the Old World, but chiefly American. Of the Australian species one is a common Asiatic one, the two others endemic. The frequently unilocular anthers closely connect the genus with *Malvaceæ*. The other characters are however more of *Sterculiaceæ*, and in some species the anthers are distinctly bilocular.

Calyx ½ in. long. Carpels spirally twisted . . . . . 1. *H. Isora.*
Calyx not above 2 lines long. Carpels straight.
Leaves obtuse, entire . . . . . 2. *H. cana.*
Leaves toothed, mostly acute . . . . . 3. *H. dentata.*

2. **H. cana,** *Benth.* A shrub, densely clothed with a short, soft or velvety whitish tomentum. Leaves on short petioles, oval or oval-oblong, obtuse, $1\frac{1}{2}$ to $2\frac{1}{2}$ in. long, entire or very obscurely toothed towards the top. Flowers small, in very short axillary sessile cymes or clusters. Calyx about 2 lines long, with short acute teeth. Petals not twice as long, nearly equal or the upper ones rather broader. Anthers 10, small, the filaments rather long, alternating in pairs with the shorter ovate, very thin and transparent staminodia. Fruit ovoid, under $\frac{1}{2}$ in. long, on a stalk of about 2 lines, loosely wo lly, the carpels straight.—*Methorium canum*, Schott, Meletem. 29, t. 5; *M. integrifolium*, F. Muell. Trans. Phil. Soc. Vict. iii. 40.

N. Australia. Brunswick Bay and York Sound, *A. Cunningham*; Upper Victoria river, *F. Mueller*.

3. **H. dentata,** *F. Muell. Herb.* Apparently a small shrub or undershrub, the slender branches, inflorescence, and under side of the leaves whitish with a close stellate tomentum. Leaves shortly petiolate, from orbicular to ovate or oblong-elliptical, rather acute, rarely exceeding 1 in., more or less toothed, greener and less tomentose above than underneath. Flowers pink or purple, rather smaller, more numerous, and in looser cymes than in *H. cana*. Calyx rarely attaining 2 lines. Petals and stamens as in *H. cana*, but the staminodia much shorter and broader, and exceedingly delicate. Fruit small, with straight carpels.

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

Var. *procumbens*. Branches procumbent, $\frac{1}{2}$ to 2 ft. long; tomentum looser; leaves smaller and rounder, velvety-villous on the upper side; staminodia longer. Macadam range, *F. Mueller*.

Var. (?) *flagellaris*. Branches prostrate, 1 to 2 ft. long; leaves nearly sessile, cordate or orbicular, 1 to $1\frac{1}{2}$ in. long; cymes on long slender peduncles. Port Essington, *Armstrong*.

N.I.B.

STERCULIACEAE

Helicteres rhychocarp

W.V. Fitzg.

N.I.B.

STERCULIACEAE
Heritiera littoralis
(Dryand.) Ait.

14. KERAUDRENIA, J. Gay.

Calyx 5-lobed, enlarged and scarious or thin and coloured after flowering, the midrib of each sepal usually thickened without lateral ribs. Petals none, or minute and scale-like. Stamens 5, alternate with the sepals, free or shortly united at the base, with or without intervening staminodia, anther-cells parallel, opening by dorsal slits. Ovary 3- to 5-celled, with 3 or more ovules in each cell; styles cohering at the summit. Capsule membranous, villous or shortly setose, opening loculicidally, and usually separating into distinct carpels. Seeds strophiolate, albuminous; embryo straight or curved, with flat cotyledons.—Shrubs more or less stellate-tomentose. Leaves entire or sinuate-lobed. Stipules narrow, or small and deciduous. Cymes terminal or opposite the upper leaves, few-flowered. Bracteoles none.

Besides the Australian species, there is one other from Madagascar, which on a further examination proves more nearly allied to *K. lanceolata* than had appeared to us when preparing the 'Genera Plantarum.' The genus has the anthers of *Seringia* and *Hannafordia*, with the calyx nearly of *Thomasia*, and must include species, in which as in the Madagascar one, the carpels do not appear to separate, as well as those in which they are quite distinct.

Bracts narrow. Carpels several-seeded, not always separating, the seeds nearly straight. Leaves mostly lanceolate, 1 to 3 in.
- Leaves quite glabrous and smooth above. Capsule scarcely septicidal.
  - Leaves broad-lanceolate. Carpels angular, villous and setose . . . 1. *K. lanceolata.*
  - Leaves narrow-lanceolate or linear. Carpels rounded on the back, very villous, but not setose . . . . . 2. *K. Hillii.*
- Leaves very rugose and pubescent above . . . . . 3. *K. Hôokeriana.*

Lower bracts broad scarious and coloured, very deciduous. Carpels 1–2-seeded, the seeds reniform. Leaves ovate or oblong.
- Leaves thick and soft, very rugose, tomentose above, mostly 1 to 2 in. long . . . . . 4. *K. nephrosperma.*
- Leaves smooth or slightly rugose, mostly under 1 in.
  - Leaves undulate, crenate or crisped . . . . . 5. *K. hermanniæfolia.*
  - Leaves quite entire . . . . . 6. *K. integrifolia.*

N.I.B.

STERCULIACEAE

Keraudrenia collina
Domin.

6. **K. integrifolia,** *Steud. in Pl. Preiss.* i. 236, *and Steetz, l. c.* ii. 347. A small much-branched shrub, the young shoots white or rusty with a close tomentum. Leaves petiolate, oblong, very obtuse, 4 to 8 lines long, entire, glabrous or nearly so above, white-tomentose underneath. Cymes rather loose, several-flowered. Bracts ovate, thin and very deciduous. Calyx tomentose; lobes broad, rather acute, attaining 3 or 4 lines under the fruit, or sometimes more. Filaments dilated and shortly connate at the base, recurved at the top, without any or rarely with 1 or 2 intervening staminodia. Ovary 5-lobed, with about 4 ovules in each. Capsule globular, softly villous; carpels 1- or 2-seeded, not very readily separating.—*Seringia integrifolia*, F. Muell. Fragm. ii. 5.

W. Australia. Swan River, *Drummond, Preiss, n.* 1651; S.W. coast, *Maxwell.*

Var. *velutina.* Leaves rather larger, minutely velvety-tomentose above, densely tomentose underneath. Flowers larger, filaments longer.—*K. velutina*, Steetz, in Pl. Preiss. ii. 348; *Seringia velutina*, F. Muell. Fragm. ii. 5; *S. grandiflora*, F. Muell. Fragm. i. 142. To this belong Drummond's specimens, n. 109, and Maxwell's, from East Mount Barren. The specimen described by Steetz, which I have not seen, was gathered by Roe, between Swan River and King George's Sound.

Actinostigma lanceolatum, Turcz. in Bull. Mosc. 1859, i. 259, from 'New Holland, Brogden,' is described as closely resembling *K. lanceolata* in habit, foliage, and most of the characters, but with axillary, not leaf-opposed inflorescence, 10 stamens all perfect and free, 5 biovulate carpels, the styles connate, with 5 radiating stigmas. I am quite unable to identify any Lasiopetalous plant with this description. It may belong to some very different Natural Order, possibly *Rutaceæ*.

4. **K. nephrosperma,** *Benth.* A shrub, with the branches very densely clothed with a soft, velvety, sometimes almost floccose tomentum. Leaves ovate or oblong, very obtuse, 1 to 2 in. long, entire, sinuate or almost lobed at the base, often slightly cordate, green, and minutely tomentose above, densely white or rusty-tomentose underneath. Cymes very short, several-flowered. Bracts ovate, membranous, very deciduous. Calyx tomentose, the lobes very broad and obtuse, attaining about 3 lines, very thin and coloured. Filaments as long as the ovary, with subulate staminodia intervening; anthers oblong. Ovary 5-celled. Fruit carpels separating, nearly globular, very tomentose. Seeds 1 or 2 in each, globose, reniform.—*Seringia nephrosperma*, F. Muell. in Hook. Kew Journ. ix. 15.

N. Australia. Desert at the sources of Victoria river, Sturt's and Hooker's Creeks, *F. Mueller*; Forster's Range, *M'Douall Stuart*.

STERCULIACEÆ

6. **MELHANIA**, Forsk.

Bracteoles 3, persistent. Calyx divided almost to the base into 5 segments. Petals 5, persistent. Staminal cup very short, bearing 5 ligulate staminodia, and 5 stipitate anthers alternating with them, the anther-cells parallel. Ovary sessile, 5-celled with 1 or more ovules in each cell. Style usually short, with 5 subulate branches, stigmatic along the inner side. Capsule opening loculicidally in 5 valves. Seeds with albumen; cotyledons folded, 2-cleft; radicle inferior.—Herbs, undershrubs, or small shrubs, softly tomentose. Leaves ovate or cordate, serrate-crenate. Peduncles axillary, 1- or few-flowered. Bracteoles often exceeding the calyx. Flowers yellow.

The genus extends over the tropical and subtropical regions of the Old World, but is most abundant in Africa. The Australian species is the same as an Indian one. The habit is that of some *Malvaceæ*.

1. **M. incana,** *Heyne; W. and Arn. Prod.* 68. A rather slender shrub of 1 or several ft., hoary or white except the upper side of the leaves with a close or velvety tomentum. Leaves shortly petiolate, oblong or ovate-lanceolate, obtuse, scarcely toothed, 1 to 2 or even 3 in. long, tomentose on both sides, or nearly glabrous above. Peduncles bearing 1, 2 or rarely 3 or 4 flowers, the pedicels very short. Bracteoles narrow-linear or subulate, rather shorter than the calyx. Sepals lanceolate-subulate, tomentose, about 4 to 6 lines long. Petals rather longer, broad, yellow. Staminodia linear, often 3 lines long; anthers shorter, linear, on short filaments. Style elongated. Capsule tomentose, shorter than the calyx, with 2 or 3 seeds in each cell.—*M. oblongifolia*, F. Muell. Fragm. i. 69.

N. Australia. York Sound, Cygnet Bay, and Dampier's Archipelago, *A. Cunningham;* Upper Victoria river and Sturt's Creek, *F. Mueller;* islands of the Gulf of Carpentaria, *R. Brown;* Albert river, *Henne.*

Queensland. Broad Sound, *R. Brown;* Rockhampton and Burdekin rivers, *F. Mueller;* Port Curtis, *M'Gillivray;* Port Denison, *Fitzalan.*

The species is also found in the East Indian peninsula, and a slight variety or closely allied species in tropical Africa.

N.I.B.

STERCULIACEAE
Melhania oblongifolia
F. Muell.

N.I.B.

STERCULIACEAE

Melhania umbellata
(Mouth) Stapf.

7. **MELOCHIA**, Linn.

(Riedleia, *Vent.*)

Calyx 5-lobed or 5-toothed, campanulate or inflated. Petals 5, spathulate or oblong. Stamens 5, united at the base, without any or with very minute tooth-like intervening staminodia; anther-cells parallel. Ovary sessile or shortly stipitate, 5-celled with 2 ovules in each cell, styles 5, free, or united at the base, often thickened at the stigmatic top. Capsule opening loculicidally in 5 or fewer valves, some of the cells occasionally abortive. Seeds usually solitary in each cell, ascending, with more or less of albumen; embryo straight, with flat cotyledons.—Herbs, shrubs, or rarely trees, the stellate tomentum occasionally mixed with spreading hairs. Leaves serrate. Flowers small, axillary or terminal, clustered or in cymes or panicles.

A large genus, dispersed over the warmer regions of the globe, the herbaceous and suffruticose species chiefly American. The two Australian species are both herbaceous; one belongs to the American series, the other is Asiatic.

Capsule very angular, pyramidal, much longer than the calyx . . . 1. *M. pyramidata.*
Capsule small, globular . . . . . 2. *M. corchorifolia.*

1. **M. pyramidata,** *Linn.*; *DC. Prod.* i. 490. Herbaceous, with a hard almost woody base, although sometimes annual only. Branches slender, divaricate, often 2 or 3 ft. long, slightly pubescent in a decurrent line or all over. Leaves petiolate, lanceolate, or the lower ones ovate, the larger ones 1 to 2 in. long, serrate, usually glabrous. Flowers small, purplish, 2 to 4 together in little almost sessile axillary umbels. Calyx 10-ribbed. Petals about 2 lines long. Capsule 3 to 4 lines long, acuminate, the very prominent angles produced into short horizontal points, giving each valve a rhomboidal, and the whole capsule a pyramidal shape.—A. Gray, Gen. Ill. t. 134.

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

Queensland. Rockhampton, *Wallace.*

The species is very generally distributed over tropical America, and occurs also in E. Africa, the Mauritius, and the Pacific islands.

11. **RULINGIA**, R. Br.

(Achilleopsis, *Turcz.*)

Calyx 5-lobed. Petals 5, broad and concave or convolute at the base, with a small, broad, or linear ligula at the top. Stamens shortly or scarcely connate at the base, 5 without anthers (staminodia), linear-lanceolate and petal-like, alternate with the petals and connivent or spreading; 5 short, opposite the petals, and perfect, the anther-cells parallel. Ovary sessile, 5-celled with 2 or rarely 3 ovules in each cell, styles connate, at least at the top, or rarely quite free. Capsule tomentose or beset with prickles or soft setæ, opening loculicidally in valves, or the carpels separating. Seeds 1 or 2 in each cell or carpel, ascending, usually strophiolate. Albumen fleshy; cotyledons flat.—Shrubs or undershrubs, with stellate tomentum or hairs. Leaves entire, toothed, or lobed. Stipules narrow, deciduous, the upper ones often laciniate. Flowers mostly white, small, in leaf-opposed or terminal, rarely axillary cymes. Petals shorter than the calyx. Strophiola of the seeds small, variable in shape in the same species.

The genus is confined to Australia, with the exception of one Madagascar species.

A. *Leaves of the flowering branches or their lobes lanceolate or ovate-lanceolate, mostly above* 1 *and often* 2 *or* 3 *in. long, entire or serrate, not undulate, crenate or crisped. Capsule loculicidal.*

Leaves or their lobes quite entire, softly hoary-tomentose . . . 1. *R. salvifolia.*
Leaves or their lobes serrate, velvety or hirsute, at least underneath.
  Capsule scarcely dehiscent, nearly glabrous, with rigid prickly setæ . . . . . 2. *R. pannosa.*
  Capsule dehiscent, tomentose with soft pubescent setæ . . . 3. *R. rugosa.*

B. *Leaves ovate or oblong, irregularly crenate or lobed, often undulate or crisped, mostly above* 1 *in. and often* 2 *or* 3 *in. long. Calyx very prominently angled in the bud* (*except* R. loxophylla). *Capsule loculicidal and often septicidal also.*

Buds obtuse.
  Petals gibbous at the base, abruptly ligulate. Leaves glabrous or pubescent above.
    Calyx-lobes erect or connivent. Leaves large, little lobed . . 4. *R. corylifolia.*
    Calyx-lobes rounded, very spreading. Leaves smaller, much-lobed . . . . . 7. *R. platycalyx.*
  Petals not gibbous, tapering into a short linear ligula. Leaves little-lobed, hoary-tomentose . . . . . 5. *R. grandiflora.*
  Petals not gibbous. Ligula short, oblong-spathulate. Leaves oblique, densely velvety . . . . . 10. *R. loxophylla.*
Buds acute. Petals tapering into a slender ligula about as long as the calyx. Leaves much-lobed, often crisped, nearly glabrous or pubescent above . . . . . 6. *R. malvæfolia.*

C. *Leaves* (*except* R. loxophylla) *crenate, more or less undulate, and crisped or bullate, but little lobed, and rarely exceeding* 1 *in. Buds small, scarcely angular. Capsule loculicidal, sometimes also septicidal, or the carpels separating.*

Cymes pedunculate. Leaves glabrous or scabrous above.
  Buds acute. Ligules long and slender . . . . . 6. *R. malvæfolia.*
  Buds obtuse.
    Leaves narrow-oblong and crenate, or, when luxuriant, ovate-lanceolate and slightly lobed . . . . . 9. *R. hermanniæfolia.*
    Leaves mostly ovate and lobed.
      Calyx about 3 lines diameter. Petals not gibbous at the base . . . . . 8. *R. parviflora.*
      Calyx 5 or 6 lines diameter, lobes very broad. Petals gibbous at the base . . . . . 7. *R. platycalyx.*
Cymes sessile or nearly so. Leaves hoary-tomentose or velvety on both sides.
  Leaves very oblique, densely velvety, ¾ to 2 in. Ligules of the petals shortly oblong . . . . . 10. *R. loxophylla.*
  Leaves small, hoary-tomentose.
    Ligules linear, rather broad. Leaves ½ to 1 in. . . . . 11. *R. cuneata.*
    Ligules obovate or spathulate. Leaves under ½ in. . . . . 12. *R. rotundifolia.*

D. *Leaves pinnatifid. Flowers in dense terminal corymbose cymes. Carpels separating, crested on the back.* (**Achilleopsis,** *Turcz.*) . . . . . 13. *R. densiflora.*

10. **R. loxophylla,** *F. Muell. Fragm.* i. 68. An erect shrub of 1½ ft., densely velvety tomentose, almost hirsute. Leaves obliquely ovate or cordate, obtuse, ¾ to 2 in. long, crenate, soft and thick, the tomentum rather harsh on the upper side, very dense and whitish underneath. Cymes small, sessile or nearly so. Calyx tomentose inside and out, spreading to about 2 lines diameter, the lobes acute. Petals broad, concave, with an oblong rather short ligula. Staminodia glabrous. Fruit not seen.

N. Australia. Table land between Victoria river and Hooker's and Sturt's Creeks, *F. Mueller.*

1. STERCULIA, Linn.

(Brachychiton, Trichosiphon, *and* Pœcilodermis, *Schott*; Delabechea, *Lindl.*)

Flowers unisexual or polygamous. Calyx more or less deeply 5-cleft, rarely 4-cleft, usually coloured. Petals none. Staminal column adnate to the gynophore, bearing at the summit 15 or rarely 10 stamens, irregularly clustered in a head. Carpels of the ovary 5, distinct or nearly so, with 2 or more ovules in each. Styles united under the peltate or lobate stigma. Fruit-carpels distinct, spreading, either firm or woody, and scarcely opening along the inner edge, or thinner, and opening as follicles, even long before they are ripe. Seeds 1 or more in each carpel, rarely winged; albumen adhering to the cotyledons, often splitting in two, assuming the aspect of fleshy cotyledons; real cotyledons flat or nearly so, and thin, the radicle next the hilum or at the opposite end, or intermediate.—Trees. Leaves undivided or lobed, or digitately compound. Flowers in panicles or rarely racemes, mostly axillary, sometimes very short; terminal flowers usually female, in these the staminal column is shorter and the anthers less perfect than in the males, surrounding the base of the ovary; in the males the ovary is often entirely abortive.

A large genus, almost entirely tropical, and more abundant in Asia than in Africa or America, where however several species are found. The Australian ones are all endemic, except *S. fœtida*, which is a widely-spread Asiatic one.

The species of this genus were distributed by Schott into a number of genera, founded chiefly on the flowers and habit, afterwards reduced and rearranged by R. Brown, chiefly on carpological characters, without reference to habit or calyx. The majority of the Australian ones belong to the group distinguished by R. Brown chiefly by the seeds having a loose outer coating covered with hairs, which in some species are so adhesive that the seeds fall out in their inner coating only, leaving the outer coating adhering to the equally hairy endocarp, with the appearance of the cells of a beehive; and by the radicle next to the hilum. The seeds do not appear to cohere in all the species, in some they are hitherto unknown, and in flowers and habit, *S. ramiflora* and *S. rupestris*, *S. fœtida* and *S. quadrifida* are more different from each other than from species belonging respectively to other groups. Among species not Australian, the position of the radicle unites two very heteromorphous ones under *Firmiana*, and would (as observed to me by M. Poinsot, of the Paris Herbarium) lead to separate *S. mexicana* from other digitate-leaved American species. I have therefore, with Endlicher and others, considered Schott and Brown's genera as sections only.

Sect. 1. **Sterculia.**—*Radicle at the end remote from the hilum. Seeds and inside of the carpels glabrous.*

Leaves digitate. Calyx-lobes 5, spreading. Staminal column long and incurved . . . . . 1. *S. fœtida.*
(See 12. *S. rupestris*, which has the leaves sometimes digitate.)
Leaves large, entire. Calyx-lobes 4, cohering at the tips . . . . 2. *S. quadrifida.*

Sect. 2. **Brachychiton.**—*Radicle next the hilum. Seeds and inside of the carpels usually villous, often cohering. Leaves entire or lobed (digitate only on some branches of* S. rupestris). *Calyx-lobes spreading.*

Calyx-lobes (where known) with induplicate margins. Seeds (where known) scarcely cohering. Leaves tomentose or pubescent, at least underneath. Flowers large, sessile. (*Brachychiton*, Schott.)
  Leaves green and softly tomentose or pubescent on both sides.
    Leaves broad, entire or obscurely 5- or 7-lobed. Calyx broadly campanulate . . . . . 3. *S. ramiflora.*
    Leaves 3-lobed. Calyx tubular-campanulate . . . . . 4. *S. Bidwilli.*
    Leaves palmately 5- or 7-lobed . . . . . 7. *S. lurida.*
  Leaves white underneath.
    Leaves angular or obscurely 5- or 7-lobed . . . . . 5. *S. discolor.*
    Leaves palmately 5- or 7-lobed, with acuminate lobes . . . . 6. *S. incana.*
Calyx-lobes strictly valvate. Outer coating of the seeds usually remaining adherent to the endocarp. Leaves glabrous. Flowers in short panicles.
  Calyx narrow, lobes lanceolate, shorter than the tube. Leaves palmately 5- or 7-lobed (*Trichosiphon*, Schott) . . . . . 8. *S. trichosiphon.*
  Calyx broadly campanulate, deeply lobed (*Pœcilodermis*, Schott).
    Leaves large, palmately 5- or 7-lobed. Flowers quite glabrous . 9. *S. acerifolia.*
    Leaves entire, ovate or cordate, or 3-lobed, acuminate. Flowers tomentose outside when young, glabrous inside. Follicles stipitate . . . . . 10. *S. diversifolia.*
    Leaves cordate-acuminate, entire. Flowers tomentose outside, hirsute inside at the base. Follicles nearly sessile . . . . 11. *S. caudata.*
    Leaves entire and lanceolate, or digitate. Flowers tomentose outside. Follicles long-stipitate . . . . . 12. *S. rupestris.*

2. **S. quadrifida,** *R. Br. in Benn. Pl. Jav. Rar.* 233. Glabrous, except the inflorescence. Leaves petiolate, ovate or cordate, obtuse or acuminate, mostly 3 to 5 in. long. Racemes several, crowded within the uppermost leaves, 1 to 2 in. long, clothed with a stellate tomentum. Bracts broad, acuminate, very deciduous. Pedicels 2 to 4 lines. Calyx about 4 lines long, tomentose, cleft to the middle, the lobes usually 4, lanceolate, connivent and cohering at the tips. Staminal column short. Follicles sessile, ovoid, 2 to 3 in. long, hard and almost woody, minutely tomentose or glabrous. Seeds 2 to 4, ovoid, black, the radicle remote from the hilum.

N. Australia. Sims Island, *A. Cunningham;* Arnhem's Land, *F. Mueller;* Port Essington, *Armstrong;* Cape Upstart, *M'Gillivray.*

Queensland. Delta of the Burdekin and Port Denison, *Fitzalan;* Wide Bay, *Bidwill;* Moreton Bay, *F. Mueller.*

The northern specimens have longer and more acute leaves, and rather smaller flowers on longer pedicels than the eastern ones.

N.T.B.

STERCULIACEAE

Stercularia vindiflora
W.V. Fitzg.

N.T.B.

STERCULIACEAE

Sterculia visudula

W.V. Fitzg.

STERCULIACEAE

9. **WALTHERIA**, Linn.

Calyx 5-lobed. Petals 5, spathulate, persistent. Stamens 5, united at the base, without intervening staminodia; anther-cells parallel. Ovary sessile, consisting of a single 1-locular, 2-ovulate carpel, style excentrical, thickened or fringed upwards. Capsule 2-valved, 1-seeded. Seed ascending, albumen fleshy; embryo straight, cotyledons flat.—Herbs, undershrubs, or rarely trees, the stellate tomentum usually mixed with spreading hairs.

Leaves serrate. Stipules narrow. Flowers usually small, axillary or terminal in clusters, heads, cymes, or panicles.

The species are mostly American, two are African, and two from the Pacific islands. The Australian species is one which is very generally dispersed over the tropical regions of both the Old World and the New.

1. **W. americana,** *Linn.; DC. Prod.* i. 492. A perennial or undershrub, 1 to 2 ft. or more high, densely tomentose or softly villous in every part. Leaves shortly petiolate, from ovate to oblong, 1 to 1½ in. long, obtuse, toothed and plicately veined. Flowers small, yellow, in dense heads, almost sessile in the axils of the leaves, or the upper ones clustered in a short spike, or irregularly collected into dense cymes or leafy corymbs. Bracts narrow. Calyx 1½ to 2 lines long. Petals nearly twice as long, narrow.—*W. indica,* Linn.; DC. Prod. i. 493.

N. Australia. Cambridge Gulf, *A. Cunningham;* Victoria river and Arnhem's Land, *F. Mueller;* Port Essington, *Armstrong;* Gulf of Carpentaria, *R. Brown, Landsborough.*
Queensland. Cape Flinders, *A. Cunningham;* Port Denison, *Fitzalan.*
The species is common within or near the tropics all round the globe.

N.I.B.

STERCULIACEA
Waltheria indica
Linn.