

(Specimen)
Gamble, J. S.
Flora of the Presidency of **N**adi
Part - 2.

10

FLORA OF MADRAS.

Subfamily II. CAESALPINIOIDEAE.

[Trees or shrubs sometimes climbing, rarely herbs. *Leaves* pinnate or bipinnate, usually with many leaflets, sometimes reduced to 1 pair and these sometimes again more or less connate; sepals none or rarely minute. *Flowers* zygomorphic, rarely ligular, hermaphrodite, various in size and colour, usually nodose, the racemes axillary, lateral or panicled at the ends of branches. *Calyx* enclosing the disk; lobes usually 5 or 4, the upper pair, separate to the margin of the short elongated disk, or very rarely gamosepalous. *Sepals* imbricate, rarely valvate. *Petals*, usually 5, rarely fewer or 0, the upper innermost bud, the others imbricate. *Stamens* 10 or fewer by abortion, usually numerous; filaments usually free. *Ovary* free or on a stalk which is more or less adnate to the disk. *Pod* dehiscent indehiscent, often septate. *Seeds* various, albuminous or linniminous.

Tribe IX. EUCAESALPINIEAE.—Leaves all bipinnate or rarely simply pinnate; Sepals free to the disk; anthers versatile:—

(Flowers in racemes or panicles:—Sepals imbricate:—Pod not winged or rarely slightly winged; leaflets rather

small.....60. *Caesalpinia*.

Pod broadly winged along the upper suture; leaflets large

61. *Mezoneurum*.

Pod produced in a wing at the apex; leaflets small

62. *Pterolobium*.

Sepals valvate or subvalvate:—

4 thin, flat; leaf rachis long with many pinnae and leaflets; flowers large.....63. *Delonix*.

Pod turgid, moniliform; leaf rachis very short with 2-6 pinnae with many minute leaflets; flowers small.....64. *Parkinsonia*.

Flowers in elongate racemes:—Stamens 10; prickly climber with small leaflets and turgid sub-

turbose pod..... 65. *Wagatea*.

Stamens 5; unarmed lofty tree with large leaflets and flat-winged pod.....06, *AcrocarpuB*.

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Tribe X. CASSIEAE.—Li **limply** pinnate;

calyx-lobes us\ free to the base:—

IV'til tamens 10, sometim< t some reduced to staminodes
anthers **usually** dehiscing by a terminal pore; leaves **abrupt!**
pinnatej*^*7 **Cassia**
Petals 0: **stamens 2, anthers dehiscing** longitudinally, **leavi**
imparipinnate.....68, Dialiui

Tribe XI. BAUHINIEAE.—Leaves of 21»>atk-t>, **asually** joined togetl^
for a portion of their length, **Bometimes free;** calyx **gamosepalous:-**
Petals unequal, erect or patent; stamens 10, sometimes reduced
3 or even 1, the rest usually sterile69. Bauhink

Tribe XII. AMHERSTIEAE.—LWea usually abruptly
pinnate] calyx-lobes **free to the disk, usually imbricate** : ovary
3-many-ovulec the ovary stalk adnate to the disk :—

Petals wanting; stamens 3-9 ; **calyx-lobes 4** !..... 70. Sara^P
Petals 3-5:—

Stamens monadelphoua, only 3 developed ; **leaflets** many

71. Tamarind'

Stamens 5, free, equal, **alternating with** 5 staminodes

72. HumboK

:ribe **XIII. CYNOMETREAE.**—Leaves abruptly **pinnate**, 2-man;
foliolate: calyx-lobes free to tin; disk, imbricate or valvate; ovai 1
-2 ovuled; seed 1:— **Petals wanting:**—

Leaflets 1 pair; stigma large, peltate; pod samaroid **below**

78. Hardwicki;

Leaflets 4-7 ; stigma minute; pod thickened below

7 1. Kingiodendroi

;ils 5; **leaflets** 1-3 pairs; stigma capitate 75. Cynometr:

60. Caesalpinia, Linn.

Trees or shrubs or **climbers**, armed or **unarmed.**
Leavl abruptly bipinnate; **pinnae** abruptly pinnate;
leaflets *nxi* **Bsmall or fewer** and larger; stipules various; stipels 0
or eonverted into thorns. **Flowers** often showy, yellow or red,
in axillary **oj terminal** racemes or panicles; bracts
caducous; bracteoles **Calyx** of 5 sepals, connate at base in a
disk-lined tube ; the lowes| sepal concave outermost. **Prtals** 5.
orbicnlar or **oblong**, clawet the uppermost smallest.
Stamens 10, free, **declinate;** anthei uniform. **Ovary** sessile,
few-ovuled; style **filiform;** stigma ter|

Iminal. *Pod* oblong or ovoid, thin, flattened or turgid, sometimes lumpy, sometimes torulose. *Foliols* transverse, ovate to orbicular.

Pod covered with wiry prickles, **oblong, inflated**; seeds 1-3, hard, globose, grey:—

Leaves with large foliaceous pinnate stipules; leaflets elliptic-oblong, obtuse, mucronate, 1-2 in. long; **bracts** lanceolate, acuminate, 1/5 in. long; pods 2-3*5 in. long, 1 1/2-2 in. broad 1. *criata*,
Leaves without stipules; leaflets elliptic-oblong, acute, 2-3 in. long; bracts subulate, 1/25 in. long; pods 4-5 in. long, 2 in. broad

2. *Jayabo*.

Pod with minute bristles, obovoid-falcate, turgid, shortly beaked, 1-5-2 in. long, 1/7 in. broad, 2-seeded; stems leaf-rhachises and pedicels densely prickly; leaves with many short pinnae each with 10-20 pairs of small leaflets; racemes 1/2-5 ft. long 3. *mimosoides*.

*Pod without prickles or bristles, usually glabrous:— Pod flattened, not twisted or torulose:—

Pod obliquely ovoid, beaked, 2-2 1/2 in. long, 1/25 in. broad, 1-seeded; stems **recurved** prickly; pinnae 3-4 pairs, leaflets 2-3 pairs, ovate, acute, up to 2 in. long, 1 in. broad; flowers in panicles of racemes i. *Nuga*.

Pod **obliquely-oblong**, truncate at apex and prominently **beaked** on the upper suture, 3-4 in. long, 1*5 in. broad, 3-4-seeded; stem with few prickles; pinnae 6-12 pairs, leaflets 10-18 pairs, oblong-falcate; 5 in. long; flowers in panicles of racemes *Sappan*.

Pod oblong, sometimes slightly curved on the upper suture, prominently beaked 3-4 in. long, 1 in. broad, 6-8-seeded; stems etc., with many recurved thorns; pinnae 5-10 pairs, leaflets 8-12 pairs, 1/5-1/7 in. long; flowers in racemes with long pedicels

5. *sepia ria*.

Pod oblong, straight, thin, 2-3 in. long, 1/7 in. broad, shortly beaked; stem nearly unarmed, erect; pinnae 6-8 pairs, leaflets about 10, obovate, 1/5-1/7 in. long; flowers in subcorymbose racemes

pulcherrima.

Pod torulose, thick, oblong, with a short recurved beak, 1*5-2 in. long, 1/7 in. broad, **2-4-seeded**; prickles few; pinnae about 10 pairs, **Leaflets** 8-10 pairs, 3-4 in. long; flowers in racemes 6. *digyna*.

Pod twisted, thin; **Beak** unarmed; pinnae 7-8 pairs, leaflets **26-30**, very narrow, 1/25 in. long; flowers small, in short dense panicles *Coriaria*.

1. CAESALFINIA CKISTA, Linn. *C. Sonduce* Ua, Flem.; F. B. I.

ii. 254. *Guilandina Bondnc.*; W, *fc A. 280 *in part var. minor*,
DC.

FLORA OF MADRAS.

Plains Districts, hills and on waste lands
 flages, especially near the coast

% StraSshng TeiT thOray shrab ^th yellow flowers. T** are

ikIr'

2. ^CSALPINIA JAYABO, Maza; Merr. in Interp. Herb. Amb.
Bend., ?' W^f? Baker in F_B_L «• 2-W. *GuOandina*
Bcnduc W. & A. 280 in part var. major, DC. Carnatic,
 near the coast (?) (G. Thomson).

it ""^^" WHng shrnb with yellow flowers and larger
 leaflets than the last.
 3' ?^ABSAf ?" • MIMOSO" >ES, Lamk.; F. B. I. ii. 256; W. & A--ol;
 Wt. Ic. t. 392.

Y~ Coast and W. Ghats at low levels and up to 4,000 ft. A
 very pnckly climbing shrub with bright yellow flowers.

IT? " NTJGA Ait; F B _ L iL 255 C i l t

USed in medicTM to give "a bitter- ' Kat Ul'imU TeL
 Getsakeia' Tam_

? ; F_B_

.; W. & A. 281; Wt. Ic. t. 36.

W. Coast, on river banks.

A large climbing shrub with yellow fragrant flowers.

Q^A K8TMPII IIA SEPI AEIA, Roxb.; P. B. I. ii. 256; W. & A.

8U ; Wt. Ic. t. 37.

Circars Deccan and Camatic in hedges and open bushy
 places; W. Ghats, up to 6,000 ft. The Mysore Thorn.

vHv, aife StraSgling thorny ahrnb with bright yellow flowers, »«d y
 very pubescent, but sometimes in the Deccan "early
 glabrous as in N. India. Vern. *Hind.* Aila; *Ur.* Orilo;
Mar. Chilian.

UWfITNA, Rottl.; P. B. I. ii. 256 ; W. & A. 281.

' v^{om} Gan^{3am} to Godavari, chiefly near villages.

IT ?S Shrub' TM^h y^{ellow} flTM^{ers.} the upper

1 r "lth red_ The seeds g[^]e an oil and the

* g_TiTC a ver_y val^{<<at>}le tanning material.

turnery gives a red⁷ Which *esides being useful in

C pulcherrina Swart •y6' It 'S only found in

cul^{ti}vation-flowers with lone sta ^ an eireCt shnib with y^{ellow} or scarlet

Willd., the " Divi-dh?"⁸ Vei⁷ Common in gardens. *C. Corzaria*^ tree,

cultivated for its La* \ ?'f^{lU} bnmcllin^g South American'

Pods, winch are a valuable tanning material.

61. Mezoneurum, Desf.

Prickly woody climbing shrubs. *Leaves* abruptly bipinnate; pinnae abruptly pinnate; leaflets small and numerous or large and few; stipules small or 0; stipels 0. *Flowers* in axillary or terminal panicles of racemes; bracts narrow, usually deciduous; bracteoles 0. *Calyx* very oblique, the tube short; lobes imbricate; the lowest longest and hood-like. *Petals* 5, 4 orbicular, spreading, subequal, the uppermost different. *Stamens* 10, free, exserted; anthers uniform. *Ovary* sessile or shortly stalked, 2-many-ovuled; style filiform; stigma small, capitate. *Pod* oblong, flat, thin, indehiscent, broadly winged along the upper suture. *Seeds* transverse, compressed, orbicular or reniform.

MEZONEURUM CUCULLATUM, W. & A. 283; F. B. I. ii. 258; var. *grandis*, Baker in F. B. I. ii. 258.

Malabar and Travancore, in forests up to 2,000 ft. A large climbing shrub, the stems with conical corky protuberances bearing a pair of hooked thorns; the upper petal short and wide, 2-lobed; the leaflets 3-4 in. long.

62. Pterolobium, E. Br.

Trees or climbing shrubs, armed with recurved thorns. *Leaves* bipinnate, the leaflets small; stipules and stipels small, caducous. *Flowers* small, in axillary or terminal racemes, long-pedicellate; bracts subulate, caducous; bracteoles 0. *Calyx*-tube short, cup-shaped, persistent; lobes 5, imbricate, the lowest longest. *Petals* 5, unequal, clawed, as long as the calyx-lobes. *Stamens* 10, free, the filaments villous; anthers uniform. *Ovary* sessile, 1-ovuled; style subulate; stigma terminal, dilated. *Pod* indehiscent; samaroid, 1-seeded, ending in an oblong or falcate wing. *Seed* large, compressed.

PTEROLOBIUM INDICUM, A. Rich.; F. B. I. ii. 259. *P. lacerans*, Wall.; W. & A. 283; Wt. Ic. 1.196.

All dry forest Districts from the Godavari southwards to the lower Pulneys. Common in open places over bushes and small trees.

A very thorny straggling or climbing shrub with yellow flowers and reddish winged pod. Yern. Tel. Walekaduda.

63. Delonix, Raf.

Erect unarmed trees. *Leaves* abruptly bipinnate; leaflets many, small; stipules small; stipels 0. *Flowers* large, showy, in terminal corymbs; bracts small, caducous; bractpoles 0. *Calyx-tuhe* very short; lobes 5, valvate, subequal. *Petals* 5. orbicular, imbricate, clawed, subequal or the uppermost dissimilar; margins nmbriate. *Stamens* 10, free, decimate, long-exserted; filaments villous below; anthers uniform. *Ovary* subsessile, many-ovuled; style filiform; stigma truncate, ciliolate. *Pod* elongate, flat, woody, dehiscent. *Seeds* transverse, oblong.

Petals yellowish-white, turning orange; leaflets $\frac{1}{2}$ in. long; pod 6-8 in. long, 1 in. broad 1. *data*.

Petals crimson, the claws yellow, the upper petal white streaked with red and yellow; leaflets 25 in. long; pod up to 2*5 ft. long, 2 in. broad
regia.

DELONIX ELATA, Gamble n. comb. *Poinciana elata*, Linn.; F. B. I. ii. 260; W. & A. 282; Bedd. Fl. 1.178.

Planted as an avenue tree and run wild; rare, but found in forests on both sides of the Peninsula according to Roxburgh, Brandis and Beddome, but this is very doubtful. A pretty medium-sized tree with a yellowish-white wood. The branches and leaves are cut for leaf-manure. Yern. *Tel.* Sankesula; *Tarn.* Padenarayan.

Delonix regia, Raf., the Gul Mohr or Flamboyant tree is an introduction, said to come from Madagascar, and is planted in gardens and avenues for ornament and for the shade given by its rounded head, bright green leaves and magnificent trusses of crimson flowers. The wood is soft and white, of no value.

61. Parkinsonia, Linn.

Small armed trees. *Leaves* bipinnate with a very short main rhachis; pinnae long, with flattened rhachis bearing many very small leaflets; stipules spinescent, straight; stipels 0. *Flowers* in short lax axillary racemes, pedicels long; bracts small, caducous; bracteoles 0. *Calyx-twhe* short, disk-lined; lobes membranous, slightly unequal, suhvalvate. *Petals* 5, spreading, with short broad claws, that of the uppermost longer. *Stamens* 10, free; filaments villous;

anthers uniform. *Ovary* shortly
stalked, many-ovuled; style filiform; stigma small,
terminal.

Pod linear, torulose, turgid at the seeds, finally dehiscent.

Seeds oblong, elongate.

PARKINSONIA ACTCEATA, Linn.; F. B. I. ii. 260; W. & A. 284.

In all dry Districts, a native of Tropical America, run wild, often on black cotton soil.

A small tree or shrub with showy yellow flowers and narrow pods, the very small leaflets often early deciduous. Yern.

Teb. Sinia tuinana.

65. Wagatea, Dalz.

A climbing shrub with scattered prickles. *Leaves* abruptly bipinnate, pinnae 4-6 pair, leaflets 6-7 pair, oblong; stipules small. *Flowers* subsessile in long simple or paniced spicate racemes; bracts minute. *Calyx-tuhe* campanulate; lobes 5, subvalvate, the lowest rather the largest. *Petals* 5, subequal, erect, oblong, obtuse, imbricate. *Stamens* 10, free; filaments pilose at the base; anthers uniform, alternate ones shorter. *Ovary* subsessile, free, many-ovuled; style slightly clavate; stigma oblique. *Pod* oblong, indehiscent, subtorulose, turgid at the seeds. *Seeds* ovoid.

WAGATEA SPICATA, Dalz.; F. B. I. ii. 261; Wt. Ic. t. 1995. W.

Ghats, in S. Canara, Mysore and Malabar, up to 3,000 ft. A prickly climber with scarlet calyx and orange petals.

66. Acrocarpus, Wt.

An erect unarmed tree. *Leaves* bipinnate, pinnae 3-5 pairs, each with 5-6 pairs of large leaflets, paripinnate; stipules deciduous; stipels 0. *Flowers* in dense axillary racemes, usually deflexed, pedicels short; bracts small, caducous, like the small lanceolate bracteoles. *Calyx-tuhe* campanulate, disk-lined; lobes 5, lanceolate, equal, as long as tube. *Petals* 5, narrow, subequal. *Stamens* 5, free, exserted, anthers versatile. *Gvary* stipitate, many-ovuled; style short, incurved; stigma minute. *Pod* flat, ligulate, dehiscent, the upper suture winged, 5-10-seeded. *Seeds* obovate, oblique, compressed.

ACROCARPUS FRAXINIFOLIUS, Wt. Ic. t. 254, *excl.* leaf; F. B. I. ii. 292; Bedd. Fl. t. 44.

W. Ghats, in the Nilgiri, Ananialai, Travancore and Tinnevelly hills, in evergreen forest up to 4,000 ft.; often planted. A very large and lofty deciduous tree with large buttresses,

the flowers green with crimson stamens, the leaflets elliptic-lanceolate, 3-4 in. long, bright red when young. Bark light grey; wood light red, useful for building and furniture. Yern. *Tarn.* Malam konne; *Mai.* Kurangan.

67. Cassia, Linn.

Trees, shrubs or herbs. *Leaves* abruptly pinnate, the rhachis often furnished with glands between the leaflets or on the petiole below them ; stipules various; stipels 0. *Flowers* usually yellow, often large and showy, in axillary racemes, terminal panicles or supra-axillary fascicles of 1 or more; bracts and bracteoles present, various. *Calyx-twhe* very short; lobes 5, imbricate. *Petals* 5, imbricate, suhequal or the lower the largest. *Stamen** normally 10 but rarely all perfect and equal, 2-5 usually th*-uppermost, being sometimes wanting or reduced to staminodes; anthers of the 3 lowest stamens often the longest, all dehiscing by terminal pores or by a short slit. *Ovary* sessile or stalked, many-ovuled; style incurved; stigma terminal, usually truncate, sometimes ciliolate. *Pod* variable, dehiscent or indehiscent, terete or flat, usually septate between the seeds. *Seeds* transverse rarely longitudinal, usually compressed, albuminous. Sepals broad, obtuse :—

Stamens all antherit'eros, but the 2-3 lowest larger than the others and with longer filaments; pods long, terete, indehiscent, cylindrical, transversely septate:—

Leaflets 4-8 pairs, ovate, acute, 2-6 in. long ; petals yellow ; pod 1-2 ft. long1. *Fistula.*

Leaflets 10-20 pairs, oblong, obtuse, 1-2 in. long ; petals rose-coloured; pod under 0 in. long ...-2. *marginal*!*

Stamens with 6-7 antherit'eros, the rest reduced to staminodes pods usually dehiscent, transversely septate :—

Leaves with 1 gland just above the base of the petiole, noiu^k between the leaflets :—

Leaves almost glabrous; pods compressed, torulose, tin-margins thickened:—

Leaflets 3-5 pairs, ovate, acuminate, 1-3 in. long; pods flat3. *occidental,*!*

Leaflets 5-10 pairs, oblong-lanceolate, about 1 in. long : pods more or less turgid4. *Sophem.*

Leaves and pods hirsute; leaflets about 4 pairs, lanceolate, 2-4 in. long; pods slender, flattened5. *hirsvt"*

Leaves with subulate glands between the leaflets, none on the-petiole base; stipules narrow, caducous :

Leaflets 3 pairs, obovate, obtuse; flowers small, in axillary pairs; pods slender, subtetragonous ; annual herbs(5. *Tora*.

Leaflets 3-5 pairs, lanceolate or oblong-lanceolate, acuminate[^] glabrous ; flowers in subterminal corymbs, large; pods cylindric, turgid, up to 3 in. long 7. *laevigata*.

Leaflets 6-8 pairs, oblong, obtuse, densely tomentose beneath; flowers in subterminal corymbose racemes, large ; pods flattened, up to 5 in. long, pubescent 8. *tomentosa**

Leaves with subulate glands between all the 8-12 pairs of elliptic-obtuse leaflets, and a pair of large obliquely cordate stipules at their bases ; flowers in subterminal but axillary corymbs, large ;. pods flat, papery, obtuse at each end, stalked, 4-5 in. long, '7 in.

broad 9. *auriculata*.

Leaves without glands on the petiole or between the leaflets :—

Pods more than 3 in. long : —

Stipules minute, caducous; racemes corymbose, forming a long terminal panicle :—

Pods 3-5 in. long, 'o in. broad, flat, long-apiculate, the sutures thin, with straight transverse ridges when dry ; leaflets 10-16 pairs, oblong, 1-1*25 in. long, long-mucronate

10. *montana*.

Pods 6-9 in. long, *5 in. broad, the apicule deciduous, the sutures thickened, indented between the seeds; leaflets 8-14 pairs, oblong, emarginate, 1*5-3 in. long, shortly

mucronate 11. *siamea*.

Stipules broad, persistent: —

Flowers in axillary corymbose racemes forming a terminal panicle; leaflets 10-20 pairs, oblong, obtuse, mucronate, pubescent, 1-1*5 in. long; pods flat, thin, with their sutures 5-7 in. long, *5 in. broad, transversely ridged

12. *timoriensis*.

Flowers in long-peduncled racemes with broad bracts ; leaflets 5-12 pairs, oblong, large, 2-6 in. long, up to 3 in. broad; pods membranous, dehiscent, winged at the middle of each valve..... *alata*.

Pods less than 3 in. long, oblong, thin, papery, rounded at both ends, curved:—

Pods 1-1*5 in. long, o in. broad, much curved, crested on the valves opposite the seeds; racemes short with small flowers; leaves with" 4-6 pairs of obovate-oblong obtuse

leaflets 13. *obtusa*.

Pods 1*5-2 in. long, '6-7 in. broad, slightly curved, not crested; racemes long with large flowers ; leaves with 5-8 pairs of lanceolate acute leaflets *angustifolia*.

Stamens 10, all equal, the two lowest with longer filaments ; leaflets 4-6 pairs, ovate, acute or obtuse, glaucous ; 15-4 in. long, 1-15 in. broad, usually with glands on the rhachis between the leaflets; pods straight, flat, thin, transversely barred, 6-8 in. long, '5-7 in-broad, stalked 14. *glauca*.

Sepals narrow, usually acute, pod small, ligulate, dehiscent; fertile stamens 5 or 10:—

Leaflets 2 pairs, ovate, membranous, oblique, about 1 in. long; flowers axillary ; fertile stamens 5, equal; pod 1-2 in. long by •25 in. broad, ligulate, viscous, glandular like the stems and

branches.....15. *Ahsus*.

Leaflets very many, small, narrow, with a gland on the petiole below them ; stipules conspicuous; flowers supra-axillary :—

Gland on the petiole stipitate, peltate; midrib close to the upper margin of the leaflet:—

Stamens 5, fertile, staminodes 0; leaflets 20 40 pairs, usually very crispate-villous; flowers very small, solitary... 16. *pumila*.

Stamens 10, alternately long and short; leaflets 10-20 pairs, usually glabrous, the rhachis crispate-villous; flowers rather large, 1-3 together in a large bract 17. *Kleinii*.

Gland on the petiole sessile :—

Midrib nearer the upper than the lower margin of the sub-falcate leaflet:—

Leaves usually 3-4 in. long, less at base and in young plants ; leaflets 40-60 pairs; stamens 10, alternately long and short, narrow; pod 1-2 in. long, 16-25-seeded..... 18. *mimosoides*.

Leaves usually only 1-2 in. long, leaflets 16-24 pairs; stamens sometimes 10, usually 1-3 wanting or reduced to staminodes, broad at top ; pod 1-2 in. long, 8-16-seeded

19. *Leschenaultiana*.

Midrib nearly central on the oblong leaflet; leaves 2-3 in. long with about 15 pairs of mucronate leaflets '6 in. long by *1-15 in. broad; stamens 10, all perfect or 1-3 reduced; pods 1-1*5 in. long, appressed-pubescent, about 10-seeded.....20. *nigricans*.

1. CASSIA FISTULA, Linn.; F. B. I. ii. 261; W. & A. 285.

C. rhombifolia Roxb. ; Wt. Ic. t. 269.

Deciduous forests in all Districts, frequently planted in gardens and avenues. The Indian Laburnum.

A moderate-sized tree with pale smooth bark when young, darker and rough when old, at once recognised by its long racemes of bright yellow flowers and long cylindrical pod. The wood is very hard, reddish-brown, strong and durable, especially useful for agricultural work. Vern. *Hind.* Amaltas; *Ur.* Sunari; *Tel.* Rela; *Tarn.* Konnei; *Mai.* Konna; *Kan.* Kakke.

2. CASSIA MARGINATA, Roxb.; F. B. I. ii. 262. *C. Roxburghii*, DC.; W. & A. 286; Wt. 111. t. 83; Bedd. Fl. 1.180.
Carnatic, in forests from S. Arcot to Travancore, elsewhere often planted for ornament.
A small deciduous tree with brown bark, short axillary racemes of rose-coloured flowers and a pod like that of the first, only shorter and more torulose. Vern. *Tarn.* Vakai; *Mai.* Kada konna.
3. CASSIA OCCIDENTALS, Linn.; F. B. I. ii. 262 ; W. & A. 290.
All plains Districts, by roadsides and on waste lands, perhaps introduced from W. Indies.
A diffuse undershrub with yellow flowers. Vern. *Hind.* Kasondi; *Tel.* Cashanda; *Tarn.* Payaverai.
4. CASSIA SOPHERA, Linn.; F. B. I. ii. 262; W. Si. A. 287.
All plains Districts, by roadsides and on waste lands.
A diffuse undershrub with yellow flowers. Vern. *Iliad.*
Kasondi; *Tel.* Pydi-tangedu ; *Tam.* Ponaveri.
5. CASSIA HIRSUTA, Linn.; Prain in Journ. As. Soc. Beng. lxvi. 2. 474.
Deccan, in the Babubudan Hills of Mysore, 4,000 ft. (Talbot); Ramandrug, Bellary (Lushington), also in the Carnatic near Madras; an introduction from America now run wild. A diffuse undershrub with flowers in pairs in the leaf-axils.
6. CASSIA TORA, Linn.; F. B. I. ii. 263 *in part*; W. & A. 290 *in part*.
All plains Districts, on waysides, waste places, fallow lands and in forest undergrowth, also in the hills at low elevations, up to 4,000 ft.
An annual weed, almost an undershrub, with small yellow flowers and very long curved pods with rhombohedral seeds which give a blue dye. Vern. *Hind.* Chakunda; *Tel.* Tantipu; *Tam.* Tagerai.

7. *CASSIA LAEVIGATA*, Willd.; Pram in Journ. As. Soc. Beng. lxvi. 2.476.
 Nilgiri and Pulney Hills at 4,000-6,000 ft, introduced from tropical America and now run wild.
 A conspicuous shrub with large yellow flowers.
8. *CASSIA TOMENTOSA*, Willd.; F. B. I. ii. 263 ; W. & A. 286.
 Nilgiri and Pulney Hills, above 6,000 ft, introduced from tropical America and now run wild.
 A conspicuous shrub with large yellow flowers.
9. *CASSIA AURICULATA*, Linn.; F. B. L ii. 263; W. & A. 290 ; Trim. Fl. Ceyl. t. xxxiii.
 Circars from Chicacole southwards, but not common; Deccan and Carnatic, in most Districts on dry stony hills and on black cotton soil, often gregarious. A beautiful shrub with large bright yellow flowers. The bark gives a valuable tanning material, the collection of it forming an important forest industry. Yern. *Hind.* Tarwar; *Tel.* Tangedu ; *Tarn.* Avaram.
10. *CASSIA MONTANA*, Heyne; F. B. I. ii. 264; W. & A. 289.
 Deccan and Carnatic, on dry stony hills and up to 3,000 ft. A handsome shrub with yellow flowers. Vern. TeZ. Pagadi tangedu, Konda tangedu.
11. *CASSIA SIAMEA*, Lamk.; F. B. I. ii. 264. *C. fiorida*, Vahi: W. & A. 288; Bedd. Fl. t. 179.
 Curnatic, from the Shevaroy Hills southwards—common in forests (Beddome). Much planted in avenues, etc, and now naturalized.
 A moderate-sized tree with yellow flowers in bracteate corymbs forming a large terminal panicle. Bark grey; wood dark brown to nearly black, bard and durable. Yern. *Tarn.* Manja Konnei.
12. *CASSIA TIMORIENSIS*, DC; F. B. I. ii. 265.
 W. Ghats, on the Carcoor Ghat (Lawson) up to about 3,000 ft, low country of Travancore (Bourdillon).
 A small tree or large shrub with pubescent leaflets and calyx, flowers yellow.
13. *CASSIA OBTUSA*, Roxb.; W. & A. 288; Wt, let. 757. *C. obovata*, Collad.; F. B. I. ii. 264.
 Deccan and Carnatic, in dry places on open lands and pastures.

A diffuse perennial herb with pale yellow flowers. The leaves are sometimes used as a substitute for senna.

14. CASSIA GLAUCA, Lamk.; F. B. I. ii. 265; W. & A. 289.

W. Ghats, scarce as a wild plant, commonly planted in gardens.

A handsome shrub or small tree with pale yellow flowers and reflexed bracts.

Yar. *suffruticosa*, Pram. *C. suffruticosa*, W. & A. 289.

Circars, Deccan and Carnatic, chiefly on E. side. A shrub with smaller leaflets, flowers and pod, the leaflets more numerous.

15. CASSIA ABSUS, Linn.; R B. I. ii. 265; W. & A. 291.

All dry Districts, on waste lands and in open forest.

A viscous annual or biennial with very small reddish-yellow flowers.

16. CASSIA PUMILA, Lamk.; F. B. I. ii. 266; W. & A. 292.

Deccan and Carnatic, in pasture lands.

A small diffuse or procumbent undershrub with small yellow flowers on very short pedicels.

17. CASSIA KLEINII, W. & A. 293; F. B. I. ii. 266.

Deccan, in Cuddapah; W. Coast in S. Canara, Malabar and Travancore, scarce.

A diffuse undershrub with rather large yellow flowers, usually with long pedicels.

18. CASSIA MIMOSOIDES, Linn.; F. B. I. ii. 266. *C. angustissima*, Lamk.; W. & A. 292.

N. Circars, hills of Gumsvir; Deccan, in hills as Horsley Konda and Ramandrug, up to 4,000 ft.; W. Ghats, in Malabar, Nilgiris, Anamalais and Travancore Hills, up to 6,000 ft.

A diffuse undershrub with long slender branches and yellow flowers.

19. CASSIA LESCHENAULTIANA, DC.; Pram in Joura. As. Soc. Beng. lxvi. ii. 477. *C. Wallichiana*, DC; W. & A. 292.

C. mimosoides var. *Wallichiana*, Baker in F. B. I. ii. 266.

W. Ghats, in the Nilgiri, Anamalai and Pulney Hills up to 6,000 ft., in grass lands;

Deccan, In the hills of Mysore. A suberect undershrub

with yellow flowers.
 Botanical Survey of India
 Pram in Journ. As. Soc. Beng

20. CASSIA NIGRICANS, Vahl;

FLORA OF MADRAS.

ra (Hohenacker);

Tuticorm m Tmnevey i = Carnatic

^ t i

TM

leaves. handsome shrub or small tree which

Ca««a «?«*«■, -L.mn., < f^u the w Indies> ana is cultivated has been ^{TM^vO *n TM^*} Bome times found run wild. O. *angustifolia*, in gardens and p«^ ^ *laneo*lata. W. & A. 288) is the Tinnevelly Yahl; F. B. -L- "" g India for its leaves, which afford a purga-senna cultiva^{te} five drug. L>.y>at' f<jis, a large tree sometimes cultivated and in avenues. It

68. Dialium, Linn.

Trees. *Leaves* imparipinnate, leaflets subopposite or alternate; f*r>ules small; stipels 0, *Flowers* small, in axillary or terminal • nicies of small cymules; bracts and bracteoles small, caducous. fa£?/a;-tube very short; lobes 5, petaloid, imbricate. *Petals* small or 0. *Stamens* 2, rarely 3, free, with short filaments; anthers erect, oblong, longitudinally dehiscent. *Ovary* sessile, 2-ovuled ; style subulate; stigma small, terminal. *Pod* ovoid-globose, indehiscent, 1-seeded; exocarp hard or fragile; endocarp usually pulpy. *Seed* 1, more or less compressed, albuminous ; cotyledons flat.

DIALIUM TRAVANCORICUM, Bourd. in Ind. For. xxx. 243 with fig-

W. Ghjits, in the forests of S. Travancore near Ponmudi at 1,000-2,000 ft.

A very large evergreen tree with globose pods and leaves with 7-11 caudate-acuminate leaflets 2-3 in. long by about 1 in. broad. The bark is pale brown and smooth and the wood brownish-grey with darker lines, likely to be useful. Yern. *Mai*. Malam puli.

69. Bauhinia, Linn.

Trees or shrubs, erect or climbing, the latter often with emanate tendrils. *Leaves* of 2 leaflets, free or more usually adnate into one entire leaf more or less deeply cleft at the apex and palmately ribbed; stipules usually small, caducous. *Flowers*

more or **less** zygomorphic, in terminal or rarely axillary racemes

LEGUMINOSAE

present, small, often caducous. *Calyx-tube*
 cylindrical by the disk; limb 5-lobed

filamentous, usually 5-lobed; the upper petal innermost. or 3 OT eTM / fertile' <<> rest sterile

Terminal, stalked; style short or filiform; terminal or oblique. continuous within or rarely

stamens 10:—

Pod dehiscent, thin, -5-7 in. broad; flowers large - flowers yellow, the standard with a red blotch; calyx-limb 5-lobed; leaflets 1-2 in. long, rounded at apex, 7-lobed; pod 4-5 in. long, not

inflated; filaments connate for nearly two-thirds with a mucro; pod 4-5 in. long, ridged on each

Pod 1-1.5 in. long; filaments 25 in. long, slender; pod 6-12 in. long, 7-10 in. broad.....
 T., racemosa.
 leaflets free or very shortly connate, under 75 in long rounded at apex; filaments 5 in. long, thick; pod 3-4 in. long * in. broad, twisted.

co. .yx_tube long, thin, pubescent, with 5 short lobes; tree with ^T? Suborbicular > semicordate leaflets, glaucous beneath, for three-fourths of length or even more, flowers small

cixib ; g³- *labarica*.

yx-tube very long, leathery, as are the 5 narrow lobes¹ 1-1-5 in
cordat. r[^]? 8hrUb WHh tendliiS aDd free¹ rounded¹ ovate, semi-

thet _t 2~3¹ln_10Dgi floWerS large¹in¹ lax axiUar/ racemes,

Petals narrow, the anthers very long , pod very large, flat

diphylla.

T I * ' Pod aeM¹ly 8trai*ht¹ flat¹tened, reticulate,

751 i bd

Fertile stamens 3, sometimes 4 or 5 :—

small, in large terminal panicles, the petals yellow with

Flowers small, g
purple streaks; leaflets connate almost to the apex coriaceous,
4-6 in. long; pods 5-6 in. long, 15 in. broad, flattened, gradually
widening to an obtuse tip " , ^ • ^ w!"
Flowers large, the petals purple-pink or white; pod 6 in.-1 ft.
long, 75-1 in. broad, flat:—

Flowers white or pink, the uppermost petal darker and
variegated, usually appearing before the leaves; leaflets
ovate rounded at apex, connate for about two-thirds up

5. *variegata.*

Flowers purple or rose, petals all similar, appearing with the
leaves; leaflets oblong, obtuse or subacute at apex, connate
about half way up and sometimes overlapping6. *purpurea.*

Climbers:—

Flowers rather large, in corymbose racemes : —

Fertile stamens 3; branchlets, leaves beneath, conspicuous
tendrils and corymbs densely tawny villous; leaflets often
very large, up to 18 in. long, connate for two-thirds up or
higher; pod large, velvety, 9-18 in. long by 2-3 in. broad, the
seeds flat7. *Vahlii.*

Fertile stamens 4-5; no tendrils; branchlets, leaves beneath,
and corymbs finely ferruginous pubescent; leaflets oblong,
connate for about three-fourths up, about 5 in. long; pod flat,
up to 6 in. long by 1 in. broad, slightly pubescent, ridged
along the upper suture8. *phoenicea.*

Flowers very small, in panicles of cylindric racemes; fertile
stamens 3; glabrous, with many tendrils; leaflets small, when
young long caudate-acuminate, when older joined in a nearly
entire cordate leaf; pod thin, flat, oblong, 15-2 in. long 9. *anguina.*

Fertile stamen 1; calyx-limb spathaceous; leaflets ovate,
semi-
cordate, subacute at apex, up to 8 in. long, connate for nearly
three-fourths up; pod flat, narrow, long-beaked *monandra,*

1. *BAUHINIA TOMENTOSA*, Linn.; F. B. I. ii. 275; W. & A. 295.

Circars and Carnatic, in dry forests from the Chilka Lake
to Tinnevely, especially in Kistna and Guntur Districts,

often planted for ornament.

A shrub with pretty flowers and a tough, nearly black wood. Yern. *Hind.* Kachnar; *Tarn., Tel.* Kanchini.

2. BAUHINIA RACEMOSA, Lamk.; F. B. I. ii. 276; W. & A 295 •
Bedd. Fl. t. 182. ' ~

- Circars, Deccan and Carnatic in dry deciduous forests; W. Ghats, on dry slopes and up to 4,000 ft. A small deciduous rather crooked tree with pale yellow flowers. Bark rough, nearly black; wood brown, hard, a good fuel. The inner bark gives a good fibre for rough ropes. Vern. *Hind.* Gurisil; *Ur.* Ambhota; *Tel.* Are; *Tarn.* Archi, Atti.
- '3. BAUHINIA MALABARICA, Roxb.; F. B. I. ii. 277; W. & A. 294.
N. Circars, in the Gumsur Sal forests and in the Godavari forests; W. Ghats, in deciduous forests, from S. Canara to Travancore, up to 2,000 ft.
A moderate-sized deciduous tree with cream-coloured flowers. Bark brown, rough; wood reddish-brown, with darker patches, moderately hard, but of little value. The leaves are acid. Vern. *Hind.* Amlosa; *Tel.* Puli shinta; *Kan.* Cheppura.
4. BAUHINIA RETUSA, Ham.; F. B. I. ii. 279.
N. Circars, on the slopes of the E. Ghats, in forest, scarce; Deccan, in Mysore, but rare.
A moderate-sized deciduous tree. Bark dark brown; wood red with darker patches and streaks, hard and of good quality. It gives a clear gum-like gum arabic, but less soluble in water. Vern. *Hinfi.* Semla; *Tel.* Nirpa.
5. BAUHINIA VARIEGATA, Linn.; F. B. I. ii. 284; W. & A. 296.
N. Circars, Deccan and Carnatic, in dry deciduous forest, especially on rocky hills; often cultivated for its beautiful appearance in flower.
A moderate-sized deciduous tree. Bark grey, with vertical cracks; wood greyish-brown with irregular darker patches, moderately hard. Vern. *Hind.* Kuchnar; *Ur.* Borara; *Tarn.* Segapu-manchori; *Tel.* Mandari.
- <>. BAUHINIA PURPUREA, Linn.; F. B. I. ii. 284; W. & A. 296.
N. Circars, Deccan and Carnatic, in deciduous forest* chiefly along water-courses; W. Coast, in dry forest lands; often cultivated in gardens.
A moderate-sized evergreen tree, often bushy, with rather large leaves. Bark grey to brown;* wood dark brown, moderately hard, used for implements. Vern. *Hind.* Khairwal; *Tel.* Kanchanam; *Tarn.* Mandari.

7. **BAUHINIA VAHLII**, W. & A. 297; F. B. I. ii. 279.
 N. Circars, in forests down to the Godavari. A gigantic climber with very thick stem and long branches bearing cream-coloured flowers with shortly-clawed petals. It is destructive to forest trees and has to be cut. The leaves are used as plates and for many other purposes; the seeds are roasted and eaten. Vern. *Hind.* Maljan; *TJr.* Shiali; *Tel.* Adda.
8. **BAUHINIA PHOENICEA**, Heyne; F. B. I. ii. 283; W. & A. 296. *B. Benthami*, Bedd. Ic. t. 107.
 W. Ghats, from Coorg and Mysore to the Anamalais and Travancore, in evergreen forests.
 A very large climber with brick-red flowers, the petals with long slender claws, the anthers long. It is very destructive to forest trees and has to be cut
9. **BAUHINIA ANGUINA**, Roxb. Cor. Pl. t 285 • F B I ii 00J, W. & A. 298. * - ^
 Malabar and Travancore, near the coast, apparently scarce. Snake climber. J
 A large very long climber with curious stems alternately twisted one way and the other between the stem margins. Vern. Naga-mu-valli (Rheede) g
Bauhinia acununata, Linn., f a prefct shrub f

sometimes found in Madras Gar
 by Us veITfslu;il leaflets. *B. h b* B . ^
 ^ shrub or
 small tree, grown in gardens in Madras

70. *Saraca*, Linn

flowers showy, yellow J^J'0^TMTM^ j^petiolar; stipels 0
 corymbose panicles; bractf small d, *Y ^ often 1
 persistent, coloured* cT/SLd^T"/ bfaCt6oleS S
 enclosing a lobed disk. \ *y^TM^ tub << elongate, cylindrical
 ^ *stamens* usuaiiy^1 ^ n%L::T
 y ^ n i t s long, filiform

anthers versatile, dehiscing longitudinally. *Ovary* stipitate, the stipe adnate below to one side of the disk, many-ovuled; style long, filiform; stigma small, capitate. *Pod* flat, oblong, coriaceous or almost woody, continuous within. *Seeds* obovate-orbicular, compressed, exalbuminous.

SARACA INDICA, Linn.; F. B. I. ii. 271; Bedd. Fl. t. 57. *Jonesia Asoca*, Roxb.; W. & A. 284; Wt. Ic. t. 206.

N. Circars, in Ganjam and Yizagapatana, in hill forests; S. Canara, Mysore and Travancore, scarce in a wild state, but frequently planted. The Asoka tree. A small tree with brilliant orange-scarlet flowers and 2-3 pairs of oblong-lanceolate leaflets. Wood reddish-brown, soft. Yern. *Hind.* Asok ; *TJr.* Oshoko; *Kan.* Ashunkar.

71. Tamarindus, Linn.

A tree. *Leaves* abruptly pinnate; leaflets many, small, opposite; stipules minute, caducous ; stipels 0. *Flowers* in racemes at the ends of branches ; bracts and bracteoles ovate-oblong, coloured, caducous. *Calyx-tube* turbinate, lined by the disk; lobes 4, lanceolate, membranous, imbricate. *Petals* 3, imbricate, the two lower reduced to scales. *Stamens* 3, perfect, the filaments connate about half-way up in a sheath split above, the rest reduced to bristle-like staminal nodes; anthers versatile, dehiscing longitudinally. *Ovary* stipitate, the stalk adnate to the disk, many-ovuled; style filiform; stigma capitate. *Pod* linear-oblong, incurved, thick, somewhat compressed, with brittle epicarp, pulpy mesocarp and leathery septate endocarp. *Seeds* obovate-orbicular, compressed, testa hard, albumen 0.

TAMARINDUS INDICA, Linn.; F. B. I. ii. 273; W. & A. 285; Bedd. Fl. t. 184.

All plains Districts, cultivated and self-sown, probably indigenous in Central Africa, The Tamarind. A large evergreen tree of great importance, having rather small pink yellow-striped flowers, small acid leaflets and a pod whose pulp is made into preserves and also exported as a drug. The bark is dark grey and the wood, very hard and heavy, is of a dark purplish-brown colour and used for many household and agricultural purposes. Yern. *Hind.* Imli • *Vr.* Tentuli; *Tain.* Puli; *Tel.* Chintu.

72. *Humboldtia*, Vahl.

Trees. *Leaves* abruptly pinnate; leaflets 1 to 6 pairs, large, with prominent nerves connected by intramarginal loops; stipules persistent, usually leafy, of two parts—the erect stipules proper and a basal usually recurved appendage; stipels 0. *Flowers* in racemes, axillary to the upper leaves or on the branches or the stem; bracts ovate or oblong; bracteoles large, coloured, persistent. *Calyx-tube* turbinate or narrow, lined by the disk; lobes 4, subequal, coloured, imbricate. *Petals* 5 or 3, spatulate, clawed, exsert. *Stamens* 5 perfect alternating with 5 minute staminodes; filaments filiform; anthers oblong, versatile, dehiscing longitudinally. *Ovary* stipitate, the stalk adnate to the disk few-ovuled; style long, filiform; stigma capitate. *Pod* oblong, oblique or falcate, compressed, dehiscent, coriaceous. *Seeds* transverse, compressed, albumen 0.

Leaflets 1 pair, subsessile, lanceolate, acuminate, with a broad gland at base, 5-6 in. long, 1-2 in. broad; stipules lanceolate, the appendages absent \ racemes very short, on old wood 1. *mijuga*.

Leaflets 2 pairs, subsessile, obovate-oblong, obtusely cuspidate, 4-7 in. long; stipules lanceolate, the appendages broadly reniform; racemes peduncled, about 6 in. long, axillary; branchlets sometimes swollen 2. *Brunonis*.

Leaflets 3 or more pairs :—

Rhachis of leaves terete; leaflets reticulate:—

Internodes of the branchlets swollen and hollow; leaflets 3-5 pairs, elliptic-ovate, cuspidate, subcoriaceous, 3-4 in. long, 1-2 in. broad; stipules ovate, the appendages acuminate at ends; racemes about 3 in. long, axillary, erect 3. *laurifolia*.

Internodes not swollen; leaflets 3-4 pairs, oblong-lanceolate, acuminate, coriaceous, 5-10 in. long, 1-2 in. broad; stipules ovate, the appendages reniform; racemes peduncled, 5-6 in. long, axillary, tawny-velvety, axillary 4. *FaMicwia*.

Rhachis of leaves flattened; leaflets 3-4 pairs, lanceolate, acuminate, chartaceous; 3-4 in. long, 1-1.5 in. broad; stipules ovate, the appendages small, falcate; racemes short, tawny-velvety, corymbose, in fascicles on the stems 5. *Bourdilloni*.

Rhachis of leaves winged, the wings obcordate; leaflets 4-6 pairs, oblong-lanceolate, long-acuminate, subcoriaceous, 6-15 in. long;

appendages ovate or reniform; racemes short, axillary or from old wood, corymbose, tawny-velvety
t a w n y v e l v e t y '
tawny-velvety.....

1-5-5 in. broad; stipules lanceolate falcate, the appendages ovate

*•"***<<<.]

LEGUMIHOSAE.

l

UNIJUGA•Bedd•Ic_ *•108; F

in s

e with crimson Ws'said

BBUNONIS' W*»- PI- AS. Rar. iii. t. 233- "
W_&A_285' Wt. Ic. 1.1606.

3. H rII.
' 285*

mts, ,n Malabar, apparently very scarce.
*7 OIShrU! with nunlero»s ^ches, the inter- nehlets
c«riously fistular, the cavities b^mall
ants; flowers pink; pod acute;

W O , f_m T' Wt Ic_ *• 1607~8' F- B-1- ii- 274.
"rounT bar' TravallC0le TM* Tinnevelly, on low
»round near nvers, Nilgiris (Wight).
moderate-sized tree, the flowers white with a buff calyx, *e
pod acute at both ends, tawny-pubescent. Bark dark
own; wood light brown, moderately hard. Vera. Mat
^voratthi

BOUEDILLONI, Prain in Journ. As. Soc. Beng.

W. Ghats, on the Peermerd Ghat, Travancore, at 3,000 ft
"oderate-sized tree reaching 50 ft. in height, with petals h.te,
veined with pink, the calyx crimson, the pod scarlet, -
aoiabnfonn, 4 in. by 1 in., pubescent, ' t. 236g^{OLI>mA DEC}UBBENS,
Bedd. ex Oliver in Hook. Ic. PI.

500-^nr m Vall6JS aboUt Ponmudi in C- Travancore, at '
*,000 ft., in evergreen forest; Tinnevelly (Beddome). ^
moderate-sized tree with pink flowers and brown tornen-*>se
poi 3-5-5 in. long. Young leaves are white and \Ti
\. Bark bh^_greenTw6bd greyish-brown. Vern.



73. Hardwickia, Boxb.

Large tree. *Leaves* paripinnate, leaflets 1 pair with a minute bristle* between; stipules small, caducous; stipels 0. *Flowers* small, numerous, in paniced racemes; bracts minute ; bracteoles scale-like. *Calyx*-*twhe* scarcely any; lobes usually 5, orbicular, petaloid, round the small basal disk, much imbricate. *Petals* 0. *Stamens* 10, alternately longer and shorter; filaments filiform; anthers versatile, dehiscing longitudinally. *Ovary* sessile, free, 2-ovuled; style filiform; stigma large, peltate. *Pod* a dry 1-seeded follicle, the seed at the apex where the pod dehisces, the base samaroid. *Seed* pendulous, obovate, compressed, 2-furrowed ; testa crustaceous ; albumen 0; cotyledons large, 2-grooved.

HARDWICKIA BINATA, Roxb. Cor. PL iii. 6, t. 209; F. B. I. ii. 270; W. & A. 284; Bedd. Fl. t. 26.

Deccan and Carnatic, in the Upper Godrfvari forests, Kistna and Guntur, in the Ceded Districts, Mysore, Coimbatore and Salem, often forming gregarious forests. A large deciduous tree with small yellowish flowers and *BanhiniaAike* leaflets. Bark dark grey, rough; wood extremely hard and heavy, dark red, streaked with black or purple, used for agricultural and many other purposes, but difficult to work. The leaves are cut for manure and the branchlets for the fibre of their bark. Yern. *Hind.* Aivjan; *Tel.* Tepi; *Tarn.* Acha; *Kan.* Kamra.

74. Kingiodendron, Harms.

Large tree. *Leaves* abruptly pinnate, the lower leaflets alternate, leaflets 4-7 ; stipules minute, caducous ; stipels 0. *Flowers* very small, numerous, in panicles of racemes; bract ovate, very small, as are the 2 minute bracteoles. *CciZ]/Jc*-tube almost wanting digfc very small; lobes 5, orbicular, gland-dotted, imbricate. *Petals* 0. *Stamens* 10 equal; filaments filiform, villous at base; anthers versatile, dehiscing longitudinally. *Ovary* sessile, villous at base 2-ovuled; style subulate ; stigma minute, oblique. *Pod* coriaceous or nearly woody, obovate, 1-seeded, the seed at the apex when the

pod dehisces. *Seed* pendulous, compressed ; testa membranous ■
cotyledons with balsam-bearing cells.

KINGIODENDRON PINNATUM, Harms in Engl. & Prantl Nat -1
Pfl. Nacht. 194. *Hardwicida pinnata*, Rox. b F B I ii O-A
W. & A. 284; Bedd. Fl. t. 255. ' ' ' %

~'°;

W\ Ghats, in the evergreen forests of S. Canara (Beddome), Malabar, Travancore and Tinnevely up to 3,000 ft. A very large handsome evergreen tree reaching 100 ft. in height, with very small white flowers. Bark dark brown and green, rough; wood dark red or reddish-brown with a sticky resin, used for planking and furniture. The resin, like copaiba balsam, is of value. Vern. *Tarn*. Madayan sainpriini; *Mai*. Shuruli.

75. *Cynometra*, Linn.

Trees. *Leaves* abruptly pinnate, the leaflets usually few; stipules caducous ; stipels 0. *Flowers* small, in short corymbs or racemes fascicled in the axils of the leaves or on old wood; bracts ovate, dry, imbricate, at length deciduous, smaller upwards ; bracteoles none or membranous, coloured. *Calyx-tube* very short, enclosing the disk; lobes 4 or 5, oblong, imbricate, at length reflexed. *Petals* 5, oblanceolate, almost included. *Stamens* 10, rarely many; filaments filiform ; anthers small, versatile, dehiscing longitudinally. *Ovary* sessile or shortly stalked. 2-ovuled; style slender; stigma capitate. *Pod* variously shaped, turgid or flattened, indehiscent, the pericarp thick, 1-seeded. *Seed* thick or compressed ; cotyledons fleshy ; albumen 0.

-Leaflets 1 pair, lanceolate, falcate, acuminate, 1-5-3 in. long, 1-1-25 in. broad, very unequal sided ; pod flat, semicircular, rugose, orange when dry, 1-5 in. long on the inner or straight side 1. *travancorica*.

Leaflets 2 pairs, oblanceolate, falcate, acute, the end ones the longest, 1-6 in. long, 1-5-2 in. broad, very unequal-sided; pod turgid, very rugose, 1-5 in. long 2. *mimosoides*.

leaflets 3 pairs :—

Leaflets obliquely obovate-oblong", obtusely acuminate and emarginate, 2-3-5 in. long, 1-1-25 in. broad, unequal-sided, the lowest

pair the smallest, often only 1 in. long 3. *Beddomei*.

Leaflets obovate, emarginate at the blunt apex, cuneate at base, 1-1 or 1 in. long, 5 in. broad, slightly unequal-sided, all pairs about equal; pod reniform globose, contracted in the middle, smooth,

broader than long, 1-6 in. in diam.....4. *BourdUlonii*.

1- CYNOMETRA TRAVANCORICA, Bedd. Fl. t. 316; F. B. I. ii.

267.

W. Ghats., in S. Travancore and Tinnevely, at 2,000 to

3,000 ft. (Beddome); Tambracheri Ghat, Wynaad (Beddome, Barber).

A lofty tree with rosy-white flowers and only 1 pair of leaflets, which when young are very thin and creamy-pink in colour.

2. CYNOMETRA MIMOSOIDES, Wall. *C. ramiflora*, Linn.; F.B.I. ii. 267 in part; W. & A. 293; Bedd. Fl. t. 315.

W. Ghats, in S. Travancore (Beddome), apparently very scarce.

A moderate-sized tree with large leaflets and curiously wrinkled pods.

3. CYNOMETRA BEDDOMEI, Prain in Journ. As. Soc. Beng. lxxvi. ii. 478. *C. malabarica*, Bedd. MS. in Herb. Kew.

W. Ghats, Tambracheri Ghat, Wynaad (Beddome).

A large tree with crimson young leaves and flowers in clusters from conspicuous imbricate bracts.

4. CYNOMETRA BOURDILLONII, Gamble in Kew Bull. 1908, 446.

W. Ghats, banks of the Parapar river, S. Travancore, at 500 ft. (Bourdillon).

A handsome moderate-sized tree with large clusters of flowers, small foliage and remarkable didymous small pod.

Wood hard, yellow; bark blackish-green.

C. cauliflora, Linn., with 2 leaflets and flower racemes from the branches is sometimes found in gardens.

Subfamily III. MIMOSOIDAE.

Trees or shrubs, sometimes climbing, rarely herbs.

Leaves bipinnate or less commonly simply pinnate.

Flowers small, regular, usually 5-merous, usually hermaphrodite, sometimes polygamous, generally in heads or spikes; bracts small, at the base of or on the peduncle, usually deciduous; bracteoles 0 or very small and usually deciduous.

Calyx more or less campanulate with usually 5, sometimes 3, 4 or 6 valvate lobes, sometimes free. *Petals* as many as the sepals,

valvate, free or connate in a lobed corolla. *Stamens* definite or indefinite; if definite as many as or twice as many as the sepals and petals, if indefinite usually very many, free or monadelphous. *Ovary* free, at the bottom of the calyx.

Pod dehiscent or indehiscent, sometimes jointed. *Seeds* sometimes arillate, albuminous or exalbuminous; cotyledons flat.

ADENANTH^{EREAE}.—Stamens definite, the anthers d
t l t i
at least in an early stage.—

blowers in globose heads:—

Small herbs or undershrubs with small thin pods and small
nets; lower flower neuter, the stamens reduced to elongate

^m l n o d e s ; s e e d s a l b u m . n o u s 76. Neptunia.
i l l T a With thick woody pods and large leaflets ; all or nearly

< the flowers perfect; seeds exalbuminous..... 77

Xv lia

* lowers in elongate spikes:—

Y

s J e d T * e n d r i l _ b e a r i n ^ c l i m b e r s w i t h v e r y l a r g e b r o a d p o d s a n d E r
; l e a f l e t s l a r g e a n d f e w ; s e e d s e x a l b u m i n o u s ... 78. Entada. ct trees or
shrubs with narrow pods and many leaflets: seeds ftourninous

Unarmed trees with shortly stalked flowers and bright red
seeds; leaflets fairly large 79. Adenantha.

nckly trees or large shrubs with sessile flowers.—

^o d s t u r g i d , s t r a i g h t ; l e a f l e t s d i s t a n t 80. Prosopis.

-Pods thin, twisted; leaflets minute, contiguous

Tribe XV CT

81* Dichrosta chys.

crested E J U M I M ^ o S E A E . — S t a m e n s d e f i n i t e , t h e a n t h e r s n o t g l a n d - u
seeds albuminous : —

^s s r a i g h t , c o r i a c e o u s , c o n t i n u o u s , d e h i s c i n g a t t h e s u t u r e s : —

! S t U b s W i t h C l a V a t e S t i g m a s **Desmanthus.**

S G S U b s o r s m a l l t r e e s w i t h c a p i t a t e s t i g m a s Leucaena.

curved, with segmented valves and indehiscent sutures

Y

S²- Mimosa.

Stai ^ C A C I E A E . — S t a m e n s i n d e f i n i t e , s e e d s e x a l b u m i n o u s : —

Tr" h m e n s f r e e t f l o u * e r s c a p i t a t e o r s p i c a t e 83. Acacia.

o u i y 2 - 3 f I ^ G E A E « — S t a m e n s i n d e f i n i t e , m o n a d e l p h o u s , r a r e l y

T a l e s a s l l l a n y a s t h e p e t a l s ; s e e d s e x a l b u m i n o u s : —

e a v e s b i p i n n a t e . —

o d s n o t s e p t a t e b e t w e e n t h e s e e d s . —

| d s t r a i g h t , w i t h t h i n v a l v e s 84, Albizzia.

c u i > v e d o r t w i s t e d w i t h c o r i a c e o u s v a l v e s

p , 85. Fithecolobium.

a s s e p t a t e b e t w e e n t h e s e e d s Enterolobium.

e * v e s s i m p l y p i n n a t e 86 I

76. Neptunia, Lour.

l or perenial herbs ?r undershrubs, erect, prostrate or the
branches often compressed or tangled. Leaves bi-

pinnate; leaflets many, small, sensitive; stipules persistent; stipels 0. *Flowers* small, sessile, in oblong or globose peduncled axillary heads; upper flowers J, lower <£, lowest neuter with flattened staminodes; bracts minute. *Calyx* campanulate, small, 5-toothed. *Petals* 5, valvate, free or connate at the base. *Stamens* in <| and \$ flowers 10, free, exerted; filaments slender; anthers gland-crested; staminodes in neuter flowers flattened. *Ovary* stalked, in any-ovuled; style filiform; stigma minute, terminal, concave. *Pod* flat, membranous, oblong, 2-valved. *Seeds* transverse, compressed; with a filiform funicle.

A floating water-plant; leaves with 2-3 pairs of pinnae each with 8-15 pairs of leaflets, no gland on the rhachis; flower heads oblong, *5 in. long; pods '5-1 in. long, *3-*5 in. broad, obtuse, cuspidate

1. *oleracea*.

Land undershrubs; rhachis with a gland between the lowest pair of pinnae:—

Erect and moderately stout; leaves with 3-5 pairs of pinnae each with 10-30 pairs of leaflets; flower heads oblong, "5 in. long;

Pods 1-2 in. long, *3 in. broad, obtuse, apiculate *plena*.

Prostrate, diffuse and slender; leaves with 1-3 pairs of pinnae each with about 15 pairs of leaflets; flower heads globose, *2 in. in diam.; pods '5-1 in. long, *25 in. broad, subacute 2. *triquetra*.

1. NEPTUNIA OLERACEA, Lour.; F. B. I. ii. 285.

Mimosa

natans, Roxb. Cor. Pl. t. 119. *Desmanthus natans*, W. Si A. 270.

Circars and Carnatic, in ponds and tanks of fresh water.

An annual water-plant, the branches zig-zag, bearing radical fibres at the nodes and spongy floats on the internodes.

Yern. *Tel.* Niru tavulupu, Nidra yung.

2. NEPTUNIA TRIQUETRA, Benth.; F. B. I. ii. 286.

Desmanthus

triquetrus, W. & A. 270; "Wt. Ic. t. 7515.

Circars, Deccan and Carnatic, in most Districts, in pasture lands.

Flowers yellow.

N. plena, Benth.; F. B. I. ii. 286 is a stouter plant, an introduction from America; Shevaroy Hills of Salem (Perrottet).

77. *Xylia*, Benth.

Trees. *Leaves* bipinnate, pinnae 1 pair; leaflets of few pairs large; stipules small, deciduous; stipels 0. *Flowers* sessile in globose peduncled heads, the peduncles axillary, fascicled or

racemose; bracts 0; bracteole club-shaped. *Calyx* tubular-campanulate, 5-lobed. *Petals* 5, valvate, slightly connate at the base. *Stamens* 10, free, exserted; filaments slender; anthers, topped with a stalked gland which is early deciduous. *Ovary* sessile, many-ovuled; style filiform; stigma minute, terminal. *rod* large, woody, flat, broadly falcate, septate between the seeds. *keeds* oblong, compressed.

XYLIA XYLOCARPA, Taub. *X. dolabriformis*, Benth.; F. B. I. "• 286; Bedd. Fl. t. 186. *Inga xylocarpa*, DC.; W. k A. 269. Forests of the N. Circars, on the hills from Ganjani to G-odavari, the chief tree of some forests; Deccan, in Hyderabad and Mysore, but scarce; W. Ghats, from S. Canara to N. Travancore.

A deciduous tree with 2 pairs of oblong lanceolate leaflets, the end pair up to 8 in. long, white flowers in globose heads and large woody dolabriform pods. Bark reddish-grey; wood hard, reddish-brown, durable and useful for sleepers and building purposes but difficult to work. Yern. *Hind.* Jainbu; *Ur.* Boja, Kongora; *Tel**Kondu tangedu; *Tarn.* Ml; *Mai.* Irumalla.

78. Entada, Adans.

-Large woody unarmed tendril-bearing climbers. *Leaves* bipinnate, the ultimate pinnae sometimes reduced to tendrils; stipules small, setaceous; stipels 0. *Flowers* very small, sessile, *n long narrow spikes, polygamous. *Calyx* minute, campanulate, shortly 5-toothed. *Petals* free or slightly connate at the base, valvate. *Stamens* 10, free; filaments filiform or slightly expanded •i x>ve; anthers shortly oblong, gland-crested. *Ovary* subsessile, ^any-ovuled; style filiform; stigma terminal, concave. *Pod* woody, very large, of many discoid 1-seeded joints which the persistent endocarp breakaway from each other and the persistent thickened sutures. *Seeds* large, circular, compressed.

ENTADA SCANDENS, Benth.; F. B. I. ii. 281 *E. Pursaetha*, DC.; ^-& A. 267.

Hill forests of the N. Circars; Deccan, in the Xallamalai Hills °f Kurnool; W. Ghats, from S. Canara to Travancore, in evergreen forests.

A gigantic climber with very small yellowish flowers and huge

Pods; the leaflets 1-3 in. long, oblong, shining, obtuse or emarginate. The thick stems are spirally twisted, and the climber is bad for forest trees and has to be cut. The round flat shining seeds are eaten and may be hollowed out into small boxes and other articles. Yern. *Hind.* Gila; *Vr.* Geredi; *Mai.* Kaka valli.

79. *Adenantha*, Linn.

Trees. *Leaves* bipinnate, the pinnae opposite; leaflets many? alternate; stipules minute, caducous; stipels 0. *Flowers* in slender spiciform racemes, either solitary and axillary or terminal and paniced; bracts minute, bracteoles 0. *Calyx* short, campanulate, 5-lobed. *Petals* 5, connate below, valvate. *Stamens* 10, free, scarcely exerted, alternately long and short; anthers oblong, ending in a stipitate gland. *Ovary* sessile, many-ovuled; style filiform; stigma small, terminal. *Pod* linear, torulose, curved, septate within, the valves much twisted after dehiscence. *Seeds* thick, with a hard shining scarlet or scarlet and black testa. ADENANTHERA PAVONINA, Linn.; F.B.I, ii.287; W. & A.271; Wt, 111. t. 84; Bedd. Fl. t. 46.

Commonly cultivated in gardens and avenues, doubtfully wild.

A handsome deciduous tree with many ovate-oblong leaflets about 1 in. long, pale yellow flowers and conspicuous pods with scarlet lenticular seeds. Bark grey; wood hard, close-grained, red, useful for building and furniture. The red seeds are used as ornaments and for jewellers' weights. Vern. *Tel.* Bandi gurivenda; *Tarn.* Ani kundamani; *Mai.* Manchadi.

80. *Prosopis*, Linn.

Shrubs or trees with thorns. *Leaves* bipinnate, pinnae usually few-paired; leaflets many, small, narrow; stipules small or 0, sometimes spinescent; stipels 0. *Flowers* small, in narrow spikes or subspicate racemes; bracts and bracteoles 0. *Calyx* campanulate, shortly toothed or subentire. *Petals* 5, valvate, connate at base, at length free. *Stamens* 10, free, slightly exerted; filaments free; anthers with a deciduous gland. *Ovary* sessile or stalked, many-ovuled; style filiform; stigma minute, terminal. *Pod* cylindrical or linear, flat or turgid, often

LEGUMINOSAE.

torulose, straight or twisted, septate within, mesocarp thick, spongy. *Seeds* ovoid, compressed.

PROSOPIS SPICIGERA, Linn.; F. B. I. ii. 288; W. & A. 271 •
 ttoxb. Cor. Pl. t. 63; Bedd. Fl. t. 56; Brand. For. Fl. t. 25.
 JJeccan and Carnatic, from the Godavari southwards, on dry
 stony lands and on black cotton soil, in open forest, more
 rarely in thicker forest.

A small to moderate-sized deciduous tree with many
 thorns-on broad bases, the leaflets distant, linear-oblong,
 about 5 in. long, the pods cylindrical, torulose and pulpy.
 Bark thick, grey, rough; wood purplish-brown, hard, a good
 fuel. The Pods are eaten by cattle. Vern. *Hind.*
Jhand; *Tel.* Ohani; ~*i. Perumbe.

81. Dichrostachys, DC.

nibs, the branchlets often ending in spines. *Leaves* bipinnate;
 pinnae paripinnate; leaflets usually very small and numerous,
 opposite, contiguous; stipules lanceolate or subulate; stipels 0.
 the peduncled spikes on short axillary branchlets,
 filiform flowers yellow, the lower ones neuter, with pink
 nodes. *Calyx* campanulate, shortly toothed. *Petals*
 connate below, 10, free, exserted; anthers
 filiform, stalked, glandular. *Ovary* sessile, many-ovuled; style
 terminal, truncate. *Pod* linear, compressed,
 continuous within, indehiscent or separating
 the suture. *Seeds* obovate, compressed.

ICHROSTACHYS CINEREA, W. & A. 271; F. B. I. ii. 288;
 Roxb.

Pl. t. 174; Bedd. Fl. t. 185.

Circars, Deccan and Carnatic, westwards to the dry slopes-or
 the Ghats, in dry scrub forests and on stony hills. A thorny shrub
 or small tree with thorny branches, pretty asselled flowers,
 twisted pods and very small pubescent leaflets. Bark grey or
 light brown; wood red streaked with black, very hard and tough
 and a good fuel. Vern. *Hind.* Vurtuli; *Tel.* Velturu; *Tarn.*

Vadatalla; *Kan.* Wadu. li • *virgatus*, Willd., is an
 introduced American under- and peduncled heads,
 small straight pods

small leaflets, occasionally found, especially near Madras. *Caena*
Ouca, Benth., is a large shrub with rather large heads of
 white flowers, glaucous foliage with narrow

acute leaflets and fl-t
American in origin it is f
Ullage, in India ^{TM P} fluently foimd in hedges ^{Podsi} ^{Probably} North
neal.

82. Mimosa, Linn.

leaflets smaWe ^{ITle} ^{T^7 P1^hkl^} ^{Lea} TM bip^ate;
P>ckly; stipules ^{sni} ⁿ ^{S*mi*lve>} caducous, the rhachis usually
Plover, email, poly^u, ^ ^ ofteU 2 to each Pinna' or
fascicled peduST h " g boS6 heads on tt>><<ary, solitary terminal
raceme; bracts 7TM 7^" peduncles often forming a Caiy* very
small camTM i l deciduous s bracteole 1, minute, innate below,
vJvafaT^ ' Shortly 4-to^othed. P_{rfu}?. 4. the petals, exserted •
<<!.,,, ?""!,,? raany or twice as many as Btipitate, maay-ovuled • ^
*f TM anthers small_ Ovary ■' ** -enJ_M, nous ' ?1!:'T ! S<<!ma

, melrano;;, £\$£? ff ! »te(terminal

when ripe from each „<<, l¹86^ Joints tllat separate
Seed, ovoid or orbict' ai fl t" ^ flom the Persistent sutures.
p. U_{lai} flat^{tened}, albuminous.

Pmnae of the leaves 1-2 TM • ,-* *e petals; bracteoles *stiff**
^'T^ arrRnged; stamens TM TM<<^

""""te, terminal.

many as the petals, bractelkl ! f *??' PinDate ; ^{stamoM} twice as
•3 in. broad. — ^{racteo} les spatmlate, pods more than 1 in. long,
Leaves under 1 in. ionff wtl, i ~ ■
oblong, senucordate, o!- 15 n7 ^^l ^^ 7~8 Pairs- shortly
peduncles usually longer th^ iTfl" ' * broad'
the sutures spinose; seeds 5-6 ' ^ ; * * * B ^

• ■ — - poa ^{over} ,ith strong reoim.ed

^tn^pirir

obovate, up to -25 h, Zl t V ^ * * * * >
l^* -re i, apart, ovar'y glab^ ^ ^ ^ ^ ^ ^ tant 2
or ^ods obtuse at tip, 6-8-seeded ' ^ ".r": "" ; "
*°hl<<*ci<<ra. J?htty p_{Hbe80ent} leavos2-3in'W ""•
^ Someti>>es >>• apart, leaflet, oblong, the' end on""^, 5~7
PaU'S >>>>out
il01**110 7,8 Pai touch „. "" SUBobova^ <<P to
>>at...:..... a' ^'n_ aP<<-t;
ovary

^2 '» apart

LEGUMINOSAE.

C⁷r^d2_3 *• W. -ft-7 inroad, sessile or shortly

! P¹mae ⁰¹ r^{ar}6lv aC^Ute ^ ap6X¹ S6eds TM[>] **TM -ith

long! P¹mae in¹¹
10^gPⁱⁿmiles 10¹⁵ pairs¹ _4_7 >>•

1-1.6 in? With 6-8 pairs of P¹Ma: *5. rubicaulis.*
¹inmiles 10¹⁸ nah.S¹ .2 .8 .n lon?
^ of P^UD ICA, Linn.; F. B. I. ii. 291.

'nt.roduced from tropical America. The Sensitive Plant

d⁸⁶ "2 lderS llrub with vei⁷ sensitive leaves, pink
mo t t >, % P U 8preads vei⁷ fast and is
nost troublesome and difficult to eradicate. Vern. *Hind.*

O AT] at; Ta>»- Total vadi.

- MIMOSA HAMATA, Willd.; F. B. I. ii. 291; W. & A. 268
eccan, from the Kistna southwards, often on black cotton

minute leaves

1 r 1 I , t in Traus_ Lilm_ Soc- <<x. 422.
an, in the Kurnool and Cuddapah Districts.

PRAINIANA¹ G^{ain}ble in Kew Bull. 1919, *ined.*

le^1!! Shrub with pink flowers a>>d rounded

5 Mr^r P¹lllae hl ve^gular s¹¹bequal pairs.

268 F^{SA} f^UT BICAUL^{AS} L<<mk.; F.B. I.ii.291>f>_1wrf; W. & A. . Wook.
Ic. PI. t, 156. *M. octandra*, Roxb. Cor. PI. t 200 eccan,
forests of Cuddapah, Mysore, Coimbatove and
fo, ' ?a> "Sllall^y m g^{ass}7 savannahs and second-growth
'wests; W. Ghats, on eastern slopes.

6 JJ ge' vei⁷ prickly shrub, the flowers pink.

* EP^S A f¹JGUSTISILK<JUA. Gaⁱⁿble in Kew Bull. 1919, *ined.* • wwts, ut
Tuminularu, Godavari Agency (Barber) shrub with

J111 shrub with pinkfewe^ few" prickles and very small
sute leaflets. ^ ^\cai V ur v e;/ ,,, . \

(Jfc /

Receipt,



p i k f l r s - f

i

83. Acacia, Willd.

Trees or erect or climbing shrubs, usually armed. *Leave** bipinnate, the pinnae even-pinnate; leaflets usually small, opposite; leaves sometimes transformed into phyllodes; stipules various, often spinescent; stipels 0. *Flowers* small, hermaphrodite or polygamous, usually 5-merous, in globose heads or cylindric spikes; peduncles axillary, solitary or fascicled or in terminal panicles; bracts 1 or 2, on the peduncle; bracteoles 1 to each flower, spatulate or subpeltate. *Calyx* campanulate, shortly lobed. *Petals* exerted, more or less united, rarely free. *Stamens* indefinite, free or very shortly connate at base; anthers small. *Ovary* sessile or stalked, 2-many-ovuled; style filiform; stigma small, terminal. *Pod* variable, ligulate or oblong, flat and dry or rarely turgid or coriaceous, continuous or septate within but not disarticulating. *Seeds* transverse or longitudinal, usually ovate or compressed; funicle often long and conspicuous. Erect trees or shrubs with stipular spines, and without prickles: — Flowers in globose heads, the peduncles 2-bracteate:— Flower-heads on axillary peduncles:—

Pod grey-downy, compressed, deeply indented on both sides between the seeds; flower-heads "5 in. in diam., peduncle bracteate above the middle; leaves 2-4 in. long with 4-9 pairs of pinnae; leaflets linear-oblong, obtuse, 2 in. long; spines straight, large ones slender, white, up to 2 in. long...1. *arabica** Pod cylindric, turgid, usually curve4:—

Peduncles bracteate at the apex :—

Pod 2-3 in. long, *5 in. in diam.; flower-heads 0 in. in diam.; leaves 1-2 in. long with 4-8 pairs of pinnae; leaflets linear-oblong, *acute, '15-2 in. long, 1 in. broad; spines straight, short, rarely over "5 in. long..... 2. *Farnesiata*.

Pod 3-4 in. long, '3 in. in diam.; flower-heads *2 in. in diam.; leaves 1-1*5 in. long with about 8 pairs pinnae; leaflets linear-oblong, obtuse, "12 in. long, *03--04 in. broad; spines short and slender or stout and strong, up to 1-5 in. long..... *tortuosa*.

Peduncles bracteate near the base; pod circfiniate about .2 in. long, 25 in. in diam.; flower-heads 2 in. in diam. • leaves under 1 in. long with*3-4 pairs of pinnae; leaflets linear-oblong, minute, '06 in. by -01 in, obtuse, glabrous; spines both short and recurved and long, straight, slender' up to 2 in. long, white with brown spots..... 3. *planifrons*

Pod flattened, straight or curved .—

Leaves glabrous/under' 1 in. long; peduncles filiform, oracteate at or below the middle .—

Spines straight, some short thick, the rest white, often hollow, up to 2 in. long, 2 in. diam. at base; pinnae 3 pairs; leaflets elliptic or obovate, obtuse, about 5 pairs, 15 in. by .075 in.; flower-heads 2-5 in. in diam.; pods very thin, flat, curved in a hook, 2 in. broad, 5-7-seeded

4. *eburnea*.

Opines of 2 kinds, short recurved and long slender, white, *1.0-2 in. long; pinnae 4-6 pairs; leaflets linear-oblong, obtuse, .1--.125 in. by .025 in.; flower-heads 3 in. in diam.; pods linear, variously bent (W. & A.) "5. *Roxburghii*. leaves hairy; peduncles fairly stout, bracteate about the middle: spines all straight .—

Longer spines slender, white, up to 125 in. long; branchlets and leaves scurfy-villous; leaves under 1 in. long with 6-10 pairs of pinnae ; leaflets minute, ovate-oblong, .075 in. by .025 in.; flower-heads 3 in. in diam.; pods 2-3 in. long, 2 in. broad, papery, obtusely pointed, straight or curved.....

.....b. *Campbellii*..

Longer spines stout, up to 2.5 in. long, 2 in. broad at base; branchlets and leaves grey- or tawny-tomentose ; leaves up to 3.5 in. long with 6-12 pairs of pinnae; leaflets oblong, .1--.15 in. by .05 in.; flower-heads 5 in. in diam.; pods 4-6 in. by .5 in., thick, curved, sharply pointed

p 7. *tomentosa*.

Pod not known; spines very stout, dark brown, up to 2.5 in. long, .3 in. in diam. at base; peduncles rather stout, the bracts below the middle; flower-heads 5 in. in diam.; leaves glabrous, 2-3 Pairs of pinnae; leaflets oblong, obtuse, .25-.4 in. long, .1--.2 m. broad, prominently nerved 8. *Wightii*. flower-heads in panicles, *2--3 in. in diam.; peduncles bracteate at middle; spines usually short, straight, up to 1 in. long; leaves 1-2 in. long, with 5-15 pairs of pinnae; leaflets linear, about .2 in. long; pods flat, strap-shaped, 4-8 in. long,

.....road..... 9. *leucophloea*.

.....el<>ugate spikes; peduncles usually]-bracteate, bracts bracteoles early caducous .— leaves straight, short or long, longest up to 2 in. and .35 in. in base, often hollow; flower-spikes 1-1.5 in. long, bracteate above the base; leaves glabrous, 1-1.9 in. long with 2-5

pairs of pinnae; leaflets oblong, 2 by .04 in.; pods flat, up to 3 in. long by .5 in. broad, curved, obtuse, reticulate..... 10. *Latronnm*.
 Spines short, hooked; flower-spikes 2-4 in. long: —

Leaflets 30-50 pairs, linear-oblong, pubescent, nerves obscure; calyx and petals white-villous, petals twice as long as calyx:-
 Bark white; branchlets white-pubescent; leaflets 25--35 in. long, petals narrow; pod 3-5 in. long, 5 in. broad, acute at both ends, grey, many-seeded

Suma.

Bark brown; branchlets brown, glabrous; leaflets 1 in long, petals broad; pod 2-3 in. long, .4 in. broad, acute at both ends..... 12. *Catechu*.

Leaflets 20-40 pairs, linear-oblong, glabrous, 1.25 in long, nerves prominent; branchlets red; petals 3 times as long as calyx, both glabrous; pod 2-2.5 in. long, brown, obtuse at

Leaflets 10-20 pairs, .25-3 in. long, 1 in. broad, oblong, glaucous; petals rather more than twice the .05 in. calyx both sides..... 14. *feiruainea*

Leaflets 6-8 pairs, .75-1-2.5 in. long, .4-5 in. broad, oblong, glaucous, petals about twice the .1 in. calyx both glabrous; pods 6-8 in. long, 1 in. broad, thick, 6-9-seeded

1 r / Z **icvvtuu**
 Climbing shrubs, with prickles on stems and stipular spines; peduncles bracteate — **TM*cmses, no**

Leaflets more or less distant, not overlapping; flowers sessile

broad, the sutures thick

long, 1 in. broad, obtuse, $Z^{LL} l^{\wedge}$
 Glands near the base of the petiole conical • \wedge \wedge
 pairs, leaflets 25-40 pairs, to 1.5 in long, not TT
 \wedge oblong-falcate, apiculate, truncate at L

JIT^ •2-3 in. long, a-2 in. broad; pod 5-6
brown-velvety when young

.....18. *torta*.

LEGUMINOSAE.

the petiole ; p
equal 7 .i apiculate "P^rds, obliquely
4-5 and 7 at base 14 in 1-15 in - b«»df pod 4
5 m. long, 75-1 in. broad, thin, glabrous

^.
e°lw»inaris.
" ^H** -ni-truncate at base ,

3' /" . 10ng> 04 . 07 in' broad' "near-oblong, obtuse
Strt tT16 'r^A^ p in-
broad' t^A sutures

. 0 • ,20. pennata.
pubp *^ m< ong ■ 0304 1 b

slightly
broad t, T a t h ; pedicels 10^; pod about 4 in. long, -5 n
S £7^ - only sMghtly raised 21. J^ n..
seed 8 ancfoVt " , nkled When dry depressed between » <<e
cordate. " , ted On the sntres' stiP»les TM« bracts ovate-
tr 1" . 16afletS aboUt 18 paiM' - 5 - 75 in - W. -15-2 in.
Pubescence leaflets 10-15 in. broad 22.

23. coricina.

■, Willd.; F. B. I. ii. 293; W. & A. 277 • --
1.149; Bedd. Fl. t. 47.

a-cars, Deccan and Carnatic, in dry localities. Either

and b) 10 iS m Patch6S of forest' esPecia% on old tank beds
fields ol CottOn 8Oil' or in grOUps or single trees among not tn, 1 ■
j- Cultivated and Perhaps, although so common. ot' tuily indigenous.
The Babul tree.

rate-sized tree with golden-yellow flowers, long >Tnio
and characteristic whitish-tomentose torulose re eaten
by cattle. Bark dark brown, rough ; ish-brown,
hard and strong, useful for agri-and many other
purposes. Vern. Hind. Babul rw w-iiatuma. Tam
Karuvclam.

iHA, Willd.; F. B. I. ii. 292; Bedd Fl t

uwcai, n"" ■ F("" "" "" sTaMa' W_ & A_ 272; Wt Ic. t. 300.
quite ,, a'f CMI and Caraatic' cultivated and run wild. \ t*
lt«rahzed even up to 5,000 feet.

°>ny shrub with bright yellow very fragrant flowers

giving the perfume "Cassie." Vern. *Hind.* Wilayati kihar ; *Tel.* Kusturi; *Tarn.* Yedda vala; *Kan.* Jali. *Acacia tortuosa*, Willd., is a large thorny shrub or small tree, native of S. America, occasionally found in cultivation in garden⁸ in the low country.

3. ACACIA PLANIFRONS, W. & A. 276; F. B. I. ii. 293 *in part*; Trim. Fl. Ceyl. t. 35.

South Carnatic, in Madura, Tinnevelly and S. Travanoore, gregarious; cultivated in Bellary and elsewhere. The Umbrella, thorn.

A small tree with white flowers and very minute leaflets? having spreading branches which form an umbrella-shaped top. Bark greyish-brown; wood pale yellow, hard and heavy, used for implements and as fuel. Vern. *Taw-Odai*.

4. ACACIA EBURNEA, Willd.; W. & A. 276; F. B. I. ii. 273 *in part*.

Deccan and Carnatic, from Mysore to Coimbatore and Tinnevelly.

A small tree with red-purple corolla and yellow stamens and large ivory-white thorns, the pods papery, the leaflets few and comparatively large. Vern. *Tarn.* Chilodai.

5. ACACIA ROXBURGHII, W. & A. 276. *A. planifrons*, W. & A.; F. B. I. ii. 293 *in part*. *Mimosa elmrnea*. Roxb. Cor. PL t. 199.

Deccan, from Mysore and Bellary southwards.

A small thorny tree, with apparently yellow flowers on very slender peduncles.

6. ACACIA CAMPBELLII, Am. in Nov. Act. Nat. Cur. xviii. 333. Circars, in forests near the coast from Godavari to Nellore; Deccan and Carnatic, especially in Cuddapah ; often on black cotton soil.

A small branchy tree with apparently pink flowers and a yellowish-white hard wood. Vern. *Tel.* Marmati; *Taw-*

- Udai vel. 7. ACACIA TOMENTOSA, Willd.; F. B. I. ii. 294 ; W. & A. 276.

N. Circars, from Ganjam to Goflavari; Deccan, in Coimbatore, scarce.

A small tree with greenish-white flowers and lar^e

broad-based spines. Vern. *Tarn*. Anaimalli.

8- ACACIA WIGHTII, Bak. in F. B. I. ii, 298.

• Carnatic, in Travancore and Tinnevely (Wight), on the sea coast.

With Verj krge Spines and rather large

f^{oAC}*A ^UCOPHLOEA, Willd.; F. B. I. ii. 294; W. & A. I FLt ^ B

, R_{0xb}.

rcavs, Deccan and Carnatic, in dry deciduous forests, moderate-sized or large tree with pale yellowish-white am L m krge terminal panicles. Bark grey and ootn when young, dark brown and rough when old;

bark . reddish brONV11' hard "lld tough, a good fuel. The VP^ 1! llsed in ^stilling and gives a good rough fibre.

v! , ^ Nimb ar, Safed babul; Tel Telia tuma; Tarn

10 A AIA L am> ATRONUM' Willd'; F' B_ L iL 296; W. & A. 273: c t. 1157.

^ - oTM? on Pool' soils and formi ing extensive forests in its !, f Little tree With the llabit of A - Pi^f'-ons in very

lla sha pe' blit smaller. It has white flowers and 7 ant ^ WhUe Sphles in Pails' often hollOW and tenanted hard S Bai'k dal k redcl's n-I:)rown; wood reddish, very

cAc7;Q ' odei. & t o?_ MAr Buch_HaM_ 5 F_ B_ I- ii- 294. A. Cateehv, JJ- QT" ""^ excZ_ *»w-; Bedd. Fl. t. 49.

to Cn;!!1 1S1 common 5 Deccan and Carnatic, in dry forests, A i we and the Shevaro7 Hills

7agoOd fuel Vern_ TeL Paki tumma' Tam_ Karodei.

nd Duh with white bark_ white flowers

*»'own l 6SCflb leaV6S With ""7 man_y leaflets_ Wo od dark TT a aUd heavy_ Vera" ^ Gtonharea.

CHU' Willd_ R B_ L H_ 295_ Mi»TM« Catechu, -1. ITS.

Amode ""Ganjam (6) Bai'k dIT 6 SiZed decidll0lls tree with Pa'e yellow flowers.

-i ^1-eyish brown rough; wood red, hard and close- exhausted. Vern. Khan-; ^.. Khoiru.

- 13 ACACIA STTNBBA.DC; P. B. I. ii- 295; W.& A.273; Bedd. Fl t. 50. *Mimosa Sundra*, Roxb. Cor. PL t. 225. Deccan and Carnatic, from the Kistna southwards to Cape Comorin, but most common in the Ceded Districts. A moderate-sized tree with yellowish-white flowers, red branchlets and leaves with fewer leaflets than Nos. H and 12. Bark rusty brown; wood reddish-brown, hard and tough and useful for agricultural purposes, vice-pounders, fuel and "cutcli." Yern. *Tel* Sandra; *Tavn*. Karangali.
14. ACACIA FERRUGINEA, DC; F. B. I. ii. 295; W. & A. 273; Bedd. Fl. t. 51.
N. Circars, Deccan and Carnatic, in dry forests, to the & slopes of the "W. Ghats."
A large, deciduous, pretty tree with pale yellow flowers, glaucous leaves, *Albizzia* pods and few spines. Wood olive-brown, very hard, used for building and agricultural purposes. Yern. *Tel*. Ansandra; *Tmn*. Yelvelam.
15. ACACIA LENTICULARIS, Buch.-Ham.; F. B. I. ii. 296.
N. Circars, forests of Ganjam (Fischer). A deciduous tree with greyish-white flowers, glaucous leaves, large pods with thickened sutures and few spines. Wood very hard, olive-brown.
16. ACACIA HOHENACKERI, Craib in Kew Bull. 1915, 408.
W. Ghats, Kundahs range of-Nilgiris(Hohenacker), Coonoor (Bourne).
A climbing shrub with small recurved prickles and large thick pod.
17. ACACIA CAESIA, Willd. *A. Intsia*, W. & A. 278 *excl. most synonyms*.
Deccan, Hills of Cuddapah ; W. Ghats, in the Anamalais.
A climbing shrub with rather large prickles and few rather large leaflets.
18. ACACIA TORTA, Craib. *A. caesia*, W. & A. 278 *not of Willd-Mimosa torta*, Roxb.
N. Circars, hills of Ganjam and Godavari;
Deccan. in Hyderabad, Bellary, Mysore and Coimbatore;
W. Ghats, in dry forest southwards to S. Travancore. A large prickly climbing shrub, sometimes very pubescent, occasionally nearly glabrous.

¹⁹- ACACIA COLUMNARIS, Craib in Kew Bull. 1915, 410.

W. Coast and W. Ghats in S. Canara and Mysore

(Hohenacker, etc.).

A prickly climbing shrub.

~ ' ^ ACIA PBNATA, Willd.; F. B. I. ii. 297 in part; W. & A. ^77 in part.

N. Circars, Deccan and E. slopes of W. Ghats, up to 5,000 ft.,

>>i moderately dry forest, in ravines and along streams.

21 A ^ ^ VeiT pricklj climbing shrub, nearly glabrous.

• ACIA CANESCENS, Grah. *A. pennata* var. *canescens*, F. B. J- ii. 298.

^ eccan and Carnatic, in dry forests and scrub lands up to

° >>000ffcM southwards to S. Travancore.

large prickly climbing shrub, recognised by its minute, er y narrow leaflets and pubescent branchlets and m-florescence.

• ACIA RUGATA, Ham. *A. concinna*, DC. var. *rugata*. Baker ln ^ -B. I. ii. 997.

**• Circars, in Ganjam (Barber).

stout, prickly, straggling or climbing shrub, chiefly of ^aste lands, the pods large and fleshy, used like those of *A. concinna*.

ACIA CONCINNA, DC.; F. B. I. ii. 296 ; W. & A. 277.

■ Deccan and Carnatic and W. Coast.

stout very prickly climbing shrub, chiefly of open waste ands, the calyx red and corolla white, the pods fleshy and ru Sose, used as a substitute for soap. Vern. *Hind.* Ban ri tha; *Tel.* Sigekai.

species of *Acacia* have been introduced from Australia t the hill stations of the W. Ghats. Most of ■ie, however, only garden plants, but two have been so grown to supply timber and fuel that they deserve special They are .-

MELANOXYLON, R. Br. The Black Wattle. A recognised by its leaves, bipinnate when young, ¹ transformed into oblong-falcate or lanceolate flowers are white and the pods narrow and much *Uel tr is *ar#ety grown for &s excellent timber and as a good

¹ ACIA DEALBATA, Link. The Silver Wattle. A small

tree with silvery foliage of bipinnate leaves which do not change into phyllodes, yellow very sweet-scented panicles and heads of flowers and narrow pods, the sutures not or little constricted between the seeds. It is largely grown in coppice as a fuel, and the bark is a useful tan, not so valuable, however, as that of ^{^ie} very closely allied *A. decurrens*, Willd., which has also been planted to a small extent. It differs by the foliage not being silvery and the pods distinctly constricted between the seeds.

Si, Albizzia, Durazz.

Trees or shrubs without thorns or prickles, rarely climbing—*Leaves* evenly bipinnate; pinnae even-pinnate; leaflets of various sizes; stipules usually small, sometimes large and foliaceous, stipules 0. *Flowers* in globose heads, rarely in spikes; peduncles distinct, axillary or in terminal panicles; bracts 2 or none; bracteoles under the flowers very small, caducous. *Calyx* campanulate or tubular, 5-lobed. *Petals* 5, connate in a funnel-shaped corolla. *Stamens* indefinite, monadelphous at the base, filaments long exserted; anthers very small. *Ovary* sessile or shortly stalked, many-ovuled; style filiform; stigma minute. *Pod* large, thin, flat, straight, continuous within, indehiscent or subdehiscent. *Seeds* ovate or orbicular, compressed, exalbuminous, the funicle filiform. •

Flowers in globose heads; trees:—

Leaflets large, usually more than 75 in. long:—

Flowers sessile:—

Leaflets obliquely ovate, broad and rounded at base on the upper, narrower and attenuate on the lower side of the midrib, 1-1.5 in. long; 75-1 in. broad, slightly villous beneath; calyx tubular, glabrous, 1 in. long; pods thin, orange-brown, *8 in. broadi. *procera*.

Leaflets oblong, curved upwards, broadest on the lower side of the midrib, rounded or semicordate at base, 75-1 in. long * 25-5 in. broad, pubescent beneath; calyx campanulate, 05 in. long, glabrous', pods moderately thick, brown, 1-1.5 in. broad.

2. *odoratissima*.

Flowers pedicelled: —

Leaflets broadly oblong, curved upwards, broadest on the lower side of the midrib, obtuse or retuse at apex, rounded at base, the end ones semicordate, slightly pubescent beneath, 1-2 in

long., *5-75 in. broad ; calyx tubular, -125 in. long, puberulous ;

pod thin, straw-coloured, 1-2 in. broad3. *Lebbeck*.

Leaflets oblong, slightly falcate, broadest on the lower side of the midrib, rounded or semicordate at base, appressed pubescent when young, ashy-grey when dry,- 5 in. long, 2 in. broad ;

°alyx campanulate, -05 in. long, puberulous; pods moderately thick, red, 1-1-5 in. broad..... 4. *Thompson!*.

leaflets small, under '75 in. long.

aflets ^{roun}(3ed at apex, the midrib nearly central, but slightly nearer the upper edge ; pedicels short.

leaflets broad, 1'5 in., half as broad as long, very grey-pubescent, base obliquely truncate on the upper, semicordate on the lower side ; calyx tubular-campanulate, puberulous; pod thin, nat, -5-1 in. broad, brown.....5. *Lathamii*.

-leaflets narrow, 1 in., one-fourth as broad as long, glabrous or ciliate on the edges, attenuate on tne upper, rounded on the ower side; calyx campanulate, puberulous ; pod thin, flat, 1~1'2o in. broad, greyish-brown6. *amara*.

eafletfe acute at apex, falcate, semitruncate at base, the midrib C oSe. to the upper edge, *1 in. broad, ciliate on the margins and

llb» stipules large and conspicuous; pedicels very short; ^alyx funnel-shaped, pubescent; pod "75-1'o in. broad, thin, pale-

Drown..... • ' 7.
pi.
marginata.

"lid -'h axi^ary spikes ; leaflets very many, linear, acute, the rath - ^ar ^e uPPer margT^in» villous on the midrib beneath ; pods ev illQK with raised sutures, 3 in. by -5 in..... *lophantha*.

l' ^LBiZZIA PROCERA, Benth.; F. B. I. ii. 299; Brand. For. Fl- t. 26. *Mimosa procera*, Roxb. Cor. PJ. t. 121. *Acacia Procera*, Willd.; W. & A. 275.

• Oircars and Deccan, in hill forests, not very common except along river banks ; W. G-hats, in deciduous forests, tten planted for ornament or in avenues.
White Siris.

verJ large deciduous tree, conspicuous for its yellowish-^nite bark and head of spreading branches. Flowers greenish - white, rather small. Wood brown, hard, iesembling walnut, useful for many purposes in building and agriculture. Vern. *Hind*, Safed siris; *Ur*. Sarapatri, ^rsi; *Tel* Telia chinduga; *Tarn*, Konda vaghe; *Mai*. Kanin thagara.

ODORATISSIMA, Benth.; F. B. I. ii. 299 : Bedd.

Fl. t. 54. *Mimosa oclorcdissima*, Roxb. Cor. Pl. t. 1-*Acacia odoiatisissima*, Willd.; W. & A. 275. Mixed forests in all Forest Districts, up to 3,000 ft. *ⁿ the hills.

A large tree, almost deciduous though never quite leafless, with sweet-scented white flowers with yellow anthesis-Bark dark grey with irregular cracks; wood dark brown** hard and close-grained, useful for many purposes, especially for wheels, oilmills and furniture. Yern. *Hind.* siris; UV. Sirsi tentura; *Tel.* Chinduga; *Tarn.* Karu Mai. Puli vaga. var. *mollis*, Benth. Leaflets and leaf rachises densely g[^]

or tawny-velvety. Coimbatore forests (Cleg-horn). 3.

ALBIZZIA LEBBECK, Benth.; *F. B. I. u.* 298; *Bedd. FL*

Acacia speciosa, Willd.; W. & A. 275.

All]>lains Districts., cultivated and rim wild, *but doubtfully indigenous.* *Sivis.*

A large *deciduous tree*, with rather large white flowers and very long greenish stamens, the pods characteristic and long remaining on the tree when ripe. Bark brownish-grey; wood dark brown, streaked, hard and useful for building and agricultural purposes. Vern. *Hind.* Siris; *Ur.* Tinia; *Tel.* Dirasana; *Tarn.* Yagei; *Mai.* Ytiga. 4. *ALBIZZIA THOMPSONI*, Brandis in *Ind. For.* xxv. 284.

N. Oircars, in Ganjam forests; Deccan, in Cuddapah and Coimbatore, up to 3,000 ft.

A large deciduous tree with pale-yellow flowers and pink anthers. Yern. *Hind.* Sailari; *Tel* Kondala.

5. *ALBIZZIA LATHAMII*, Hole in *Ind. For. Records* iv. 4. 153.

S. Carnatic, in Tinnevely and Rarnhad, up to 1,200 ft. (Wight, Latham, Hole), in dry deciduous forest. A much-branched small tree with purplish-red white-lenticellate bark, short leaves and small pods.

6. *ALBIZZIA AMARA*, Boivin; *F. B. I. ii.* 301; *Bedd. Fl. t.* 61. *Acacia amara*, Willd.; W. & A. 274. A. *Wightii*, Grab.;

W. & A. 274. *Mimosa amara*, Roxb. Cor. PL t. 122.

N. Circars, in Yizagapatam and Godavari; Deccan and Carnatic, in dry forest lands to S. Travancore and UT> to 3,000 ft. P

A moderate-sized deciduous tree with pinkish-white flowers

leaves with very many very small leaflets, the young shoots yellow-pubescent. The wood is purplish-brown with lighter bands, very hard and strong, used in building and agricultural work. Yern. *Tel* Nalla renga; *Tarn*. Wunja; *Mai*. Yaracchi.

ALBIZZIA MARGINATA, Men*. *A. stijmlata*, Boiv.; F. B. I. ii. 300; Bedd. PL t. 55. *Acacia stzpulata*, DC.; W. & A. 274 N. Circars and Deccan, in hill forests; W. Ghats, in deciduous forests and up to 3,000 ft. or higher ; sometimes planted as a shade tree for coffee.

A large deciduous tree with white flowers with pink filaments and leaves with very many falcate leaflets. Bark horizontally furrowed; wood brown, soft, of less value than of the other species. Vern. Hind. Siran; *Tel* ; *Tarn*.

Pili vagei; *Mai Potta vaga*.

annaZ ^{L o P!} ^{antilla} > ^{B < TM} *th.* is an Australian shrub, eulti-^{dn} wild on the Nilgiris and Pulneys.

85* Pithecolobium, Mart.

ke.

ai > spines ^{oV} ^{thru}bs > unarmed or with spinescent stipules or
3118' stipei n ^{V e 8} biPinna-te, pinnae even-pinnate; stipules
8 o U solit ^S * ^{Flo}Wers ^{llsuall} 7 hermaphrodite, in globose
of Wanol^L or racemed Peduncles, axillary at the
o i - - ; bracteoles under the
calyx

thed p ^{ome}Utnes Persistent. Calyx campanulate, shortly
5 Va W lobe!' ^J ⁹ niVely 6' COmate hl a tuLu1^ corolU wltm
bracts small; bracteoles under the
calyx

lobe!' ^J ⁹ niVely 6' COmate hl a tuLu1^ corolU wltm ^{Ovav}
^TMlsmoadel ^h Pous, much exserted; anthers
nnnntl * * * * 7 TM ^{sf}alked! ^ ^{ny} ovuled; ^{ly} ^o filiform;
ltf rap S i t or falcate ^{retimes}
TM' U8^7 Ascent and much

ft ^{'Sted'} coriaceous t, ! , ^{of} ^{leaves} ^{reaching} *
terniinal P^icles; pods ^g ^D * ^m > ^ ^{terminal} ^g ^D * ^m > ^
r, nnae ^ 7 n . . . i seT with ft white edible arii i . ^ " -
C << ^m - in length ^{flo} f ^{With} 5 " 8 1 Jilira of oWo >> S leaflets reaching

<< * ul << . seo ^ ' 1 Rt - WI " f U8 o > om Jiform rounded joints with
£ W

Unarmed :—

Leaflets numerous, small, trapezoid, coriaceous, tawny-villous beneath, the margins incurved, *3-*5 in. long, glands many, 1-3 on the petiole, 1 half-way between each pair of the 3-12 pairs of pinnae; calyx and corolla golden-pubescent; pod 3-4 in. long" * curved in a circle, orange within with 4-7 black seeds

3. *subcoriaceuin-*

Leaflets few, large, 1-4 pairs; glands 1 on the petiole, 1 each at the base of each pinna and leaflet; bracteoles lanceolate, persistent :■— Pinnae 1-2 pairs, leaflets up to 4 pairs, lanceolate, acuminate, glabrous, black when dry, reaching 7 in. long, 2 in. broad, unequa at base ; calyx campanulate, *075 in. long; corolla twice as long> lobes recurved; pod spirally curved, the valves 'O--7 in. broad»

red within 4. *bigeniinu-*

Pinnae 1 pair, leaflets 1-3 pairs, ovate, abruptly caudate-acuminate, glabrous, reticulate, green when dry, reaching 6 in. long, 3 in. broad, nearly equal at base ; calyx short-campanulate, •05 in. long ; corolla twice as long, lobes spreading..... 5. *graciU-*

1. PITHECOLOBIUM DULCE, Benth.; F. B. I. ii. 302; Bedd. t. 188. *Mimosa dnlcis*, Roxb. Cor. PL t. 99. *Ing a did c is*, Willd.; W. & A. 268; Wt, Ic. t. 198.

All dry plains Districts, cultivated as a hedge plant and run wild, native of tropical America.

A tree which, when allowed to grow, reaches a good size and gives a useful strong red dish-white wood, a good fuel, pods which are eaten by cattle and foliage which is eaten by goats. It makes a good strong hedge. Yern. *Tarn*. Karkapilly.

2. PITHECOLOBIUM UMBELLATUM, Benth.; F. B. I. ii. 303. *Ivga umbellata*, W. & A. 270.

Eastern Districts (Wight, Cleghorn) scarce. A low tree with thick moniliform pods, and heads of rather few pedicelled creamy-white flowers with very long stamens, thorns scarce. Verii. *Tarn*. Iyamalai.

3. PITHECOLOBIUM SUBCORIACEUM, Thw.; F. B. I. ii. 305. *P. amtmcldayanum*, Bedd. Fl. t. 189.

W. Ghats, in the Anamalais and the Hills of Travancore above 4,000 ft., in evergreen forests.

A small tree with pretty greenish-white flowers, foliage and pods. Wood yellowish, soft. Yern. *Tarn*. Malei

- PITHECOLOBIUM BIGEMINUM, Mart.; F. B. I. ii. 303.

Inga ngemina, Willd.; W. & A. 269.

W. Ghats, in evergreen forests up to 3,000 ft. from Mysore to Anamalais and Travancore, common in Wynaad; W. coast, in S. Canara,

A small tree with white flowers and broad flat pod curved in a ring and orange-red inside with black seeds. Bark smooth, brown, thin; wood light brown, soft. Vem. *T;m.* 5- p

Pakku J *Mai*. Mutha kolappan.

PITHECOLOBIUM GRACILE, Bedd. in Madr. Journ. Sc. 1864,

- **; Brand. Ind. Trees 274.

W. Ghats, in the Wynaad- forests at 3,000 ft. (Beddome, gamble); Coorg (Bourne).

The points of the leaflets all tree with white flowers and loner S *fium S(man)* Prain, the Rain tree is an introduction

1 * meilca' anc* ^s °ft(\$n grown as an avenue tree. Its 1 ls very fast, but the wood is useless.

S6. Inga, Willd. ^ 8> Leaves

simply pinnate. *Flowers* in spikes or

Peduncled* Calyx tubular or campanulate, shortly

rolio ^etc^s combined in a •tubular or funnel-shaped

^nd witV» ° * i long-ex °~> tie lobeS valvate* Stamens indefinite,

ny. \ m° nadelphous; anthers minute. Ovary

sessile, ii_s f • ' s^A^e Aliform; stigma minute. Pod

linear, coria- vnf* laight or Clu%v ed, the sutures usually thickened. Seeds ♦dte or orK* i A ar, compressed, sometimes with a pulpy aril.

m °/NOMETROIDES, Bedd.; F. B. I. ii. 306.

Callicmdra

Tth ° des BedcL FL * 317

aV o . atstin ttle Hills of S. Travancore in evergreen forest J ^00-3,500 ft. (Beddome).

1 ID ^C Slzed glabrous tree with thorny branches, having 1' of leaflets 3~4 in> lonS' flowers with 3-lobed calyx and an ^A^

^l^i'ous coriaceous pod much thickened at sutures.

Family **LYI. ROSACEAE.**

8illl ple ' S ni^s or trees_ Leaves alternate, rarely opposite, compound; stipules free or adnate to the petiole

rarely 0. *Flowers* usually regular and hermaphrodite. *Calyx*'
 tube free or adnate to the ovary, usually 5-lobed, often bracteolate.
Disk lining the calyx-tube or forming a ring at its base. *Petal**
 5, rarely 0, inserted under the margin of the disk,
 usually imbricate. *Stamens* perigynous, usually indefinite,
 in one or more series; filaments generally incurved in bud ; anthers
 small didymous. *Ovary* of one or more free or connate carpels;
 ovules 1 or more in each carpel; styles basal lateral or
 subterminal, free or connate; stigmas simple, penicillate or
 capitate. *Fruit* variable, of achenes berries or drupes, rarely
 capsular. *Seeds* erect or pendulous, exalbuminous; testa
 membranous or coriaceous; cotyledons plano-convex; radicle
 short. Ovary superior; the ripe carpels not enclosed in the
 calyx-tube:—•

Flowers irregular; ovules 2, ascending ; carpel 1, style basal

1. **Parinarium.**

Flowers regular; ovules 2, pendulous : —

Carpel 1: —

Tube erect; style terminal .—

Petals large ; endocarp hard, bony**Prunus**.[^]

Petals very small; endocarp coriaceous2. **Pygeum***

Drupe inverted; style subbasal; endocarp coriaceous

Prinsepia.

Carpels many :—

Ovules 2 ; pendulous ; calyx ebracteolate; prickly shrubs :—

3. **Rubus.**

Ovule 1, erect; calyx bracteolate; herbaceous plants:—

Achenes on a fleshy receptacle4. **Fragaria.**

Achenes on a dry receptacle o. **Potentilla.**

Ovary inferior; the ripe carpels enclosed in the calyx-tube :—

Carpel 1; petals 0; herbaceous (3. **Alchemilla.**

Carpels more than 1; petals present; trees or shrubs :—

Carpels not confluent when ripe ; prickly shrubs with compound
 leaves and adnate stipules 7. **Rosa.**

Carpels confluent when ripe; erect unarmed trees or shrubs with
 simple leaves and small stipules :—

Flowers in panicles ; ovary 5-celled**Eriobotrya.**

Flowers corymbose or fascicled:—

Ovary 5-celled; endocarp cartilaginous**Pyrus**#

Ovary 2-3-celled ; endocarp thin ; evergreen trees

8. **Photinia.**

Ovary 2-5-celled; endocarp bony ; rigid shrubs

1. Parinarium, Jiiss.

^tipiUes *J^T* Si?Ple' alternate' evergreen, quite entire;
 or pint%oi oV lanceolate' *Fl*TM** hermaphrodite, white
 k ' QoV *Jm**o**e* racemes' bracteate. CaZya-tube
 campanu- fP^{ed}; lobes 5, imbricate. *Petals* 5, inserted of
 the Cal^tube> ses^ or clawed, deciduous. ^nilater<l K T^{US};
 filaments connate ^ the base in a ring or ide of *'bUndle' filif01>m ;
 anthers small. *Ovary* adnate to the
 W sti y ; ' elled' the ovules erect. st^le ^1.
 stone 1 o^{ma} *n^lncate_ ^^ an ovoid or spherical drupe,
 , cotyledons fleshy.

^W o yX,tUbe' 2''Celled' the ovules erect, st^le ^1

y

Leafflets 8-9 ,, I
 kernes BF f g' 3 m# broad' elliptic-lanceolate, glabrous
 lofff- flow f^xillar y or terminal, slightly pubescent, about 4 in.
 &> uowers white .. n . ,,
 -leaves 4-5 j_n iJ-- *maicum*.
 silky midrib h , 1~1 5 ln'' broad' lanceolate^ glabrous except the
 ,f; es slender, drooping, usually
 axillary,
 , about 2 in. long; flowers pink 2. *travanooricul*.
 !^1^1 INDICIJM> B^{ed}d. Ic. t. 109, Fl. t, 191; F. B. I.
 ^ilk y-villonQ ,ene^fu; ^emes slender, drooping, usually axillary,
 Uous, about 2 in long flo i K l

JT woods at 2,000-3,000 ft. (Beddome). p middli^{ng}-sized
 evergreen tree, ii A^j^{NARIUM} TRAVANCORICFM, Bedd. Ic. t.
 189; F. B. I.

if O A ! , In the Travancore Hills, in evergreen forests 2 2'000
 ^ (Beddome, Bourdillon).
 Sniail gTaCeful evei>_green tr^e with straight cylindric • Bark
 smooth, mottled brown and white: wood *'a, smooth,
 pink.

2. Pygeum, Gaertn.

ti Vev^{gree}7n <h i ntil% e or . nrubs or trees. ie<<ves simple,
 alternate, persistent,
 base; st- rarelv toothed, sometimes with pitted glands near the

Sme^t times^{PU_eS} SmaU[>] deciduous^t Flowers small, in racemes, ^{eavl}y bud
^{Tlyhj} 8U^{PP}ression of the ovary; bracts deciduous, ^aPanul ^{rmin}S a
cone- *Calyx-tube* obconic urceolate or ^{afce}t usu^{ally} villous within,
deciduous usually in a ring
the Carcoor Glltlt^t S_E_ Wynaad, in

at the middle; lobes 5-6, very small. *Petals* 5-6, sometimes undistinguishable from the calyx-lobes with which they alternate, usually villous. *Stamens* normally 10, 20 or 30, in one or two rows, often irregular by the absence of some; filaments slender, incurved; anthers small. *Carpel* solitary at the base of the calyx-tube, ovoid or globose; style subulate; stigma capitate; ovules 2, collateral, pendulous. *Fruit* a transversely oblong obscurely 2-lobed indehiscent drupe; pericarp thin, dry or fleshy; cotyledons hemispheric; radicle minute, superior.

Leaves entire:—

Calyx-lobes and petals unequal, the latter the longer:—

Leaves ovate to broad-lanceolate, acuminate at apex, 4-6 in. long, 1.5-3 in. broad, not pitted; racemes slender, 2-3 in. long; pedicels 1 in.; stamens more than 30 with long filaments; ovary glabrous with long slender style; drupe 5 by 7 in., dark purple, top slightly retuse 1.

acuminatum.

Leaves lanceolate, acute at apex, 2-4 in. long, 1-1.5 in. broad, rarely pitted; racemes under 2 in. long, pedicels 1 in.; stamens about 20 with short filaments; ovary glabrous with short style; drupe 5 by 8 in., purple, top slightly retuse 2.

sisparensis.

Leaves ovate, obtusely acute at apex, rounded or subcordate at base and usually pitted; 4-6 in. long, 2.5-3 in. broad; racemes reaching 5 in. long, pubescent, pedicels 1-2.5 in. long; stamens about 20; ovary glabrous, with thick style; drupe 6 by 7 in., top not retuse 3. *Wightianum*.

Calyx-lobes and petals nearly equal, similar, but the latter more obtuse; stamens normally 30; racemes 2-4 in. long, pubescent, pedicels 1 in.; leaves lanceolate, long acuminate, up to 7 in. long, 2-3 in. broad; basal glands present or more often absent; drupe 6 by 1 in., black, slightly retuse at top 4. *Gardneri*.

Leaves crenate-serrate, ovate or ovate-oblong, attenuate at base; petals oblong, 1 in. long, glandular-ciliate, twice the length of the calyx-lobes; stamens 10-15, usually 10 5. *Andersoni*.

1. PYGEUM ACUMINATUM, Coleb. in Trans. Linn. Soc. xii. 360, t. 18; F. B. I. ii. 318.

E. Ghats, Runipa Hills of Godavari at 2,500 ft. (Gamble).
An evergreen tree, with fairly large leaves.

2. PYGEUM SISPARENSE, Gamble in Kew Bull. 1918, 238.

W. Ghats, about Sispara in W. Nilgiris at 6,000-7,000 ft. (Gamble).

A small tree with small leaves racemes and flowers, the fruit large.

WIGHTIANUM, BL; P. B. I. ii. 319. *P. ceyanicum*. t. 59.

W. Ghats, from Mysore to the Nilgiris, Pulneys and

Aravancore Hills, at 3,000-6,000 ft.

Large and handsome tree with white flowers, the leaves, fruit and bark smelling of prussic acid. Bark dark brown, lignous; wood hard, pink, mottled and streaked.

4

" C A

Hool f*in r B. L if 32L

Vern. *Palan kacchi, Mah Nai

kambagam.

• ^nats, in the hills of Malabar, Nilgiris, Pulneys and Aravancore, above 3,000 ft.

l e a f t T "glands only occasionally found. inflorescence, the 5

E GB EM ANDERSONI, Hook. f. in P. B. I. ii. 320.

(Gambel's Mahendragiri Hills Ganjam at 4,500 ft)

exc^f % Shrub> noticeable - "s serrate leaves, glabrous " eP* the margins of the rather long petals.

3. Rubus, Linn. r

Cl> eepi ng h , *«a»e. altemat -or *"* Or climbin« shm'»- usually prickly. the Petiole j, ' 8uple or com Pound; stipules free or adnate to 2V*} sol: j, 2J|T* m t6r final or axilla T corymbose panicles. y' ^ te or red; bracts various; bracteoles usually

i ; n a d i b 5 A

OVn, Of tJ>e calyx ti\h* n , '* mimy' inserted on the ! 8 2 cH ' \ Peh many' On a convex receptacle; st^le ^'bterminal. filiform; stigma f * % 1-eeded drupes ^d ^ ^tyledons piano-

^d Un fl der Surfa-' *he nerves on the upper

lentum. pnckles comparatively few> sKort, re-

Bracts boat-shaped or obovate, entire or dentate at apex ; leaves up to 4 in. long, 3 in. broad, the lobes short, acute, again lobulate

1.

*Wight**-Bracts broadly ovate or obovate, laciniate at apex :—

Leaves thick, deeply cordate, prominently and minutely rugose on both surfaces with very small areoles ; bracts and stipules long-flabellately laciniate :—

Leaves orbicular in outline, up to 6 in. in diam., the lobes rounded, scarcely lobulate, the sinuses shallow; tomentum thick, fulvous ; inflorescence dense...2. *rugosus* var.

*Thwaitesi**-Leaves ovate in outline, up to 9 in. long by 7 in. broad, the lobes acute, the end one long and usually again lobulate; tomentum short, white or pale fulvous; inflorescence loose

3. *Fairholmianus*>

Leaves thin, shallowly cordate, not minutely rugose, up to 6 in. long by 5 in. broad, the areoles rather large ; bracts and stipules shortly laciniate ; tomentum very thin, tawny ; inflorescence la*

4. *Gardnerianus*.

Bracts pectinately laciniate with linear segments; leaves deeply cordate, not lobulate, rugose with small areoles :—

Petals very small, less than half the length of the calyx-lobes ; leaves up to 5 in. long by 4.5 in. broad, the lobes, especially the end one, acute, the sinuses deep; inflorescence short or shortly paniculateo. *micropetala*^-

Petals nearly as long as the calyx-lobes; leaves up to 6 in. diam., the lower lobes rounded or subacute, the end lobe acute; inflorescence large, in spreading panicles 6. *fulvus*.

Leaves pinnately 3-foliolate, wrinkled, the end leaflet the largest; stipules subulate; petals white, as long as or longer than the calyx-lobes ; fruit globose, orange:.....7. *ellipticu**-

Leaves pinnately 5-7 foliolate, usually white beneath: —

Branches glabrous, glaucous, not glandular; leaves usually 7-foliolate; stipules subulate; petals pink, shorter than the calyx-lobes; fruit globose, black with white tomentum8. *niveus*

Branches covered with glandular bristles and hairs; leaves usually 5-foliolate, stipules lanceolate; petals red, longer than the calyx-lobes ; fruit globose, purple with white tomentum.....9. *racemosus*.

1. RUBTJS WIGHTII, Gamble. *B. rugosus*, Wt. Ic. t. 225 not of Sm. *R. moluccanus*, Hook, f. in F. B. I. ii. 330 in part only (var. *u.* Thwaites Enum. Pl. Zeyl.). Sivagiri hills, Tmnevelly (Wight). A small species with pretty vine-like leaves and red fruits.

RUGOSUS, Sm. in Eees Cycl. xxx. *B. moluccanus*,

Focke. W. Ghats, in the Nilgiri Hills at levels, common on Dodabetta at 8,000 ft. large strongly-growing shrub with large purple-black fruits.

- &UBUS FAIRHOLMIANUS, Gardn. in Calc. Journ. Nat. Hist. Mu- 6. *B. moluccanus*, Hook. f. in F. B. I. ii. 330 *in part onh* (var. y. Thwaites Enum. PL Zeyl.).

^ • Wiats, m the Pulney Hills at 5,000-7,000 ft. (. j* large shrub with white tomentum and red fruits.

- ttUBus GARDNERIANUS, O. Kze. *R. moluccanus*. Hook. f.

• -t>. 1. ii. 330 *in part only* (var. *d.* Thwaites Enum. PI. ^)^ *U. macrocarpus*, Gardn.

Ghats, at Udambadsholay, Travancore Hills, at 5,000 ft. (Meebold); E. Ghats, Madgol Hills of Yizagapatam at 4,500 ft. *probably*.

good-sized shrub with thin leaves, open reticulations to 5 p^{he leay}es, many prickles and black fruit.

- -ttUBus MICROPETALUS, Gardn. in Calc. Journ. Nat. Hist. Vllj- 6. *B. moluccanus*, Hook. f. in F. B. I. ii. 330 *in part o'1%* (var. /3. Thwaites Enum. PL Zeyl.).

Tmnevelly District, at Kalivayalpil (Barber). Pparently a small species, perhaps climbing, with deeply- 6 lobec^ leaves, small petals and red fruit.

US FDLVUS¹ Focke in Biblioth. Bot. lxxii. 81 (1909). Ghats, in W. Nilgiris, Bababudan Hills of Mysore, di Hills of Malabar, hills of Coimbatore, at 3,000-°<0U0 ft. (King, Fischer and others).

strong-growing, perhaps climbing, species with large flovv^{er} panicles and black-purple fruit.

XJBus ELLIPTICUS, Sm.; F. B. I. ii. 336. *B. Gowreephul*, r^{sh}-> W. & A. 298; Wt. Ic. t. 230. *B. Wallichianus*, W- & A. 298; Wt. let. 231.

^- Circars and Deccan, in the hills above 4,000 ft.; W- Ghats, in all Districts, in open places, usually above MOO ft.

A large straggling shrub with stiff red hairs and prickles. The orange raspberry-like fruit is edible and good, it can be made into preserves.

8. RUBUS NIVEUS, Thunb. Dissert. 9, fig. 3 *not of* Wall-*R. lasiocarpus*, Sm.; F. B. I. ii. 339; W. & A. 299; Wt. Ic t. 232.

N. Circars, Deccan and Carnatic, in hills above 4,000 ft. > W. Ghats, in all Districts, on Shola margins and in open forest.

A straggling shrub, the leaves usually very white beneath» fruit edible but dry and the seeds with a woolly coat. Yar. *subglaber*, Thw. Leaves not white beneath, glabrou except on the nerves; thorns large, recurved from bvoa bases.

Nilgiri and Pulney Hills, at high elevations. 9.

RUBUS RACEMOSUS, Roxb.; E. B. I. ii. 340.

Nilgiri hills, at high elevations, above 6,000 ft. A straggling shrub very closely allied to *R. niveus*, *cln^e J* differing in the glandular hairs, especially on the caiy tube.

Rubus Idaeus, Linn., the Raspberry, is found in cultivation hill stations.

4. *Fragaria*, Linn.

Perennial scapigerous herbs with creeping stolons. *h^{oa}*
digitately 3- rarely 5-foliolate, rarely pinnate or simple; *stip^{tt}*
adnate to the petiole. *Flowers* white or yellow, often polyg*¹¹¹¹⁰ :
cymose on erect scapes; bracts leafy; bracteoles 5, close uii the
calyx. *Petals* 5. *Stamens* many, 1-seriate, persistent; *j*
ments filiform; anthers didymous. *Carpels* many, on a *c^o*
. ^ receptacle; styles lateral; ovules 2, collateral, pendulous. *
I of many achenes, sunk in the surface of the fleshy recept
Seeds minute; cotyledons plano-convex; radicle superior.

Flowers yellow, solitary, bracteoles broad, 3-5-fid at apex; *lea*

J

3-5, obovate, usually crenate; peduncles shortly whitish-*vl*
•25-1 in. long; slender plants with the ripe receptacles red.-*I-II*

Flowers white, in cymes, bracteoles deeply bifid in 2 lanceolate
leaflets 3, obovate, coarsely dentate; peduncles densely golden-*vi* ^
1-1-5 in. long; robust plants with the ripe receptacles white *ti o*
with pink 2. *nilgerrensi**

1. FRAGARIA INDICA, Andr.; F. B. I. ii. 343; W. & ^{A-} 3 Wt. Ic. t. 989.

W. Ghats, Nilgiri and Pulney Hills at 6,000-7,000 ft. A small creeping strawberry, the fruit insipid. -. FRAGARIA NILGERRENSIS, Schlecht.; F. B. I. ii. 344. *F. elatior*, W. & A. 300; Wt. Ic. t. 938. W. Ghats, Nilgiri and Pulney Hills, above 6,000 ft. A stout creeping wild strawberry, the fruit edible and pleasant.

Fragaria elatior, Ehrh., the Strawberry, is cultivated in hill gardens.

5. Potentilla, Linn.

Herbs or rarely shrubs, perennial or sometimes annual. *Leaves* digitately or pinnately compound, the leaflets usually lobed; stipules adnate to the petiole. *Flowers* white or yellow, rarely red, solitary or in corymbose cymes; bracts leafy; bracteoles 5, rarely 4, under the calyx. *Calyx* persistent, tube hemispheric or urceolate, concave at base; lobes 5, rarely 4, valvate. *Petals* 5. *stamens* many, 1- or in ore-seriate, rarely definite. *Carpels* many, on a small dry receptacle; ovule solitary, pendulous; style persistent or deciduous, ventral or terminal. *Fruit* of many achenes, ^Custere^d on the dry receptacle. *Seeds* minute; radicle superior.

Leaves pinnate with 5-7 obovate coarsely-toothed leaflets, whitish beneath, softly golden-villous; flowers about 5 in. in diam.; achenes smooth or very minutely wrinkled, pale, about 1 in. long

1. *Leschenaultiana*.
Leaves digitately 5-foliolate, leaflets obovate or oblanceolate, silky-villous, green beneath, obtusely deeply crenate; flowers about 25 in.

in*."]*

diam.; achenes dark, deeply wrinkled, scarcely .05 in. long

2. *Kleiniana*.

!• POTENTILLA LESCHENAULTIANA. Ser.; F. B. I. ii. 350; W. & A. S01; Wt. Ic. t. 990.

W. Ghats, in the Nilgiri and Pulney Hills, above 6,500 ft. A strong-growing perennial herb with yellow flowers. -

POTENTILLA KLEINIANA, W. & A. 300; F. B. I. ii. 359; Wt. 111. t. 85.

W. Ghats, in the Nilgiri Hills about Ootacamund at 6000 ft.

A weak, usually prostrate herb with yellow flowers, sometimes stoloniferous.

6. Alchemilla, Linn.

Annual or perennial herbs. *Leaves* alternate, orbicular, lobed or deeply divided; stipules adnate to the petiole, sheathing the stem. *Flowers* minute, in corymbose cymes; bracts maivy » bracteoles 4-5, under the calyx-lobes. *Calyx-tube* campanulate, lobes 4-5, valvate. *Disk* adnate to the calyx-tube, large and thick a its mouth. *Stamens* 4-5, on the mouth of the calyx-tube. *C<trp^{el/S}* 1-5, stalked or sessile in the calyx-tube; style basal; stigma capitate. *Fruit* of 1-4 achenes enclosed in the niembranou persistent calyx-tube.

ALCHEMILLA. INDICA, Gardn.; F. B. I. ii. 361. *A. vnlg<»^{l*}>*
Wt. Ic. t. 229.

Nilgiri and Pulney Hills, above 7,000 ft., chiefly at elevations as on the top of Dodabetta, on open grass-land. A perennial silky herb with prostrate stems covered with dry remains of the stipules; flowers very small, green; leave orbicular, 7-11-lobed, serrate.

7. Rosa, Linn.

Erect, sarmentose or climbing shrubs, usually prickly. alternate, imparipinnate; leaflets serrate; stipules adnate to petiole. *Flowers* terminal, solitary or corymbose, white, or red; bracts rarely persistent; bracteoles 0. *Calyx-tube* globose, ovoid or flask-shaped, the mouth contracted; lobes 4-5, imbricate. *Petals* 4-5, usually large. *Disk* lining the calyx-tube, thickened m^a ring at the mouth. *Stamens* many, inserted on the disk. *C<v^o/P^e* many, rarely few, in the bottom of the calyx-tube; styles s^{u:>} terminal, free or connate above; stigma thickened; ovule solit&v[^] pendulous. *Fruit* a fleshy calyx-tube (rose-hip) enclosing a clu^{ste} of coriaceous or bony achenes. *Seeds* small, pendulous; cotyledo plano-convex; radicle superior.

ROSA LESCHENAULTIANA, W. & A. 301; F. B. I. ii. 368;
Ic. t. 38.

W. Ghats, in the Nilgiri Hills above 5,000 ft., in Forest; said to occur also in the Pulney Hills. A large climbing shrub with pink flowers, very gla leaf-rhachises and peduncles and globose fruit, the styles

united in a long-exserted column. Bark papery, purplish-red ; wood reddish-brown.

Roses, of many species and garden varieties, are to be found in cultivation, especially in the Hills.

8. Photinia, Lindl.

Evergreen trees or shrubs. *Leaves* simple, coriaceous, entire or toothed; stipules subulate, deciduous. *Flowers* small, white, in corymbose terminal panicles ; bracts deciduous. *Calyx-tube* obconic; lobes 5, short, persistent. *Petals* 5, spreading. *Stamens* 5, inserted on the mouth of the calyx. *Ovary* half-adhering, 2-celled; styles 2, rarely more, free or connate at the base; stigmas truncate; ovules 2 in each cell, collateral, ascending. *Fruit* a small globose or ovoid drupe with 2 pyrenes each in a crustaceous endocarp, each with 2 seeds. *Seeds* obovoid, triquetrous or compressed; testa coriaceous; cotyledons plano-convex ; radicle inferior.

Leaves elliptic—ovate or—lanceolate, mucronate at apex, crenulate, 1-6 in. long, the nerves prominent beneath; flowers 3 in. broad, the claw of the petals usually villous; seeds triquetrous ... 1. *Lindleyana*. Leaves elliptic or obovate, obliquely acuminate at apex, entire, 1-5 in. long, 1-2-5 in. broad, nerves not prominent; flowers 1-6 in. broad, the claw of the petals usually glabrous; seeds compressed

2. *Notoniana*.

1. PHOTINIA LINDLEYANA, W. & A. 302; F. B. I. ii. 380; Wt. Ic t. 228.

W. Ghats, in Shola Forests of the Nilgiri Hills at about 6,000 ft.

A small tree with dark brown bark and light brown close-grained wood, used only for fuel.

- var. *tomentosa*, Gamble. Petioles, undersurface of young leaves and inflorescence softly tomentose; leaves almost entire, serrate towards the apex.

Nilgiris, chiefly in Sholas towards Sispara at and above 7,000 ft.

2. PHOTINIA NOTONIANA, W. & A. 302; F. B. I. ii. 380; Wt. Ic. t. 991; 111. t. 86; Bedd. Fl. t. 192. W. Ghats, in the Nilgiri and Pulney hills and the hills

of Malabar and Travancore above 4,000 ft., in forests.

A good-sized tree with reddish-brown scaly bark and li red close-grained wood.

9. Cotoneaster, Rupp.

Small trees or shrubs, erect or decumbent. *Leaves* simple, usually downy beneath; stipules subulate, deciduous. *Flowers* small, solitary or in axillary or terminal cymes, win* or pink; bracts and bracteoles small. *Calyx-tube* turbinate 01 campanulate; lobes 5, short, persistent. *Pttals* 5, imbricate iⁿ bud. *Stamens* indefinite, usually 20, inserted at the mouth o the calyx. *Carpels* 2-5, adnate to the calyx-tube; styles fre[^] stigma truncate; ovules 2 in each cell, erect. *Fruit* an ovoi globose or turbinate drupe with 2-5 1-seeded bony pyrenes. *Seeds* compressed, cotyledons plano-convex ; radicle inferior.

COTONEASTER BUXIFOLIA, Wall.; F. B. I. ii. o87; W. & [^] 302; Wt. Ic. t. 992.

W. Ghats, Nilgiri and Pulney Hills, above o,000 ft. A rigid, intricately branched shrub with elliptic-ovate acuminate apiculate small leaves, tomentose beneath, flowers and scarlet fruit. Beddome says the hard, wood is used by the Todas to make clubs for buffaloes.

Prunus Persica, Benth. and Hook, f., the Peach; *Avium*, Linn., the Cherry; *Pyrus Mains*, Linn., the App*^e *Pyrus communis*, Linn., the Pear, are cultivated in hill stations for their fruit.

Prinsepia utilis, Royle, a thorny shrub, introduced from the Himalaya, is now found run wild in the Nilgiri Hills.

Eriobotrya japonica, Lindl., the Loquat, is occasionally cultivated in the Nilgiri Hills for its fruit.

Family LYII. SAXIFRAGACEAE.

Trees, shrubs or herbs. *Leaves* alternate with stipules adnat^e to the petiole or 0, or opposite exstipulate. *Flowers* usually hermaphrodite, regular. *Culy** usually 5-merous, more or

1s*

adnate to the ovary; lobes imbricate or valvate. *Disk* cup-like or sometimes reduced to intra-staminal glands. *Petals* usually 5, rarely 0, usually perigynous, imbricate or valvate. *Stamens* inserted with the petals, equalling or double their number, rarely indefinite. *Carpels* usually 2, less often 3-5, united in a usually --, rarely 3-5-celled ovary, with axile placentas, sometimes 1-celled with parietal placentas; ovules many; stigmas capitate or lateral subcapitate. *Fruit* an indehiscent capsule or an indehiscent berry. *Seeds* usually numerous, albuminous.

Placentas pendulous from the apex of the 1-celled ovary; dichotomous herbs with opposite leaves; staminodes none, stamens 5 .. 1. *Yahlia*.

Placentas parietal; scapigerous herbs with radical leaves; staminodes alternating with the 5 stamens2. *Parnassia*.

1. *Yahlia*, Thunb.

Annual or biennial herbs. *Leaves* opposite, entire; stipules 0. *Lower* flowers small, regular, axillary, usually in pairs, white or yellowish. *Calyx-tube* hemispheric, adnate to the ovary; lobes 5, valvate. *Petals* 5, epigynous, short. *Stamens* 5, inserted on the margin of the epigynous disk; filaments subulate. *Ovary* inferior, 1-celled, with 2 pendulous placentas; ovules many; styles 2; stigmas capitellate. *Fruit* a capsule dehiscing at the apex between the styles. *Seeds* many, minute, ellipsoid, smooth.

Lower flowers subsessile, 2- or often 1-flowered in most of the upper axils; filaments with a small hairy scale at their base 1. *viscosa*.

Lower flowers peduncled, 2- or rarely 1-flowered in most of the upper

axils; filaments without a scale at their base.....2. *oldenlandioides*.

!• VAHLIA VISCOSA, Roxb.; F. B. I. ii. 399; W. & A. 361; Wt. Ic. t. 563.

Beccan and Carnatic, on dry lands.

-• VAHLIA OLDENLANDIOIDES, Roxb.; F. B. I. ii. 399; W. & A. 364; Wt. let. 562...

Deccan and Carnatic, on sandy lands, especially near the sea.

2. *Parnassia*, Linn.

Glabrous, perennial, scapigerous herbs, the scapes 1-flowered,

dually with a leaflike bract in the middle.
entire.

Leaves

radical, petioled. *Calyx* *x-tuhe* free or adnate to the ovary ; lobes 5, imbricate. *Petals* 5, white or pale yellow. *Stamens* *o*, perigynous or nearly hypogynous, opposite the calyx-lobes, alternating with 5 staminodes opposite the petals; filaments subulate; anthers ovate. *Ovary* 1-celled, ovoid; style short; stigmas 3-4 ; ovules numerous, on parietal placentas opposite the stigmas. *Fruit* a capsule, loculicidally 3-4-valved. *Seeds* numerous, smooth, albumen scarcely any.

Scapes 6-12 in. high ; leaves broadly ovate, cordate, 1-15 in. long" » petals obovate, conspicuously fimbriate on the margins ; staminodes 3-5-lobed, the lobes cylindric-clavate..... 1. *Wightiana*-
Scapes 3-6 in. high; leaves orbicular, cordate, *5-'75 in. long; petals obovate, not or slightly fimbriate on the margins ; staminodes clavate. entire or more or less 3- or even 5-lobed 2. *mysorensis*-

1. PARNASSIA WIGHTIANA, Wall, in W. & A. 35 ; F. B. I. »• 402; Wt. 111. t. 21, Ic. t. 945.

Boggy places on the Nilgiri plateau at 6,000-8,000 ft,

2. PARNASSIA MYSORENSIS, Heyne in W. & A. 35 ; F. B. I. "• 402; Wt. 111. t. 21.

W. Ghats, in the Mysore, Malabar, Nilgiri and Pulney Hills, above 5,000 ft., in damp places or among rocks. The Nilgiri specimens have the staminodes more prominently lobed than those from the Pulneys. The two species are closely allied and are more distinguishable by the difference of size than by other characters.

Family LYIII CRR&SULkCfckE.

Herbs, with often a woody rootstock, or undershrubs, usually succulent. *Leaves* alternate or opposite, simple or sometimes pinnate ; stipules 0. *Flowers* regular, hermaphrodite or unisexual* usually in cymes. *Calyx* free, 4-5-, rarely 6-8-lobed. *Petals* as many as the calyx-lobes and alternate with them, free or connate. *Stamens* as many or twice as many as the petals, hypogynous *o*[^] epipetalous. *Carpels* as many as and opposite to the petals, *fi*^{ie} or connate below, narrowed into the styles with a hypogyn^o^{lls} scale at the base of each; ovules numerous, 2-many-seriate[^] rarely few. *Fruit* of usually 4-5, rarely fewer, follicles dehiscing at the ventral suture. *Seeds* many, rarely few or solitary* albuminous.

Stamens as many as the petals : leaves opposite j small herbs

1. Tillaea.

stamens twice as many as the petals; tall erect fleshy herbs :—

Calyx with a long inflated tube and shortly 4-fid limb; corolla with a much constricted tube; leaves bulbiferous in the crenatures, opposite, sometimes pinnate Bryophyllum.

Calyx with a short tube and deeply 4-partite limb; corolla with a flask-shaped tube ; leaves opposite or the upper alternate, sometimes pinnatifid, not bulbiferous 2. Kalanchoe.

1. Tillaea, Linn.

Small glabrous herbs. *Leaves* opposite, entire. *Flowers* minute, axillary, solitary or fascicled or cymose, white or red. *Calyx* 4-lobed. *Petals* 4-5, free or connate at the base. *Stamens* 4-5, filaments filiform. Hypogynous *scales* 4-5 or 0. *Carpels* 4-5, free ; styles short; stigmas minute. *Follicles* 2-many-seeded, rarely 1-seeded.

TILLAEA PENTANDRA, Royle; F. B. I. ii. 412.

-Deccan, in Mysore (Lobb); Nilgiris (Hohenacker), usually on walls or rocks.

A small tufted plant with angular stem, stem-clasping leaves and minute scarious flowers.

2. Kalanchoe, Adans.

■ Erect perennial herbs with stout fleshy stems and leaves. *leaves* opposite or the upper alternate, entire eremite or pinna-tmd. *Floivers* large, erect, in many-flowered paniculate bracteate cymes. *Calyx* 4-partite or 4-fi.d half way down, shorter than the corolla. *Petals* 4, connate in a flask-shaped corolla tube, the lobes spreading, persistent. *Stamens* 8, in 2 series, adnate to the corolla-tube. Hypogynous *scales* 4. *Carpels* 4, adnate to the base of the corolla-tube, attenuate into long subulate styles ; stigmas obliquely truncate; ovules many. *Follicles* 4. *Seeds* ^{ve*}y many, oblong-ellipsoid, ribbed longitudinally.

^alyx divided not more than half-way down ; leaves obovate, nearly entire, up to 6 in. long, much narrowed at base ; calyx tubular, very glandular-pubescent; flowers yellow, in elongate panicles of cymes corolla lobes ovate-oblong 1. *glandulosa*.

Cl divided nearly to the base: —

simple, crenate, the crenatures broad :—

Calyx-lobes narrow, lanceolate :—

Flowerjt yellow, in large corymbose bracteate panicles, the inflorescence glandular or glabrous; leaves obovate-spathulate especially the upper ones, up to 4 in. long, 1 in. broad ; corolla-tube *ik* fruit shining, white2. *floribunda*.

Flowers white:—

Calyx and corolla glandular-hairy ; inflorescence in compact corymbs ; leaves obovate, obtuse, up to 5 in. long, 2 in. broad, dotted with red spots (Cooke).....3. *olivacea*.

Calyx and corolla not glandular-hairy; inflorescence in spreading panicles of cymes; leaves elliptic, narrowed at base, more or less acute, up to 6 in. long, 3 in. broad, tinged with red (Cooke)4. *Bhidei*.

Calyx-lobes large, ovate; leaves orbicular-obovate, cuneate at base, up to 3 in. long, 2 in. broad; flowers yellow, in compact corymbose cymes, the inflorescence glabrous; corolla-lobes

obovate, mucronate5. *grandiflora*.

Leaves pinnatifid, the segments, especially in upper leaves, usually narrow and even linear, sometimes broader; flowers pale yellow, in paniculate cymes "with linear bracts ; calyx-lobes lanceolate, glandular; corolla-lobes oblong-lanceolate, mucronate 6. *laciniata*.

1. KALANCHOE GLANDULOSA, Hochst.; F. B. I. ii. 414.

Deccan, in hilly country in Mysore (Wight) on dry rock soil.

A thick-stemmed succulent plant reaching 2 ft. in height.

2. KALANCHOE FLORIBUNDA, W. & A. 359; F. B. I. ii. 414.

Deccan, on dry hills in Coimbatore at 2,000-4,000 ft. (Fischer, etc.)

An erect succulent-leaved plant with glandular inflorescence. Var. *glabra*, C. B. Clarke in F. B. I. ii. 415.

W. Ghats, on dry slopes from Mysore and N. Nilgiris to the Anamalais and hills of Travancore, at 2,000-4,000 ft.

An erect succulent, the inflorescence not glandular, and prominently corymbose.

3. KALANCHOE OLIVACEA, Dalz.; Cooke Bomb. Fl. i. 467.

W. Ghats, in the Anamalai Hills at Attakatti and Kadamparai, 3,500-4,000 ft. among rocks (Fischer).

An erect succulent of an olive-brown colour when fresh.

4. KALANCHOE BHIDEI, T. Cooke Bomb. Fl. i. 467.

Deccan, in the hills of Coimbatore at Dimbam and Anai-

kerai at 3,500-5,000 ft, (Fischer); Pulney Hills (Bourne). An erect succulent reaching 3 ft. high, with large flower-panicles and broad leaves.

5. KALANCHOE GRANDIFLORA, W. & A. 359; F. B. I. ii. 415: Wt. 111. t. 111.

W. Ghats, in the Nilgiri and Pulney Hills, above 6,000 ft. A tall succulent plant with glaucous leaves and showy flowers.

6. KALANCHOE LACINIATA, DC.; F. B. I. ii. 415; W. & A. 360; Wt. Ic. t. 1158.

Deccan, on dry slopes in Coimbatore at 1,500 ft.; W. Ghats, N. slopes of Nilgiris and hills of Travancore at 3,000 ft. A large succulent herb, up to 4 ft. high.

Bryophyllum pi/mat urn, Kurz, an introduced plant, is found in gardens and run wild in many places in plains District*. It is remarkable for forming new plants at the crenatures of the leaves.

Family LIX, DROSERACEAE.

Perennial glandular-hairy herbs, insectivorous. *Leaves* radical or cauline, usually entire; stipules 2. *Flowers* hermaphrodite, regular. *Calyx* 4-5- or more-partite, the sepals free, imbricate, persistent. *Petals* as many as sepals, usually hypogynous, imbricate, marcescent. *Stamens*, as many as petals; filaments free or connate at the base. *Ovary* free or adherent to the base of the calyx, globose or ovoid, 1-3-celled; styles 3-5; ovules numerous, usually on parietal placentas. *Fruit* a membranous, usually loculicidal 2-5-valved capsule. *Seeds* many, albumen fleshy, embryo minute.

Drosera, Linn.

Perennial herbs with glandular hairs, sometimes with bulbous roots. *Leaves* rosulate or cauline, the glandular hairs attracting and securing small insects which they can assimilate. *Flowers* white or pink, racemose cymose corymbose or solitary. *Calyx*-lobes 4, 5 or 8, erect, marcescent. *Petals* as many as sepals, also marcescent. *Stamens* as many as petals. *Ovary* free, ovoid or globose, 1-celled; ovules many, parietal; styles 2-5. *Capsule* loculicidally 2-5-valved. *Seeds* many, obovoid-ellipsoid. testa smooth, reticulate.

Rootstock not bulbous : —

Leaves all radical, rosulate, round-spathulate; scapes leafless; styles 5, undivided m 1. *Burmanni*-

Leaves cauline, alternate, linear ; styles 3, bifid to the base

2. *indica*-

Rootstock bulbous; leaves cauline, semihmte; styles 3, short,

fimbriate ' 3. *peltata*.

1. *DROSERA BURMANNI*, Yahl; F. B. I. ii. 424; W. & A. 34; Wt. 111. t. 20; let. 944.

All Districts, in suitable damp places and to the highest points in the hills.

An erect plant with leafless scapes about 4-6 in. high fr the rosulate cushion of leaves at the base.

2. *DROSERA INDICA*, Linn.; F. B. I. ii. 424; W. & A. 34; 111. t. 20.

N. Circars, especially in Ganjam ; Deccan, in wet places m the Hills; W. Coast, S. Canara to Travancore, in swampy places.

A straggling leafy plant, the stems usually 3-4 in., sometimes up to 12 in. long.

3. *DROSERA PELTATA*, Sm.; F. B. I. ii. 424; W. & A. 34; Wt. 111. t. 20.

W. Ghats, on open downs in the Nilgiri and Pulney Hills above 5,000 ft.

An erect, pretty plant with slender steins reaching 12 in. high and over, the leaves peltate with upturned cusps-When being dried it stains the paper red.

Family LX. HALORRHAGIDACEAE.

Herbs, often aquatic. ' *Leaves* opposite or whorled, sometimes partly alternate, when submerged often pectinately piniiatind; stipules 0. *Flowers* hermaphrodite or unisexual, small, axillary* solitary or fascicled, sessile or pedicelled. *Calyx-tuhe* adnate to the ovary, lobes usually 4. *Petals* 4, sometimes 2 or 0, valvate oi slightly imbricate. *Stamens* 8, 4 or 1; anthers 2-celled, dehiscing longitudinally and laterally. *Ovary* 4-, 2- or 1-celled; ovules 4, pendulous ; styles as many as cells ; stigmas papillose or plumose. *Fruit* small, dry or drupaceous, 4-, 2- or 1-celled, indehiscent or separating into carpels. *Seeds* pendulous, 4 or rarely 1.

Terrestrial plants with monoecious flowers, \$ flowers pedicelled; petals 4 in \$ flower³; stamens 8; fruit 1-celled, 1-seeded

1. Serpicula.

Aquatic plants ; petals 0:—

Flowers hermaphrodite or monoecious, axillary or in spikes; stamens 2-8 ; fruit 4-furrowed or separating into carpels; seeds 2 or 4

2. Myriophyllum.

Flowers unisexual, usually monoecious, axillary; stamen 1; fruit indehiscent, 4-celled; seeds 4.....3. Callitriche.

1. Serpicula, Linn.

Small decumbent branching herbs. *Leaves* opposite or alternate, entire or toothed. *Flowers* monoecious, axillary, (J pedicelled, ? sessile. *Calyx-txihe* adnate to the ovary; lobes 4. *Petals*: m (J flowers 4, cucullate; in \$ flowers 0. *Stamens* 8, filaments filiform, anthers linear-oblong. *Ovary* 1-celled; ovules 4, pendulous ; styles 4, short, stigmas plumose ; in £ flowers pistillodes 4. *Fruit* a minute, indehiscent nut, 1-celled, 1-seeded, the enclosing calyx-tube ribbed or smooth.

Glabrous, little branching; leaves spatulate, entire or 3-toothed at a-pex; pedicels short, scarcely *4 in. long ; petals acute at apex; fruit glabrous, ribbed and warted 1. *brevipes*.
Hirsute with crisped hairs, much branched; leaves obovate, 3-5-toothed ^at apex; pedicels long, usually '6 to #8 in. long; petals obtuse at apex ; fruit hairy, not ribbed2. *hirsuta*.

1- SERPICULA BREVIPES, "VV. & A. 338. *S. indica*, Thw.; F. B. I. ii. 431 *in part*.

W. Ghats, in Nilgiris and Pulneys, at 6,000-7,000 ft., in wet places.

2. SERPICULA HIRSUTA, W.& A. 338; Wt. let, 1,001. *S. indica*, Thw.; F. B. I. ii. 431 *in part*.

W. Ghats, in the Nilgiri Hills at 6,000-8,000 ft., on banks, common.

2. Myriophyllum, Linn.

Glabrous aquatic herbs with floating stems. *Leaves* opposite ^{Ol%} whorled, the floating ones usually linear-serrate, the submerged ones pectinately pinnatifid. *Flowers* very small, hermaphrodite ^{Ol>} monoecious, axillary or in nearly naked spikes; <\$ very shortly

pedicelled or sessile, \$ sessile. *Calyx* in £ minute, 4- rarely 2-lobed, sometimes 0; in ? adnate to the ovary, 4-furrowed, lobes 0 or 4 minute. *Petals* in g 2 or 4, concave, sessile ; in ? usually 0. *Stamens* 2, 4 or 8. *Ovary* of 4, rarely 2, carpels; ovules solitary, pendulous; styles short, plumose. *Fruit* 4-furrowed, separating into 4 or 2 cocci; embryo straight or curved.

Floral leaves short, up to *5 in. long, submerged leaves long and niuch pectinate ; fruit carpels spreading stellately, tubercled; stamens 8

1. *indicia*¹-

Floral leaves long, up to 1 in. long or longer, submerged leaves short, often absent; fruit carpels erect, columnar, muriccate; stamens 4

2. *intermedia*¹'

1. MYRIOPHYLLUM INDICUM, Willd.; F. B. I. ii. 433; W. & A. 339.

E. Coast, from Ganjam southwards, in ponds and canals, W. Coast, more scarce.

A floating aquatic, with very long stems and many submerged leaves.

2. MYRIOPHYLLUM INTERMEDIUM, DC; F. B. I. ii. 433. 31-*indicum*, Wt. 111. 1.102 *except the fruit.* *Haloragis oligantha** W. & A. 338; Wt. Ic. t. 1,061.

W. Ghats, especially Nilgiris, in wet places and ponds-above 5,000 ft.

Sometimes floating, with short submerged leaves, more often rooted in mud with only the upper leaves apparent.

3. Callitriche, Linn.

Small glabrous aquatic annual herbs. *L* aves* opposite, linear or obovate-spathulate, entire, the upper ones often rosulate. *Flowers* minute, axillary, usually monoecious, solitary or some-times one £ and one ? together; bracteoles white, membranous* caducous. *Calyx* and *petals* 0. *Stamen* 1, forming <\$ flower-*Ovary* in \$ flower 4-celled with 4 pendulous ovules; styles 2, long? subulate. *Fruit* indehiscent, of 4 carpels combined in 2 pairs, at length separating. *Seeds* pendulous; testa membranous; albumen fleshy; cotyledons short; radicle superior.

CALLITRICHE STAGNALIS, Scop.; F. B. I. ii. 434. *C. Wightiana**

Wall.; W. & A. 339; Wt, Ic. t. 1,947.

W. Ghats, Nilgiri and Pulney Hills, in wet places and ponds about 7,000-8,000 ft.

A small flaccid herb, rooting at the nodes, the carpels narrowly winged at the margins.

Family LXI. RHIZOPHORACEAE.

Trees or shrubs. Leaves opposite, entire or rarely toothed; stipules interpetiolar, caducous. *Flowers* regular, usually hermaphrodite, axillary, solitary or in cymes racemes or panicles; bracteoles usually in pairs at the base of the calyx. *Calyx-tube* more or less adnate to the ovary, rarely free; lobes 4-14, valvate, persistent. *Petals* as many as the calyx-lobes and shorter than the tube, entire emarginate bifid or lacerate. *Stamens* usually twice as many as the petals, often in pairs opposite to them; anthers 1-celled, rarely multi-locellate. *Ovary* 2-5-celled or 1-celled by suppression of the septa; ovules usually 2 in each cell, pendulous; style simple; stigma simple or lobed. *Fruit* usually leathery, indehiscent 1-celled, 1-seeded. *Seed* 1, pendulous, arillate or not, albumen fleshy or 0; embryo in albuminous seeds minute, in exalbuminous seeds elongate, often germinating while the fruit is on the tree.

Embryo exalbuminous, radicle large, protruded while the fruit is on the tree :—

- Braeteoles present at the base of the calyx:— Calyx-lobes and petals 4, entire; stamens usually 8; ovary 2-celled 1. Rhizophora.
- Calyx-lobes and petals 5-6, the petals more or less lacinate:—
 - Stamens 10-12; ovary 3-celled 2. Ceriops.
 - Stamens indefinite; ovary 1-celled 3. Kandelia.
- bracteoles absent; calyx-lobes and petals 8-14; ovary 2-4-celled 4. Bruguiera.
- embryo albuminous ; radicle minute, not protruded:—
 - calyx-tube with bracteoles, stamens many:—
 - Ovary semi-inferior, 3-5-celled, 2-ovuled in each cell; leaves coriaceous 5. Carallia.
 - Ovary superior, 3-celled, 2-ovuled in each cell; leaves membranous 6. Weihea.
 - calyx-tube without bracteoles, adnate to the base of the 3-celled ovary; leaves membranous, crenate; stamens 8...7. Blepharistemma.

1. *Rhizophora*, Linn.

Trees; branches thick, marked by leaf-scars; aerial roots descending from the stem and branches. *Leaves* opposite, coriaceous, glabrous, mucronate, entire; stipules large. *Flowers* rather large, in axillary 2-3-choromously divided, few-flowered cymes; bracteoles connate at the base of the calyx. *Calyx* 4-lobed; lobes coriaceous, valvate. *Petals* 4, entire, inserted on a fleshy disk. *Stamens* 8-12 ; filaments short; anthers linear. *Ovary* 2-celled, 2 ovules in each cell; style conical, subulate; stigma bifid. *Fruit* coriaceous, 1-celled, 1-seeded, ovoid, the persistent reflexed calyx-lobes surrounding its base. *Seed* pendulous, germinating on the tree, the radicle elongate, perforating the apex of the fruit.

Leaves elliptic, long-mucronate, up to 4 in. broad; cymes 3-7-flowered on peduncles 1-1-25 in. long ; petals fleshy, lanate on the faces with¹¹

1. *mucronata*.

Leaves oblong-lanceolate, short-mucronate, up to about 2 in. broad-, cymes 2-flowered, on stout peduncles about 2 in. long; petals tin*^{1*} glabrous..... 2. *Candelario*-

1. RHIZOPHORA MUCRONATA, Lamk.; F. B. I. ii. 435; Wt. 1^c-t. 238. *B. Candelaria*, W. & A. 310.

Tidal forests on both E. and W. Coasts. The Mangrove. A glabrous evergreen tree, often appearing buttressed by the mud being washed away from the branching aerial roots, the lower part of the stem dying off; usually also sending up conical excrescences from the roots, looking like inverted tent-pegs. Bark brown, with vertical clefts, a valuable tanning material; wood dark red, very hard, ^{an} excellent fuel. Vern. *Tel.* Upoo-poina; *Tarn.* Kandal.

2. RHIZOPHORA CANDELARIA. DC. *R. conjugate*, Hensl-;

F. B. I. ii. 436 *not of* Linn.

Tidal forests on both coasts; more scarce than the p^{1e'}ceding ; common in the Kistna Delta.

A glabrous small evergreen tree, similar to *JR. mucronata*-Yern. *Tarn.* Kandal.

2. *Ceriops*, Am.

Shrubs or small trees with aerial roots from the stem and branches. *Leaves* opposite, ovate or obovate, entire,

coriaceous-

Flowers small, in soft rather dense axillary cymes; bracteoles connate under the calyx. *Calyx* 5-6-lobed, the tube adnate to the ovary. *Petals* 5-6, inserted at the base of a 10-12-lobed fleshy disk ; emarginate, the apex more or less ciliate. *Stamens* 10-12, inserted between the lobes of the disk ; filaments slender; anthers oblong. *Ovary* semi-inferior, 3-celled, 2 pendulous ovules in each cell; style short; stigma simple. *Fruit* coriaceous, 1-celled, 1-seeded, with persistent reflexed calyx-lobes. *Seed* as in *Bhizo-l>hora*, the radicle grooved and angular.

Petals tipped with 3-4 capitate • bristles..... 1. *Candolleana*.

Petals tipped with many ciliae 2. *Roxburghiana*.

1. CERIOPS CANDOLLEANA, Arn.; F.B.I.ii.436; Wt. Ic. t. 240.

Tidal forests of the W. Coast; Quilon in Travancore (Wight).
A small evergreen tree with many buttresses at base and root excrescences as in *Bhizophora*. Leaves obovate, usually emarginate. Bark dark red, giving a good tanning material; wood orange-red, hard, an excellent fuel. Yern. *Mai An kandal*.

2. CERIOPS ROXBURGHIANA, Arn.; F. B. I. ii. 436.

Tidal forests of the E. Coast, Godavari and Kistna Deltas and elsewhere.

A small evergreen tree similar to the preceding, the leaves obovate. Yern. *Hind. Goran; Tel. Gatharu; Tarn. Chiru*

kandal.

3. *Kandelia*, W. & A.

A small tree with aerial roots from the stem and branches. *Leaves* opposite, coriaceous, oblong, obtuse, entire. *Flowers* few, large, in axillary pedunculate dichotomously branched cymes, ^{w*nte}; bracteoles connate round the base of the calyx. *Calyx* 5-6-lobed; tube short, adnate to the ovary; lobes linear, valvate. *Petals* 5-6, thin, bifid, the lobes multifid. *Stamens* many; filaments capillary ; anthers small, oblong. *Ovary* semi-inferior, 1-celled; ovules 6. affixed in pairs to a central column; style slender; stigma 3-lobed. *Fruit* 1-celled, 1-seeded, girt with the Persistent reflexed calyx-lobes. *Seed* as in *Bhizophora*,

KANDELIA RHBEDII, W. & A. 311; F. B. I. ii. 437; Wt. Ill, t. 89.

Tidal forests of the W. Coast; less common on E. Coast.

A small tree with pretty flowers, the pendulous radicle of the seed very slender, cylindrical. Bark reddish-brown; wood soft, reddish-brown, used only for firewood. Yern. *Tel.* Thuvar kandan.

i. Bruguiera, Lam.

Trees or shrubs with aerial roots from the stem and branches. *Leaves* opposite, coriaceous, entire. *Flowers* solitary or cymose on axillary peduncles; bracteoles 0. *Calyx-tube* obconic or campanulate, coriaceous, adnate to the ovary; lobes 8-14, linear-lanceolate, valvate. *Petals* 8-14, oblong, 2-lobed or emarginate, involute, with a bristle in the sinus and others, usually 2-4, at the tip of each lobe. *Stamens* twice the number of the petals, in pairs within the petals; filaments filiform; anthers linear, mucronate. *Ovary* inferior, 2-4-celled, cells 2-ovuled; style filiform; stigma 2-4-lobed. *Fruit* 1-celled, 1-seeded, indehiscent, coriaceous, crowned with the calyx-lobes. *Seed* as in *Rhizophora*.

Flowers large, solitary, calyx-lobes erect in fruit; radicle grooved :—

Petals glabrous except at the base; leaves elliptic, acute, up to 6 in. long by 2*5 in. broad1. *conjugata*.

Petals densely hirsute on the margins; leaves elliptic-oblong, acute or acuminate, up to 5 in. long by 2 in. broad2.

eriopetala,>

Flowers small, in axillary cymes; calyx-lobes recurved in fruit;

petals short, obtuse, slightly hairy; leaves elliptic-lanceolate, acute, up to 4 in. long, 1*5 in. broad; radicle almost terete..... 3. *cylindrica*.

1. BRUGUIERA CONJUGATA, Merr. in Philipp. Journ. Sc. ix. 118. *B. gymnorhiza*, Lam.; F. B. 1. ii. 437; W. & A. 311; *B. Bheedii*, Bl.; Wt. Ic. t. 293A.

Tidal forests of both coasts.

A rather large evergreen tree with short stout grooved rugose radicle; root excrescences frequent. *Wood* red, extremely hard, used for building and fuel. Vern. *Hind-Kankra*; *Tel.* Thuddu ponna.

2. BRUGUIERA ERIOPETALA, W. & A.; F. B. I. ii. 438; Wt. Ic t. 239B.

- Tidal forests of Travancore on W. Coast.
A small tree, similar to the preceding but scarce.

3. BRUGUIERA CYLINDRICA, W. & A. 311. *B. caryophylloides*, BL; F. B. I. ii. 438; Wt. 111. t. 210. *B. malabarica*, Am.; F. B. I. ii. 438.

Tidal forests of West Coast (Wight); E. Coast, Kistna

delta (Weld, Boileau), S. Arcot.

A small tree with dark brown bark and red close-grained wood. Vern. *Tel.* Vurada.

5. Carallia, Eoxb.

Trees or shrubs. *Leaves* opposite, petioled, ovate obovate or elliptic, entire or serrulate, glabrous, shining. *Flowers* small, ¹u short 3-cliotomous axillary branching cymes; bracteoles at base of calyx minute. *Calyx-tube* campanulate; lobes 5-8, valvate. *Petals* 5-8, inserted on a crenulate disk, clawed, entire or bifid, toothed or lacerate. *Stamens* twice the number of the petals and inserted with them on the disk; anthers small. *Ovary* semi-inferior, usually 3-5-celled, ovules 2 in each cell; style subulate; stigma 3-5-lobed. *Fruit* small, globose, usually 1-celled, 1-seeded, indehiscent. *Seed* subreniform; testa granular; albumen fleshy; embryo curved.

leaves serrulate, ovate, acuminate, shining, 4-5 in. long, 2-2 o in. broad, petals orbicular, the margins crenately waved; stigma

3-lobed !..... 1. *lucida*.

-Leaves entire, obovate, obtuse or shortly acute, the margins revolute, 3-5 in. long, 2 in. broad; petals orbicular-cordate, the margins deeply lacerate; stigma 4-lobed 2. *integerrima*.

1. CARALLIA LUCIDA, Roxb. Cor. PI. t. 211; W. & A. 312; Wt. Ic. t. 605.

N. Circars, in the lower hills (*teste* Roxburgh). A small evergreen tree. Vern. *Tel.* Karalli.

2. CARALLIA INTEGERRIMA, DC.; F. B. I. ii. 439 *in part*; Wt. 111. t. 90; Bedd. Fl. t. 193.

Deccan, hills of Cuddapah, Kambakam Hill in Chingleput (Bourne); W. Coast and W. Ghats, in evergreen forests, up to 4,000 ft,

A pretty evergreen tree, sometimes with aerial roots, the flower buds frequently covered with yellow resin. Bark dark grey, thin; wood red, hard, with a pretty silver grain, useful for carpentry. Vern. *Hind.* Kierpa; *Tel.* Karalli;

Kan. Andipunar; *Mai.* Varanga.

6. Weihea, Spreng.

Trees or shrubs. *Leaves* opposite, petioled, entire or obtusely serrate. *Flowers* axillary, solitary or fascicled; bracteoles •-» connate in a cup, at length a short distance below the calyx-*Calyx-tube* shortly turbinate, adnate to the ovary; lobes 4-5, spreading, valvate. *Petals* 4-5, inserted under the margin ° an obscure disk, clawed, spatulate, fimbriate. *Stamens* 16-30, inserted on the disk; filaments filiform; anthers oblong. *Ovary* superior, 3-celled, 2 pendulous ovules in each cell; style filiform » stigma 2-4-lobed. *Fruit* globose, fleshy, splitting in 3-4 valves, 3-4-celled, the cells 1-2-seeded. *Seeds* ovoid, arillate, albuminous; cotyledons flat; radicle terete.

WEIHEA ZEYLANICA, Baill.; F. B. I. ii. 441; Bedd Fl. t. W. Ghats, in the hills of Travancore and Tinnevely, at low elevations.

A small tree with thin ovate acuminate leaves and white flowers. Yern. *Tarn*. Kanun.

7. Blepharistemma, Wall.

A tree. *Leaves* opposite, petioled, membranous, elliptic-oblong-acuminate, crenate. *Flowers* polygamo-dioecious, in many-flowered axillary cymes; bracteoles 0. *Calyx-tube* campanulate. adnate to the base of the ovary; lobes 4, erect. *Petals* 4, clawed, spatulate, lacerate at apex, inserted round an 8-lobed disk, the disk lobes long in £, shorter in <f. *Stamens* 8, inserted on the margin of the disk, small in ?; filaments ciliate; anthers oblong. *Ovary* free, 3-celled, 2 ovules in each cell; style short in <J, longer in \$; stigma shortly 3 lobed. *Fruit* a fleshy capsule.

BLEPHARISTEMMA CORYMBOSUM, Wall.; F. B. I. ii. 441. W.

Coast and W. Ghats, from Coorg to Travancore, up to 2,500 ft., in evergreen forest.

A handsome straight-stemmed tree, in favourable situations reaching a considerable size, with white flowers and greenish-black fruit. Wood pale greenish-yellow, moderately hard-Yern. *Mai*. Nir kurunda.

Family LXII. COMBRETACEAE.

Trees or shrubs, often climbing. *Leaves* alternate subopposite or opposite, sometimes ternate, entire ; stipules 0. *Flowers* hermaphrodite, rarely unisexual or polygamous, in spikes or racemes often paniced; bracteolate. Ovary tube adnate to the ovary and produced above it, the limb 4-5-lobed, the lobes valvate. *Petals* 4-5 or 0, inserted on the calyx, alternate with its lobes. *Stamens* as many as, or twice as many as the calyx-lobes, in 2 series; filaments filiform or subulate: anthers usually didymous. *Ovary* interior, 1-celled, usually crowned with a lobed disk; ovules usually 2-3, sometimes more; style subulate; stigma simple. *Fruit* coriaceous or drupaceous, generally indehiscent, angular or winged, sometimes crowned by the "persistent calyx. *Seed* 1 ; Albumen 0 ; cotyledons convolute plicate or plano-convex.

Petals 0 — Calyx-limb deciduous ; erect trees or shrubs : —

Flowers in spikes or racemes 1. **Terminalia.**

Flowers in capitate heads..... 2. **Anogeissus.**

Calyx-limb accrescent in fruit; straggling shrubs... 3. **Calycopteris.**

Petals 4-5:— Calyx-limb persistent; leaves alternate; trees or shrubs

1. **Lumnitzera.**

Calyx-limb deciduous ; leaves opposite ; climbers :—

Calyx-tube not or only shortly produced beyond the ovary

5. **Combretum.**

Calyx-tube produced more than 5 in. beyond the ovary

6. **Quisqualis.**

1. **Terminalia**, Linn.

Trees. *Leaves* alternate or subopposite, entire or slightly crenulate, often with glands on the petiole or on the lower part of the nerve; stipules 0. *Flowers* small, green or white, in spikes, the spikes solitary or in panicles ; hermaphrodite sometimes*the upper flowers of the spike cJ, the lower g ; bracteoles small, usually soon deciduous. *Calyx-tube* ovoid or cylindrical, constricted above the ovary; limb campanulate with triangular valvate lobes. *Petals* 0. *Stamens* 10 in 2 series, the upper alternate with the calyx lobes, the 5 lower opposite them ; filaments subulate, exserted; anthers small. *Disk* inside the

stamens, 5-lobed, villous. *Ovary* inferior, 1-celled; ovules 2-3, pendulous; style subulate; stigma small. *Fruit* ovoid, smooth or angular or winged with 2-5 equal or unequal wings, indehiscent. *Seed* solitary, exalbuminous; cotyledons convolute.

Fruit not winged, ovoid or subcompressed:—

Flowers in simple spikes; leaves clustered at the ends of the branchlets, alternate, obtuse :—

Leaves green, thin, obovate, base cordate, petiole very short; fruit ellipsoid, more or less compressed, 2-ridged when dry*

glabrous 1. *Catappa*-

Leaves greyish-green, thick, broadly elliptic, cuneate at base, petiole very long; fruit subglobose, very faintly 5-ridged when dry, minutely brown-tomentose 2. *bellerica*-

Leaves glaucous, thick, ovate, rounded or attenuate at base, obtuse or emarginate at apex, petiole short; fruit obovoid, very

faintly 5-ridged when dry, glabrous 3. *pallida*-

Flowers in simple spikes or short terminal panicles; leaves not clustered at the ends of the branchlets, opposite or subopposite :—

Fruit minutely brown-tomentose, ovoid or ellipsoid, faintly 5-ridged when dry; leaves coriaceous, ovate or ovate-oblong, tawny-pubescent, up to 5 in. long by 3 in. broad, nerves irregular ; spikes densely tawny-pubescent, as are the branchlets....4.

Gella-Fruit glabrous, shining :—

Leaves ovate elliptic or obovate, obtuse and usually apiculate at apex, usually rounded at base, under surface glabrous to tawny-villous, up to 7 in. long by 3-5 in. broad, nerves regular, parallel; spikes nearly glabrous ; fruit obovoid, faintly angled, up to 1*5 in. long, 1 in. in diam.....5. *Chebula*.

Leaves ovate-lanceolate, acuminate at apex, unequally attenuate or rounded at base, pubescent when young, glabrous when old, up to 4 in. long, 1-2 in. broad, nerves fairly regular; spikes slender, rusty-puberulous; fruit ovoid, covered with round spots, '75-125 in. long, '5 in. in diam....6. *iravancorensis*-

Fruit with 5 equal angles or wings; flowers in panicles of spikes with linear bracteoles; leaves often more or less crenate or serrate :—

Fruit with short hard angles or wings, usually notched near *th.*^ top, the lines on the wings oblique and curving upwards; leaves oblong or elliptic, usually crenulate ; bark smooth 7. *Arjuna*.

Fruit with long thin papery wings, usually-rounded at top, the lines on the wings straight and horizontal.

Fruit softly and minutely yellowish brown-velvety as are
the

leaves beneath twigs and inflorescence ; leaves coriaceous, elliptic-ovate or -oblong, obtuse and often emarginate at apex, unequally cordate at base with usually 1 or 2 sessile glands at the base of the midrib beneath, up to 9 in. long by 4.5 in. broad; fruit,

including wings, 1.0 in. in diam 8. *coriacea*.

Fruit glabrous, large, usually 2 in. in diam., including wings.—

Calyx villous with yellowish-brown hairs as are the underside of the leaves, the twigs and inflorescence; leaves coriaceous, elliptic-oblong, obtuse or even emarginate or slightly acute at apex, rounded or cordate at base, nerves many, prominently parallel, glands near the base of the midrib large and stalked, up to 7 in. long, 3 in. broad; panicles dense 9. *tomentosa*.

Calyx glabrous without, the leaves, twigs and inflorescence all nearly or quite glabrous ; leaves membranous or chartaceous, elliptic- or obovate-oblong, obtuse or acute at apex, narrowed at base, the nerves parallel but not prominent, glands some way up the midrib beneath, stalked, up to 7 in. long, 2.5 in.

broad; panicles lax 10. *crenata*.

* fruit with 3 unequal wings, 1 long and 2 short; leaves elliptic or elliptic-oblong, acute or acuminate at apex, rounded or cordate at base, lower subopposite, upper alternate, at first rusty-puberulous, afterwards glabrescent, up to 7 in. long, 2-2.5 in. broad ; panicles with many slender spikes, the flowers small with recurved bracteoles; fruit rusty-puberulous, the middle wing 1.0 in. long 11. *paniculata*.

- 1- TERMINALIA CATAPPA, Linn.; F. B. I. ii. 444; W. & A. 313; Wt. Ic. t, 172; Bedd. Fl. t. 18.

Cultivated in gardens and avenues near the coast, introduced from Malaya. The Indian Almond. A large deciduous handsome tree with large leaves, which turn red before falling, the trunk often buttressed. Wood ined, hard. The nut-kernels with thin spirally folded cotyledons are eaten. Vern. *Hind.* Deshi-badam ; *Tel.* Vedam; *Tarn.* Nat vadam ; *Mod.* Adamarram.

- 2- TERMINALIA BELLERICA, Roxb. Cor. PL t. 198; F. B. I. ii. 445; W. & A. 313 *excl syn.*; Wt. Ic. t. 91; Bedd. Fl. t. 19.

Deciduous forests in all Districts, up to about 3,000 ft. A large deciduous tree with long-petioled leaves, pubescent flowers and tomentose fruit. Bark bluish-grey with vertical cracks; wood yellowish-grey, hard, not durable and little used, but useful if carefully seasoned.

The fruit

is the Belleric niyabolani used in tanning, but of value than that of *T. Chebula*. Vern. *Hind.* Bahera; ^{VI,} Thiira ; *Tel, Tarn.* Tani; *Mai.* Thani.

3. *TERMINALIA PALLIBA*, Brand. Ind. Trees, 308. .
 Deccan, in dry deciduous forest, in Cuddapah, Kum^o ' K Arcot and Chingleput, chiefly on rocky hills* up 2,000 ft. is
 A small subevergreen tree with glaucous leaves, gla»^r flowers and fruit similar in character and uses to tna *T. Chebula*. Vern. *Tel.* Telia karaka. n«.
4. *TERMINALIA GELLA*, Dalz. in Hook. Journ. Bot. m-Bedd. Fl. ciii.
 Deccan, Ramandmg Hills of Bellary, Nandidriig in Mys^ol' j W. Ghats, in the lower E. Nilgiris, Pulneys and Ayatna * Hills, up to 3,000 ft. id
 A tree, probably of large size, with large velvety[^] fr^{ul} ' dense spikes and coriaceous leaves, the petioles 'o-long, with two glands at apex below the blade. <
5. *TERMINALIA CHEBULA*, Retz; Roxb. Cor. PI. 1.197; F.#[#] ii. 446 *in part*; Brand. For. Fl. t, 29. ^
 N. Circars and Deccan, in deciduous forests ; W. Coast a W. Ghats, on dry slopes up to 3,000 ft. The Myrabol[^] tree.
 A large tree in good soil, a small one in dry rocky p^{*a} and at high elevations, the leaves usually tawny-pubesce with short petioles up to *5 in. long, bearing 2 glands be the blades, the fruit very variable in size and shape. . tf fruits,
 Chebulic myrabolams, give a valuable tan^{*11} * material and a yellow dye. Bark dark brown; ^{vf0} .[^] brownish-grey, very hard, used in building and for &g cultural work. Vern. *Hind.* Ham ; *TJr.* Karedha; Karaka; *Tarn.* Kadakai. Var. *tomevtella*, C. B. Clarke in F. B. T. ii. 44«. Under sitrfa^c
 of leaves villous beneath with reddish hairs.
 N. Circars, in the hills of Ganjam and Godavari. ^ 6.
TERMINALIA TRAVANCORENSIS, W.& A. 314. *T. angustifw* * Roxb.; F. B. I. ii. 449; Bourd. in Journ. Bomb. Nat. &^{ls} ' Soc. xii. 351, t. 4.
 W. Ghats, evergreen forests of Travancore, up to 2,00U (Bourdillon).

A lofty tree with, glabrous lanceolate leaves, the petiole '75 in. long, without glands. Bark pale brown, smooth ; wood pale brown, hard. Vern. *Tarn.* Pei kadakai, Mor-gatchie; *Mai.* Kotta kadakai. ?• TERMINALIA ARJUNA, W. & A. 314 (in note); F. B. I. ii.

447 ; Bedd. Fl. t. 28. *T. Berryi*, W. & A. 314. -N.

Circars and Deccan, more scarce in Carnatic except in Tinnevely and on the W. Coast, on the banks of rivers and streams, often planted.

A large and handsome deciduous tree usually with narrow oblong leaves, the stems often buttressed. Bark pinkish-grey, smooth; wood brown, variegated with darker streaks, very hard and useful. Yern. *Hiacl.* Arjuna; *Ur.* Arjuno; *Tel.* Yermaddi; *Tarn.* Vella marda, Kula maruthu. ^s- TERMINALIA CORIACEA, "VV. <fc A. 315. *T. tomentosa* var.

coriacea, C. B. Clarke in F. B. I. ii. 448. Deccan, on dry hills in deciduous forest, chiefly in the Ceded Districts and up to 4.500 ft. as at Horsleykonda. A large tree in suitable localities, otherwise often stunted, noticeable for the abundant yellowish velvety down. Bark deeply cracked ; wood hard, dark brown. Yern. *Tel.* Tani.

TERMINALIA TOMENTOSA, W. & A. 314. *T. tomentosa* var.

t'jpica, C. B. Clarke in F. B. I. ii. 447 ; Wt. Ic. 1.195 *probably*. N. Circars, deciduous forests of G an jam and Godavari; Deccan, in Hyderabad and Bellary.

A large tree with the under-surface of the leaves villous, also the inflorescence; the fruit large, glabrous. Bark rough, much fissured; wood as in the preceding. Yern. *Hind.* Asan, Saj; *Ur.* Sahaju ; *Tel.* Tani. ^m- TERMINALIA CRENULATA, Roth ; W. & A. 314. *T. tomentosa*,

^var. *crenu'ata*, C. B. Clarke in F. B. I. ii. 448. W. Coast and W. Ghats, from S. Cariara southwards, up to 2,000 ft.

A large tree with curly ylabrcma rather tliin leaves and glabrous fruit. Bark greyish-black; wood dark brown, streaked with black, hard and useful for building and agricultural purposes. Yern. *tarn.* Karu maruthu; *Mai.* Thembava.

- TERMINALIA PANICULATA. Roth ; F. B. I. ii. 448; W. & A. ³¹5; Bedd. Fl. t, 20.

S. Deccan, in the deciduous forests of Cuddapah Bellary; W. Ghats, in deciduous forests from S. Canal* to Travancore, common up to 2,000 ft. A large deciduous tree with characteristic fruit. Bai dark brown, cracked; wood pale brown, smooth, very bar » a useful building wood. Vern. *Tel.* Neemeeri; *Ttvi-* *^e karakai, Vem-maruthu; *Mai.* Pillai maruthu.

2. *Anogeissus*, Wall.

Trees or shrubs. *Leaves* alternate or subopposite, petiole entire. *Flowers* in dense globose heads on short axillary peduncle or in short cymes; bracts on the peduncles or at the cyme branch often leafy; bracteoles minute. *Calyx-tube* slender above ovary; limb cup-shaped with 5 lobes. *Petals* 0. *Stamens* ' in 2 series; anthers small. *Ovary* inferior, 1-celled; ovules pendulous; style subulate. *Fruits* packed in dense heads, compressed, 2-winged, ending in the persistent calyx-tube and m times limb. *Seed* 1; cotyledons convolute.

Leaves elliptic or suborbicular, up to 3 in. long, 2-2.5 in. broad, obtuse at apex, rounded or sometimes cordate at base; flower-heads usually in cymes; calyx-tube rather short, about *1 in. long, lobes reflex^e > fruit broadly winged, the wings rounded, entire 1. *latifolia*^l
 Leaves elliptic-lanceolate, up to 2*5 in. long, 1 in. broad, acute at apex, narrowed at base; flower-heads usually solitary on bracteate peduncle *t* calyx-tube long and slender, about '2b in., lobes spreading; ^{rIU} fairly broadly winged with dentate wings 2. *acuminate*

1. ANOGEISSUS LATIFOLIA, Wall.; F. B. L. ii. 450; Bedd. I* t. 15. *Conocarpus latifolia*, DC.; W. & A. 316; Wt. I^c t. 994. N. Circars, Deccan and Carnatic to S. Travancore, in deciduous forests and up to 4,000 ft. A large deciduous tree, conspicuous by its smooth bark and by the leaves turning red before falling. Grey, hard, with a small purplish heartwood, strong ^{^n} tough and useful for agricultural implements, carts, building and fuel. It gives a gum and the leaves are used ^{*n} tanning. Vern. *Hind.* Bakli; *Ur.* Dohu; *Tel.* Chiriman; *Tarn.* Vellay naga; *Mai.* Maru kanchiram. var. *villosa*, C. B. Clarke. Leaves densely rusty-villous. S. Deccan, in Mysore and N. Nilgiris.

2. ANOGEISSUS ACUMINATA, Wall.; F. B. I. ii. 450; Bedd. Fl. t. 16. *Conocarjpus acuminata*, Roxb.; W. & A. 316. N. Circars, from Ganjam to Godavari, usually on river banks, often cultivated.

A large deciduous tree with rough dark grey bark and drooping branches. Wood grey, shining, hard, not so good in quality as that of *A. latifolia*. Vern. *Ur.* Pasi; *Tel.* Panchman, Pansi; *Tani.* Nunnera.

3. Calycopteris, Lamk.

A diffuse scandent shrub. *Leaves* opposite, entire, elliptic or ovate. *Flowers* in dense axillary racemes, crowded in large Panicles towards the ends of the branches. *Calyx-tube* elongate, striate, produced above the ovary; limb 5-lobed, the lobes

insistent, recurved or spreading, accrescent. *Petals* 0.

Stamens

2 series, short, 5 opposite to 5 alternate with the calyx-lobes; filaments subulate; anthers didymous. *Ovary* inferior, 2-celled; ovules 3, pendulous; style subulate; stigma simple.

**Ulf* narrow, ovoid, 5-ribbed, 1-seeded, surmounted by the

Uarged calyx. *Seed* solitary; cotyledons convolute.

CALYCOPTERIS FLORIBUNDA, Lamk.; F. B. I. ii. 449. *Getonia floribunda*, Roxb. Cor. PL t. 87; W. & A. 315.

■N"- Circars and Deccan, in deciduous forests or along water-courses up to 2,500 ft.

A- straggling shrub, often climbing, the wood of peculiar structure. *V^ra.* *Ur.* Kokundia; *Tel.* Bandi murududu.

4. Lumnitzera, Willd.

littoral glabrous shrubs or small trees. *Leaves* alternate, lanceous, obovate-cuneate, entire or crenate, clustered towards the ends of the branches. *Flowers* small, in axillary or terminal racemes; bracteoles 2, on the calyx-tube. *Calyx-tube* oblong, produced above the ovary; lobes 5, persistent. *Petals* 5, oblong,

LUMNITZERA RACEMOSA, Willd.; F. B. I. ii. 452; W. & A. 316.

E. and W. Coasts, in mangrove swamps.

An evergreen tree of shrubby growth with rather small leaves and white flowers. Bark thick, brown, rough; wood hard, greyish-brown with a darker heartwood, used for posts and as fuel. Vern. *Tel.* Kadivi, Thandara; *Tarn.* Tippara-thai.

5. Combretum, Linn.

Shrubs, usually straggling or climbing. *Leaves* entire, opposite, petiolate, sometimes alternate or ternate. *Flowers* polygamo-dioecious, spicate, the spikes often paniced; bracteoles small. *Calyx-tube* constricted above the ovary; limb campanulate or funnel-shaped; lobes 4-5. *Petals* as many as the calyx-lobes and inserted between them, sometimes 0. *Stamens* twice as many as the calyx-lobes, in 2 series; filaments slender; anthers small, didymous. *Ovary* inferior, 1-celled; ovules 2-5, pendulous; style subulate; stigma simple. *Fruit* dry, usually indehiscent, with 0 ridges or wings, the wings chartaceous. *Seed* usually solitary; testa membranous, protruded into the angles of the wings; cotyledons plicate, rarely convolute; radicle superior.

Flowers small, with campanulate calyx-limb and 5 calyx-lobes and 5 petals, bracteoles linear, as long as flowers; leaves oblong, abruptly acuminate, up to 6 in. long, 2 in. broad, the transverse nervules many; horizontal, floral leaves cream-white; fruit with 5 papery wing

oblong, 1 in. long 1. *decandrum*-
Flowers with 4 calyx-lobes and petals, bracteoles minute: leaves all green, transverse nervules of leaves irregular, branching:—

Calyx-tube above the ovary widely campanulate; leaves ovate to lanceolate, often nearly orbicular, pale and thin when dry, variable in size; fruit with 4 papery wings, nearly globose in outline, 1.5 in. in diam. 2. *ovalifolium*-

Calyx-tube above the ovary funnel-shaped; leaves ovate to nearly orbicular with a short abrupt acumination, up to 5 in. long, 4 in. broad, coriaceous, greenish and shining when dry; fruit with 4 papery striate wings, globose in outline, 1.5 in. in diam.

3. *extensuratum*-

1. COMBRETUM DECANDRUM, Roxb. Cor. PL t. 59; F. B. I. ii-452. *Poivreia Roxburghii*, DC.; W. & A. 317. N.

Circars, from Ganjam to Godavari, abundant in open

forest land.

A

h^y-scented flowers

est cSe
Arikota

S 777
Ult to Ae9tr^y-

l leaV6S^a ^"Wesome
Vern_ ^ Atundi; Tel.

2 /^ *

• ^BBMCK OTALWoLira, Roxb, F. B. I. ii.458; W.& A.

ft" n-
to 2.000 ft' w^T ?d C arnatic' in deciduous forest, up
A Wp r Ooast'm S. Canara.

!f#45a

^; « leaves and fruit
and rather dense spikes.

6< Quisqualis, Linn.

teJeSe * oUm^« "hmbs. X_e«w8 opposite, oblong or
,.ed. • -"lowers in short axillary or terminal spikes. '
Hmb 5 ^?leS *m*11 C«y«-t«be produced above the
to ff; ^vules ot P^a?S 5_ SteM^s 10> short. Ovary
1-5 a 6 calyx-tub P^ndlllons; st^Ie filiform, somewhat adnate
"glecl or 5.wi ' stl8ma subcapitate. Fruit dry, coriaceous.
Qa ge &trf i ; cotyledons not convolute.
S rALABARICA' Bedd_ I@- t. 155; F. B. I. ii. 460. ;
f^ai^C001' Ghilt in W?naad (Beddou,e) at 1,500 ft.; I

A Uirc_e [I ,rests »t 300 ft. (Bourdillon).
Pillk Petals irg •8lmib With caly_x_tu'» about -5 in. long,
Celling 5 'eUlP^le-ovate or -lanceolate acuminate leaves
a Spines . and » ^ 1D, leDgth> the petiol^es hardening as rigid
ro, U<iUal;* indie T ^Mw^like 5-winged fruit about 1 in. long.
ha. n the Malav^C A ^n^1S a laiige straggling or climbing shrub
atefl-Dg c^olom fl Pelag0' with sllo^7 long-tubed flowers
ln garden, ,v « to oranS^e and ^d, commonly culti-

fo ,rests »t 300 ft. (Bourdillon).
g l b i

plains.

family **LXIII. MYRTACEAE.**

Trees or shrubs, rarely herbs. *Leaves* entire, ^{op^OSjot^d} alternate, usually with an intramarginal nerve, an

^{^efs}

with pellucid glands; stipules none or minute, deciduous. ^{^^}

regular, hermaphrodite or rarely polygamous, axillary 01 ^{\$&&}

solitary or in cymes or corymbs; bracteoles usually -, ^{s0 ^ ^uce}d

0. *Calyx-tube* adnate to the ovary and sometimes ^{pv<^ ^ 5}

above it, sometimes with a disk at the mouth; ^{HmD o ^}

persistent or deciduous lobes, often closed in bud. ^{erted}

many as the lobes of the calyx and alternate with them, ^{i ^e>}

on the margin of the disk or the mouth of the ^{ca ^^e)lS}

imbricate, sometimes connate and falling as a calyptra. [^]

t

many, inserted within the petals in one or more rows, ^{ot}

inwards in bud; anthers 2-celled, dehiscing longitudinally- ^{r^ ^}

inferior or semi-inferior, 1- or more- but usually 2-celled » ^{g. ^}

many ovules, the ovules usually axile, sometimes pen [^]

style simple; stigma small. *Fruit* crowned with

the limb, a berry or capsule with many seeds, sometimes

on y arrest. *Seeds* exalbuminous.

Leaves opposite or very rarely alternate:— ^{ay.}

Leaves with 3-5 ribs, very tomentose; ovary 3-6-celled, ^{1.}
seeded.....1.

Leaves penninerved:— ^{y.}

Calyx-limb closed in bud, the lobes in flower valvate; ovary ** ^{2. Psid}
celled.....2. **Psid**

Calyx-limb 4-5-lobed, the lobes free; ovary usually 2-celled:

Calyx-tube produced beyond the ovary; flowers in cym^{eS'}

stamens bent back inwards in bud at the middle:— ^{, ^}

Calyx-tube with a thickened staminal disk at the m^{otl ^}

flowers usually large, the petals falling free3. 3 * °

Calyx-tube without a thickened staminal disk;

^ usually small, the petals falling off either free or more ot

as a calyptra4. **Syzyg^U** [,

Calyx-tube not produced beyond the ovary; flowers solitary ^

fascicled or in short racemes, the stamens not bent inwards

the middle in bud, but only erect or incurved:— ^v

Ovary with 2 cells and many axile ovules; flowers axill*^

or subterminal.....

5. **Euge**^{nia}''

Ovary with 2 cells, each with 4 pendulous ovules; flowers supra-axillary«.....6. **Meteoromyrtus.**

Leaves alternate in older plants, young leaves often different from the later and usually opposite; petals falling off as a calyptra

7. **Eucalyptus.**

1. **Rhodomyrtus, DC.**

Trees or shrubs. *Leaves* opposite, 3- or 5-ribbed. *Flowers* rather large, in axillary 1-7-flowered cymes; bracteoles small, deciduous. *Calyx-tube* turbinate, not or hardly produced beyond the ovary; lobes 5, persistent. *Petals* 5, spreading. *Stamens* ^definite, free, in many series. *Ovary* 1- 2- 3-celled, but appear-^{ing} 2- 4- 6-celled by spurious partitions between the pairs of ^{ov}ules which are arranged in vertical rows ; style filiform; stigma ^{ca}Pitate. *Fruit* a'globose berry with numerous horizontal seeds. **ed* compressed, exalbuminous, reniform or orbicular, horizontal; ^{esta} hard; embryo curved with small cotyledons and long radicle.

RHODOMYRTUS TOMENTOSA, Wt. Spic. Neilgh. t. 71; F. B. I. *• 469. *Myrtus tomentosa*, Ait.; W. & A. 328;" Wt. 111. t.97*3, ^{lc}-1. 522.

Nilgiri and Pulney Hills, and southwards above 5,000 ft., on °pen downs, on dry slopes. Hill Gooseberry; A. thickly tomentose shrub with grey-tompriose foliage, pink lowers and pleasant fruit, much eafcm on the Nilgiris. ^Fyson says that the Pulney fruit >s not so good. Bark tmin, red, papery; wood dark red, close-grained, makes good talking-sticks. *Yern. Badaga* Thaontay; *Trav. Hills, Kovatta.*

2. **Psidium, Linn.**

^{lai}Trees °r shrubs. *Leaves* opposite, entire, not dotted. *Flowers* ge, white, on 1- or few-flowered axillary peduncles. *Calyx* ^{val} ^{te} or obovate, limb undivided in aestivation, separating ^{sj} ^{hlto} 4~5 ^{lob}es when in flower. *Petals* 4 or 5, free. ^{ma} ^{menS} many, inserted in several series on a wide disk. *Ovary* ^{.stia} ^{ny*}cell^{ed}, with numerous ovules in each cell; style subulate; ^{))e} ^{fna} Peltate or capitate. *Fruit* a globose ovoid or pyriform ?' ^{U8Uall} ^{3r} crowned by the calyx-limb. *Seeds* many, sub-orm. testa hard :^v embryo curved with short cotyledons and radicle.

PSIDIUM GUAJAVA, Linn.; F. B. I. ii. 468.

An American plant, cultivated and run wild in most District⁸
The Guava.

A small tree, much cultivated for its fruit, Bark smooth*
thin, greenish-grey; wood greyish-brown. Tern.
BW-Amrud ; Tel Jama; Tarn. Segapu ; Kan. Sebe ; Mai
TeU-

3. Jambosa, DC.

Trees. *Leaves* opposite, entire, pellucid-dotted, petioles
short-*Flowers* large, 4-merous, jointed with the top of the pedicel,
* terminal or rarely lateral cymes, the branches 3-chotomo«stf
divaricate; bracteoles 0. *Calyx-tube* more or less turbin«*
usually attenuate at the base, the mouth produced beyond <**
ovary and furnished with a thickened staminal disk; lob*
rounded, persistent. *Petals* 4, inserted on the top of the mou*
of the calyx, broad, concave, obtuse, falling singly • *Sta***"
very numerous free, longer than the petals, bent inwards in df
middle regularly when in bud, later unfolding. *Ovary*

2-ceM

1-2-seeded fleshy berry, crowned by the calyx-limb and thick
disk. *Seeds* large, angled; cotyledons thick, fleshy radicle
am*¹

concealed between the cotyledons. 7,

Flowers pedicelled :—

Leaves rounded or cordate at base :—

Flowers in terminal corymbose cymes —

rKkt JDU! JDUU u Π Λ Λ |

la"CeOlate' lon &-ac»»inate, 6-9 in. long, 10-20 in. -
calyx-tube slender, 0-75 in. long; frSt 1-6 in. i»
j ".....1. *Munronii*-
Reaves elliptic-oblong, acute or obtuse, 6-9 in. long, 3-35 in.
oroad; calyx-tube stout, 4in. long; fruit 1 in. in diam.

² M

Leaf

²- *Mundagam.*

erves and intramarginal nerve not conspicuous, the latter irregular and often double; leaves elliptic, obtusely acute

rounded at base, 3-45 in. long, 1-5-2-5 in. broad, n.f Tt thick, subcylindric, 0 in. long

^^-^be

Flowers in lateral cymes on the old, ooip^{CoVrtflensis}-or

-lanceolate, long acuminate, the nerve's, !/ \ PtIC_ovate

es and intramarginal

nerve very conspicuous, 4-7 in. long, 2-4 in. broad; calyx-tube
 ort, thick; fruit 1-5 in. in diam., spherical4. *Bama-Varma*.
 ves narrowed at base ; flowers in terminal corymbose cymes —
 Leaves elliptic or ovate :-

Leaf-nerves and intramarginal nerve somewhat obscure :—
 Reaves ovate or elliptic, bluntly acuminate, 25 in. long,
 2 m. broad; calyx-tube slenderly funnel-shaped below,
 suddenly broadening above, about 75 in. long; fruit ovoid
 1 1/2 in. m diam..... C Inot

j *o. taeta*.
 Reaves elliptic, acute to caudate-acuminate, 3-7 in. long,
 3 m. broad; calyx-tube shortly and stoutly obconic, about
 1 1/2 in. long; fruit hemispherical, 1 in. in diam.

0. hemispherica.

intramarginal nerve prominent; leaves nar-
 elliptic-oblancoate > acuminate at both ends, the apex
 3/4-5 in. long, 1-1 1/2 in. broad \$ calyx-tube campanulate,
 hemispheric, 2 in. long; fruit apparently small

Leave r

Λ' ΛourcΛΛonΛ'

Λ linear or lanceolate, acuminate at both ends.—
 V8S 1 5-2 in. broad, the nerves and intramarginal nerve Prominent;
 calyx*-tube funnel-shaped, 0 in. long; fruit

QO 1-2 in. in diam..... 8. *vulgaris*.

leaves faintly the nerves and intramarginal nerve
 faintly the nerves and intramarginal nerve
 above; calyx-tube very slender at base, broadly turbinate s
 5 fruit globose, 75 in. in diam... 9. *occidentalis*.

leaves broadly ovate, very coriaceous, obtuse at apex,
 nerves nviij • J
 Ion • intramarginal nerve prominent but irregular,
 8 > 3 m. broad ; calyx-tube narrowed below.... 10. *Beddomei*. ii

47Q^{oSt} MIJNRONII > Walp. *Eugenia Munronn*, Wt.; F. B. I.

- hats, from s. Canara southwards, up to 5,000 ft., in
 f green forests.

reddish or white flowers and
 green fruit. Vem. Tarn. Ikmbili. v/i -Ei NBAGAM >

/ TraV < 182 >

* s' ln the evergreen forests of Travancore, up to

l1 > ! nized hee With white fragrant flowers. Bark K" n' wood
 brown, rough, used for posts. Vern. *atta
 samba; *Mai*. Mundagam.

Gamble n. comb. *Eugenia Mundagam*,

3. JAMBOSA COURTALLENSIS, Gamble in Kew Bull., 1918. 239.
W. Ghats, hills of Tinnevelly (Wight).
A tree.
4. JAMBOSA RAMA-YARMA, n. comb. *Eugenia Rama-Varma*,
Bourd. in Ind. For. xxx, 147, t. 2.
W. Ghats, in the evergreen forests of Travancore
and Tinnevelly, above 4,000 ft.
A medium-sized rare tree with white flowers, large leaves
and greenish-pink fruit.
5. JAMBOSA LAETA, Bl. *Eugenia laeta*, Ham.; F. B. I. ii. 479.
E. pauciflora, Wt. Ic. t. 526.
W. Ghats, in evergreen forests from S. Canara southwards,
up to 4,000 ft.
A medium-sized pretty tree with rather small leaves, white
petals and very long crimson stamens. * Bark
smooth-white ; wood brownish-grey, hard.
6. JAMBOSA HEMISPHAERICA, Walp. *Eugenia hemispheric***
Wt.; F. B. I. ii. 477; Wt, Ic. t. 525; Bedd. Fl. t. 203.
W. Ghats, from S. Canara southwards, up to 3,000 ft.,^{i]1}
evergreen forests.
A large tree with white or rose-coloured flowers and purp^{le}
fruit. Bark smooth., blackish ; wood brown, hard. Vev»'
Tarn. Vellei nyaral; Mai. Yen nyara.
7. JAMBOSA BOURDILLONII. Gamble in Kew Bull.. 1918, 239.
W. Ghats, hills of Travancore at 2,000 ft. (Bourdillon). A
medium-sized tree.
8. JAMBOSA VULGARIS, DC. W. & A. 332; Wt. Ic. t.
435-
Eugenia Jambos, Linn.; F. B. I. ii. 474.
Cultivated in gardens and sometimes found run
wil<^
chiefly on old cultivations. The Roserapple.
A small pretty tree with greenish-white flowers and pi
white fruit, edible but not very good. Yern. *Hind.*
jaman.
9. JAMBOSA OCCIDENTALIS, Gamble n. comb.
Eugenia
dentalis, Bourd. in Ind. For. xxx. 195, t. 3.
W. Ghats, banks of the Periyar river and elsewhere, a
near water.
A small handsome bushy tree with large white

numerous stamens and greenish-pink globose fruit.
Yern *Tam*. Atta samba.

MYRTACEAM.

'imsz T | 0/hl n comb -

s_Ti

■ *
^ 0 0 -

^ b f Ch T Cteri8tic ^ --ceous leaves and subtermmal corymbs.

r, 4- Syzygium, Gaertn.

-trees or shrnha r P^udd-dotted pi °PPOSITE, entire, glabrous, often

< *' >> es, HSI, X cof M7S 8mf ' in terminal axillary or lateral C < % * -tube tZ2 Yl T ' b m Cte OleS Small decid, o'is o r 0.

110 thickened 8/a^f''nUel_Shaped the limb 4'' 1'ai^y 5-lobed ;

fal'ing off as ! Tl ^ *** ^ > r0 >> nded' -ncave, usually

""nerous ft*, T ^ lld- sometimes singly. Si!aH!e>>s very

Celld ! "1Wards at the middle when in bad. O

^ g. crowned b v T T Se?ded ben7' ^ lobose P?*" > or P
fles V; radicle sJaf] oat'EX/ lmb' Seeds globose, cotyledons

Cymes t 11 aXiUary' rarely from leafless axils
^ r T t T gh deciduous : ~

; leaves coriaceous, the nerves close

Llfle!, i0les r5 in_ lon g' elliptic, caudate-acuminate at
• fl ' 0live-green when dry, 2-3 in. long, 1-1-5 in.
VfS ln dense cy mes of wnb Unles, the branches , buds
-2 in. long; fruit oblong, 5 in. W

Leaves wifv, i.- ^* Arnottianuni.
^ Pex cun * aboUt r5 in_ lon_ oblan ceolate, obtuse at
broad • fl at baSe> ^urPlish wheil dry, 75-1 25 in. long, -5 in. Tf rS m

1 ^ ^ 10ng 2' M V h ^ rae-
1 i i ' ^ obtusel y acute at aPex, cordate at base,
ed ^ ^ dry r5 i 2 5 in * lon ^ 1 i 1 25 in broad
ad D oorynibs of umbellules 2 b in. long, the branches

tenninal corymbse cymes of umbellules, the
on0U bd X ^ l

cal v v Tu ; g..... 3< B'nfo'mianum
Ually in ^ gat6' funnel-shaped * leaves chartaceous or
short rather nerves not always close together .—
USUall in short rather few" flowered axillary racemes ;

few-flowered axillary racemes ;

acutely ^{m*} elliptic or elliptic-oblong,

° long-acuminate at apex, 3-5 in. long, 1-1.5 in. broad,

the nerves rather close and parallel; petals often many ; fruit
 •5 in. long, scarlet..... 4 *Wightianurn.*
 Flowers in many-flowered terminal and axillary panicles of
 umbellules; calyx-tube under '3 in. long, greyish and
 gland-dotted:-

Leaves ovate, long-acuminate, up to 4 in. long, 1*5 in broad,
 usually rounded at base, petiole -1--2 in. long; llower pedicels
 short, slender; fruit 2 in. in diam °....5. *zeylanicurn-*

Leaves linear-lanceolate, acuminate, up to 3 in. long, 5
 in-broad, narrowed at base, petiole '5 in. long ; flower pedicels
 elongate, slender ° 6. *linear*-*

Flowers in umbels of 5-10 at the ends of the branchlets; caly*' tube
 resinous-scaly, about '2 in. long, the lobes minute ; leaves
 elliptic-oblong, obtuse, narrowed at base, '3-'5 in. long, '2 i»-broad,
 petiole -1 in. long; pedicels very short... 7. *microphyll^{^n}*-Petals
 usually falling in one piece, calyprate :—

Cymes terminal, more or less corymbose, sometimes also axillary to
 upper leaves :—

Branchlets tetragonous; flowers small; calyx-tube
 scarcely •1 in. in diam., turbinate .—

Leaves very coriaceous, elliptic to obovate or even orbicular,
 up to 6 in. long, 3 in. broad, nerves distant and prominent,
 but scarcely parallel, petiole very short, thick; inflorescence
 branches stout; fruit small, globose 8. *montaniM¹*-

Leaves coriaceous, ovate-lanceolate, caudate-acuminate, up to
 3 in. long, 1-15 in. broad, nerves close and parallel, petiole
 very short; inflorescence branches slender; fruit
 small,
 globose9. *rubicunduM-*

Branchlets terete:—

Leaves more than 1 in. broad :—

Leaves membranous, elliptic-ovate or -lanceolate,
 caudate-acuminate, green when dry, up to 35 in. long, 1*5
 in. broad, petiole slender, nerves parallel, close and regular;
 inflorescence branches slender, divaricate nearly at right
 angles

10. *Gardneri.*

Leaves coriaceous, obovate, obtuse or emarginate, dark
 brown when dry, up to 4 in. long, 1*5 in. broad, petiole very
 short, stout, nerves parallel, reticulate between them;
 inflorescence branches moderately thick, ascending

11. *caryophyllaeum.*

Leaves less than 1 in. broad :— Leaves suborbicular or
 obovate, often slightly emar[^]inate.

very coriaceous, up to 1 in. long, *75 in. broad, the nerves close; flowers in close terminal corymbs'; calyx-tube ovoid, '15 in. long-; fruit oblong- or obovoid, up to *5 in. long

12. *calophylli/olium*.

Leaves obovate, abruptly obtusely acuminate at apex, cuneate at base, coriaceous, prominently glandular, up to 2 in. long, *70 in. broad, the nerves somewhat distant; flowers in lax terminal and axillary cymes; calyx-tube funnel-shaped, '35 in. long..... 13. *palghatense*.

Cymes mostly axillary, occasionally terminal: —

"peduncles 2-4 in. long, their branches also long, ascending ? leaves chartaceous, ovate, obtuse, narrowed at base and decurrent on the *75 in. long petiole, 3-4 in. long, 2-2*5 in. broad ; nerves few, distant, irregular, joining in loops only; flower

buds small, scarcely 1 in. in diam14. *travancoricum*.

-Peduncles nearly 1 in. long, their branches stout, divaricating at right angles ; leaves elliptic, usually abruptly acuminate at apex, narrowed at base, up to 6-in. long, 2'o-3*5 in. broad, long-petioled, nerves many, parallel, joining in an intramarginal nerve; flower-buds rather large, about '25 in. in diam.

15. *Chayaran*.

als cymes lateral, usually from the scars of fallen leaves, sometimes axillary •—

leaves alternate, suborbicular or ovate, very coriaceous, arge, reaching 8 in. long or longer, 6 in. broad; flowers in cymes ⁿ divaricating branches, the calyx-mouth 2. in. in diam. petals calyptrate; fruit nearly spherical, about 0 in. in diam.

16. *alternifolium*.

leaves opposite :—

petals free; leaves obovate to obcordate, thin, pale on both ^{es}» nearly glaucous beneath, the nerves distant, meeting ⁿ loops only; flowers very small in very short branching panicles ; fruit spherical, "25 in. in diam17. *malabaricum*.

^{Pe}tals united, calyptrate .—

Serves of leaf irregular, distant, anastomosing near the margin, but not producing a clearly marked intramarginal nerve.- _

Branchlets terete, pale; leaves broadly obovate, often nearly orbicular, subcoriaceous, 3-8 in. long, 2-4 in. broad; inflorescence 2-2*5 in. long, the branches rather stout; fruit globose or ovoid, '25-*5 in. in diam.

18. *operculatum* var. *obovatum*.

Branchlets tetragonous, dark; leaves elliptic or ellipse-oblong, membranous, 4-6 in. long, 2-3 in. broad; inflorescence about 4 in. long, the branches slender, angled.

19. *Stocks**^l-

Nerves of leaf joining in a distinct intramarginal Large tree; leaves over 1 in. broad, variable in shape usually 3-6 in. long, usually acuminate, sometime abruptly, the nerves close and parallel; flowers somewhat large, the mouth of the calyx-tube 2 in. in diam. fruit oblong ellipsoid or globose.....20. *Jambola*^{^^} Shrub or small tree; leaves narrow, oblong, 3[^] ^{^^} long, under 1 in. broad, the nerves ^{clos} [®] ^h [^] ^{iyx}-tube irregular; flowers small, the mouth[^] of ^{^^} ^{cr0w} ^{ned} about 1 in. in diam.; fruit obovoid, 'o "V [^] ^{ynean} *uni*. with the cup-like calyx-limb.....

TM [^] *S densiflorinn*,
Wall.;

1. SYZYGium ARNOTTIANUM, Walp. *-' F B X ii
483;

W. & A. 329. *Eugenia Arnottiana*, Wt.; •
Wt. Ic. t. 999. . .

W. Ghats, in Shola forests of the Nilgms, Pulneys and Travancore Hills, at high levels, rarely than 5,000 ft.

A large tree with red young leaves and buds, [^] coloured flowers and dark purple fruit. Bark grey wood greyish-brown, hard and close-grained; used for building and fuel; one of the most important of woods. Vern. *Tarn*. Naval, Nagay ; *Mai Ayn*.

2. SYZYGium MYHENDRAE, Gamble n. comb. *Eugenia Mjdrae*, Bedd. MS.; Brand. Ind. Trees, 325. ,

W. Ghats, in the evergreen forests of Travancore at Tinnevely, at 3,000-4,000 ft. (Beddome, Bourdillon). A medium-sized handsome tree reaching 40 ft. in height the flowers white, very small, the leaves small. 3 SYZYGium

BENTHAMIANUM, Gamble n. comb. *Eugenia Benthamiana*, Wt. *E. Arnottiana* var. *Benthamiana*, Duthie in F. B. I. ii. 484.

W. Ghats, in the Nilgiri Hills, at Sispara, 6,000 ft. (Gardner). Apparently a small tree or large shrub.

4. SYZYGIUM WIGHTIANUM, Wall.; W. & A. 330. S.
lanceo-latum, W. & A. 330. *Eugenia Wightiana*, Wt.; F. B. I.
ii. 485 ; Wt. Ic. t. 529. *E. lanceolata*, Lam.; Wt. Ic. t. 530.

A moderate-sized tree, with white flowers and scarlet fruit, showy when in full flower and fruit.

̄" EullTM zeyLANICUM> DC.; W. & A. 330; Wt. Ic. t. 73. Eugema zeykmica, Wt.; F. B. I. ii. 485.

• Ghats, from S. Oanara to Travancore, in the lower country, on the banks of streams.

A handsome little tree with white flowers and edible white fruit Vern. Mai. Pula.

LINEARE, Wall. Eugenia linearis, Duthie in • • i. 11. 486. E. zeylanica, Bedd. Pl. t. 202. 3.50Q ft hl the S' Tinneve11Λ Hills> on ri^er beds up to

small tree, with white flowers.

GIUM MICROPHYLLUM, Gamble n. comb. Eugenia -ophylla, Bedd.; F. B. I. ii. 505.

SnnjTII In S> Travancore> on river banks, at 4,000-5,000 ft. (Beddome).

much-branched tree with very small leaves.

**<MUM MONTANUM, Gamble n. comb. Eugenia moniana, ^ Ic. t. 1060; p. B. I. ii. 488.

v • Ghats, Shola forests of the Nilgiri Hills, above 5,000 ft., common.

aVC" eveit gi*een tree with small white flowers in terminal leavt-s and purple fruit. Bark brown, peeling off in small flakes; wood greyish-

,_∞ e]J hard» used for building. Vern. Badaga,

RUBICUNDUM, W. & A. 330. Eugenia rubicunda, in P -p' T " n' 4yo ; Wt> Ic' *• 53S_ K Ussophylla, Duthie *' I. ii. 488.

g (- Thomson)' soath to Tin-

and Travancore, up to 3,000 ft. in evergreen forests.

d m" sized tree with r0ll^h branchlets, narrow leaves '^11 fruit Bark thin' sniooth' pale bro^wn ; wood h

F. B i- V:rARDNERI' Thw. Eugenia Gardneri, Duthie in F.

B 'j '." 489> E- cymosa, Lam. var. rostrata, Duthie in

W. Ghats, in the Anamalai, Travancore and Tinnevely Hills, up to 4,000 ft. in evergreen forests. An enormous tree with slender branchlets, caudate leaf * white flowers and purple fruit. Bark smooth, white; ^w0 dark reddish-brown with yellow patches, used for building in Travancore. Yern. *Tarn*. Kir naval; *Mai*. Kari nyaraj-11. SYZYGIIUM CARYOPHYLLAEUM, Gaertn. ; W. & A. &- -*Eugenia caryophyllaea*, Wt.; Wt. Ic. t. 540; F. B. A. 490.

W. Coast and W. Ghats from S. Canara southwards, up ^{to} 5,000 ft., especially near streams.

A small tree with white flowers and black globose fruit. Bark smooth, grey ; wood brown, rather soft. Yern. i»^{fl} ' Nyara.

12. SYZYGIIUM CALOPHYLLIFOLIUM, Walp. *Eugenia ccdophyU¹** *folia*, Wt.; Wt. Ic. 1.1,000 ; F. B. I. ii. 494. W. Ghats, Shola forests of the Nilgiris above 6,000 ft.» common and conspicuous.

A large evergreen tree with a rounded head, small leaves, white flowers and dark purple fruit. Bark thick, brown, rough ; wood reddish-brown, hard and useful for building-

13. SYZYGIIUM PALGHATENSE, Gamble in Kew Bull. 1918, 240.

W. Ghats, in the Palghat Hills of Malabar at 5,000 ft. (Beddome).

A large tree with conspicuously glandular leaves and Ion-? calyx-tube.

14. SYZYGIIUM TRAVANCORICUM, Gamble in Kew Bull. 1918, -40.

W. Coast, in swampy places in the low country of Travancore, up to 200 ft. (Bourdillon).

A medium-sized or large tree with long-petioled leaves and small flowers in long-pedunculate corymbose axillary cymes.

15. SYZYGIIUM CHAVARAN, Gamble n. comb. *Eugenia Chararan*. Bourd. For. Trees Trav. 188.

W. Ghats, evergreen forests of N. Travancore at low elevations (Bourdillon).

A very large handsome tree with rather large white flowers, usually in axillary cymes, and large closely-nerved leaves. Wood useful, the trunks sometimes hollowed into boats. Yern. *Mai*. Chavarán.

16. &TZYGIUM ALTERNIFOLIUM, Walp. *Eugenia alternifolia*, Wt.; Wt. Ic. t. 537; F. B. I. ii. 497; Bedd. Fl. t. 198. Deccan, in the hills of Kurnool, Cuddapah and N. Arcot. A large tree with large alternate or subopposite leaves, yellowish-white scented flowers and globose fruit. The wood is dark red, hard and close-grained, and is in considerable demand for building purposes. Vern. Tel. Manchi moyadi, Mogi.

'• SYZYGIUM MALABABICUM, Gamble n. comb. *Eugenia mala-*•% Bedd. Fl. t. 199; F. B. I. ii. 497.

bs, in the Wynaad forests of Malabar at 2,000-generally in swampy places. A medium-sized tree with very small flowers in short aternal cymes and small globose fruit, the leaves pale _ when dry.

18 Q

YZYGIUM OPERCULATUM, Gamble n. comb. *Eugenia oper-*™«ta, Roxb.; F. B. I. ii. 49S; Wt. Ic. t. 552. *E*

Vaf cerasoides, Wt. Ic. *! 615: ii. 493' ° *ovaium* - *E. operculata* var. *obovata*, Duthie in F. B. I.

N- Circars, forests of Gumsur.

moderate-sized tree of rather dry grassy localities. lao% m or near the Sal forests, the leaves turning red ^ he cold season, the flowers greenish, the fruit purple niall and edible. Bark gi-ey or light brown; wood reddish-Vern. Hind. Piaman.

n. comb. *Eugenia Stocksii*,

m F. B. I. ii. 498.

forests about 3,000 ft. (Beddome).. rge tree with small flowers in axillary as well as lateral 2o. sY Tmbose cymes.

Janh G^ JAMBOUNUM! "DC- 5 W. SL A. 329. *Eugenia* t. la? wa> Lam_; F_ B_ L "• 4"J wt_Ic_ *• 535; Bedd_ Fl.

#. *caryophyllifolia*, Lam.; Wt. Ic. t, 553.

. ;Orest districts, both in the plains and in the hills up to () 000 -P4-

and * tti_' usually along river banks and in deen o coast sands on the one side

in W. Ghat Sholas on the other. Often cultivated

in A ®nUes a^d t p fo t ruit.

I ge evei* gi'een tree with white flowers and purple fruit.

E. caryophyllifdia, Lam.; Wt. Ic. t, 553.

the latter in cultivation oblong and edible, good in
and puddings, in a wild state usually small and
less globose. Bark smooth, light grey; wood hard, red
grey, useful for building and agricultural purposes. ® ^

Hind. Jaman; *Ur.* Janio; *Tel* Neredu ^ *Tam.* Naval \ &
Narala; *Mai.* Naga.

var. *axillare*, leaves thin, obovate, abruptly acuminate; "°^ .^
small, in axillary or lateral cymes; fruit globose, *^ in'
diam. ^

W. Ghats, lower hills of Travancore, in evergreen f^{ore}S
(Bourdillon).

21. SYZYGium HEYNEANUM, Wall. *Eugenia Heyneana*, D^* * in
Fl. Br. Ind. ii. 500. *E. salicifolia*, Grab.; Wt. Ic t. ^
N. Circars and Deccan, in river-beds and along strea
westwards to Coorg, also in S. Travancore.

A large shrub or small tree with white flowers and navi
leaves.

5. *Eugenia*, Linn.

Trees or shrubs. *Leaves* opposite, entire,
pellucid-dotted *Flowers* moderate-sized, solitary or in fascicles or
short c^j^e ' axillary or terminal; bracteoles 2, below the
calyx-tube, tube persistent. *Calyx-tube* nearly globose, not
produced beyond ovary, the limb of 4, rarely 5, persistent lobes;
stamina 1 disk present, broad. *Petals* 4, rarely 5, distinct.
Stamens numerous » distinct. *Ovary* 2-celled, the cells often
again divided by false partitions, ovules several in each cell;
style slender; stigma simple. *Fruit* a nearly globose, 1- or
2-celled berry, crowned with the calyx-lobes. *Seeds* 1-2, large;
cotyledons thick, partially combined; radicle very minute, scarcely
distinguishable.

Young parts and inflorescence fulvous- or silvery-pubescent:—

Staminal disk broad:—

Leaves large, elliptic or obovate or suborbicular, very coriaceous?
3-5 in. long, 2-3*5 in. broad, floccose near the base when young
like the innovations; flowers large, tawny-velvety, about 1 in. in
diam., solitary or in short few-flowered terminal cymes;
fruit

about 5 in. in diam., densely tomentose 1. *jioccosa*.

Leaves usually under 3 in. long:—

Flowers on fairly long pedicels; leaves coriaceous:—

Pedicels solitary, 5-1 in. long, axillary or lateral among the

leaves; leaves oblanceolate, obtuse, 1-2 in. long, '75 in. broad,

the margins revolute, nerves obscure; fruit 2 in. in diam
rusty-tomentose . o 7 •

p J. *Jossmia*.
pedicels about 1 in. long, in axillary pairs on a short peduncle •

leaves elliptic to obovate, acute, 2-5-4 in. long, 1-1-25 in'
broad, nerves rather prominent beneath with reticulation
between; fruit about 5 in. in diam., glabrous...3. *calcadensis*.

eaicels -3 m. long, in pairs on the young branchlets below
" eaVes ; leaves obovate, obtusely abruptly acuminate at
*Pex, acutely attenuate at base, the margins
decurrent ^0 in. long, -75-1-25 in. broad, nerves
slender, not
prominent.... A 7. '..

o 4. *chscijera*.
*ers in nearly sessile clusters; leaves ovate to orbicular

r, distant, prominent; fruit globose, grey-tomentose,
i- m diam. \ ■,

.. 0. *coayensis*.
disk not enlarged .—

s fascicled in the leaf-axils or in very short cymes .— ^
eaves coriaceous, narrowly oblanceolate, obtusely acuminate
^apex, the base acuminate, margin recurved, 1-2 in. long,
fillVn? Q bro ~ admei<VeS Veiy obliquenot P<>>ninent; peduncles'

Leavo? T^o ^ 10ng^ faSCided6^ **ottUriana*.

at h>> Subconaceous' eni Ptic or ovate, obtusely acute, narrowed
nerve? T^^ reeuved' 1<5_2^5 in' lon^ ^-1^o in. broad, soni r °
re: Ped<<nles rusty, villous, fascicled cymose or
abn 7f <<es sessitary> about 1-4 in. long>> fruit g^omoso> glabrous, * T .
out -4 in. lono-

flower- v *bract eata*.

<<hort ^r^ T In the leaf^axils' Pedicels -5-1 in. long; leaves silver
u led^ lanceolate^ long-acuminate, * rounded at base, Promii 7eSCent
beueath> ^5 in_ lon^ _75^1 25 in. broad, nerves shorth rather distant^
at right an^les to midri^b; fruit globose,

AU Parts ii appressed_Pube^scent, about -6 in. in diam 8. *argentea*.

Leave us or nearly so :—
2^5 in. lo^oVate\caudate_acuminate^ J rounded or acute at base, up to ov iri Pai'^1^ X

p , g; fruit
leaves of x'^6 in< in diam9- *Mooniana*.

loil g> 2 in\ obtusely acute or retu^se>> cordate at base, up to 3 in.

^wded*1^ road^ Petiole very shorf^ thick^5 flowers in short terminal

1. E racemes> slightly pubescent..... 10. *singampattiana*.

^'A FL0CC0SA^ Bedd_ Fl t- 200; F. B. I. ii. 501.

*' in the S_ Tinnevelly Hills at 3.000-4,000 ft

m⁺ brOad^ petiole "2 in_ long, slender; flowers solitary ^{11%S^t} axilla^{ry} or lateral,
pedicels slender, '3 in. long; fruit labror^ ■ « .

- A good-sized tree with white flowers, very velvety on the petals, large leaves and tomentose fruit,
2. *EUGENIA JOSSINIA*, Duthie in F. B. I ii 500
*Jossini**
indica, Wt.; Wt. Ic. t. 523.
W. Ghats, in the Sivagiri and Courtalluni Hills of Tinnevelly.
A small tree or shrub.
 3. *EUGENIA CALCADENSIS*, Bedd. Ic. t. 162; F. B. 1. ii. 502.
W. Ghats, Nilgiris at Sispara, Silent Valley in Malabar at 3,0&) ft., Calead Hills of S. Tinnevelly at 2,000 ft. (Beddome).
A very pretty little tree with showy white flowers in p¹"8'
 4. *EUGENIA DISCIFERA*, Gamble in Kew Bull. 1918, 239.
W. Ghats, hills of Travancore near Chimunji at 4,000 ft- (Bourdillon).
A small tree, the disk of the flowers broad and conspicuous-
 5. *EUGENIA CODYENSIS*, Munro; F. B. I. ii. 501.
W. Ghats, from Coorg and S. Canara to Nilgiris and Travancore, in evergreen forests, at about 3,000 ft. A shrubby little tree with greenish-white flowers.
 6. *EUGENIA ROTTLERIANA*, W. & A. 331 • F B I ii 502; Wt. Ic. t. 100.
W. Ghats, in the evergreen forests of Tinnevelly and Travancore at 4,000 ft.
A pretty little tree with small flowers.
 7. *EUGENIA BRACTEATA*, Roxb.; F. B. I. ii. 502 ; W. & A. 331; Wt. 111. t. 13. *E. Willdenowii*, Wt.; Wt, Ic. t. 545.
E. Coast, common on coast sandhills and in evergreen scrub forest from the Chilka Lake southwards; often cultivated in gardens.
A shrub, resembling myrtle, with pretty white flowers and red berries. Bark yellowish-grey, smooth; wood grey, hard, close-grained. Vern. *Ur.* Sagarabatna ; *Tel.* Arivita; *Tarn.* Kaya.
 8. *EUGENIA ARGENTEA*, Bedd.; F. B. I. ii. 503.
W. Ghats, in the Wynaad forests of Malabar at 3,000 ft, (Beddome).
A shrub or small tree with silvery leaves and conspicuous filiform bracteoles under the calyx-tube, i*. *EUGENIA MOONIANA*, Wt.; Wt. Ic. t. 551; F B I ii 505 W. Ghats, from S. Canara southwards, at 2,000-4,000 ft. '

tree with white flowers and globose crimson

forest "lgampatti Hi"S of Tinnnevelly at 3,000 ft., A small dense tree with white flowers.

6. Meteoromyrtus, Gamble.

nerved vilin! "I Shrn b" Leave * oPPosite> membranous, penni- < * T / o ? Dg. A A * naU Solita A 'W

d the ovt T' [Pedlc^> villous; bracteoles 2, linear, below the lan ifc' CftZ^_tube 8h<<rt. TM* Produced 4 Ian o i f' fuTMlshed' wit^ an annular disk at the mouth ; 4' ^bo'rCl ,7 "S> rather longer than the petals. P*«U a 'ins o il , erted Ov'''-y 2-cell^ , ; aMtherS Small' oPeninS longitudinaUy. from its Z: ' a'f f 4"ovuled in each cell, the ovules pendulous Aet known ' 7 elongate; stigma s«bcapitate. J-n«« in a' -ins o i'l Pe"ucid-P"nctate_ «««'»' * indefinite, inserted Ov'''-y 2cell^ , ; aMtherS Small'

G 1 X u s ' Bedd- Ic t. 161; F. B. I. ii. 506. smaU ?' a DeVak in S_E_ W_y naad> at 2,000-3,000 ft. ** o] krge Shl'''b With bl l1

A smaU? y ,, t.

leaves *vU*** o] krge Shl"b With oblon S- lanceolate, acuminate
distant S When ^oUng> afterwards glabrous, the rather
flowers o nei'VeS meetin S jn a looped intramarginal nerve; Jiuear
h" ender Pedi cels usually supra-axillaiy, with long
pellucid r?leS and lanceolate calyx-lobes, the petals
Ucid-P»nctate and ciliate.

T1«

7> Eucalyptus, L'Her.

& shaPe and" ** U8Ually oPPosite wh en young, when old different
toe"« on . "SUally alternate, coriaceous, entire, penninerved.
lla»y- bi-aXf Peduncles, solitary or in umbels or heads of
adnat e at the i deciduous- C«^«-tube turbinate or campanulate,
^7 small lV aSe to the oval7' truncate at apex, sometimes with
the Press oJ6S' Pet(dS 5' united in a calyPtra which falls off m_r, of the
growing stamens. Stamens many, free, !!
aments filiform ; anthers small. Ovary inferior, ' llHny
ovuleS in each cell, subhorizontal; style slender;

stigma small. *Fruit* a hardened capsule, dehiscent loculicidal ¹ j at the mouth. *Seeds* small, angular or linear-cuneate; testa membranous; cotyledons longer than the radicle. EUCALYPTUS GLOBULUS, Labill.

An introduction from Australia, largely grown in forests of the Nilgiris and other hills of the W. Ghats and frequently found self-sown. The Blue Gum.

A lofty tree with very grey young leaves and narrow, *fr^{ree}* linear-lanceolate, curved, vertically hanging old ones, with rather large flowers and rugose capsule, all parts very aromatic with a valuable essential oil which is largely extracted. Bark grey, the outer layers deciduous; ^{w⁰} grey with darker streak, moderately hard, used in building ¹ & but most especially for fuel.

Many other species of the genus are also found cultivated in gardens and plantations on the S. Indian hills.

Family LXIY. LECYTHIDACEAE.

Trees. *Leaves* alternate, entire or shortly toothed, usually crowded at the ends of the branchlets; stipules 0. *Flowers* large* solitary or in axillary or terminal racemes. *Calyx-tube* enclosing the ovary; lobes usually 4-6, rarely 2-3, valvate or imbricate. *Petals* 4-6, rarely more or 0. *Stamens* many, in several series; filaments slender; anthers small, sometimes wanting. *Ovary* 2-6, rarely more-celled, many-ovuled, the ovules pendulous or horizontal; style long, slender; stigma capitate. *Fruit* a woody, fleshy or fibrous berry, with 1 or many seeds.

Fruit angular, fibrous, 1-seeded; stamens all perfect

1. Barringtonia*

Fruit globose or ovoid, fleshy, many-seeded; stamens partly without anthers 2. Careya-

1. Barringtonia, Forst.

Trees. *Leaves* alternate, usually membranous, entire or crenate-serrate, pinninerved. *Flowers* in elongate, terminal or lateral, racemes or interrupted spikes; bracts small, deciduous; bract-veins minute or 0. *Calyx-tube* scarcely produced above the ovary; limb of 2-4, rarely a, lobes; lobes imbricate or

valvate. *Petals* 4, rarely 5, imbricate, adnate at base to the staminal tube.

Ovary with 2 cells, each with 4 pendulous ovules; flowers
 Leave, f^"TM^1^1^6. **Meteoromyrtus.**
 the 1 nate m older Plants, young- leaves often different from
 ater and usually opposite; petals falling off as a calyptra
 7. **Eucalyptus.**

1. Rhodomyrtus, DC.

vatheTl or Slmibs> Leave* °PPOsite, 3- or 5-ribbed. Flowers decidu
 ai%ge' in axillaiT 1-7-flowered cymes; bracteoles small, the ov US" ,
 ^"tube turbinate'not oi* hardly produced beyond 7f ^ 5' persi8tent_
 in g ° - 4% J SeHeS* Omry lm 2* 3"celled' but appeai-
 °vules I, "Celled b*v sPuri"o"s partitions between the pairs of
 Capitate V 7? ai_e aiTanSed in vertical rows ; style filiform; stigma
 Seed Jfruit a globose berry with numerous horizontal seeds,
 testa ^ompressed' exalbuminous, reniform or orbicular, horizontal; a
 ; emWo curved with small cotyledons and long radicle.

*i 469°MARTUS TOMENTOSA' m_ Spic- Neilgh. t. 71; F. B. I.
 ic> t K_622Vrtus iomentO8a> Ait_ ; w_ & 'A_ 328. wt_In_1_-97#3^

Petals 5' spreading. Stamens % m manJ SeHeS Omry lm
 2* 3"celled' but

PulneF Hills' and southwards-above 5,000 ft., on
 ou dly slopes_ Hin Gooseberry-
 y tomentose shrub with grev-tomentose foliage, pink
 and pleasant fruit, much eaten on the Nilgiris.
 that the Pulne^ fruit is not so ^ood_ Bark Wan'le^
 P^apery; wood dark red, close-grained, makes good
 ln g-sticks. "Vern.BadacjaThaontay; Trav.Hills, Koratta.

2. Psidium, Iinn.

wi, 1- s subs_ Leaves opposite, entire, not dotted. Flowers
 e' on ^" or ^ew"flowered axillary peduncles. Calyx • r
 ° 0Vate. limb undivided in aestivation, separating mt
 4"5 lobes when in flower. Petals 4 or 5, free.
 y n an^' inserted in several series on a wide disk. Ovary
 a ' Wl^b nu nious ovules in each cell; style subulate;
 , Ol caPitate. Fruit a globose ovoid or pyriform
 fon SUa crow ned by the calyx-limb. Seeds many,
 sub-SracTi eS^a barc^ embryo curved with short cotyledons and

PSIDIUM GUAJAVA, Linn.; F. B. I. ii. 468. m .j.g#

An American plant, cultivated and run wild in most Dis 1

The Guava.

A small tree, much cultivated for its fruit. Bark thin, greenish-grey; wood greyish-brown. vern. Amrud ; *Tel* Jama; *Tarn*. Segapu ; *Kau*. Sebe ; *Mai* re

3. Jambosa, DC.

Trees. *Leaves* opposite, entire, pellucid-dotted, petioles s ^
Flowers large, 4-merous, jointed with the top of the p^{ec11} ' ,
 terminal or rarely lateral cymes, the branches 3-choton ^
 divaricate; bracteoles 0. *Calyx-tube* more or less tui ^
 usually attenuate at the base, the mouth produced beyon ovary
 and furnished with a thickened stamina! disk; rounded,
 persistent. *Petals* 4, inserted on the top of the n of the calyx,
 broad, concave, obtuse, falling singly. . xue very
 numerous, free, longer than the petals, bent inwards m middle
 regularly when in bud, later unfolding. *Ovary* %o~ce\ ' ^
 many-ovuled; style slender; stigma slightly acute. *Fr**l
 1-2-seeded fleshy berry, crowned by the calyx-limb and thieke disk.
Seeds large, angled; cotyledons thick, fleshy; radicle 8»^{ia} concealed
 between the cotyledons.

Flowers pedicelled:—

Leaves rounded or cordate at base :—

Flowers in terminal corymbose cymes :—

Leaf-nerves and intramarginal nerve conspicuous, regular
 » leaves cordate at base:—

Leaves lanceolate, long-acuminate, 6-9 in. long, 1.5-2.5 in*
 broad; calyx-tube slender, .5-1.75 in. long; fruit 1.5 in* 1D
 diam1. *Munronii*-

Leaves elliptic-oblong, acute or obtuse, 6-9 in. long, 3-3.5
 in-broad; calyx-tube stout, 4 in. long; fruit 1 in. in diam.

2. *Mundagam*.

Leaf-nerves and intramarginal nerve not conspicuous, the latter
 irregular and often double ; leaves elliptic, obtusely acute,
 rounded at base, 3-4-5 in. long, To-2-0 in. broad; calyx-tube
 thick, subcylindric, .5 in. long3. *cov.rtalhnsis*.

Flowers in lateral cymes on the old wood; leaves elliptic-ovate
 or -lanceolate, long acuminate, the nerves and intramarginal

short fv ^ Conspicuous > 4, 7 in. lo » g > 2-4 in. broad 5 calyx-tube
XV ' fΛ r5 in' in diam' Spherical 4
n a r r d t b

V f " p c a l4' ^ «o-Fama.
narrowed at base ; flowers in terminal corymbose cymes
:-ves elliptic or ovate :— Leaf.nerves and i n t r a m a r g i n a l n e r v e . 8 O m e w h a t
obscure. _ R e a v e s o v a t e o r e l l i p t i c , b l u n t l y a c u m i n a t e , 2 5 i n .
l o n g
/ I * " 1 " , b r O a d ; c a l ^ x " t u b e s l e n d e r l y f u n n e l - s h a p e d b e l o w *
s u d d e n l y b r o a d e n i n g a b o v e , a b o u t ' 7 5 i n . l o n g 5 f r u i t o v o i d '
1 m . i n d i a m
T o . t a e t a
^ e a v e s e l l i p t i c , a c u t e t o c a u d a t e - a c u m i n a t e , 3 - 7 i n . l o n g ,
i n b r o a d ; c a l y x - t u b e s h o r t l y a n d s t o u t l y o b c o n i c , a b o u t l n '
l o n g 5 f t m i t h e m i s p h e r i c a l , 1 i n . i n d i a m .

n ^ - h e m i s p h e r i c a .
r o w l e f 1 V e S . a n d i n t r a m a r g i n a l n e r v e p r o m i n e n t ; l e a v e s n a r - b l u t
P t i c " o b l a n c e o l a t e ^ a c u m i n a t e a t b o t h e n d s , t h e a p e x
l a J 1 i l e n s p h e r i c , 2 i n . l o n g ; f r u i t a p p a r e n t l y s m a l l

Leaves r 7* Bourdillonii.
^ » l i n e a r o r l a n c e o l a t e , a c u m i n a t e a t b o t h e n d s . —
f a i r T e S 1 5 ~ 2 i n " b r o a d j t h e n e r v e s a n d i n t r a m a r g i n a l n e r v e y
p r o m i n e n t ; c a l y x - t u b e f u n n e l - s h a p e d , ' 5 i n . l o n g ; f r u i t
r s e 1 _ 2 ^ i n d i a m 8 v u i a a r i s
L e a v e s ^ ~ ^ 7 K V J , v u i g a n s .
f a i n t m x , t e n e r v e s a n d i n t r a m a r g i n a l n e r v e
a b o v j . ^ a l y X " t u b e v e r ^ s l e n d e r a t b a s e , b r o a d l y t u r b i n a t e e V
m ^ ^ 5 f r u i t ^ l o b o s e ^ 7 5 i n _ i n d i a m -- 9 . o c c i d e n t a l i s . ' l e a v e s b r o a d l y o v a t e ,
v e r y c o r i a c e o u s , o b t u s e a t a p e x , i n - l o n ^ 3 a n d i n t r a m a r g i n a l n e r v e
p r o m i n e n t b u t i r r e g u l a r , & , m . b r o a d ; c a l y x - t u b e n a r r o w e d
b e l o w 1 0 . B e d d o m e i .
i i ^ O U S t ? i A J I N K O U N I I ' w a i P - E u g * n i a M u n r o n n , W t . ; F . B . I . ' ^ ^
W t . I c . t . 5 4 6 .
' f r o m S _ C a n a T M s o u t h w a r d s , u p t o 5 , 0 0 0 f t . ; i n
f o r e s t s .

P i u ^ r I t r e e W i t h l a i ^ e r e d d i s h o r W h i t e f l o w e r s a n d 2 .
J A M B ^ h ^ g r e e n f r u i t V e m . T a r n . I l a m b i l i .
^ o S ^ M I J N D A G A M ' G a m b l e n . c o m b . E u g e n i a M u n d a g a m ,
G h ' T r e e S T r a V > 1 8 2 _
0 ^ m t h e e v e r ^ P r e e n f o r e s t s o f T r a v a n c o r e u p t o

Λ 0 S t ? I X J N R W I

^ . G h

4,000 ft^' m the ever^Preen forests of Travancore, up to

8U^{ooth}U}!11"SiZed tie With white fraSrant flow^{ers}. Bark ^T< *n IT x!^{0W}n;
Wood brown' rouSh' used f^{or} posts. Yern. • ^atta samba; *Mai*
Mundagam.

3. JAMBOSA COTJRTALLENSIS, Gamble in Kew Bull..
W. Ghats, hills of Tinnevelly (Wight).
A tree.
4. JAMBOSA RAMA-YARMA, n. comb. *Eugenia Rama* V«^{rrrl} ,
Bourd. in Ind. For. xxx, 147, t. 2. <|
W. Ghats, in the evergreen forests of Travancore at
Tinnevelly, above 4,000 ft. veS
A medium-sized rare tree with white flowers, large l^{ea}
and greenish-pink fruit. ..
5. JAMBOSA LAETA, Bl. *Eugenia laeta*, Ham.; F. B. I- u*
E. pauciflora, Wt. Ic. t. 526.
W. Ghats, in evergreen forests from S. Canara southe
up to 4,000 ft. ite
A medium-sized pretty tree with rather small leaves, w
petals and very long crimson stamens. Bark snio
white ; wood brownish-grey, hard.
6. JAMBOSA HEMISPHERICA, Walp. *Eugenia hemispheric* »
Wt.; F. B. I. ii. 477; Wt. Ic. t. 525; Bedd. Fl. t. 203.
W. Ghats, from S. Canara southwards, up to 3,000 ft., n
evergreen forests. ,
A large tree with white or rose-coloured flowers and pu-i"P
fruit. Bark smooth, blackish ; wood brown, hard. > el
Tarn. Vellei nyaral; Mai. Yen nyara.
7. JAMBOSA BOURDILLONII, Gamble in Kew Bull.. 1918. 23^-
W. Ghats, hills of Travancore at 2,000 ft. (Bourdillon). A
medium-sized tree.
8. JAMBOSA VULGARIS, DC. W. & A. 332; Wt. Ic. t.
43>
Eugenia Jambos, Linn.; F. B. I. ii. 474.
Cultivated in gardens and sometimes found run
wild-" chiefly on old cultivations. The Rose-apple. A
small pretty tree with greenish-white flowers and
pinkish-white fruit, edible but not very good. Yern.
Hind. Gulab
jaman.
9. JAMBOSA OCCIDENTALS, Gamble n. coml>. *Eugenia occi-*
dentalis, Bourd. in Ind. For. xxx. 195, t. 3.
W. Ghats, banks of the Periyar river and elsewhere, always
near water.
A small handsome bushy tree with large white flowers?

numerous stamens and greenish-pink globose fruit.
Yen**-Tarn*. Atta samba.

£T T⁰||||1¹ ~ Gamble n* COmb* *Eligenla Beddomei* >
S¹ T

characteristic very coriaceous leaves and
s m subterminal corymbs.

***• Syzygium, Gaertn.**
* ^ucS-dottS¹*111^Λ LmVeS o W^{osite}> entil<e> glabrous, often
Cyme*> uauall towcr8_ 8small¹ in terminal axillary or lateral
Ca^{ty}*-tube t l . CO^{rj}mbose 5 bracteoles small deciduous or 0.
*o th^{ickener}!Urf te or f Ulmel_sh^{aped}, the limb 4- rarely 5-lobed ;
falli>>g off a ammal aisk_ ^^{tals} 4-5, rounded, concave, usually
nu^{mero}U^s f Sa(Tal^I)trate lid> sometimes singly. *Stamens* very
Celled wiJ^{6e'} inwai*d^s at the middle when in bud. *Ovary*
*****)_c^{irrr}?) ovuies in each ceil; stjie i; stigma sim;Die_
oblong, crow T i or few^{seeded} beri^{T'} globose pyriform or
flesh^5 i-adicl^e the cal^vx_limb_ Seeds globose; cotyledons
o^e^s fo' _ . e SmaU> concealed between the cotyledons.

and axillary, rarely from leafless axils .—
free, though deciduous :—

s ort, turbinate; leaves coriaceous, the nerves close

Wlth Petiole^s -5 in. long, elliptic, caudate-acuminate at at
base, olive-green when dry, 2-3 in. long, 1-1-5 in.
dense cymes of umbellules, the branches buds -2
in. long; fruit oblong, -5 in. loner

leaves with 4-- *' ^rno'^a^w<<w.

apex> ouneat+r⁸ aboUt '5 in> l0ng> oblanc^{eolate}, obtuse at
broa<J; flow Pwpl'sh when dry, 75-1-25 in. long, -5 in.

bra^{nches} +J^{rS} m terminal corymbose cymes of umbellules, the

W* c^{ecc}tir^{gonous}'buds j in_iong2 _ ^ ^ ^ << << .

Oearly bla u ' o , Va ' obtusely acute at apex, cordate at base,

flow^{ers} in o dl'y> V'o_2 ''o in'' lon^ i''1'25 »• broad,

t oy^ of b l l l

W* stir^{gonous}'buds j in_iong2 ^ ^ ^ << <<

tetr^{ago}nous h* of umbellules 2'5 in_ lon£. the branches
al^^{tube} el' ! >:L in_ lon_ 3. *Benthamianum*
CO^{ria}ceO^{Us} tji gate' fl*nnel-shaped; leaves chartaceous or
F^Wers u n^{CrVeS} not alwa>TS close together .— Cal^^{tube}U3 i m Short

rather few-flowered axillary racemes; acute to long, $\ln < 10Ug$;
leaves elliptic or elliptic-oblong-acute ^ apex, 3-5 in. long,
1-1.5 in. broad,

the nerves rather close and parallel; petals often many ;

•5 in. long, scarlet.....4.

i h t i ^

Flowers in many-flowered terminal and axillary panicles umbellules; calyx-tube under '3 in. long, greyish and glandotted: —

Leaves ovate, long-acuminate, up to 4 in. long, 1*5 in. long, usually rounded at base, petiole 1-*2 in. long; flower pedicel short, slender; fruit 2 in. in diam5.

Leaves linear-lanceolate, acuminate, up to 3 in. long* '*>^l ' broad, narrowed at base, petiole *5 in. long ; flower pedicel elongate, slender; .6- ^nea)

Flowers in umbels of 5-10 at the ends of the branchlets; calyx tube resinous-scaly, about *2 in. long, the lobes minute ; leaf elliptic-oblong, obtuse, narrowed at base, '3-#5 in. long,

broad, petiole *1 in. long; pedicels very short...7. *microphyte*

Petals usually falling in one piece, calyptrate :—

Cymes terminal, more or less corymbose, sometimes also axillary to upper leaves :—

Branchlets tetragonous; flowers small; calyx-tube scarcely •1 in. in diam., turbinate :—

Leaves very coriaceous, elliptic to obovate or even orbiculate up to 6 in. long, 3 in. broad, nerves distant and parallel but scarcely parallel, petiole very short, thick; inflorescence branches stout; fruit small, globose8. *montati*^l-

Leaves coriaceous, ovate-lanceolate, caudate-acuminate, up * 3 in. long, 1-1-5 in. broad, nerves close and parallel, petiole very short; inflorescence branches slender; fruit small*

obovate9. *rubicundwn*^l-

Branchlets terete:—

Leaves more than 1 in. broad :—

Leaves membranous, elliptic-ovate or -lanceolate, caudate-acuminate, green when dry, up to 3'5 in. long, 1*5 in. broad, petiole slender, nerves parallel, close and regular; inflorescence branches slender, divaricate nearly at right angles

10. *Gardneri*.

Leaves coriaceous, obovate, obtuse or emarginate, dark brown when dry, up to 4 in. long, 1*5 in. broad, petiole very short, stout, nerves parallel, reticulate between them; inflorescence branches moderately thick, ascending-

11. *caiyophyllaeum*'

Leaves less than 1 in. broad :—

Leaves suborbicular or obovate, often slightly emarinate,

very coriaceous, up to 1 in. long, -75 in. broad, the nerves close ; flowers in close terminal corymbs; calyx-tube ovoid, •lo m. long ; fruit oblong or obovoid, up to '5 in. long

12. *calophyllifolium*.

leaves obovate, abruptly obtusely acuminate at apex, cuneate at base, coriaceous, prominently glandular, up to 2 m. long, -70 in. broad, the nerves somewhat distant; flowers in lax terminal and axillary cymes; calyx-tube tunnel-shaped, -35 in. long13. *palghatense*.

cymes mostly ~-:i_{lar}v_j occasionally terminal :-

n. long, their branches also long, ascending :

chartaceous, ovate, obtuse, narrowed at base and decur-

ner on the '75 in< lon_o Petiole, 3-4 in. long, 2-25 in. broad ;

bu/68 distant, irregular, joining in loops only; flower

⁸ small, scarcely *1 in. in diam.....14. *travancoricum*.

es nearly 1 in. long, their branches stout, divaricating angles ; leaves elliptic, usually abruptly acuminate at

nerv nerves manv> parallel, joining in an intramarginal e; flow_{er}-buds rather large, about '25 in. in diam.

^y_{raes} If_{eral} usual_y from the scars of fallen leaves, sometimes *o* *Chavaran*. also o_{axillary} : _

In*,> ^alternate, suborbiculait or ovate, very coriaceous,

^ith 'd lg 8 in_ long^{or} longer, 6 in. broad ; flowers in cymes

Petals ¹Vancatin^S ^ra^ches, the calyx-mouth *2 in. in diam. Ca

yptrate; fruit nearly spherical, about f5 in. in diam.

16. *alternifolium*.

obovate to ob_{cordate}, thin, pale on both in l_o' nearly &la_{ucous} beneath, the nerves distant, meeting

f y 5 flowers very small in ver_y short branching g
; spherical, -25 in. in diam17. *mdlabaricum*.

^m leaf irregular, distant, anastomozing near the ^ ^ gm, but not producing a clearly marked intramarginal

terete, pale; leaves broadly obovate, often ^{orbi}^ular, subcoriaceous, 3-8 in. long, 2-4 in.

5 inflorescence 2"2'5 in_ long£the branches rather ; fruit

globose or ovoid, -25--5 in. in diam.

18. *operculatum* var. *obovatum*.

Branchlets tetragonous, dark; leaves elliptic or elliptic oblong, membranous, 4-6 in. long, 2-3 in. broad; inflorescence about 4 in. long, the branches slender, angled.

19. *Stocksii*-

Nerves of leaf joining in a distinct intramarginal nerve :-*"

Large tree; leaves over 1 in. broad, variable in shape usually 3-6 in. long, usually acuminate, sometimes abruptly, the nerves close and parallel; flowers somewhat large, the mouth of the calyx-tube 2 in. in diam.;

fruit oblong ellipsoid or globose 20. *Jambolani*¹-

Shrub or small tree; leaves narrow, oblong, 3-4 in.

•

long, under 1 in. broad, the nerves close but slightly irregular; flowers small, the mouth of the calyx-tube about 1 in. in diam.; fruit obovoid, 5 in. long, crowned with the cup-like calyx-limb.....!..... 21. *Heyneanus*¹'

1. SYZYGium ARNOTTIANUM, Walp. *S. densiflorum*, Wall-> W. & A. 329. *Eugenia Arnottiana*, Wt.; F. B. I." - 483; Wt, Ic. t. 999.

W. Ghats, in Shola forests of the Nilgiris, Anamalais, Pulneys and Travancore Hills, at high levels, rarely lower than 5,000 ft.

A large tree with red young leaves and buds, creamy¹; coloured flowers and dark purple fruit. Bark grey rough, wood greyish-brown, hard and close-grained; useful for building and fuel; one of the most important of the Nilgiri woods. Yern. Tarn. Naval, Nagay; *Mai. Ayri.*

2. SYZYGium MYHENDRAE, Gamble n. comb. *Eugenia Myhendrae*, Bedd. MS. ; Brand. Ind. Trees, 325.

W. Ghats, in the evergreen forests of Travancore and Tinnevely, at 3,000-4,000 ft. (Beddome, Bourdillon).

A medium-sized handsome tree reaching 40 ft. in height, the flowers white, very small, the leaves small.

3. SYZYGium BENTHAMIANUM, Gamble n. comb.

Eugenia

Benthamiana, Wt. *E. Arnottiana* var. *Benthamiana*,

Duthie

in F. B. I. ii. 484.

W. Ghats, in the Nilgiri Hills, at Sispara, 4000 ft. (Gardner). Apparently a small tree or large shrub.

4. SYZYGIUM WIGHTIANUM, Wall.; W. & A. 330. *S. lanceo-*
latum, W. & A. 330. *Eugenia Wightiana*, Wt.; F. B. I.
ii.
485 ; Wt. Ic. t. 529. *E. lanceolata*, Lam.; Wt. Ic. t. 530.

W. Ghats, in the Nilgiri, Pulney and Travancore Hills, at 2,000-4,000 ft.

A moderate-sized tree, with white flowers and scarlet fruit, showy when in full flower and fruit.

SYZYGium ZEYLANICUM, DC.; W. & A. 330; Wt. Ic. t. 73. *Eugenia zeylamca*, Wt.; F. B. I. ii. 485.

W. Ghats, from S. Canara to Travancore, in the lower country, on the banks of streams.*

^ handsome little tree with white flowers and edible white fruit_ Vern. *Mai Pula*.

^ZYGIUM LINEARE, Wall. *Eugenia linearis*, Duthie in F. B. I. ii. 486. *E. zeylanica*, Bedd. Fl. t. 202.

W. Ghats, in the S. Tinnevelly Hills, on river beds up to 3,500 ft.

A small tree, with white flowers.

OZYGIUM MICROPHYLLUM, Gamble n. comb.

Eugenia "ncrophylla, Bedd.; F. B. I. ii. 505.

W\ Ghats, in S. Travancore, on river banks, at 4,000-⁵>000 ft. (Beddome).

small much-branched tree with very small leaves.

ZYGIUM MONTANUM, Gamble n. comb. *Eugenia* 060; F. B. I. ii. 488.

. Ghats, Shola forests of the Nilgiri Hills, above 5,000 ft., common.

A large evergreen tree with small white flowers in terminal ^corymbs, large leaves and purple fruit. Bark brown, ^Sanulated and peeling off in small flakes; wood greyish-^{lj}own, moderately hard, used for building. Vern. *Badaga*, „, ^Poiiagay.

" r²Y <> iTJM RUBICUNDUM, W. & A. 330. *Eugenia mhicunda*, ^{VV}t.; F. B. I. ii. 495. Wt. Ic. t. 538. *E. lissophylla*, Duthie ¹¹¹F. B. I. ii. 488.

^- Ghats, in the Nilgiri Hills (G. Thomson), south to Tin-^{nev}elly and Travancore, up to 3,000 ft. in evergreen forests. ^A tedium-sized tree with rough branchlets, narrow leaves ^a^d small fruit. Bark thin, smooth, pale brown; wood

IU ft^{le(idisn_}bro^{wn,} rough.

¹ bY ZYQiuM GARDNERI, Thw. *Eugenia Gardneri*, Duthie in [^]B. I. ii. 489. *E. cymosa*, Lam. var. *rostrata*, Duthie in ^F< B. I. ii. 488.

montana, ^{wt}- Ic. t. 1060; F. B. I. ii. 488.

W G

W. Ghats, in the Anamalai, Travancore and Tinnevely Hills, up to 4,000 ft. in evergreen forests. An enormous tree with slender branchlets, caudate white flowers and purple fruit. Bark smooth, white dark reddish-brown with yellow patches, used for bi in Travancore. Yern. *Tarn*. Nir naval ;* *Mai*. Kari nyaral.

11. SYZYGIUM OABTOPHVLIA^U-, -«-• . ^ -
L .. *Eugenia caryophyllaea*, Wt., Wt.

W°Coast and W. Gh&te from S. Canara southwards, up to K (\c\ff ff psneciallv near streams.

isman%re^Pe with white flowers and black globose fruit, Bark smooth, grey ; wood brown, rather soft. Yern.

MaL

-----—» anpvta. : W. & A.
329.

- 19 SYZYGIUM CALOPHYLLIFOLIUM, Walp. *Eugenia caloptiyUi-folia*, Wt.; Wt. Ic. t. 1,000 ; F. B. I. ii. 494. W. Ghats, Shola forests of the Nilgiris above 6,000 ft., common and conspicuous.

A large evergreen tree with a rounded head, small leaves, white flowers and dark purple fruit. Bark thick, brown, rough ; wood reddish-brown, hard and useful for building.

13. SYZYGIUM PALGHATENSE, Gamble in Kew Bull. 1918, 240. W. Ghats, in the Palghat Hills of Malabar at 5,000 ft.

(Beddome).

A large tree with conspicuously glandular leaves and long* calyx-tube.

14. SYZYGIUM TRAVANCORICUM, Gamble in Kew Bull. 1918, 240. W. Coast, in swampy places in the low country of Travancore, up to 200 ft. (Bourdillon).

A medium-sized or large tree with long-petioled leaves and small flowers in long-pedunculate corymbose axillary cymes.

15. SYZYGIUM CHAVARAN, Gamble n.comb. *Eugenia Chavaran*. Bourd. For. Trees Trav. 188.

W. Ghats, evergreen forests of X. Travancore at low elevations (Bourdillon).

A very large handsome tree with rather large white flowers, usually in axillary cymes, and large closely-nerved leaves.

Wood useful, the trunks sometimes hollowed into boats.
Yern. *Mai*. Chavaran.

b. SYZYGIUJVI ALTERNIFOLIUM, Walp. *Eugenia alternifolia*, Wt.; Wt. Ic. t. 537; F. B. I. ii. 497; Bedd. FL t. 198. Deccan, in the hills of Kurnool, Cuddapah and N. Arcot. A large tree with large alternate or subopposite leaves, yellowish-white scented flowers and globose fruit. The wood is dark red, hard and close-grained, and is in considerable demand for building purposes. Yern. *Tel.* Manchi moyadi, Mogi.

kYZYGiUM MALABARICUM, Gamble n. comb. *Eugenia mala^h<*rica*, Bedd. Fl. t. 199; F. B. I. ii. 497. W. Ghats, in the Wynaad forests of Malabar at 2,000-4,000 ft., generally in swampy places. A medium-sized tree with very small flowers in short lateral cymes and small globose fruit, the leaves pale when dry.

OYZYGIUM OPERCULATUM, Gamble n. comb. *Eugenia oper^oulata*, Roxb.; F. B. I. ii. 49S; Wt. Ic. t, 552. *E. cerasoides*, ftoxb.; Wt. Ic. t. 615. ii 490' *ohovaivm'* *E. operculata* var. *obovata*, Duthie in F. B. I.

^N- Circars, forests of Gumsiir.

A moderate-sized tree of rather dry grassy localities, usually in or near the Sal forests, the leaves turning red ⁱⁿ ^{*ne} cold season, the flowers greenish, the fruit purple ^{SI*}iall and edible. Bark grey or light brown; wood reddish-

^{gre?}- Yeni. *Hind.* Piaman.

YZYGIUM STOCKSII, Gamble 11. comb. *Eugenia Stocksii*, Uuthie in F. B. I. ii. 498.

[^]- Ghats, Wynaad forests about 3,000 ft. (Beddome). [^] large tree with small flowers in axillary as well as lateral ²⁰ n^{COrymbose} cymes.

[^]YZYGIUM JAMBOLANUM, DC.; W. & A. 329.

Eugenia wnbolana, Lam.; F. B. I. ii. 499; Wt. Ic. t. 535 ; Bedd. Fl. ^{*197-} *E. canjophyllifdia*, Lam.; Wt. Ic. t. 553.

AU forest Districts, both in the plains and in the hills up ^{to} 6,000 ft., usually along river banks and in nioister Realities, but found even on coast sands on the one side ' in W. Ghat Sholas on the other. Often cultivated in ^{av}enues and topes and for its fruit.

A large evergreen tree with white flowers and purple fruit,

the latter in cultivation oblong and edible good m ^
 and puddings, in a wild state usually small and J less
 globose. Bark smooth, light grey ; wood haid,,i«L ,rev
 useful for building and agricultural puvpoes Te

.....

, lower hills of Travancore, in evergreen forests

- 01 s2Y⁰aiU3i¹⁰HEYNEANUM, Wall. *Eugenia Eeyneana*, Duthie
 Tn Fl. Br. Ind. ii. 500. *E. salzcifolia*, Grah.; Wt. Ic t. o39.
 N. Circars and Deccan, in river-beds and along streams,
 westwards to Coorg, also in S. Travancore.
 A large shrub or small tree with white flowers and narrow
 leaves.

5. Eugenia, Linn.

Trees or shrubs. *Leaves* opposite, entire,
 pellucid-dotted.

Flowers moderate-sized, solitary or in fascicles or short cymes,
 axillary or terminal; bracteoles 2, below the calyx-tube, usually
 persistent. *Calyx*-tube nearly globose, not produced beyond the
 ovary, the limb of 4, rarely 5, persistent lobes; staminal disk, ii
 present, broad. *Petals* 4, rarely 5, distinct. *Stamens*

numerous,
 distinct. *Ovary* 2-celled, the cells often again divided by false
 partitions, ovules several in each cell; style slender;
 stigma

simple. *Fruit* a nearly globose, 1- or 2-celled berry, crowned
 with the calyx-lobes. *Seeds* 1-2, large ; cotyledons thick, partially
 combined ; radicle very minute, scarcely distinguishable.

Young parts and inflorescence fulvous- or silvery-pubescent:—

Staminal disk broad :—

Leaves large, elliptic or obovate or suborbicular, very coriaceous,
 3-5 in. long, 2-3*5 in. broad, floccose near the base when young"
 like the innovations; flowers large, tawny-velvety, about 1 in. in
 diam., solitary or in short few-flowered terminal cymes; fruit
 about *5 in. in diam., densely tomentose 1. *floccosa*.

Leaves usually under 3 in.-long:—

Flowers on fairly long pedicels; leaves coriaceous : —

Pedicels solitary, '5-1 in. long, axillary or lateral among the
 leaves; leaves oblanceolate, obtuse, 1-2 in. long, -75 in. broad,

the margins revolute, nerves obscure; fruit 2 in. in diam., rusty-tomentose 2> *Jos8iniam*
 Pedicels about 1 in. long, in axillary pairs on a short peduncle; leaves elliptic to obovate, acute, 2'5-4 in. long, 1-1-25 in. broad, nerves rather prominent beneath with reticulation etween; fruit about '5 in. in diam., glabrous...3. *calcadensis*.
 edicels '3 in. long, in pairs on the young branchlets below ne leaves ; leaves obovate, obtusely abruptly acuminate at apex, ^acutely attenuate at base, the margins decurrent,
 °-25 in. long, -75-1-25 in. broad, nerves slender, not prominent.. A -,- !*

..... 4. *disci/era*,
 ^ ^ ^ 8 m nearly sessile clusters,- leaves ovate to orbicular, ^ retuse, shining > i'5"2'5 " * • long, 1-1-75 in. broad, few, distant, prominent; fruit globose, grey-tomentose,
 Stami i^?11 diWn 5- *codyensis*.

12 disk not W

fascicled in the leaf-axils or in very short cymes .—

at - COriaceous > narrowly oblanceolate, obtusely acuminate ^ ^pex, the base acuminate, margin recurved, 1-2 in. long, o m broadn very oblique, not prominent; peduncles fascicled.....6

at h 5 SUBcoriaceous ^ elliptic or ovate, obtusely acute, narrowed nerved margins recurved > 1-5-2-5 in. long, -75-1-25 m. broad, son ^ obsCUre ; Peduncles rusty-villous, fascicled cymose or letmies solitary, about '4 in. long; fruit globose, glabrous,

Plowe 4in<10ng..... *l.bracteata*.
 short ^ Solltary in the leaf-axils; pedicels -5-1 in. long; leaves silverPG ^^ lanceolate, long-acuminate, rounded at base,

Portly rather mine Plf beSCent beneath' 4~5 in_ long * '75~1 25 in_ broad >> nerves, distant, at right angles to midrib; fruit globose, All Parts ii a Ppressed -Pubescent, about -6 in. in diam.....8. *argentea*.

25 in. lo caudate-acuminate, rounded or acute at base, up to or in . f' l in- broad, petiole -2 in. long, slender; flowers solitary >Se aUS' axiHary or lateral, pedicels slender, 3 in. long; fruit

BS ovT roUS> '15 in> in diam..... 9' *MooniaTM*.

2 in * ' obtusely acute or retuse, cordate at base, up to 3 in. - -ded - road> petiole very short> thick; flowers in short terminal

1. J] laemes> slightly pubescent 10. *singampattiana*.

GEN' A FLOCCOSA. Bedd. Fl. t. 200; F. B. I. ii. 501.

■ ults, in the S. Tinnevelly Hills at 3.000-4.000 ft. (ome).

- A good-sized tree with white flowers, very velvety i petals, large leaves and tomentose fruit.
- .2. EUGENIA JOSSINIA, Duthie. in F. B. I. ii. 500. *fa*^{*l*}
indica, Wt.; Wt. Ic. t. 523.
 W. Ghats, in the Sivagiri and Courtallum Tinnevelly. A small tree or shrub.
3. EUGENIA CALCADENSIS, Bedd. Ic. t. 162; F. B. L.ii.
 W. Ghats, Nilgiris at Sispara, Silent Valley in Malabar 3,000 ft., Oalcad Hills of S. Tinnevelly at 2,000 ft. (Beddo[^]) A very pretty little tree with showy white flowers
4. EUGENIA DISCIFERA, Gamble in Kew Bull. 1918, 2
 W. Ghats, hills of Travancore near Chimunji at 4,000 (Bourdillon).
 A small tree, the disk of the flowers broad and conspicuou •
5. EUGENIA CODYENSIS, Munro; F. B. I. ii. 501.
 W. Ghats, from Coorg and S. Canara to Nilgin* an Travancore, in evergreen forests, at about 3,000 ft. A shrubby little tree with greenish-white flowers.
6. EUGENIA ROTTLERIANA, W. & A. 331; F. B. I. ii. 502; Ic. t. 100.
 W. Ghats, in the evergreen forests of Tinnevelly Travancore at 4,000 ft.
 A pretty little tree with small flowers.
7. EUGENIA BRACTEATA, Roxb.; F. B. I. ii. 502 ; W. & A. 331; Wt. 111. 1.13. *E. Willdenowii*, Wt.; Wt. Ic. t. 545.
 E. Coast, common on coast sandhills and in everg^r@^{eu} scrub forest from the Chilka Lake southwards; often cultivated in gardens.
 A shrub, resembling myrtle, with pretty white flowers and red berries. Bark yellowish-grey, smooth; wood gi^{*eV}> hard, close-grained. Vern. *Ur.* Sagarabatna ; *Tel.* Arivita; *Tarn.* Kaya.
8. EUGENIA ARGENTEA, Bedd.; F. B. I. ii. 503.
 W. Glmts, in the Wynaad forests of Malabar at 3,000 ft. (Beddome).
 A shrub or small tree with silvery leaves and conspicuous filiform bracteoles under the calyx-tube. 9; EUGENIA MOONIANA, Wt.; Wt. Ic. t. 551; F. B. I. ii. 505. W. Ghats, from S. Canara southwards, at 2,000-4,000 ft.

A small tree with white flowers and globose crimson fruit.

EA?ENI fL S1N «AMPATTIANA, Bedd. Ic. t. 273; F.B.I.ii.506. W. Ghats, in the Singampatti Hills of Tinnevely at 3,000 ft., in moist forests. -A- small dense tree with white flowers.

6. Meteoromyrtus, Gamble.

'I⁶⁶ or s^{lu}Λ' *Leaves* opposite, membranous, penni-or ^{8U} villos when young. *Flowers* small solitary, on axillary ^{lyxTT¹¹¹*117} pedicels' villos 5 bracteoles 2, linear, below the ^{ondH} and longer than *il* *Calyx-tube* short, not produced Hes4 l ^{oVary'} furnished with an annular disk at the mouth ; ^{4>} sub ' ^{i anCeolate'} villos, rather longer than the petals. *Petals* in ^{?^mcular}, pellucid-punctate. *Stamens* indefinite, inserted ^{Q_v 9 ^} on the disk; anthers small, opening longitudinally, frou/t ^{Celled'} a^{lout} 4-ovuled in each cell, the ovules pendulous r ^{<l}pex; style elongate ; stigma subcapitate. *Fruit* not

- 1 ^ WYNAADENSIS, Gamble in Kew Bull. 1918,
- *Eugenia wynaadensis*, Bedd. Ic. t. 161; F. B. I. ii. 506. •
- ^hats, about Devala in S.E. Wynaad, at 2,000-3,000 ft. i
- a ^{aree} or large shrub with oblong, lanceolate, acuminate s,
- villos when young, afterwards glabrous, the rather ^{nt}
- ^{n^i*}ves meeting in a looped intramarginal nerve;]•
- s on sender pedicels usually supra-axillary, with long r^{ftii}
- ^{ac^eoi}es and lanceolate calyx-lobes, the petals and ciliate.

7. Eucalyptus, L'Her. ^{A_fees} T^{lti} shai

^{aves} usually opposite when young, when old different
^{an^ us^}ally alternate, coriaceous, entire, penninerved.
^{k¹ ax^^ai}7 Peduncles, solitary or in umbels or heads of
^{f laoS ^ec^U0ll}s. CaZi/aj-tube turbinate or campanulate,
^{ei7 sm} ^{'Jase to ^e ovarJ} truncate at apex, sometimes with
V the ^{l0beS*} *Petals* 5' TMited in a calyptra which falls off e
^{..e8Sille o^ ^e} ^{S^{row}^n}g stamens. *Stamens* many, free, ^{d^{late}'}
^{filaments} filiform ; anthers small. *Ovary* inferior, ' ^{ma}fly
ovules in each cell, subhorizontal; style slender;

stigma small. *Fruit* a hardened capsule, dehiscent at the mouth. *Seeds* small, angular or linear-cuneate; membranous; cotyledons longer than the radicle.

EUCALYPTUS GLOBULUS, Labill.

An introduction from Australia, largely grown in the Nilgiris and other hills of the W. Ghats and frequently found self-sown. The Blue Gum.

A lofty tree with very grey young leaves and narrow, linear-lanceolate, curved, vertically hanging old ones, rather large flowery and rugose capsule, all aromatic with a valuable essential oil which is

extracted. Bark grey, the outer layers deciduous;

grey with darker streak, moderately hard, used in building but most especially for fuel.

Many other species of the genus are also found cultivated in gardens and plantations on the S. Indian hills.

Family LXIY. LECYTHIDACEAE.

Trees. *Leaves* alternate, entire or shortly toothed, usually crowded at the ends of the branchlets; stipules 0. *Flowers* large solitary or in axillary or terminal racemes. *Calyx* enclosing the ovary; lobes usually 4-6, rarely 2-3, valvate or imbricate. *Petals* 4-6, rarely more or 0. *Stamens* many, in several series; filaments slender; anthers small, sometimes wanting. *Ovary* 2-6, rarely more-celled, many-ovuled, the ovules dorsal or horizontal; style long, slender; stigma capitate. woody, fleshy or fibrous berry, with 1 or many seeds.

Fruit angular, fibrous, 1-seeded; stamens all perfect

1. *Barringtonia**

Fruit globose or ovoid, fleshy, many-seeded; stamens partly without anthers 2. *Careya**

1. *Barringtonia*, Forst.

Trees. *Leaves* alternate, usually membranous, entire or crenate-serrate, penninerved. *Flowers* in elongate, terminal or lateral, racemes or interrupted spikes; bracts small, deciduous; bracteoles minute or 0. *Calyx* scarcely produced above

the ovary; limb of 2-4, rarely 5, lobes; lobes imbricate or valvate. *Petals* 4, rarely 5, imbricate, adnate at base to the staminal tube

«mens very numerous, in many rows, connate below; filaments
 rform, all bearing anthers. Ovary inferior, 2-4-celled; ovules
 ^ In each cell, pendulous or horizontal; style long, filiform ;
 small. Fruit a fibrous berry, globose ovoid or
 quad-c ngular, crowned by the persistent calyx-limb, 1-seeded.
 Seed ^oid or ellipsoid, exalbuminous; embryo large,
 cotyledons

t

alix-lobes valvate; fruit largo, about 2 in. long, ovoid;
 flowers

&e, 1"5~2 in. in diam.; leaves large, up to 12 in. long...1. *racemosa*.
 a yx-lobes imbricate; fruit medium-sized, about 1 in. long, quad-
 ngular; flowers rather small, '3-'5 in. in diam. ; leaves up to 6 in-
 £2. *acutangula*.

¹- BARRINGTONIA RACEMOSA, Roxb.; F. B.I. ii. 507; W. & A.
 333; Wt. Ic. t. 152.

W. Coast, in Malabar and Travancore, along backwaters,
 often planted for ornament.

A medium-sized ornamental tree with large flowers,
 cream-coloured with pink stamens, in pendulous racemes,
 and large brownish-red fruits. Wood white, soft, porous.

Yern. *Tarn*. Samuthram; *Mai*. Samuthraccham. *"•

BARRINGTONIA ACUTANGULA, Gaertn.; F. B. I. ii. 508;
 W. & A. 333 ; Bedd. Fl. t. 204.

E. & W. Coast Districts along streams and on swampy
 land; more scarce inland in the Deccan and Carnatfc. A
 medium-sized tree, conspicuous for its long pendent
 racemes of pink flowers, succeeded by angular fruits, leaves
 obovate. Bark dark brown, rough ; wood white, soft, with
 a pretty silver-grain, used for furniture. Yern, *Kind*. Ijal;
Ur. Hinjolo; *Tel*. Kurpa ; *Tarn*. Adampa; *Mai*. Nir perzha.

2. *Careya*, Eoxb.

rees or a small undershrub. Leaves alternate, membranous,
 Ow ded at the ends of the branches, penninerved, crenate-serrate,
 J^{Wers} lai'ge, showy, in racemes or interrupted spikes. Calyx-
 3e ca nipanulate or funnel-shaped, hardly produced beyond the
 Jarv; limb 4-lobed, the lobes imbricate. Petals 4, imbricate,
 Ucll longer than the calyx-lobes. Stamens very numerous, in
 .everal rows, slightly connate at base; filaments very,
 long,

lutev_{most} and outermost without anthers. *Ovary* inferior, 4-5-

celled, crowned by an annular disk; ovules many, each cell, on vertical axile placentas; style long, nitor small. *Fruit* a large globose fibrous berry, crown persistent calyx-limb. *Seeds* numerous, in fleshy ptilP > 0; embryo large with obsolete cotyledons.

CAREYA ARBOREA, Roxb. Cor. PL t. 218; F. B. W. & A. 334; Wt. Ill, tt. 99 and 100; Bedd. Fl. t. All Forest Districts, in deciduous forest, especially Circars, up to 5,000 ft., conspicuous in grassy P^{laces#} large A large deciduous tree with yellowish-white flow ' j[^], obovate-serrate leaves and large globular fruit- c [^] & s. dark grey, gives a good fibre and makes slow < ■ [^] [^] m wood red, hard, of good quality but little used.

Hind., *Ur.* Kumbi; *Tel.* Gadava, Dudippi; *Ta-nu Mai.* Perzha.

Family LXY. MELASTOMACEAE.

Herbs or shrubs, sometimes climbing, rarely trees. ■ ^{reai} ^{es} [^] opposite or rarely whorled, entire or nearly so, often ribbed at the base; stipules 0. *Flowers* regular, hermaphrodite, m^{s1} panicles or corymbs, rarely solitary or fascicled, usually bract and bracteolate. *Disk* sometimes present. *Calyx-tube* n partly or entirely adherent to the ovary; limb 4-5-lobed, some calyprate. *Petals* as many as the calyx-lobes, inserted at the margin of the tube, imbricate. *Stamens* as many or often more than as many as the petals and inserted with them; filaments variously inwards in bud, often alternately shorter and longer; anthers 2-celled, basifixed, dehiscence usually by terminal pores, usually by slits; connective often appendaged near the base. 4-5-, rarely 3- or 6- or 1-celled; ovules usually numerous, on parietal or central placentas, sometimes few; style usually filiform. *Fruit* usually enclosed in the calyx-capsular or baccate, dehiscent irregularly or by slits at the top of the cells. *Seeds* many (usually 1 in *Meinecydon*); albumen 0; cotyledons small (in *Memecylon* large and convolute). Leaves 3- or more-ribbed from the base; ovary 4-5-celled, ovules and seeds many:— Petals 4 or 5:—

Seeds curved; flowers usually large and often showy :—

, &
1

ob 1 lit f i l d usually bra^c

al; fruit opening¹ by pores at its apex

1. **Osbeckia.**

Stamens unequal; fruit bursting irregularly2. **Melastoma.**
 seeds straight, stamens equal .— Flowers moderately large, fleshy
 and red, petals 4; climber

3. **Kendrickia.**

flowers rather small, pink or white, somewhat fleshy; epiphytic
 Pet SIUUbS.....4* *Medinilla*"

S 3 ; seeds straight; stamens equal; inflorescence scorpioid;

T 5. **Sonerila.**

^ s not ribbed"but penninerved with faint intramarginal
 nerves;

ry 1-celled, few-ovuled; seed 1.....0. **Memecylon.**

1. **Osbeckia, Linn.**

^ ei bs, undershrubs or shrubs, usually erect, branches usually
 t» ©d. *Leaves* opposite or sometimes ternate, entire, 3-7- or
 e Inies 9-ribbed. *Flowers* terminal, solitary capitate

or
 . ed* Pul>ple-pink or white, often conspicuous; bracts con-
 I , Oll8) so n sometimes involucrate. *Calyx-tube* urceolate or sub-
 s^, sometimes much produced beyond the ovary, usually
 or f Wl^* ^u^Ous-based bristles which are solitary or in sessile
 Ian a c*us ters or on pectinate scales; lobes 4 or 5, subulate

or
 Us 1? vari^sly bristly, alternating with as many
 appendages
 <iir<a ^ ste^a^e^y bristly. *Petals* 4 or 5, usually broadly obovate,
 e- *Stamens* 8 or 10, equal or subequal; anthers oblong,
] . ^ate attenuate or beaked. *Ovary* semi-inferior,
 4-5-celled,

7at apex; ovules numerous in each cell on placentas radiating
 •r>o- . ax^S; s^yle long, simple. *Fruit* a capsule opening
 by
 at its apex. *Seeds* many, curved, minutely tuberculate.

&t t* S ^en^amorous (also, sometimes, *O. cupularis*); anthers attenuate

yx-tube with simple bristles only ; leaves 3-5-ribbed, outer pair
 o* ribs very slender:—

leaves elliptic, -5-1 in. long, *5 in. broad, acute at apex, obtuse
 base, pale greenish when dry, bristles on upper surface many
 small adnate, also few large adnate only at base; branchlets
 s rigose; calyx-lobes ovate, obtuse, appendages very short with

^ly about 3 bristles 1. *minor*.
-•eaves elliptic, 1-1 -75 in. long, '5-1 in. broad, acute at apex, acute^r
obtuse at base, yellowish-green when dry, bristles on upper

surface distant, lineolate, thick, completely minute mucro ; branchlets glabrous; calyx-lobes ^{ov} 1 acuminate, appendages triangular with few bristles, *u* ^j

***75 in.** ^{xo}

Leaves oblong-lanceolate, 1-2*25 in. long, [°] *5-*75 in. ^{xo} j.les ofl at apex, obtuse at base, slightly yellowish when dry, ^lets upper surface slender, adnate except a short point; ^fjstled scabrous; calyx-lobes ovate oblong, rounded and stella e y en. at apex, ciliate on margins and with few bristles on > *erA.*

dages short with a small tuft ^{!^} i b d

Calyx-tube with simple bristles below, tufts above; leaves 3-/- outer pair slender:— .

i

Calyx-lobes broad, obtuse or retuse, appendages cylind^{rica} a tuft of many bristles :—

Calyx-lobes many-bristly at apex and in a line on back; ^ ^ elliptic, acute at apex, rounded at base, 1-1*5 in. ^{o'1»£re}e; broad, bristles on upper surface slender, half adnate, n^a

^

ribs 3 with a slender intramarginal pair 4. *cow*

Calyx-lobes few-bristly at apex only ; leaves lanceolate, &^{cx} nate at apex, narrowed at base, 2-4 in. long, 1-1'5 in- ,,

bristles on upper surface sparse, slender, half adnate ; riD the outer 2 pairs slender 5. *KM*

Calyx-lobes short, acute, few-bristly at apex, appendages s cylindrical with about 3 bristles; leaves lanceolate, acumin | 1-2 in. long, bristles on upper surface few, slender, adnate be*⁰ ' ribs 5, the outer pair intramarginal 6. *Laioso*

Calyx-tube with conspicuous tufts of bristles, rarely simple at_t base only:—

Tufts of bristles sessile as are appendages ; calyx-lobes ovate* obtuse, bristly at apex, ciliate on margins ; branchlets fleshy* glabrous, bluish when dry; leaves oblong-lanceolate, 1-1*5 in-long, *3-"5 in. broad, 3-ribbed, lineolate on upper, nearly glabrous

on lower surface 7. *subla&vis-*

Tufts of bristles stalked as are appendages:—

Stalks of bristle-tufts and appendages very short, the bristles woolly, the tufts large, '5-1 in. broad; leaves ovate, densely tawny-bristly on both surfaces, reticulate ; ribs 7-9

8. *reticulata*.

Stalks of bristle-tufts and appendages elongate :—

Shrubs with many branches ; leaves 5-ribbed :—

Calyx-lobes obtuse or emarginate at apex, the bristles pale
and bulbous-based:—

Stems grey, with long retrorse stiff bristles; leaves lanceolate, acuminate, 3-4 in. long, 1 in. broad, the bristles on the upper surface few, long, adnate below in branched lineoles9. *trdvancorica*.

Stems reddish with short, stiff, appressed bristles • leaves elliptic, acute, 1-3*5 in. long; 5-2 in. broad, the bristles on the upper surface close, velvety, shortly adnate below
10. *Wightiana*.

Calyx-lobes acute at apex, the bristles rufous, always in tufts; leaves 1-1*5 in. long, -o-1 in. broad, the bristles on the upper surface few^'only little adnate below

11. *Leschenaultiana*.

Slender shrubs with few* erect branches and scarcely woody stems; calyx-lobes acute, ending in a stellate tuft of bristles; leaves lanceolate, acute, 3-ribbed, 1-2 in. long, *3-*8 in. broad, sparsely bristly to nearly glabrous above, glabrous beneath except on nerves 12. *octandra*.

yx-tube with thin, flattened, rather sparse pectinate scales, the as similar, lobes lanceolate, acuminate, *3 in. long; leaves , long-petioled, 5-ribbed, up to 5 in. long, 1'5 in. broad, g p , , p g
rtly scabrous on both surfaces 13. *xoynaadensis*.

^{Wers} dually tetramerous (4- or 5-merous in *O. cupnlaris*) :— others gradually attenuate upwards; erect undershrubs with *^a^gled stems and fruiting calyx constricted above :— densely hispid; leaves opposite, oblong-lanceolate; calyx-tube ^with scattered tufts of bristles, lobes oblong, glabrous except at ^apex, margins prominently ciliate-bristly, appendages branched

14. *hispidissima*.

Nearly glabrous; leaves usually in threes, linear-lanceolate, sparsely hispid-ciliate on margins and ribs; calyx-tube glabrous, the lobes with few short ciliate bristles, the appendages slender, ⁿot bristly 15. *rostrata* var. *pulchella*.

Anthers abruptly beaked, the beaks slender; herbs or small undershrubs with 4-angled steins : -

Calyx-tube glabrous, lobes white-ciliate on the margins, appendages short and broad with pectinate bristles; leaves linear-lanceolate 16. *chinensis*.

Calyx-tube with both simple and stellate bristles, lobes ciliate, the apices stellate-bristly, as are the slenderly stalked appendages; leaves oblong-lanceolate 17. *zeylanica*.

Anthers short, truncate at apex; herbs or small undershrubs, the stems terete or slightly 4-angled.—

Calyx-tube in fruit 15 in. long with 4 short lobes, a stellate cluster of bristles at tip, appendages similar on very short stalks; leaves elliptic, subacute. up to 1 in. broad, drying greenish.....',
 Calyx-tube in fruit 25 in. long with 4 or 5 triangular lobes with a stellate cluster of bristles at tip, appendages long-stellately bristle-tipped; leaves elliptic or elliptic-ovate, up to 1-5 in. long by 75 in. broad, drying yellowish... 19-
 Calyx-tube in fruit 25 in. long with triangular ciliolate leaves narrowly lanceolate, 2-3 in. long, about 10 in. stiosely hairy above, shortly hispid beneath.....*#

1. OSBECKIA MINOR, Triana. • *O. aspera*, Wt. Ic. t. 3// - W. Coast, in Travancore (Wight, Horsley). A small shrub with small whitish-hairy leaves and red flowers.
2. OSBECKIA LINEOLATA, Gamble in Kew Bull. 1910, W. Ghats, Nilgiri and Pulney Hills, at high levels, 6,000 ft. A small erect shrub with glaucous branches and drying yellowish-green, the upper surface with -lineoles, flowers purple-red.
3. OSBECKIA ASPERA, Blume; *F. B. I. ii. 519 in part*; W. & 323 *in part*. W. Ghats, Courtallum in Tinnevelly Hills (Mitchel). A small undershrub with purple flowers.
4. OSBECKIA COURTALLENSIS, Gamble in Kew Bull. 1918, 2*- W. Ghats, Courtallum in Tinnevelly (Wight). A small shrub with red-purple flowers.
5. OSBECKIA KLEINII, W. & A. 323 *in note*. *O. aspera* var. *Klehrii*, C. B. Clarke in *F. B. I. ii. 519*. W. Coast, in Cochin and Travancore. An erect undershrub with purple-red flowers in terminal leafy panicles and rather large leaves, sparsely bristly.
6. OSBECKIA LAWSONI, Gamble in Kew Bull. 1918, 242. W. Ghats, Murchison in Travancore, at 2,000 ft. (Lawson)-A small erect undershrub with purple flowers in short terminal panicles.
7. OSBECKIA SUBLAEVIS, Cogn. in DC. Monog. vii. 32it W. Ghats from Mysore to Nilgiris, on rocks at about 7,000 ft.

MELASTOMACEAE.

A small fleshy shrub with smooth glabrous glaucous bluish branches and bright purple flowers in small terminal corymbose cymes.

- ⁸- OSBECKIA RETICULATA, Bedd.; Fl. Br. Ind. ii. 520. ° > *alveohta*, Bedd. Ic. t. 168.

W. Ghats, in the Anamalais and Pulneys, at 6,000-7,000 ft. A. large, very handsome shrub reaching 10-15 ft. in height, the whole plant except the deep purple petals covered with ferruginous hairs.

- * OSBECKIA TRAVANCORICA, Bedd. ex Gamble in Kew Bull, ined.

W. Ghats in the lower hills of Travancore (Beddome). An undershrub easily known by its stems being clothed with long retrorse bristles.

- ¹⁰- OSBECKIA WIGHTIANA, Benth.; F. B. I. ii. *fl.* 9; W. & A. ³²³; Wt. Ic. t. 998.

W. Ghats, in the Nilgiri, Anamalai and Pulney Hills, at 4,000-7,000 ft., often in rocky places.

A much-branched shrub reaching 8 ft. or more in height, with handsome purple flowers and pale-brown silky foliage, the leaves whitish beneath, like the calyx-tube. °- OSBECKIA LESCHENAULTIANA, DC; F. B. I. ii. 520. °- *Gardneriana*, Wt. Ic. t. 997.

W. Ghats, in the Nilgiri and Pulney Hills, at 6,000-8,000 ft., in damp places.

A branching shrub 8-10 ft. high with handsome purple flowers in terminal capitate heads, the calyx and small leaves with rufous hairs.

- OSBECKIA OCTANDRA, DC; F. B. I. ii. 521. ° *virgata*, Don in W. & A. 323; Wt. Ic. t. 376.

W. Ghats, from the Nilgiris to Travancore, at about 3,000 ft. A. slender undershrub with small purple flowers and dark ^ 4> foliage, the leaves lanceolate.

- *• OSBECKIA WYNAADENSIS, C B. Clarke in F. B. I. ii. 521. W.

Ghats, in Wynaad, at about 4,000 ft. A. slender erect undershrub with purple flowers in sub-terminal corymbs, large long-petioled leaves and very characteristic comb-like scales on the calyx-tube. °- OSBECKIA HISPIDISSIMA, Wt. Ic. 1.1612; F. B. I. ii. 516. ^T. Circars,

Mahendragiri Hill in Ganjam, 4,500 ft.

- (Gamble), Madgol Hills of Vizagapatam, at 5,000' f k ^ j . » yf.
Lushington). Deccan, in Mysore, at Wostara (O °^
A very hispid erect undershrub with large flowers.
15. OSBECKIA ROSTRATA, D. Don; F. B.I. ii-517.
Var. *pidchella*, Triana. O. recaZt-a, Bedd. M.S. in Her .
and B.M. . wampj
Camatic, in the Sirumalai Hills, at 3,500 ft., m s
places (Beddome).
An erect glabrous shrub reaching 4-6 ft. high, ^,
purple flowers.
16. OSBECKIA CHINENSIS, Linn.; F. B. I. ii. 515. —
N. Circars, Madgol Hills of Vizagapatam, about 4,U
(A. W. Lushington).
An erect slender undershrub, reaching about 2 ft. i
with pale mauve flowers in capitate leafy heads.
17. OSBECKIA ZEYLANICA, Willd.; F. B. I. ii. 516 ; W. & A' ^
N. Circars, Deccan and Carnatic, especially near the c An
erect annual herb with small purple mauve flower s leafy
capitate heads.
18. OSBECKIA TRUNCATA, Don in W. & A. 322 ; F. B. I- 11'
514; Wt. Ic. t. 375.
W. Coast from S. Canara to Travancore.
An erect annual herb with small purple flowers.
19. OSBECKIA CUPULARIS, Don in W. & A. 323; F. B. I- 11#
514. O. *Leschenaultiana*, Wt. Ic. t. 996, not of DC.
"W. Ghats, from Coorg to Nilgiris and Pulneys, at 3,000*
7,000 ft., in grass.
A herbaceous plant from a perennial rootstock, the flowered
white tinged with pink, calyx-lobes and petals as ofte»
5 as 4.
20. OSBECKIA GRACILIS, Bedd. in Trans. Linn. Soc. xxv. 216;
F. B. I. ii. 518.
W. Ghats, Sispara Ghat, in the W. Nilgiris, at 4,000 ft.
(Beddome).
An erect slender plant with purple flowers in few-flowered
terminal panicles and narrow leaves, the calyx-tube
greyish-blue when dry.

2. Melastoma, Linn.

usually erect and bristly. *Leaves* opposite, entire, elliptic or lanceolate, 3-7-ribbed. *Flowers* terminal, or in clusters or panicles, large, purple or sometimes rose usually 5-merous; bracts conspicuous. *Calyx-tube* lobed, *Panicle* covered with strigose or paleaceous hairs; *Petal* or lanceolate, alternating with subulate appendages. *Calyx-lobes*, broadly obovate, large. *Stamens* long, opposite calyx-lobes, with purple anthers produced at the base to end in two lobes and petals with yellow anthers and connective not less, but with 2 tubercles in front. *Ovary* ovoid, more or less lobed; *Calyx-tube*; ovules numerous; style simple. *Seed* usually 1-2, dehiscent or soft berry-like capsule. *Fruit* numerous, curved, minutely punctate.

MELASTOMA MALABATHRICUM, Linn.; F. B. I. ii. 523; W. & A.

j - HL. t. 95.

Wet Districts, rarer inland, in wet places and on banks of streams, up to 6,000 ft.

A small shrub with large red-purple flowers, the calyx-tube covered with pale paleaceous scales.

3. Kendrickia, Hook f. An

climbing shrub, climbing like ivy with stem *leaves* opposite, petioled, fleshy, with two pairs of

Upper *leaves* from the base, the other from the midrib short way

in few-flowered terminal umbels; peduncles

Calyx-tube urceolate, fleshy, slightly pro-

longed; *Ovary*, rose-purple; limb of 4 short fleshy lobes,

Stamens 4, fleshy, red, spreading. *Stamens* 8, equal,

opening at the summit by one pore; connective with a

process at the base. *Ovary* inferior, 4-6-celled; ovules

5 style simple, stout. *Fruit* globose capsule, 1-celled

seed, opening at the apex by 4-6 valves.

Very many, minute, prismatic. *KENDRICKIA WALKERI*, Hook.

f.; F. B. I. ii. 526; Bedd. Ic.

- Ghats, in the Anamalai Hills (Beddome), otherwise a Ceylon plant.

A very ornamental ivy-like climber, the lower stems a by rootlets, the branches free and pendent, the leaves in shape.

4. *Medinilla*, Gaud.

Erect or scandent, often epiphytic, branching shrubs.

opposite or whorled, entire, often fleshy, ribbed from the the blade. *Flowers* pink or white, in terminal panicles or lateral cymes, 4-5- rarely 6-merous, sometimes solitary; sometimes coloured, usually deciduous. *Ca Zya-tube* usually or cylindrical, the limb entire or obscurely toothed. *Petal* " " 4 or 5, ovate oblong or obovate, acute, somewhat fleshy, twice as many as the petals, equal; anthers opening by a pore; connective with 2 tubercles in front at the base and a behind. *Ovary* inferior, 4-6-celled, with many ovules on placentas; style filiform. *Fruit* a berry, crowned by the the calyx. *Seeds* numerous, ovoid or subfalcate, the raphe thickened.

Leaves 3-5-ribbed, elliptic lanceolate, 3-35 in. long, 1'5 in. usually acute at both ends, thinly fleshy ; flowers axillary, peduncles 1-3-flowered; stamens with very short anthers, the and spur very small.....1.

Leaves 3-ribbed, the outer ribs obscure and close to the orbicular, 1'5 in. in diam., very fleshy; flowers axillary on so peduncles; stamens with long, curved, acuminate anthers, the and spur prominent2. *Bead*

1. *MEDINILLA MALABARICA*, Bedd. Ic. t. 157; F. B. I.

W. Ghats, in the Nilgiris and Anamalais, at 7,000 ft. (Beddome).

An epiphytic scandent shrub, the flowers and peduncles, the petioles and the bases of the leaves a brilliant crimson colour

2. *MEDINILLA BBDDOMBI*, C. B. Clarke in F. B. I. *Mradicans*, Bedd. Ic. t. 184, *not of* Blume. *Trip radicans*, W. & A. 324.

W. Ghats, from Coorg to Wynaad and perhaps south, at 2,000-3,500 ft.

An epiphytic fleshy shrub, rooting from the stems.

5. **Sonerila**, Koxb.

Herbs, sometimes shrubby below, sometimes stemless, often
 fl%. *Leaves* opposite, the pairs equal, or unequal, entire or
 serrulate, ribbed or nerved from near the base or penninerved.
 Flowers mostly, purple reddish or white, in scorpioid cymes.
 Calyx-tube funnel-shaped campanulate or hemispheric ; teeth 3,
 short. *petals* 3 *stamens* 3, rarely 6, equal, anthers oblong or
 lanceolate, connective without appendage. *Ovary* inferior, 3-celled
 many-ovuled, the placentas axile ; style simple, filiform; stigma
small or capitellate. *Fruit* a capsule, enclosed in the persistent
 calyx-tube, dehiscing apically by 3 valves. *Seeds* very many,
 minute, smooth or tuberculate, the raphe forming a lateral
 appendage.

erect, elongate

:-leaves membranous :—

Small soft herb with very small flowers and small truncate
 others; stems glandular-pilose, often winged; leaves ovate,
 under 1 in. long, with a pair of slender nerves from above the
 base..... 1. *tenera*.

Erect suffrutescent herbs with rather large flowers and acuminate
 or rostrate anthers :—

Leaves with one slender pair of nerves from the base, a stronger
 pair a short way up covered with scattered bristly hairs,
 oblong-lanceolate, subentire, 1-1.5 in. long; fruiting capsule
 smooth,
 ribbed.... 2- *Clarkei*.

Leaves with 2-3 pairs of nerves from the base and a pair or
 more of nerves a short way up, all ascending almost to the
 apex and joining in loops :—

Leaves glabrous or nearly so, minutely serrate on
 the margins:—

Leaves under 2*5 in. long, acuminate at apex, rounded at
 base, the petiole up to 1.25 in. long; fruiting
 capsule

glabrous *S. Brunonis*.

Leaves 3-4 in. long, acuminate at apex, cordate at base,
 the petiole about 2 in. long; fruiting capsule glandular,

hairy *A. elegans*.

Leaves with ferruginous silky hairs on both surfaces, acute
 at apex, narrowed at base, the margins ciliate 1.5 in. long
 the petiole about 1 in., fruiting capsule with few glandular

i .

5

travanconca.

hairs

Leaves penninerved-with 8-10 nerves cordate ovate-lanceolate, long-acuminate, the base glabrous 3-4 in. long, sharply serrate; fruiting cap

Leaves, also stems, thick and fleshy .— Calyx-tube d i l ^ the top

so stems, thick and fleshy .— Calyx-tube and lobes glandular-pilose; apex, rounded or cordate at base, 7-9-ribbed usually long petiole, up to 3 in. long bristly-serrate, sparsely glandular-pilose or smooth Calyx-tube glabrous, smooth, in fruit funnipedicel: leaves lanceolate, acute at apex, auricled at base, conspicuously 3-ribbed from petiole, up to 15 in. long, 6 in. broad, sharply

Stems creeping; calyx-tube in fruit campanulate

pedicel; leaves ovate, acute at apex, rounded

3-5-ribbed from the top of the petiole, up to 1.75 in. sharply bristly-serrate, glabrous

Stemless or with only short weak stems; capsule nei a rim:—

Stems up to 6 in. long, quadrangular, sometimes hardly penninerved, ovate-lanceolate, acute, rounded or

equally, at base, up to 4 in. long by 2 in. broad, spatulate peduncles up to 3 in. long with 4-8 flowers

Stemless:— Leaves ovate or ovate-lanceolate, usually cordate

peduncles more than 4-flowered :— Slightly crispate-hairy ; leaves with 3-4 pairs of nerves the base, 2-3 on each side further up, up to 5 in. broad, acuminate, minutely serrate: petals narrow; 1-lin-long

Glabrous leaves with 2 pairs of nerves from the base, further up, up to 2 in. long, 1 in. broad, acute, crenate-serrate petals broad ; capsule 15 in. long

Leaves orbicular, deeply cordate at the base, others above, up to nearly 1 in in diam minute serrate; peduncles less than 4-flowered • petals broad • caps 1-15 in. long

1. SONERILA TENERA, Royle 111. t. 45, % . 2; F B I ii 5 N. Oircars, in Ganjam (Gamble); W. Ghats in Wy at 4,000 ft. on rocks, occasional south to Tinnevell A small weak herb with small pink flowers.

- SONERILA CLARKEI, Cogn. *S. amabilis*, Bedd.; F. -B. I. u. 533.

Y' Ghats, bills of Tinnevely, at 2,000 ft. (Beddome). 3 small woody plant with mauve flowers. • fcONERiLA BRUNONIS, W. & A. 321; F. B. I. ii. 53; Wt. 111. *⁹⁴, Ic t. 1059. S.

Arnottiana, Thw. var. *tenella*, Bedd. ; *^{1 B}- I- ii. 532.

W. Ghats, at Courtallnm in Tinnevely (Wight), Anamalais, ^ 3,000 ft. (Beddome).

n erect woodv plant with mauve-purple flowers (blue in H 1 t 9 4 /

v£ VEGANS, Wt. Ic. t. 995-3; F. B. I. ii. 535.

W. Ghats, at Sispara in Nilgiris, at 6,000 ft. A pretty erect herbaceous plant with rather thick stems and mauve flowers.

^{TR}AVANCORICA, Bedd. Ic. t, 156; F. B. I. ii.

^- Ghats, Attraimalai Hills of Travancore at 3,500-5,000 ft. (Beddome)-

A pvetty perennial ndershrub with mauve flowers and ^{si}% foliage.

RILA. VERSICOLOR, Wt. Ic. t. 1057 ; F. B. I. ii. 535. Ghats, in Nilgiri Hills, 3,000-6,000 ft, annual undershrub with rose-coloured flowers, one side of the petals darker than the other. ^{ar*} *amllaris*. *S. axillaris*, Wt. Ic. t. 1058.

W. Ghats, in W. Nilgiris and Wynaad, about 3,000 ft., distinguished by the racemes being axillary along the stem ,, instead of terminal.

'• SONBRILA SPECIOSA, Zenk. PL Ind. Coimb. t, 18; F. B. I. ii. 534; Wt. Ic. t. 995-2.

W. Ghats, from Mysore to Nilgiris, where common in ravines, and Travancore Hills, at 5,000-7,000 ft. A very pretty fleshy species with mauve-pink flowers. & *Bensonii*, Hook, f. in Bot. Mag. t. 6049; F. B. I. ii. 540, seems to be a 6-stamened form of this species. ^{8'} SONBKILA GRANDIFLORA, Wall. ; F. B. I. ii. 535; W. & A. ³²² ; Wt, Ic. t. 995, Spic. Nilg. t. 67.

W. Ghats, in the Nilgiri, Anamalai and Pulney Hills, usually along streams, at about 6,000 ft.

OF XADR*^S-

A very pretty fleshy undershrub ^J^ ,,J>J#& times paler, the small leaves promine*i^7 19.

SONERILA PULNBYENSIS, Gamble in && W. Ghats, in the Pambar Ravine, P«^{lne^} A straggling fleshy plant rooting *troi* flowers not known.

10. SOXERILA RHEEDII, W. & A. 321. - at
W. Ghats, Coorg to Malabar and Wy»^{a'} ' ft., on wet rocks.

A small short-stemmed or stemless P flowers.

11. SONERILA WALLICHII, Benn. ; F. B. I- ^{n- m c}
W. Ghats, from Wynaad to the. Anamalais, upwards.

A stemless plant with bright pink or r

12. SONERILA SCAPIGERA, Dalz.; F. B. I- ^u
W. Ghats, Bababudan Hills of Malabar

A stemless glabrous plant with mauve flowe*- ^
flowered racemes.

13. SONERILA ROTUNDIFOLIA, Bedd-; F. B. I- ^{ll- o r og . J3^}
ⁱ¹⁶⁹⁻ A Anaⁱ

W. Ghats, Malabar Hills, Nilgiris and ^
rocks at 4,000-6,000 ft. flo^{d-8^}

A small stemless plant with rather large maiyve few-flowered racemes, the peduncles bright red-

6. Memecylon, Linn. & \$

Shrubs or trees, glabrous. *Leaves* opposite, coriaceous, ^, or shortly petioled, nerves inconspicuous, joining a usual y ^ spicuous intramarginal nerve. *Flowers* usually axiUatf i¹ ojd of same year's leaves) or lateral (in axils of fallen leaves wood), fascicled or in simple or paniced cymes or um[^] , f, bracteoles 2 or more, at or near the base of the pedicels. o ' *le* tube above the ovary campanulate or saucer-shaped, limb trun or shortly 4-lobed, often coloured, enclosing a frequently W,.. disk. *Petals* 4, blue or white, rarely reddish, fitome** S, eq^f hlaments long; anthers short, opening by slits, the *connef'* thickened at the back, ending in a spur or horn. *Ovary* l-ceU^{*d}; ovules 6-12, on a central placenta; style filiform, simple. *F[^]f* a globose or ellipsoid berry, crowned by the calyx-lim£ normally

- *Seed* large, testa crustaceous, cotyledons
^{xoll} laceous, convolute, ^{ll}ace

oaves r > 4*

Flow . acute at base > not cordate, rarely rounded .—

ov i . ^{ses}sile or very shortly pedicellate, in fascicles on axillary
lateral tubercles :— ^Javes lanceolate, acuminate; flowers axillary :

—

aves up to 10 in. long by 2*5 in. broad with prominent intra-
lar^{lar}gmal nerves connected by about 10-16 prominent straight
ryes with the midrib; flower-fascicles about '5 in. broad,
icels very short with lanceolate bracteoles; calyx-tube
panulate, disk rays prominent and raised 1. *Heyneanum*.

^eaves up to 4 in. long by 125 in. broad, the 6-10 nerves and
ittramarginal nerve faint; flower-fascicles *2 in. broad, the
^{ew} lowers sessile, bracteoles ovate; calyx-tube campanulate,
disk-rays very faint 2. *Lawsoni*.

aves elliptic-ovate, up to 35 in. long, 15 in. broad, shortly and
usely acute to acuminate at apex, narrowed at base, dull and
owish when dry, intramarginal nerve and about 6 branching
es often visible; peduncles very short, fascicled, axillary and
lateral fl f

> lowers sessile in umbels, with ovate bracteoles and cam-
Panulate calyx-tube, disk rays not apparent 3. *Talbotianum*.

^{aves} elliptic or elliptic-obovate, under 2 in. long, 1 in. broad,
*, ^{Ves} not visible, petiole very short; flowers axillary or lateral:—
eaves green when dry ; branchlets very slender, pale; tubercle
SI*iall, flowers very shortly pedicellate with small bracteoles ;
calyx above the ovary saucer-shaped, disk rays obscure

4. *LusJmigtonii*.

eaves yellowish when dry; branchlets slender, nodose, rough,
^u tiniate often quadrangular; tubercles small, flowers shortly
pedicellate with lanceolate bracteoles ; calyx above the ovary
campanulate, disk rays obscure 5. *Jiavescens*.

o[^]vers clearly pedicellate, in pedunculate cymes:— ymes
branched, lateral, the iltimate branches umbellulate :— -Leaves
linear-lanceolate up to 3 in. long by '5 in. broad, obtuse ^{at} apex,
intramarginal nerve close to the margin, the nerves ascending;
calyx above the ovary saucer-shaped, the disk
clearly but not thickly rayed 6. *angustifolium*.

leaves ovate or ovate-elliptic, under 2 in. long by -75 in. broad,
obtuse or emarginate at apex, dull above, yellowish when dry,
nerves not visible; calyx campanulate, the disk rays con-
spicuous, raised 7# *umbellatum*

leaves ovate, acute or obtuse or emarginate at apex,» d_ obtuse at base, shining above, up to 4 in. long by V5 »«• ^. when dry the upper surface greenish, the lower brown, ^. marginal nerve and about 8-10 pairs of nerves faintlj'J ^ Peduncles about -25 in. long; calyx campanulate, the d» shghtly raised..... 8_ * >t
 Leaves ovate, acute or acuminateat' apex', ' acute or oWJJ^ base, sometimes sinning above, up to 7 in. long by 2 «>• " nerves and intramarginal nerves slightly visible when peduncles about -5 in. long, pedicels filiform; calyx cnp *TM the disk rays conspicuous ... 9_ g> Ll-

T

Cymes axillary, 3-flowered, pedicels filiform with W«**JJ above the base, peduncles -25-5 in. long; leaves ov»te-1*J late, caudate-acuminate, up to 2 in. long, -7 in. broad; <> cup-shaped, white, disk dis<Ltly raye'd... " > . i ^ Cymes lateral, short, few-flowered • -

Leaves green when dry, ovate-lanceolate, caudate-acu."^

^ Dgt ?6_1"5 in_ broadt " >o intramarginal nerve • » s?2
 S * ir : ir 1 1 W

lltTl branched' the ""in^te branches'not distinctly «>>>D

Leaves yellow when dry, narrow^ ^te^oblong, obtuse ^ . " f" 2 - . ^ ng, . 75 y in. broad, intramrgi nerve and about 6-8 pairs of nerves faintly visible; '-J f ftm-j ca'y* « fruit saucer-shaped, disk

aves sSrnUr::: ^ ^ 111_ ! « _ * :
 Flowers fascioWl . ; *e or 8ol»etimes rounded at base:- aterarlub^et^:- ^ ^ort-peduncled cyuies *

Leaves shortly (-1 in >* ^ ^- i - , i
 base.ovate-obLng.obtus^ r tai . rOUnded or Sligh^ «ordate " broad, intraniamal lrvs . Tt " ? *o 35 in" lon^ ^ 1>3 T
 •2 in. long; calyx campruTateabov 01,101161"03"811516' ^ the ovar y. the teeth acute, disk rays faint

Leaves sessile, cordate at base ^{TM=} '*■..... vW..... 13- *Sisparens*'
 long by 1-5 in. broad, pedicel's *llioT*^ " " ^ "P t0 2,5 iB'
 above the ovary, the teeth acute disk ,.» « • yx camPanulate
 , UJSK. lays taint

Leaves sessile or very shortly (scarcely -1 in ^ 14; *malaharicum*'
 oblong-lanceolate, acuminate, up to 6 in w"h° - ' cordate'

- pedicels *i \ i
 with f long>; calyx above the ovary saucer-shaped, papillose
 ' the disk rays faint; flowers lateral or axillary
- s f • 15> deccaneilse r
 e 1Cled on Hilary or lateral small tubercles :—
 e i ? 1 t ' few-flowered > branchlets quadra'n-
 S ovate> obtuse, up to 2 in. long, 1 in. broad, cordate,
 Calyx fun^el-shaped, slightly papillose, the disk rays
- pj 16. *subcorda turn.*
 teret^{Gr} C*Usters abo<t "5 in. in diam., usually axillary; branchlets
 b road ' leaVes sessile> cordate, lanceolate, 3-6 in. long, 1-2 in. s]
 ' Calyx-tube above the ovary suddenly widened to saucer-
 ow -! • layS promine^{nt}..... 17. *depressum.*
 b In long (*5--7 in.) -peduncled, subterminal or axillary
 ; leaVes lanc^{eo}late, acuftiinate, 1*5-2-5 in. long, '7-1 in.
 <tisk . ' pe^icels "2 in- long; calyx-tube cup-shaped, lobes acute,-
 rays fairly prominent..... 18. *terminale.*
- ' ^ ^ ECY HEYNEANUM, Benth.; F. B. I. ii. 560; W. & A.
mosoi dTM > Wt. Ic. t. 277.
 , in Wynaad, the Bolump^catti Yalley and
 V Tinne-^e% Hills up to 3,000 ft.
- 9 shrub with prominently nerved leaves and blue flowers.
 SMECYLON LAWSONI, Gamble in Kew Bull. 1919, 226. o
 IVT ^{Ghi'ts' in SE-} Wynaad at about 3,000 ft. (Lawson). o'
 ME^ ECYLON TALBOTIANUM, Brandis in Talb. Bomb. List, ^{ed}< 2,
 appendix.
 W- Ghats, Coorg or Nilgiris (G. Thomson); W. Coast., in
 S- Canara (Hohenacker). -A- tree reaching 30-40 ft. in
 height with blue flowers and yellow globose berry *25 in. in
 diam.
- 4- MEME CYLON LUSHINGTONII, Gamble in Kew Bull. 1919, 227.
 Deccan, Horsleykonda in Cuddapah at 4,000 ft. (Gamble),
 Osahatti in Coimbatore (A. W. Lushington); W. Ghats, in
 E. Nilgiris at 4,000-6,000 ft,
 A large shrub with small leaves, pale blue flowers in small
 clusters and berry '2 in. in diam.
- f• MEME CYLON FLAVESCENS, Gamble in Kew Bull. 1919, 226.
 W\ Ghats, in BTilgiri Sholas at and above 7,000 ft. (Gamble). A
 large shrub with many branches, usually obovate
 yellowish leaves, pale blue flowers and greyish berry *3 in. in
 diam.

F. B-1-ii

6. MEMECYLON ANGUSTIFOLIUM

t. ^/o.

W. Ghats, in forests near Courtallum m
usually on river banks.

A shrub reaching 6-8 ft. in height
flowers and black-purple berries. ^mi/frn**1'^ Jll

7. MEMECYLON UMBELIATUM, Burm. f. ^ ' ^9; vV •

W. & A. 319. *M. tinctorium*, Koen.; W- * ' -g I, ii-
t. 93. ilf. ^i(7e var. *vamiflom*, O. B. Clarke_m ^. peCC*
E. Coast Districts from the Kistna soutn ^ s
from Cuddapah and N. Arcot to Ooinibatore,
the slopes; W. Coast, in Travancore.

A large shrub with yellowish foliage ana ^
berries, the flowers blue. TT B I- **'

8. MEMECYLON EDULE, Roxb. Cor. Pl. t. 8-;

"part only.

N. Circars, in Ganjam, up to 4,500 ft. on &* > ^ . ^ ffl
Deccan, hills of N. Arcot and Cuddapah, coim
evergreen forests. < l_e

A large shrub with blue flowers and blaok-p^{ur}P^
fleshy berry *25 in. in diam., the leaves sllinin^0
upper surface. Bark light brown, rough; w
brown, very hard and close-gi-ained, a good in
Ur. Nirasa; Tel. Alii; Tarn. Kaya. *

9. MEMECYLON QRANDE, Retz; F. B. I. ii. 557 ; W. & is"
ifcf. eduZe var. *ovata*, C. B. Clarke in F. B. I. ii. W. Coast
Districts from S. Canara to Travancore; "W in the lower
Pulney Hills.

A large shrub with rather long-peduncled cymes,
leaves and brownish-black berry "25 in. in diam.

10. MEMECYLON GRACILE, Bedd. Ic. t. 164; F. B. I. ii- L-

W. Ghats, evergreen forests of Travancore and Tinnevel J
at 1,000-3,000 ft., a common undershrub.

A pretty shrub with zig-zag branches, pale blue Hower»
and globose berry -25 in. in diam. The wood makes g^{ood}
walking-sticks.

11. MEMECYLON MADGOLENSE, Gamble in Kew Bull. 1919, 227-
N. Circars, Madgol Hills of Vizagapatam at 3,000-4,500 ft.
(A. W. Lushington).

A shrub, the berries about "15 in. in diam.

- J^EMECYLON MOLESTUM, Cogn. *M. eclule* var. *nwlesta*, C. B. Clarke in F. B. I. ii. 564.

W. Ghats, in the Nilgiri and Anamalai Hills at about 6,000 ft.

A tree reaching 30-40 ft. in height, with bright blue in ^{CO}nspicuous flowers, the berries 2 in. in diain.

- MEMECYLON SISPARENSE, Gamble in Kew Bull. 1919, 227.

W. Ghats, on Sispara Ghat in W. Nilgiris, at 5,000 ft. (Gamble).

A large shrub or small tree with flower clusters about 1 in. 14 M¹¹ diam*jtllle Petals blue, calyx red.

- -^EMECYLON MALABARICUM, Cogn. *M. ampleMtcaule* var. *m«laharica*, C. B. Clarke in F. B. I. ii. 559 in part.

W. Ghats, in moist sholas of the Nilgiri and Pulney Hills at 4,000-6,000 ft,

A small tree with bright blue flowers in clusters about ⁵ in. in diam., the calyx red. Wood greyish-brown, very \\ T\ ' ^ an(^ e)lose-grained, a good fuel. ' M^EMECYLON DECCANENSE, C. B. Clarke in F. B. I. ii. 560. ■&£ *Heynenum*, W. & A. 319, not o/Benth. W- Coast, in Malabar and Travancore at low levels. A shrub, apparently scarce, the flowers blue with red calyx, the berries black, '15 in. in diam., the flowers sometimes axillary.

- * ^EMECYLON SUBCORDATUM, Cogn. *M. amplexicaule* var. *wdata*, Wight; F. B. I. ii. 559.

S. India, precise locality not known.

- ⁷- HEMECYLON DEPRESSUM, Benth. *M. amplexicaule* var. *malabarica*, C. B. Clarke in F. B. I. ii. 559 in part. W. Coast and lower slopes of W. Ghats in Malabar and Travancore, up to 1,200 f^

A shrub, rather variable in leaves, the branchlets sometimes terete, sometimes tetragonous; berries black, "3 in. in diam. ¹⁸-

MEMECYLON TERMINALE, Dalz.; F. B. I. ii. 558. *M. aviabile*, Bedd. Ic. t. 163; F. B. I. ii. 555.

W. Ghats, in the hills of S. Canara up to 2,000 ft. (Beddome).

A slender, pretty shrub reaching about 10 ft. in height, With pale blue flowers.

Family LXVI. LYTHRACEAE.

alt

Trees, shrubs or herbs. *Leaves* usually decussate, $i^* \wedge$ nate or verticillate, entire; stipules 0 or minute, $\wedge \wedge_0$ deciduous. *Flowers* hermaphrodite, regular or some $im \cdot cU]ate$; morphic, solitary or in axillary dichasia, sometimes $p \wedge \wedge_{et}$. Bracts and bracteoles small, usually deciduous. *Calyx-* $te,$ sistent, cup-shaped campanulate or tubular; lobes $\gg l$ often with accessory appendages alternating with the i . as many as the calyx-lobes, alternate with them, in $sei \quad "vfe \setminus$ mouth of the tube, sometimes 0, frequently clawed $an \wedge * - V_r \text{ very}$. *Stamens* as many as, or twice as many as, the calyx- $*0 \quad \wedge$ many, inserted on the calyx-tube. *Ovary* free, in the the calyx-tube, 1-6-celled; the ovules on axile $P \wedge cen \wedge \wedge \wedge$ long; stigma capitate. *Fruit* a dehiscent or (indehiscent, $\wedge r$, opening by valves or irregularly, usually many-seeded. $ihaj > e$, sometimes various $m sJ$ winged; cotyledons flat or con

x Low, usually aquatic herbs with very small flowers; $cai \} *$ branous :—

Placenta in the ovary not continuous with the style :—

Fruit dehiscent, opening in valves, the valves minutely I^{101} tally striate..... $\wedge \wedge 7 7 . 7 \wedge .$ 1- $*oi9X$

Fruit indehiscent, opening irregularly, the walls not striate

2. Amman $\gg ia \#$

Placenta in the ovary continuous with the style, the fruit $o \setminus$ cularly or irregularly dehiscent 3. Nes &

Trees or shrubs; calyx moderately thick :—

Flowers zygomorphic; calyx-tube tubular, curved; shrub \wedge

under surface of leaves black-dotted 4. Woodfordi**

Flowers actinomorphic; calyx-tube not curved :—

Capsule circumsciss; flowers 6-merous, solitary in the leaf-axils; fleshy 5. Pemphis*

Capsule 3-6-valved; flowers 6-merous; stamens many; seeds

winged 6. Lagerstroemia*

Capsule irregularly dehiscent; flowers 4-merous; stamens 8;

seeds pyramidal 7. Lawsonia.

1. Rotala, Linn.

Annual or rarely perennial herbs of wet places, stems often tetragonous. *Leaves* verticillate, opposite and decussate or rarely

ei'nate, entire, sessile or subsessile; stipules 0. *Flowers* very
 % l j s ° Htary and axillary or in terminal spikes or
 racemes,
 Uvely in umi^js usually sessile; bracteoles 2.
Calyx-tuhe
 ^aiu panulate or subglobose, often scarious and hyaline; lobes
 with often subulate appendages between them. *Petals* as
 any as calyx-lobes, inserted between them, usually small, J3ome-
 *mes a^sent. *Stamens* 1-6, on the calyx-tube opposite the lobes.
 Van J sessile or substipitate, 2-4-celled; ovules many;
 style
 0 unuifir; stigma capitate. *Fruit* a septicidal 2-4-valved cap-
 11 e, the walls minutely horizontally striate ; placenta central, free
 . e top, one valve of the capsule crowned with the style.

Seeds

11m ute, ellipsoid or hemispheric, usually flattened on one side.

- * cowers and leaves verticillate :— Petals 0; stamens fewer than the
 5 calyx-lobes; bracteoles much
 longer than the calyx; capsule 2-3-valved.....1. *o'ccultiflom.*
 ■ Petals present; calyx-lobes and stamens 3 each; bracteoles ntuch
 shorter than the calyx ; capsule 3-valved..... 2, *verticillaris.*
 owers and leaves opposite, decussate :— lowers axillary or in
 numerous leafy spikes :— ^alyx appendiculate, the
 appendices subulate, sometimes absent: —
 Petals minute, subulate, calyx-lobes long-acuminate; capsule
 4-valved; very small almost filiform herbs3. *illecebroides.*
 Petals obovate; calyx-lobes acute; capsule 3-valved;
 herbs with tetragonous stems : —
 Calyx-lobes very short; petals very small; floral leaves not
 conspicuously smaller than those of the stem
 4. *leptopetala.*
 Oalyx-lobes triangular, acute; petals rather large;
 floral
 leaves usually much smaller than the others5. *densiflora.*
 Calyx exappendiculato: —
 Stamens longer than the calyx, the calyx-lobes
 triangular,
 acute; petals 5, fimbriate ; capsule 3-valved.....6. *Jimbriata.*
 Stamens shorter than the calyx, the calyx-lobes acuminate ;
 petals 4, obovate, entire ; capsule 2-valved7. *indica.*
 Flowers in close terminal spikes, with cordate floral leaves; petals
 4, rose; capsule 4-valved:—
 Petals large, broadly obovate; stamens included; leaves rounded

or suborbicular, shortly petioled8. *rotundifolia*.
Petals small, narrowly obovate; stamens exserted;
leaves
orbicular, sessile ____9. *macrandra*.

1. ROTALA OCCULTIFLORA, Koehne.
W. Coast, in Malabar (G. Thomson, quoted by
A small water-herb with linear verticillate lea
bracteoles. ~ t.
^c#
2. ROTALA VERTICILLARIS, Lhm.; W. & A. 30jJ 5
^
t, 260 A. *Ammannia Rotala*, C. B. Clarke in 1 • ^
E. Coast, from Nellore (Bourne) southwards to
(Rottler). leaves-
A small herb of ricefields with verticillate lmeai
^^
3. ROTALA ILLECEBROIDES, Koehne.
locality (Wight). B
A very slender water-herb with erect slenaei uS
leaves ovate-cordate, the calyx-lobes with conspicu
like acumination. fan
4. ROTALA LEPTOPETALA, Koehne. *Ammannia f*
Roxb. • F. B. I. ii. 568 in part. lac^{e9#}
Plains Districts, chiefly on the East Coast, in moist p
A herb 3 to 12 in. high with usually erect stems and r
few branches, hardly distinct from *R. densiflora*-
^
5. ROTALA DENSIFLORA, Koehne. *R. Roxburghta-nct*, TM*-
^
260 B. *Ammannia pentandra*, Roxb.; F. B. I. n-
part.
Most plains Districts, in moist places. m .

A herb reaching 6-12 in. high with many
divaricati b
noriferous bi*anches. -
6. ROTALA FIMBRIATA, Wt. Ic. t. 217. *Ammannia pentanw*
var. *fimbriata*, C. B. Clarke in F. B. I. ii. 569.
Deccan, in Mysore, in ricefields and on tank
borde
(Wight), Horsleykonda, in Cuddapah, at 4,000 ft. (Gamble,
Fischer).

A rather large herb reaching nearly 2 ft. in height, the lower nodes rooting, the leaves linear cordate.

7. ROTALA INDICA, Koehne. *Ammannia peploides*, Spr.;

F. B. I. ii. 566. *Ameletia indica*, DC; W. & A.303; Wt.

Ic

t. 257 A.

Most Districts in ricefields and other wet places, in the hills Up to 2,000 ft.

An extensively rooting much-branched herb, the obovate

^ Huate thickly marginate stem leaves much larger than

Hor*S ' floral ones w^ch "i^ke short leafy spikes.

Ho -h*^ R^I5S^DIPOLIA. Koeline. Ammannia rotundifolia,

An iy^F*R L ** 566; ^_ & A_306 ^j^TM^_

7hAA llcts' in icefields and other wet places, up to ^00 ft. in the hills.

extensively creeping herb forming large patches, con- CU0Us f^i* its terminal spikes of pretty rose-coloured flowers.

W ^ A AIA CRANDRA, Koehne. Ammannia rotundifolia, • « A. 306 m jp_a^ Ameletia rotundifolia, Wt. Ic. t. 258.

' ^""ats, in the hills of Malabar (Bourne), Anamalais Wight).

naccid herb, creeping aud rooting at base, much inched, scarcely distinct from B. rotundifolia.

A 2. Ammannia, Linn.

aces a •r ^ernaPs biennial sometimes) glabrous herbs of wet ' j^IUS more or less tetragonous. Leaves decussate, sessile, .

p sessile or pedunculate dichasia; bracteoles ^» tri Gm anois_ Calyx-tuhe campanulate, later globose;

a^^ase; stipules 0. Flowers small, 4- or rarely 5- m i^

p1>e §^uAa; appendages 0 or very sJiort. Petals alternate, when on ti ' l:etw^een the calyx-lobes, sometimes 0. Stamens 4 or 8, ^'ect o.a. ^x"^^ll^e- Ovary sessile, incompletely 1-5-celled ; style or c-' . S

1SIna capitate. Fruit a capsule, breaking up irregularly 7 U^W^c^88> the walls very thin, membranous, not striate. ag verV r>

many, small, a raphe on the inner face.

Ca orm' *eaves usually auriculate-cordate ; petals present:— lat e aS *on£ as or longer than the calyx-tube ; flowers pedicel-

Q^e^ stan^iens 4, included; petals small or absent..... 1. nudtiflora. psule hidden in the calyx-tube; flowers subsessile : stamens 8,

ob e> ^xserted ; petals #1 in. long..... 2. octandra. ' ^eaves narrowed or somewhat cordate at base ; petals 0; es

bghtly longer than the calyx-tube ; stamens 4...3. baccifera.

l' AM^ANNIA MULTIFLORA, Roxb.; F. B. I. ii. 570; W. & A. 305.

All plains Districts, in wet places.

A small erect herb with narrow leaves.

2. AMMANNIA OCTANDRA, Linn, f.; F. B. J-
Cor. PL t. 133; W. & A. 304.
East Coast, on tank borders.
A rather large erect herb with large rose-colou
3. AMMANNIA BACCIFERA, Linn.; F. B. 1. n-^{00t} •
Roxb.; W. & A. 305.
All plains Districts, in wet places. - . ■
An erect herb reaching sometimes - rt-
leaves narrowed at the base. . j, B-
- Var. *aegyptiaca*, Koehne. ^ . *salicifolia*, O. B. Clar
ii. 569. Leaves more or less cordate at base, tn
capsule larger.

^

Most Districts of the Circars and Deccan,
an 5,000 ft, in the Nilgiri Hills.

3. Nesaea, Comm.

Annual or perennial herbs or undershrubs, stems o^{often}
gonous. *Leaves* decussate or verticillate, sessne.^
^ petioled; stipules 0. *Flowers* small, solitary and
axiHaiy> ^ axillary dichasia; bracteoles 2. O«^«-tube
campanulate m ^
lobose, herbaceous, lobes 4-8, appendices usually sn0

or globose, herbaceous, lobes 4-8, appendices usually s , \iq&
Petals as many as the calyx-lobes, inserted between
^ sometimes absent. *Stamens* 4-many, inserted on the caiy-
^ *Ovary* sessile, glabrous, 2-5-celled; ovules many;
style shoi't; stigma capitate. *Fruit* a globose or
ellipsoid cap ^ at first opening with an operculum,
later irregularly » t placenta central, running up to the
style, the valves reinai as wings. *Seeds* minute, flattened or
hollowed on one side.

Leaves attenuate at base; calyx-tube usually pubescent, appendages horn-like, prominent..... 1. *lanceolata*
Leaves cordate and subamplexicaul at base; calyx-tube glabrous and appendages short 2. *brevipes*

1. NESAEA LANCEOLATA, Koehne. *Ammannia lanceolata**

Heyne; F. B. I. ii. 570.

Circars, Deccan and Carnatic, in wet places, near the Coast.

2. NESAEA BREVIPES, Koehne. *Ammannia cordata*, W. & A-

304; F. B. I. ii. 570.

Circars and Deccan.

4. **Woodfordia**, Salisb.

arborescent, the branches terete or the younger
 Leaves opposite, entire, subcoriaceous, with black
 surface. *Flowers* in short axillary
 solitary; bracteoles 2. *Calyx-tube* long, slightly
 curved above, oblique near the mouth; lobes 6, short,
 with 4 accessory appendages. *Petals* 6, very small. *Stamens*
 inserted in the lobes of the calyx-tube, usually much
 longer; filaments filiform. *Ovary*
 filiform; ovules very many on axile placentas; style long,
 slender. *Fruit* an ellipsoid, membranous capsule
 sometimes split by it. *Wood*
 cuneate, smooth.

ii 5-9 **WOODFORDIA FRUTICOSA**, Kurz. *W. floribunda*, Salisb.; F. B. I.
 77 *tomentosa*, Roxb. Cor. PL t. 31; W. & A. 308. . "
 Malabar and Deccan, as far south as the hills of Kurnool, *Malabar*
 forests, on dry hill sides and rocky places; *Malabar*
 Coast, in S. Canara (Wight).

Large deciduous shrub with scarlet flowers and lanceolate
 leaves, whitish beneath. Bark thin, grey; wood
 light and hard. The flowers give a red dye. Vern. .
 Dawi; *Ur*. Jatiko; *Tel* Jargi, Seringi.

5. **Pemphis**, Forst.

Small trees. *Leaves* opposite, thick and
 fleshy,
Flowers solitary, axillary, pedunculate; bracteoles 2.
 Calyx-tube campanulate, coriaceous, ribbed; lobes 6, short, with
 6 appendages. *Petals* 6, inserted at the top of the
 calyx-tube. *Stamens* 12 (or 18), inserted in 2 rows
 above the ovary. *Ovary* free, subsessile. 3-celled at the base; *Stamens*
 many; style long; stigma capitate. *Fruit* a coriaceous
 capsule, nearly globose, circumsciss. *Seeds* numerous,
 compressed, cuneate, margined.

ACIDULA, Forst.; F. B. I. ii. 573; W. & A.
 307. *Griffithiana*, Wt. Ic. t. 1996.

coast and tidal backwaters in Malabar, Travancore and
 Tinnevely. A large branching evergreen shrub or small tree
 with grey-

silky pubescent small leaves under J-» i't in* i ^wii et U"
flowers.

6. Lagerstroemia, Linn.

Trees or shrubs. *Leaves* opposite, distichous ^.
most alternate, entire, petiolate, often glaucous be .^^ Yi 2,
deciduous. *Flowers* often large and showy, in atlj es.): ' often
forming terminal usually trichotomous p^{al} -. j s# at the apex of
the peduncles; bracteoles 2, on the pecu ^ ^ a^{1*}
tube campanulate, coriaceous, smooth or ribbed; ^ivjt-t^{11'''}
Petals 6, sometimes more, inserted on the top oi f the C&+J ,j«
clawed, the blade wrinkled, the margins \$^a) L.
numerous, inserted near the base of the calyx-tu long,
exserted. *Ovary* sessile, 3-6-celled ; ovules n ^ ing,
on axile placentas; style long, curved; stl=> ,
Fruit an ellipsoid woody loculicidal capsule, 3-6-va
numerous, flat, erect, falcately winged at the apex,
cotyledons orbicular, thin, convolute,

Ovary glabrous :—

Calyx-tube smooth without:—

Petals white, rather small, shortly clawed :—

Calyx-tube with a ring inside the lobes appressed to ^
sule in fruit; leaves greyish and glabrous or shortly P :i ora.
beneath, rounded at base ^' ^

Calyx-tube without a ring; leaves narrowed at base •-** ^ Q
Leaves glabrous or downy and bluish-white beneath i ^
4 in. long; flowers scarcely '25 in. broad ; calyx lobes re
in fruit 2. W>
Leaves ferruginous-villous beneath, up to 6 in. long;
more than '25 in. broad..... 3. Th

Petals variously coloured from white to crimson j leaves
beneath.....

Calyx-tube ribbed without; petals large, mauve ; leaves large, up
to 8 in. long, green beneath..... 4. Flos-Reo^{^nae'}

Ovary densely villous ; calyx-tube not ribbed, densely fulvous tome*^{1''}
tose as is the Hinder surface of the leaves5. Rottleri-

1. LAGERSTROEMIA PARVIFLORA, Roxb. Cor. Pl. t. 66 ; F. B. I. ii. 575; W. & A. 308 ; Wt. Ic. t. 69 ; Bedd. Fl. t. 31. X. Circars and Deccan as far south as the N. Nilgiri_s> in deciduous forest.

Large deciduous tree with rather small white flowers and woody capsule varying in size. Bark light brown, thin, exfoliating in longitudinal scales; wood hard, useful for building for agricultural purposes. Vern. *Hind.* Sida, Bakli; *Tel* Chinangi.

TROEMIA LANCEOLATA, Wall.; F. B. I. ii. 576;

- & A. 309. *L. microcarpa*, Wt. Ic. t. 109 ; Bedd. Fl. t. 30. eccan, in the Sandur Hills of Bellary, up to 4,000 ft. W. Lushington); W. Ghats and W. Coast, common

and dry evergreen forests up to 3,000 ft. Large deciduous tree with small white flowers and small Psules. Bark smooth, white, peeling off in papery flakes ; oocul reddish-brown, moderately hard, useful and valuable for building and other purposes. Vern. *Tel.* Ventaku ; 3 *T* w- Yevala; *Mai* Yenthekku ; *Kan.* Billi nandi. "

AGERSTROEMIA THOMSONII, Koehnein Engl. Pflzreich xvii.

in d

" Mysore and Carnatic" (G. Thomson), probably W. Ghats, apparently very rare.

AGERSTROEMIA FLOS-REGINAE, Eetz; F. B. I. ii. 577.

- *• *Reginae*, Roxb. Cor. PL t. 65; W. & A. 308; Wt. Ic. t. 413; Bedd. Fl. t. 29.

W\ Ghats, from S. Canara through Malabar to Travancore, chiefly along river banks and up to 3,000 ft.; hills of the "N- Circars (Roxburgh); much cultivated for ornament, sometimes for timber.

A large deciduous tree, very handsome from its large niauve flowers, the seed capsules remaining long. Bark smooth, usually grey; wood light red, hard, valuable for building, for ship work and furniture. Vern. *Hind.* Jarul; *Tarn.* Kadali, Pu maruthu; *Mai* Mani maruthu.

LAGERSTROEMIA ROTTLEI, C. B. Clarke in F. B. I. ii. 576. Without locality (Rottler). A well-marked but very little-known tree.

oemia indica, Linn., is an ornamental large shrub or tree, commonly cultivated in gardens, native of China.

7. Lawsonia, Linn.

A glabrous shrub, branches terete, branchlets sometimes Jbeta-,
ending in spines. *Leaves* opposite, entire, lanceolate;

stipules minute, deciduous. *Flowers* small, in terminal pa^{""^}
bracts small, deciduous. *Calyx-tube* short; lobes 4, *P*

tb^e

ovate p_{rfo}& 4> obovate, wrinkled and crenate, i_{ser*e<:he} i>*
top of the calyx-tube. *Stamens* 8, inserted in pairs at t*

{,,e

oi the calyx-tube and opposite the lobes; anthers oblo[^]
connects thick. Omn, subglobose, 2-4-celled; ovules [^],
7f P^{liice}<t"s; style long, thick; stigma capitate. J

le,i.

globose capsule, breaking up irregularly, ultimately [^]

f.

Seeds numerous, pyramidal, closely packed;

testa [^]

cotyledons orbicular, flat.

. 5;|:

WSONIA INERMIS, Linn L alba Lamk.. F. B. I- »•

W. & A. 307; Wt. 111. t, 87.

All plains Districts, cultivated as a hedge pi*^{"1*} P^{erlli#}
rfltf

wild on the Coromandel coast and in the Deccan-
Henna plant. , -[^]

A deciduous shrub with white flowers and small leaves <\
give the "henna" dye. Bark greyish-brown, thwi
[^] grey, hard. Vern. *Hind.* Mehndi; *Vr.*

Mangha*" Gormta ; *T_{am.}* Marithondi; *Kan.* Gorantu.

Family LXYII. SONNERATIACEAE.

Trees or shrubs, glabrous. *Leave*, opposite, entire; stip^{<leS}.
Flowers regular, small or large, solitary or in panicles; br[^]
andxbracteole.s 0. *Calyx-tub** slightly united .with the
0*[^] lobes 4-9, valvate. *Petals* as many as the calyx-lobes and
alter** with them, sometimes 0. *Stamens* as many as the
calyx-'°% and alternate with them or very many inserted within
the >!■» ° the calyx-tube; filaments bent inwards in bud. *Ovary*
2-20-celle°-nearly superior; ovules numerous, in many rows;
style l<>>f \ stigma capitate or peltate. *Fruit* a dry or
somewhat fle*» mdehiscent or dehiscent capsule, many-seeded.

Sonneratia, Linn. f.

Glabrous sea-coast trees. *Leaves* opposite, petioled, coriaceoi^{'8)}
entire. *Flowers* large, terminal, solitary or 2-3 together.
Cdf thickly coriaceous; tube widely campanulate, lobes

valvat* - *Jretals* 4-8 or 0. *Stamens* numerous, inserted on the circular rim¹ of the calyx-tube, inflexed in bud. *Ovary* free or adnate at tl base "to the calyx-tube, many-celled ; ovules many, ascending, axile placentas; style long; stigma capitate. *Fruit* a subglobo*,.

«alv¹⁵ Celledj maily-seeded berry, supported by the persistent
 <*>nv i ^6eds Small' curved, angular, embedded in pulp; cotyledons
 volute; radicle short, terete.

HaJ, f⁸ 4? petals 0; stigma large, umbrella-shaped j
 leaves

nrowly oblong 1. apctaia.

" °oes 6 ; petals 6 ; stigma capitate ; leaves obovate

2. caseola/is.

•327. RATIA APETALA, Buch.-Ham.; F. B. I. ii. 579; W. & A.

E- Coast, in mangrove forests in the deltas of the Godavari,
 Kistna and Coleroon.

A moderate-sized evergreen tree with black smooth bark
 il*d reddish-brown wood. It gives, like the true
 man-groves (*Rhizophora*), upright root excrescences. Vera.
 Tel ^yalanki; Tarn. Marama,

COONNEKATIA CASEOLARIS, Engl. S. *acicla*, Linn, f.; F. B.
 I.

n- 579 ; W. & A. 327 ; Wt. Ic. t. 340. W. Coast, along
 backwaters from S. Canara southwards. ^ small evergreen
 tree with large showy pink-petalled lowers and large
 depressed-globose fruit. Wood grey, soft,
 even-grained. It also gives root-excrescences with
 even softer wood. Yern. *Mai Blatti*, Thirala.

Family LXYIII. ONAGRACEAE.

Herbs, rarely undershrubs, sometimes aquatic. *Leaves* opposite
 J alternate, entire or toothed; in *Trapa* the submerged leaves
 Pl^atipartite ; stipules 0. *Flowers* hermaphrodite, axillary and
 *°htary or in terminal and axillary spikes or racemes, regular or
 Retimes irregular. *Calyx-tube* wholly adnate to the ovary
 Uial*-adnate in *Trapa*); lobes 2-5, valvate. *Petals* epigynous,
 al^niat ih b l 0 *Stamens* as
 many as

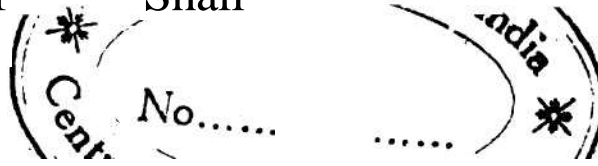
e in *Trapa*); lobes 2,

with the calyx-lobes, rarely 0. *Stamens* as many as ^{01<} twice as many as the petals and inserted with them. *Ovary* ^{U**ior} (half-inferior in *Trapa*), 1-6-, usually 4-celled, ovules 1 or ^{*la*y} in each cell, pendulous or half-ascending, placentas axile; * subulate; stigma capitate or 2-4-lobed. *Fruit* various scent or mdehiscentT cafis^, or baccate, 1- or many-celled needed. ^{^pt*p}*£ oV}

8e/&
a Ve17

W^f

Snail



Fruit a many-seeded capsule; leaves alternate.—
 Stamens twice as many as the calyx-lobes; ovary 4-c
 Calyx scarcely produced beyond the ovary; capsu e

Calyx usually much produced beyond the ovary j
 cidal

-Stamens as many as the calyx-lobes ; ovary 3-6-celled
 ^^

Fruit indehiscent, 1-4-celled, 1-4-seeded.—
 Flowers 2-merousj ovary 1-2-celled, the ovules
 axis; small erect land herbs with small fruits
 S_{circum}cae*

hairs.....*'
 Flowers 4-merous; ovary 2-celled, the ovules attache
 septum; floating water herbs with large fruits with 2-4 sp ^\$,

i. Jussiaea, Linn.

i₆

Herbs or undershrubs, usually of wet places. *Leaves* ft"
 .. usually entire. ^fo_{lim}-a yellow 01. white> axillary, »"
 ej pedicels with 2 bracteoles. C«^-tube narrow, scarcely
 P/°° ^ above the ovary; lobes 4-6, acute, persistent. *Petals*
 4-6, ° ^ margm of an epigynous disk. *Stamens* twice as
 many * petals and inserted with them. *Ovary* inferior,
 4-5-celled; <*« many axile, in sevei-al vertical rows at the
 inner angle <rf * cell; style simple, short; stigma 4-5-lobed.
Fruit a linear, t»« or ang ed, 4-5-celled capsule, septicidally
 4-5-valved, orowaed » tel ^ oalyx_lobes_ <<<>*

• rr° P
 cotyledons oblong, obtuse.

tSobr ?? Creepin^ st6-; Pet-ls 5, white;
 Fract II tso'. Ce.' ObtUSE; p^ with a Petals - P^" 1-^" Ttle_es
 acute- seeds wth
 variety Prominent raphe, appearing didymon* in «"»
 2. *sufruticosa*-

^ JESSIEH WRTNS> LiDn_ ; r" B_ L <- 587; W. & A. 336.

. and W. Coast Districts, in or on the borders of pond
 and tanks and watercourses.

L P re"y watei--Plant, floating by means of white cellular
 floats at the nodes of the main stem

USAEUS r' Linn - ! ■ F- B. I. ii. 587. J.
villosa, . & A. 336.

numerous, small, the crust*** testa inolud.ng an empty cell
 forming the raphe, the embryo >"

W. Coast and W. Ghats, in wet places up to 3,000 ft.
erect hairy undershrub, reaching 4-6 ft. high, with
large flowers.

2. Ludwigia, Linn.

Herbs 7" Flowers, lanceolate, entire, ^{leaves} alternate, petiolate, narrowly
Psdio 1* usually axillary, solitary, sessile or nearly so;
the o^s Wlt ^ kracteoles. Calyx-tube scarcely produced above
3-5 } y* *okes 3-5, acute, persistent or late deciduous. Petals
as m below the margin of an epigynous disk.

Stamens

OVar ^ as the petals and inserted with them; filaments short,
ttioi'e n fl 1Or' 4-5-celled; ovules many, axile, attached in 2 or
8tioⁿ ca* rows to the inner angle of each cell; style simple;
open''' Ca^lta*^e Fruit a linear or oblong 4-5-celled capsule, ^{6AS} Yevy
y terminal pores or breaking up irregularly along the ^{man}y» small, smooth, with a narrow raphe; rounded.

istino<• d> smooth, the seeds in many rows in each cell, not
CaP^su^C1Shable through the walls 1. *parviflora*.
P^ro^mi inflated, slender, the seeds in one row in each
cell,
en% distinguishable through the walls 2. *prostrata*.

J^WIGIA PARVIFLORA, Roxb.; F. B. I. ii. 588;
W. & A.

; Wt. in. t. ioi.

most all Districts, in rice-fields and other wet places. JT¹
erect herb, up to 2 ft. high, the leaves lanceolate or
"near-lanceolate up to 3 in. long, the flowers small, the
capsule about '3 in. long.

PROSTRATA, Roxb.; F. B. I. ii. 558; Wt.
Ic.

- Ohats, swamps in the Anamalais at 2,000 ft. (Beddome).
l r b at first prostrate, then erect, the leaves lanceolate
very slender j)etioles, together up to 3*5 in. long; the
flowers very small, the capsule '5 in. long.

3. Circaea, Linn.

tf erbs. Leaves opposite, petiolate, sinuate-dentate, membranous.

lowers very small, white, pedicelled, in terminal and axillary ;
bracteoles minute. *Calyx-tube* ovoid, shortly produced

above the ovary; lobes 2. *Petals* 2, obcordate, ⁱⁿ ^{nate} *i &
 the margin of the epigynous disk. *Stamens* [^], ^a ^{ovtll} ^{es}
 the petals; filaments filiform. *Ovary* inferior, 1-2-oe
 ^.

l } *0T^

p ; y
 attached to the inner angle of the cells; style }
 capitate. *Fruit* small, pyriform, indehiscent, hispid
 hairs. Seeds 1 in each cell, ellipsoid ; cotyledons flat.

CIRCAEA ALPINA, Linn.; F. B. I. ii. 589; Wt. M- *• y ooO ft,

W. Ghats, in the Nilgiri and Pulney Hills, at about
 in shady places.

A small, slender herb, reaching about 1-8 m. *

° membranous ovate leaves and 3-seeded fruit.

4. Trapa, Linn.

Aquatic floating herbs. *Leaves* dimorphic, the su
 ^^
 ones opposite, root-like, primati-partite, the floating one. ^

rhomboid, the petiole with a spongy swelling near
 ^te

Flowers axillary, solitary, peduncled. *Calyx-tube* shoi , ' gg

to the lower part of the ovary ; lobes 4, 2 or all ^{beconlin} ", 4X
 on the fruit. *Petal*s 4, sessile, white, inserted on the inar^
 the epigynous, cup-shaped disk. *Stamens* 4. *Ovary* ji;
 semi-inferior with a conical apex; ovule solitary in each
 pendulous ; style subulate ; stigma capitate. *Fruit* larg^e?

^
 1-celled, with 4 angles, 2 or all of which spinose. indehiscent, ^ ^
 a short beak through which the radicle is protruded. S^{eU}
 inverted, cotyledons very unequal; radicle incurved.

TRAPA BISPINOSA, Roxb. Cor. PI. t. 234; F. B. I. "• :j
 W. & A. 337.

Most plains Districts, floating in tanks, sometimes culti^{Vilte} ^
 The Water-Chestnut.

A plant with long stems bearing pectinate leaves according

to some authors) beneath the surface and rhomboid rosulate leaves with swollen petioles on the surface. The 2-spined fruit is eaten, either raw or cooked, and gives much starch. Vein. *Hind. Singhara.*

Var. *incisa*, Wall. Leaves smaller, more deeply incised at the margins, less villous ; fruit smaller. W. Coast District (Wight).

Oenothera rosea, Ait., and *O. tetraptera*, Cav., also perhaps some other species, are found in gardens and apparently

on the S¹ Hills, and sometimes on other hills in the
and W. Ghats.

Family LXIX. SAMYDACEAE.

T'

i^{01*} shrubs. *Leaves* alternate, rarely opposite,
petiolate,
e[>]entire[>] crenate or serrate, often with pellucid glands;
ma[']. sma^H or 0. *Flowers* regular, usually hermaphrodite,
Pedi^l a¹ ai⁷ or subterminal fascicles racemes or panicles;
s^{Wt} S^{articulate}» bracteolate. *Calyx* coriaceous, persistent, tube
, ,^{ol} *ong[>] sometimes adnate to the ovary; lobes 3-7, imbricate
tita *Petals* as many as the calyx-lobes or 0, perigynous.
Som^f Sⁿ e^{or} indefinite, often alternating with staminodes,
ol^l U^{nes} ascⁱ cled opposite the petals ; anthers didymous or <-
o^{o*} wary 1-celled, superior or half-superior; ovules many, ^
^~ ' Pa^{ai*} ietal placentas; style 1 with capitate stigma, or styles
iv-xi^m a¹ loculicidal 2-5-valved capsule, the valves alternating
with f^{vio} 1
Pia^{centas}. *Seeds* few or many, oblong or
angular,
arillate, albuminous!

- p^{s°}; flowers in axillary fascicles..... 1. **Casearia**.
s Present; flowers in axillary or subterminal, sometimes panicled,
..... 2. **Homalium**.

1. Casearia, Jacq.

or trees. *Leaves* alternate, distichous, petioled, entire
serrate, with pellucid transparent glands, usually both as dots
<U^l lines; stipules small, lateral, caducous. *Flowers* small,
<3^{le}enish-yellow, in axillary fascicles (Indian species); pedicels
suited above their base, surrounded by many scale-like bracteoles.
^^{dyx} inferior, deeply 4-5-lobed; lobes imbricate, obtuse,
per^sistent. *Petals* 0. *Stamens* normally twice as many as the
^^{lyx}-lobes, alternating with as many staminodes tufted at their
a^{pex}, the stamens and staminodes forming a ring attached below
to the calyx-tube; filaments subulate. *Ovary* free, ovoid, 1-celled;
o^{vules} many, on (usually 3) parietal placentas; style simple;
stigma capitate or 3-fid. *Fruit* a succulent, ellipsoid, 3- or rarely
2*-valved capsule, angled or ribbed when dry. *Seeds* many,

angular or obovoid, with an enveloping fleshy coloured (usually

Aiis .

orange or red) aril; testa coriaceous or ci fleshj; cotyledons flat; radicle terete, superior-

Leaves glabrous :—

Leaves broadly elliptic, coriaceous when old:—

ly Leaves rounded at base, obtuse or very short 7F

fre

blade up to 6-7 in. long, 4 in. broad, crenate-se^ H^f^ reticulate; capsule *7 in. long, yellow.....the acui^lien ^oot

Leaves attenuate at base, acuminate at apex, ^doV<?>

blade up to 6 in. long, 3 in. broad, entire, si ^

tf

prominently reticulate; capsule '7 in. long- ••^' ^

Leaves narrowly elliptic, chartaceous when old;T t base, ^j^,

Leaves elliptic-oblong or -lanceolate, attenuate ^ ^ .^ 10^

acuminate at apex, the acumen twisted; b^{la} eatb; ^^ 2 in. broad, entire or distantly serrate, reticulate ^

tf**^.'

•5 in. long or less, orangecnwiT&te at*C*

Leaves elliptic-oblanceolate, cuneate at base, a ^.^ ^ex ^

blade up to 6 in. long by 2'5 in. broad, entire, pa e> ^ ^a* '■

prominent; capsule up to 1 in. long, bright orange ••• -^ shoVTM

Leaves obovate, coriaceous, cuneate at base, ^btuSe_{broad}, oi\

pointed at apex,- blade up to 4 in. long, 2*25 m- ^giil'

cucullate, entire, pale, but usually drying nearly h-^coyiac^

'7 in. long, orange-yellow

Leaves hairy:—

Leaves thick, branchlets and inflorescence softly \$* ^e& ^

tomentose;, leaves subcoriaceous, oblong, unequally 10 ^vo»^

base, acuminate at apex ; blade up to 6 in. long, 2'° * nientos«-

crenate-serrate ; capsule -5-*8 in. long, yellow.....6< ° ^\|o^s'

Leaves and slender branchlets and inflorescence rufoUS" nilJfte '*

leaves membranous, oblanceolate, long and sharply acui ^

blades up to o in. long, 2 in. broad, sharply serrate; ca

orange 7.

a

oange7. wy

1. CASEARIA GRAVEOLENS, Dalz.; F. B. I. ii. 592.

N. Circars, in Ganjam, chiefly on old cultivated lands-A

small deciduous tree conspicuous in forest by its raw^{1^}

large leaves turning red in winter before falling- 3al

dark grey; wood light yellow, moderately hard,

evei -grained. Vern. Hind. Chilla; TJv. Giridi.

2. CASEARIA RUBESCENS, Dalz.; F. B. I. ii. 593. f
W. Ghats, in the forests of Coorg (G. Thomson); hills *of*
Travancore, 3,500 ft. (Bourdillon). A large shrub, apparently
evergreen, the glabrous branchlets

SAMYDACEAE.

With large lenticels. The Travancore specimens have more
 3 c lanceolate leaves.

AS EARIA ESCULENTA, Roxb.; F. B. I. ii. 592.

/ Coast, in the Circars and southwards; Striharikota and similar forests of the Carnatic; W. Coast, from S. Canara to Cochin.

small tree with many fascicles of flowers from the leaf-
 iUs, apparently evergreen. Roxburgh says the leaves

4 c are eaten- Vern. *Tel.* Kunda jungara.

A8K!A!>T' VARANS, Bedd. Fl. t. 208, *not of* Thw. n forests of Travancore up to 3,000 ft. glabrous apparently evergreen tree. Bark green, ; wood yellowish-white, even-grained. Vern. *Mai.* «. v eil a kunnan.

'A^ ARIA CORIACEA, Thw.; F. B. I. ii. 592.

Ghats, Shola forests of the Nilgiris, Anamalais and neys above 6,000 ft. * g n ey evergreen tree with yellowish-white smooth bark.

• ^ASEARIA TOMENTOSA, Roxb.; F. B. I. ii. 593; Brand. For.

* L * > • 31. *C. elliptica*, Willd.; Wt. Ic. t. 1849.

^U plains forest Districts pf the Circars, Deccan and

Carnatic, very common in open, much-grazed lands; rare ^ W. Ghats, W. side.

-A. bushy shrub or small deciduous tree in open lands, a much larger tree in forest, the oblong leaves generally tomentose, sometimes nearly glabrous. Bark thick, pale;

wood yellowish-white, close-grained. Vern. *Hind.*

Chilla;

Vr. Girari; *Tel.* Chilaka duddi.

• CASEARIA WYNADENSIS, Bedd. Ic. t. 160 ; F. B. I. ii. 594.

W"- Ghats, in the forests of Malabar, Travancore and

Tinnevely at 2,000-3,000 ft,

-A- small villous tree with slender branchlets and trifold

stigmas.

2. Homalium, Jacq.

rees ov shrubs. *Leaves* alternate, crenate or serrate, rarely

7th, petiolate ; stipules small or 0. *Flowers* small, in slender
axillary and subterminal, simple or paniced, racemes; bract at ^
base of the pedicel often prominent, caducous, *Calyx-tube*
, adnate to the base of the ovary; lobes 5-7, narrow

persistent. *Petals* 5-7, inserted in the throat of t ^ fasoicles.
 sistent. *Stamens* opposite the petals, solitary 01
 alternating with glandular stam modes. v *

^ 1-celled; ovules many, on parietal placentas nei
 ^ 2-5, filiform; stigmas capitellate. *Fruit* a coria^lar;
 2-5-valved at the apex. *Seeds* small, oblong or angw
 fleshy; cotyledons foliaceous.

Stamens solitary opposite each petal:—

Racemes simple, elongate :—

Leaves obovate, obtuse or emarginate and very
 at apex, tomentose beneath, repand-crenate, m
 pairs, parallel and with parallel transverse ne
 and petals very similar

t^ jipi^{ol} i.
 e*_rves " °
 nljes; 12

Leaves elliptic, abruptly acuminate at apex, g
 coarsely crenate, main nerves 6-8 pairs, arcni y
 j_g irregular, reticulate between; petals larger than t

g,, *,*
 j rat*^l

Racemes in panicles ;>leaves ovate or elliptic, acum^l

^

r an

the sepals
 Stamens in fascicles of 3-4 opposite each petal; racemes s
 to 6 in. long; ~~leaves ovate, bluntly acute or acuminate~~ ^
 glabrous, crenate, main nerves about 7-8 pairs, irreguiai ,
 much longer than the sepals4. *travan*

. je>uf
 ^
 e t^
 ()k

puberulous beneath, crenate, main nerves about o p
 irregular and reticulate between ; petals longer and

1. HOMALIUM TOMENTOSUM, Benth.; F. B. I. ii.

N. Oirears, in the forests of Ganjam (Gamble).

A large deciduous tree, the flowers in long racemes
 leaves in young trees and shoots sometimes up t °

, ^
 long and 5 in. broad. Bark thin, greyish-white;
 brown, hard and heavy.

j_e
 ^

w °

2. HOMALIUM ZEYLANICUM, Benth.; F. B. I. ii. 596; Becl. *
 t. 210. *Blachwellia tetrandra*, "Wt. Ic. t. 1851.

W. Ghats, in evergreen forests up to 3,000 ft., common on
 old coffee estates.

A large evergreen tree, the young leaves bright red, t>^{ie}
 flowers fragrant. Bark pale, rough; wood brownish-i^^{^*}
 hard. Vern. *Mai*. Manthala mukki.

3. HOMALIUM NEPALENSE, Benth.; F. B. I. ii. 596. *Black\oelU^{a'}<*

napalensis, Wall. PI. As. Bar. t. 179.

ats, Mahendragiri Hill in Ganjam at 4,500 ft., Rumpu
 2 of Godavari (Gamble).
 ee with creamy-white bark and moderately hard white
 wood.

590 MALIUM TRAVANCORICUM, Bedd. Fl. 211; F. B. I. ii.

• Hats, hills of S. Travancore and Timievelly, in ever-
 green forests at low levels.

medium-sized ornamental tree with
 greenish-white flowers.

Family LXX. TURNERACEAE.

ULMIFOLIA, Linn., is a West Indian plant with
 a common weed of roadsides and waste
 especially along Coromandel Coast. The chief
elegans, Urb., with ovate coarsely-toothed, and
an(JU8tifolia) Willd., with lanceolate serrate leaves. The
 seems the most common on the "W. Coast, the latter on East.

Family LXXI. PASSIFLORACEAE.

Herbs or herbs, usually climbing by means of tendrils. *Leaves*
 nate, simple or lobed, frequently glandular beneath, petiole

; p, p,
 tendrils axillary or 0. *Flowers* regular, hermaphrodite
 or sexual, axillary, solitary racemose or cymose-paniculate,
 often
 ovary; bracteoles 3, minute and scattered or foliaceous
 glandular; stipules 2, deciduous or persistent, sometimes
 dil

forming an epicalyx, rarely 0. *Calyx-tube* short or long,
 coriaceous or membranous, persistent; lobes 5, imbricate. *Petal*
 or 5 attached to the calyx-tube, free or connate, imbricate,
 often marcescent. *Corona* of one or more rows from the
 calyx-tube, tubular or split into erect or radiating filaments,
 sometimes 5- *Stamens* 5, on a gynandrophore or free at the base,
 perigynous; others oblong, 2-celled, basi-fixed or versatile,
 introrsely dehiscent. *Ovary* superior, on a gynophore or
 subsessile, 1-celled with 3 parietal placentas and numerous
 ovules; styles 1 or 3; stigmas reniform capitate or flattened.
Fruit a berry or capsule. *Seeds* numerous, ovoid or flattened,
 often pitted, with a fleshy aril; albumen fleshy; cotyledons

leafy; radicle short, terete.

FLORA OF MADRAS.

Flowers hermaphrodite, usually large; corona of corolla
 fruit a large fleshy bony^l
 Flowers unisexual, small; 'corona' small or none • fruit a

2.

!• Passiflora, Linn.

Twining herbaceous or shrubby plants, tendril-bearing. »'
 simple or palmately lobed, usually glandular beneath at the or
 on the petiole; stipules slender or leafy. *Flowers* Ji«**
 rodite solitary or cymose; bracteoles 3 *Calyx*-tnhe
 fed* lobes 5. *Petals* 5, inserted on the throat of the calyx-
 C«o ot 1 to several rows of numerous usually filiform segments
 w 1 or more membranous folds lower down and a
 shallot surrounding the gynandrophore. *Stamens* 5, from the
 gy*¹ pnore; anthers oblong, dorsifixed. *Ovary* 1-celled,
 many-ovu styles usually 3. *Fruit* a fleshy indehiscent berry.
Seeds »■ a-ruiate, often pitted; albumen fleshy ; cotyledons
 foliaceous. PASS₁FLOBA LBSCHKHAUWU, DC.; F. B. I. ii. 599;
 W. & A' '2 ; Wt. Ic. t. 39.

W. Ghats, in the Nilgiri³ and Pulne^{above-5,000} ft. A
 climbing shrub with curious semi-orbicular leaves, rounded at
 base broadly truncate and 3-cuspidate above, white flowers

ulis, Sims, the Passion fruit from Bra
 cultivated in the hills and may occasionally be
 M a M 3_10b6d toothed ^ i»

fc rfa
 7d

and yellowish ovoid berry with pitted seeds.

ertw^s, Sims, the Passion fruit from
 Brazil

M 3_10b6d toothed ^ves. i». c«fca«rfa, Masi,
 f" Spe<lie8 with Globed leaves and large prominent
 ^ run wild and now common on the Nilgiris
*F. foeti**'*
 towns' Id r^{PIo} American sPe«es commonly run wild near
 onle, w S7 road8ides iu »any places in the plains and at the
 flowers flowas. Several other species are also found in gardens.

2. Adenia, Forsk.

' tendril-bearing. ie«,es entire,
Λ on the

ov f^{ln}K^{leS} often P^{roduced} into tendrils. *Calyx-tube* campanulate ^a
li

bott ar; 10i:>eS 4~5* Pe*aZs 4~5, inserted on the throat or bott^{com} of Λ
calyx^{x-tlll})e. *Male flowers*: stamens 4-5, at the \wedge \circ m of the
calyx-tube, opposite as many scales or glands; Or !f^{cents} free or
connate; anthers basifixed; ovary rudimentary \wedge • *Female*
flowers : staminodes 4-5, opposite as many scales tu \wedge an<*s'
^{oyary} stalked or sessile; ovules numerous, attached
loc r-aiietal P^{lacentas}; stjle \circ or 3_{-fid} sti^gmas 3_ *Fmit a*
Us i^{Cidal} 3^{valved} capsule. *Seeds* numerous, arillate, flattened,
foli ly pitted⁵ funicle long; albumen fleshy;
cotyledons

Small; petals attached to the throat of the calyx-tube,
a f. \circ bovate ; anthers short, filaments combined in a tube ; corona
Of l*ln \wedge e of short hairs at the bases of the petals ; leaves ovate, entire
J hastate or palmately 3-lobed, glandular at the top of the petiole;
ppsule 1 in> long i. *Wightiana*.
j. \circ Wers rather large; petals attached to the base of the calyx-tube,
 \wedge near-spathulate, long-fringed; anthers long, filaments forming a
 \wedge P below* leaves palmately 3-5-lobed, rarely undivided, glandular
the sinuses and base; capsule 2 in. long 2. *palmata*.

*• ADENIA WIGHTIANA, Engl. *Modecca Wightiana*,
Wall.; F- B. I. ii. 601; W. & A. 353 ; Wt. Ic. t. 179.

Deccan and Oarnatic, in dry hilly country from N". Arcot
southwards, at low levels.

A tuberous-rooted slender climber with very small flowers,
the petioles much twisted.

2. ADENIA PALMATA, Engl. *Modecca palmata*, Lamk.; F. B. I.
ii. 603; W. & A. 353; Wt. Ic. t. 201.

Hills of the Carnatic, W. Ghats and W. Coast in moist
hilly country at low levels.

A large tuberous-rooted woody climber, the stems thickened
at the nodes, the leaves large and deeply palmate.

Family LXXII. CARICACEAE.

CARICA PAPAYA, Linn., the Papaw tree, a soft-wooded, almost
Wanchless tree, introduced from South America, is cultivated in
gardens in the plains Districts for its valuable edible fruit, which
is of the size of a small melon with a soft yellow pulp. Vern.
Hind. Papaya, Popai.

Family LXXIII. CUCURBITACEAE.

Herbs or undershrubs, rarely shrubs, prostrate or elm¹ " means of tendrils spirally twisted. *Leaves* alternate, P^{to} simple or lobed or palmately or pedately divided, ^{ofte}ciollS or at base; stipules usually 0. *Flowers* regular, ^{ul0n0e}aCeDiC>se^t dioecious, yellow or white, solitary paniculate or ^{v*} ^te *Calyx-tube* usually adnate to the ovary; limb rotate camP ^ the or tubular, lobes 5, rarely 3-6, imbricate. *Petals* as ^{*a} ^brjftte-calyx-lobes, free or gamopetalous, sometimes lobed or ^ ^aX valvate or involute in bud. *Stamens* inserted at the w& J^{eTS} the middle or at the base of the calyx-tube, usually ^ ceH³ free or connate, usually 1 1-celled, the others 2-celle^d ^etil>es straight, nexuose or conduplicate, the connective s ^ot^t produced; in J flowers staminodes often present. *Ovary* ^^1, usually of 3 connate carpels; ovules usually many, ^^1. rarely few and erect or pendulous; placentas usually * ^ \ parietal or partly intruded, and so spuriously 3-celled; ^ with 3 stigmas, rarely styles 2-4; in <\$ flowers pistilloo ^^ present. *Fruit* usually a fleshy berry, indehiscent or cte^ ^ by valves or by a circumscissile lid. *Seeds* usually many* ^ ^ or fibre, often compressed; outer testa often ^{c01}"rU^Bliy or margined, inner membranous; albumen 0; cotyledons V foliaceous, radicle short.

Ovules horizontal: -

Anther-cells flexuose or conduplicate.—

Corolla rotate or campanulate, 5-partite to the base: -;

theS-

Petals fimbriate on the margins 1- Trichosa

Petals entire.—

Calyx-tube of \$ elongate; anthers cohering, incJudj* ^

, bulate; tendrils p

acute at both ends; slender climbers ...2. ^ym

Pistillodes glandular or 0; tendrils bifid; ^{fruit}

variously shaped; stout climber

Calyx-tube of 3 short; anthers free or slightly

usually exsert:—

Stamens free, inserted on the mouth of the caly^

usually with a large bract; tendrils simple...3.

Stamens free, inserted on the tube of the calyx-

Pistillodes 1-3, subulate; tendrils simple; ^{fruit}

a c u t e

t b t h

d 2

^ y

S flowers in racemes ; fruit fibrous, opening by a stopple at the apex; tendrils 2-5-fid4. **Luffa.**

d flowers solitary or fascicled :—

Calyx-lobes subulate, entire, erect; scaberulous herbs:—

Pistillode 0; tendrils bifid; seeds pyriform, surrounded by a thick crenulate ring ... 5. **Bryonopsis.**

Pistillode glandular; seeds compressed, usually smooth.—

Connective produced; tendrils simple...6. **Cucumis.**

Connective not produced ; tendrils 2-3-fid

7. **Citrullus.** Calyx-lobes subfoliaceous, serrate, reflexed; tendrils

2-fid; large hairy climber**Benincasa.**

⁰¹>olla campanulate, 5-lobed to the middle or lower; tendrils usually simpler-Filaments connate; stigma 1, 3-lobed; flowers white or yellow; slender climbing or prostrate herbs; seeds compressed, margined,

velvety or scrobiculate8. **Coccinia.**

Filaments free; stigmas 3-5, bilobed; flowers yellow, very ^{ar}ge ; large climbing hispid or hairy herbs ; seeds compressed

Cucurbita.

-cells straight or curved, not flexuose .— around the style annular or cupular; tendrils simple, rarely seeds ovoid or subglobose, smooth or rugose, usually

pressed and margined.....9- **Melothria.**

around the *style 0* or obscure; tendrils simple :—

[^]amens inserted on the tube of the calyx .—

Petiole of leaf with a stipuliform bract; seeds marginate, hollowed on one side, convex on the other; connective of

anthers not produced at apex 10. **Blastania.**

Petiole of leaf not stipulate; connective of anthers produced ^{at} apex.—

Fruit indehiscent; seeds marginate, smooth

11. **Kedrostis.**

Fruit circumsciss near the base; seeds appressed-pilose, not marginate, scarcely compressed 12. **Corallocarpus.**

Stamens inserted on the mouth of the calyx-tube; fruit depressed-globose; seeds ovoid, smooth, marginate

13. **Cerasiocarpum.**

Pendulous: —

^{es} pedate with 3-5 leaflets; tendrils simple ; seeds verrucose,

^{ot} ringed; slender climbers 14. Gynostemma.

broad membranous wing; scandent s

1. Trichosanthes, Linn

Herbaceous, limb TM. L — " ^ f ^ ^
pinnate.denticulate; tendrils, -> jh. << £ ^ * * * * £ f c
monoecious, white; < J « " ^ d .bove;

Holity. C < / y * -tube ' < > g ' ^ n f ^ n m l t e a t t h e b a s e , D t 9
•ntira semite or lacinate. Petals . • > , con tllbe; fj

long. fin. briate. S < < < > e < > 3, inserted . n h e c ^ h c e l l e d : ^ A
very short; anthers connate, 2 2-celled, the th < r ^ ^ ^ o . . o ^
eondnpligte; in ? flowers ^ " J j ^ , . ovules ^ bifid;
or fusiform, 1-celled with 3 parietal placen ^ 0
horizontal; style ^ t ^ h r o n s < < v < ^ > > > > in s
owers pistillodes 0. ^ < 1 * 8 many, en > >
indehiscent berry, < < < " y 8 I U 0 0 t h _
pulp, ellipsoia or angular.

Female flowers without or with very small brtW ■ ' t V ^
Leaves entire, cordate, distantly denticulat ,

1 race, ne s few-flowered, straight;
^
ai racemea'with very small ' > - f s fl ; vers. lobes of

subulate Pedicel,
Loaves lobed:- deeply and cel,
Ma, e race. es without ^ ^ ^ W muc
lobed, denticulate, the end teetn h
short
er

than the ■ < o very lo
rounded, very faintly denticulate-.....

Set' longer 'than the flowers r- ^ V

Leaves glabrous on both J * j j j ^ ^ s b
t-th; petals rather ^ short ^ , ;

Leaves densely villous < ls long g _ > > * < > *
and subulate _ * * < • l o U S - - ^ t e

T.....

Calyx-lobes deeply divided, the divisions subulate; leaves soft,
 not deeply lobed and hardly scabrous 7. *Lepiniana*.
 Pe with 1 G. flowers bracteate, either few with lanceolate bracts or many
 benelacinate bracts; leaves 3-5-lobed, very scabrous above, pubescent
 > regularly and deeply serrate 8. *anamalayana*.

- TRICHOSANTHES NERVIFOLIA, Linn.; F. B. I. ii. 609, in
 '«'; W. & A. 349.

Y' hats, in Coorg, Nilgiris and Pulneys, at low levels.

slender twining herb with reticulate leaves and ovoid
 acute fruit, green with white lines, afterwards red above,
 le see flattened with angular projections on the margins,

2 T^{he face}s rugose.

- TRICHOSANTHES CUSPIDATA, Lamk.; W. & A. 349. *T. nervi-*
 Lin.; p. B. I. ii. 609, in part. 2' Coast, in Travancore
 and Malabar, slender twiner with reticulate leaves and
 characteristically

3 rpgeniculate zig-zag racemes.

- TRICHOSANTHES CUCUMERINA, Linn.; F. B. I. ii.
 609;

B & A- 350. *T. lobata*, Roxb.; F. B. I. ii. 610.

eccan and W. Coast, in plains country and in lower hills.

slender annual climber with rather shortly laciniate
 small white flowers, deeply 5-lobed leaves and an ovoid
 usiformi fruit, green and striped when fresh, scarlet or

4. T¹¹ when ripe, up to 3 in. long.

TRICHOSANTHES PERROTTETIANA, Cogn. Monog. 362. arnatic, at
 Pondicherry (Perrottet, *from description*), t, slender climber with
 3-lobed leaves and deep basal sinus, 5- TR racemes slender,
 long-peduncled.

TRICHOSANTHES VILLOSULA, Cogn. Monog. 362. * Ghats, in the
 Nilgiri Hills at 5,000-6,000 ft. rather stout herbaceous
 climber with conspicuously j^{ous} stems, petioles and
 inflorescence and very long amiae to the petals of the
 rather large white flowers; 6 rpe fruit ovoid, acuminate,
 2*5 in. long.

'o TRICHOSANTHES PALMATA, Roxb.; F. B. I. ii. 606; W. & A-
 375; Wt< IIL tt% 104/105< T' bradecata > Voigt; Cogn< Monog*

2' Ghats, in all Districts, up to 5,000 ft., common.

A large woody climber with palmate deeply-lobed but very
 triable leaves, scabrous-dotted above, conspicuous large

bracts and a large globose red orange-streaked edible.

Vern. *Tarn.* Anacoruthay; *Tel* Abuva. ^{^^} _{legS} Var. *tomentosa*, Heyne; F. B. I. ii. G07. ^{Lea}, ^{VeS} _{bracts} ^{alld} lobed, scarcely scabrous, tomentose beneath;

calyx-lobes more deeply lacinate.

W. Ghats, in the Mysore Hills, Pulneys and J about 3,000-6,000 ft. TRICHOSANTHES LEPINIANA, Cogn. Monog. 3//-. [^] _{tj}, <>

Carnatic, at Pondicherry (Lepine); W. Ghats, Nilgiris and Pulneys. 0,5.10[^]

A large strong-growing climber with palmate *J* leaves and deeply lacinate calyx-lobes. 378.

8. TRICHOSANTHES ANAMALAYANA, Bedd.; Cogn. [^];

W. Ghats, in the Anamalai Hills at 4,000 ft. (#^e

description).

Apparently a large species but very little known.

Trichosanthes Anguina, Linn., is the Snake Gourd [^] for its long twisted fruit, which may reach 3 ft. in *fa*^o[^]*e* 3 in. in diam. and is used as a vegetable. In leaves and it greatly resembles *T. cucumerina*. Yern. *Hind.* Chachii^{lCla}

2. *Gymnopetalum*, Arn.

Twining slender pubescent or scabrous herbs; tendrils simple. *Leaves* cordate, 5-angular or 3-5-lob'ed. *Flowers* or yellow, dioecious or monoecious, £ solitary or racemes, [^] solitary. *Calyx-tube* elongate, tubular, contracted near mouth; lobes 5, subulate. *Corolla* rotate, deeply 5-partite, [^] lobes oblong or obovate. *Stamens* 3, included, inserted [^] the middle of the calyx-tube; filaments short, free; anthers [^] connate, 1 1-celled, the others 2-celled, the cells linear, long * tudinally conduplicate; in ? staminodes 3, minute or 0. ⁰[^]^l^u ovoid or oblong; ovules numerous, on 3 placentas; style filiform r stigmas 3, linear; in <\$ pistillodes 1-3, subulate. *Fruit* an ovoi» oblong berry acute at both ends. *Seeds* many or few, obovoid⁰¹ oblong, compressed, marginate, nearly smooth.

GYMNOPETALITM WIGHTII, Arn.; F. B. I. ii. 611 • Trim. [^]1-Ceyl. t. 43. *G. tubiflorum*, Cogn. Monog. 388. *Bryonia tubi/lora* W. & A. 347.

W. Coast from S. Canara (Hohenacker) to Travancore; "W Glnits, in the Anamalai Hills at 3,000 ft. (Gamble).

^A *y slender climber with yellow flowers and membranous
^{ea}v es, the seeds oblong, truncate at the ends.

3. Momordica, Linn.

Oi* ^{ΛΛ} annual¹ or perennial herbs; tendrils simple. *Leaves*

^enti • or perennial herbs; tendrils simple. *Leaves*
 morT' • ed O1 1)edately 3-7-foliolate. *Flowers* yellow or white,)n ,
 Clous or dioecious, the <\$ solitary or racemed, the \$ solitary; ca
 I>re sent or 0, usually on the peduncle. *Calyx-tube* short,
 the e; lobes 5 > ovate. *Petals* 5, shortly connate below,
 sbo %f^o 1%otate or campanulate. *Stamens* 3, rarely 2;
 filaments the _antllers at len^th free, 1 !_celled, the others

th ^{Λan^t}

conduplicate or rarely horseshoe-shaped; in ? flowers 0 or of
 3 glands. *Ovary* oblong, 1-celled; ovules horizontal,
 on 3 vertical placentas ; style long ; stigmas 3 ; . ^Λowers
 pistillode 0 or glandular. *Fruit* an oblong or ^{eilca}l >
 smooth or rough berry or a 3-valved capsule. *Seeds* ^{c ny} or
 few, obovate or flattened, smooth or variously sculptured.

^{ale} flowers solitary •—

owers monoecious; flower-peduncles bracteate at the middle or
 near the base; leaves orbicular-reniform, deeply pedately 5-7-lobed ;
 fusiform, rostrate, tuberculate; seeds compressed, subrectan-
)SG OH thOfaCG§..... *- *Charantia*.

>wers dioecious ; bract near the top of the peduncle :—

Petioles without glands :—

Calyx-lobes linear-lanceolate, acute; leaves ovate,
 cordate, entire or somewhat 3-5-lobed; fruit ellipsoid with soft
 spines

2. *dioica*.

Calyx-lobes ovate-oblong, obtuse; leaves broadly ovate, deeply
 cordate, entire or somewhat 3-5-lobed; fruit ellipsoid, densely
 softly echinate ³⁻ *subangulata*.

Petioles glandular; calyx-lobes lanceolate, acute; leaves large,
 palmate, cordate, usually 3-lobed; fruit ovoid with raised points

4. *cochinchinensis*.

Male peduncles 2-5-flowered; flowers monoecious ; bract at the top

°f the peduncle in \$, near the middle in ? ; calyx-lobes lanceolate,
acute ; leaves orbicular, reniform, deeply cordate, shortly 5-7-lobed;
fruit pyriform or fusiform; seeds broadly ovoid, smooth ... *5. tuberosa*.
Male peduncles many-flowered; flowers dioecious; bract very small,
towards the base of the peduncle in \$, near the middle in <\$;
calyx-lobes lanceolate; leaves ovate-cordate, denticulate, about 4
in. by

5-7-lobed, the end lobes long and acute ; fruit ovate^a > ^ -4 3 in.,
covered with triangular papillae ' A

1. MOMORDICA CHARANTIA, Linn.; F. B. I. "• b10,
348; Wt. Ic. t. 504. d r
All plains Districts, cultivated and commonly found
A slender twining annual herb with pale J .°?
and an edible fruit of a bright orange colour, with
pulp, and covered with raised tubercles. vei
Karela; Tarn. Pava kai. ^ 34S;
2. MOMORDICA DIOICA, Roxb.; F. B. I. ii. 617; W. &
Wt. Ic. tt. 505, 506. . the hills
Plains Districts of the Carnatic and W. Coast, in ¹¹
up to 4,000 ft. ff0
A perennial tuberous-rooted climber with yellow and
an orange-coloured muricate fruit, up to a long,
sometimes eaten, as are the tubers. ve
Puagakara.
3. MOMORDICA SUBANGULATA, BL; Cogn. Monog. ^'
W. Ghats, from S. Canara to Wynaad, up to 3,000 f^
A pretty climber with large yellowish petals veined.
4. MOMORDICA COCHINCHINENSIS, Spr.; F. B. I. ii.
mixta, Roxb.; W. & A. 349.
Deccan and W. Ghats, in S. Canara and Mysore. .^
A handsome large climber with large petals, creamy-^{*}
tinged with yellow, and black claws; fruit bright 1
' ovoid, 4-5 in. long, covered with conical points, seeds v
large.
5. MOMORDICA TUBEROSA, Cogn. *M. Cymbalarut*,
F. B. I. ii. 618. *Lyffia tuberosa*, Roxb.; W. & A. 1068.
Deccan and Carnatic, in Mysore, Bellary and Anantap¹¹¹
and down to Tinnevely, on black cotton soil. A trailing
plant with herbaceous shoots from a larg^e
tuberous rootstock, petals white, tinged pale yellow, fruit
dark green and ribbed, about 1 in. long, said to be edible.
6. MOMORDICA DENTJDATA, Thw.; JP. B. I. ii. 618.
W. Coast, at Quilon in Travancore (Wight)
A slender climber with membranous leaves.

4. *Luffa*, Tourn.

Annual climbing herbs, large or small; tendrils 2-5-fid. *Leaves* 3-5-lobed, rarely subentire; petiole not glandular at the apex. *Flowers* monoecious, yellow or white; *S* flowers in racemes, \forall flowers solitary, both often from the same axil. *Calyx-tube* in 0[^]tiu-binate or campanulate, in ? produced beyond the ovary; ^{obe}s 5, triangular or lanceolate. *Petals* 5, free, spreading, obovate £^r obcordate. *Stamens* 3, less often 4 or 5, inserted on the calyx- £^{be} 5 filaments free or connate; anthers exerted, free, 1 1-celled, . ^{ot}Ws 2-celled, the cells sigmoid, often on a broad connective; ¹¹¹ ? lowers staminodes 3 or more, thick. *Ovary* oblong, 1-celled; ^{ovules} many, horizontal, on 3 parietal placentas; style cylindrical; stigma 3-lobed; in <J flowers pistillode 0 or glandular. *Fruit* a e or small oblong or cylindrical, smooth or angled or spinotus, us berry, usually dehiscent by a circumsciss opening at the with a stopple. *Seeds* many, oblong, compressed.

5; fruit large, cylindrical, 5-12 in. long, smooth, 10-ribbed or t 10 angled; seeds narrowly winged, smooth on sides; leaves ^o^icircular-reniform, palmately 5-lobed, scabrous and punctate; petals ^o▷tuse..... 1. *aegyptiaca*.

^oruit oblong-clavate with 10 sharp angles; seeds not winged, lightly rugose on the sides; leaves orbicular-cordate, palmately ⁵-7-lobed, scabrous; petals emarginate 2. *acutangula*. ^{Fl}ruit small, spinous, the spines woolly; seeds thinly verrucose; leaves ovate-cordate, slightly 3-5-lobed, scabrous 3. *umbellata*.

1- LUFFA AEGYPTIACA, Mill.; F. B. I. ii. 614. *L. pentandra*, Roxb.; W. & A. 343; Wt. Ic. t. 499.

All plains Districts, especially near the coast, cultivated and run wild, but doubtfully indigenous. A large climbing plant with smooth fruit, edible when young, and when old the fibrous skeleton forms a flesh-brush "loofa." Yern. *Hind*. Ghia taroi.

2. LUFFA ACUTANGULA, Roxb.; F. B. I. ii. 713. *L. amara*, Roxb.; W. & A. 343.

Most plains Districts, especially near the E. Coast, not common. A climber with angular fruit, and usually

(var. *amara*,

C. B. Clarke) with scabrous and pubescent leaves,
small • • W & A. 344; FIB " "

3. LUFPA UMBELLATA, Roem. *L. Klemii*, w. c

ii. 616.

W. Coast, in Travancore, scarce.

A slender branching climber.

5. Bryonopsis, Am.

125

Annual scaberulous scandent herbs; tendrils *
 ^ -deeply* palmately 5-lobed. *Flowers* monoecious,
 0^ fascicled, often in the same axils. *Calyx-tube*)r
 5.p panulate; lobes 5, subulate. *Corolla* campanulate,
 lobes ovate. *Stamens* 3, free, inserted on the tube of

2 2 ^

1 F*

lobes oate , , ^
 filaments short; anthers cohering, 1 1-celled, 2 2-c ^ f \ ^ at
 linear, flexuose round the broad connective not pro oY
 •apex; staminodes in ? 3, small. *Ovary* globose or ,oy01 ' maS 3,
 numerous, horizontal, on 3 placentas; style slender, p^tft
 ® papillose, deeply 2-lobed; pistillodes in <£ flowers 0. ^
 spherical or ovoid-conical pulpy many-seeded berry. .f^p
 form, surrounded by a thick grooved crenulate ring on e of which
 project the swollen faces of the seed.

BRYONOPSIS LACINIOSA, Naud. *Bryonia lacinosct*,

F. B. I. ii. 622; W. & A. 345; Wt. Ic. t. 500.

ffc \n

Most Districts, in hedges and on bushes, up to 4,0

the hills.

A slender climbing annual from a thick permanent 10
stems angular; berries conspicuous, *5 to 1 in
brick-red when ripe with white vertical lines.

6. Cucumis, Linn.

Annual herbs or with a perennial root, climbing or trailing
hispid or scabrous; tendrils simple. *Leaves* entire or palm¹¹
3-7-lobed or 5-angled, dentate or serrate. *Flowers* yellow, non
cious, short-peduncled, in clusters in the axils, ?
h t i *Calyx*-tube turbinate or campanulate; lobes 5. *Cor* late;
lobes 5, oblong or ovate, acute. *Stamens* 3, free, 1 2 2-celled,
the cells conduplicate, the connective produced above in a crest;
in \$ flowers staminodes 3, setiform or ligulate. *Ovary* in c? a
broad gland-like pistillode, in ? ovoid or globose; ovules

flowers on 3 vertical placentas; style short; stigmas 3,
 pistillode glandular. *Fruit* a large or small,
 elongate, smooth or tuberculate or spinous berry,
 Seeds very many, oblong or elliptic, compressed,
 y smooth.

or glabrous or pubescent; leaves suborbicular-reniform,
 at base; ovary densely softly villous :—

leaves shallowly 5-angled or slightly lobed, softly villous ; s
 in clusters :-

ovoid, obtuse at both ends, 1-1*5 in. long; leaves rather
 thickI- *pubescens*.

globose ovoid or elongate, large v leaves large and thin

Melo.

; leaves deeply palmately 5-lobed, scabrous; S flowers
 solitary !.....²- *trigonus*.

% spinous; perennial trailing herb with cinereous very

—leaves....*S. prophet*

arum.

¹Ult With few scattered tubercular prickles, cylindric, yellowish-

en c? flowers in fascicles ; leaves with angular lobes*sativus*.

¹- CUCUMIS PUBESCENS, Willd.; W. & A. 342; Wt. Ic. t. 496;

°- *h'igonus*, Roxb.; F. B. I. ii. 619, *in part*. ■E. Coast

Districts, on waste ground. A climbing or trailing plant, the
 fruit ovoid, striped dark

and light green.

*• CUCUMIS TRIGONUS, Roxb.; F. B. I. ii. 619, *in part*; W. & A.

³^2 ; Wt. Ic. t. 497.

Beccan and Carnatic, in dry Districts. A prostrate plant
 from a perennial rootstock, the fruit yellow or yellow
 with green stripes.

³- PUCUMIS PROPHETARUM, Linn ; F. B. I. ii. 619; W. & A. 342.

Deccan, in dry Districts, Bellary (Gamble), apparently on
 hlack cotton soil.

A trailing very scabrous plant with subglobose spinous
 fruit striped green and white.

Oncumis Melo, Linn., the Melon, is largely cultivated on the
 sandy beds of rivers when the stream has subsided to its hot
 season channel. Vern. *Hind*. Kharboj.

Citcumis sativus, Linn., the Cucumber, is grown in gardens as
 a vegetable. Vern. *Hind*. Khira.

7. Citrullus, Neck.

freflV^e

Trailing herbs, hispid or scabrous; tendrils --

^

all

triangular-ovate, deeply 3-5-lobed; the midlobe e o»
 ^ j sinuately pinnatifid. *Flowers* monoecious, yellow, bo
 ^^g 5. solitary, rather large. ■ *Calyx-tube* broadly campanula ^fcuge
 oy. Oorotta usually rotate, the petals ovate or ^{oho} *'
 free ^{ov} emarginate. *Stamens* 3; filaments short, free; an
 £u0^{lls}' slightly cohering, 1 1-celled, 2 2-celled, the cells linear
 the connective not produced; in ? flowers staniinodes o^ or
 ligulate. *Ovary* ovoid, 1-celled; ovules many on o
 placentas; style short; s. tigas 3, thick, reniform; ^{lu} o ^ fay
 pistillode glandular. *Fruit* a globose or oblong neshy,
 gea, indehiscent berry. *Seeds* very many, elliptic-oblong, ^{c0}
 smooth.

Perennial; fruit globose, up to 3 in. in diam., very bitter; ^{n^}
 narrow, thick.....^{l- G^ q.} |ed
 Annual; fruit oblong or ellipsoid, up to 10 in. in diam., edi ^{^ ari\$.}
 lobes broad, thin^v T

CITRULLUS COLOCYNTHIS, Schrad.; F. B. I. ii. &#; ^ t.

498. *Cucumis Colocynthis*, Linn.; W. & A. 342.

Deccan, on dry sandy or stony, lands. ,

1^

A trailing scabrid herb with much cut leaves and g ^
 fruit variegated dark-green and white, the pulp ^{o*} 1
 affords an important purgative medicine.

Vern. Indrawan; *Tel.* Patsa kaya.

. *C. vulgaris*, Schrad., is the Water Melon, sometimes grown
 the sandy beds of rivers for its refreshing fruit. It comes ^{t^l}
 Tropical Africa. Vern. *Hind.* Tarbuj.

8. Coccinia, W. & A.

Slender scan-dent or prostrate herbs; roots sometimes tuberous;
 tendrils simple. *Leaves* petiolate, deltoid or subrotund, angled
 or lobed, sometimes glandular beneath. *Flowers* rather large?
 white or yellow, dioecious, <J solitary or subcymose, \$
 solitary-*CalyX'twbe* campanulate, short; lobes 5. *Corolla*
 campanula^, shortly 5-fid. *Stamens* 3; filaments connate in a
 column, rarely free; anthers connate, 1 1-celled, 2 2-celled, cells
 conduplicate; in ^ flowers staminodes 3, oblong or

subulate. *Ovary* ovoid,

st 1 ^ 01 ^near» ovules very many, horizontal, from 3 placentas ;
o/ 71 Slender 5 stigmas 3; pistillode in g flowers 0. *Fruit*
an ^ or oblong indehiscent berry. *Seeds* ovoid,
compressed, bined, the testa smooth velvety or scorbiculate.

OCCINIA INDICA, W. & A. 347 ; Wt. 111. t. 105. *Cephalandra*

l>di>a*, Naud.; F. B. I. ii. 621.

most plains Districts, especially in the Deccan and Carnatic,
«pn hedges and bushes.

^ pretty climber with large white flowers and oblong scarlet
ruit with velvety seeds, the leaves variable, generally
*>-angled with shallow sinuses, but sometimes even on the
sam^e plant (var. *palmaia*, W. & A.) deeply 5-lobed. The
iruit is sometimes eaten. Vem. *Hind.* Bhimb; *Tel.*
Kai-donda; *Tarn.* Kovay.

9. Melothria, Linn.

^tender scandent or prostrate herbs, annual or with a perennial
°t stock; tendrils simple, rarely bifid. *Leaves* usually mem-
anous, entire or lobed. *Flowers* small,
monoecious or
loecious, yellow or white; \$ in racemes, corymbs or umbels,
1 sometimes fascicled, rarely solitary; ? solitary fascicled or in
^bels. *Calyx* campanulate; lobes 5. *Corolla* deeply
5-partite,
1UQ lobes entire. *Stamens* 3, inserted on the tube, rarely at the
base, of the calyx; filaments free; anthers free or
slightly
cohering, 1 1-celled the others 2-celled, or all 2-celled, the cells
straight or curved, the connective sometimes produced; in ?
flowers staminodes 3 or 0. *Ovary* ovoid globose or fusiform,
constricted below the flower; ovules usually many, on 3 placentas;
style short, surrounded by an annular disk; stigmas 3, rarely 2;
111 cj flowers pistillodes globose or annular. *Fruit* a
globose
Oyoid or fusiform berry, many- or few-seeded. *Seeds* ovoid or
subglobose, usually compressed and margined, smooth ov rugose.
"lowers usually monoecious, \$ in racemes, \$ solitary; anthers
subsessile; leaves deltoid, acute or acuminate, up to 2 in. long,
2-2-5 in. broad, membranous, punctate; fruit fusiform,
rostrate;
seeds smooth, truncate at base, not marginate 1. *zeylanica*.

Flowers monoecious or dioecious, \$ usually umbellate, ? solitary or umbellate; filaments long, the connective not produced :—

Seeds small, much compressed; leaves membranous, simple or

3-5-lobed:—

Flowers monoecious; leaves usually rufous-villous beneath, the teeth very short • berry globose, 25 in. in diam.; seeds smooth faintly marginate 2. *perp*^{As}

Flowers dioecious; leaves nearly glabrous beneath, the triangular; berry oblong, -6 in. long, -3 in.

Seeds large, globose, scarcely compressed; leaves variable in shape : —

Flowers dioecious ; leaves cordate, ovate or 3-5-lobed or the lobes sometimes long, prominently nerved; fruit ribbed, up to 2-5 in. long; seeds smooth on the faces, the ring rugose..... 4. *heterop*^W[^]

Flowers monoecious; leaves deeply cordate or sagittate,

lobed though ft 1 dfuit ovoi >

broad;

marginate ...% S *rnM*^{ron}

deeply cordate lobed though often angulate, prominently nerved; fruit beaked, up to 1 in. long; seeds smooth on the faces, nearly on the flat ring..... 5. *ainpl*^{ica}

Flowers monoecious, <J fascicled," ?"solitaryV"anthers the connective apiculate; fruit small, globose, sessile; marginate, slightly flattened, -15 by -1 in.; leaves and stems or less scabrous :—

Seeds smooth on the faces; leaves beneath densely softly vi

6 *up*

Seeds rugose on the faces; 'leaves" beneath "shortly' hirsute or scabrous..... 7. t

tomentose

1. MELOTHRIA ZEYLANICA, C. B. Clarke in F. B. I. ii. 626.
W. Ghats, in Wynaad and Pulney Hills, at about 3,000 ft
A pretty, very slender climber, the flowers and fruit on long slender pedicels.
2. MELOTHRIA PERPUSILLA, Cogn. *Zehneria*
Hookeriana,

Arn.; F. B. I. ii. 624. *Bryonia Hookeriana*, W. & A.
345.

B. maysorensis, Wt. Ic. t! 758.

Deccan, Horsleykonda at 4,000 ft. (Fischer); W. Ghats, in the Nilgiris and Pulneys, up to 6,000 ft.; Shevaroy HiH^s of Salem.

A slender climber with small globose berries, red when ripe, and greenish-yellow flowers. The var. *subtrwnccdtu* Cogn., has the leaves nearly truncate at base.

3. MELOTHRIA MUCRONATA, Cogn. *Zehneria Baueriana*, C. B-Clarke; F. B. I. ii. 624. *Bryonia maysorensis*, W. & A.

345; Wt. Ic. t. 1609 (but not dioecious).

^w- Ghats, in the Nilgiris, Pulneys and Sirumalai Hills, up to 7,000 ft.

[^] slender climber with oblong berries, apparently yellow when ripe

when ripe.

- [^]MELOTHRIA HETEROPHYLLA, Cogn. *Zehneria umbellata*, Thw.; F. B. I. ii 625 in part. *Bryonia imbellata*, Klein; ^w- & A. 345.

^E- Ghats, Madgol Hills of Vizagapatam, at 5,000 ft.;

[^] Deccan, in the hills; W. Ghats, at low levels and up to 5,000 ft. W. Coast, from S. Oanara southwards.

^A climber from a perennial root, with polymorphic leaves and large fruit, red and often yellow-spotted or -striped when ripe, the small flowers yellowish-white. ^o- MELOTHRIA AMPLEXICAULIS, Cogn. *Bryonia amplexicaulis*, *W & A. 346; Wt. Ic. t. 502.

Deccan, Carnatic and W. Coast, not common.

A climber with more or less amplexicaul coriaceous leaves and scrobiculate seed, very nearly allied to and difficult to distinguish from the preceding species.

- * > • MELOTHRIA LEIOSPERMA, Cogn. *Muhia leiosperma*, Wt.; [^]- B. I. ii. 623. *Bryonia leiosperma*, W. & A. 345.

W. Ghats, in the Nilgiris and Pulneys, up to 6,000 ft.

A hispid, very villous small climber.

- ⁷- MELOTHRIA MADERASPATANA, Cogn. *Muhia scabrella*, Am.; ^F- B. I. ii. 623. *Bryonia scabrella*, Linn. f.; Wt. Ic. t. 501.

Most Districts of the Deccan, Carnatic and lower hills of W. Ghats.

A scabrous climber with small yellow flowers, the berries red when ripe, the leaves variable in shape.

10. Blastania, Kotschy & Peyi\

Prostrate or scandent annual herbs, drying black; tendrils simple. *Leaves* digitately 5-7-lobed or -partite; in each axil a

h'oad, rounded, stipuliform, pectinate bract. *Flowers* minute, Monoecious, \$ racemose, on slender pedicels; ? solitary in the same axils. *Calyx-tube* short, campanulate; lobes 5, very small, subulate. *Corolla* rotate, deeply 5-partite. *Stamens* 3, inserted on the calyx-tube, free; anthers small, 11-celled, the rest 2-celled, the cells short, straight, connective not produced ; staminodes

in ? 0. Ovary ovoid; ovules few, horizontal, on 2-3 placeX1 flowers (P) style columnar; stigmas 2, rarely 3; pistulode j^ ^^ o or Fruit a fleshy globose or subquadrate berry. &^ ^ tbe otbe^{l-} 3, marginate, obovate, hollowed on one side, convex the testa smooth.

BLASTANIA GARCINI, Cogn. *Ctenolepis* GaiT'^m F. B. I. ii. 629. *Bryonia Garcini*, Willd.; W. & N. Circars, Deccan and Camatic, extending wes Ghats.

A slender pretty annual climber with orange oi

11, Kedrostis, Medikus.

Prostrate or scandent herbs, with a p simple. Leaves entire or lobed, dentate or partite. yellow or greenish, monoecious, rarely dioecious; o corymbose; ? solitary or aggregated, shortly pedicelle • partite

Prostrate or scandent herbs, with a perennial rootstoc ,

corymbose; ? solitary or aggregated, shortly pedicel tube campanulate; lobes 5, short. Corolla rotate, g^ort; Stamens 3, rarely 5, inserted in the calyx-tube; filamen , .. anthers short, 1 1-celled, the others 2-celled or all 1-cel e ^^ cells straight or curved; connective produced above 1 usually bifid; staminodes in ? 0 or 3, very small. OQ<& V beaked, with 2-3 placentas; ovules few; style som rounded by a disk; stigmas 2 or 3; pistillode in <J 0 or g^{ia} , ^ beaked, with 2-3 placentas; ovules few; style rounded by a disk; stigmas 2 or 3; pistillode i <J Fruit an ovoid, usually rostrate berry. Seeds few, tumid, testa smooth.

KEDROSTIS ROSTRATA, Cogn. *Bhynclwcarpa foetida*, ^ Clarke; F. B. I. ii. 627. *Bryohia rostrata*, Rottl.; W. & Camatic (Wight, Rottler).

A prostrate or scandent herb with orbicular or renifor leaves, small flowers and an ovoid, beaked, red fruit.

12. Corallocarpus, Welw.

Prostrate or climbing herbs ; tendrils simple. *Leaves* roundish-cordate, lobed or palmate, rather thick. *Flowers* minute, monoecious, ♂ in small crowded racemes on long peduncles, ? solitary short-peduncled from the same axils. *Calyx-tube* campanulate; lobes 5, short. *Corolla* 5-partite; lobes ovate. *Stamens* 3, free, inserted on the calyx-tube; filaments very short; anthers all

"-celled or 1 1-celled, the cells straight, lateral on the thm
con-ective, which is often produced and sometimes bifid above
; in staminodes 0 or minute. Ovary ovoid, beaked,
2-3-celled ; es ^

es 0 or minute. Ovary ovoid, beaked, 23celled ;
.3 es ^ew> °n 2-3 placentas ; style straight, without disk; stigma
"» rarely 2-4-lobed; in \$ flowers pistillode minute. Fruit an
°1d usually beaked fleshy berry, circumsciss near the base.
°e ds f_{ew} obovoid or subglobose, often appressed-pilose, veiy little
COln pressed.

to /? °^ ? flowers thickened, also of <\$, which reach 3 in.
long .

p 1^s stout; leaves rather thick, deeply 3-5-lobed..... 1. *epigaeus*.
eies of \$ flowers very slender, also of <£, which reach 1-5 in.
& 5 tendrils capillary ; leaves thin, 3-lobed 2. *gracilipes*.

*• CORALLOCARPUS EPIGAEUS, Hook, f.; F. B. I. ii.
628. *Bryonia epigaea*, RottL ; W. & A. 346; Wt. Ic. t. 503.
Deccan and Carnatic and westward to the lower hills of
the Ghats, in dry country.

A thick-stemmed climber from a large tuberous rootstock,
the leaves rough and variable in their lobes, the fruit scarlet
m the middle, the base and beak green. -•

CORALLOCARPUS GRACILIPES, Cogn. Monog. 650.

Carnatic, Near Pondicherry (Lepine).

A very slender climber.

13. *Cerasiocarpum*, Hook, f.

Climbing glabrous herbs; tendrils simple. *Leaves* oblong,
°i*date at base, entire or hastately 3-lobed. *Floivers* small,
Monoecious; J in racemes; ? solitary, often from the same
^Xlls. *Calyx-tnhe* campanulate ; lobes 5, minute. *Corolla* rotate,
"Partite, the lobes ovate. *Stamens* 3, free, inserted on the mouth
of the calyx-tube; filaments very short, broad; anthers 1 1-celled,

2-celled; cells oblong, lateral on the connective, which is
m membranous and of ten produced; staminodes in ? 0. Ovary
uv°id, 1-celled, with 2-3 placentas; ovules 4-6; style -columnar;

stigma 3-lobed ; in *S* pistillode 0. *Fruit* a depressed globose smooth fleshy indehiscent berry. *Seeds* 2-6 broadly ovoid, not compressed, marginate, surrounded by orange pulp.

CERASIOCARPUM BENNETTII, Cogn. *C. zeylanicwni*, Hook. f.;
F. B. I. ii. 629; Trim. Fl. Ceyl. t. 44.

3,000 W. Ghats, in S.-E. Wynaad, near
Devaia, *
(Gamble).

A pretty climber with membranous leaves up
2-5 in. broad, dentate and acuminate, sometime
base, the fruit bright orange-red.

14. Gynostemma, Blume.

Slender climbing herbs; tendrils simple. *Leaves* ^P
^ 3-7-foliolate, leaflets ovate-lanceolate. *Flowers* nim^ ^
or greenish, dioecious or rarely monoecious, in
panicles; pedicels articulate, bracteolate. *Calyx* rotate, 5-
lobes short. *CWoZZa* rotate, 5-partite; lobes lanceolate.
5, inserted at the bottom of the calyx; filaments conn
column below; anthers 2-celled; staminodes in ¥ ' g tyl^{es}
spherical, 2-3-celled; ovules 2 in each cell, *V^{endnl}o1^l^{is}Ce^*
2-3, bifid at tip; pistillodes in ? 0. *Fruit* a globose, ^{ind^} rUCose.
1-3-seeded berry. *Seeds* ovoid or triangular, flattened, pi.
GYNOSTEMMA PEDATA, Blume; F. B. I. ii- ^3;
Ceyl. t. 45.

e\ly

W. Ghats, Nilgiri Hills at 4,000-6,000 ft.; hills of Tin*
(Beddome).

A slender climber with long flower- and fruit-panic
leaflets vine-like, crenate-serrate, the berry greenish-

15. Zanonía, Linn.

Scandent shrubs; tendrils simple or bifid at the apex. ^{*,*} T,eflV^{es}
petiolate, ovate or oblong, entire. *Flowers* small, dioecious,
racemose or the g paniced. *Calyx* of 3, rarely 4, sepals, broa
oblong or orbicular, membranous, concave. *Corolla* rotate,
partite, coriaceous or fleshy; lobes narrowed at the apex. *StainV*
5, free, inserted on a fleshy disk; filaments very short and thi^{cji'}
anthers transversely oblong, 1-celled; staminodes in ?
^{sllo'} alternate with the petals. *Ovary* elongate, at first
3-celled, lat^{er} 1-celled by absorption of the septa; ovules 2-many
in each cell* on parietal placentas, pendulous; styles 3, bifid at
apex; pistil-lode in <\$ 0. *Fruit* cylindrical clavate or
hemispheric, terete or subtrigonus, truncate and broadly 3-valved
at apex. *Seeds* large* pendulous, oblong, compressed, imbricate,

surrounded by a broad membranous wing.

Linn_ R R L " . 6335 W_ & A. 340; Wt. p

, ^ut not monoecious). A • Ghats, in the Bababudan Hills of Malabar.

s out climbing shrub with lame ovate-cordate leaves and LJ^VI*ged seeds.

it_s ii^CtVia . vull{ J^aTM, Ser., is the Bottle Gourd, cultivated for \vheil

J J^w^ich has various shapes and is eaten when young, and i^ntlsi °

. and the shell has dried used for bottles and to make

Ben Instruments_ yern. Hind. Kaddu.

^ \tyi!T^asa ceriMa, Savi, is the White G-ourd Melon, occasionally n

w ® *or its fruit, which is large and fleshy and covered

with

^ield om_ The seeds, which are compressed and marginate,

an on. Y^ei.n. Hinc^i Gol kadda>

the p^617a. ' ^W, Duch., the Squash-Gourd, 0. Pepo, DC, 0

,, u^Pkin, 0. ovifera, Linn, the Vegetable Marrow, and

^mb^S a^ Dllcn_5 the Musk Melon, are all large-fruited large nn%

or trailing herbs cultivated for their fruits.

Family LXXIY. DATISCACEAE.

it) l 01* ^S_ Leaves petioled, simple or pinnate, alternate

; n f • Flowers small, regular, dioecious or rarely

bisexual, a<jn^aScicles racemes or panicles. Cafya;-tube in £

short; in ? f ^ ^ Ovar^ lobes 3~9_ Petals o_ Stamens 4 or

more,

cell l^ PP^Os^e ^e calyx-lobesi filaments short; anthers 2-

0 ' ln ? if present reduced to staminodes. Ovary 1-celled,

<is ^ o ^ a^ ^ie apex; placentas parietal; ovules numerous,

alt m^ o1% ^or^zon*a1' styles as many as the placentas and

in W^ ^ *^em' sinciple or 2-partite. Fruit a coriaceous or

Se 7 ">lanous caP^sule, dehiscing at the apex between the styles, very

many, minute; albumen scanty; embryo straight.

Tetrameles, R. Br.

arge tree. Leaves deciduous, ovate, acuminate, pubescent

neath. Flowers dioecious, appearing before the leaves; \$

in

V icles, J in racemes, clustered near the ends of the

branches.

<ty#-tube in c? very short, in ? connate with the ovary; lobes

• Stamens 4, opposite the calyx-lobes, inserted round a

flat

Capsule ovoid, membranous, 4-8-ribbed, dehiscent a f the &P
Seeds very many, minute, ellipsoid; testa very loo ite
 membranous.

TETHAMELES NTJDIFLORA, R. Br.; F. B. I-^{mm} Fl. t. 212. T. *Grahamiana*, Wt Ic. t. 1956.

W. Coast and W. Ghats, in low level forests both
 and deciduous, up to 2,500 ft. m

A very large deciduous tree reaching 150 ft. m * ^
 considerable diameter, the base supported by large Bark
 greyish-white, smooth; wood coarse and so ^ used on
 the W. Coast for dug-out canoes. Tern-Ohini.

Family LXXY. BEGONIACEAE.

Succulent herbs, sometimes undershrubs; stem otte
 ^ to a rhizome or tuber. *Leaves* alternate, rarely subvei
 ^
 to a rhizome or tuber. *Leaves* alternate, y
 more or less inequilateral, entire toothed or lobed; ,ose o?
 free, often deciduous. *Flowers* usually showy, win e ^ase r
 yellow, monoecious, on axillary peduncles bracteate Lqo\le &
 divided above in dichotomous cymes; bracts and v*^l or
 opposite. MALE: Perianth of 2 outer valvate *sepals* w
 &
 without an inner smaller pair: *stamens* numerous, the n '
 -
 free or connate in a bundle; anthers usually narrowly
 ^g
 2-celled, dehiscent longitudinally. FEMALE: Perianth o
 ^
 sepals, the 2 outer usually large; *ovary* inferior, 2-4-celled, 1 ^
 3-celled and_-winged; *placentas* axile, simple or 2 in eac ,
 ovules numerous; styles 2-4, free or connate; stigmas bia or
 twisted. ^rui7 a capsule, usually winged, variously but usi
 loculicidally dehiscent. *Seeds* minute; testa reticulate; all>^{ul}
 scanty or 0.

Begonia, Linn.

CHARACTERS OF THE FAMILY.

Placentas 2 in each cell; small plants with tuberous roots:—

Capsule 3-celled; sepals of <J flowers 4, the outer larger:—

Ovary pubescent; leaves ovate, cordate, acuminate;
 capsule-wings 3, elongate, one especially so, ascending; stigmas
 spiral

Ovary glabrous; leaves orbicular, cordate; capsule-wings
 \$> narrow, horizontal, sub-equal; stigmas branched, curved

2. *cordifolia*-

BEGONIACEAE.

²-celled; sepals of <J flowers 4, the outer larger .—
succulent, rather stout; leaves up to 6 in. long, ovate,
^ a l l y often not deeply cordate, nearly entire, acute;
capsule-ⁿ<?s 1 broad descending, 2 narrow; stigmas twisted

3. *integrifolia.*

tems very slender, scarcely 6 in. long; leaves small,
mem-s :-

Capsule-wings subequal, triangular, ascending; stigmas
reni-^{tor}»i, papillose; outer sepals of \$ orbicular, broad;
leaves

^equally cordate, up to 2 in. in diam4. *crenata.*

Ca^{psule}-wings narrow, one much longer and broader than the
other 2, horizontal; stigmas 3-5-lobed, capitate; sepals of
<? flowers obovate, narrow; leaves equally cordate,
about

^l in. in diam⁵- *canarana.*
undivided":- ""

j^s scapigerous herbs :—

leaves peltate, reniform-orbicular, broader than long, entire,
ciliatej scape longer than the leaves; sepals of \$ flowers 4,
o^Uter slightly larger than inner; capsule-wings equal
and

equally broad (-2 in.), prominently reticulate..... 6. *albo-coccinea.*

^{aves} deeply corda^ at base but not peltate :— Leaves ovate,
coarsely serrate, often lobed, acute, pilose, very membranous ;
scape slender, as long as the leaves; sepals of c? flowers 4,
orbicular, inner narrow ; capsule-wings subequal,

loader above (about '15 in.) and truncate7. *subpeltata.*

Leaves orbicular, broader than long, distinctly dentate,
white-tomentose beneath, thick; scape elongate,
many-flowered; sepals of \$ flowers 2 only; capsule-wings
subequal, broadest

at the middle (-2 in.;⁸- *floccij'era.*

^{ter}ns elongate, leaf-bearing; leaves ovate, acute, serrate, sparsely
Pubescent, membranous; flowers large; sepals of <? flowers 4, outer
j^ch larger than the obovate inner, anthers long; capsule at first
^{ls}pid, the wings subequal, ascending, broadest at top (*3-'4 in.)

P

Al^lmost shrubby, the stems thick, jointed, leafy, the flowers on
axillary peduncles ; sepals in <J and ? 2 only, orbicular; leaves
V^{er}y unequally ovate-cordate, acuminate, serrate; capsule-wings
subequal, rounded or slightly angled near the top where broadest,
occasionally slightly acute at top.....10. *malabarica.*

9. trichocarpa.

BEGONIA PICTA, Sm.; F. B. I.'ii. 638. N.
Circars, hills of Gun jam (Gamble).

A slender plant of shady banks, the flowers pale rose, leaves variegated. 2. *BEGONIA CORDIFOLIA*, Thw.; F. B. I. ii. 641.

BEGONIA CORDIFOLIA, Thw.; F. B. I. ii. 641. W. Ghats, in forests from Malabar to Tinnevely. A scapigerous herb with pink flowers and leaves.

3. *BEGONIA INTEGRIFOLIA*, Dalz.; F. B. I. ii. 648. W. Ghats, in the hills from Canara and

Wynaad.

Wynaad. Wynaad.

flowers.

A short-stemmed succulent herb with white

4. *BEGONIA CRENATA*, Dryand.; F. B. I. ii. 601. Bedd. Ic. t. 110.

W. Ghats, from Mysore to Wynaad, at low levels.

A slender herb with small pale pink flowers.

5. *BEGONIA CANARANA*, Miq.; F. B. I. ii. 652. W. Coast and W. Ghats, from S. Canara (Hohenal

Malabar and Wynaad, up to 3,000 ft.

A very slender herb with small flowers.

6. *BEGONIA ALBO-COCCINEA*, Hook. F. B. I. ii. 653.

Grahamiana, Wt. Ic. t. 1811.

W. Ghats, in the hills of Tinnevely about Ourta.

A scapigerous succulent herb with rose-coloured

rather large

rather large peltate leaves, and large membranous scales at the base.

7. *BEGONIA SUBPELTATA*, Wt. Ic. t. 1812; F. B. I. ii. 654.

W. Ghats, probably in Malabar (Wight).

A very slender herb with membranous leaves.

8. *BEGONIA FLOCCIFERA*, Bedd. Ic. t. Ill; F. B. I. ii. 655.

W. Ghats, hills of Travancore and Tinnevely, at 300 J (Beddome).

A rather large herb with woolly leaves and tall flowered scapes.

9. *BEGONIA TRICHOCARPA*, Dalz.; F. B. I. ii. 653.

W. Ghats, Bababudan Hills of Malabar (Law).

A large fleshy herb with white flowers and large basal

stipules.

10. BEGONIA ZIALABARICA, Lamk.; F. B. I. ii. 655. *B.*
dipetafa' Grah.; Wt. Ic. t. 1813. *Diploclinium*
Lindleyanuin, "VW Ic. t. 1817.

^W- Ghats, in the Nilgiri, Anamalai and Pulney Hills, up ^{to} 6,000 ft, in moist woods.

^A !arge almost shrubby much-branching succulent plant ^{*ith} many rose-coloured flowers and large capsule, common ^{an<*} conspicuous. The shape of the capsule-wings is triable: sometimes they are pointed at apex, sometimes truncate, but more usually rounded.

^m
*\ *anamalayana*, Bedd, in Trans. Linn. Soc. xxv. 217 is a ^v ^{a^8}erous herb with very oblique reniform leaves, the younger y floccose, the older glabrous. The scape is **many-flowered**, ^{2^{Ch} 10}»ger than the leaves, and both <J and ? flowers have ^my ² sepals. Anamalai Hills, in moist forests, at 3,000 ft.

Family LXXYI. CACTACEAE.

^{H<<*}bs_f shrubs or trees with usually succulent stems; branches ^{^<*} thickened, striated or angled. *Leaves* usually represented ^{**} tufts of ^{spines} or by ^{prickies} or small tubercles; stipules 0. *oioers* regular, hermaphrodite, solitary. *Calyx-tuhe* adnate to ⁶ ^{ov}ary; lobes 3-many, small, imbricate. *Petals* many, free or ^{010%} united at base, imbricate. *Stamens* very many, free or ^{~ⁿ}ate to the base of the petals; filaments filiform; anthers ^{S^ll}. *Ovary* ^{1_}ceUed . ^{ovuleg} very ^{many>} horizontal, on parietal Nacentas; style terminal, simple, filiform or cylindric; stigma ^{^*}any-rayed. *Fruit* a 1-celled berry with pulpy placentas. ^{^eds} very .many, oblong or reniform; albumen copious scanty ^{ov} 0; embryo straight or curved; cotyledons free or connate.

Opuntia, Mill.

Shrubs, with woody stems; branches jointed, the joints fleshy, flattened, ovate, tubercled, the tubercles hirsute and spiny. *Leaves* ^{o*i} youngest joints small, scale-like, deciduous; on older ones [^]represented by spines. *Flowers* lateral, showy, yellow orange or ^{r*d}. CaZyaj-tube bearing small outer lobes adnate to the ovary, the inner lobes at its mouth. *Petals* many, spreading, connate below. *Stamens* very numerous, in many series. *Ovary* of many connate carpels; ovules many ; style cylindric ; stigmas many, thick, erect. *Fruit* a pear-shaped, fleshy, tubercled berry. *Seeds* compressed; testa very hard, albuminous cotyledons leaf-like.

ANALYSIS, AFTER I. H. BURKILL IN RECORDS
INDIA, IV.

Stamens exserted; flowers rose-coloured; spines

Stamens not exserted:—

floweri*s

J

Spines falling except one long one on each cushion;
the sepals and petals tinged with red

inonaeana^a'

Several large spines remaining on each cushion:—

^ . fevers

a Spines all straight, slender, tawny or purplish-W*1

' ^

elator-

opening lemon-yellow, changing to rose-pink..... •

ojoiired \.

Spines some curved, the largest stout, light horn-
life, darkening afterwards; flowers yellow

^ Oin*-

1. OPUNTIA COCCINELLIFERA, Mill.

Chingleput and Tinnevely Districts in Carnatic ^^ -o

A Mexican species which is only occasionally^^.

it India and has apparently never spread itsel ofcject

°* was introduced at Masulipatam in 1788 vvitn

,n[ted-acclimatizing the cochineal insect, for which 1

2. OPUNTIA MONACANTHA, Haw.

-neccaH> ^

N. Circars, common ; Carnatic, about Madras;

Coimbatore.

m. 11(J is

A species which has spread widely in some locali i

^g at once recognized by its single straight thorns.

^^ introduced very early, certainly before 1786, pro pa

Brazil.

3. OPUNTIA ELATIOR, Mill.

a\sO

N. Circars, along the coast down to the Kistna rivei, *■
near Madras; Deccan, about Bellary.

^ it

A common species, but frequently mistaken for the i ^ - '
is recognized by its rose-pink flowers and was app^{al}

introduced about 1800.

003

4. OPUNTIA DILLENII, Haw.; F. B. I. ii. 657; W. & A' °
excl. syn. *Cactus indicus*, Roxb.; Wt. 111. t. 114.

E. Coast from Ganjam to Madras, often quite close to ^
sea, inland also in various places; Deccan, in Bella¹⁷

ri V)V 1^

Mysore, the most common species, easily recognizea j
glaucous-green ^joints, yellow flowers, purple fruits

curved thorns. It comes probably from the Cftliforni
Peninsula and was introduced very early, and before 1' it
was established in Madras (Burkill). Many attempts

have been made to eradicate it, but

unsuccessfully in

general. Its spread is chiefly due to its use as a hedge Plant. Vern. *Hind.* Nagphana.

Family LXXVII. AIZOACEAE.

ern' ^ o* ^erenn^a^ herbs. *Leaves* simple, often fleshy, opposite
i'eo_ui.\ y Or ^sely whoiied; stipules scarious or 0. *Flowers*
Varel ' 1fllllaP^ir odite or rarely polygamous, in cymes or fascicles,
ov_{ai.v} So aiX *Calyx* of 4-5 sepals, free or rarely adnate to the
st<ime USUal!y Persi stent. *Petals* usually 0, when present small.
tirne • ^erisy^{nous} or hypogynous, definite or indefinite, some-
°blo staminodes; filaments free or connate in a cup; anthers
Ovule ary ^ree» 2-5-celled, syncarpous or rarely apocarpous;
as ^i m^ny in eac^ carpel} axile or solitary basal; styles as many ^ii'ci
Ca!^e^s# -*Fruit* usually capsular, dehiscent loculicidally or 1 in
8ciss^y» sometimes of indehiscent cocci. *Seeds* many or Or . Gl
carP^l» usually renif orm, compressed; testa membranous siir« s
ceousf often pitted or tuberculate; albumen mealy, ^cled by
the curved or annular embryo.

^ syncarpous: -

J uoe elongate ; stamens inserted on the calyx-tube :
capsule Clr cumsci_{ss} . petals 0 :-

vary and capsule 3-5-celled1. **Sesuvium.**

yvary and capsule 1-2-celled 2. **Trianthema.**

a yx deeply 5-partite : stamens hypogynous; capsule 3-5-celled,
loculicidal :—

p many, small; seeds arillate 3. **Orygia.**

-Petals 0; seeds sometimes appendaged.....4. **Mollugo.**

ruit apocarpous; carpels^5, 1- seeded ; petals 0 5. **Gisekia.**

1. SesuYium, Linn.

Herbs or undershrubs, erect or prostrate, branched, succulent, opposite, entire, fleshy; stipules 0 or the petioles con- by a stipuliform membrane. *Flowers* axillary, sessile or cled, solitary or clustered; bracteoles 2 or 0. *Calyx-tube* t^'binate; lobes 5, lanceolate, persistent, coloured within, apicu-iate below the tip, hyaline on the margins. *Petals* 0. *Stamens* 5 or ^ny, inserted round the top of the calyx-tube; filaments usually c°nnate at base. *Ovary* free, 3-5-celled ; ovules numerous on axile Placentas; styles 3-5. *Fruit* an ovate membranous 3-5-celled,

c>ef

circumscissile capsule, the axis and placentas peisi many, reniform ; testa smooth ; embryo annular.

SESUVIUM PORTULACASTRUM, Linn.; F. B. I. ^{1L}

E. and W. Coasts, on sea-shore sand.

A fleshy prostrate rooting stout-stemmed herb, ^{sep^{a^}} ^{jinea^{l'''}} purplish, the styles 3, the seeds black, shining, lea^v oblanceolate or spatulate. ^{x]lag'-}

Var. *repens*, Rottl. 8. *repens*, Wt. in Hook. Oomp- b'ovate-ii. 71; W. & A. 361. Leaves much smaller, spatulate, stems more slender.

2. *Trianthea*, Linn. ^f

Diffuse prostrate branched herbs, glabrous or papill^{ose>} ^{^ ^} petioled, opposite, unequal, entire, subfleshy, the petio e , ^{^ .^s} pair connected at the base by stipuliform membranes. ^{^ oY} small, axillary, sessile or peduncled, solitary or in *J n^t** clusters; bracts membranous as are the 2 bracteoles. [^] tube short or long; lobes 5, coloured within, mucronate ^{^^} back near the tip. *Petals* 0. *Stamens* 5, 10 or 15, inserted [^] the top of the calyx-tube. *Ovary* free, sessile, usually ti^l , at apex, 1-2-celled; ovules 1 or more in each cell, from a placenta; styles 1 or 2, papillose. *Fruit* a capsule, circu , the upper part carrying away 1-2 seeds, the lower 2-niany* *Seeds* 1 or more, reniform, rough ; embryo annular.

Style 1:—

Flowers solitary, sessile, sheathed by the base of the p^e ^{le.} stamens 10 or 15 ; leaves obovate ; capsule-top mitriform ^{enC} ^{-c} at least 1 seed, the lower part 3-5-seeded; seeds with conceu muriculate lines 1. *Portulacastm*

Flowers fascicled, nearly sessile, not enclosed in the base of ^{p p} annular depressed cushion enclosing 1 seed, the lower part 1-seedecl; seeds with concentric smooth lines 2.

Styles 2 ; flowers in clusters of dichasioid cymes ; stamens 10 or I⁵ ' leaves elliptic or elliptic-oblong; capsule-top truncate with a» annular rim enclosing 2 seeds, the lower part also 2-seeded; seeds with concentric muriculate lines 3

decandra-

1. TRIANTHEMA PORTULACASTRUM, Linn. 2\monogyna,hinn-> F. B. I. ii. 660. *T. obcordata*, Roxb.; W. & A. 355 ; Wt. Ic. t. 200

petiole; stamens 5; leaves oblong or elliptic;
capsule-top ^c

t

2. ^{^R} ^{oS} ^{Plail} Districts, a weed of roadside and waste lands.
 UNTHEMA TRIQUETRA, Rottl. *T. crystalUna*, W. &
 A.
 * -B. I. 11. 660, wof o/VaJbl. °ast Districts of the
 Camatic from Striharikota south-
 Var 'T/ ^{hlland to} Coimbatore.
 broa ^{gif°Ua} > Gamble. Leaves longer, up to 75 in., and
 a er; calyx-lobes with more acuminate and longer mucros. 3 T '
 CiU* natic, at Tuticorin (K. Rangachari).
 ' ^R IANTHEMA DECANDEA, Linn.; F. B. I. ii. 661; W.
 & A.
^{35^} Wt. Ic. t. 296.
 and Camatic, on dry-soil lands, common, a road-
 weed.

3. *Orygia*, Forsk.

flesh ^l ^{US^ranclied} & ^{labrou} ^s herb. *Leaves* opposite and alternate, °Ppo
^{ntu%e'} ^P etioled; stipules 0. *Flowers* in terminal and leaf-^{sepaj} ^K
^{^W}-flowered cymes; bracts and bracteoles scarious. ⁸, '
^{oVa^e*cus} ^Pielate, the margins hyaline. *Petals* 0. *Stamens* ^{oUS'}
^{inserte^} at the base of the calyx, subhypogynous, ^{nil} iorm;
 ; nodes many, connate t te b y
 sil ^{Q\} ^{e^e<^'} ovules many, axile; styles 5, filiform.
 staminodes many, connate at the base. *Ovary*
 by the ^{il} ^{\s}8X} ^{^lo"o8e} papery loculicidal capsule, surrounded
^{str} • ^{Se^a^s} 5 cells 5. *Seeds* many, reniform,
 compressed, P nolate, with many concentric raised lines;
 embryo annular. ^{Ry} ^{GIA} ^{^ECUMBENS}, Porsk.; F. B. I. ii. 661.
Giimis trianthe-Koules, Heyne; W. & A. 362; Wt. 111. t. 113.
 eccan, in Hyderabad, Mysore and Coimbatore. branching herb
 with flowers in slender cymes, purple red
 staminodes (petals of Wight) and obovate cuspidate fleshy
 leaves.

4. *Moll ii go*, Linn.

■ Branching, often dichotomous, herbs. *Leaves* often falsely
 whorled, or alternate, or radical and rosulate, entire, linear
 °hovate or spatulate; stipules membranous, caducous. *Floivers*
 axillary, greenish r solitary fascicled or in cymes or racemes;

Wets minute. *Sepals* 5, persistent. *Petals* 0. *Stamens* 3-5, subhypogynous, alternate with the sepals, often with staminodes

intermixed. Ovary free, globose or ovoid, 3-5-cells >
 many in each cell, axile; styles 3-5, linear or small clavate
 membranous, oblong globose or subcylindrical, capsular, sonie
 loculicidal. Seeds several in each cell, rarely 1, reniform times
 appendaged at the hilum; embryo annular.

Flowers in axillary fascicles; seeds appendaged and with
 white thread curved round them:—

Leaves densely stellate-hairy, orbicular to obovate and spinose
 pedicels usually very short; sepals densely stellate hairy

Leaves glabrous or slightly crispate-pubescent, usually ovate
 late but sometimes almost orbicular; pedicels long, filiform
 glabrous *' vx

Flowers in terminal cymes; seeds not or minutely appendaged
 curved thread:—

Leaves in whorls at the nodes:—

Cymes corymbosely branched; pedicels long, filiform:— *n]en"*

Leaves linear-lanceolate to obovate; stems
 seeds dark reddish-brown, shining, tuberculate...3. *Pen*

Leaves linear, very narrow; stems very slender, terete,
 golden-brown, reticulate, not tuberculate 4- v

.....

quadrang

^

; P^e

g s g

brown with flattened papillae, not tuberculate, the back flat

g

Cyme-branches lengthening into elongated racemes; P^e
 short; leaves linear-lanceolate; stems angular; seeds g^o

^

with fl

bk 5.

futt^{>c*}

Leaves all radical, spatulate; flower-peduncles many, ^{el}
 trichotomously branched; pedicels filiform; seeds reddish-lanceolate
 covered with minute flattened tubercles 6. *nudic^{ll}*

1. MOLLUGO LOTOIDES, O. Kze. *M. hirta*, Thunb.; F. B.^{l'}

n. 662. *Glinus lotoides*, Loefl.; W. & A. 362. *G.*

dict^{m)l'}

noides, Linn.; W. & A. 362.

Deccan and Carnatic, in dry sandy places, and on waste lands, common.

A prostrate herb covered with stellate hairs, the leaves usually orbicular, the pedicels sometimes up to 75 inⁿ-long, but more usually very short.

2. MOLLUGO OPPOSITIFOLIA, Linn. *M.*

Spermda

F. B. I. ii. 662; W. & A. 44.

Deccan and Carnatic, in dry places and on waste lands a fallow fields, common.

A slender prostrate herb, the leaves eaten and used medicinally. Vern. *Tarn*. Toora.

- ³ MOLLUGO PENTAPHYLLA, Linn. *M. stricta*, Linn.; F. B. I. ^{ij}- 663; W. & A. 44.

AH plains Districts and at low elevations in the hills, a common weed.

An erect slender glabrous herb, the leaves very variable in shape.

- ⁴ MOLLUGO CERVIANA, Ser.; F. B. I. ii. 663; W. & A. 44.

Deccan and Carnatic, in sandy places, especially near the coast.

A very slender small glabrous herb, many branched from the base.

- ⁵ MOLLUGO I>STICHA, Ser.; F. B. I. ii. 603; W. & A. 44; Wt. Ic. t. 3.

East Coast, in sandy places not far from the sea. An erect rather stout long-leaved herb, more or less crispate-pubescent.

- ⁶ MOLLUGO NUDICAULIS, Lam.; F. B. I. ii. 664; W. & A. 43.

Deccan and Carnatic, in dry places. An erect annual herb with rosulate leaves.

5. Gisekia, Linn.

Diffuse branched herbs. *Leaves* opposite or falsely whorled, fleshy, spathulate, abounding in raphides; stipules 0. *Flowers* small, hermaphrodite or polygamous, in axillary fascicles or short cymes. *Sepals* 5, ovate, herbaceous with membranous margins, many white raphides. *Petals* 0. *Stamens* 5-15, hypogynous; filaments dilated at the base; anthers oblong. *Carpels* usually 5, distinct, sessile on a small torus, 1-celled; ovule 1 in each cell, basal; styles simple. *Fruit* of 5 free, membranous, white-papillose, indehiscent, 1-seeded carpels. *Seeds* vertical, compressed, subreniform; embryo annular.

GISEKIA PHARNACEOIDES, Linn.; F. B. I. ii. 664; Roxb. Cor. PI. t, 183; Wt. Ic. t. 1167.

Deccan and Carnatic, from the Godavari southwards, on waste lands.

A diffuse usually prostrate herb with fleshy glaucous leaves

and black minutely pitted seeds. Vern. *Tel* Ishi-rash
kura.

Family LXXYIII. UMBELLIFERAB.

Herbs, rarely shrubs or trees. *Leaves* usually alternate, or compound, the petiole generally sheathing at base; rarely small and scarious. *Flowers* regular or hermaphrodite or polygamous, in compound umbels, the outer flowers of the umbel sometimes umbels and umbellules each furnished with involucral bracteoles, which may sometimes be absent from one adnate to the ovary, limb 5-toothed or 0. *J''* epigynous, 2-lobed. *Petals* 5, epigynous, sometimes often bifid, with an inflexed apex and a median fold. *Ovary* inferior, crowned by the disk; ovule solitary in each cell, styles 2, often dilated at the base into stylopods; stigmas 2 indehiscent dorsally or laterally compressed separated by a commissure and attached to and often from a slender forked carpophore; the mericarps usually by 5 longitudinal primary ridges, often alternating with secondary ones, the pericarp traversed by oil-canals (vittae). *Seed* in mericarp, pendulous; albumen cartilaginous; embryo near the apex, the radicle superior.

Umbels simple; leaves orbicular, undivided; fruit laterally pressed; vittae 0:—

- Mericarps with 3 ridges, the commisural obscure; flowers with pericarp of seed thin 1. **Hydrocotylus**
 Mericarpe with 7-9 ridges, the primary and secondary s¹¹¹¹¹ netveined between; flowers red; pericarp thick 2. **Centella**
 Umbels in groups of about 3, sessile in the axils of a cymose"
 leaves 3-5-partite; fruit covered with hooked prickles; vittae
 3. **Sanicula-**

Umbels compound:—

Fruit laterally compressed:—

Leaves entire; flowers yellow or lurid; mericarp with 5 primary ridges, the secondary inconspicuous 4. **Bupleurum**.

Leaves usually pinnate or deeply pinnate; flowers white:—

Involucral bracts and bracteoles absent; umbels leaf-opposed
Apium.

Involucral bracts and bracteoles usually present:—

Furrows between the ridges usually with 1 vitta...5. **Carum**.

Furrows between the ridges 2-3-vittate.....6. **Pimpinella**

bit widest at the commissure, circular or somewhat dorsally pressed in section ; primary ridges distinct : —
 ribut globose, the ridges prominent; petals white7. Seseli.

■Fruit ovoid:—

- lowers yellow ; leaves large with filiform segments

Foeniculum.

blowers white; leaves small; vittae many. -

Bracts prominent..... #• Schultzia.

Bracts none or small.....9. Polyzygus.

•j^{Ult} ^OrsaHy compressed, the mericarps flattened, the lateral
 nc%es winged —

ll*gs of the mericarps with thick margins ; vittae on the faces
 °f the mericarps usually extending to the base; petals
 not

radiant 10. Peucedanum.

Wings of the mericarps with thin margins; vittae usually not
 °xtending to the base; petals very often radiant

11. Heracleum.

ruit subterete, not winged; secondary ridges of the mericarps

p: Petals radiant :

fruits glabrous; involucral bracts none Coriandrum.

ruits setose; involucral bracts prominent, pinnate Daucus.

PlUinet; Petals radiant :-

1, Hydrocotyle, Linn.

-Prostrate herbs, rooting at the nodes; growing in moist places.

ectves orbicular or reniform, palmately lobed,

long-petioled;

stlpules scarious. Flowers white, small, m simple small axillary

©ssile or pedicellate umbels; involucral bracts small

or 0.

;/a%teeth none or very small. Petals entire, acute, valvate.

^uit laterally compressed, small; mericarps with 3 primary but
 without secondary ridges; vittae 0.

eaves 1-3*5 in. in diam., 7-9-lobed; umbel-peduncles clustered, up to 2
 in. long; mericarps very little compressed, the primary ridges
 obscure.....1. javanica.

leaves 1-2 in. in diam., 7-9-lobed; umbels solitary, sessile or very
 shortly peduncled; mericarps slightly compressed, the primary ridges
 apparent2. conferta.

Leaves -1--5 in. in diam., 7-lobed ; umbel peduncles solitary, very

slender, up to 75 in. long; moricarps compressed, the primary ridges
angular 3. *rotundifolia*.

" 667-

1. HYDROCOTYLE JAVANICA, Tlmb.; F. B. 1- n-
polycephala, W. & A. 366; Wt. Ic. t. 1003. laceS
 W. Ghats, in the Nilgiris and Pulneys, in shady v'
 at high levels. .. ggg#
2. HYDROCOTYLE CONFERTA, Wt. Ic. t. 1002; F. B. 1# 11# jg jU
 W. Ghats, in the Nilgiris and Pulneys, at high lev
 wet places. nm g
3. HYDROCOTYLE ROTUNDIFOLIA, Roxb.; F. B. I. "•
 Ic. t. 564. if. feweZZa, D. Don; W. & A. 366.
 E. Ghats, hills of Vizagapatam, at 5,000 ft.; W. the
 Nilgiris and Pulneys, in bogs and on bare wet to
 7,000 ft.

2. Centella, Linn.

Prosti-ate herbs, rooting at the nodes. *Leaves* orbicular, ^
 p t e y nerved, deeply cordate with an angular sinu,
 petioled; stipules scarious. *Flowers* reddish, small, sessi »
 simple axillary few-flowered umbels; involucral bracts 2, sm
 ^ truncate. *Petals* minute, ovate, acute, imbricate. /* 1

palmately nerved, deeply cordate with an angular sinus,
 ^ tild t i l

Cc/Z?/^ truncate. *Petals* minute, ovate, acute, imbricate. /
 laterally comjjressed, the mericarps with about 7-0 subsm
 ridges, the secondary ridges as prominent as the
 p¹¹ reticulate between them, vittae 0; pericarp thickened.

CENTELLA ASIATICA, Urban. *Hydrocotyle asiatica*, 1¹¹¹
 F. B. I. ii. 669; W. & A. 366; Wt. Ic. t. 565.

All plains Districts in wet places, the borders of ricefie
 and on banks, up to 6,000 ft. in the hills.

A common trailing and rooting weed with leaves up to J- 1
 in diam., orbicular-cordate with rather shallow sinus.

3. Sanicula, Linn.

Erect herbs. *Leaves* deeply 3-5-parfcite, the segments again
 lobed and mucronate-serrate, chiefly radical and long-petioled.
Flowers very small, mostly unisexual, in groups of about 3 umbel^{9*}

sessile in the forks and on the branches of a cymose panicle, the bracts sessile, leaf-like; umbellules usually small, few-flowered, with few bracteoles. *Calyx-lohes* herbaceous, lanceolate. *Petals* white, with long incurved points. *Disk* flattened, thickened round the filiform styles. *Fruit* ovoid, not compressed, the mericarps

thickly covered with hooked spiny prickles, without ridges, vittae

-----~ EUROPAEA, Linn.; F. B. I. ii. 670. 8. *data*,

Ham.;

^w- & A. 367; Wt. 111. t. 117, fig. 2; Wt. Ic. tt. 334, 1004. ^w-

Ghats, in the Nilgiris and Pulneys above 6,000 ft., in Sholas and similar shady places.

^ Perennial herb of wide distribution but variable, the S. Indian form having the leaves acuminate lobed.

4. *Bupleurum*, Linn.

Glabrous herbs or shrubs. *Leaves* entire. *Floivers* small, fellow or lurid, in compound umbels; involucral bracts and [^]teoles usually present. *Calyx-lobea* 0. *Petals* 5, obovate, [^]flexed, the apex emarginate. *Dish* broad, flat. *Styles* short. *J»?>tt* laterally compressed, slightly constricted at the com-Assure; mericarps subpentagonal, primary ridges distinct, ^{8°}metimes almost winged, secondary 0 or obscure; vittae 1-3 ^{*u} the furrows between the primary ridges; carpophore 2-fid or f Partite. *Seed* terete, sometimes slightly grooved on the inner iace.

, usually single-stenfined shrub up to (3 ft. high ; lower leaves ^{^P} to 6 in. long, cauline shorter, obtuse, all mucronate; bracts and wacteoles broad; mericarps -3--4 in. long with 5 corky ridges shortly ^winged . vittae 1 in each furrow between them ...1. *plantaginifolium*.

Erect perennial herbs up to 3 ft. high or even more; bracts and Wcteoles narrow, 3-nerved ; mericarps semi-ellipsoid, 5-ridged :— Leaves linear-oblong, obtuse at apex and mucronate, usually 1-3 in. l°ng, '3 in. broad; mericarps with 1-3 vittae in the furrows

2. *mucronatumi*.

Leaves linear, acute at apex and mucronate, up to 4 in. long, '25 in.

broad; mericarps with usually 3 vittae in the furrows...3. *virgatum*. Erect slender perennial herb up to 1 ft. high ; lower leaves crowded near the base, upper few, all linear mucronate ; bracts and bracteoles lanceolate, hair-pointed; mericarps semi-ovoid, '1 in. long with distinct ridges; vittae 1 in each furrow, sometimes 3 at commissure

4. *distichophyllum*.

1. BUPLEURUM PLANTAGINIFOLIUM, Wt. Ic. t. 281; F. B. I. ii. 674. * W. Ghats, in the Shola Forests of the Nilgiris, above 6,000 ft.

A shrub, often with a single stem up to 6 ft. stem marked by the round scars of fallen leaves. leaves long and narrow with very oblique sup nerves; cauline leaves shorter and broader an obtuse.

2. BUPLEURUM MUCRONATUM, W. & A. 370; *r. &*
in part
 W. Ghats, in the Nilgiris at about 7,000 ft., among scarce in Pulneys.
 A bushy plant with knotted stems and many leaves, cauline similar to the radical.
 «
 Yar. *ramosissimum*, C. B. Clarke in F. B. I. *ramosissimum*, W. & A. 370; Wt. Ic. t. 1007.
 W. Ghats, in the Nilgiris and Pulneys, at 6,000-8,000 Shevaroy Hills of Salem.
 A low bushy plant with more terete stems and leaves, less obtuse at apex or sometimes acute.
3. BUPLEURUM VIRGATUM, W. & A. 370. *B. microneidii-M v mrgatum*, C. B. Clarke in F. B. I. ii. 676.
 W. Ghats, in the Pulney Hills, at about 7,000 ft., a grass on the downs.
 A tall erect herb with terete stems and narrow, long sharply mucronate-acuminate leaves; the umbels peduncled with many rays.
4. BUPLEURUM DISTICHOPHYLLUM, W. & A. 370; F. B. I. Wt. Ic. t. 1006.
 W. Ghats, in the Nilgiri Hills, above 7,500 ft., on the open downs.
 A slender erect herb, the radial leaves tufted. A small specimen from the Madgol Hills of Vizagapatai 4,000 ft. (A. W. Lushington), seems to belong to *B. falcatwn* * Linn.

5. Carum, Linn.

Annual or perennial herbs. *Leaves* pinnate or decompose. *Flowers* white, polygamous, the sterile flowers often with irregular petals; umbels compound; involucral bracts few or 0; bracteoles numerous, entire. *CV*Zi/#-teeth* small or 0. *Petals* broad, obtuse

retuse or emarginate. *Fruit* ovoid ellipsoid or oblong, laterally compressed and more or less constricted at the commissure;

mericarps subpentagonal, the inner face flattened; primary ridges usually conspicuous, vittae in the furrows single; carpophore bifid. *Seed* terete, flat or obscurely channelled on the inner face.

NOTHUM, C. B. Clarke in F. B. I. ii. 681.

(Lobb); W. Ghats, on rocks above Sispara in W. g, at 7,500 ft. (Gamble). A bulbous-rooted herb reaching about 1 ft. in height, with small leaves with linear segments, the mericarps strongly ridged, the umbels of about 7 rays with linear-lanceolate bracts.

Carum Petroselinum, Benth. and Hook, f., is the Parsley occasionally cultivated, chiefly in the gardens of European residents.

6. *Pimpinella*, Linn.

■"■©rbs, annual biennial or perennial. *Leaves* simple or com-d

Flowers in compound umbels, hermaphrodite or poly-^—monoecious; involucral bracts few or 0, bracteoles usually jinear small, or 0. *Calyx-teeth* small, lanceolate. *Petals* with ^{On}g inflexed points, entire or emarginate. *Styles* usually long, sometimes very short. *Fruit* laterally compressed, usually constricted at the commissure, ovoid; mericarps subpentagonal, the inner face flattened; ridges slender, vittae 2-3 in the furrows between them. *Seed* terete or dofsally compressed, inner face usually flat.

^ruit glabrous or nearly so:—

■Fruit short, ovoid or subglobose, didymous, disk obsolete; styles very short; leaves trifoliolate, membranous, subglabrous, the leaflets again sometimes divided, narrowed at base, deeply serrate; bracts 0, bracteoles 1-2 or 0.....1. *Heyneana*.

Fruit ovoid with conspicuous conical disk and long styles:—

Basal leaves orbicular- or broadly ovate-cordate, with narrow sinus or overlapping, serrate, pubescent, about 3-5-nerved, petioles up to 2 in. long, cauline leaves pinnatifid soon reduced to mere petiole-sheaths; bracts and bracteoles 0.. .2. *Leschenaultii*.

Basal leaves orbicular-cordate, with broad (5-in.) sinus, serrate, hispid pubescent on nerves above otherwise glabrous, about 10-20-nerved, petioles up to 12 in. long-, cauline leaves pinnatifid, gradually reduced to linear petiole-sheaths ; bracts 0, bracteoles few, linear, persistent.....3. *pulneyensis*.

Fruit papillose—scabrous, ovoid :—

Fruit densely papillose, disk conical; styles long and slender; basal leaves orbicular-cordate, sometimes 3-partite, serrate, pubescent, passing in cauline ones to deeply pinnatifid, and finally small, linear.....

Fruit sparsely papillose, didymous disk small-styles short; basal leaves, present; ovate-cordate, acute, serrate, glabrous, lobed; cauline leaves trifoliolate, large, upper also trifoliolate, & slender acuminate serrate leaflets; bracts 0, bracteoles 0 or 1-*

monoiea-

1. PIMPINELLA HEYNEANA, Wall.; F. B. I. ii. 684. *Uclioi seiadivm I Heynemium*, DC.; W. & A. 368. Circars and Deccan, in hill forests, scarce; W. (ft*** from the Coimbatore Hills to Tinnevely. An erect annual herb, the flower umbels with many l^{ono} slender rays.
2. *SOPWELIA LESCHAUULTII*, DC; F. B. I. ii. 687; W. & A. *9; Wt. Ic. t. 1005.

W. Ghats, in the Nilgiris, above 6,000 ft.; on the open downs near sholas with long-petioled basal leaves (Fyson). An erect almost scapigerous perennial with white flowers. *TITLLA PUYENSIS*, Gamble in Kew Bull. 1919, 228-W. Ghats, at Bear Shola and in other moist woods » At fu^{mh} about 6,000-7,000 ft. (Bourne).

A tall herb reaching 1-2 ft. high, with long-petioled basal and lower cauline reniform leaves with many pal***⁶ **Z** ¹ tripartite and

. ic. t. 041. KANA, W. & A. 369; P. B. I. H. ^:

W. GbUs in the Nilgirs, and Pulneys, above 6,000 ft.. J grass lands near gfiok forests, more scarce to the h>>^s °i S. Tinnevely.

Pubes⁸ <<<t tall perennial with

orbicti[^] eS and cWact*risti AilloSe fn"tS>

"NELLA MUNOIA Dalz.; p. B. I. ii. 687. • Circars, m the hiUs fl. om Ganjam to Godavari, at

lobed.

levels, up to 3,000 ft.; W. Ghats, Mudumalai in Wynaad at 2,000 ft., Anamalais ; Shevaroy Hills of Salem. A tall erect monoecious herb with white flowers and umbels with very slender rays.

7. Seseli, Linn.

Herbs. *Leaves* 2-3-pinnate or twice 3-partite. *Flowers* white, ^{J1*} compound umbels; involucre bracts 0 or few, rarely many, hi'acteoles many. *Calyx-teeth* minute, lanceolate or linear, or 0. *Petals* 5, with a long inflexed acumination. *Styles* short. *Fruit* oblong ovate or globose, broadest at the commissure, not impressed; mericarps semi-terete or compressed dorsally, the ^{ln*}er face flat or *sometimes* concave; ridges strong, obtuse or [^]acute, lateral hardly larger than the dorsal; vittae in each ^Vrow solitary, large, others smaller often under the ridges; <*** not prominent. *Seed* semi-terete, the inner face somewhat concave.

^{SE}SELI INDICUM, W. & A. 371; F. B. I. ii. 693. *Cnidium diffusum*, DC; Wt. Ic. t. 569. Plains Districts of the Carnatic (Heyne). An annual herb, usually diffuse, with many branches white or pinkish flowers and a globose fruit with prominent ridges and straight hairs stellate at the apex.

8. Schultzia, Spreng.

Glabrous perennial herbs. *Leaves* 1-2-pinnate, ultimate pinnae toothed, pinnatifid or multifid. *Flowers* in compound umbels; involucre bracts several, entire or divided, bracteoles numerous. [^]st-teeth prominent. *Petals* obovate, emarginate white. *Fruit* ovate-oblong, the commissure broad; mericarps dorsally [^]pressed, primary ridges slender, furrows between them with vittae; carpophore bipartite. #

SCHULTZIA ? BENTHAMII, C. B. Clarke in F. B. I n. [^]7. W. Coast, in Canara (Hohenacker).

A tall herb with short pinnate leaves and rather large mericarps with 3 prominent ridges on the back followed by two secondary, in section crescent-shaped, the commissure with 4 vittae, vittae in the furrows between the ridges in pairs.

9. Polyzygus, Dalz.

pitSewZ ^{heib} With tuWous <<*** ^{Leaves} *Leaves* teraatelyanf
 wWte t ^{eCompOUndthe} Went* pinnatifid. ^{Flowers} *Flowers*
 small-bract;oesf ^{OInPOLm d} "mbels; inTOI <<CTM> tracts very few or 0;
 ^S ^{8m} p ; faCeOUS_ ^%-teeth small or the outer /
 obovllte with ail in fl <<ed acu.nination.

the Prin>><<"7 r^ges obscure, i^
 bipartite

r ^{TM BEE O ^} Dal.; F. B. I. ii. 698. v.

Uhatss Canara and Mysore (Law)

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 It • ^ obovate or cuneate, inflexed at *e small. *OvcZ JT*
*DI*k* Und <<late- <>>e rtylopods usually elliptic olZf, ⁸ "0US_
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little *CT**

2-e on the cimtt·1^ T^ ^ in

Leaflets oblon., orTh flat' the illner face fltt'

!°ng, -2 in. broad w,H T° ^ entire ' ^ricarps elliptic * in"

lateral 2-vittate TM ^{thlck} <<"k margins; dorsal furrows 1-vittat*

'COWmiss"-e 2-vittate, vittae not conspicuous.

Leaflets 'ir.A

!■

<<>>tely winged; the dorsal

•2 m. in dkTtheT^{01114'''} ΛΛ se'''at « ; -«" ««rP^s orWCU1?
 rfttate, lateral i-J^T''1 Pale and rathei'' thin. dorsal flirr0WS
 spicuous but often «r f ' C<''''fflissMe 4-6-vittate, the vittae con-
 1 PEUP^ Short2. a»«»»^Λse_
 " C B SaTk^Ue^M DHANA, Ham'; F_ B_ I_ - 709, Λ_ ΛΛ'''

A glabrous herb reaching 2 ft. in height, the flowers yellow.

-• PEUCEDANUM ANAMALLAYENSE, C. B. Clarke in F. B. I. ii. 710.

W. Ghats, in the Anamalai forests (Wight, Beddome). A tall herb with fistular fluted stems and much cut leaves with narrow leaflets.

Peucedanum sativum, Benth. and Hook, f., the Parsnip, is occasionally cultivated in gardens.

11. Heracleum, Linn.

Perennial or biennial more or less hairy herbs, often of large size. *Leaves* 1-2-3-pinnate, the segments usually broad, lobed ^{dn(*)} toothed. *Flowers* white or yellow, often polygamous,

in compound umbels, large and with many rays; involucre bracts ^{ew}, simple or 0, rarely many, foliaceous; bracteoles many. *Calyx*-lobes 0 or small and linear-lanceolate. *Petals* usually

unequal, often radiant, the larger often widely spreading, bifid or sinuate, all with an incurved apex. *Ovary* usually pubescent.

> *fruit* orbicular, elliptic or obovate, much dorsally compressed, winged, the wing with usually thickened margins; ridges slender; ^{yl} *stamens* usually solitary in the dorsal furrows, 2-4 or rarely more on the commissure, all descending from the short thick stylopod to below the middle of the fruit and sometimes dilated at the

[^] *apex*. *Seed* much dorsally compressed, [£] plano-convex.

■ Lower leaves simple, usually 3-lobed, rarely pinnatifid, densely ^{vl} *hairy*; outer flowers of the umbellule usually radiant *mericarps* elliptic, broadly winged, *vittae* usually 4 on the back, 2 on the

commissure..... 1. *Hookerianum*.

Lower leaves pinnate :—

-Pinnae usually 1 to 2 pairs with a terminal usually 3-lobed, large, glabrous; petals equal; *mericarps* orbicular, broadly winged, *vittae* usually 6 on the back, 4-6 on the commissure 2. *aquilegifolium*.

Pinnae 1-3 pairs, small and distant, with a terminal broad 3-lobed, hoary-pubescent; petals equal; *mericarps* elliptic-obovate, thick on the back, *vittae* usually 4 on the back, 4 and often more on the

commissure..... 3. *rigens*.
Pinnae 2-3 pairs, both the side and end ones long and deeply
pinnatifid, tawny-pubescent j petals very unequal, the radiant ones
very conspicuous ; mericarps elliptic or very slightly obovate, 'S to

•4 in. long by -2-3 in. broad, the wings narrow, vittae on the 4, on the commissure usually 24. *ceyla*⁷
 Lower leaves bipinnate, sometimes nearly tripinnate:—^k
 Fruit small; elliptic, -25 by 2 in., wing narrow, vittae 4 on the bac*^j extending down three-fourths of the face, 2-4 and unequal on *^l commissure; bracteoles lanceolate, -15 in. long; lower leaves 1~ * pinnate, the pinnules broad, pinnatifid, shortly crenate - serra > nracronate, covered above with scattered scales, hispid on ner beneath⁵ *Sprengeli*^{anU}

Fruit large, at least 3 in. long : —
 Fruit obovate, -45 by 2 in.? wing rather broad, vittae 4.on tj» back, extending down two-thirds of the face, 2 on c^oinmlf " * g bracteoles lanceolate, long acuminate, -25 in. long; lower left much cut, bipinnate, the pinnules deeply lobed, sharply serra > covered above and on nerves beneath with long soft hairs

^{6.} *courtallen*[^]
 Fruit elliptic, -3--4 by -25-3 in., wing narrow, vittae 4[^]6 on [^] back, extending nearly to the base, 2-4 on commissure; ^{^^} lanceolate, -25 in. long; lower leaves 1- to almost 3-pi[^] pinnules broad, not deeply lobed, shortly serrate, both surta with short soft hairs..
⁷
CandolUa^{***}

Leaves pedately 5-7-foliolate, "with lanceolate'leaflets'cuneate at W* and sharply serrate above; petals unequal; merioarpB aPP[^]. unequally winged.....^{... 8. pedaW.}

1. HERACLEUM HOOKERIANUM, W. & A. 373; P. B. I-^{il} ' *Pashnaca Hooheriana*, Wt. Ic. t. 1010. W. Ghats, open downs on the Nilgiris above 7,000 ft. . An erect herb with white flowers sometimes tinged » red, leaves villous and sticky, nearly all radical and [^] the ground, the stem 1 to 15 rarely to 2 ft. high. .. ¹³

-. H[^]ACLEUM AQuiMoiFOLiuM, C. B. Clarke in F. B. I- «• ^l VV. Ghats, in the Anamalai Forests (Wight). An erect herb reaching 2-3 ft. in height. .
 O;3.

A HERACLEUM RI^{6ENS}> Wall.. F B L H 715; W. & A- *' TM^{^aca}»•*«;<<•, wt. ic. t. ioo9. , [^]
 W. Ghats, in the Nilgirf and Pulney Hills, on open do above 6,000 ft.
 A tall, erect, greyish-pubescent herb reaching 3 f*"Jj height, with yellow flowers, the leaves both **radical** a cauhne, remarkable for the distent, more or less orbic»' cordate, slightly fobed leaflets

. *multiradiatum*, Gamble.

W. Ghats, in the Pulney Hills, at lower levels.

A larger plant with larger and more cut leaflets and very large umbels, often with 30 or more rays 4-5 in. long, commissural vittae sometimes up to 10.

. *elongatum*, Gamble.

W. Ghats, in the Pulney Hills (Bourne).

A slenderer plant with thinner leaves, large umbels and an elongated fruit almost oblanceolate, *6 in. by *25 in., vittae on the commissure 2-4.

4. HERACLEUM CEYLANICUM, Gardn.; F. B. I. ii. 716; Fyson Hillt. Fl. 175.

W. Ghats, in the Pulney Hills, on the downs at high levels (Bourne).

A tall handsome species with much cut fern-like leaves, conspicuous white radiant flowers and very large umbels with sometimes over 40 rays, some nearly 6 in. long.

5. HERACLEUM SPRENGELIANUM, W. & A. 372; F. B. I. ii. 716. *Pastinaca Sprengeliana*, Wt. Ic. t. 1008.

W. Ghats, in the Nilgiri Hills, above 6,000 ft., in grassy places near the Sholas ("Wight, Gardner), apparently scarce.

A large very leafy plant at once recognized by the small fruit,

6. HERACLEUM COURTALLENSE, Gamble n. comb. *H. rigens*, Wall. var. *Candolleana*, C. B. Clarke in F. B. I. ii. 715

in part. *Pastinaca ligusticifolia*, W. & A. 372; Wt. Ilk t. 116.

W. Ghats, at Courtallum in Thinevelly (Wight).

A tall leafy plant, with much cut deeply serrate leaves and long fruit.

7. HERACLEUM CANDOLLEANUM, Gamble n. comb. *H. rigens*, Wall. var. *Candolleana*, C. B. Clarke in F. B. I. ii. 715 *in part.* *Pastinaca Candolleana*, W. & A. 372.

W. Ghats, from the Nilgiris to the Anamalai and Pulney Hills, above 6,000 ft. common.

A large leafy plant with broad leaves, shortly serrate.

8. HERACLEUM PEDATUM, Wt. Ic. t. 342; F. B. I. ii. 716.

W. Ghats, in the Pulney and Sivagiri Hills in the under-growth of Shola forest.

A trailing and rooting herb of ground vegetation, with small white radiant flowers and pedate leaves. *Apium graveolens*, Linn., Celery, and Dawns *Carota*, Linn., Carrot, are occasionally cultivated in gardens as vegetables.

Xoeniculwn -vidgare, Gaertn., Fennel, *Anethmn Soiva*, R^o*bⁿ Uill, and *Coriandrum sathmm*, Linn., Coriander, are sometimes cultivated for their leaves and seeds and may occasionally •>e found run wild.

Family LXXIX. ARALIACEAE.

Trees or shrubs, sometimes climbing, rarely herbs, glabrous stellately pubescent, frequently prickly. *Leaves* alternate, *ra** opposite, ong-petioled, large, simple or compound; stip adnate to the petiole, sometimes within its sheathing base, rar 0. *H lowers* regular, hermaphrodite or polygamous, in

rnab^of raceme^{8ol.p} *icled head8, with Wts ^/^^s ; pedicel** of the Cal^{ox} <>• t^{re} articulated. CW"

T f f

y ; limb

tr>>n-te or

bri

with H : ? y ^TPtmt. «..^ as iany as
small and 6 P6talS' inSeited TM^ond an epigynous
teeth- disk-

XI na e H :

0 « .7 nf 6 P6talS' inSeited TM^ond an epigynous disk-
pend!l /"', tomany-celled; ovules solitary in each cell.
endulou.; styles as many as the cells, distinct or united. *Ff*
Su e") - t^{tWn; albumeu} nniform or ruminant; embryo
minute, radicle superior.

Petals imbricate in bud —.

brica**

Nothop anax'

Pedicels jointed; leaves pinnate...

3

Polyse*

Pedicels continuous; leavesdigitateV.!.....". "".....!!!!!!A **Schef<<er>>**

ôr n2ly¹ r[^] K^{ate} rr^{tC} ^ C0>>W.pinnate, leaflets y
entHe; stl[^] small, not prominent. *Flowers*

1. Aralia, Linn. SDaa11 trees Often **Primly-**

leaves alternate

-monoecious, in solitary racemed or paniced rarely umbels; pedicels often jointed close under the flower, truncate or 5-lobed. *Petals* 5, ovate, imbricate in bud. *Stamens* 5. *Ovary* 2-5-celled ; styles 2-5, free or shortly connate at the base. *Fruit* a small 4-5-celled and -angled or 2-3-celled and subglobose berry. *Seeds* compressed; albumen uniform. ARALIA MALABARICA, Bedd. Fl. cxxi.; F. B. I. ii. 722. W. Ghats, Wynaad to Travancore at 2,000-3,000 ft., in evergreen forests.

A large shrub or small tree with scattered prickles on the stems and leaves. Leaves bipinnate, leaflets lanceolate, sharply serrate ; flowers in a spreading panicle of prominently bracteate umbels.

A leaf specimen from the Madgol Hills of Vizagapatam (A. W. Imshington) appears to belong to *A. foliolosa*, Seem.; F. B. I. ii. 7*-o, var. *siJcJcimcnsis*, C. B. Clarke. It is a small, single-stemmed, si'ect treelet with very prickly leaves and stems.

2. Pentapanax, Seem.

Trees or large climbing shrubs, often epiphytic. *Leaves* alternate, simply pinnate with 3-5 or more leaflets or digitate with 3-5 leaflets, glabrous. *Flowers* hermaphrodite or polygamous, in compound racemes or panicles of umbels ; pedicels jointed under the flowers. *Calyx* 5-lobed. *Petals* 5, imbricate in bud. *Stamens* 5. *Ovary* 4-5-celled ; styles 4-5, combined at any rate except the tips. *Fruit* 4- or 5-celled and -angled or -ribbed.

PENTAPANAX LESCHENAULTII, Seem.; F. B. I. ii. 724. *Hedera LeschenauUii*, W. & A. 377. *H. trifoUata*, W. & A. 377; Wt. Ic. t. 307.

W. Ghats, in the Nilgiris and southwards at high elevations as on Dodabetta at 8,000 ft

A tree with 3-5 ovatoacuminate bristly-serrated leaflets, and panicles of globose umbels, the fruit not deeply angled. It is sometimes found growing epiphytically on other trees.

3. Polyscias, Forst.

Trees or large shrubs. *Leaves* alternate, pinnate; leaflets entire, coriaceous. *Flowers* in panicles of umbels,- bracts small, lanceolate or 0 ; pedicels articulate under the flower. *Calyx-limh* minutely toothed. *Petals* 5-8, usually 5, free, valvate in bud.

FLORA OF MADRAS.

Stamens 5-8 anthers oblong. *Ooanj* ^-celled, the cells
1-ovuled;

with" 8 p° Pyi"enes_ Seec* compressed, albumen uniform.

s AOUMINATA, Seem.; F. B. I. ii. 727; Bedd. Fl. '•

»t 'Ann ^ w' ' 11181115' Anamalais and hills of Tinnevelly at
4,500-5,000 ft.

A glabrous tree with long pinnate leaves with many *OUOW*
lanceolate, long-acuinate leaflets, the flower umbels in
racemes m a ---- :i

Λi ^{acuminat} W «, Wt. Ic. t. 10«3.

*• Schefflera, Forster.

shrubs. *Leaves* alternate, digitate, *rarely*

* "■foliolate; leaflets usually coriaceous,

m 5 petioles long; stipules usually

connate

h! me e Pe,t,lole' lowers in panicles of umbels or compound
usually terminal; bracts usually deciduous; bracteoles

w, sometimes unifp^ ;. , x.,i _ ...j. _^ :*

r^sent, T ^ ^ f truncate or toothed. Pe<</« 5-6 or

as I,fe^e-n f ~^S ^ ma^ - the petals. Ila as

trl If?

S xj.4 uiiinoio -

iLL in dian' -> many-flowered, in ten»i»;" Ul'ge

flöWerS; bracts' bracteoles and pedicel*

wh

i

lendertrv P6diCelS ^brouS' ^ ^ s chartaceous

Flowers i n r a S SCM'Cely impred or raised 2. i

«* the previou 68' TM PaniolS Up to X ft'lon^ frOM the "7

pubescent- 1 fl'yeai"; bra cts, bracteoles and pedicels rusty
spicuous ' glaucous beneath, the nerves

not con-

Styles short f.....^{3_ raeem0Sa'}

shrubs— ' ^{C01}»iate in a cylindric column; straggling

Leaflets prominently reticulated : — Leaflets large, 4 in.

long or more; fruit o-angled:—

Leaflets obovate, Hounded or emarginate at apex or very slightly obtusely pointed, the main nerves oblique, petiolules slender, 1-2 in. long; umbels in racemes in a terminal

panicle often 1 ft. long 4. *s+ellata*.

Leaflets ovate or elliptic, shortly and suddenly pointed at apex:—

Leaflets chartaceous, the main nerves scarcely more prominent than the secondary and the reticulatiuous, not very oblique, about 60° with the midrib; panicles with a rather long rhachis 5. *Roxburghii*.

Leaflets coriaceous, the main nerves much more prominent than the secondary and the reticulations, very oblique, about 30^ with the midrib; panicles with a short rhachis

6. *venulosa*.

Leaflets under 2 in. long, coriaceous, obovate, obtuse or emarginate, petiolules -25-'5 in. long; umbels in subterminal

stellate-villous racemes about 1 in. long 7. *Bourdillo?iiL*

Leaflets not prominently reticulated, oblong, aoiite, coriaceous) up to 10 in. long, 4 in. broad, petiole 7-15 in. long, petiolules 5-10, 2 in. long or longer; umbels in large panicles up to

12 in. long 8. *Wallichiana*.

flowers sessile, bracteoles 4 to each flower; leaflets 6-8, oblong, acute or acuminate, up to 6 in. and even 1 ft. long, petiole about G in., petiolules stout, 1-2 in. long; flower-umbels in panicle^ of ^iceines with stout branches 9. *capitata*.

1. SCHEFFLERA ROSTRATA, Harms. *Heptapleuvum rostratum*, Bedd.; F. B. I. ii. 729. *Hedera rostrata*, Wt. Ic. tt. 1013, 1014.

Nilgiri Hills, in Knndahs Sholas, above 7,000 ft. A large tree with 5-9 lanceolate, sometimes denticulate, leaflets, the petiolules about 1 in. long, the nerves conspicuous, meeting in loops near the margin.

2. SCHEFFLERA MICRANTHA, Gamble, n. comb. *H. rostratum* var. *micrantha*, C. B. Clarke in F. B. I. ii. 729.

Nilgiri Hills, along the W. scarp from Naduvatam to Sispara, about 6,000 ft.

A tree with about 6 lanceolate or oblong-lanceolate leaflets, the petiolules '5-1 in. long, the nerves not conspicuous nor

meeting in loops.

PP§

3. SCHEFFLERA RACEMOSA, Harms. *Heptapleurum racemosum*,
Bead. Fl. t. 214; F. B. I. ii. 729. *Hedera racemosa*, Wt. Ic
t. 1015.

W. Ghats, in Shola Forests of the Nilgiris, Pulneys and southwards, at 3,000-7,000 ft.

A large tree, conspicuous for its large racemose inflorescence, the leaflets oblong-lanceolate, the petiole⁸ 1-2 in. long. Wood soft, grey.

4. SCHEFFLERA STELLATA, Harms. *Heptapleuim stellatum*,
Gaertn.; F. B. I. ii. 730. *Hedera obovata*, Wt. Ic. tt. 10U.
1012.

W. Ghats, in Nilgiris and Pulneys, up to 6,000 ft.

A large straggling or climbing shrub with small flowers. the petals usually falling as an operculum.

5. SCHEFFLERA ROXBURGHII, Gamble, n. comb.

Aralia

digitata, Roxb. *Heptapleurum venulosum*, Seem.; F. B. I.
ii. 729 in part.

•N. Circars, in Ganjam and Yizagapatam, in the E. & hnt forests.

A large straggling or climbing shrub with long racemes.

6. SCHEFFLERA VENULOSA, Harms. *Heptapleurum venulosum*,
Seem.; F. B. I. ii. 729 in part. *Paratropia venulosa*, W. & A[«]
377; Wt. 111. t. 118.

Deccan, in hilly country as at Horsleykonda, Chittoor;
W: Ghats, on the east slopes; frequent on trees near villages.

A large straggling or climbing shrub, with coriaceous shining leaves, sometimes epiphytic. Bark grey, shining-Vern. *Hind.* Dain.

- Var. *oUiquinervia*, Gamble. Leaves more coriaceous, the lower 1 or 2 pairs of nerves rib-like and curving very obliquely nearly to the top; flower racemes less congested. W. Ghats, in Wynaad, Malabar and Anamalais up to 3,000 ft.

7. SCHEFFLERA BOURDILLONII, Gamble in Kew Bull. 1919, 228.
Hills of Travancore, in evergreen forests at about 4,000 ft. (Bourdillon).
An epiphytic shrub about 12 ft. high, growing on large trees.

8. SCHEFFLERA WALUCHIANA, Harms. *Heptapleurum Wai-*

Uchiamn, C. B. Clarke; F. B. I. ii. 730.

Paratropia

Wallichiana, W. & A. 377.

W. Ghats, in Ooorg, Nilgiria, Pulneys and lulls of Inn-
velly and Travancore up to 6,000 ft.

Apparently a climbing shrub or " somewhat *[^]TM^(ms) (W.
& A) or " a medium-sized tree" (Bourdillon), with large
coriaceous leaflets, the main nerves nearly horizontal,
the flowers 6-merous.

9. SCHEPFLEEA CAPITATA, Harms. *Brassaia capitata* Ufl.
Clarke ■ P B I ii 732. *Paratropia capitata*, W. & A. «\$/»•
W. Ghats, in Nilgiris and Wynaad, at 3,000-6,000 ft. A
striking tree with large coriaceous digitate leaves and stout
flowers, inflorescence, the flowers normally 5- otten
more -merous.

Nothopanax fruticosum, Miq., is an erect shrub with mucn CUL
leaves, frequently grown in gardens as a foliage plant.

Family LXXX. ALANGIACEAE.

Trees or shrubs, armed or not. *Leaves* alternate, petiolate,
entire or lobed, usually unequal at base, penninerved or palmately
nerved from the base ; stipules 0. *Flowers* white or
yellowish-*hite, hermaphrodite, in axillary fascicles, cymes or
corymbs; Pedicels articulate with the ovary; bracts 0 or small
and deciduous. *Calyx-tube* adnate to the ovary, limb truncate or
4-10-toothed. *Petals* 4-10 linear, valvate, thickened, recurved in
flower. *Stamens* as many as the petals and alternate with them,
or 2-4 times more; filaments free or slightly connate at base
where usually villous; anthers elongate, linear. *Ovary* inferior,
turbinate, 1-2-celled, surmounted by a disk enclosing the elongate
style; stigma large, capitate; ovules solitary in the cells, pendulois.
Fruit a 1-2-seeded berry, crowned by the calyx-lobes and disk,
testa thick; albumen fleshy; cotyledons leafy, flattened, coi date
at base; radicle long, terete.

Alangium, Lamk.

CHARACTERS OF THE FAMILY.

* We, fascided; stamens «* ■ £ - « 1 ^ ^ ^ !
about -W in. ion., ^ ^ t ^ t at Z base, bLy ellipsoid,
lanceolate, more or less 3-o-nerveu ^ salvifolmm.
pubescent, '75 in. long..... pp U

Flowers in cymes; stamens as many as the petals; buds slender, about 0 in. long, nearly glabrous; leaves ovate, broad, entire or lobed with acuminate lobes, palmately 3-5-nerved at the base; berry ovoid, glabrous, *25 in. long 2. *begonifolium*.

1. ALANGIUM SALVIFOLIUM, Wang. *A. Lamarchii*, Thw.:
F. B. I. ii. 741; Bedd. PI. t, 215. *A. decapetalum*, Lamk.; W. & A. 325.

Civcars, Deccan and Carnatic, in dry regions, in the plains and low hills, common on roadsides.

A deciduous small tree, sometimes straying, sometimes spmous, with pretty white-scented flowers. Bark grey, orange-yellow when young; wood olive-brown, hard and close-grained, scented, useful for ornamental work and a good fuel. Yern. *Hind. Akohi*; I/r. Anknla; Tel Ankolaiuu; Tain. Alangi; Mai. Arinjil; Kan. Ankola,

- Yar. *hexapetalum*, Wang. *A. hexapetalum*, Lamk.; W. & A. 326. Leaves thinner, 3-5-nerved at base, cuspidate-acuminate at apex; berry larger; apparently evergreen and usually climbing. W. Coast, in Malabar and Travancore.

2. ALANGIUM BEGONIFOLIUM, Baill. *Marlea beyonifolia*, Roxb. Cor. PL t. 283; F. B. I. ii. 743.
E. Ghats, Madgol Hills of yizagapatam above 3,000 ft. (A. W. Lushington).

A small tree with white flowers and broad lobed leaves. Bark grey; wood white and soft.

Family LXXXI. CORNACEAE.

Trees or shrubs, rarely herbs. *Leaves* opposite or alternate, petiolate, entire or angular-lobed or serrate ; stipules usually 0. *Flowers* small, hermaphrodite or unisexual, in dichotomously branched panicles cymes or heads, white or yellow or sometimes green or lurid. *Calyx-tube* adnate to the ovary ; limb 4-5-lobed or subtruncate. *Petals* 4-5, rarely 0, alternate with the calyx-lobes, imbricate or valvate. *Stamens* as many as and alternate with the petals; filaments short; anthers introrse. *Disk* epigy-nous, usually fleshy. *Ovary* inferior, 1-4-celled; ovules solitary in the cells, pendulous; style simple or sometimes divided. *Fruit* a drupe or berry, 1-4-celled, with 1-4 bony or crustaceous pyrenes. *Seeds* oblong, terete, pendulous ; testa membranous ;

albumen

enclosing the subfoliaceous cotyledons ; embryo axile, radicle terete or flattened.

Mastixia, Blume.

Trees, the branches terete. *Leaves* opposite or alternate, petioled, entire. *Flowers* small, hermaphrodite, in terminal many-flowered panicles; bracts small or elongate ; bracteoles 2 at the base of the calyx-tube ; pedicel articulate. *Calyx-tube* campanulate, limb 4-5-lobed. *Petals* 4-5, ovate, coriaceous, valvate, the apex inflexed. *Stamens* 4-5, alternate with the petals; filaments short; anthers oblong-cordate. *Disk* fleshy, 4-5-lobed. *Ovary* 1-celled; ovule 1, pendulous near the top of the cell; style short, cylindric. *Fruit* an ovoid or ellipsoid drupe, crowned by the scar of the calyx-lobes; putamen woody, grooved down one side. *Seed* ellipsoid; testa membranous; albumen fleshy; cotyledons foliaceous ; radicle elongate.

Bracts hardly anj'; bracteoles small, linear lanceolate; leaves elliptic, suddenly narrowed in a twisted acumen, glabrous, drying black or bluish, paler beneath; inflorescence stout, subglabrous or sparsely puberulous; flower buds ^f1 in. in diam.; drupe 1 in. by

*75 in..... 1. *arborea*.

Bracts leafy, up to *75 in. long ; leaf-acumen not or slightly twisted: flower-buds about *05 in. in diam.:—

Bracteoles conspicuous, linear; leaves elliptic, glabrous, drying grey, almost glaucous beneath; inflorescence slender and spreading, tawny-villous; drupe not known.....2. *Meziana*,

Bracteoles small, lanceolate-acuminate ; leaves elliptic-oblong, glabrous or puberulous when young, drying olive-green, pale beneath; inflorescence slender but close, densely white-villous; drupe oblong, 1*25 by *5 in..... 3. *pentandra*.

1. MASTIXIA ARBOREA, C. B. Clarke; F. B. I. ii. 745; Bedd. Fl. t. 216. *Bursinopetalum arboreum*, Wt. Ic. t. 956.

W. Ghats, from S. Canara south wards; in evergreen forests from 3,000 ft. upwards.

A large tree with coriaceous leaves and a large greenish-purple drupe. Bark pale brown, lenticellate ; wood greyish-yellow, soft.

2. MASTIXIA MEZIANA, Wangerin in Fedde Rep. iv. 336.

W. Coast, in Malabar and northwards (*teste* Wangerin). A tree with conspicuously bracteate inflorescence.

3. MASTIXIA PENTANDRA, Bl.; F. B. I. ii. 74t>.

W. Coast and W. Ghats, in Cariara and Malabar to Travancore, in evergreen forests and on river banks up to 1,000 ft. A very large tree (Bourdillon) with elliptic-oblong leaves up to 6 in. long, 2*5 in. broad. Wood greyish-white, soft.

III. COROLLIPLORAE.

Sepals herbaceous, often connate in a usually persistent calyx, more or less adnate to the ovary or free. *Petals* usually as many as the sepals or sometimes fewer, usually 4-5, rarely 6 or more, very rarely biseriate, almost always combined in a corolla-*Stamens* 1-seriate, as many as the petals or fewer, sometimes biseriate and twice as many as the petals, sometimes but more rarely indefinite; filaments usually adnate to the corolla-tube, rarely free. *Carpels* usually connate, the styles free, sometimes free and then the styles united.

Family LXXXII. CAPRIFOLIACEAE.

Small trees or shrubs, erect or climbing. *Leaves* opposite* rarely alternate, simple lobed or imparipinnate; stipules usually 0. *Flowers* hermaphrodite, regular or irregular, in cymes or panicles. *Calyx* adnate to the ovary; lobes 3-5, imbricate. *Petals* connate in a tubular, funnel-shaped or rotate corolla* 5-fid, with imbricate lobes. *Stamens* 5, rarely 4, inserted on the corolla-tube alternately with the lobes; filaments filiform or subulate; anthers 2-celled, introrse, dehiscing longitudinally. *Ovary* inferior, 2-8-, rarely 1-celled; style terminal; stigma capitate, ^{ov} short with 2-5 lobes; ovules solitary, pendulous, or several ⁰¹¹ axile placentas. *Fruit* a drupe with 1-8 cartilaginous pyrenes or a many-seeded berry. *Seeds* 1 or many in each cell; albumen copious, fleshy; embryo usually minute with ovate cotyledons. Corolla-limb regular, flowers small; ovary cells 1-ovuled stigma^a lobed..... 1. Yiburnum. Corolla-limb regular or irregular, flowers rather large; ovary cells many-ovuled; stigma capitate 2. Lonicera.

1. Yiburnum, Linn.

Trees or shrubs. *Leaves* opposite, petioled, simple or lobed, entire dentate or serrate; stipules inconspicuous or 0.

-Flowers.

in terminal or subterminal umbels, corymbs or thyrsoid panicles, white greenish or pink; bracts and bracteoles usually deciduous. *Calyx-tube* turbinate or cylindrical; lobes 5, short, persistent. *Corolla* rotate, tubular or campanulate, lobes 5. *Stamens* 5, inserted on the corolla-tube. *Ovary* 1-3-celled ; ovules 1 in each cell, pendulous; style short; stigma 3-lobed. *Fruit* a dry or fleshy drupe, usually 1-seeded; endocarp crustaceous, ridged and furrowed or excavated on one side. *Seed* compressed; albumen uniform or ruminant; embryo minute with small cotyledons and ■cylindric superior radicle.

Flowers in erect compound umbels :—

Corolla rotate, the lobes ovate, spreading, bracts persistent; leaves elliptic, acuminate, entire, the margins recurved, up to 5 in. long, 2 in. broad, covered beneath, like the branchlets and inflorescence, with round peltate scales; drupe oblong, flattened, punctate

1. *acuminatum*.

Corolla tubular, the lobes short, erect; drupe glabrous; no peltate scales but tufts of hair in the axils of the leaf-nerves beneath :—

Corolla glabrous; bracteoles deciduous; drupe ellipsoid; leaves ovate-lanceolate, long-acuminate, entire or slightly serrate with about 4-6 pairs of nerves the lower only subopposite.

2. *coriaceum*.

Corolla pubescent; bracteoles linear, persistent; drupe ovoid; leaves ovate, acute, distantly slightly dentate with about 4 pairs of nerves, the 2 lower prominent, opposite or subopposite* from near the base3. *hebanthum*.

Flowers in drooping panicles; corolla cylindrical, the lobes hypo-crateriform, spreading; no peltate scales, but the inflorescence, nerve-axils and petioles villous; leaves ovate, acute, serrate, with about 4-6 pairs of prominent, subopposite or alternate nerves; drupe ovoid-oblong, the endocarp with a T-shaped ventral groove ... 4. *erubescens*.

1. VIBURNUM ACUMINATUM, Wall.; W. & A. 388; Wt. Ic. t. 1021. *V. punctatum*, Ham., var. *acifinatum*, C. B.

Clarke

in F. B. I. iii. 5; Bedd. Fl. t. 217.

N. Circars, Mahendragiri Hill at 4,000 ft.; Deccan, in Mysore and the hills of N. Coimbatore; W. Ghats, from Mysore to Travancore, in evergreen forests at 3,000 to 6,000 ft. A small evergreen tree with white

flowers. Bark thin,

brown, tessellated; wood light red, hard and close-grained
 Vern. *Tarn*. Konakaran; *Badaca*, Yelle sunde. - VIBURNUM
 CORIACEUM, Bl.; F. B. I. Hi. 6. *V. capitellatum*-M>

W. & A. 388. *V. hebanthum* ■ Wt, Ic. t. 1023,
letterpress
 1022 (?).

Deccan, hills of ST. Coimbatore; W. Ghats, about Oonoor
 m Nilgiris at 6,000 ft., "sometimes higher, more common m
 Pulneys, on the margins of Sholas. A small evergreen tree
 with whitish flowers.

4. VIBURNUM HEBANTHUM, W. & A. 388; F. B. I. Hi. &
 v,

capiteuahtm, Wt. Ic. t. 1022, *letterpress* 1023 (?). W. Ghats,
 in Nilgiri Shola Forests at 6,000-8,000 ft, common
 about Ootacamund.

A small tree with bright green foliage and a strong, heavy,
 unpleasant smell, the flowers greenish-white. Bark brown,
 thin, lenticellate; wood light reddish-brown. Vern. *Badca*^{9th}
 Jvadambu.

4. VIBURNUM ERUBESOENS, Wall F B I . iii. 7. V.

WigUia-[^] W & A 3 8 8 W t I :

Tnn^{TM8'} in the higher Sholas of Nilgiri* at and above . '
 » "•' common, less so in the Pulney Hills. A small tree
 with drooping thyrsi of white or pinkish flowers on red
 stalks, the fruit red. Bark thin, grey; wood soft, reddish.

2. Lonicera, Linn.

Erect or climbing shrubs. *Leaves* opposite, petioled sessile or
 sometimes connate, entire or sometimes sinuate; stipules 0.
Flowers of various sizes usually in duncled pairs, axillary and
 solitary or in subterminal heads panicles or clusters; bracteoles -
talyx. *txxbe* ovoid or globose; limb short, 5-toothed. *Corolla* tubular
 campanulate or funnel-shaped, often irregular; limb 5-cleft.
 6te«w»» 5, inserted on the corolla-tube. *Ovary* 2-3-celled; ovules
 several in each cell in double rows on axile placentas; style
 slender; stigma capitate. *Fmil* a fleshy 2-3-celled berry;
 the berries in pairs or sometimes more or less united. *Seeds* few
 in each cell; testa crustaceous; albumen fleshy; embryo terete.
 Climbing shrub; corolla-tube much elongate, 2-lipped; leaves ovate,
 acuminate, densely grey-tomentose beneath, up to 3 in. long; berries
 dlstlnet

Lonicera."]

CAPRIFOLIACEAE.

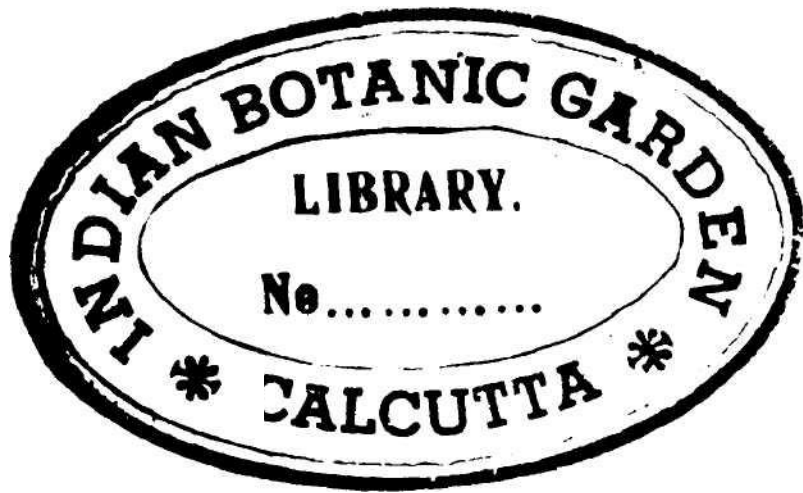
erect shrub; corolla-tube shortly elongate and gibbous at the
lobed; leaves lanceolate, nearly glabrous beneath, up to 2 in. long
Worries combined, the pair enclosed in a membranous bract, the calyx
limb with a reflexed ring below the lobes 2. *ligustr*

1. LONICERA IJESCHENAUULTII, Wall.; F. B. I. **III.** 10; W. & A. 389; Wt. 111. tt. 120 and 121 B.

Hills of the Deccan, Carnatic and W. Ghats above 5,000 ft.
A climbing shrub with light brown papery bark ;
creamy-white flowers.

2. LONICERA LIGUSTRINA, Wall.; F. B. I. **III.** 12; W. & A. 389; Wt. 111. t. 1025.

W. Ghats, in the Nilgiris and Pulneys above 6,000 ft.
An erect shrub with twisted stems, light brown papery
bark, small leaves and creamy-white flowers, sometimes
used as a hedge-plant.



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