

CELASTRACEAE, R. BR.

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THIS is a large widely distributed family, found chiefly in the warmer parts of Europe, North America, and Asia, with outliers in temperate South America and in Australia, and numerous species in South Africa. The members of the family are large trees, sometimes reaching a height of forty to fifty feet, or shrubs, erect or climbing, and often bearing spines. Considered as a whole, the family is not economically important. One member, *Catha edulis*, is used as a beverage by the natives, and Harvey affirms that "the leaves chewed to excess have intoxicating effects." It is a rare shrub in South Africa. Other members, e.g. *Cassine sp.* and *Hartogia sp.* yield useful timbers, but are not used to any very large extent.

I have retained nine genera in the family. The chief character used to differentiate the genera is the fruit. I grant that this should be supplemented by other characters where it is possible, as the material is more often than not incomplete, but it has been impossible to do this in most cases as it appears to be the one stable character in a family where both the genera and species are very variable.

I have combined *Cassine*, *Elaeodendron*, *Scytophyllum*, and *Mystroxylon* in one genus *Cassine*, as in my opinion there are no generic differences between them.

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CELASTRACEAE.

Trees or shrubs, sometimes twining, armed or unarmed. *Leaves* opposite or alternate, petiolate or sessile, simple, membranous or coriaceous, sometimes glaucous, entire or toothed, with the veins reticulate, distinct or obsolete; stipules small, mostly caducous. *Inflorescence* cymose or fasciculate, axillary. *Flowers* 4-5-partite, small, clustered, green or white, bisexual or unisexual. *Calyx* 4-5-partite, imbricate in aestivation, persistent; segments entire or laciniate. *Petals* 4-5, alternate with the sepals, imbricate in aestivation, deciduous. *Stamens* 4-5, inserted under or on the edge of the disc; filaments often dilated at the base, usually short; anthers introrse, erect, longitudinally dehiscent, basi- or dorsifixed. *Disc* fleshy, 4-5-lobed or entire, more or less surrounding and at times partially enveloping the ovary. *Ovary* sessile, sometimes partially sunk in the disc, usually free, 1-5-chambered; style thick, 2-5-lobed, with usually 2, sometimes 3-6, erect or pendulous ovules. *Fruit*, 1-5-locular, a dehiscent capsule or an indehiscent berry or drupe, or (in *Cassine*) an indehiscent drupe-like fruit, with more or less leathery epicarp, and membranous endocarp (when present). *Seed* with or without an arillus, endospermous or exendospermous.

KEY TO THE SOUTH AFRICAN GENERA.

Leaves alternate :

- Fruit winged..... *II. Pterocelastrus.*
 Fruit not winged :
 Each ovary-chamber 3-6-ovuled..... *IV. Putterlickia.*
 Each ovary-chamber 2-ovuled :
 Fruit a dehiscent capsule..... *I. Gymnosporia.*
 Fruit a dry or fleshy indehiscent drupe..... *III. Cassine.*

Leaves opposite :

- Style lateral in fruit ; pistil monocarpellary..... *VII. Pleurostyliia.*
 Style terminal in fruit ; pistil consisting of more than 1 carpel :
 Fruit a dehiscent capsule..... *VI. Catha.*
 Fruit a dry or fleshy indehiscent drupe :
 Ovules pendulous..... *VIII. Maurocenia.*
 Ovules erect :
 Inflorescence a raceme..... *V. Lauridia.*
 Inflorescence a cyme :
 Seed exendospermous..... *LX. Hartogia.*
 Seed endospermous..... *III. Cassine.*

I. GYMNOSPORA, WIGHT AND ARN.

Trees or shrubs, armed or unarmed. *Leaves* alternate, petioled, entire or toothed. *Inflorescence* cymose. *Flowers* 5-parted. *Sepals* with irregular lacinated or ciliated margins. *Petals* larger than the sepals. *Disc* fleshy, flat or collar-like. *Ovary* 3-chambered, with 2 ovules in each chamber ; style short or long ; stigmas 3, or more or less 2-3-lobed. *Fruit* a dehiscent capsule. *Seeds* with a complete or incomplete aril.

I. *Fasciculatae* : Pedicels simple, fasciculate, articulated :

Branches spiny, flowers almost sessile :

- Flowers clustered in dense sub-sessile glomerules ;
 leaves rounded at the apex or mucronate..... 1. *capitata.*
 Flowers pedicellate in the axils of the leaves ; leaves acute..... 2. *uniflora.*

Branches not spiny ; pedicels usually well-developed :

- Leaves entire or sub-entire, small, not exceeding 3 cm.,
 with recurved margins :
 Leaf always exceeding 2 cm. in length, more or less
 orbicular, not cuneate..... 3. *lucida.*
 Leaf never exceeding 1 cm. in length, obovate,
 cuneate..... 4. *Zeyheri*

Leaves toothed, usually fairly large and exceeding 2 cm.
 in length, up to 6 cm. in length, except in *G. Zeyheri*
 where leaves are 2-2.5 cm. long :

- Pedicels articulated at the base or very near the base :
 Leaves ovate or ovate-lanceolate, acuminate,
 rounded at the base..... 29. *acuminata*, var.
microphylla.

Leaves obovate or rounded-obovate not
 acuminate at the apex, distinctly cuneate
 at the base :

- Leaves coarsely repand-dentate, with about
 3-4 teeth on each side.

- Flowers sub-sessile or very shortly pedicellate; pedicel never exceeding 3 mm. 4. *Zeyheri*.
- Pedicels averaging 0.5-1 cm. articulated 5. *ilicina*.
- Leaves serrate, with more numerous teeth. 6. *undata*.
- Pedicels articulated well above the base or near the middle:
- Leaves with few (3-5) teeth and strongly recurved margins, not pointed; lateral nerves about four..... 7. *procumbens*.
- Leaves with several teeth and not or slightly recurved margins, mostly acuminate; lateral nerves several:
- Leaves lanceolate or lanceolate-ovate; articulation more towards the base than the middle of the pedicel..... 9. *fasciculata*.
- Leaves oblong-ovate not glaucous; articulation more towards the middle of the pedicel..... 9. *Peglerae*.
- Leaves more or less obovate, white or whitish, glaucous beneath; articulation more towards the middle than the base of the pedicel:
- Pedicels under 1 cm. long; leaves less than 10 cm. long..... 10. *albata*.
- Pedicels 1.5-2 cm. long; leaves 10-15 cm. long..... 11. *deflexa*.
- II. *Cymosae*: Inflorescence a cyme:
- Leaves sessile, cordate at the base; inflorescence very few-flowered 12. *cordata*.
- Leaves petiolate, not cordate; inflorescence usually several flowered:
- Leaves long and linear or small and fasciculate; branchlets mostly spiny and often *Berberis-like* shrubs; leaves entire or nearly so:
- Unarmed plants; branchlets of one kind with scattered leaves; fruit 2-valved, succulent.
- Flowers very small; midrib prominent on under surface of leaf..... 13. *monococca*.
- Flowers larger; leaf veinless..... 14. *angustifolia*.
- Branchlets of two kinds, of long shoots and short shoots, with usually fasciculate leaves; fruits (where known) 3-valved, not succulent:
- Spines large, up to 9 cm. long.
- Leaves oblanceolate or linear-oblanceolate; inflorescence compact, shorter than the leaves; pedicels 1-1.5 mm. long; peduncle never exceeding 6 mm. 15. *polyacantha*.
- Leaves obovate-cuneate; inflorescence lax; pedicels 4-5 mm. long; peduncle 1 cm. or more long 16. *integrifolia*.

- Spines when present very small and slender :
- Peduncles 1 cm. long ; petals about
4 mm. long 17. *saxatilis*.
- Peduncles about 0.5 cm. long ; petals
less than 2 mm. long 18. *vaccinifolia*.
- Leaves distinctly toothed :
- Flowers numerous, very densely glomerate on the
spiny branches..... 19. *condensata*.
- Flowers few or laxly arranged :
- Leaves long-linear, or lanceolate, about 8 cm.
long (remotely toothed) :
- Leaves linear, one-nerved, 2-7 mm. wide,
with a distinctly denticulate margin... 20. *linearis*.
- Leaves lanceolate, penni-nerved, 5-12 mm.
wide, with a closely denticulate margin 21. *lanceolata*.
- Leaves shortly linear, not more than 5 cm. long.
- Leaves fasciculate, narrowed towards the
base only, entire or slightly toothed,
- Leaves submembranous, with a con-
spicuous straw-coloured midrib ;
peduncle very slender..... 22. *tenuispina*.
- Leaves coriaceous, with an incon-
spicuous midrib ; peduncle stoutish 23. *elliptica*.
- Leaves not fasciculate, narrowly lanceolate,
narrowed to each end, distinctly toothed 24. *Bachmannii*.
- Leaves mostly oblanceolate, obovate, ovate, or rounded,
fairly large ; spines sometimes absent :
- Branches and peduncles pubescent ; leaves usually
well over 5 cm. long, elliptic or elliptic-ovate,
narrowed slightly towards the base ; branches not
spiny..... 25. *peduncularis*.
- Leaves not more than 3 cm. long, ovate or ovate-
rounded, sub-cordate at the base ; branches with
slender spines..... 26. *rubra*.
- Branches and peduncles glabrous.
- Leaves entire..... 27. *laurina*.
- Leaves toothed.
- Leaves elliptic, rhomboid, ovate, or ovate-
lanceolate ; branches not spiny, all of
one kind ; the leaves not fasciculate :
- Pedicels about 2 cm. long or more ;
leaves rounded at the base..... 28. *filiformis*.
- Pedicels up to 0.5 cm. long ; leaves
shortly cuneate at the base..... 29. *acuminata*.
- Branches spiny, of two kinds, long
shoots and short axillary shoots
with fasciculate leaves..... 30. *harveyana*.
- Leaves obovate or oblanceolate or somewhat rounded,
wider towards the top.
- Inflorescence very densely glomerate ; the flowers
sub-sessile..... 31. *crataegiflora*.

Inflorescence laxer with distinct pedicels.

Spines absent or present only on the young flowerless shoots, and then very small, not more than 2 cm. long; leaves usually spathulate-obovate; in variety *orbiculata* leaves more than 2 cm. long, more or less orbicular

32. *angularis*, var. *orbiculata*.

Spines usually present, large and stout, borne on and below the flowering branches; leaves larger than in preceding, more or less obovate to oblanceolate, hardly spathulate.

Leaves fasciculate, more or less elliptic above the shortly narrowed base, about twice as long as broad, somewhat glaucous above; fruiting pedicel about 8–10 mm. long, slender.....

33. *nemorosa*.

Leaves not fasciculate, more or less orbicular and slightly narrowed at the base, not broadest at the apex, more greenish than glaucous; fruiting pedicel short and stout.....

34. *heterophylla*.

Leaves obovate or oblanceolate above the cuneate base, more than twice as long as broad, mostly glaucous; fruiting pedicels stouter, usually much less than 5 mm. long.

Leaves fasciculate, rather smallish, rarely more than 6 cm. long, green or greenish-glaucous.....

35. *buxifolia*.

Leaves usually not fasciculate, rather large, usually well over 6 cm. long, grey, glaucous to whitish.....

36. *senegalensis*.

1. *G. capitata*, Sim, Forests and Forest Flora, Cape Col. (1907), 186.

Celastrus capitatus, E. Mey. ex Sond. in *Harv. and Sond. Fl. Cap.* i. 458; *Celastrus rigidus*, Ecklon and Zeyher *Enum. Plant. Afric. Austr.* (1834–1837) 947, p. 121; E. Mey. in *Herb. Drège*, name only.

A glabrous rigid shrub, 3–6 feet high, exceedingly spiny. Branches terete, dark grey, striated and in parts slightly verrucose. Twigs very short. Leaves tufted, coriaceous, sub-sessile; lamina 1–2.5 cm. long, 0.3–1.1 cm. wide, obovate, rounded at the apex and emarginate, very cuneate at the base, with an entire margin and the veins showing only slightly on the under surface of the leaf. Inflorescence fasciculate, with the flowers in dense sub-sessile glomerules. Flowers 5-parted. Sepals 1.5 mm. long, deltoid, acuminate, with a deeply laciniated margin. Petals 2 mm. long, broadly oblong, with a ciliated margin. Filaments 3.5 mm. long, slightly broader at the base. Disc fleshy, deeply 5-lobed, with the filaments situated in the sinuses. Ovary 2-chambered, with 2 ovules in each chamber; style, 0.25 mm. long; stigma 3-lobed. Fruit a 3-locular triquetrous apiculate capsule 6 mm. long, with ligneous valves. Seed half-covered by a white aril.

COAST REGION: Zoutpanshoogde near Zwartkopsrivier, Uitenhage, Ecklon and Zeyher 947 in *Herb. Kew!* and in *Herb. Musei Austro. Afric!* Redhouse near Port Elizabeth, Patterson 2292 in *Herb. Bolus!* Fish River, Bathurst Div. Drège in *Herb. Kew!* Albany, Zeyher 848 in *Herb. Kew!* Junction Farm, Gwatyn, Queenstown Div., Galpin 8086 in *Herb. Bolus!* and in *Herb. Galpin!* In scrub, Izeli, near Kingwilliamstown, Galpin 5931 in *Herb. Galpin!*; Kingwilliamstown, Sim 1966 in *Herb. Maritzburg Univ. Coll.* 1672! and in *Herb. Bolus!* Fish River, Kaffraria, Baur 1090 in *Herb. Kew!* and in *Herb. Bolus!* Komgha, Flanagan 2585 in *Herb. Musei Austro. Afric.!* and in *Herb. Bolus.*

CENTRAL REGION : Somerset Div., *Burchell 3278 in Herb. Kew!* Graaff-Reinet, *Bowker in Herb. Kew!* Coega Kama Kloof at Bushmansriver Kloof, *Zeyher 2177 and 2178 in Herb. Musei Austro. Afric!*

EASTERN REGION : Butterworth, Transkei, *Pegler 2023 in Herb. Bolus!*

2. G. uniflora, sp. nov.

Frutices glabri, spinosi, erecti. *Rami* alli longii, teretes, striati, cano-fusci, alii brevissimi, folius fasciculatis. *Ramuli* sub-angulati. *Spinae* graciles, circa 1 cm. longae. *Folia* alterna vel fasciculata, coriacea; petioli 1 mm. longi; laminae lanceolatae, 1.5-4 cm. longae, 0.3-0.8 cm. latae, acutae, basi cuneatae; margines serrati supra inedium; nervis prominentibus. *Flores* axillares, 3-4-nati, 5-parti. *Sepala* 1 mm. longa, lato-oblonga, marginibus fimbriatis. *Petala* 2-5 mm. longa, sub-orbiculata, carnosa, marginibus integris. *Filamenta* 1 mm. longa, baso latiore. *Discus* carnosus sulcatus, margine depresso crenato. *Ovarium* 3-loculare; stylus brevissimus, stigmatum 3-lobo. *Ovula* in loculis 2, erecta. *Fructus* non vidi.

EASTERN REGION : Zwaartkop, Natal, *Medley Wood 10253 in Govt. Herb. Natal 11423!* and *in Herb. Kew!* and *in Herb. Bolus!*

3. G. lucida, Loesen in Engler & Prantl Pflanzenfam. iii, V. 208.

Celastrus lucidus, Engler & Prantl Pflanzenfam. iii, V. 208; Linn. Mant. 49; Murr. Syst. Veget. Ed. 13 (1774) 198; Reich. Syst. Pl. i. (1779) 553; Murr. Syst. Veget. (1784) 237; L. Hent. Thip: nov. 1 (1787) 49, tab. 25; Thunb. Prod. Cap. (1794) 42; Gmel, Syst. Veget. (1796) 406; Murr. Syst. Veget. edit. Pers. (1797) 248; Meerb. Icon. select (1798) tab. 12; Willd. Spec. I (1798) 1123; Thunb. in Rom. Arch. III (1805) 241, sp. 1; Ait. Hort. Kew. edit. 2a. II (1811) 25; Thunb. Fl. Cap. II (1818) 118; Rom. et Schult. Syst. Veget. V. (1819) 417; DC. Prod. II. (1825) 5; Sond. in Harv. and Sond. Fl. Cap. i. p. 456. *Cassine concava*, Lam. Dict. (1789) 652; Pers. Synops. 1 (1805) 327, sp. 5; Poiret Dict. Suppl. II (1811) 143 and tab. 130 fig. 2. *Celastrus concavus*, Lam. Illustr. Gen. No. 2695.

A much-branched glabrous unarmed shrub, one or more feet high. *Branches* terete, greyish-brown. *Twigs* angular, striated. *Leaves* alternate, coriaceous; petiole stout, 1-2 mm. long; lamina 2-3 cm. long, 1-2 cm. wide, oval or more or less orbicular, obtuse and with a hooked mucro at the rounded apex; rounded at the base, never cuneate, with an entire conspicuously revolute margin, and distinct venation. *Inflorescence* fasciculate; fascicles few-flowered, with pedicels measuring 2-3 mm. and articulated just above the base. *Flowers* 5-parted. *Sepals* 1 mm. long, deltoid, with a lacinated margin. *Petals* 2.25 mm. long, broadly oblong, with an uneven margin and flecked with brown. *Filaments* 1.5 mm. long. *Disc* fleshy, forming a collar round the ovary, but not enveloping it, with five deep indentations in which the filaments are situated. *Ovary* 2-4-chambered, mostly 3-chambered, with 2 ovules in each chamber; stigmas 2-3, mostly 3, linear, sub-sessile. *Fruit* a 2-4-locular, mostly 3-locular, trigonous brown capsule, the size of a pea. *Seeds* angular, with a thin aril.

COAST REGION : Howston, Caledon, *Marloth in Herb. Marloth 9206!* Camp's Bay *Pappe in Herb. Musei Austro. Afric!* Prior in Herb. Kew! Bantry Bay near Sea Point, *Dawson in Herb. Bolus 13267!* Table Mountain, *Masson in Herb. Kew!* Fish Hoek near Simonstown, *St. C. Caporn in Herb. Bolus 13266!* Fish Hoek, *Page in Herb. Bolus 16019!* Cape of Good Hope, *Herb. Forsyth in Herb. Kew!* Cape Agulhas, *Schlechter 10560 in Herb. Kew!* and *in Herb. Bolus!* and *in Nat. Herb. Pretoria!*

4. G. Zeyheri, Davison comb. nov. (Pl. XI, fig. 2.)

Celastrus Zeyheri, Sond. in Harv. and Sond. Fl. Cap., i. 456.

A glabrous unarmed shrub 3-6 ft. high. *Branches* terete, greyish-brown. *Twigs* pale, greyish-green, angular. *Leaves* alternate, coriaceous; petiole stout, 1-2 mm. long; lamina unequal; the larger 2-2.5 cm. long and 1.4-1.8 cm. wide; the smaller 0.5-1.2 cm. long, and 5-0.9 cm. wide; obovate or rounded-obovate, obtuse or sub-acute, or



Plate XI.

1. *Cassine sphaerophylla*, O. Kuntze.
(No. 2171, Cape of Good Hope Herb.)

2. *Gymnosporia Zeyheri*, Davison.
(No. 576 Bolus, Cape of Good Hope Herb.)

emarginate, cuneate, with 3-4 coarse serrations on the upper half of the flat margin, sometimes entire, and then margin slightly revolute; venation distinct. *Inflorescence* cymose, subsessile or very shortly pedunculate; peduncle never exceeding 3 mm. *Flowers* 5-parted. *Sepals* 1 mm. long, orbicular, with a dark brown centre and pale transparent lacinated margin. *Petals* 1.75-2 mm. long, broadly oblong or sub-orbicular, with an uneven margin. *Filaments* 1 mm. long. *Disc* fleshy and saucer-like round the base of the ovary and with a crenate margin. *Ovary* 3-chambered with two ovules in each chamber; style very short; stigma indistinctly 3-lobed. *Fruit* a capsule the size of a small pea, globose-trigonal, with sub-membranous walls. *Seed* partly enveloped by a thin membranous aril.

COAST REGION: Summit dolerite Kopje, Bowker's Park, Queenstown, *Galpin 2254* in *Nat. Herb. Pretoria!* and in *Herb. Bolus!*

CENTRAL REGION: Somerset, *Burchell 3071* in *Herb. Kew!* near Middelburg, *Burchell 2808* in *Herb. Kew!* in mountains near Graaff-Reinet, Cave Mt. *Bolus 576* in *Herb. Kew!* and in *Herb. Bolus!* and in *Herb. Musei Austro. Afric.!* Graaff-Reinet, *Burchell 2854* in *Herb. Kew!*

5. *G. ilicina*, Davison comb. nov.

Celastrus ilicinus, *Burch.* in *Burchell's Trav.* i. 340; *DC. Prod.* ii, 7.

A glabrous unarmed shrub with greyish-brown terete branches. *Twigs* angular, striated. *Leaves* alternate, coriaceous; petiole 1-4 mm. long; lamina 2-3.5 cm. long, 1-2.8 cm. wide, obovate or sub-orbicular, with an acute apex and distinctly cuneate base, dark green and veiny on the upper surface, glaucous beneath, with the margin coarsely repand-dentate, with 3-4 teeth on each side. *Inflorescence* fasciculate; fascicles few-flowered with the pedicels articulated above the base and averaging 1 cm. in length. *Flowers* 5-parted. *Sepals* sub-orbicular; 2 outer sepals 0.75 mm. long, with a brown deeply-lacinated margin; 3 inner sepals 1 mm. long, with a slightly lacinated concolorous margin. *Petals* 2 mm. long, broadly oblong, with an uneven margin. *Filaments* 1 mm. long. *Disc* fleshy, saucer-like round the base of the ovary, with an undulate margin. *Ovary* 2-3-chambered, with 2 ovules in each chamber; style 0.5 mm. long; stigmas 2-3-lobed. *Fruit* a capsule.

CENTRAL REGION: Bruintjes-Hoogte, Somerset East, *MacOwan 1235* in *Herb. Musei Austro. Afric.!* and in *Herb. Bolus!*

KALAHARI REGION: Asbestos hills at Blaauwbosch Poort, Dist. Hay, *Wilman 1327* in *Herb. Bolus!* and in *Nat. Herb. Pretoria!* Asbestos Hills; *Marloth 4909* in *Herb. Bolus!* *Marloth 2076* in *Herb. Marloth!* Asbestos Mountains, Griqualand West, *Burchell 1163!* *2037* in *Herb. Kew!*

6. *G. undata*, Szysz., Enum. Polypet.

Rehmann ii. 34 (1888); *Sim* in *Forests and Forest Flora, Cape Col.* (1907) 186; *Pegler* in *Ann. Bolus. Herb.* ii. 13 (name only). *Celastrus undatus*, *Thunb. Sond.* in *Harv. and Sond. Fl. Cap.* i. 457; *Celastrus collinus*, *Ecklon and Zeyher Enum. Plant. Afric. Austr.* 931, p. 119; *Celastrus dumetorum*, *Ecklon and Zeyher Enum. Plant. Afric. Austr.* 932, p. 119; *Celastrus ilicinus*, *Ecklon and Zeyher Enum. Plant. Afric. Austr.* 933, p. 119; *Celastrus cymatodes*, *Spreng. Syst.* 775; *Gymnosporia Zeyheri*, *Sond.* in *Harv. and Sond. Fl. Cap.* i. 456; *Celastrus Zeyheri*, *Sond.* in *Harv. and Sond. Fl. Cap.* i. 456; *Gymnosporia Zeyheri* (*Sond.*) *Loesen in Engl. Bot. Jahrb.* 17 (1893) 548.

A glabrous unarmed shrub or small tree. *Branches* terete, greyish-brown. *Twigs* angular, purplish-brown. *Leaves* alternate, thinly coriaceous; petiole 2-5 mm. long; lamina 3-7 cm. long (usually 3.5-4 cm. long), 1.5-4.5 cm. wide, obovate, obtuse or acute, with a distinctly cuneate unequal base; upper surface darker in colour and both surfaces distinctly veined, with a slightly undulate coarsely serrated margin and with more than five teeth on each side of the margin. *Inflorescence* fasciculate, many-flowered. *Pedicels* at least 0.5 cm. long, articulated near the base. *Flowers* 5-parted. *Sepals* 0.75 mm. long, sub-orbicular, with a lacinated margin. *Petals* 2 mm. long, oblong, with

an uneven margin. *Filaments* 1.5 mm. long. *Disc* fleshy, collar-like, surrounding the base of the ovary but not enveloping it, with an undulate margin. *Ovary* 3-chambered, with 2 ovules in each chamber; style 1 mm. long; stigmas 3. *Fruit* a 3-sided capsule 7 mm. long. *Seeds* with a thin yellow aril.

Sim, in "Forests and Forest Flora of Cape Colony," says of this plant: "Seldom over 20 feet in height and 12-15 inches diameter. Bark thin, dark, smooth, pinkish inside. Timber very little used, but close-grained, heavy, and even."

Pappe, who gives it the name Koko-tree, in speaking of its distribution, says: "It is frequent in the Eastern and Transkeian Conservancies and Natal, especially in the shale-formation scrubs; in high forest it is usually scarce. It abounds on the coast and even on the sea dunes, but also extends to 5,000 feet altitude."

COAST REGION: Zwartkopsrivier, Uitenhage, *Ecklon and Zeyher 933 in Herb. Kew! Zeyher 2190 in Herb. Kew!* and in *Herb. Musei Austro. Afric!* Zoutpanshoogte, Uitenhage. *Ecklon and Zeyher 932 in Herb. Musei Austro. Afric!* Quaggas-Vlakte, Uitenhage, *Ecklon and Zeyher 931 in Herb. Musei Austro. Afric!* Uitenhage; *Zeyher 855 in Herb. Kew!* Prior in *Herb. Kew!* Bosjeman's River (Albany) *Zeyher 2185 in Herb. Kew!* and in *Herb. Musei Austro. Afric!* Albany, Prior in *Herb. Kew!* Wooded Ravines, Junction Farm, Gwatyn, Queenstown Dist. *Galpin 8088 in Nat. Herb. Pretoria!* First Creek, East London, *Galpin 3162 in Nat. Herb. Pretoria!* Woods near Kei Mouth, *Flanagan 877 in Nat. Herb. Pretoria!* and in *Herb. Musei Austro. Afric!* and in *Herb. Bolus!*

KALAHARI REGION: Houtbosch, Transvaal, *Rehmann, 6516 in Herb. Kew!* and in *Herb. Bolus!*

EASTERN REGION: Natal and Zululand, *Gerrard 1589, 1590 in Herb. Kew!* Kaakloof, *Wylie 61* and in *Govt. Herb. Natal 7757!* Avoca, near Durban, *Schlechter 2876 in Herb. Bolus!* No locality. Prior in *Herb. Kew!*

7. *G. procumbens*, Loesen. in Engl. Jahrb., 39 (1906) 169.

Pegler in Ann. Bolus Herb. ii, 13 (name only). *Celastrus procumbens*, Linn. f. *Suppl. 153*; *Sond. in Harv. and Sond. Fl. Cap. I, 457*; *Ecklon and Zeyher Plant. Afric. Austr. (1834-1837) 934, p. 119*; *DC. Prod. II. 7*; *Celastrus ilicinus*, pl. *Krauss ex Sond. l.c. name only*; *Cassine articulata*, E. Mey. ex *Sond. l.c. name only*.

A glabrous procumbent unarmed shrub ranging from 1-10 feet in height. *Branches* terete, brownish-grey. *Twigs* angular. *Leaves* alternate, coriaceous; petiole 1-3 mm. long; laminae 3-6 cm. long (some under 3 cm. but the majority longer than 3 cm.), 1.5-3.5 cm. wide, ovate or elliptic, acute, with a minute recurved point, cuneate, with 3-5 spinous serrations on each side of the leaf, paler beneath, shiny above, with a strongly recurved margin and with distinct venation showing about 4 lateral veins on each side. *Inflorescence* fasciculate, many-flowered. *Pedicels* 0.5-1 cm. long, articulated well above the base or near the middle. *Flowers* 5-parted. *Sepals* orbicular; 2 outer sepals, 1 mm. long, brown-edged, deeply lacinated; 3 inner sepals 1.5 mm. long, with a concolorous slightly lacinated margin. *Petals* 2.5 mm. long, broadly oblong, with an irregular margin. *Filaments* 1 mm. long. *Disc* fleshy, collar-like, 5-sided. *Ovary* 3-chambered; stigma sub-sessile, obsoletely 3-lobed. *Fruit* a woody 3-locular capsule, the size of a pea.

This is a low-growing procumbent shrub found growing among shrubs along the seashore and on the sand dunes.

COAST REGION: Western escarpment of Bokkeveld, *Marloth in Herb. Marloth 7921!* Stille Bay, Riversdale Dist., *Muir 447* and in *Herb. Galpin 5275!* Melville, Knysna, *Burchell 5545 in Herb. Kew!* Knysna, *Duthie 591 in Herb. Bolus!* Sand dunes, Groot River, Zitzikama, *Fourcade 665 and 1241 in Herb. Fourcade!* Uitenhage, *Pappe in Herb. Musei Austro. Afric!* Port Alfred, *Potts in Grey Univ. Coll. Herb. 229!* Port Elizabeth, *Paterson 2294 in Herb. Bolus!* *Ecklon and Zeyher 934 in Herb. Musei Austro. Afric!* Algoa Bay, *Burchell 4374 in Herb. Kew!* Kowie, Bathurst Div. *Tyson in Herb. Bolus!* and in *Nat. Herb. Pretoria!* Rietfontein, Bathurst Div. *Burchell 4057 in Herb. Kew!* Bosjeman's River Hoogde (Albany) *Zeyher 2205 in Herb. Musei Austro. Afric!* Margins of woods

on sand hills, East London, *Galpin 5686 in Nat. Herb. Pretoria!* Sea Coast, East London' *Galpin 1846 in Herb. Bolus!* and in *Nat. Herb. Pretoria!* Sand dunes behind the Orient Beach, East London, *Kotze in Herb. Forest Dept. No. 3382* and in *Nat. Herb. Pretoria!* In valley next beyond Naboom River Mouth, East London, *Galpin 7785 in Nat. Herb. Pretoria!* Naboom Mouth, *Murray in Herb. Musei Austro. Afric.!* In Krantz near Naboom River Mouth, East London, *Galpin 7769 in Nat. Herb. Pretoria!* East London: *Sim 2197 in Herb. Maritzburg Univ. Coll. 1671!* and in *Herb. Bolus!* *Sim 1971* and in *Herb. Maritzburg Univ. Coll. 1663!* Among shrubs near Kei Mouth, *Flanagan 166 in Nat. Herb. Pretoria!* and in *Herb. Musei Austro. Afric.!* Kentani, *Pegler 842 in Herb. Bolus!*

EASTERN REGION: Isipingo, Natal, *Van der Bijl in Govt. Herb. Natal. 16084!* Between Umkomaas and Umlaas Rivers, Natal. *Drege in Herb. Kew!* Winkle Spruit, Natal, *Govt. Herb!* *Wood 11895 in Nat. Herb. Pretoria!* *Franks in Govt. Herb. Natal 12977!* Durban: *Wood 6358 in Herb. Kew!* and in *Herb. Musei Austro. Afric.!* and in *Herb. Bolus!* and in *Nat. Herb. Pretoria!* *Wood in Nat. Herb. Pretoria!* *Wood 8555 in Herb. Musei Austro. Afric.!* *Wood 10984* and in *Govt. Herb. Natal, 12058!* and in *Herb. Musei Austro. Afric. 7366!* *Rehmann 8995 in Herb. Bolus!* and in *Herb. Kew!* Bluff near Durban, *Wood 11187 in Herb. Bolus!* Port Natal, *Gueinzus in Herb. Kew!* Inanda, Natal, *Wood 1630* and in *Govt. Herb. Natal 77,* and in *Herb. Bolus!* and in *Herb. Kew!* Natal: *Sanderson in Herb. Kew!* *Gerrard 1369!* *1374 in Herb. Kew!* *Cooper 1260 in Herb. Bolus!* and in *Herb. Kew!* Zululand, *Cooper 2162 in Herb. Kew!*

8. G. Peglerae, Davison, sp. nov.

Arbores parvi, glabri, circa 15 pedes alti. Rami teretes, cano-fusci. Ramuli angulati. Folia alterna, coriacea; petioli 1 cm. longi; laminae 5-7 cm. longae, 2-3 cm. latae, oblongo-ovatae, acuminatae, acutae, cuneatae, marginibus crassis serratis planis; non-nulli nervi laterali, supra prominenti. Inflorescentia fasciculata, 4-6-floribus. Pediceli 0.5-0.8 cm. longi, leviter infra articulati. Flores 5-parti. Sepala 1.5 mm. longa, membranacii marginibus crassis laciniatis. Petala 2-5 mm. longa, oblonga, marginibus undulatis. Filamenta 1.5 mm. longa. Discus carnosus, annulus. Ovarium 3-loculare; ovula in loculis 2, erecta; stylus 0.5 mm. longus; stigmata 3, 0.5 mm. longa. Fructus capsularis 3-valvatus, 0.6 mm. longus.

EASTERN REGION: Forests, Kentani, *Pegler 1209 in Nat. Herb. Pretoria!* (Type!) and in *Herb. Musei Austro. Afric!*

9. G. fasciculata, Loesen. in Eng. Jahr., 19 (1894), 232.

Catha fasciculata, Tul. in Ann. Sc. Nat. 4 ser. VIII. 98.

A glabrous unarmed tree, reaching a height of 15 feet. *Branches* terete, greyish-brown. *Twigs* angular. *Leaves* alternate, coriaceous; petiole 0.3-1 cm. long; lamina 4.5-9.5 cm. long, 1.2-4 cm. wide, lanceolate, sometimes lanceolate-ovate, acuminate, acute, cuneate, with a serrate margin not or only very slightly recurved and with distinct venation showing several lateral nerves. *Inflorescence* fasciculate, many-flowered. *Pedicels* 0.3-0.7 cm. long, articulated above the base, but more towards the base than the middle of the pedicel. *Flowers* 5-parted. *Sepals* 1 mm. long, sub-orbicular, with a deeply lacinated margin. *Petals* 2.5 mm. long, oblong, with a very irregular margin. *Filaments* 1.5 mm. long. *Disc* fleshy, saucer-like round the base of the ovary and with an undulate margin. *Ovary* 3-chambered, with 2 ovules in each chamber; style 1 mm. long; stigmas 3. *Fruit* a 3-locular capsule.

COAST REGION: Kingwilliamstown, *Sim in Herb. Maritzburg Univ. Coll. 1673!*

KALAHARI REGION: Hillside, Louws' Creek, near Barberton, *Galpin 890 in Herb. Kew!* and in *Herb. Bolus!* and in *Herb. Musei Austro. Afric.!* and in *Nat. Herb. Pretoria!* and in *Govt. Herb. Natal 7208!*

EASTERN REGION: Natal and Zululand, *Gerrard 1370 in Herb. Kew!* Umzinyati Falls, *Wood 1312 in Col. Herb. Natal 5738!* and in *Herb. Musei Austro. Afric.!* near Durban, *Wood 10983 in Govt. Herb. Natal 12064!* and in *Natal Herb. Pretoria!* Camperdown, *Franks in Govt. Herb. Natal 13614!*

WITHOUT LOCALITY: *G. McKen 1370 in Govt. Herb. Natal, 16958!*

10. *G. albata*, Sim Forest and Forest Flora Cap. Col. 186 (1907).

Celastrus albatus, *N. E. Br. in Kew Bull. (1906). 16.*

A glabrous unarmed shrub or small tree, reaching a height of 15 feet. *Branches* terete, greyish-brown. *Twigs* sub-terete, ashy. *Leaves* alternate, coriaceous; petiole 0.2–0.5 cm. long; lamina 3.5–8 cm. long, always under 10 cm. long, 2–5 cm. wide, elliptic or obovate, obtuse or acute, cuneate, denticulate, green above, white beneath, with the veins showing distinctly on both surfaces. *Inflorescence* fasciculate, many-flowered. *Pedicels* averaging 5 mm. long, not exceeding 1 cm. in length, articulated more towards the middle than the base of the pedicel. *Flowers* 5-parted. *Sepals* 0.75 mm. long, deltoid, with a deeply lacinated brown-edged margin. *Petals* 2.5–3 mm. long, elliptic, with an irregular undulate margin. *Filaments* 2 mm. long. *Disc* fleshy, saucer-like round the base of the ovary and with a crenulate margin. *Ovary* 3-chambered, with 2 ovules in each chamber; style 0.5 mm. long; stigmas 3, small. *Fruit* a 3-locular obovate capsule, 6 mm. long.

COAST REGIONS.—Mountain Ravines, Queenstown, *Galpin 1576 in Nat. Herb. Pretoria!* Queenstown, *Potts in Grey Univ. Coll. Herb. No. 1875* and in *Herb. Bolus!* Fort Cunynghame, Kaffraria, *Sim 2115 in Nat. Herb. Pretoria!*

CENTRAL REGION: In wooded kloof, Pot River Berg, Maclear Dist. *Galpin 6597 in Herb. Kew!* and *Nat. Herb. Pretoria!*

KALAHARI REGION: Leribe, Basutoland, *Dieterlen 285 in Nat. Herb. Pretoria!* and in *Herb. Musei Austro. Afric. 7271!* Pyramid Estate near Potgieters Rust, *Galpin 8805 in Herb. Musei Austro. Afric.!*

EASTERN REGION: Edge of wood near Van Reenen's Pass, *Wood 6362 in Govt. Herb. Natal 8531!* and in *Nat. Herb. Pretoria!* and in *Herb. Musei Austro. Afric.!* and in *Herb. Bolus!* and in *Herb. Kew!* Indeni, Zululand, *Davis No. 27, Herb. Wood No 7888, in Herb. Musei Austro. Afric.!* and in *Herb. Bolus!* and in *Herb. Kew!* *Davis 27 in Govt. Herb. Natal. 8530!*

11. *G. deflexa*, Sprague in *Kew Bull. (1906), 246.*

A glabrous unarmed medium-sized or large tree. *Branches* glabrous, terete, slightly flexuous, with a greyish-brown wrinkled bark. *Twigs* sub-terete, pallid, glaucous-green. *Leaves* alternate, thinly coriaceous; petiole about 1 cm. long, grooved above; lamina 10–15 cm. long, 3.5–6 cm. wide, lanceolate-ovate or obovate, obtuse, with a cuneate base and serrato-dentate margin, glaucous-green above, with prominent closely-reticulated venation, whitish-glaucous beneath, with the midrib and 10–11 lateral veins more prominent than on the upper surface, but the veins less distinct than on the upper surface. *Inflorescence* fasciculate, with 10–20 flowers in each fascicle. *Pedicels* 1.5–2 cm. long, conspicuously articulated 5–6 mm. above the base. *Flowers* 5-parted. *Sepals* deflexed, 1–1.75 mm. long and 1–1.25 mm. wide, ovate-oblong with a brown-edged lacinated margin at the apex or as far as the middle of the sepal. *Petals* deflexed, 4.75–5 mm. long, 3 mm. wide, elliptic-ovate or sub-orbicular with an inflexed apex and irregular margin. *Filaments* 1.5 mm. long; anthers sub-orbicular. *Disc* fleshy, annular, with an irregular margin. *Ovary* 3-chambered, with two ovules in each chamber; style 0.5–0.75 mm. long; stigmas 3. *Fruit* a 3-locular depressed trigonous-globose capsule, with sub-ligneous valves. *Seeds* with an incomplete membranous aril.

COAST REGION: In woods near Fort Cunynghame, *Bolus in Herb. Bolus 8825!* in woods, Kentani, *Pegler 2113 in Herb. Bolus!*

KALAHARI REGION: Woodbush, Pietersburg Dist. *Grenfel 4 in Herb. Kew! Grenfel in Transv. Col. Herb. 1142!* and in *Herb. Kew!* Potatabosch No. 2013 near stream, Pietersburg Dist. *Burt-Davy 5077 in Transv. Col. Herb. 1158!* and in *Herb. Kew!* and in *Herb. Bolus!* Potatabosch, Pietersburg Dist. *Eastwood in Transv. Col. Herb. 1294!* Forest at Hangklip: *Legat 67 in Transv. Col. Herb. No. 4923!* in *Herb. Kew!* *Legat 68 in Transv. Col. Herb. No. 4924!* in *Herb. Kew!* Houtboschberg, *Burt-Davy 1242 in Herb. Bolus!*

Sprague says of this plant: "According to Burt-Davy, *G. deflexa* is common in the mist-belt forest of the Houtboschberg (Zoutpansberg District) at altitudes of between 1,400 and 1,500 metres. It is there known as "Saffraan-hout," on account of the yellow colour of the inner bark."

12. *G. cordata*, Sim. Forests and Forest Flora Cape Col. 184 (1907).

Celastrus cordatus E. Mey. ex Sond. in Harv. and Sond. Fl. Cap. i. 454.

A glabrous unarmed shrub or tree. *Branches* terete, brownish. *Twigs* purplish-brown, angular, slightly flexuous. *Leaves* alternate, membranous or sub-coriaceous, sessile or sub-sessile; lamina 3.5-6.8 cm. long, 1.5-4 cm. wide, ovate, with a distinctly cordate base and an acute or obtuse very shortly mucronulate apex; margin serrulate or sub-entire; paler beneath, with the veins showing distinctly on both surfaces. *Inflorescence* axillary, cymose, very few-flowered. *Peduncle* 2-4 mm. long; pedicel about 5 mm. long. *Flowers* 5-parted. *Sepals* 1.5 mm. long, sub-orbicular, with an irregular or very slightly lacinated margin. *Petals* 2.75 mm. long, sub-orbicular, narrowed to a short claw and with a slightly involute margin and distinct yellowish-brown veins. *Filaments* 1 mm. long. *Disc* fleshy, flat, 5-angled. *Ovary* 3-chambered, with two ovules in each chamber; style 5 mm. long; stigmas 3. *Fruit* an obcordate 3-locular capsule, about 1 cm. long. *Seeds* compressed, covered by a thin membranous aril.

COAST REGION: Along streams in woods, near Kei Mouth, *Flanagan 847 in Nat. Herb. Pretoria!* and in *Herb. Musei Austro. Afric.!* Kentani, *Pegler 2108 in Herb. Bolus!*

EASTERN REGION: Egossa, E. Pondoland, *Sim 2471 in Nat. Herb. Pretoria!* and in *Herb. Bolus!* Umzinkulu, Natal, *Drège in Herb. Kew!* Sydenham near Durban, *Wood 8257 in Herb. Kew!* Dumisa station, Alexandra Dist. *Rudatis 1432 in Herb. Kew!* Natal, *Gerrard 1376 in Herb. Kew!*

13. *G. monococca*, Davison, sp. nov. (Pl. XVI.)

Arbores parvi vel frutices, 10-13 pedes alti, inermes, glabri, erecti. Rami teretes, cano-fusci, striati. Ramuli angulati, striati. Folia alterna, coriacea; petioli 2-3 mm. longi; laminae 3.5-5.3 cm. longae, 0.5-1 cm. latae, lanceolato-lineariae, obtusae, mucronatae, cuneatae, rugosae, margines integri leviter reflexi; costa infra prominente. Inflorescentia cymosa, floribus paucis. Pedunculi 2-2.5 cm. longi. Flores minimi, 5-parti, immaturi. Fructus capsularis circa 0.7 cm. longus, 1-locularis. Semina arilo membranaceo.

COAST REGION: Buffeljagdsriver, Swellendam, *Zeyher 4652 in Herb. Musei Austro. Afric.!* Breede River, *Burchell 7509! 7525! 7477 in Herb. Kew!*

14. *G. angustifolia*, Bolus and Wolley-Dod in Trans. S. Afr. Phil. Soc. xiv, 247.

Scytophyllum angustifolium, Sond. in Harv. and Sond. Fl. Cap. i. 472. Elaeodendron angustifolium, Presl. Bot. Bem. 34.

A glabrous unarmed shrub. *Branches* terete, brownish, of one kind, long, with scattered leaves. *Twigs* angular, striated, greyish-green. *Leaves* alternate, coriaceous; petiole about 3 mm. long; lamina 3-4.5 cm. long, 0.8-1.5 cm. wide, lanceolate, obtuse, with a small inflexed point, cuneate, with an entire margin slightly rugose on the upper surface and with obsolete venation. *Inflorescence* a few-flowered axillary cyme. *Peduncle* 3-5 mm. long. *Pedicels* extremely short. *Flowers* 5-parted. *Sepals* 1 mm. long, sub-orbicular, flecked with brown and with a ciliated margin. *Petals* 1.5 mm. long, oblong, flecked with brown,



Plate XVI.

Gynnosporia monococca, Davison.
(No. 7477, Herb. Hort. Bot. Reg. Kew.)

and with a ciliated somewhat undulate margin. *Filaments* 0.5 mm. long. *Disc* fleshy, collar-like round the base of the ovary, and with a crenulate margin. *Ovary* 2-3-chambered, with 2 ovules in each chamber; style extremely short; stigmas 2-3. *Fruit* not seen.

COAST REGION: Devil's Peak near Capetown, *Pappe in Herb. Musei Austro. Afric.!* Table Mountain, *L. Bolus in Herb. Bolus 16108!* Rocky ridge N.E. of head of Kasteel's Poort, Table Mountain, *Pillans in Herb. Bolus!*

NO LOCALITY: *Drège in Herb. Kew!*

15. *G. polyacantha*, Szysz. Enum. Polypet. Rehm. 2: 34 (1888).

Celastrus polyacanthus, Sond. in *Harv. Fl. Cap. i. 455*; *Celastrus linearis*, Ecklon and Zeyher Enum. Plant. Afric. Austro. 946, p. 121 name only; *Polyacanthus angustifolius*, Presl. Bot. Bem. 33. *Celastrus inflexus*, Ecklon and Zeyher, Enum. Plant. Afric. Austro. 956 name only.

A greyish rigid glabrous shrub bearing strong spines. *Branches* of two kinds; the long ones greyish-brown, terete, curved, straight or inflexed, verrucose; the short ones very much abbreviated, growing in the axils of the spines, scarred by the previous leaves and bearing this year's leaves in a tuft at the apex. *Spines* large, up to 9 cm. long. *Leaves* tufted, membranaceous or very thinly coriaceous; petiole 1-3 mm. long; lamina 1-3 cm. long, 0.2-0.8 cm. wide, oblanceolate or linear-oblanceolate, obtuse or emarginate, distinctly cuneate, with conspicuous veins and an entire or slightly serrate margin. *Inflorescence* compact, shorter than the leaves. *Peduncle* never exceeding 6 mm. *Pedicels* 1-1.5 mm. long. *Flowers* 5-parted. *Sepals* 0.75 mm. long, sub-orbicular, with a ciliated margin. *Petals* 1.75-2 mm. long, oblong, with an uneven somewhat undulate margin. *Filaments* 1-1.75 mm. long. *Disc* fleshy, annular, with a crenate margin. *Ovary* 3-chambered, with 2 ovules in each chamber; style 0.25 mm. long; stigmas obsolete 3-lobed. *Fruit* a dry 3-locular capsule, 4 mm. long. *Seeds* with an incomplete yellow membranous aril.

COAST REGION: Despatch, Uitenhage, *Holland 34 in Herb. Bolus!* Karroo-like hills near Zwartkop River, Uitenhage, *Zeyher 956 in Herb. Kew!* and in *Herb. Musei Austro. Afric.!* and in *Herb. Bolus!* Zwartkop's Rivier, Uitenhage, *Ecklon and Zeyher 946 in Herb. Kew!* and in *Herb. Musei. Austro. Afric.!* Zwartkop, Uitenhage, *Ecklon and Zeyher 7 in Herb. Musei. Austro. Afric.!* Redhouse, near Port Elizabeth, *Paterson 1079 and in Herb. Bolus!* Sea coast, East London, *Page 16983 in Herb. Bolus!*

CENTRAL REGION: Cookhouse, Somerset East, *Rogers 2762 in Herb. Bolus!* Great Fish River, Somerset Div. *Burchell 3258 in Herb. Kew!* Kommadakka, Somerset Div. *Burchell 3316 in Herb. Kew!* near Mortimer, Cradock, *Kensit in Herb. Bolus!* Between Kruidfontein and Karmmelk River, Graaff-Reinet Div. *Burchell 2942, in Herb. Kew!* Culmstock, Middelburg Dist., *Southey in Herb. Galpin 5868!* and in *Herb. Kew!*

KALAHARI REGION: near Bloemfontein, *Grey Coll. Herb. 55 in Herb. Bolus!* and in *Herb. Kew!* and in *Nat. Herb. Pretoria!* Braamfontein, Johannesburg, *Gilfillan 6198 in Nat. Herb. Pretoria!* Muckleneuk, near Pretoria, *Stent in Govt. Herb. 15114!* Pretoria Kopjes, *Leendertz 162 in Herb. Bolus!* Irene, near Pretoria, *Conservator of Forests, in Col. Herb. 9216!* Road from Pretoria to Crocodile River, *Burt-Davy 184 in Nat. Herb. Pretoria!*

16. *G. integrifolia*, Glover in Ann. S. Afr. Mus. 9 (1915). 206.

Celastrus integrifolius, Linn. f. Sond. in *Harv. and Sond. Fl. Cap. i. 457*; *Thunb. in Fl. Cap. 219*; *Ecklon and Zeyher Enum. Plant. Afric. Austro. (1834-1837) 936, p. 119.*

A rigid glabrous shrub. *Branches* of two kinds; the long ones terete, greyish-brown, rigid, flexuous, verrucose; the short ones very much abbreviated, bearing the scars of previous leaves below, and the present year's leaves and inflorescence in a tuft at the apex and growing in the axils of the spines or on the spines. *Spines* very strong, reaching a length of 9 cm. and bearing abbreviated branches. *Leaves* tufted, in the axils of the spines or on the spines, coriaceous; petiole 1-2 mm. long; lamina 1-1.5 cm. long, 0.3-0.7 cm. wide, obovate-cuneate, obtuse or emarginate, with an entire reflexed margin and mostly obsolete

venation, although in some cases, e.g. *Galpin* 5068, the veins are quite distinct on both surfaces. *Inflorescence* cymose, lax, borne on the abbreviated branches. *Peduncle* 1 cm. or more long. *Pedicels* 4-5 mm. long. *Flowers* 5-parted. *Sepals* 1.25 mm. long, sub-orbicular, with a ciliated margin. *Petals* 2.5-3 mm. long, 1.2-2 mm. wide, ovate-oblong, fleshy, with a ciliated incurved margin and distinct central vein on the ventral face. *Filaments* 1.25-1.5 mm. long; anthers oblong. *Disc* fleshy, flat, obsoletely 5-lobed and with a slightly undulate margin. *Ovary* 3-chambered with two ovules in each chamber; style 0.5 mm. long; stigma obsoletely 3-lobed. *Fruit* a 3-locular dry triquetrous capsule 4-5 mm. long. *Seeds* with an incomplete yellow membranous aril.

COAST REGION: Wilgerboschfontein, Roggeveld, *Worsdell* in *Herb. Musei. Austro. Afric.* 6100! Between Kochmanskloof and Gauritz, River, Kannaland (Swellendam) *Ecklon* and *Zeyher* 936 in *Herb. Musei Austro. Afric.*! Corenti River Farm, Dist. Riversdale, *Muir* 49 in *Herb. Galpin* 5068! Uitenhage; *Thorn* 15 in *Herb. Kew!* *Alexander Prior* in *Herb. Kew!* Albany, *Bowker* in *Herb. Kew!* Bothasberg, *MacOwan* 1134 in *Herb. Kew!* Dist. of Beaufort *Cooper* 520 in *Herb. Kew!*

CENTRAL REGION: Somerset; *Atherstone* 91 in *Herb. Kew!* *Burchell* 3321 in *Herb. Kew!* in Karroo near Kockman's Kloof, *Mund* in *Herb. Kew!* near Graaff-Reinet, *Bolus* 135 in *Herb. Kew!* Sunday's River, Graaff-Reinet Div.: *Burchell* 2883! 2872 in *Herb. Kew!* Camdeboosberg, Aberdeen Div. *Drège* in *Herb. Kew!*

WESTERN REGION: Olifants River, *Zeyher* in *Herb. Musei Austro. Afric.*! Between Bitterfontein and Stinkfontein, Namaqualand, *Pearson* 5535 in *Herb. Bolus!*

17. *G. saxatalis*, Davison comb. nov. (Pt. XII, Fig. 1.)

Celastrus saxatalis, *Burch.*, *Burchell's Trav.* II, 264.

Fructi spinosi, glabri; ramis pluribus. *Spinosi* tenuii, 1-1.5 cm. longi. *Rami* alii longi, teretes, cano-fusci; alii brevissimi, foliis fasciculatis inflorescentibusque. *Folia* fasciculata, coriacea; petioli 0.5 mm. longi; laminae 0.6-1.5 cm. longae, 0.2-0.4 cm. latae, obovatae, integrae, cuneatae, apicibus rotundis vel sub-emarginatis; nervae supra inconspicuae, costa infra prominente. *Inflorescentia* cyma; floribus paucis. *Pedunculi* 1 cm. longi. *Pediceli* 0.5-0.7 cm. longi, filiformi. *Flores* 5-parti. *Sepala* 1 mm. longa, marginibus leviter laciniatis. *Petala* 4 mm. longa, oblonga, marginibus integris recurvis. *Filamenta* 2.5 mm. longa. *Discus* carnosus, annulus. *Ovarium* 4-loculare; ovula in loculis 2; stylus 1.5 mm. longus; stigmata leviter 4-lobata. *Fructus* non vidi.

KALAHARA REGION: Asbestos mountains, Griqualand West: *Burchell* 1671! 2027 in *Herb. Kew!* Griqualand West *Burchell* 2158 in *Herb. Kew!* near Hamapery, Bechuanaland. *Burchell* 2487 in *Herb. Kew!*

18. *G. vacciniifolia*, Conrath in *Kew Bull.* (1908) 221.

A divaricate shrub reaching a height of 3.5 m. and armed with slender spines. *Branches* of two kinds; the long ones terete, dark-grey; the short ones very abbreviated, bearing the scars of former leaves and this year's leaves and inflorescence at the apex. *Spines*, when present, very small and slender, straight or curved. *Leaves* tufted, coriaceous; petiole very short; lamina 5-12 mm. long, 2-3.5 mm. wide, oblong or obovate-oblong, with a rounded or sub-emarginate apex and a cuneate base, entire, with prominent venation on both surfaces. *Inflorescence* a few-flowered cyme, a little longer than the leaves. *Peduncle* about 0.5 cm. long. *Pedicels* 1.5-4 mm. long, filiform. *Flowers* 5-parted, never exceeding 2 mm. in length. *Sepals* 0.5 mm. long, ovate and rounded at the apex. *Petals* 1.5 mm. long, ovate-oblong. *Fruit* a 3-locular, dry reddish-coloured capsule.

A full description of the flower cannot be given, owing to lack of material.

CENTRAL REGION: In the bush near Modderfontein, *Conrath* 88 in *Herb. Kew!*

WESTERN REGION: Naukleft Mts. between Goas and Kabiras, on stony ground, *Pearson* 9072 in *Herb. Bolus!*



Plate XII.

1. *Gymnosporia saxatilis*, Davison.
(Burchell 2027.)

2. *Hartogia capensis*, Thunb.

19. *G. condensata*, Sprague in Kew Bull. (1906), 246

A small glabrous spiny tree. *Branches* of two kinds; the long ones sub-terete, pallid, glaucous-green, with internodes 0.7–2 cm. long; the short ones very abbreviated in the axils of the spines or on the spines and bearing this year's leaves and inflorescence at the apex. *Spines* very strong. *Leaves* in tufts above the spines, chartaceous; petiole 2–3 mm. long, grooved above; lamina 1.5–2.5 cm. long, 6–8 mm. wide, oblanceolate or narrowly obovate, obtuse or somewhat emarginate, very often mucronulate, gradually narrowed towards the base, distinctly minutely glanduloso-serrate, pallid glaucous-green on both sides, with the veins obscure above but prominent beneath. *Inflorescence* a very densely-glomerated cyme with numerous flowers, borne on the spiny branches. *Flowers* 5-parted. *Pedicels* 3–3.5 mm. long. *Sepals* 1–1.5 mm. long, sub-orbicular, sub-membranous, slightly concave above and with an irregularly lacinated margin. *Petals* 2.75–3.5 mm. long, 1.75–2.5 mm. wide, elliptic or ovate-elliptic, finally patent or slightly deflexed, and with a minutely denticulated margin. *Filaments* 1.75–2.25 mm. long, broader at the base. *Disc* fleshy, annular. *Ovary* 3-chambered with two ovules in each chamber, 0.75 mm. high; style very short; stigmas 3, about 0.5 mm. long.

KALAHARI REGION: Olifants River, Middelburg Dist. *F. A. Hurley!*

20. *G. linearis*, Loesen. in Engl. & Prantl Nat. Pflanzfam iii. 5.

Celastrus linearis, Linn. f. *Sond. in Harv. and Sond. Fl. Cap. i. 455*; *Thunb. Fl. Cap. 219*; *Celastrus stenophyllus*, Ecklon and Zeyher *Enum. Plant. Afric. Austro. (1834–1837) 955*, p. 122; *Euclethus linearis*, Presl. *Bot. Bem. 33*; *Polyacanthus stenophyllus*, Presl. *l.c.*

A glabrous greyish-glaucous, spiny shrub. *Branches* usually long, terete, greyish-brown, but some abbreviated and bearing tufts of leaves. *Twigs* sub-angular. *Spines* horizontal, 4–5 cm. long, bearing leaves and inflorescences. *Leaves* alternate, coriaceous; petiole 2–3 mm. long; lamina 2.5–9 cm. long, 2–7 mm. wide, linear or lanceolate, acute or obtuse, with a narrowed base, glaucous-green, one-nerved, with a distantly but distinctly toothed margin. *Inflorescence* lax, cymose, axillary, several-flowered. *Peduncle* 1–6 mm. long. *Pedicels* 1–2 mm. long, lengthening in fruit. *Flowers* 5-parted. *Sepals* 0.5 mm. long, deltoid, with a ciliated margin. *Petals* 2 mm. long, closely flecked with brown, oblong, or oblong-ovate, with a ciliated margin from the apex to half-way down the petal. *Filaments* 1.25 mm. long. *Disc* flat, fleshy, saucer-like, with a crenulated margin. *Ovary* 2–3-chambered, with 2 ovules in each chamber; style 0.25 mm. long; stigma shortly 2–3 lobed. *Fruit* usually a 2-locular dry capsule. *Seed* with an incomplete membranous aril.

COAST REGION: Uitenhage: *Prior in Herb. Kew! Ecklon and Zeyher 955 in Herb. Kew! and in Herb. Musei Austro. Afric.!* Koegakammas Kloof, *Ecklon and Zeyher 759 in Herb. Kew! and in Herb. Musei Austro. Afric.!* Commando Kraal, Sunday's River, *Zeyher 303 in Herb. Kew! and in Herb. Musei Austro. Afric.!* Bushman's River Station, *Galpin 2979 in Nat. Herb. Pretoria!* Kloof between Klipfontein and Spitskop, *Burt-Davy 13528 in Nat. Herb. Pretoria!*

CENTRAL REGION: Sunday's River, Graaff-Reinet Div. *Ecklon and Zeyher 955 in Herb. Kew! and in Herb. Musei Austro. Afric.!* By water-courses, "The Water-furrow" near Graaff-Reinet, *Herb. Bolus 135!*

21. *G. lanceolata*, Glover in Ann. S. Afr. Mus. 9 (1915) 206.

Celastrus lanceolatus, E. Mey. ex Sond. in *Harv. and Sond. Fl. Cap. i. 456*; *Catha patens*, Presl. *Bot. Bem. 33*; *Catha lanceolata*, Presl *l.c.*

A small glabrous glaucous-green spiny tree, reaching a height of twelve feet. *Branches* terete, greyish-white. *Twigs* lax, virgate, greyish-white. *Spines* strong, 4–5 cm. long, bearing leaves and inflorescences. *Leaves* alternate, coriaceous; petiole 2–5 mm. long, lamina 3–8 cm. long, 5–12 mm. wide, lanceolate, obtuse, mucronulate and narrowed towards the base, glaucous, with distinct penni-nerved venation and closely denticulate margins.

Inflorescence lax, cymose, axillary, several-flowered. *Peduncle* branching into two near the base, 1-5 mm. long; secondary branches about 5 mm. long. *Pedicels* 1-2 mm. long. *Flowers* 5-parted. *Sepals* 0.5 mm. long, deltoid, with a ciliated margin. *Petals* 1.5-2 mm. long, oblong or ovate, with a ciliated margin from the apex to half-way down the petal. *Filament* 0.75 mm. long, dilated at the base. *Disc* flat, fleshy, saucer-like, with a crenulated margin. *Ovary* 2-3-chambered, with 2 ovules in each chamber; style very short; stigmas shortly 2-3-lobed. *Fruit* not seen.

WESTERN REGION: Ramond's Drift, Verleptpram, Little Namaqualand *Drège* in *Herb. Kew!* Orange River, *Schlechter 11452* in *Herb. Kew!* and in *Nat. Herb. Pretoria!* and in *Herb. Bolus!* Sandy banks, Orange River, *Pearson 6097* in *Herb. Kew!* and in *Herb. Bolus!* Banks of Orange River near Abbasis, *Pearson 2998* in *Herb. Kew!* and in *Herb. Musci Austro. Afric.!* *Pearson 3101* in *Herb. Kew!* and in *Herb. Musei. Austro. Afric.!* and in *Herb. Bolus!*

22. G. tenuispina, Szysz, Enum. Polypet. Rehmann (1888) ii. 34.

Celastrus tenuispinus, Sond. in *Harv. and Sond. Fl. Cap. i. 456*. *Gymnosporia loob-sakelensis*, Loesen.

A greyish shrub, bearing slender spines. *Branches* of two kinds; the long ones terete greyish-brown; the short ones very abbreviated and bearing tufts of leaves and the inflorescences. *Twigs* sub-terete, flexuous. *Spines* slender, reaching a length of 2 cm. and bearing abbreviated branches. *Leaves* tufted, sub-membranous; petiole about 2 mm. long; lamina 1-3.5 cm. long, 2-6 mm. wide, linear, mucronulate and narrowed towards the base, minutely downy beneath and on the petiole, with a minutely denticulated margin and veinless except for the conspicuous straw-coloured midrib. *Inflorescence* lax, few-flowered, axillary, cymose. *Peduncle* about 4 mm. long, very slender. *Flowers* immature. *Fruit* a 3-celled capsule, with yellowish-brown sub-membranous valves. *Seeds* dark brown, with a very small yellow aril at the base.

KALAHARI REGION: Eastern Bamaquato Territory, Bechuana Country, *Holub* in *Herb. Kew!* Mochudi, Bechuanaland Protectorate, *Harbor 6314* in *Herb. Kew!* and in *Herb. Musei Austro. Afric.!* 9080! Hill near Pretoria, *Marloth* in *Herb. Marloth 9521!* Pretoria *Kopjes*, *Leendertz 514* and *105* in *Herb. Bolus!* Pretoria, *Conrath 741* in *Herb. Kew!* Premier Mine, Transvaal, *Rogers 25047* in *Herb. Bolus!* Rustenburg, *Olive Nation* in *Herb. Kew!* and *216* in *Herb. Bolus!* Magaliesberg, *Burke 120* in *Herb. Kew!* *Zeyher 305* in *Herb. Kew!* *Zeyher 120* in *Herb. Musei Austro. Afric.!* Middelburg, *Rattray* in *Nat. Herb. Pretoria!* Zeerust, *Burt-Davy 103* in *Nat. Herb. Pretoria!* Nylstroom to Springbok Flats, southern slope of nek, *Burt-Davy 1730* in *Herb. Bolus!* Kloofs near Mission Station, Botsabelo, *Marloth* in *Herb. Marloth 11762!*

NO LOCALITY: *Rogers 6228* in *Herb. Bolus!*

23. G. elliptica, Davison comb. nov. (Pl. X, fig. 2.)

Celastrus ellipticus, *Thunb. Sond. in Harv. and Sond. Fl. Cap. i. 458*; *Celastrus integer*. *Ecklon and Zeyher Enum. Plant. Afric. Austro. (1834-1837) 945*, p. 120, not *Celastrus integer*, *Thunb.* *Celastrus heterophyllus*, *Sond. l.c. partly excl. var.*

An erect greyish shrub bearing slender spines. *Branches* of two kinds; the long ones terete, greyish-brown; the short ones very abbreviated and bearing tufts of leaves and the inflorescences. *Twigs* sub-terete. *Spines* slender, about 1 cm. in length. *Leaves* tufted, coriaceous; petiole 1-2 mm. long; lamina 1-4 cm. long, 2.5-6 mm. wide, linear with an obtuse or mucronulate apex and narrowed very much towards the base, smooth and veinless on the upper surface, veiny and rugulose beneath but the midrib not conspicuously prominent, with an entire or slightly serrated margin. *Inflorescence* axillary, cymose, not dense. *Peduncle* 0.4-1 cm. long, rather stout. *Flowers* 5-parted. *Sepals* 1 mm. long, orbicular, concave, with a lacinated margin. *Petals* 2 mm. long, oblong, with



Plate X.

1. *Gymnosporia filiformis*, Davison.
(Herb. Musei Austro. Afric. No. 7363.)
2. *Gymnosporia elliptica*, Davison,
(Cape of Good Hope Herb. No. 2160.)

an undulate margin. *Filaments* 1 mm. long, broader at the base. *Disc* fleshy, annular, with a crenulate margin. *Ovary* 3-chambered, with 2 ovules in each chamber; style very short; stigmas 3, linear, 0.5 mm. long. *Fruit* a dry capsule 4 cm. long.

COAST REGION: Gauritzrivier, George, *Ecklon and Zeyher 945 in Herb. Musei Austro. Afric.!* Gamtoos River, *Schlechter 6043 in Herb. Kew!* Uitenhage: *Zeyher 395! 707 in Herb. Kew!* Olifantshoek, Bosjesman's Rivier, Uitenhage, *Ecklon and Zeyher 943 in Herb. Kew!* Uitenhage, *Zeyher 2180 in Herb. Musei Austro. Afric.!* Between Uitenhage and Algoa Bay, *Burchell 4277 in Herb. Kew!* Albany: *Cooper 1523 in Herb. Kew!* *Zeyher in Herb. Kew!* Grahamstown, *MacOwan 290 in Herb. Kew!* Gwatyn Farm, Queenstown, *Galpin 8300 in Herb. Kew!* and in *Nat. Herb. Pretoria!*

EASTERN REGION: Grassy plains, Tugela, Natal, *Gerrard 1587 in Herb. Kew!* and in *Govt. Herb. Natal!*

No LOCALITY: *Zeyher 2181 in Herb. Kew!*

24. G. Bachmannii, Loesen. in Engl. Bot. Jahrb. 19 (1894) 232.

Glabrous. *Spines* small, slender, few. *Twigs* closely set, slender, distinctly angular-striate, rather densely leafy. *Leaves* shortly and slenderly petiolate, chartaceous, narrow or sublinear-lanceolate; very much narrowed at the base and acute; apex obtuse or rotundate, with the margin closely serrulate, and with the veins prominent below, reticulate. *Inflorescence* solitary in the axils of the leaves, a little shorter than the leaves, few-flowered, dichotomous. *Fruit* a 3-locular capsule, 3-6-seeded. *Seeds* covered below by the pale yellow aril, uncovered above.

EASTERN REGION: Pondoland, *F. Bachmann 847 in Herb. Kew.*

25. G. peduncularis, L. Bolus in Ann. Bolus ii (1916) 13.

Pegler in Ann. Bolus Herb. ii, 13 (name only); *Sim in Forests and Forest Flora Cape Colony (1907) 184;* *Celastrus peduncularis, E. Mey ex Sond. in Harv. and Sond. Fl. Cap. i, 454;* *Hex flexuosa, E. Mey. in Hb. Drègeony, name only.*

An unarmed tree 15-25 feet high. *Branches* terete, greyish-brown. *Twigs* sub-angular, softly pubescent. *Leaves* alternate, sub-membranous; petiole 3-6 mm. long, grooved above; lamina 2-8 cm. long, usually 5 cm. long and seldom less than 5 cm. long, 0.8-3.5 cm. wide, elliptic or elliptic-ovate, obtusely sub-acuminate, narrowed slightly towards the base; paler beneath, with distinct venation and a crenato-serrate margin; the young leaves slightly pubescent beneath. *Inflorescence* axillary, cymose, few-flowered, pubescent. *Peduncle* 1-1.5 cm. long, pubescent. *Flowers* 5-parted. *Sepals* 0.75 mm. long, sub-orbicular, pubescent on the outside and with a brown-edged lacinated margin. *Petals* 1.75 mm. long, fleshy, sub-orbicular, slightly narrowed at the base, and with an uneven margin. *Filaments* 0.5 mm. long. *Disc* fleshy, slightly enveloping the base of the ovary. *Ovary* 2-chambered, with 2 ovules in each chamber; style 0.25 mm. long; stigma entire. *Fruit* a 2-locular dry obovate capsule about 1 cm. long. *Seed* compressed with a membranous yellow aril.

COAST REGION: Knysna, *Burchell 5397 in Herb. Kew!* Gouna Forest, Knysna Div., *Fourcade 1896 in Herb. Fourcade!* Main Forest Deepwaals, Knysna, *Keet 605 in Nat. Herb. Pretoria!* Blaauwkrantz, Bathurst Div. *Burchell 3671 in Herb. Kew!* Blaauwkrantz, Zitzikamma, *Fourcade 678 in Herb. Bolus!* and in *Herb. Fourcade!* Mountains near Grahamstown, *MacOwan 75 in Herb. Kew!* near Grahamstown *MacOwan in Herb. Bolus 1046!* Albany, *Zeyher 885 in Herb. Kew!* and in *Herb. Musei Austro. Afric.!* Howisonspoort, near Grahamstown, *Zeyher 2187 in Herb. Musei Austro. Afric.!* and in *Herb. Kew!* Bushy slopes, Lower Albany, *Tyson in Govt. Herb. 13415!* Bushy slopes round Grahamstown, *Tyson in Herb. Musei Austro. Afric. 2517!* Junction Farm, Gwatyn, Queenstown Dist. *Galpin 8260 in Nat. Herb. Pretoria!* East London, *Rattray 287 in Herb. Kew!* On a krantz near Naboon River Mouth, East London, *Rattray in Galpin Herb. 7771!* Perie Forest, *Scott-Elliot 892 in Govt. Herb. Natal 4640!* Inacu Forest, Toise River, *Galpin 7379 in Herb. Bolus!* and in *Nat. Herb. Pretoria!* Woods near Komgha, *Flanagan 274 in Nat. Herb.*

Pretoria! Flanagan 4 in Herb. MacOwan 2075! Prospect Farm, Komgha Dist. Flanagan in Herb. Musei. Austro. Afric. 3600! Kentani, Pegler 758 in Herb. Bolus! Along streams, Kentani, Pegler 758 in Nat. Herb. Pretoria! British Kaffraria, Cooper 33 in Herb. Bolus! and in Herb. Kew! and in Govt. Herb. Natal 8579! Between Kei River and Gekau, Drège in Herb. Kew! Fort Cunynghame, Kaffraria, Sim 1922 in Nat. Herb. Pretoria! Sim 2022 in Herb. Maritz. Univ. Coll. 1677! Sim 2166 in Herb. Bolus!

KALAHARI REGION: Near Bester's Vlei, Harrismith, Orange Free State, Bolus in Herb. Bolus 8136! Barberton, Van Dam in Herb. Trans. Mus. 21124! Berlin, Godwan River, Barberton District, Davidson and Hofmeyr 44 in Nat. Herb. Pretoria!

EASTERN REGION: Eastern Districts, MacOwan 233 in Herb. Kew! Van Reenen, Franks and Wood No. 12153 in Govt. Herb. Natal 13702! Port Natal, Gueinzuis in Herb. Kew! Inanda, Natal, Wood 810! and 1604 in Govt. Herb. Natal! 624 in Herb. Bolus! and in Herb. Kew! Wood 940 in Herb. Kew! Natal: Gerrard 1371 in Herb. Kew! Cooper 2161 in Herb. Kew! Sutherland in Herb. Kew! Mrs. K. Saunders in Herb. Bolus! Howick, Natal, Schlechter 6780 in Herb. Bolus! Natal and Zululand, Gerrard 1373 in Herb. Kew! Nkandkla, Zululand, Wylie Herb. Wood No. 8760 in Nat. Herb. Pretoria! Zululand, Davis 102 in Govt. Herb. Natal 8783!

WITHOUT LOCALITY: Gerrard and McKen in Govt. Herb. Natal 618! and 17205!

Sim, in the Forest Flora of Cape Colony, says of this plant: "Abundant throughout the Eastern and Transkeian Conservancies and Natal, both inside and outside the forests, from the coast up to 6,000 feet altitude and reserved in all the conservancies except the Transkeian under the name *Celastrus peduncularis*. Bark dark grey outside, red-streaked with white inside, smooth and clean like English beech, getting rough when very old, that of the branches changing to nearly black when dry, and adhering to the wood; in this state the branches are much used by the natives for knob-kerries. Trunks usually damaged when over two feet diameter and are irregular, but up to that size they have fine clean boles. Timber heavy, hard, tough, and elastic; sapwood white, heartwood of a dark-grey colour, nearly black when fully mature, close-grained, and showing about thirty rings per inch. Often used in the construction of wagons, and for handles, etc. Not sufficiently known, possibly on account of its variability. In young plants and coppice shoots the leaves are often larger and more ovate than described above."

The common names for this plant are "Blackwood"; Dutch, "Swarthout"; Kaffir, "Umncai."

26. *G. rubra*, Loesen in Bull. Herb. Boiss. 4. 430.

Pegler in Ann. Bolus Herb. ii, 13 (name only). *Celastrus ruber*, Harv. in Harv. and Sond. Fl. Cap. ii, 592; *Celastrus concinnus*, N.E. Br. in Kew Bull. (1906) 16.

A glabrous spiny shrub. Branches angular, greyish-brown, slightly pubescent. Spines slender. Leaves alternate, membranous; petiole about 5 mm. long; lamina 1.5-2.5 cm. long (never exceeding 3 cm.), 1-1.5 cm. wide, ovate or ovate-rounded, obtuse, sub-cordate at the base with a serrulate margin. Inflorescence axillary, cymose, 2-3-flowered. Peduncle thread-like, 0.6-1.5 cm. long, pubescent. Pedicel 2-3 mm. long. Flowers 5-parted. Sepals 0.75 mm. long, suborbicular with a ciliated margin. Petals 2 mm. long, elliptic, obtuse, with a minutely and irregularly denticulated margin. Filaments 1 mm. long. Disc fleshy, partly enveloping the base of the ovary. Ovary 3-chambered with 2 ovules in each chamber; style 0.25 mm. long; stigmas 3, linear, 0.25 mm. long. Fruit not seen.

KALAHARI REGION: Tzaneen, Northern Transvaal, Rogers 18842 in Herb. Kew! Zoutpansberg, Transvaal, Worsdell in Herb. Kew!

EASTERN REGION: Umtata, Transkei, Schlechter 6350 in Herb. Bolus! Dumisa Station, Alexandra Dist. Natal, Rudatis 1164 in Herb. Kew! Inanda, Natal, Wood 1395 in Herb. Kew! Wood 1395 in Col. Herb. Natal 5730! Lidgeton, Natal, Wood 6336 in Herb. Kew! and in Govt. Herb. Natal 8592! Natal, Gerrard in Herb. Kew! Entumeni, Zululand, Wood 3963 in Herb. Bolus! and in Herb. Kew! and in Govt. Herb. Natal 4767! Indeni Forest, Zululand, Wood 7896 in Herb. Kew! and in Govt. Herb. Natal 12349!

27. *G. laurina*, Bolus and Wolley-Dod in Trans. S. Afri. Phil. Soc. xiv, 247.

Szys. *En. Polypet. Rehmann* (1888) ii, 34. *Scytophyllum laurinum*, Ecklon and Zeyher *Enum. Plant. Afr. Austro.* (1834-1837) 966. p. 124; *Sond. in Harv. and Sond. Fl. Cap. i.* 471; *Celastrus laurinus*, Thunb. *Fl. Cap. ed. Schultz.* (1827) 217; *Scytophyllum obtusum*, Ecklon and Zeyher l.c. 965, excl. syn. *Celastrus laurinus* and *Celastrus obtusus*, Drège *Herb.*; *Celastrus oleoides*, Lam. *Ill.* 2695.

A glabrous unarmed shrub 8-10 feet high. *Branches* terete, greyish-brown. *Twigs* sub-angular, whitish. *Leaves* alternate, coriaceous; petiole 2-4 mm. long, lamina 2-6 cm. long, 0.5-3 cm. wide, usually obovate, sometimes ovate-oblong, rounded or emarginate at the apex or sometimes very obtusely acuminate, narrowed towards the base, rugose, not nervose, glaucescent, with an entire revolute margin. *Inflorescence* axillary, cymose. *Peduncle* glabrous, 3-5 mm. long. *Flowers* 5-parted. *Sepals* 2; outer ones 0.75 mm. long, deltoid, with a brown-edged lacinated margin; 3 inner ones 1 mm. long, sub-orbicular with a brown-edged lacinated margin. *Petals* 2.25 mm. long, sub-orbicular or broadly oblong, flecked with brown and with an uneven margin. *Filaments* 1 mm. long. *Disc* fleshy, annular. *Ovary* 3-chambered, with 2 ovules in each chamber; style very short; stigmas 3. *Fruit* fleshy, obovate, 0.6-1 cm. long, finally dehiscent. *Seed* covered with a thin yellow aril.

WESTERN REGION: Khamiesberg, Khoms River, Pearson 6648 in *Herb. Kew!* near Ezelsfontein, Pearson 6317 in *Herb. Kew!* and in *Herb. Musei Austro. Afric.* 7295! Middle and upper slopes of Zuurberg, Pearson 6254 in *Herb. Kew!* and in *Herb. Bolus!* Sneeuwkop, Pearson 5832 in *Herb. Kew!* Namaqualand, N.E. of Stinkfontein, Pearson 5635 in *Herb. Kew!* Bushmansland, Kweckfontein, Pearson 5042 in *Herb. Kew!* and in *Herb. Musei Austro. Afric.* 7318! and in *Herb. Bolus!* Little Namaqualand, Rattelpoort Mountain; Pearson 2962 in *Herb. Kew!* and in *Herb. Musei Austro. Afric.* 7309! Rattelpoort, Pearson 4722 in *Herb. Kew!* Leeuwfontein, Cape, Pearson 3229 in *Herb. Kew!*

COAST REGION: Mountains, Heerelogemont, Van Rhynsdorp Dist. Zeyher in *Herb. Musei Austro. Afric.!* Olifants River, Schlechter 5035 in *Herb. Bolus!* Olifants River Valley near Warmbaths, Stephens 7258 in *Herb. Kew!* and in *Herb. Musei Austro. Afric.* 7303! Olifants River, near Clanwilliam, Dickson in *Herb. Bolus* 5608! and in *Herb. Kew!* Clanwilliam, Rogers 16841 in *Herb. Kew!* Bergvalley, Clanwilliam, Ecklon and Zeyher 967 in *Herb. Kew!* and in *Herb. Musei Austro. Afric.!* Kradouw, Cape, Pearson 5282 in *Herb. Kew!* Kardouw, Clanwilliam, Zeyher in *Herb. Musei Austro. Afric.!* Modderfontein near Piquinier's Kloof, Schlechter 7961 in *Herb. Kew!* and in *Herb. Bolus!* and in *Nat. Herb. Pretoria!* and in *Herb. Natal* 13226! near Piquetberg in *Herb. Bolus!* Western edge of Bokkeveld, Marloth in *Herb. Marloth* 7627! Ceres, Pearson 3499 in *Herb. Kew* and in *Herb. Musei Austro. Afric.* 7306! and in *Herb. Bolus!* near Ceres, Bolus in *Herb. Bolus* 8332! Bain's Kloof, near Wellington, Zeyher in *Herb. Musei Austro. Afric.!* Kloof near Tulbagh: Burchell 1020 in *Herb. Kew!* Winterhoek, Tulbagh, Zeyher in *Herb. Kew!* and in *Herb. Musei Austro. Afric.!* near Waterfall, Tulbagh, Ecklon and Zeyher 965 in *Herb. Musei Austro. Afric.!* Du Toit's Kloof, Worcester Div. Drège in *Herb. Worcester Div. Drège* in *Herb. Kew!* Cooper 1655! 1701 in *Herb. Kew!* Hex River, Marloth in *Herb. Marloth* 2202 b! Hex River, near De Doorns, Bolus in *Herb. Bolus* 13087! Paarl Mountain, Drège in *Herb. Kew!* Camp's Bay, Alexander Prior in *Herb. Kew!* MacOwan 2549! Bolus No. 183 in *Herb. Kew!* and in *Herb. Musei Austro. Afric.!* and in *Herb. Bolus* 183! and in *Nat. Herb. Pretoria!* Marloth in *Herb. Marloth* 5614! Table Mountain, Drège "a" in *Herb. Kew!* Orange Kloof, west slopes, Table Mountain, Woolley-Dod 2507 in *Herb. Bolus!* and in *Herb. Kew!* sides of Table Mountain and Devil's Peak, Ecklon and Zeyher 966 in *Herb. Kew!* Devil's Mount, Capetown, Alexander Prior in *Herb. Kew!* Thickets near Capetown, Alexander Prior in *Herb. Kew!* Northern slopes of Table Mountain, Pillans 3692 in *Nat. Herb. Pretoria!* Wynberg, Alexander Prior in *Herb. Kew!* Mountain slopes. Muizenberg, St. C. Cuporn in *Nat. Herb. Pretoria!* Muizenberg, in *Herb. Musei. Austro. Afric.!* Simon's Bay, Alexander Prior in *Herb. Kew!* Seashore, Simonstown, Bolus in

Herb. Bolus 4933! top of Red Hill, Simonstown: *Wolley-Dod* 2648 in *Herb. Kew!* *Wolley-Dod* 2647 in *Herb. Bolus!* Miller's Point, *Wolley-Dod* 2271 in *Herb. Kew!* Smit-Winkel's Bay, *Wolley-Dod* 2686 in *Herb. Kew!* Hottentot-Holland Mountains, Stellenbosch, *Ecklon and Zeyher* 966 in *Herb. Kew!* and in *Herb. Musei Austro. Afric.!* Mountains near French Hoek: *Bolus* in *Nat. Herb. Pretoria!* *Phillips* 1079 and in *Herb. Musei Austro. Afric.* 8279! French Hoek, *Eullene* in *Herb. Bolus* 2746! Sir Lowry's Pass, *Schlechter* 4829 in *Herb. Bolus!* and in *Herb. Kew!* Genadendal near Caledon, *Pappe* in *Herb. Musei Austro. Afric.!* S. slopes Zwartberg, Caledon, *Pillans* in *Herb. Bolus* 17144! Cape of Good Hope, *Cooper* 2696 in *Herb. Kew!* Cape Agulhas and Potberg, *Drège* in *Herb. Musei Austro. Afric.!* Corente River Farm, Riversdale Dist. *Muir* 47 in *Herb. Galpin* 5069! George, *Alexander Prior* in *Herb. Kew!* Keurbooms River, Long Kloof, George, *Fourcade* 1645 in *Herb. Fourcade!* Uniondale Div., *Burchell* 5065 in *Herb. Kew!* Avontuur, Uniondale, *Fourcade* in *Herb. Fourcade!* Prince Alfred's Pass, Uniondale, *Fourcade* 2474! 1277a! 2057 in *Herb. Fourcade!* *Fourcade* 2057 in *Herb. Bolus!* Lange Kloof, Humansdorp Div., *Burchell* 4921 in *Herb. Kew!* Langevalley, *Zeyher* 306 B in *Herb. Musei Austro. Afric.!*

WITHOUT LOCALITY: *Dr. Wallich* in *Herb. Kew!* *Zeyher* 306 in *Herb. Kew!*

28. *G. filiformis*, Davison sp. nov. (Pl. X, Fig 1.)

Frutices glabri, inermes. *Rami* teretes, cano-fusci. *Ramuli* angulati, cano-fusci. *Folia* alterna, membranacea; petioli 1-1.5 mm. longi; laminae 2-5 cm. longae, 1.3-3.3 cm. latae, infra pallidiorae, ellipticae, acuminato-obtusae quandam apiculatis minutis; basi rotundati; margines serrati; nervi et costa prominentes. *Inflorescentia* cymosa, 2-3 floribus. *Pedunculi* filiformi, circa 2 cm. longi. *Flores* 5-parti. *Sepala* 1 mm. longa, sub-membranacea, orbiculata, marginibus integris. *Petala* 2 mm. longa, lato-oblonga, marginibus undulatis. *Filamenta* brevissima, ad 0.25 mm. longa. *Discus* carnosus. *Ovarium* 3-loculare, disci immersum. *Stigma* capitata. *Fructus* non vidi.

EASTERN REGION: Near Durban, *Wood* 11608 and in *Herb. Musei Austro. Afric.* 7363! Berea, Durban, *Wood* 9987 and in *Gov. Herb. Natal* 10543! Sydenham, *Wood* 8257 and in *Govt. Herb. Natal* 9205! Inanda, Natal, *Wood* 734 in *Herb. Kew!* and in *Herb. Bolus!* *Wood* 734 and in *Govt. Herb. Natal* 5072!

29. *G. acuminata*, Szysz. Enum. Polypet. Rehm. 2: 34 (1888).

Pegler in *Ann. Bolus Herb.* ii. 13 (name only). *Celastrus acuminatus*, Linn. *Suppl.* 154; *Sond.* in *Harv. and Sond. Fl. Cap.* i. 454; *Thunb. Fl. Cap.* 218; *Ecklon and Zeyher Enum. Plant. Afric. Austro.* (1834-1837) 927, p. 118; *Pappe Sylv. Cap.* 8; *Celastrus populi-folius*, *Lam Illustr.* 2698; *Celastrus rupestris* and *mucronatus*, *Ecklon and Zeyher Enum. Plant. Afric. Austro.* (1834-1837) 929, 930, p. 119; *C.* (?) *Plectronia*, DC. *Prod.* ii. 9; *Catha acuminata* and *rupestris*, *Presl. Bot. Bem.* 33.

A glabrous unarmed shrub or small tree, seldom over 20 feet in height and 12 inches in diameter breast high. *Branches* terete, dark grey or greyish-brown, with a thin bark, which is fissured only when old. *Twigs* angular. *Leaves* alternate, membranous or sub-coriaceous, with lengthwise elastic threads in the tissue; petiole 3-7 mm. long; lamina 2-11 cm. long, 0.6 cm. wide, ovate, or ovate-lanceolate, or elliptic-rhomboid in some of the coppice shoots, with the apex decidedly acuminate acute, and with a shortly cuneate base, distinctly veined, paler beneath, and with a serrate margin. *Inflorescence* axillary, solitary or cymose, few-flowered. *Peduncle* extremely short, 0.5-2 mm. long. *Pedicels* up to 0.5 cm. long, lengthening in the fruit. *Flowers* 5-parted. *Sepals* sub-orbicular; 2 outer ones 0.5 mm. long, with a yellowish-brown laciniated margin; 3 inner ones 1 mm. long, with a yellowish-brown laciniated margin. *Petals* 2.5 mm. long, sub-orbicular, with distinct yellowish-brown veins and an entire incurved margin. *Filaments* extremely short, never exceeding 0.5 mm. *Disc* fleshy, flat. *Ovary* 3-chambered, with 2 ovules in each chamber; stigmas sub-sessile, obsoletely 3-lobed. *Fruit* a dry abortively 1-locular obovate or orbiculate capsule up to 1 cm. long. *Seeds* covered with a thin yellow aril.

COAST REGION: Clanwilliam, *Rogers 16843 in Herb. Bolus!* on banks of stream at "Monte Cristo," Porterville, *Edwards 39 in Herb. Bolus!* Simonsberg, *Drège in Herb. Musei Austro. Afric.!* Paarl Mountain, *Drège in Herb. Kew!* Silverrivier, *Schlechter 2377 in Herb. Bolus!* Soldaten Bosch, western slopes of the Apostles, Cape Peninsula, *Pillans 3687 in Nat. Herb. Pretoria!* Devil's Mountain, Capetown, *Alexander Prior in Herb. Kew!* Rocks west side of Devil's Peak, *Wolley-Dod 1326 in Herb. Bolus!* and in *Herb. Kew!* Roadside, Orange Kloof, *Wolley-Dod 3282 in Herb. Kew!* Kirstenbosch, *Schlechter 241, 242 in Herb. Musei. Austro. Afric.!* Nursery Gorge, above Kirstenbosch Cape Peninsula, *Page in Herb. Bolus!* and in *Nat. Herb. Pretoria!* Skeleton Ravine, in *Herb. Bolus!* Orange Kloof, *Marloth in Herb. Marloth 8443!* Newlands, *Wilms 3111 in Herb. Kew!* Newlands, *Marloth in Herb. Marloth 1621b.* Muizenberg, *Bolus 4623 in Herb. Bolus!* and in *Herb. Kew!* Stellenbosch, *Alexander Prior in Herb. Kew!* Jonker's Hoek, below trout hatchery, *Pillans in Herb. Bolus, 15470!* Genadendal, *Alexander Prior in Herb. Kew!* Zwartberg and near Genadendal, *Ecklon and Zeyher 927 in Herb. Bolus!* Mountain, Grootvadersbosch (Swellendam), *Pappe in Herb. Musei Austro. Afric.!* *Marloth in Herb. Marloth 3495!* Klynrivier, Caledon Dist., *Zeyher 2188 in Herb. Kew!* and in *Herb. Musei Austro. Afric.!* Zoetmelk's River, Riversdale Div. *Burchell 6811 in Herb. Kew!* Georgetown, *Alexander Prior in Herb. Kew!* Zwartberg, *Alexander Prior in Herb. Kew!* Honitini Gorge, Farleigh, Knysna, *Keet 713 in Nat. Herb. Pretoria 3323!* Gouna River, Knysna, *Keet 710 in Nat. Herb. Pretoria 3320!* Concordia, Knysna, *Keet 711 in Nat. Herb. Pretoria 3321!* Knysna, *Duthie 606 in Herb. Bolus!* Plettenberg Bay, *Ecklon and Zeyher in Herb. Kew!* in a deep woody ravine near the Keurbooms River, Uniondale Div. *Burchell 5149 in Herb. Kew!* Forest Storm's River, Zitzikamma, *Fourcade 706 in Herb. Fourcade!* Bitou River near bridge in scrub forest, *Fourcade 1490 in Herb. Fourcade!* Wooded gorge, Zuurbraak Mtn. *Galpin 3882 in Nat. Herb. Pretoria!* North side of Kromme River, near Wagenbooms Station, Humansdorp Div., *Burchell 4882 in Herb. Kew!* Witte El's Bosch in forest, Humansdorp Div., *Fourcade 1409 in Herb. Fourcade!* Uitenhage, *Zeyher 812 in Herb. Kew!* *Zeyher 546 in Herb. Kew!* Zwartkop's River, Uitenhage, *Alexander Prior in Herb. Kew!* Van Staadens River, *Zeyher 2189 in Herb. Musei Austro. Afric.!* Wooded kloof, west of Grahamstown, Albany Div. *Burchell 3562 in Herb. Kew!* Grahamstown, *MacOwan in Herb. Kew!* Salatkraal not far from Grahamstown, Albany Div., *Ecklon and Zeyher 929 in Herb. Kew!* and in *Herb. Musei. Austro. Afric.!* Grahamstown, *Atherstone in Herb. Kew!* Stony Vale, *Dr. Gill in Herb. Kew!* Grahamstown, *Schlechter 2670 in Nat. Herb. Pretoria!* Katrivier, Winterberge (Ceded Territory) *Ecklon and Zeyher 930 in Herb. Kew!* In forest at Torstoni, Dist. Stutterheim, *Galpin 7808 in Nat. Herb. Pretoria!* Wooded krantz, Naboom River, near mouth, *Galpin 5666 in Nat. Herb. Pretoria!* Woods near Komgha, *Flanagan 893 in Nat. Herb. Pretoria!* and in *Herb. Musei Austro. Afric.!* and in *Herb. Bolus!* Faku's Territory, *Sutherland in Herb. Kew!* Qolora River, Kentani, *Pegler 1208 in Herb. Musei Austro. Afric.!* and in *Herb. Bolus!*

CENTRAL REGION: Stormberg, *Drège 6745b in Herb. Kew!*

KALAHARI REGION: Orange Free State, *Cooper 2158 in Herb. Kew!* Houtbosch, Transvaal, *Rehmann 6571 in Herb. Kew!* Wooded kloof, Pig's Peak, Swaziland, *Galpin 1335 in Herb. Bolus!* and in *Herb. Kew!* and in *Nat. Herb. Pretoria!*

EASTERN REGION: In valley near Chivenka River, Tembuland, *Bolus in Herb. Bolus!* Engcoba mountain, Tembuland, *Flanagan 2742 in Nat. Herb. Pretoria!* in mountain, Engcoba, Tembuland, *Bolus 8826 in Herb. Bolus!* and in *Herb. Kew!* Soukine Forest, Port St. Johns Dist. *Forester Boshoff in Herb. Forest Dept. No. 4993 in Nat. Herb. Pretoria!* Woods near Port St. Johns, *Flanagan 2563 in Herb. Bolus!* near Durban, *Wood in Govt. Herb. Natal 8850!* Palmiet, *Wood 11609 in Nat. Herb. Pretoria!* and in *Herb. Bolus!* and in *Herb. Maritzburg Univ. Coll. 1674!* Natal, *Gerrard 1372 in Herb. Kew!* Inanda, Natal, *Wood 1338 in Herb. Kew!* and in *Col. Herb. Natal 5732!* Natal and Zululand, *Gerrard 1586 in Herb. Bolus!* and in *Herb. Kew!*

WITHOUT LOCALITY: In *Govt. Herb. Natal 2849!*

When the fresh leaves of this plant are broken elastic strands of tissue are seen.

Sim (Forests and Forest Flora of Cape Colony (1907) 184) says of this plant: "It occurs throughout the forest and scrub districts of each conservancy, from the coast up to 6,000 feet, more usually as a gnarled shrub among rocks than as a forest tree; in some mountain patches it is one of the most abundant species, as at Cathcart and on the Drakensberg; it also occurs in Pondoland, Natal, and Transvaal. Though reserved in all the conservancies (under the name *Celastrus acuminatus*), the wood is not, so far as I am aware, used at all, probably on account of its small size and branched habit."

Pappe (Silva Capensis 8) says of this plant: "When polished it displays beautiful shades. To the joiner it furnishes a splendid material for fancy work; by the turner it will be found very serviceable for wooden screws, etc., as also by the manufacturer of musical instruments. In the colony it has hitherto chiefly been used by wheelwrights. . . . It is harder and tougher than the European yoke-elm."

Fourcade (Report on Natal Forests 100, 132) says of this plant: "Wood very heavy, hard, strong, very close-grained and compact, with close and narrow concentric bands of white tissue; medullary rays very fine and close; pores very small, irregularly distributed; colour pale pink tinged with brown; suitable for turner's work and engraving. . . . Weight per cubic foot, 60.6 lb.; relative hardness, 6.0."

"At Knysna elephants are very partial to the foliage of this tree, and numbers are pulled down by them, especially in the swampy places."

G. acuminata, var. **microphylla**, Davison comb. nov.

Celastrus acuminatus, var. *microphyllus*, Sond. in *Harv. and Sond. Fl. Cap.* i. 454; *Celastrus microphyllus*, Ecklon and Zeyher *Enum. Plant. Afric. Austro.* 928 non. Thunb.

COAST REGION: Avontuur (Uniondale), Marloth in *Herb. Marloth 10938!* Woodvale Forest, Gwatyn, Queenstown Div., Galpin 8085 in *Nat. Herb. Pretoria!* Hogsback Mt., King Williams Town Div. Rattray 294 in *Herb. Bolus!* Yellowwoods, Kaffraria, Sim 1193 in *Nat. Herb. Pretoria!* Fort Cunynghame, Bolus in *Herb. Bolus 8827!*

KALAHARI REGION: Leribe, Basutoland, Mrs. Dieterlen 553 in *Nat. Herb. Pretoria!* and in *Herb. Musei Austro. Afric. 3861!*

30. G. harveyana, Loesen. in *Bull. Herb. Boiss.* 4 (1896) 429.

A glabrous spinuous shrub. Branches of two kinds; the long ones striate-angular, greyish-brown, the twigs tetragonous; the short branches very abbreviated and bearing tufts of leaves. Spines very slender. Leaves alternate on the longer branches, tufted on the short branches, membranous, stipulate; stipules sub-filiform, about 2 mm. long; petiole 5-8 mm. long, slender; lamina 2-4.5 cm. long, 1-2.5 cm. wide, ovate or elliptic-rhomboid, rounded or slightly obtusely-acuminate, with a minute indentation at the apex (the leaves on the short shoots never acuminate) and a cuneate base; margin crenato-serrulate; venation closely reticulate, with the midrib and veins slender and prominent on both surfaces. Inflorescence frequently solitary in the axils of the leaves, cymose. Peduncle slender, 0.7-2 cm. long. Pedicel 1.5-2 mm. long. Flowers not seen. According to Loesener (in "Bull. de L'Herb. Boiss." 4, 431: "Sepals 5, rotundate, ciliate; petals and stamens 5; ovary 3-chambered." Fruit a dry capsule, 5-6 mm. long.

Variety Galpin 7840 (?).

COAST REGION: Near Mt. Cota, King Williamstown. Galpin 7840 in *Nat. Herb. Pretoria!* Kentani, Pegler 298 in *Herb. Kew!*

KALAHARI REGION: Slangaapies Mountains, Wakkerstroom, Burt-Davy in *Trans. Col. Herb. 3506!* along streams in dense shade, Barberton Mountains, Burt-Davy in *Trans. Col. Herb. 332!* and in *Herb. Bolus!* Modjadji, Pietersburg Div., Rogers 18114 in *Herb. Bolus!* Potatobosch No. 2013, Zoutpansberg, near stream, Burt-Davy in *Trans. Col. Herb. 1210!* Haenertsberg, road from Potatobosch to Zeederberg's Dam, Burt-Davy 1265 in *Herb. Bolus!* New Agatha, near Tzaneen, N. Transvaal, Rogers 18842 in *Herb. Kew!*

EASTERN REGION: Puffadder, E. Pondoland, *Sim 2485 in Herb. Bolus!* Natal, *Gerrard 285 in Herb. Kew!* Krantz Kloof, between Durban and Maritzburg, *Schlechter 3192 in Herb. Bolus!*

31. *G. crataegiflora*, Davison sp. nov. (Pl. XVIII.)

Arbores vel frutices, glabri, spinosi. Rami teretes, cano-fusci. Ramuli sub-angulati. Folia alterna, coriacea; petioli crassi, 2-3 mm. longi; laminae 3-7 cm. longae, 1.5-5 cm. latae; utrinque nervis elevatis, obovatae vel sub-orbiculatae, in basin cuneatae, apices rotundatae apiculatis brevibus; margines grossis serratis. Inflorescentia glomerata, densa; flores subsessili. Pedunculi circa 1 mm. longi, crassi, in fructe leviter longiori ad 5 mm. Flores 5-parti. Sepala 1-1.5 mm. longa, sub-orbiculata, marginibus fimbriatis. Petala 2.5-3.5 mm. longa, lato-obovata vel suborbiculata, carnosa. Filamenta 1 mm. longa, baso latiore. Discus carnosus, annularis, margine crenulato. Ovarium 3-loculare, ovula in loculis 2, erecta; stigmata 3-lobo, sessile. Fructus capsularis valvis ligniis tarde dehiscentis. Semina fusca, infra immersa in arilo ochro membranacea.

EASTERN REGION: Inanda, Natal, *Wood 212 in Herb. Kew!* and in *Herb. Bolus!* Natal and Zululand, *Gerrard 1379!* (?) *Wood 517 in Herb. Bolus!*

EASTERN REGION: Inanda, Natal, *Wood 212 in Herb. Kew!* and in *Herb. Bolus!* *Wood 517 in Herb. Bolus!*

WITHOUT LOCALITY: *Fourcade in Herb. Fourcade!*

32. *G. angularis*, Sim Forest and Forest Flora Cape Col. 1907, 186.

Pegler in Ann. Bolus Herb. ii, 13 (name only). Celastrus angularis, Sond. in Harv. and Sond. Fl. Cap. i. 460.

A glabrous much-branched sparsely spiny shrub about 3-6 feet high. Branches of two kinds: the long ones distinctly striated; the short ones very much abbreviated and bearing tufts of leaves and inflorescences. Twigs angular-striated. Spines present only on the young flowerless shoots, very small and not more than 2 cm. long. Leaves usually tufted, thinly coriaceous; petiole 1-3 mm. long; lamina 0.7-3 cm. long, 0.2-2 cm. wide, usually spatulate-obovate, rounded, emarginate, often with a recurved point at the apex, cuneate, veinless on the upper surface, but the veins distinct on the under surface and with a spinuloso-serrate margin. Inflorescence cymose, solitary or several together, fairly lax. Peduncle 0.3-1 cm. long. Pedicels 2-3 mm. long. Flowers 5-parted. Sepals 0.75 mm. long, sub-orbicular, with a laciniated margin. Petals 2 mm. long, elliptic or broadly oblong, with a slightly laciniated undulate margin and brown veins down the centre. Filaments 1 mm. long. Disc fleshy, annular, with a slightly lobed margin. Ovary 3-chambered, with 2 ovules in each chamber; style 0.5 mm. long; stigma shortly 3-lobed. Fruit a dry capsule about 3 mm. long.

COAST REGION: Van Staadens, *Zeyher 2182 in Herb. Musei Austro. Afric.!* Hills at Grahamstown, *Alexander Prior in Herb. Kew!* Hillsides, Grahamstown, *Galpin 340 in Nat. Herb. Pretoria!* Dassie Krans, Grahamstown, *Galpin 2916 in Nat. Herb. Pretoria!* Albany, *Atherstone 104 in Herb. Kew!* Grahamstown, *Pappe in Herb. Kew!* Mountains near Grahamstown, *MacOwan 712 in Nat. Herb. Pretoria!* and in *Herb. Bolus 712!* and in *Herb. Musei Austro. Afric.!* Shrubby places near Komgha, *Flanagan 474 in Nat. Herb. Pretoria!* and in *Herb. Musei Austro. Afric.!*

KALAHARI REGION: Transvaal, *Sanderson in Herb. Kew!* Pilgrim's Rest, Lydenburg, Transvaal, *Rogers 14872 in Herb. Bolus!*

EASTERN REGION: Tugela, *Haygarth (Wood No. 1008) in Govt. Herb. Natal 10909!* Natal, *Gerrard 1375 in Herb. Kew!* Clairmont Flat, Natal, *Wood 7859 in Herb. Bolus!* and in *Herb. Kew!* and in *Nat. Herb. Pretoria!* Inanda, Natal, *Wood 633 in Herb. Kew!* *Wood 633 and in Col. Herb. 5734!* and in *Herb. Musei Austro. Afric.!* and in *Herb. Bolus!* *Wood in Govt. Herb. Natal 2066!* Mount Edgecombe, Inanda, Natal, *Wood 1139 in Herb. Kew!* *Wood 1139 and in Col. Herb. Natal 5735!* near Grooms, Inanda, *Wood 1672 in*



Plate XVIII.

Gymnosporia crataegiflora, Davison.

(Wood 212.)

Col. Herb. Natal 5736! Dumisa Station, Alexandra, Natal, *Rudatis 543 in Herb. Kew!* Pinetown, Natal, *Wood in Herb. Musei Austro. Afric. No. 1119* and *in Herb. Kew!* and in *Herb. Musei. Austro Afric. 1119!* Tongaat, North Coast, Natal, *Wood 8373* and *in Govt. Herb. Natal 9116!* Zululand, *McKenzie in Herb. Kew!* Natal, *Saunders in Herb. Bolus!*

WITHOUT LOCALITY: *Gerrard and McKen 1376 in Govt. Herb. Natal 620!*

G. angularis, Sim. var. **orbiculata**, Davison.

Leaves often measuring up to 3.5 cm. more or less orbicular.

COAST REGION: In scrub on sea coast at East London, *Galpin 1870 in Herb. Kew!* and *in Nat. Herb. Pretoria!* Kei Bridge, Komgha Div., *Mason in Herb. Kew!* Outskirts of woods, Kentani, *Pegler 741 in Herb. Kew!* and *in Herb. Bolus!* and in *Herb. Musei. Austro Afric.!* Kentani, *Pegler 1244 in Herb. Bolus!*

EASTERN REGION: Dumisa Station, Alexandra Dist., Natal, *Rudatis 1117 in Herb. Kew!* Eastern Districts, *Cooper 144 in Herb. Kew!* Natal and Zululand, *Gerrard 1377 in Herb. Kew!*

G. angularis, Sim. var. **grandifolia**, Davison.

Twigs sub-terete, not angular and striated. *Leaves* always more than 2 cm. long, measuring up to 8 cm., obovate, with the midrib and lateral veins raised and very distinct below.

COAST REGION: Pirie Forest, *Galpin 5917 in Herb. Kew!* and in *Nat. Herb. Pretoria!* Pirie, *Sim 1318 in Herb. Bolus!* Kingwilliamstown, *Tyson in Herb. Bolus!* Woods near Komgha, *Flanagan 316 in Nat. Herb. Pretoria!* Prsopect Farm near Komgha, *Flanagan in Herb. Musei Austro. Afric. 3608!*

This variety may form a separate species intermediate between *G. angularis* and *G. nemorosa*. The material available is insufficient to warrant a new species being formed on it, and it appears wiser to retain this as a variety of *G. angularis* as the inflorescence is very similar, until more complete material has been seen.

33. G. nemorosa, Syzsz. "Enum. Polypet. Rehmann" ii, 34 (1888).

Celastrus nemorosus, E. and Z. *Sond. in Harv. and Sond. Fl. Cap. i. 460.*

A glabrous spiny shrub. *Branches* of two kinds; the long ones terete, greyish-brown, somewhat verrucose; the short ones very abbreviated, bearing tufts of leaves and the inflorescences. *Twigs* sub-angular. *Spines* strong, up to 5 cm. long, borne on and below the flowering branches. *Leaves* alternate or tufted, sub-coriaceous; petiole 2-8 mm. long; lamina 3-6.5 cm. long, 1.5-3.5 cm. wide, obovate or elliptic above the shortly narrowed base, about twice as long as broad, somewhat glaucous above, rounded at the apex or slightly emarginate, with a shortly cuneate base, with distinct venation, and with a dentato-serrate margin. *Inflorescence* cymose, lax, solitary, or 2-3 together. *Peduncle* 0.5-2.5 cm. long, slender. *Fruiting pedicel* 0.8-1 cm. long, slender. *Flowers* 5-parted. *Sepals* 1-1.5 mm. long, sub-orbicular, with the margin lacinated at the rounded apex and half-way down. *Petals* 2-2.5 mm. long, broadly oblong, with an uneven undulate margin. *Filaments* 1 mm. long. *Disc* fleshy, collar-like round the base of the ovary and with a slightly lobed margin. *Ovary* 3-chambered, with 2 ovules in each chamber; style 0.25-1 mm. long; stigmas 3, linear. *Fruit* not seen.

COAST REGION: Knysna, *Burchell 5524* and *5526 in Herb. Kew!* Katjes Kraal, Knysna Div., *Burchell 5238 in Herb. Kew!* near seashore, Plettenberg Bay, *Fourcade 1050 in Herb. Fourcade!* forest east of Clarkson, Zitzikamma, *Fourcade 1404 in Herb. Fourcade!* Krakamma, Addow and Olifantshoek, Uitenhage, *Ecklon and Zeyher 938 in Herb. Musei. Austro. Afric.!* Howisonspoor near Grahamstown, *Zeyher 2183 in Herb. Musei. Austro Afric.!* Grahamstown, *Burchell 3593 in Herb. Kew!* *Zeyher 2184 in Herb. Musei. Austro Afric.!* MacOwan in *Herb. Kew!* Junction Farm, Gwatyn, Queenstown Dist., *Galpin 8087 in Nat. Herb. Pretoria!* Kingwilliamstown, *Sim 1145 in Herb. Bolus!* Forest, Baziya Mt., Kaffraria, *Baur 124 in Herb. Kew!*

EASTERN REGION: (North of Entufufu Drift, main road, Lusikiski Dist., *Miller in Herb. Forest Dept.* 4453!; Port Natal, *Grant in Herb. Kew!* sea coast near Durban, *Wood 11408 in Herb. Bolus!* and in *Herb. Musei Austro. Afric.* 3898! and in *Govt. Herb. Natal 12429!* Berea, Durban, in *Govt. Herb. Natal 15468!* *Wood 11864 in Govt. Herb. Natal 12487!* Springfield, *Wood in Govt. Herb. Natal 15741!* Inanda, Natal, *Wood 1297 in Herb. Bolus!* Natal, *Cooper 2165 in Herb. Kew!* near Stanger, *Wood in Govt. Herb. Natal 3433!* Natal and Zululand, *Gerrard 1588 in Herb. Kew!*

34. G. heterophylla, Loesen. in Engler Prantl Nat. Pflanzfam. iii, 5, 207.

Celastrus heterophylla, Eck. and Zeyh. ex Sond. *Fl. Cap.* i. 458 (excl. var. *glomeratus*); *C. cymosus* 948 and (*C. parvifolius* 949) Eck. and Zeyh. *l.c.* names only; *Catha heterophylla* and *C. cymosa*, Presl *Celastrus glomeratus*, E. Mey. in *Drège Zwei Pfl. Docum.* 146 (name only).

A glabrous much-branched spiny shrub 2-3 feet high. *Branches* sub-angular, striated. *Spines* slender, reaching a length of about 1.5 cm. *Leaves* alternate, never fasciculate, sub-coriaceous, varying very much in size and shape even on the same branch; petiole 1-2 mm. long; lamina 0.8-3 cm. long, 0.4-2 cm. wide, elliptic to sub-orbicular, acute or obtuse, with an apiculate point, narrowed slightly at the base, with the veins distinct on the under surface and a sub-entire or spinuloso-serrate margin. *Inflorescence* cymose, sub-sessile, rather dense. *Pedicels* 1.5-2 mm. long; fruiting pedicels short and stout. *Flowers* 5-parted. *Sepals* 1 mm. long, sub-orbicular, with a lacinated margin. *Petals* 2.25 mm. long, broadly oblong, with an uneven undulate margin. *Filaments* 1.5 mm. long. *Disc* fleshy, annular, with a slightly crenulate margin. *Ovary* 3-chambered, with 2 ovules in each chamber; style 0.25-0.5 mm. long; stigma obsoletely 3-lobed. *Fruit* a trigonous dry capsule about 5 mm. long. *Seed* covered with a thin yellow aril.

COAST REGION: Gamtoos River, *Schlechter 6043 in Herb. Bolus!* Addow, Uitenhage, *Ecklon and Zeyher 949 in Herb. Musei. Austro. Afric.!* Addow, Uitenhage, Zwarthoogdens between Hassagaybosch and Grahamstown (Albany), *Ecklon and Zeyher 1948 in Herb. Kew!* and in *Herb. Musei Austro. Afric.!* Albany Dist., *Cooper 1523 in Herb. Kew!* Bothasberg (Albany), *Zeyher 16 in Herb. Musei Austro. Afric.!* Bosjemansrivier, *Zeyher 2181 in Herb. Musei Austro. Afric.!* among bushes on kloof about Grahamstown, *without Collector in Herb. Kew No. 94!* Kingwilliamstown, *Tyson 1049 in Herb. Musei Austro. Afric. 5524!* Between Gekau and Bashee River, Transkei, *Drège in Herb. Kew!*

35. G. buxifolia, Szysz. Enum. Polypet. Røhm. 2, 34 (1888).

Pegler Ann. Bolus Herb. ii, 13 (name only). *Celastrus buxifolius*, Linn. *Sp.* 285; *Sond. in Harv. and Sond. Fl. Cap.* i. 459; *Thunb. Prod.* 42; *Thunb. Fl. Cap.* 220; *Houtt. Pfl. Syst.* 3 t. 21 f. 1; *Catha buxifolia*, Presl *Bot. Bem.*; *Celastrus rhombifolius* E. and Z. *Sond. in Harv. and Sond. Fl. Cap.* i, 460, var. *geminus*, *Sond. in Harv. and Sond. Fl. Cap.* i, 459; *Celastrus cymosus* Sol. *Bot. Mag.* 2070, *spinis nudis*; *Celastrus multiflorus*, *Ecklon and Zeyher Enum. Plant. Afric. Austr.* 951, *spinis floriferis*, var. *laxiflorus*, *Sond. in Harv. and Sond. Fl. Cap.* i, 459; *Celastrus patens* and *spathaephyllus*, *Ecklon and Zeyher l.c.* 939, 950; *E. leptopus*, *Bernh. in Hb. Krauss*; *Catha patens* and *spathophylla*, Presl., var. *venenatus*, *Sond. in Harv. and Sond. Fl. Cap.* i, 459; *Celastrus venenatus*, *Ecklon and Zeyher, l.c.* 952; *Catha venenata*, Presl, var. *empleurifolius*, *Sond. in Harv. and Sond. Fl. Cap.* i, 459; *Celastrus empleurifolius*, *Ecklon and Zeyher l.c.* 953, *fol. membranaceis*; *C. polyanthemos*, *Ecklon and Zeyher, l.c.* 954, *fol. coriaceis*. *Celastrus buxifolius*, *humilis* and *parvicaulis*, *Ecklon and Zeyher Enum. Plant Afric Austr.* 942, 944, 940.

An extremely variable glabrous much-branched shrub, either almost spineless or bearing numerous strong spines reaching a length of 10 cm. *Branches* of two kinds; the long ones terete, not striated, with smooth greyish-white bark when young, becoming darker and fissured on the older branches; the short ones very abbreviated and bearing tufts of leaves and inflorescences. *Spines* very strong and often bearing leaves and inflorescences. *Leaves* alternate or tufted, sub-membranous or coriaceous, green or greenish-glaucous; petiole

2-6 mm. long; lamina 1.8-6 cm. long, seldom exceeding 6 cm., 0.6-2.5 cm. wide, always more than twice as long as broad, obovate or oblanceolate above the cuneate base, obtuse or emarginate, veiny on both sides, with a serrate or crenulate margin. *Inflorescence* cymose, borne usually on the short shoots, usually much branched, but varying very much in size and the number of flowers. *Peduncle* usually stout and varying from 0.2-1.5 cm. in length, absent in var. *glomeruliflora*. *Fruiting pedicels* usually much less than 5 mm. long. *Flowers* 5-parted. *Sepals* sub-orbicular, with lacinated margins; the 2 outer 0.5-1 mm. long; the 3 inner 1-1.5 mm. long. *Petals* 2.5-4 mm. long, elliptic or broadly oblong, with a ciliated margin. *Filaments* 2-2.5 mm. long, dilated at the base. *Disc* fleshy, annular, with a crenulate margin. *Ovary* 3-chambered, with 2 ovules in each chamber; style 0.25 mm. long; stigma obsoletely 3-lobed. *Fruit* a dry 3-locular capsule varying in size, usually the size of a small pea and very woody.

COAST REGION: Olifant's River, Clanwilliam Div., *Dickson in Herb. Bolus 5609!* and *in Herb. Kew!* Tafelberg, Cape, *Ecklon and Zeyher 942 in Herb. Musei Austro. Afric.!*; Table Mountain, Cape of Good Hope, *John MacGillivray 616 in Herb. Kew!* Devil's Mt., Capetown, *Ecklon and Zeyher 945 in Herb. Musei Austro. Afric.!* Devil's Peak, near cataract, *Pappe in Herb. Musei Austro. Afric.!* Waterfall, Devil's Peak, *Wolley-Dod 1950 in Herb. Bolus!* and *in Herb. Kew!* Simon's Bay, *Milne 144 in Herb. Kew!* Cape of Good Hope, *Cooper 230 in Herb. Kew!* Elands-kloof, Caledon, *Ecklon and Zeyher 951 in Herb. Musei. Austro Afric.!* in plains between Kockmans-kloof and Gauritz River, Swellendam, *Ecklon and Zeyher 951 in Herb. Musei Austro. Afric.!* River banks near Congo, Oudtshoorn Dist., *Bolus in Herb. Bolus 11748!* Langekloof, George, *Ecklon and Zeyher 953 in Herb. Musei. Austro. Afric.!* Mundo in *Herb. Musei Austro. Afric.!* Seven Weeks Poort, Zwartbergen Mts., *Phillips 1418* and *in Herb. Musei Austro. Afric. 9155!* Banks of Keurboom River, Knysna *Bolus!* *Fourcade 1061 in Herb. Fourcade!* and *in Herb. Kew!* Knysna, *Schlechter 5896 in Herb. Bolus!* Hills below Assegai Bush and Essensbosch, Humansdorp Div., *Fourcade 1894 in Herb. Fourcade!* and *in Herb. Kew!* Humansdorp, *Rogers 2986 in Herb. Bolus!* Hills near Humansdorp, *Fourcade 1030 in Herb. Fourcade!* and *in Herb. Kew!* Hillsides, Humansdorp, *Galpin 3881 in Nat. Herb. Pretoria!* and *in Herb. Kew!* Malabasshoogde and Hersguaskloof (Humansdorp), *Zeyher 2182 bis in Herb. Musei Austro. Afric.!* Zwartkops River, Uitenhage, *Ecklon and Zeyher 944 in Herb. Musei Austro. Afric.!* Zwartkops Uitenhage, *Zeyher 246 in Herb. Musei Austro. Afric.!* and *in Herb. Kew!* Zwartkops River, Uitenhage, *Ecklon and Zeyher 952 in Herb. Musei Austro. Afric.!* Gamtoos River, Uitenhage, *Ecklon and Zeyher 954 in Herb. Musei Austro. Afric.!* Krakakamma, Uitenhage, *Zeyher in Herb. Musei Austro. Afric.!* *Ecklon and Zeyher 940 in Herb. Musei Austro Afric.!* Uitenhage, Div., I. L. Drège in *Govt. Herb. Pretoria 3486!* and *in Herb. Kew!* Witteklip, Uitenhage, *Bolus in Herb. Bolus 9137!* Blaauw Krantz, Bathurst Div., *Burchell 5654 in Herb. Kew!* Blaauw Krantz, Zitzikamma, *Fourcade 1229 in Herb. Fourcade!* and *in Herb. Bolus!* coast forest, Storm's River, Zitzikamma, *Fourcade 381 in Herb. Kew!* in forest, Groot River, Zitzikamma, *Fourcade 653 in Herb. Fourcade!* and *in Herb. Kew!* near Grahamstown, *MacOwan 124 in Herb. Musei Austro. Afric.!* near Lesseyton Nek, Queenstown, *Galpin 2164 in Nat. Herb. Pretoria!* and *in Herb. Kew!* Kingwilliamstown, *Sim 1962 in Herb. Bolus!* British Kaffraria, *Cooper 230 in Nat. Herb. Pretoria!* and *in Herb. Kew!* Prospect Farm, hill-sides near woods near Komgha, *Flanagan 325 in Nat. Herb. Pretoria!* and *in Herb. Musei Austro. Afric.!* and *in Herb. Kew!* Chumiesberg, Kafferland, *Ecklon and Zeyher 939 in Herb. Musei. Austro Afric.!* Kentani, *Pegler 58 in Herb. Bolus!* near Kentani, *Pegler 1207 in Herb. Bolus!*

CENTRAL REGION: Zwarthilletje, Prince Albert Div., *Drège in Herb. Kew!* Prince Albert Div., *Drège in Herb. Kew!* between Zuurberg Range and Klein Bruintjes Hoogte, Somerset Div., *Drège in Herb. Kew!* Blyde River, Somerset Div., *Burchell 2962 in Herb. Kew!* Somerset Div., *Burchell 3113* and *3067 in Herb. Kew!* by watercourses, Graaff-Reinet, *in Herb. Bolus 26!* Nieuweveld, Beaufort West, *Drège in Herb. Kew!* Papkuil, *Wilman in Herb. Musei. Austro Afric. 25342!*

WESTERN REGION : Sandy river beds, Amiet, *Pearson 9853 in Herb. Kew!* among rocks near water in Kloms Ravine, Khamiesberg, *Pearson 6644 in Herb. Bolus!* and in *Herb. Kew!* roadside between Brakdam and Rietkloof, Namaqualand, *Pearson 5672 in Herb. Kew!*

KALRHARI REGION : Near Griqualand, *Burchell 1703!* and *1705 in Herb. Kew!* Griqualand West, *Burchell 2632 in Herb. Kew!* Harrismith, Orange Free State, *Sankey 240 in Herb. Kew!* Bethlehem, *Potgieter 80 in Nat. Herb. Pretoria!* and in *Herb. Kew!* Bethlehem, *Phillips 3154* and in *Nat. Herb. Pretoria 1121!* and in *Herb. Kew!* Schoonheid 170, in Bloemhof Dist., *Burt-Davy 9406 in Transv. Herb.!* and in *Herb. Kew!* Leribe, Basutoland, *Dieterlen 6813 in Herb. Kew!* *75b in Nat. Herb. Pretoria* and in *Herb. Kew!* and in *Govt. Herb. Natal 13861!* *75a in Nat. Herb. Pretoria!* and in *Herb. Musei. Austro Afric. 6813!* and in *Herb. Kew!* Kookfontein, Vereeniging, *Burt-Davy 15137 in Herb. Bolus!* Pretoria, *Wilms 219 in Herb. Kew!* Pretoria Kopjes, *Leendertz 186 in Herb. Bolus!* Irene Rogers *11408 in Herb. Bolus!* and in *Herb. Kew!* Aapies Poort, Pretoria, *Rehmann 4080* and *4082 in Herb. Kew!* Wonderboom, about four miles from Pretoria, *Phillips 3030 in Nat. Herb. Pretoria!* and in *Herb. Musei. Austro. Afric 16864!* and in *Herb. Kew!* Matebe Valley, Transvaal, *Holub in Herb. Kew!* Struben's Farm, Lynwood, Pretoria Dist., *Mogg in Transv. Herb. 11482!* and in *Herb. Kew!* Daspoort, Pretoria Dist., *Burt-Davy 1179 in Transv. Herb!* and in *Herb. Kew!* Rivers Creek, Barberton, *Galpin 515 in Herb. Bolus!* and in *Nat. Herb. Pretoria!* and in *Herb. Kew!* Sheba Valley, near Barberton, *Galpin 1104 in Herb. Bolus!* Springbok Flats, southern slopes of Nek, Waterberg Dist., *Burt-Davy 1730* and in *Transv. Herb. 2729!* and in *Herb. Kew!* Mosdene, Naboomspruit, Waterberg Dist. *Galpin M 54 in Herb. Musei. Austro Afric. 19192!* Burns on rise between M'Kethalegi Spruit and White M'Belusi, Swaziland, *Burt-Davy 10631 in Transv. Herb!* and in *Herb. Kew!*

EASTERN REGION : Fort Donald, Griqualand East, *Sister Stephany 631 in Herb. Bolus!* Durban, Natal, *Wood 8299 in Nat. Herb. Pretoria!* and in *Herb. Kew!* Around Durban, *Sanderson 414 in Herb. Kew!* Station Dumisa, Alexandra Dist., Natal, *Rudatis 660 in Herb. Kew!* Verulam, Natal, *Wood 604 in Herb. Bolus!* and in *Herb. Kew!* Umzingati Falls, *Wood 11504 in Herb. Kew!* and in *Govt. Herb. Natal 12412!* Natal, *Wood in Herb. Kew!* *Gerrard 55* and *581 in Herb. Kew!* Inanda, Natal, *Wood 685* and *499 in Herb. Kew!* *Wood 685* and in *Col. Herb. Natal 5955!* Port Natal, *Gueinzus in Herb. Kew!* *Harvey in Herb. Kew!* around Durban, Natal, *Wood 69 in Herb. Kew!* coastland, Natal, *Sutherland in Herb. Kew!* Winklespruit, South Coast, Natal, *Franks in Govt. Herb. Natal 12987!* Pinetown, Natal, *Wood 8795 in Herb. Bolus!* Springfield, Natal, *Wood 12813* and in *Govt. Herb. Natal 15984!* Malvern, *Wood 10097* and in *Govt. Herb. Natal 10907!* Natal and Zululand, *Gerrard 1378* and *1379 in Herb. Kew!* roadside near Somkele Rail, Klabisa, *Aitken and Gale 24 in Nat. Herb. Pretoria!* and in *Herb. Kew!* Ilala Veld, north of Mkuzi River, Ubombo, *Aitken and Gale 16 in Nat. Herb. Pretoria!* and in *Herb. Kew!* near edge of bush, E. Ingwavuma, *Aitken and Gale 54 in Nat. Herb. Pretoria!* and in *Herb. Kew!* Entumani, Zululand, *Wood 9364 in Nat. Herb. Pretoria!* and in *Herb. Kew!* Skilouvane, *Junod 579 in Herb. Kew!*

RHODESIA : Suburbs, Bulawayo, *Zealley 18 in Herb. Bolus.*

WITHOUT LOCALITY : *Wallich in Herb. Kew!* *Thom 155* and *184* and *113 in Herb. Kew!* *Alexander Prior in Herb. Kew!* *Zeyher 2179* and *304 in Herb. Kew!* *Gill in Herb. Kew!* *Baur in Herb. Marloth 8694!* *Gerrard and McKen in Govt. Herb. Natal 621!*

Sim, in "Forest and Forest Flora of Cape Colony," 186, says of this plant : "*Gymnosporia buxifolia* is abundant from Capetown eastward through all the conservancies, and from the coast up to 5,000 feet, seldom in dense forest, but seldom absent from the forest environs or from rocky scrub ; it occurs also on Karroo kopjes and on the Drakensberg and other mountains, and extends to Natal and Transvaal."

This is an exceedingly variable species and also a very widespread one. It varies not only in the size of the plant but also in the size of the spines, leaves, inflorescence and

flowers. It is distinguished from *G. senegalensis* by the smaller and greener leaves. In *G. senegalensis* the leaves are glaucous to whitish and have a very finely-serrated margin, It is distinguished from the species preceding it in the key by the pronounced obovate leaves.

Sonder ("Flora Capensis" i, 459) describes four varieties, only one of which is retained, viz. *glomeruliflorus*. The differences are hardly distinguishable and the specimens merge into each other too much to warrant retaining these varieties.

G. buxifolia var. **glomeruliflora**, Davison, comb. nov.

Celastrus buxifolia var. *glomeruliflora*, Sond. in *Harv. and Sond. Fl. Cap.* i, 459.

A glabrous almost unarmed shrub. *Inflorescence* much-branched, sub-sessile, dense and much shorter than the leaf.

COAST REGION: Gametoos River, *Dr. Gill!*

36. G. senegalensis, Loesen. in *Engl. Bot. Jahrb.* 17 (1893), 541.

Celastrus senegalensis, Lam. *Oliv. Fl. Trop. Afr.* i, 361.

A glabrous glaucous or glaucescent shrub, from 1-10-15 feet high, unarmed or spinous. *Branches* of two kinds; the long ones terete, whitish or greyish-white, with the bark smooth when young, fissured when older; the short branches very abbreviated, bearing tufts of leaves and inflorescences. *Spines* either short and slender or stout and reaching a length of 7-10 cm. *Leaves* alternate, rarely tufted on the short branches, coriaceous, very variable as to size; petiole 0.3-1 cm. long; lamina 2-10 cm. long, usually over 6 cm. long, 1.3-4.5 cm. wide, obovate or oblanceolate above the very cuneate base, rounded or submarginate, sometimes sub-acute and mucronate, grey, glaucous to whitish, with distinct venation and very closely and finely serrate denticulate margins. *Inflorescence* cymose, solitary or fascicled, usually much branched and shorter than the leaves, fairly compact or lax. *Peduncle* 0.2-1.2 cm. long. *Fruiting pedicel* stout, usually less than 5 mm. long. *Flowers* 5-parted, varying in size. *Sepals* 0.25-0.5 mm. long, sub-orbicular, with a lacinated margin. *Petals* 1-3.5 mm. long, broadly oblong, distinctly veined, with a fimbriate undulate margin. *Filaments* extremely short or 1 mm. long. *Disc* fleshy, annular, with a crenulate margin. *Ovary* usually 2-chambered, occasionally 3-chambered; style very short; stigma 2-lobed, occasionally 3-lobed. *Fruit* a dry capsule 4-5 mm. long.

WESTERN REGION: Erongo Mts., *Pearson 9853* and in *Herb. Musei. Austro Afric. 12041!* and in *Herb. Bolus!*

KALAHARI REGION: South African Gold Fields, *Baines in Herb. Kew!* Smit's Drift, *Pole Evans H. 15730* and *H. 15732* in *Herb. Kew!* In gullies around Barberton, *Galpin 514* in *Herb. Bolus!* Pietpotgietersrust, Transvaal, *Leendertz 1286* in *Herb. Bolus!* South side of the Limpopo above Peerie's Kraal, *Baines in Herb. Kew!* Between Delagoa Bay and Pretoria, *Bolus 7698* in *Herb. Bolus* and in *Herb. Kew!*

EASTERN REGION: Lobito Bay, near Benguella, *Bolus in Herb. Bolus 12450!*; About fifteen miles from Lourenco Marques, Delagoa Bay, *Bolus 7699* in *Nat. Herb. Pretoria!* and in *Herb. Bolus* and in *Herb. Kew!* Lourenco Marques, Delagoa Bay, *Bolus 7700* in *Herb. Bolus!* and in *Herb. Kew!* About eighteen miles from Lourenco Marques, Delagoa Bay, *Bolus 7701* in *Herb. Bolus!* and in *Herb. Kew!* Polana, Lourenco Marques, *Borle 14* in *Nat. Herb. Pretoria!* Catembe, Lourenco Marques, *Borle 120* in *Nat. Herb. Pretoria!*

RHODESIA: "The World's View," Matopo Hills, near Bulawayo, *Galpin 7077* in *Nat. Herb. Pretoria!* and in *Herb. Bolus!* Matopos Hills, *Rogers 5244* in *Herb. Bolus!* Main Street, Bulawayo, *Zealley 80* in *Herb. Bolus!* Bulawayo, *Holte* in *Herb. Bolus 4359!* Islands near Victoria Falls, *Allen 411* in *Nat. Herb. Pretoria!* Banks of the Zambesi, above the Falls, *Lamb 2406* in *Herb. Bolus!* Livingstone, N. bank of Zambesi, N.W. Rhodesia, *Rogers 7420* in *Herb. Bolus!* Vleiand N'dola, N.W. Rhodesia, *Allen 384* in *Nat. Herb. Pretoria!* Odanzi River Valley, Div. Umtali, *Teague 32* in *Herb. Bolus!* and in *Herb. Kew!* Lomagundi, Rhodesia, *Eyles 3148* in *Herb. Musei. Austro Afric. 18531!* Salisbury,

Rhodesia, *Eyles 1655* and in *Herb. Musei. Austro Afric. 17529! 649* and in *Herb. Musei. Austro. Afric 11578!* Chilanga, N. Rhodesia, *Rogers 8523* and in *Herb. Musei. Austro. Afric 8922!* and in *Herb. Bolus!*

Probably *Gymnosporia* sp.

The material of this specimen is very scanty. From its general appearance and the structure of the flowers, I should place it as a *Gymnosporia*. There are not fruits, however, and the flowers are not quite mature, so for the present it would be safer not to place it definitely in the key. The following is a description of the specimen as far as the material goes:—

Twigs sub-angular, greyish-brown. *Leaves* alternate, coriaceous; petiole 2–3 mm. long; lamina 1.5–2.5 cm. long, 1–1.8 cm. wide, obovate or rounded obovate, cuneate, rounded or sub-actute, with serrate margins and distinct venation. *Inflorescence* fasciculate; fascicles few-flowered and the flowers sub-sessile. *Flowers* 5-parted, immature. *Sepals* sub-orbicular, with a laciniated margin. *Petals* sub-orbicular. *Disc* saucer-like. *Ovary* 3-chambered. *Stigmas* 3, sub-sessile. *Fruit* not seen.

KALAHARI REGION: Transvaal, *Rehmann 6518*.

If, when further material is available, this is definitely placed as a *Gymnosporia*, it should be inserted in the key immediately after *G. undata*, Szysz., from which it may be distinguished by the leaves not exceeding 2.5 cm. in length and the inflorescence being few-flowered, with sub-sessile flowers while in *G. undata* the leaves are from 3–7 cm. long and the fascicles are many-flowered, with the pedicels at least 0.5 cm. long.

2. PTEROCELASTRUS, Meissn.

Unarmed shrubs or trees with brownish-grey terete branches and angular twigs. *Leaves* alternate, coriaceous, petiolate, lanceolate, oblong-lanceolate, elliptic-lanceolate or obovate, obtusely-acuminate or obtuse, sometimes rugose on the under surface. *Inflorescence* a lax or dense-flowered cyme. *Flowers* 5-parted. *Sepals* unequal, with a laciniated margin. *Petals* often brown-flecked. *Disc* fleshy, obsoletely 5-lobed and half enveloping the ovary. *Ovary* 3-chambered, occasionally 2-chambered with 2 erect ovules in each chamber; style terminal. *Fruit* a dry dehiscent capsule, with abrupt horns or wing-like outgrowths which may be variously divided.

Inflorescence a lax, much-branched cyme, up to about half as long as the leaves; flowers fairly large; leaves lanceolate or oblong-lanceolate, obtusely acuminate.

Inflorescence 4–5 times dichotomously branched, few-flowered, compact; peduncle 5–7 mm. long; capsule with 3–6 simple abrupt horns..... 1. *Galpinii*.

Inflorescence many times branched, many-flowered, loose; peduncle 1–2 cm. long; capsule armed with numerous compressed, wing-like patent or decurrent horns..... 2. *rostratus*.

Inflorescence a dense-flowered short cyme; the flowers very small, with short stout pedicels; leaves elliptic to obovate, rarely slightly acuminate.

Leaves rather small, rarely up to 5 cm. long; oblong-lanceolate to elliptic-lanceolate.

Leaves oblong-lanceolate not exceeding 1 cm. in width; horns of fruit very short, not decurrent..... 3. *Rehmannii*.

Leaves elliptic or oblanceolate, 1–2 cm. wide..... 4. *echinatus*.

Leaves usually well over 5 cm. long, obovate..... 5. *tricuspidatus*.

1. *P. Galpinii*, Loes. in Engl. Bot. Jahrb. 41, 308 (1908), *Loesen. in Bull. Herb. Boiss. IV; 431*.

A shrub about 10 feet in height. The old branches terete, brownish-grey, with striated bark; twigs alternate, angular. *Leaves* alternate, coriaceous; petiole 3–5 mm. long;

lamina 4·5–7 cm. long, 1–2·2 cm. wide; lanceolate, obtusely acuminate, mucronate, cuneate at the base, sometimes oblique, paler beneath, glabrous, with the margin entire, slightly revolute, and the midrib prominent on both surfaces; the lateral veins more prominent on the under surface and converging at the margin. *Inflorescence* a 4–5 times dichotomously branched, few-flowered compact cyme up to about half as long as the leaves. *Peduncle* 5–7 mm. long. *Flowers* fairly large, 5-parted. *Sepals* unequal; 2 exterior 0·5 mm. long; 3 interior 1 mm. long. *Petals* 2·5 mm. long, oval or oblong-oval with irregular margins, pale yellow at the apex, speckled with brown in the centre from the base to about three-quarters of the way up. *Filaments* half as long as the petals, incurved. *Disc* fleshy, obsoletely 5-lobed, enveloping half the ovary and with the stamens inserted in the shallow sinuses. *Ovary* 2–3-chambered, with 2 ovules in each chamber; stigma sub-sessile shortly 2–3-lobed. *Fruit* a capsule, with 2–6 simple abrupt horns.

KALAHARI REGION: Rimer's Creek, Barberton, *Galpin 448 in Herb. Kew!* and in *Nat. Herb. Pretoria!* and in *Herb. Bolus!* Berlin, Kaapsche Hoop, *Hofmeyr 9 in Nat. Herb. Pretoria!*

2. *P. rostratus*, Walp. Rep. i, 535; *Sond. in Harv. and Sond. Fl. Cap. i, 463.*

Celastrus rostratus, *Thunb. Fl. Cap. ed. Schultz (1823) 218*; *Asterocarpus rostratus*, *Ecklon and Zeyher Enum. Pl. Afric. Austr. 963, p. 123*; *Pterocelastrus rostratus*, *Presl Bot. Bem.*; *Asterocarpus tricuspoidatus*, *Ecklon and Zeyher Enum. Pl. Afric. Austr. 964, p. 124. excl. syn.*

A tree 20 feet high, with diameter of 1–2 feet breast high. *Branches* terete, dark grey; twigs angular. *Leaves* alternate, coriaceous; petiole 5–7 mm. long; lamina 4·5–7·5 cm. long, 1·4–3·3 cm. wide, oblong-lanceolate, obtusely acuminate, emarginate, cuneate at the base, shining above, paler and dull beneath, glabrous, with the midrib raised on the upper surface, lateral veins more distinct on the under surface and converging at the margin. *Inflorescence* a many-times branched many-flowered loose cyme up to about half as long as the leaves. *Peduncle* 1–2 cm. long. *Flowers* fairly large, 5-parted. *Sepals* unequal; 2 outer 0·5 mm. long; 3 inner 2 mm. long, with the margins irregularly laciniated. *Petals* 3 mm. long, oblong, slightly clawed, with the margins slightly irregular at the apex, and the whole surface covered with brown striations. *Filaments* 0·75 mm. long. *Disc* fleshy, obsoletely 5-lobed, enveloping half the ovary, and with the stamens inserted in the shallow sinuses. *Ovary* 3-chambered, with 2 ovules in each chamber; stigma sub-sessile, with 3 flat lobe. *Fruit* a capsule, armed with numerous compressed wing-like patent or decurrent horns.

COAST REGION: Stellenbosch, *Marloth in Herb. Marloth 5997!* Genadendal, Caledon Dist., *Ecklon and Zeyher in Herb. Kew!* "Brandenburg Forest," Zondercinde River, near Genadendal, *Gibbs in Herb. Bolus!* Grootvadersbosch, Swellendam, *Marloth in Herb. Marloth 3498!* Duyvelsbosch, Swellendam, *Ecklon and Zeyher 964 in Herb. Musei Austro. Afric.!* Langebergen, Swellendam, *Bolus 619 in Herb. Kew!* and in *Nat. Herb. Pretoria!* and in *Herb. Musei Austro. Afric.!* and in *Herb. Bolus!* *MacOwan 2967 in Herb. Musei Austro. Afric.!* Pupasvalley, Swellendam, *Ecklon and Zeyher 963 in Herb. Musei Austro. Afric.!* Grootvadersbosch, Swellendam, *Zeyher 2193 in Herb. Kew!* and in *Herb. Musei Austro. Afric.!* Mountains round Swellendam, *MacOwan 8823 in Herb. Musei Austro. Afric.!* Swellendam, *Mund in Herb. Musei Austro. Afric.!* Garcia's Pass, Riversdale Div., *Phillips 340 in Herb. Kew!* and in *Herb. Musei Austro. Afric.!* *Burchell 7433 in Herb. Kew!* George, *Burton in Herb. Forest Dept. No. 3776 in Nat. Herb. Pretoria!* Jonkersberg, George, *McMillan in Herb. Forest Dept. 3777 and in Nat. Herb. Pretoria!* *Keet 1033 in Nat. Herb. Pretoria!*

3. *P. Rehmannii*, Davison. (Pl. XIII, Fig 2.)

Frutex glaber. *Rami* teretes, striati, suffuscicani. *Ramuli* angulares. *Folia* alterna, sub-coriacea; petiolus 2 mm. longus; lamina 2–3 cm. longa, 0·6–1 cm. lata, oblongo-



Plate XIII.

1. *Putterlickia verrucosa*, Szysz.
(Sim 1697.)
2. *Pterocelastrus Rehmannii*, Davison.
(Rehmann 605f.)

lanceolata, apice obtusa vel leviter emarginata, basi cuneato-acuta integribus marginibus, et conspicuis costis. *Cymae* parvae. *Pedunculus* 0·5 cm. longus, robustus. *Florae* non vidi. *Capsula* sicca, 0·5 cm. longa, brevis echinatis numquam decurrentibus.

The material from which this species has been described is by no means ample. The type specimen was collected by Rehmann at Houtbosch in the Transvaal, and it is in the Kew Herbarium. It is quite evident though from the fruit that it is a *Pterocelastrus*, and both the fruit and the leaves point to the fact that it is a distinct species.

KALAHARI Region: Houtbosch, Transvaal, *Rehmann 6055 in Herb. Kew!*

4. P. echinatus, N.E.Br. in Kew. Bull. 1906, 16.

An entirely glabrous shrub, with terete brownish-grey branches. *Twigs* angular. *Leaves* alternate, coriaceous; petiole 1·5–3 mm. long; lamina 1·5–3 cm. long, 1–2 cm. wide, obovate or oblanceolate, obtuse or slightly emarginate, cuneately acute at the base, smooth and shining above, dull beneath, with the midrib and lateral veins more prominent on the under surface. *Inflorescence* a dense-flowered short cyme with small flowers and short stout pedicels. *Peduncle* as long as the flowering part, usually about 4 mm. long. *Flowers* 5-parted. *Sepals* 0·5 mm. long, orbicular, with lacinated brown-edged margins. *Petals* 2 mm. long, oblong. *Filaments* 1·5 mm. long. *Disc* fleshy, flat, obsolete crenate. *Ovary* 3-chambered; each chamber 2-ovuled; style 1 mm. long; stigma obsolete 3-lobed. *Fruit* a capsule covered with many (always more than three) horns.

KALAHARI REGION: M'babane, Swaziland, *Burt-Davy 2791 in Herb. Kew!* and in *Herb. Bolus!*

EASTERN REGION: Maritzburg, *Rudatis 1599 in Herb. Kew!* Inanda, Natal, *Wood 1250! 1292! 582 in Herb. Kew!* Noodsberg, *Wood 4128 in Herb. Kew!* 'Nkomdhlh. Zululand, *Haygarth in Herb. Wood No. 7538 and in Herb. Kew!* and in *Col. Herb. No. 7538 and in Herb. Bolus!* Ngoya, Zululand, *Medley Wood 8633 in Nat. Herb. Pretoria!* and in *Herb. Kew!*

5. P. tricuspидatus, Sond. in Harv. and Sond. Fl. Cap. i, 461.

Walp. Rep. (1842) i. 535; Burm. Afr. t. 97. f. 1. Celastrus tricuspидatus, Lam. Tabl. Encyc. ii, 93; DC. Prod. 2, 5; Celastrus pterocarpus, in DC. Prod. 2. 5; Asterocarpus typicus, Ecklon and Zeyher, Enum. Pl. Afric. Austro. 956, p. 122; Pterocelastrus typicus, Meissn. Gen. pl. 68; Pappe Sylv. Cap. 9; Asterocarpus Burmanni, Ecklon and Zeyher Enum. Pl. Afric. Austro. 958, p. 122; Walp. Rep. (1842) i, 535. Pterocelastrus variabilis, Sond. in Harv. and Sond. Fl. Cap. i, 462; Asterocarpus nervosus, Ecklon and Zeyher Enum. Pl. Afric. Austro. 959, p. 123; Pterocelastrus nervosus, Walp. Rep. i, 535; Asterocarpus arboreus, Ecklon and Zeyher Enum. Pl. Afric. Austr. 960 p. 123; Pterocelastrus arboreus, Walp. Rep. i, 535; Asterocarpus tetrapteris, Ecklon and Zeyher Enum. Pl. Afric. Austr. 962. p. 123; Pterocelastrus tetrapteris, Walp. Rep. i, 535. Pterocelastrus tetrapteris, Walp. Rep. i, 535. Pterocelastrus litoralis, Walp. Rep. i, 535; Asterocarpus litoralis, E. and Z. Enum. Plant. Austr. Afric. 957! Pterocelastrus stenopteris, Walp. Rep. i, 535; Asterocarpus stenopteris, E. and Z. l.c. 961.

A glabrous shrub or tree up to 20 feet high. *Branches* terete, with greyish-brown, striated bark; *twigs* angular. *Leaves* alternate, coriaceous; petiole 1–7 mm. long; lamina 3·5–8 cm. long (the majority 5 cm. or more long); 1–4 cm. wide, obovate, obtuse, slightly emarginate, cuneate at the base, glabrous, with the entire margins slightly revolute; the under surface of the leaf rugulose and having the midrib and lateral veins more prominent than on the upper surface. *Inflorescence* dense-flowered and short, with short stout pedicels. *Peduncle* 4–8 mm. long. *Flowers* 5-parted. *Sepals* unequal; 2 exterior 0·5 mm. long; 3 interior 1·5 mm. long, orbicular, brown-edged, and with slightly lacinated margins. *Petals* 2 mm. long, oblong, pale yellow throughout, with slightly irregular revolute margins. *Filaments* 1 mm. long; anthers small. *Disc* fleshy, surrounding the base of the ovary but not enveloping it, deeply 5-lobed, with the filaments situated in the deep sinuses. *Ovary* 3-chambered, with 2 ovules in each chamber; style 0·5 mm. long; stigma 3-lobed. *Fruit* a 3-winged capsule, with the wings entire, toothed, lacerated, bifid, or trifid.

I have included *P. tricuspidatus*, *P. variabilis*, *P. litoralis*, and *P. stenopterus* in one species under the name *P. tricuspidatus*. On examining all the material available it is quite clear that the variability in the species is due to the conditions under which the plant is growing, and not due to stable specific characters.

COAST REGION: Malmesbury Div., Saldanha Bay, *Ecklon and Zeyher 958 in Herb. Musei. Austro Afric.*! Caledon Div., Hottentot Holland Mts., *Pappe in Herb. Musei Austro. Afric.*! Table Mt., *Burchell 267 in Herb. Kew!* *Ecklon and Zeyher 956 in Herb. Musei Austro. Afric.*! Diep River, *Marloth in Herb. Marloth 7178!* Muizenberg, from *Bolus Herbarium in Nat. Herb. Pretoria!* Muizenberg and Steenberg, *Zeyher 2195 in Herb. Musei Austro. Afric.*! Kalk Bay, *Bolus 4775 in Herb. Kew!* and in *Herb. Bolus!* Summit of Klein Slangkop, *Wolley-Dod 3086 in Herb. Bolus!* Simon's Bay, *Wright in Herb. Kew!* Cape Div., *Ecklon and Zeyher in Herb. Kew!* *Bolus Herbarium in Nat. Herb. Pretoria!* Between Breede River and Duivenhoeks River, Swellendam, *Zeyher in Herb. Musei. Austro Afric.*! Grootvadersbosch and Wagonmachersbosch, Swellendam, *Ecklon and Zeyher 959 in Herb. Musei Austro. Afric.*! Grootvadersbosch, Swellendam Div., *Pearson 15543 in Herb. Bolus!* Zoetmelkfontein, Riversdale Dist., *Muir 5175 in Nat. Herb. Pretoria!* Mossel Bay, *Schlechter 5764 in Herb. Kew!* near Mossel Bay, *Young in Herb. Bolus 5513!* George, *Zeyher 306 in Herb. Kew!* *Drège 6727a in Herb. Kew!* Knysna, *Burchell 5235 and 5544 in Herb. Kew!* *Drège 6727b in Herb. Kew!* Zitzikamma, *Fourcade 1381 and 1461 in Herb. Fourcade!* *Galpin 3884 in Nat. Herb. Pretoria!* Humansdorp, *Phillips 1553 and 1572 in Herb. Kew!* *3324 and 3371 in Nat. Herb. Pretoria!* *Fourcade 2228 in Nat. Herb. Pretoria!* *Rogers 2984 in Herb. Bolus!* Uitenhage, *Ecklon 423 in Herb. Kew!* and in *Herb. Bolus!* *Alexander Prior in Herb. Kew!* *Ecklon and Zeyher 960 in Herb. Kew!* *Rogers 3609 in Herb. Kew!* Krakakamma and Adow, Uitenhage, *Ecklon and Zeyher 961 in Herb. Kew!* and in *Herb. Musei Austro. Afric.*! Walmer, Port Elizabeth, *Sim in Herb. Maritzburg Univ. Coll. 1694!* Port Alfred, *Burchell 3921 and 4073 in Herb. Kew!* *Grey Coll. Herb. 212 in Herb. Bolus!* Port Elizabeth, *Ecklon and Zeyher 957 in Herb. Musei Austro. Afric.*! Zwartkopsrivier, *Pappe in Herb. Musei Austro. Afric.*! Van Staaensberg, *Zeyher 2196 in Herb. Musei Austro. Afric.*! Alexandria Div., *Burt-Davy 14273 in Nat. Herb. Pretoria!* near Grahamstown, *MacOwan 1047 in Herb. Bolus!* Grahamstown, *Galpin 215 and 218 in Nat. Herb. Pretoria!* *Burt-Davy 12171 in Nat. Herb. Pretoria!* *Burchell 3569 in Herb. Kew!* Atherstone, *Burchell 4918 in Herb. Kew!* Stockenstrom, *Stayner 103 in Nat. Herb. Pretoria!* Queenstown: *Herb. Galpin in Nat. Herb. Pretoria!* *Galpin 8089 in Nat. Herb. Pretoria!* *Cooper 283 in Herb. Kew!* and in *Herb. Bolus!* on rocky ridges at Fincham's Nek, Queenstown, *Galpin 1889 in Nat. Herb. Pretoria!* *Pirie Sim in Herb. Maritzburg Univ. Coll. 1193!* Emerald Hill, South-eastern region, *Paterson in Herb. Bolus 1005!* Nahoon, East London, *Galpin 5739 in Nat. Herb. Pretoria!* Katriver, *Ecklon and Zeyher 962 in Herb. Musei Austro. Afric.*! Katberg, margins of forest and in open veld, *Stayner 103 in Herb. Bolus!* Komgha, *Flanagan 273 in Nat. Herb. Pretoria!* Kaffraria, *Baur 924 in Herb. Kew!* *Cooper 88 in Herb. Kew!* Fort Cunynghame, Kaffraria, *Sim 1920 in Nat. Herb. Pretoria!* *Sim 113 in Herb. Bolus!*

• CENTRAL REGION: Somerset, *Burchell 3314 in Herb. Kew!*

EASTERN REGION: Alexandra Dist., Natal, *H. Rudatis 1060 and 1129 in Herb. Kew!*

6. *P. Dregeanus*, Sond. in Harv. and Sond. Fl. Cap. i, 462.

Eleaodendron Dregeanum, Presl Bot. Bem.

A small glabrous much-branched shrub having a greyish-green appearance. Branches terete, striated, greyish; twigs angular, spreading. Leaves alternate, coriaceous; petiole 1-1.5 mm. long; lamina 1.5-2 cm. long, 0.5-0.9 cm. wide ovate or oblong-ovate, broadest in the middle and narrowed towards each end, obtuse, sometimes slightly emarginate, narrowed at base, thick and veinless, with a striato-rugulose and papillose-multi-punctate under surface, and smooth and shining upper surface. Inflorescence cymose. Peduncle 0.3-0.5 cm. long. Flowers 5-parted. Sepals unequal; 2 outer 1 mm. long; 3 inner 1.5 mm.

long, all sub-orbicular with lacinated margins. *Petals* 2.5 mm. long, sub-orbicular, concave with entire margins. *Filaments* 1 mm. long. *Disc* fleshy, saucer-like, with a crenulate margin. *Ovary* 3-chambered, with 2 ovules in each chamber; style very short; stigmas 3. *Fruits* not seen.

COAST REGION: Wupperthal, Clanwilliam, *Drège 6725 in Herb Kew!* and in *Herb. Musei Austro. Afric!*

This species has not been inserted in the key as the fruits have not been seen, and, therefore, one cannot assert positively that it is a *Pterocelastrus*. It is readily recognized by the thick, veinless striato-rugulose leaves which have numerous white dots over the whole under surface. If the fruits, when seen, prove this to be a *Pterocelastrus* it should be inserted in the key between *P. Rehmannii* and *P. echinatus*. It can readily be distinguished from both species by the leaf characters stated above.

3. CASSINE. Linn.

Unarmed trees or shrubs, sometimes twining. *Branches* terete; twigs usually angular, sometimes slightly winged. *Leaves* opposite or alternate, petiolate, coriaceous. *Inflorescence* cymose. *Flowers* 4-5-parted. *Sepals* usually fleshy, with lacinated margins. *Petals* larger than the sepals, oblong or sub-orbicular. *Disc* fleshy, collar-like, saucer-shaped or flat, either surrounding the base of the ovary or half-enveloping it. *Ovary* 2-3-chambered, with two axile erect endospermous ovules in each chamber; style usually very short; stigma either entire or 2-3-parted. *Fruit* a drupe. *Seeds* without an aril.

1. Leaves alternate:

- a. Flowers fasciculate; leaves entire or sub-entire:
 - b. Leaves rounded or obtuse at the apex..... 1. *eucleaeformis*.
 - bb. Leaves acute..... 2. *maritimum*.
- aa. Flowers cymose; leaves serrate or crenate, rarely sub-entire:
 - c. Branchlets and under surface of leaves pubescent:
 - d. Leaves elliptic to orbicular, rounded at base; flowers several in cymes:
 - e. Cymes long-stalked, 1 or more cm. long; leaves about 6-8 cm. long, often distinctly toothed (coast region)..... 3. *velutinum*.
 - ee. Leaves less than 4 cm. long, with a distinctly dentate-serrate margin; peduncle less than 1 cm. long (coast region)..... 4. *pubescens*.
 - eee. Cymes very shortly stalked; leaves rarely as much as 4 cm. long, mostly sub-entire (Transvaal)..... 5. *burkeana*.
 - dd. Leaves oblanceolate, cuneate at the base..... 6. *Schlechteri*.
 - cc. Branchlets and under surface of leaves glabrous:
 - g. Inflorescence fairly long-stalked, 0.5-1.5 cm. long, glabrous or nearly so; leaves sub-cordate at base, usually nearly as long as broad..... 7. *sphaerophylla*.
 - ggg. Inflorescence very shortly stalked, about 1-3 cm. long, not exceeding 3 mm. in length, pubescent; leaves cuneate at base, always longer than broad..... 8. *aethiopica*.

2. Leaves opposite:

- a. Leaves entire..... 9. *parvifolia*.
- aa. Leaves serrate:
 - d. Leaves rounded at base; twigs distinctly 4-winged; leaves oblong-lanceolate or ovate..... 10. *tetragona*, var. *lara*.
 - dd. Leaves rounded or sub-cordate at base; twigs 4-angled but never winged; leaves broadly ovate or sub-rotund..... 11. *latifolia*.

bb. Erect shrubs or trees; twigs usually terete but if sub-angular never winged:

- e. Leaves more or less obicular, very rounded at the base (Cape districts) 12. *capense*.
- ee. Leaves obovate or elliptic, obtusely or acutely cuneate at the base (south-eastern districts):
- * Mature leaves up to but usually less than 5 cm. long.
- g. Fruits ellipsoid, slightly over 0.5 cm. long..... 13. *kraussiana*.
- gg. Fruits globose, 1.5 or more cm. in diameter..... 14. *croceum*.
- * Mature leaves usually over 6 cm. long.
- h. Flowers pedicellate; leaf margins distinctly spinuloso-serrate..... 15. *papillosa*.
- hh. Flowers sub-sessile; leaf margins minutely denticulated..... 16. *laurifolium*.

1. *C. eucleaeiformis*, O. Ktze., Revisio Gen. Plant (1891) 114.

Mystrozydon eucleaeforme, Sond. in Harv. and Sond. Fl. Cap. 1, 470, Ecklon and Zeyher Enum Plant Afric. Austr. 972, 125; *M. filiforme*, Ecklon and Zeyher l.c. 970, 125; *M. oligocarpum*, Ecklon and Zeyher l.c. 125; *Celastrus filiformis*. Thunb. Prod. (1794) 42; Fl. Cap. ed. Schultz (1823), 217.

A glabrous unarmed tree reaching a height of 40 feet and a diameter of 8 inches breast high. Branches greyish-brown, with an irregularly striated bark; twigs angular. Leaves alternate, coriaceous; petiole 2-5 mm. long; lamina 2.5-4 cm. long, 1-2.5 cm. wide, oval or ovate, rounded or obtuse, cuneate at the base, dark green and shining above, paler and sometimes rugose beneath, with a slightly undulate and usually entire revolute margin, sometimes distinctly serrated. Inflorescence fasciculate. Pedicels 1-3 mm. long. Flowers 5-parted. Sepals 1 mm. long, sub-orbicular, with a lacinated margin. Petals 2.5 mm. long, oblong, with a ciliated margin. Filaments 1.5 mm. long. Disc saucer-like, with a crenated margin surrounding the base of the ovary but not enveloping it. Ovary 2-chambered, with 2 ovules in each chamber; stigma sub-sessile, 2-lobed. Fruit a drupe the size of a small pea. The unfertile fruits are small and dry, but the fertile fruits are fleshy.

COAST REGION: Knysna, Burchell 5538 in Herb. Kew! Fourcade 1902 in Nat. Herb. Pretoria! Keet 707, 708, 709 in Nat. Herb. Pretoria! Keet in Herb. Forest Dept. No. 3818, 3808, and in Nat. Herb. Pretoria! Zitzikamma, George, Ecklon and Zeyher 970 in Herb. Musei Austro. Afric.! Humansdorp, Fourcade 1452 in Herb. Musei Austro. Afric.! Uitenhage, Ecklon and Zeyher 971, 972 in Herb. Kew! and in Herb. Musei Austro. Afric.! Krakakamma, Uitenhage, Ecklon and Zeyher in Herb. Musei Austro. Afric.!

KALAHARI REGION: Woodbush, Tralsvaal, O'Connor 10222 in Herb. Kew!

EASTERN REGION: Egossa, E. Pondoland, Sim 2469 in Herb. Maritzburg Univ. Coll. 1662! Natal, Gerrard 1157 in Herb. Kew! Ngaya, Zululand, Wood 7541 in Herb. Kew! Wood 8502, 9403 in Nat. Herb. Pretoria! and 10165 in Nat. Herb. Pretoria! and in Herb. Bolus!

LOCALITY UNREADABLE: Ecklon and Zeyher in Herb. Kew!

2. *C. maritimum*, L. Bolus in Ann. Bolus Herb. i (1915), 182.

Celastrus maritimus, Bolus Journ. Linn. Soc. 24, 173 (1887); *C. apiculatus*, Sond. Mss. *Gymnosproia apiculata*, Sim in Forest and Forest Fl. Cape Col. (1907) 187. *Gymnosporia maritima*, Sim l.c. 186.

A glabrous unarmed scrambling shrub, about 2-3 feet in height, found growing along the seashore. Branches terete, greyish-brown; twigs angular. Leaves alternate, coriaceous; petiole stout, 1.5-3 mm. long; lamina 1.5-4 cm. long; 0.8-1.8 cm. wide, elliptic or ovate, sometimes apiculate, cuneate at the base, somewhat rugose, with the midrib prominent on the upper surface and with a reflexed entire margin. Inflorescence

fasciculate. *Pedicels* declinate, 2 mm. long in the flower, sometimes lengthening to 5 mm. in the fruit. *Flowers* 5-parted. *Sepals* unequal, all fleshy, concave, sub-orbicular, with lacinated margins and covered on the outer surface with a white powder; 2 outer 1 mm. long; 3 inner 1.5 mm. long. *Petals* 2 mm. long, obovate-oblong, with an undulate repandocrenate margin. *Filaments* 0.175 mm. long; anthers 0.25 mm. long. *Disc* 5-lobed, fleshy, surrounding the base of the ovary, with the filaments situated in the sinuses. *Ovary* 2-chambered, with 2 erect ovules in each chamber; style 0.25 mm. long; stigma 2-lobed. *Fruit* a drupe the size of a small pea. *Seeds* without an aril.

COAST REGION: Muizenberg, Cape Peninsula, *Caporn in Herb. Bolus!* Muizenberg Mts., near Fish Hoek Bay, *Bolus 4767 in Herb. Kew!* and in *Herb. Bolus!* Kalk Bay, next to seashore, *Bolus 307 in Herb. Kew!* and in *Herb. Musei Austro. Afric.!* and in *Herb. Bolus!* Knysna sand dunes, Groot River, *Fourcade 1978 in Herb. Fourcade!* and in *Herb. Bolus!* Plettenberg Bay, sand hills near the landing place, *Burchell 5320 in Herb. Kew!* Humansdorp, sand-dunes, Slang River, *Fourcade 1813 in Herb. Fourcade!* and in *Herb. Bolus!* Humansdorp, *Rogers 2993 in Herb. Kew!* Port Elizabeth, *Hemsley 217 in Herb. Albany Museum!* *MacOwan No. 215 in Herb. Kew!* and in *Herb. Musei Austro. Afric.!* Schoenmakers Kop, near Port Elizabeth, *Paterson 2287 in Herb. Bolus!* Port Alfred, in bush near foreshore, *Tyson in Govt. Herb. Pretoria 13420!* Port Alfred, near Grahamstown, *Burt-Davy in Herb. Bolus 7858!* Klynmund in Albany, *MacOwan 1402 in Herb. Musei Austro. Afric.!* East London, on sea coast, *Galpin 1847 in Nat. Herb. Pretoria!* and in *Herb. Bolus!* Sand-dunes, East London, *Sim 2343 in Herb. Bolus!* in *Nat. Herb. Pretoria!*

NO LOCALITY: *Bowker in Herb. Kew.*

3. *C. velutinum*, Loes. Pegler in Ann. Bolus Herb. ii, 13 (name only).

Elaeodendron velutinum, Harv. in *Thes. Cap. (1863)*, ii, 55, pl. 186. *E. sphaerophyllum* var. *pubescens*, N.E. Br. in *Gard. Chron. (1891)*, 393.

A large forest shrub, 6-10 feet high, with a dense velvety pubescence covering the twigs, peduncles, and the under surface of the leaves. *Branches* terete, covered with a greyish bark; twigs sub-terete, flexuous, and covered with a dense velvety pubescence. *Leaves* alternate, coriaceous; petiole 3-6 mm. long, densely pubescent; lamina 6-8 cm. long, sometimes a length of 10 cm., 2.5-4.5 cm. wide, sometimes reaching a width of 6 cm., elliptic or oblong-elliptic, obtuse, sometimes sub-emarginate, rounded or sub-cordate at the base, sparsely pubescent above, with the midrib only densely pubescent and the under surface of the leaf covered with a dense velvety pubescence; the margin often distinctly toothed. *Inflorescence* a many-flowered crowded cyme. *Peduncel* 1-1.6 cm. long, densely pubescent. *Flowers* 5-parted. *Sepals* 1.5 mm. long, oblong, densely pubescent, and with brown-edged lacinate margins. *Petals* 2 mm. long, glabrous, broadly ovate, and with an irregular undulate margins. *Filaments* 1 mm. long. *Disc* 5-angled, fleshy, furrowed, with the filaments situated at the points. *Ovary* half enveloped by the flesh disc, 3-chambered, with 2 ovules in each chamber; style entire, truncate; stigma 0.25 mm. long. *Fruit* a drupe about 1 cm. long.

COAST REGION: Knysna, *Burchell 5219 in Albany Museum Herb.!*; (?) Lottering Bush, Zitzikamma, *Galpin 3880 in Nat. Herb. Pretoria!* (?) Bathurst, *Burchell 3737 in Herb. Kew!* East London, *Galpin 7774 in Nat. Herb. Pretoria!* Kei Mouth, *Flanagan 1345 in Herb. Bolus!* and in *Herb. Musei Austro. Afric.!* and in *Nat. Herb. Pretoria!* Kentani, *Pegler 713 in Nat. Herb. Pretoria!* and in *Herb. Kew!* and in *Herb. Bolus!*

CENTRAL REGION: Somerset Div., *Drege 6757a in Herb. Kew!*

EASTERN REGION: Inanda, Natal, *Wood 994 in Nat. Herb. Pretoria!* and in *Natal Govt. Herb. 1674!* and in *Herb. Kew!* and in *Herb. Bolus!* Nonoti River, Natal, *Gerrard 1381 in Herb. Kew!*; Umzinyati, Natal, *Wood 11, 438 in Herb. Bolus!* and in *Herb. Musei Austro. Afric.*

4. C. pubescens, Kuntze, Rev. Gen., 1 (1891), 114.

Mystroxydon pubescens, Ecklon and Zeyher Enum. Plant Austr. Afric. 977; Sond in Harv. and Sond. Fl. Cap. i, 470.

An unarmed tree 15–20 feet high. Branches terete, greyish-brown; twigs terete, softly pubescent. Leaves alternate, coriaceous; petiole 2–5 mm. long; lamina 2–3.2 cm. long, 1.4–2.8 cm. wide, elliptic or orbicular, emarginate, rounded or sub-cordate, veiny, glabrous above, softly and densely pubescent beneath, with a dentate-serrate recurved margin. Inflorescence a few-flowered cyme. Peduncle 5 mm. long, glabrous or nearly so. Pedicels 3 mm. long. Flowers not seen. Fruit an ovate or obovate drupe.

COAST REGION: Zwartkops River, Uitenhage Div., Ecklon and Zeyher 977! Zeyher 2200 in Herb. Musei Austro. Afric.!

5. C. Burkeana, Kuntze, Rev. Gen. (1891) 114.

Mystroxydon Burkeanum Sond. Fl. Cap. i, 470; *Elaeodendron Rehmannii* Szysz. En. Polypet. Rehm. 2, 37. *E. aethiopicum*, Oliv. var. *pubescens*. Fl. Trop. Afric. i, 365; *Mystroxydon aethiopicum*. Thunb. according to Loesenes Nachträge.

Branches terete, covered with short grey pubescent hairs; twigs sub-terete, horizontal, covered with short soft grey pubescent hairs. Leaves alternate, coriaceous; petiole 1–2 mm. long; lamina 1.5–4 cm. long, 1–2 cm wide, elliptic or oblong-elliptic, emarginate, rounded at the base, dark green and sparsely pubescent above, paler and more densely pubescent beneath especially on the prominent midrib, and along the revolute, sub-entire sometimes serrate margin. Inflorescence a pubescent few-flowered cyme. Peduncle very short and stout, not exceeding 2 mm., pubescent. Flowers 5-parted. Sepals 1 mm. long, pubescent, triangular, with brown-edged lacinate margins. Petals glabrous, 2 mm. long, sub-orbicular, with an irregular margin. Filaments 1 mm. long. Disc fleshy, furrowed, 5-angled, with the filaments situated at the points of the disc. Ovary half immersed in the fleshy disc, 3-chambered, with 2 ovules in each chamber; style very short; stigma capitate. Fruit a drupe the size of a pea.

KALAHARI REGION: Braamfontein, Johannesburg, Gilfillan in Herb. Galpin 1699! Aapies Poort, Rehmann 4099 in Herb. Kew! 4100 in Herb. Bolus! Pretoria, Leendertz 461! 634 in Herb. Transv. Mus.! road to Silverton, east of Government House, Pretoria, Robertson in Herb. For. Dept. 2295! Crocodile River, Burke 378 in Herb. Kew! and in Herb. Musei Austro. Afric.! Zeyher 309 in Herb. Kew! and in Herb. Musei Austro. Afric.!

RHODESIA: Salisbury, Eyles 885 in Herb. Bolus! and in Herb. Musei Austro. Afric.!

6. C. Schlechteri, Davison comb. nov.

Mystroxydon Schlechteri, Loes. in Engl. Bot. Jahrb. 28 (1901) 159.

The young branches, petioles, under surface of the leaf especially the midrib, peduncles and pedicels and calyx covered with a soft short grey pubescence; the older branches gradually becoming glabrous. Leaves alternate, coriaceous; petiole 2–3 mm. long; lamina 3–5 cm. long, 0.8–1.7 cm. wide, oblanceolate or oblong, obtuse and minutely apiculate, rarely sub-acute, cuneate at the base, with the upper surface of the leaf glabrous except at the base of the midrib, which is sparsely pubescent, and with the undersurface sparsely pubescent but puberulous along the raised midrib; margin sub-denticulate or serrulate. Flowers mostly solitary, small and sub-sessile, 5-parted. Sepals 0.75 long, ovate, obtuse, pubescent, with brown-edged lacinate margins. Petals 1.25 mm. long, sub-orbicular, glabrous. Filaments 0.5 mm. long. Disc fleshy, 5-angled, with the filaments situated at the points. Ovary half-enveloped by the disc, 3-chambered, with 2 ovules in each chamber; style very short; stigma capitate.

RESSANO GARCIA: Schlechter 11944 in Nat. Herb. Pretoria! and in Herb. Bolus!

7. *C. sphaerophylla*, O. Kuntze Rev. Gen. Plant i, 114. (Pl. XI, Fig. 1.)

Mystroxylon sphaerophyllum, Ecklon and Zeyher Enum. Plant. Austr. Afric. 126 ; Sond. in Harv. and Sond. Fl. Cap. i, 470 ; Pappe Silva Cap. No. 31. *Elaeodendron sphaerophyllum*, Presl Sim in Forests and Forest Fl. Cape Col. (1907), 191.

A tree 20-30 feet high and 18-24 inches diameter breast high. Branches terete, brownish-grey, glabrous ; twigs glabrous, somewhat compressed and angular. Leaves alternate, coriaceous ; petiole 2-5 mm. long ; lamina 1.5-5 cm. long, 1.2-4 cm. wide, elliptic or sub-orbicular, usually nearly as long as broad, emarginate, rounded or sub-cordate at base, glabrous on both surfaces, with a reflexed crenulate or callous-serrulate margin and raised veins on the under surface. Inflorescence a many-flowered cyme, glabrous or nearly so. Peduncle 0.5-1.5 cm. long, usually measuring up to 1 cm. long, glabrous or nearly so. Flowers 5-parted. Sepals 1-1.5 mm. long, with ciliated margins. Petals 2 mm. long, sub-orbicular, with irregular undulate margins. Filaments 1.5 mm. long. Disc. fleshy, 5-angled, with the filaments situated at the points. Ovary half-enveloped by the disc, 3-chambered, with 2 erect ovules in each chamber ; style 5 mm. long ; stigmas 2. Fruit a drupe the size of a pea.

COAST REGION : Duivenhok, Swellendam, Zeyher in Herb. Musei Austro. Afric. ! Knysna, Keet in Herb. Forest Dept. 2528 ! 2751 ! 2752 ! 3079 ! Burchell 5639 and 5524 in Herb. Kew ! Pappe in Herb. Kew ! and in Herb. Musei Austro. Afric. ! Rogers 26085 in Herb. Kew ! Duthie 608 in Herb. Bolus ! Sand hills east of Keurbooms River, Knysna Div., Fourcade 1074 in Herb. Bolus ! Plettenberg Bay, Fourcade 613 in Herb. Fourcade ! Humansdorp, Fourcade 2146 in Herb. Fourcade ! Uitenhage, Alexander Prior in Herb. Kew ! "Cap Recief" and Krakakamma (Uitenhage), Ecklon and Zeyher 978 in Herb. Musei Austro. Afric. ! Forests of Addo and by Zwartkops River, Uitenhage, Zeyher 632 in Herb. Musei Austro. Afric. ! Port Alfred, Tyson in Herb. Transv. Mus. 17529 ! Port Alfred, near Grahamstown, Burt-Davy 7931 in Herb. Bolus ! Zwartkoprivier Zeyher, 2200 in Herb. Musei Austro. Afric. ! Kowie, MacOwan 417 in Herb. Kew ! and in Herb. Gill. Coll ! Hillary, near sandflats, Alexandria Dist., Burt-Davy 14281 in Herb. Bolus ! Philippstown, Katrivier, Ecklon and Zeyher 976 in Herb. Musei Austro. Afric. ! hillside near junction of the Kei Rivers, Queenstown Dist., Galpin 8091 in Herb. Albany Mus ! Gooda River Mouth, East London, Galpin 7337 in Herb. Albany Mus. ! and in Nat. Herb. Pretoria ! and in Herb. Kew !

No LOCALITY : Muller in Herb. Kew !

8. *C. oethiopica*, Thunb. in Fl. Cap. ed. Schultz (1823), 269.

Mystroxylon confertiflorum, Sond. in Harv. and Sond. Fl. Cap. i, 469 ; *Elaeodendron aethiopicum*, Oliver Fl. Trop. Afr. i, 365 ; Sim Forests and For. Fl. Cape Col. (1907) ; *E. anthranthum*, Presl Bot. Bemerck 34 ; M. Kuhu, Ecklon and Zeyher Enum. Plant Austr. Afric. 127 ; *M. anthranthum*, *M. spilocarpum*, *M. sessiliflorum*, Ecklon and Zeyher l.c. 973, 974, 975. *M. confertiflorum*, Tulasn, Ann. Sc. Nat. (1871) Bot. 106.

A shrub or tree reaching a height of 20-30 feet, with a diameter up to 12 inches breast high. Branches terete, greyish-brown ; twigs sub-angular, slightly pubescent or glabrous. Leaves alternate, coriaceous ; petiole 1-4 mm. long ; lamina 1-2-4.5 cm. long, 0.8-2.5 cm. wide, oblong or elliptic-oblong, obtuse, always longer than broad, shallowly emarginate, usually cuneate at the base, glabrous or sparingly pubescent on the under surface, with a reflexed crenulate sometimes slightly undulate margin and prominent veins on the under surface. Inflorescence a dense cyme, pubescent. Peduncle very short, not exceeding 3 mm. Flowers 5-parted. Sepals 0.75 mm. long, sub-orbicular, pubescent, with brown-edged fimbriate margins. Petals 2.5 mm. long, oblong, with irregular undulate margins. Filaments 0.75 mm. long. Disc fleshy, furrowed with a crenulate margin. Ovary partly enveloped by the disc, 2-chambered, with 2 ovules in each chamber ; style 0.5 mm. long ; stigma capitate. Fruit a drupe the size of a pea.

COAST REGION : Knysna, *Keet in Herb. Forest Dept. 2335 ! Fourcade 1059 ! Uitenhage, Ecklon and Zeyher ! Drège 6736a ! Ecklon and Zeyher 975 ! Alexander Prior ! Addo Forests, Uitenhage, Ecklon and Zeyher 973 ! 974 ! Redhouse, Uitenhage, Paterson in Herb. Rogers 495 ! Grahamstown, Galpin 263 ! Kanagha, Albany, Galpin 175 ! Albany, Hutton ! Katberg, Ecklon and Zeyher ! Kat River, Ecklon and Zeyher 976 ! Queenstown, Galpin 8091 ! 8261 ! East London, Wood 3373 ! Paetzold 8223 ! Komgha, Flanagan 308 !*

CENTRAL REGION : Somerset East, Burchell 3172 ! 5188 ! 3285 ! Drège 6737a !

EASTERN REGION : Natal, Gerrard 690 !

NO LOCALITY : Pappe ! Alexander Prior !

2. C. parvifolia, Sond. in Harv. and Sond. Fl. Cap. i, 466.

A small glabrous shrub with terete brownish-purple branches. Twigs angular. Leaves opposite, coriaceous ; petiole stout 3–5 mm. long ; lamina 3–6 cm. long, 0.7–2.5 cm. wide, lanceolate or oval, obtuse, emarginate, sometimes slightly apiculate, with a very cuneated base, slightly rugose, with a thick midrib, with prominent veins on the under surface and with an entire reflexed margin. Inflorescence a few-flowered cyme with a prominent bract at the base of each flower. Bract very acuminate, 2.5 mm. long, with lacinated margins. Peduncle short, 2–4 mm. long. Flowers 5-parted. Sepals 0.75 mm. long, triangular, with lacinated margins. Petals 1.75–2.5 mm. long, oblong, with a slightly irregular margin and distinct brown veins. Filaments 0.5 mm. long. Disc not very conspicuous, forming a narrow collar round the base of the ovary. Ovary 2-chambered, with 2 ovules in each chamber ; style 0.5 mm. long ; stigmas 2, bifid. Fruit not seen.

COAST REGION : Witsenberg, *Zeyher in Herb. Musei Austr. Afric. ! Witsenberg, near Steendahl, Bolus 5478 in Herb. Kew ! and in Herb. Musei Austro. Afric. ! and in Nat. Herb. Pretoria ! Witte Els Bosch, Humansdorp Div., Fourcade 823 in Herb. Bolus ! Zitzikamma, Galpin 3883 in Nat. Herb. Pretoria ! and in Herb. Maritzburg Univ. Coll. 1708 ! Fourcade 823 in Herb. Fourcade !*

10. C. tetragona, Loesen. in Engl. Bot. Jahrb. 28, 158.

Cassine scandens Ecklon and Zeyher Enum. Plant Austr. Afric. 989, 128 ; Sond. in Harv. and Sond. Fl. Cap. i. 467 ; *Celastrus refractus*, E. Mey in Drège Zwei. Pfl. Docum. 127 ex Sond. in Harv. and Sond. Fl. Cap. i. 467 ; *Celastrus tetragonus* ; Thunb. Prod. 42 ; E. Mey in DC. Prod. ii, 7 (name only) ; *Rhamnus tetragonus*, Thunb. Fl. Cap. 146 exd. sp. fructif.

A large climbing shrub. Branches flexuous, grey, more or less angled, twigs distinctly 4–6 winged. Leaves opposite, coriaceous ; petiole very short, 1–2 mm. long ; lamina 1.5–5.5 cm. long, 0.7–2.7 cm. wide ; the upper are smaller and narrower ; the lower larger and wider, oblong-lanceolate or ovate, obtuse or acute, nearly always apiculate, narrowed to the base and rounded or sub-cordate, glaucous with a revolute undulate usually spinulose-serrate margin and the veins raised on the upper surface. Inflorescence a fairly dense cyme. Peduncle not exceeding 1 cm. Pedicels short, about 1 mm. long. Flowers 5-parted. Sepals 2 mm. long, sub-orbicular, with lacinated margins. Petals 2 mm. long, oblong, with slightly irregular margins. Filaments 0.25 mm. long. Disc narrow, cupular. Ovary 2-chambered, with 2 ovules in each chamber, not immersed in the disc ; style 0.25 mm. long ; stigmas 2, bifid. Fruit a drupe the size of a pea.

Var. *laxa* Loesen.

Leaves measuring up to 8.5 cm long. Inflorescence much laxer. Peduncle 1–1.3 cm. long. Pedicels 2 mm. long.

COAST REGION : Knysna, Burchell 5604 in Herb. Kew ! Rogers 26995 in Herb. Kew ! Uitenhage, Ecklon and Zeyher in Nat. Herb. Pretoria ! and in Herb. Musei Austro. Afric. ! Alexander Prior in Herb. Kew ! Galgebosch, Drège in Herb. Musei Austro. Afric. ! and in Herb. Kew ! Humansdorp, Rogers 2949 in Herb. Albany Museum ! Zwartkopsrivier, Addo (Uitenhage), Ecklon and Zeyher 989 in Herb. Musei Austro. Afric. ! and in Herb. Kew ! and in Herb. Bolus ! Redhouse, near Port Elizabeth, Paterson 459 in Herb. Bolus !

and in *Herb. Albany Mus.*! Port Elizabeth, *Alexander Prior in Herb. Kew!* Algoa Bay, *Burchell 4295 in Herb. Kew!* Port Alfred, *Burchell 3832 and 4064 in Herb. Kew!* Hillary, near Sandflats, Alexandria Division, *Burt-Davy 1422 in Herb. Bolus!* Albany, *Burchell 3520 in Herb. Kew!* Kentani, *Pegler 743 in Herb. Bolus!* Kei Mouth, *Flanagan 172 in Nat. Herb. Pretoria!*

CENTRAL REGION: Mount Boschberg, *MacOwan in Herb. Albany Mus.*!

Var. laxa Loesen.

COAST REGION: Windvogelberg, *Sim 2013 in Herb. Maritzburg. Univ. Coll. 1723!* Port Alfred, *Salisbury 353 in Herb. Albany Mus.*! Kentani, *Pegler 743 in Herb. Musei Austro. Afric. 3801!* and *9535!*

KALAHARI REGION: Ivy Range, Transvaal. *Thorncroft 503 in Natal Govt. Herb.*!

11. *C. latifolia*, Ecklon and Zeyher, *Plant Austr. Afric.* 990, 129.

Sond. in Harv. and Sond. Fl. Cap. i, 466; *Pegler in Ann. Bolus Herb.* ii, 13 (name only). *Celastrus heterophyllus*, *E. Mey. in Drège Zwei. Pfl. Docum.* 52, ex *Sond. in Harv. and Sond. Fl. Cap.* i, 467.

A large climbing shrub, with greyish-brown terete branches. *Twigs* angular. *Leaves* opposite, coriaceous, sub-sessile or petiole very short, 0.5 mm. long; lamina 2.5–7 cm. long, 1.3–4.5 cm wide, broadly ovate or sub-rotund, obtuse, emarginate, sub-cordate or cordate at the base, somewhat glaucous with distinct veins and a serrate or spinuloso-serrate revolute or slightly undulate margin. *Inflorescence* a few-flowered cyme. *Peduncle* about 1.5 cm. long, very seldom less than 1 cm. long. *Flowers* 5-parted. *Sepals* 1 mm. long, sub-orbicular, with lacinated margins. *Petals* 2.5 mm. long, oblong, with uneven margins. *Filaments* 0.5 mm. long. *Disc* narrow, cupular. *Ovary* 2-chambered, with 2 ovules in each chamber, not immersed in the disc; style 0.25 mm. long; stigmas 2, linear. *Fruit* a drupe the size of a pea. The serrations in this species are further apart than in *C. tetagona*, and the margin is not so pronouncedly spinuloso-serrate or undulate.

COAST REGION: Hermanus, *Marloth in Herb. Marloth 2789!* Kaaiman's River, George, *Truter (Nat. Bot. Gardens 560, 16) in Herb. Bolus!* Knysna, *Pappe in Herb. Musei Austro. Afric.*! Plettenberg Bay, *Ecklon and Zeyher 990 in Herb. Kew!* and in *Herb. Bolus!* and in *Herb. Musei Austro. Afric.*! Groot River, Zitzikamma, *Fourcade 665 in Herb. Fourcade!* Ratel's Bosch, Zitzikamma, *Fourcade 326 in Herb. Fourcade!* Groot River Mouth, Rob. Hoek, Humansdorp, *Fourcade 1956 in Herb. Fourcade!* Kabeljauw's River, Humansdorp Div., *Bolus 3049 and 7323 in Herb. Bolus!* Slang River, Humansdorp, *Fourcade 1814 in Herb. Fourcade!* Uitenhage, *Drège in Herb. Kew!* scrub on sand hill, Port Alfred, *Galpin 355 in Herb. Galpin!* Paterson 495 in *Herb. Albany Mus.*! Sandy slopes, Kowie, *Tyson in Herb. Bolus!* Kowie West, Bathurst Div., *Tyson in Herb. Bolus 13285!* Grahamstown, *MacOwan 242 in Gill Coll. Herb.*! East London, *Wood 3131!* *3142!* *3367 in Herb. Galpin!* Sea coast, East London, *Galpin 1836 in Herb. Galpin!* East London, *Sim 1973 in Herb. Bolus!* Kentani, *Pegler 1351 in Nat. Herb. Pretoria!* and in *Herb. Bolus!*

CENTRAL REGION: Aliwal North, *Drège in Herb. Kew!*

EASTERN REGION: Mt. Edgecombe, Inanda, *Natal, Wood 1101 and in Col. Herb. 5740!* and in *Herb. Kew!* Alexandra Dist., *Natal, Rudatis 1146 in Herb. Kew!*

12. *C. capensis*, Linn. *Mant.* 220 (1771)

Thumb. Prodr. 52 1794; *Fl. Cap. ed. Schult.* 269 (1823), *Sond. in Harv. and Sond. Fl. Cap.* i, 466, partly; *Pegler in Ann. Bolus Herb.* ii, 13 (name only); *Enonymus Colpoon Linn Mant. Nov.* (1771) *Cassine Colpoon Thumb. C. Capensis* var. *Colpoon DC. Prodr.* 12 (1825); *Sond. in Harv. and Sond. Fl. Cap.* i, 466; *Burm. Rar. Afr. Pl.* t. 85, 86.

A glabrous erect shrub, with terete greyish-brown branches. *Twigs* angular, purplish-brown. *Leaves* opposite, coriaceous; petiole 2–3 mm. long; lamina 2–3.2 cm. long, 1.4–3.4 cm. wide, more or less orbicular, very obtuse, emarginate, very rounded at the base, somewhat glaucous, with the sub-recurved margin entire towards the base and bluntly

serrated upwards, and with prominent reticulate venation on the under side of the leaf. *Inflorescence* a many-flowered rather lax cyme. *Peduncle* 0.5–1 cm. long. *Pedicels* 2–3 mm. long. *Flowers* 4-parted. *Sepals* 1 mm. long, deltoid, with brown-edged lacinated margins. *Petals* 2.5 mm. long, broadly oblong, or oblong with uneven margins. *Filaments* 1.5 mm. long. *Disc* fleshy, flat, and deeply 4-lobed, with the filaments situated in the sinuses. *Ovary* 2-chambered, with 2 ovules in each chamber; style very short; stigma obsolete 2-lobed. *Fruit* a drupe about 0.5 cm. long.

COAST REGION: Saldanha Bay, *Ecklon and Zeyher 985 in Herb. Musei. Austro. Afric.!* Brackfontein and Olifantsrivier (Clanwilliam) *Ecklon and Zeyher 987 in Herb. Musei. Austro Afric!* (partly). Camp's Bay, *Alexander Prior in Herb. Kew!* Balges Nest, Constantia Nek, *Wolley-Dod 2618 in Herb. Kew!* Table Mountain, *Mund in Herb. Kew!* *Pappe in Herb. Kew!* *Drège in Herb. Kew!* Ravines above Groot Schuur, Table Mountain, *Smuts!* Muizenberg, *Zeyher 2202 in Herb. Musei. Austro Afric.!* near Simonstown, *Piessie in Herb. Kew!* *Alexander Prior in Herb. Kew!* *Wolley-Dod 1018 in Herb. Kew!* and in *Herb. Bolus!* *Kirk in Herb. Kew!* Gordon's Bay, *Bolus in Col. Herb. 255!* in *Herb. Bolus 9817!* Rhenoster Kop, Bredasdorp Div., *Schlechter 10574 in Herb. Kew!* and in *Nat. Herb. Pretoria!*

13. C. Kraussiana, Bernhardi in Flora 1844, 305.

C. Capensis, Sond. in Harv. and Sond. Fl. Cap, i, 466 (as to syn).

An erect glabrous shrub or small tree, with terete greyish-brown branches. *Twigs* terete or sub-angular. *Leaves* opposite, coriaceous; petiole 3–5 mm. long; lamina 2.5–5 cm. long, 1–4 cm. wide, obovate, obtuse, emarginate, cuneate at the base, paler on the under surface, with well-marked reticulate venation and slightly revolute coarsely serrated margins. *Inflorescence* a lax many-flowered cyme, branching dichotomously. *Peduncle* reaching a length of 1 cm., in many cases extremely short (in the latter case the secondary branches of the inflorescence may reach a length of 2 cm., with the succeeding branches proportionally long, thus giving the cyme a very lax appearance). *Pedicel* 1–5 mm. long. *Flowers* 4–5-parted. *Sepals* up to 1 mm. long, sub-orbicular, with a deeply lacinated margin. *Petals* up to 3.5 mm. long, oblong, spreading, with a slightly uneven margin. *Filaments* 1.5 mm. long. *Disc* fleshy, very deeply 4- or 5-lobed, with the filaments situated in the sinuses. *Ovary* not immersed in the disc, 2–3-chambered, with 2 ovules in each chamber; styles 0.5 mm. long; stigmas 2 or 3, linear. *Fruit* an ellipsoid drupe, slightly over 0.5 cm. long.

COAST REGION: Hout Bay, near Capetown, *King in Herb. Forest Dept. 2381!* Tokai *King in Herb. Forest Dept. 3357!* Eagle's Nest, Constantia, *Wolley-Dod 2618 in Herb. Bolus!* Devil's Mountain and Cataract, *Pappe in Herb. Musei Austro. Afric.!* and in *Nat. Herb. Pretoria!* Table Mountain, *Sim 2328* and in *Herb. Maritzburg. Univ. Coll. 1719!* Table Mountain, *Pappe in Herb. Musei Austro. Afric.!* Table Mountain, above Kirstenbosch, *Pappe in Herb. Musei Austro Afric.!* Kirstenbosch, near Capetown, *Bolus in Herb. Bolus!* Paradise Estate, Claremont, *Pillans 3704 in Nat. Herb. Pretoria!* "Fish Hoek, Cape Peninsula, *Marloth in Herb. Marloth 4422!* Duyvenhoeekrivier, Swellendam, *Ecklon and Zeyher 986 in Nat. Herb. Pretoria!* Woodville, George, *Sims in Herb. Forest Dept. 3349!* "Brenton," Knysna, in *Herb. Forest Dept. 2753!* Gouna River, Knysna, *Keet in Herb. Forest Dept. 2753!* Harkeville Forest, *Knysna Keet in Herb. Forest Dept. 2758!* Gouna Plateau, Knysna, *Keet in Herb. Forest Dept. 3076!* and *575 in Herb. Albany Museum!* Gouna Forest, Knysna, *Fourcade 1909 in Herb. Fourcade!* Houteni River, Knysna, *Keet in Herb. Forest Dept. 2466!* Groot River, Zitzikamma, *Fourcade 650 in Herb. Fourcade!* Sand-dunes, Slang River, Humansdorp, *Fourcade 2180 in Herb. Fourcade!* Krakakamma, *Pappe in Herb. Musei Austro. Afric.!* *Burchell in Herb. Kew!* *Zeyher 2204 in Herb. Musei Austro. Afric.!* Forests Addo and Krakakamma, *Uitenhage, Ecklon and Zeyher 548 in Herb. Musei Austro. Afric.!* and in *Herb. Albany Museum!* and in *Herb. Kew!* Galgebosch, Uitenhage, *Drège in Herb. Musei Austro. Afric.!* Uitenhage, *Cooper 1510 in Nat. Herb. Pretoria!* and in *Herb. Kew!* *Cooper 1577 in Herb. Kew!* *Ecklon and Zeyher 986 in Herb. Kew!* and in *Herb. Bolus!* and in *Nat. Herb. Pretoria!* *Krauss 1792 in Herb.*

Kew! Humewood, *Paterson* 2295 in *Herb. Albany Museum!* Baaken's River Valley, near Port Elizabeth, *Bolus* in *Herb. Bolus* 2224! Port Elizabeth, West in *Herb. Bolus!* Betheldorp, near Port Elizabeth *Patterson* 3356 in *Herb. Bolus!* Algoa Bay, *Alexander Prior* in *Herb. Kew!* Howisonspoor, *Glass* 3411 in *Herb. Musei Austro. Afric.!* Grahamstown, *MacOwan* 238 and in *Natal Govt. Herb.* 80! and 286 in *Herb. Kew!* *Daly and Cherry* in *Herb. Albany Museum* 958! *Schlechter* 2674 in *Herb. Kew!* and in *Herb. Bolus!* and in *Herb. Albany Museum!* *Burchell* 3568 in *Herb. Kew!* *Atherston* 105 in *Herb. Kew!* Philippstown and Katrivier, *Ecklon and Zeyher* 988 in *Herb. Musei Austro. Afric.!* Katrivier Mountains, *Pappe* in *Herb. Musei Austro. Afric.!* and in *Herb. Albany Museum!* Rocky Kopjes, Fort Grey, East London, *Galpin* 7818 in *Herb. Galpin!* Woods near Komgha, *Flanagan* 890 in *Nat. Herb. Pretoria!* and in *Herb. Musei Austro. Afric.!* 783 in *Nat. Herb. Pretoria!* and in *Herb. Musei Austro. Afric.!* and in *Herb. Albany Museum!* Fort Cunynghame, *Sim* 1923 in *Herb. Albany Museum!* *Galpin* 2467 in *Herb. Galpin!* and in *Herb. Albany Museum!* Mount Coke, Katrivier, *Sim* 1521 in *Herb. Bolus!* Near Golara Mouth, Kentani, *Pegler* 1441 in *Herb. Bolus!*

EASTERN REGION: Pondoland, *Sim* 2508 in *Herb. Bolus!* Noodsberg, Natal, *Wood* 934 in *Herb. Kew!* and in *Herb. Bolus!* and in *Natal Gov. Herb.!* Indeni, Zululand, *Davies* 3415! *Wood* No. 7892 in *Herb. Bolus!*

14. *C. croceum*, Kuntze, Rev. Gen. Plant. i, 114.

Elaeodendron croceum, DC. *Prod.* 2, 11; *Pappe. Sylv. Cap.* 10; *Sond. in Harv. and Sond. Fl. Cap.* i, 468; *Ilex crocea*, *Thunb. Fl. Cap.* 159; *Crocoxydon excelsum*, *Ecklon and Zeyher, Enum. Plant. Austr. Afric.* 983; *Rhamnus capensis* *Spreng*; *Cassine parvifolia*, *E. Mey and Drège* 6740; *Elaeodendron verrucosum*, *Kunth. Linn* 19, 393; *C. Zeyher*, *Turcz. Bull. Mosc.* (1858) 2, 452.

A tree, 20–40 feet high, with a diameter 2–4 feet breast high. Branches terete, verrucose, grey; twigs terete or sub-angular, verrucose. Leaves mostly opposite, coriaceous; petiole 3–6 mm. long; lamina 1.5–5 cm. long, 1–3 cm. wide, obovate or elliptic, obtuse or retuse, sometimes sub-acute, rounded or cuneate at the base, glabrous, with distinct reticulate venation, shewing especially on the under surface of the leaf, and with a serrate-crenate margin. Inflorescence a few-flowered cyme. Peduncle 0.5–1.2 cm. long. Flowers 4-parted. Sepals 1 mm. long, sub-orbicular, with entire margins. Petals 4 mm. long, broadly ovate, with entire margins. Filaments 1.5 mm. long. Disc fleshy and thick, with a crenate margin. Ovary immersed in the disc, 4-chambered, with 2 ovules in each chamber; style very short; stigma truncate. Fruit a globose drupe, reaching a length of more than 0.5 cm.

COAST REGION: Uitenhage, *Ecklon and Zeyher* in *Herb. Musei. Austro Afric.!* *Drège* in *Herb. Kew!* *Krakakamma* and *Olifantshoek* (Uitenhage), *Ecklon and Zeyher* 983 in *Herb. Kew!* and in *Herb. Musei Austro. Afric.!* and in *Herb. Albany Mus.!* *Addo Drège* in *Herb. Kew!* *Kingwilliamstown*, *Sim* 1960 in *Herb. Bolus!* and in *Herb. Galpin!* *Queen's Park*, East London, *Paetzold* in *Herb. Galpin* 8221! *Kartivier* and *Kaffraria*, *Ecklon and Zeyher* 983 in *Herb. Musei Austro. Afric.!* and in *Herb. Kew!* and in *Herb. Albany Mus.!* *Fort Cunynghame*, *Sim* in *Herb. Maritzburg Univ. Coll.* 1729! 1730! *Sim* 2120 in *Herb. Bolus!* Between *Kagaberg* and *Moncazana*, *MacOwan* 1685 in *Herb. Musei Austro. Afric.!*

15. *C. papillosa*, Kuntze Rev. Gen. Plant i, 114.

Bull. Herb. Bois. 4, 432; *Pegler* in *Ann. Bolus Herb.* ii, 13. *Elaeodendron papillosum*, *Hochst.* in *Krauss. Beytr.* 42; *E. capense*, *Ecklon and Zeyher Enum. Plant. Austr. Afric.* 797, 127; *Hook. Bot. Mag. t.* 3835; *Sond. in Harv. and Sond. Fl. Cap.* i, 468; *Ilex crocea*, *Drège ex Presl. Bot. Bemerk* 37; *Cassine crocea*, *Presl Bot. Bemerk* 36; *Cassine lacunculata*, *Loes.* in *Bull. Herb. Bois.* 1, 432.

A large glabrous shrub. *Branches* terete, greyish, verrucose; twigs purplish-brown, sub-angular. *Leaves* opposite, or sub-opposite, stiffly coriaceous; petiole 0.5-1 cm. long; lamina 3-9 cm., 1-4.5 cm. wide, elliptic or ovate, acute, acutely cuneate at the base, glabrous, with distinct venation on the under surface and distinct spinuloso-serrations on the revolute margin. *Inflorescence* a few-flowered cyme. *Peduncle* usually 0.5 cm. long or less. *Flowers* pedicellate, 4-parted. *Sepals* 1.5 cm. long, ovate-oblong, with entire sometimes slightly lacinated involute margins. *Petals* 2 mm. long, oblong, with irregular undulate margins. *Filaments* 0.75 mm. long. *Disc* fleshy, flat, quadrangular, with a filament situated at each point. *Ovary* 2-chambered, with 2 ovules in each chamber; style 0.5 mm. long; stigma entire. *Fruit* an ovate drupe, 1.5-2.8 cm. long.

COAST REGION: Orange Kloof, Table Mountain, *Marloth 3426 in Herb. Bolus!* Seven Weeks Poort, Zwartbergen, *Marloth in Herb. Marloth 8448!* George, *Burchell 5715 in Herb. Kew!* and in *Gill. Coll. Herb!* Zitzikamma, George, *found in Herb. Musei Austro. Afric.!* Ratels Bosch, Zitzikamma, *Fourcade 382 in Herb. Fourcade and in Herb. Bolus!* and in *Herb. Albany Museum!* Forests near seashore, Ratal's Bosch, Zitzikamma, *Fourcade 569 in Herb. Bolus!* and in *Herb. Fourcade!* Blauwkrantz Zitzikamma, *Galpin 3885 in Herb. Galpin!* and in *Herb. Albany Mus.!* Zitzikamma and Krakakamma (George and Uitenhage), *Ecklon and Zeyher 979 in Herb. Musei Austro. Afric.!* Knysna Commonage, *Keet Herb. Forest Dept. No. 2378 in Herb. Bolus!* and in *Herb. Forest Dept. 2378!* Deepwells Forest, Knysna, *Keet in Herb. Forest Dept. 3814!* Gouna Wit-Plek Forest, *Keet in Herb. Forest Dept. 3940!* Sour Flats Forest, Knysna, *Fourcade 1913 in Herb. Fourcade!* Balmoral, Knysna, *Duthie 605 in Herb. Bolus!* Storms River Mouth, Humansdorp, *Keet 552 in Herb. Albany Museum!* and in *Herb. Forest Dept. 3068!* *Keet 544 in Herb. Albany Museum!* and in *Herb. Forest Dept. 3065!* *Keet 551 and in Herb. Forest Dept. 3067!* Uitenhage, *Alexander Prior in Herb. Kew!* Van Stadenberg, *Zeyher 2191 in Herb. Musei Austro. Afric.!* Mountains near Grahamstown, *MacOwan and Bolus 713 in Herb. Bolus!* and in *Herb. Kew!* and in *Herb. Musei Austro. Afric.!* East London Park, *Robertson in Herb. Forest Dept. 2435!* East London, *Sim 2117 in Herb. Albany Museum!* *Sim 2573 in Natal Govt. Herb.!* *Paetzold in Herb. Galpin 8222!* *Sim in Herb. Maritzburg Univ. Coll. 1715!* Pirie, near Kingwilliamstown, *Sim 2154 in Herb. Bolus!* and in *Herb. Galpin!* Kentani, *Pegler 756 in Herb. Bolus!* and in *Herb. Musei Austro. Afric. 12122!* and in *Herb. Kew!* and in *Herb. Albany Museum!* Woodville, Transkei, *Sim in Herb. Forest Dept. 3332!* Kaffraria, *Sim 1335 in Herb. Bolus!* Kei Mouth, *Flanagan 862 in Nat. Herb. Pretoria!* and in *Herb. Musei Austro. Afric.!* and in *Herb. Albany Museum!* Port St. Johns, *Doran in Herb. Forest Dept. 2115!* Cape Colony, *Legat in Herb. Forest No. 812 and in Herb. Bolus!*

EASTERN REGION: Indeni Forest, *Davis 140!* *148!* *Wood 10169 and in Natal Govt. Herb. 10793!* *10794!* Port Natal, *Krauss 270 in Herb. Kew!* Bluff, Durban, *Wood 11987 in Govt. Herb. Natal!* Inswatzi, Natal, *Wylie in Wood 10079 in Nat. Herb. Pretoria!* and in *Natal Govt. Herb. 10897!* Inanda, Natal, *Wood 937 in Herb. Kew!* Natal and Zululand, *Gerrard 1859 in Herb. Kew!* In bush near Durban, *Wood 549 in Herb. Bolus!*

NO LOCALITY: *Burchell 6050 in Herb. Kew!* *MacOwan 2748 in Herb. Kew!* *Mund in Herb. Kew!*

EXTRACTS: *Pappe in Herb. Musei. Austro Afric.!*

16. *C. laurifolium*, Davison comb. nov.

Elaeodendron laurifolium, *Harv. in Thes. Cap. ii, 54, Pl. 185.*

A shrub or small tree, glabrous in all parts. *Branches* terete, with a smooth purplish-brown bark; twigs terete or sub-angular, greyish-brown. *Leaves* opposite, coriaceous; petiole 0.5-1 cm. long; lamina 6-11 cm. long, 2-6 cm. wide, broadly oblong or elliptic, obtuse, shallowly emarginate, obtusely cuneate at the base, paler on the under surface, with an entire or remotely and minutely denticulate margin and distinct reticulate venation. *Inflorescence* a few-flowered cyme. *Peduncel* 4-8 mm. long. *Flowers* sub-sessile, 5-parted.

Sepals 1.5 mm. long, linear, with slightly uneven margins. *Filaments* 2 mm. long. *Disc* small, narrow, cupular. *Ovary* 2-chambered, with 2 ovules in each chamber; style 0.5 mm. long; stigma capitate. *Fruit* not seen.

EASTERN REGION: Port Natal, *Gueinzuis 5 in Herb. Kew!* Inanda, Natal, *Wood 1585 in Herb. Kew!* and in *Herb. Bolus!* Natal and Zululand, *Gerrard 1592 in Herb. Kew!* Zululand, *Wylie in Wood No. 8591 in Herb. Musei Austro. Afric.!* and in *Herb. Bolus!* *Wylie in Natal Govt. Herb. 9140!*

4. PUTTERLICKIA, Endl.

Glabrous shrubs with strong spines which are either naked or bear small tufts of leaves or undeveloped buds. *Branches* terete, greyish-brown, smooth, or verrucose. *Twigs* angular. *Leaves* alternate or tufted, coriaceous, petiolate, obovate with an entire or spinuloso-serrate margin. *Inflorescence* a lax or several-flowered cyme. *Pedicels* articulated or not articulated. *Flowers* 5-parted. *Sepals* unequal, with lacinated margins; the two outer smaller than the three inner ones. *Disc* saucer-like, either with a crenate margin and not enveloping the ovary, or fleshy and enveloping three-quarters of the ovary. *Ovary* 3-chambered with 6 ovules in each chamber; style terminal. *Fruit* a trigonous capsule, 2-2.5 cm. long; valves ligneous. *Seeds* endospermous and partly covered by an aril.

Sim, in "Forests and Forest Flora of Cape Colony," page 88, states that these shrubs are of no economic importance.

Branches smooth; pedicels 0.7-1 cm. long, articulated 1. *pyracantha*.
Branches warted; pedicels about 0.2-0.3 mm. (rarely 5 mm.) long, not articulated. 2. *verrucosa*.

1. *P. pyracantha*, Endl. in Endl. Gen. 1086 (1840).

Syzz. En. Polypet. Rehmann (1888) ii, 34; Sim Forests and For. Fl. Cap. Col. 188 (1907). Pl. 19. Celastrus pyracanthus, L. Sond. in Harv. and Sond. Fl. Cap. i, 453; Thunb. Fl. Cap. 220; DC. Prod. 2, 8; Bot. Mag. t. 1167; Ecklon and Zeyher Enum. Pl. Afric. Austr. No. 935! Celastrus integer, Thunb. Fl. Cap.; Celastrus obtusus, Thunb. Fl. Cap. 217. Celastrus campestris, Ecklon and Zeyher Enum. Pl. Afric. Austr. No. 937; Catha campestris, Presl Bot. Bem. 34.

A straggling shrub two or more feet high, armed with strong spines. *Spines* usually 3-5 cm. long, either naked or bearing small tufts of leaves or undeveloped buds. *Branches* terete, greyish-brown, not warted. *Twigs* angular. *Leaves* tufted, coriaceous; petiole 1-4 mm. long; lamina 1.3-7 cm. long, usually about 3.5 cm. long, 0.8-3.5 cm. wide usually 1.5 cm. wide, obovate, obtuse, emarginate, cuneate at the base, glabrous and glossy, with the margin revolute and usually entire; the venation more marked on the under surface, reticulate. *Inflorescence* a loose-flowered cyme. *Peduncle* 1-2.5 cm. long. *Pedicels* 0.7-1 cm. long, articulated. *Flowers* 5-parted. *Sepals* unequal, with lacinated margins; 2 exterior ones 1.5 mm. long; 3 interior ones 2.5 cm. long. *Petals* 4 mm. long, oblong, with slightly ciliated revolute margins. *Filaments* 3 mm. long. *Disc* thick, fleshy, enveloping three-quarters of the ovary, obsoletely crenate, furrowed, with the filaments situated in the shallow sinuses. *Ovary* 3-chambered, each chamber 6-ovuled; style 1 mm. long; stigma slightly 3-lobed. *Fruit* a red woody capsule 2 cm. long. *Seeds* partly covered by an aril.

COAST REGION: Saldanha Bay, *Grey in Herb. Kew!* Hottentots Holland Mts., near Gordon's Bay, *Bolus 9289 in Nat. Herb. Pretoria!* and in *Herb. Bolus!* and in *Herb. Kew!* Gordon's Bay, *Bolus in Herb. Bolus!* Zeeoë Vlei, *Bodkin in Herb. Wolley-Dod No. 868 in Herb. Kew!* and in *Herb. Bolus!* Camps Bay, *MacOwan 1822 in Herb. Musei Austro Afric!* and in *Herb. Kew!* *Burchell 301 in Herb. Kew!* Table Mountain, facing Camps Bay, *Schonberg Herb. Galpin No. 4859 in Nat. Herb. Pretoria!* Table Mountain, *Burchell 242 in Herb. Kew!* Rosebank, near Capetown, *Bolus in Herb. Bolus 3820!* Riet Valley



Plate XVII.

Putterlickia pyracantha, Endl.

(Flowers from a specimen collected by H. G. Flanagan ; fruit from MacOwan, No. 1822.)

and Duiker Valley, *Ecklon and Zeyher 935 in Herb. Musei Austro. Afric.!* Buffelskraal, Riversdale Div., *Muir in Herb. Bolus 1590!* Near Mossel Bay, *Drège "a" in Herb. Kew!* and in *Herb. Musei Austro. Afric.!* Groot River, Zitzikamma, *Fourcade 1088 in Herb. Fourcade!* Seashore, Ratel's Bosch, Zitzikamma, *Fourcade 570 in Herb. Fourcade!* Gamtoos River, Humansdorp, *Fourcade 2267 in Herb. Fourcade!* Humansdorp, *Rogers 3084 in Herb. Bolus!* Grasrug, Uitenhage, *Baur 1009 in Herb. Kew!* Redhouse, Uitenhage Div., *Paterson in Herb. Bolus 537!* Zwartkops River and Krakamma, Uitenhage, *Pappe in Herb. Musei Austr. Afric.!* Near Port Alfred, Bathurst Div., *Burchell 4085 in Herb. Kew!* Barker's Valley, near Port Elizabeth, *Kensit in Herb. Bolus!* 35 miles south of Graaff-Reinet on Port Elizabeth road, *Bolus 1144 in Herb. Bolus 1662!* Grahamstown, *Galpin 57 in Nat. Herb. Pretoria!* Beaufort Dist., *Cooper 534 in Herb. Kew!* and in *Herb. Bolus!* near Kei Bridge, Butterworth Dist., *Pegler 769 in Herb. Bolus!* Prospect Farm, Komgha Dist., *Flanagan 136 in Herb. Musei Austro. Afric.!*

CENTRAL REGION: Zuurberg, Somerset Div., *Drège "b" in Herb. Kew!* Fish River, *Burchell in Herb. Kew!*

KALAHARI REGION: Springfield, Griqualand West, *Wilman in Herb. Bolus 1315!*

WITHOUT LOCALITY: *Zeyher 2176 in Herb. Kew!* *Prior in Herb. Kew!* *Burchell 8392 in Herb. Kew!*

The coppice shoots have larger alternate membranous leaves with a spinuloso-serrate margin, and are very different from the older plants, where the leaves are smaller, coriaceous, tufted, and with an entire margin.

2. *P. verrucosa*, Szysz. En. Polypet, Rehm. ii, 34 (1888)

Sim Forests and For. Fl. Cape Col. 189 (1907); Pegler in Ann. Bolus Herb. ii, 13 (name only). Celastrus verrucosus, E. Meyer in Drege Zwei. Pfl. Docum. (Pl. XIII, Fig. I).

A spiny shrub with terete verrucose branches and angular twigs. *Spines* strong measuring up to 5 cm. long. *Leaves* tufted, coriaceous; petiole 1-2 mm. long; lamina 2-4 cm. long, 1-2 cm. wide, obovate, obtuse, emarginate, cuneate at the base, glabrous, with an entire or serrate revolute margin, and the venation more marked on the under than on the upper surface. *Inflorescence* a few-flowered cyme. *Peduncle* 1.5-2 cm. long (rarely 5 mm.), not articulated. *Pedicels* 0.2-0.3 cm. long. *Flowers* 5-parted. *Sepals* equal, 2 mm. long, sub-orbicular, with a lacinated margin. *Petals* 2.5 mm. long, oblong or obovate, with a ciliated margin. *Filaments* 2 mm. long; anthers small. *Disc* saucer-like, with a slightly crenate margin. *Ovary* 3-chambered, with 6 ovules in each chamber; style 0.5 mm. long; stigma 3-lobed. *Fruit* a brownish-red woody capsule, measuring up to 2.5 cm. long; seeds partly covered by an aril.

COAST REGION: Kingwilliamstown, *Sim 1967* and in *Herb. Maritzburg Univ. Coll. 1665!* *1697!* *1698!* and in *Herb. Bolus!* Fort Cunynghame, *Sim 1001* and in *Herb. Maritzburg Univ. Coll. 1699!* and in *Herb. Bolus!* Woods near Komgha, *Flanagan 606 in Nat. Herb. Pretoria!* and in *Herb. Musei Austro. Afric.!* Kentani, *Pegler 602 in Herb. Kew!* and in *Herb. Bolus!*

EASTERN REGION: Port Natal, *Peddie in Herb. Kew!* Natal, *Wood 134 in Herb. Bolus!* *Saunders in Herb. Bolus!* Attercliffe, *Sanderson 349 in Herb. Kew!* Inanda, *Wood 615 in Herb. Kew!* and in *Herb. Musei Austro Afric. Wood 1135 in Herb. Kew!* Groenberg, *Wood 587 in Herb. Kew.* Durban, *Wilms 1913 in Herb. Kew.* Dumisa, *Rudatis 1167 in Herb. Kew!*

5. LAURIDIA, E. and Z.

Glabrous unarmed shrubs. *Leaves* opposite, petiolate, coriaceous. *Inflorescence* racemose. *Flowers* 4-parted. *Sepals* equal. *Disc* obscurely lobed at the margin. *Ovary* half immersed in the disc, 2-chambered, with two erect ovules in each chamber. *Fruit* a drupe. *Seeds* endospermous.

This is a monotypic genus, the plant from Damaraland collected by Marloth (No. 1196) and named *Lauridia multiflora* by Engler is *Salvadora persica*, Garcin ex L.

Lauridia has been kept as a separate genus by Bentham and Hooker (*Genera Plantarum*) and by Sonder in the *Flora Capensis*. In the *Index Kewensis*, however, this genus is sunk under *Elaeodendron*, Jacq. I have followed Bentham and Hooker and Sonder in keeping this as a separate genus on account of the racemose inflorescence, which is unique in the family *Celastraceae*.

1. *L. reticulata*, Ecklon and Zeyher in *Enum Plant Austr Afric* 968 (*Pl. XIV, Fig. 2*).

Sond in Harv. and Sond. Fl. Cap. i, 469. Lauridia rupicola, Ecklon and Zeyher l.c., 969.

A glabrous unarmed shrub 8–10 feet high. *Branches* terete, grey. *Twigs* angular, grey. *Leaves* opposite, coriaceous; petiole 2·5–3 mm. long; lamina 2·5–3·75 cm. long, 0·8–1·75 cm. wide, ovate or oval, acute or obtuse, sometimes slightly emarginate, rounded or slightly narrowed at the base, smooth and veinless above, with distinct veins and raised midrib beneath, with an entire or sparingly toothed and slightly revolute margin. *Inflorescence* a short panicle about 1 cm. long, with sub-sessile flowers. *Axis* angular. *Bracts* 3, persistent, with a lacinated margin; outer 1·5 mm. long; 2 inner 1 mm. long. *Flowers* 4-parted. *Sepals* equal, 1 mm. long, sub-orbicular, fleshy, with very slightly lacinated margins. *Petals* 1·5 mm. long, ovate. *Disc* fleshy, slightly 4-lobed. *Ovary* half immersed in the fleshy disc, 2-chambered, with 2 erect ovules in each chamber; style very short; stigmas 2, bifid. *Fruit* not seen, but Sonder says: "Drupe, of which few have been examined, as large as a small pea, roundish and reddish."

COAST REGION: Winterhoek, near Uitenhage, *Ecklon and Zeyher 96 in Herb. Musei Austro. Afric!* and in *Herb. Bolus!* Zoutpanshoogde at Zwartkop rivier, Uitenhage, and Bothasberg between Grahamstown and Vishrivier, *Ecklon and Zeyher 968 in Herb. Musei Austro. Afric!* Grahamstown, *Sim 87* and in *Herb. Maritzburg Univ. Coll. 173!*

6. CATHA, Forsk.

Glabrous unarmed shrubs with terete branches and compressed glaucous twigs. *Leaves* opposite, petiolate, lanceolate, coriaceous, and repand-serrate. *Inflorescence* a short dense many-flowered cyme. *Flowers* 5-parted. *Sepals* equal, deeply lacinated. *Petals* oblong. *Disc* saucer-like, with a crenate margin. *Ovary* situated in the centre of the concave disc but not enveloped by it, 3-chambered, each chamber containing 2 erect ovules; style terminal; stigma sub-sessile, 3-lobed. *Fruit* an oblong 3-celled capsule.

Sonder in "Harvey and Sonder *Flora Capensis*," i, 463, gives the following information of this plant under the name *Methyscophyllum* :—

"This is the Bosjeman's-thee of the colonists. The leaves chewed to excess by the Bosjemen have intoxicating effects; a moderate infusion is said to be as good as tea, and also as a remedy for asthma. The properties, perhaps, are similar to those of the Paraguay tea, a shrub not distantly related to the present."

Pappe, in "Florae Cap. Med. Prod.," p. 9, states :—

"An infusion of the leaves of this shrub is pleasant to the taste, and used in cough, asthma, and other diseases of the chest. It grows about the Zwarte Kei River, where it is a favourite beverage with the Bushmen and others, who also chew it and call it Bosjeman's-thee."

It is not very common in South Africa. It occurs along the coast from Knysna up to Natal, and also in the Kalahari region in the eastern and northern Transvaal. It occurs also in Abyssinia and is cultivated in Arabia.

1. *C. edulis*, Forsk. *Fl. Aegypt. Arab.* 63 (1775).

Endl. Gen. 5942; *Oliv. Flor. Trop. Afric.* i, 36; *Methyscophyllum glaucum*, *Ecklon and Zeyer, Enum.* 1138, 152; *Sond. in Harv. and Sond. Fl. Cap.* i, 6; *Hartogia Thea*, *E. Mey. in Drège Zwei. Pfl. Docum.* 189. *Trigonotheca serrata*, *Hochst. in Flora (1841)* 662; *Catha Forskalli*, *Rich. Flor. Abyss.* i, 134, tab. 30; *Catha inermis* *J. F. Gmel. Syst.* 411.



Plate XIV.

1. *Pleurostylia capensis*, Oliv.
(Hutchins in Herb. Norm. Austro. Afric. 915.)
2. *Lauridia reticulata*, E. & Z.



Plate XV.

Catha edulis, Forsk.
(Hutchins No. 2981.)

A resinous unarmed tree attaining a height of 20 feet. *Branches* terete, greyish. *Twigs* with a ridge across at the insertion of the opposite petioles, compressed, greyish, glaucous. *Leaves* opposite, coriaceous; petiole 5 mm. long; lamina 4.5-9 cm. long, 0.6-3 cm. wide, lanceolate, acuminate, sub-emarginate, cuneate at the base, glaucous, with the margin repand-serrate, revolute, and the veins reticulate, prominent. *Inflor-escence* a dense-flowered cyme. *Peduncle* stout, 2-5 mm. long, rarely 1 cm. long. *Flowers* 5-parted. *Sepals* equal, 1 mm. long, sub-orbicular, with deeply lacinated margins. *Petals* 2-5 mm. long, oblong, with ciliated margins. *Filaments* 1.5 mm. long, slender; anthers 0.5 mm. long. *Disc* saucer-like, with a crenate margin. *Ovary* 3-chambered, each chamber 2-ovuled; stigma sub-sessile, obsoletely 3-lobed. *Fruit* oblong, 3-chambered, 6-9 mm. long, dehiscing loculicidally.

COAST REGION: Knysna, *Burchell 5520 in Herb. Kew!* In cultivation at Rockwood, Queenstown, introduced from Hot Fire, White Kei, Cathcart, *Galpin 2499 in Nat. Herb. Pretoria!* and in *Herb. Maritzburg Univ. Coll. 1731!* Junction Farm, Gwatyn, Queens-town Dist., *Galpin 8084 in Nat. Herb. Pretoria!* Mt. Windvogelberg, Queenstown, *Baur 142 in Herb. Kew!* and in *Herb. Bolus!* and in *Herb. Musei Austro. Afric.!* Windvogelberg Mt. and Zwart Kei River, Cathcart Div., *Drège in Herb. Kew!* *Ecklon and Zeyher 1138 in Herb. Musei Austro. Afric.!* Perie Forest, *Hutchins 2981 in Herb. Musei Austro. Afric.!* Kaffraria, *Baur 1124 in Herb. Kew!* Kentani, *Pegler 2111 in Herb. Bolus!*

CENTRAL REGION: Cultivated in garden at Graaff-Reinet from near Queenstown, *Bolus in Herb. Bolus 1856!*

KALAHARI REGION: Concession Creek, Barberton, *Thorncroft 814 in Nat. Herb. Pretoria!* Highland Creek, near Barberton, *Thorncroft 669 in Nat. Herb. Pretoria!* Mac-a-Mac Falls, Lydenburg District, *Burt-Davy 1452 in Nat. Herb. Pretoria!* Spelonken, N. Zoutpansberg, *Bailey in Transvaal Dept. Agric. Herb. No. 3018* and in *Nat. Herb. Pretoria!* Between Tzaneen and Medingen, Zoutpansberg, *Burt-Davy 2648 in Herb. Bolus!* Between Medingen and Dicke's, Modgadgies Mts. (High Veld), *Burt-Davy Col. Herb. No. 2696* and in *Nat. Herb. Pretoria!* and in *Herb. Bolus!*

EASTERN REGION: Natal, *Gerrard 745 in Herb. Kew!* Cultivated in Botanic Gardens, Durban, *Wood, in Col. Herb. No. 3088* and in *Nat. Herb. Pretoria!*

RHODESIA: Matopos in Kloof, *Eyles 977 in Herb. Musei Austro. Afric.!* Bulawayo, *Rogers 13570 in Herb. Musei Austro. Afric.!* and in *Herb. Bolus!* Odzani River Valley, Manica Dist., Div. Umtali, *Teague 112 in Herb. Bolus!* and in *Herb. Musei Austro. Afric.!* near Chirinda Forest, Rhodesia, *Swynnerton 102 in Herb. Musei Austro. Afric.!*

NYASALAND: *Buchanan 287 in Herb. Musei Austro. Afric.*

7. PLEUROSTYLIA, Wight et Arn.

A large glabrous unarmed tree, with greyish-brown rough and fissured bark, which contains a red pigment. *Twigs* opposite, angular. *Leaves* opposite, shortly petiolate. *Inflor-escence* a few-flowered cyme. *Flowers* 5-parted. *Sepals* equal. *Disc* fleshy, flat, furrowed, crenate at the margin, surrounding the base of the ovary. *Ovary* 1-chambered, with 6-8 ovules; placentation parietal; style very short; stigma peltate, slightly lateral in the young stage, distinctly lateral in mature fruit. *Fruit* a dry 1-locular 1-seeded capsule, curved on one side. (As the ovary matures the style becomes distinctly lateral, and in the mature fruit the position of the style is marked by a scar half-way up one side.)

This is a monotypic genus found north of Kingwilliamstown and in the Eastern and Transkeian Conservancies, Pondoland, Natal, and Zululand. It is found in the mountain forests, but occurs more frequently as a spreading tree near the coast. The tree is reserved in all the conservancies. It is known by the common names of Bastard Safraan, Hard Pear, Umngqangqua, and Mbomvane. Fourcade states (Report, pp. 100 and 133): "Wood heavy, hard, moderately strong and elastic, close-grained and compact, with

well-defined concentric wavy bands of soft tissue; medullary rays very fine, close; pores small, numerous, irregularly distributed; colour white or pale yellow, tinged with pink; used for wagon-wood." The mature tree, however, is too scarce to be of any economic value.

1. *P. capensis*, Oliv. in Hook. *Icones Plant.* 23 (1894), t. 2297. (Pl. XIV, Fig. 1.)

Pegler in Ann. Bolus Herb. ii, 13 (name only); *Cathastrum capense*, Turcz. *Bull. Soc. Nat. Mosc.* 31 (1858), i, 448; *Harv. in Harv. and Sond. Fl. Cap.* i. 527.

A large unarmed tree up to 40–50 feet in height, and sometimes 2–3 feet in diameter breast high. *Branches* greyish-brown, with bark fissured. *Twigs* opposite, angular. *Leaves* opposite, coriaceous; petiole 1–2 mm. long; lamina 2.5–6 cm. long, 0.8–2.3 cm. wide, lanceolate or oblong-lanceolate, acuminate, obtuse, sometimes sub-emarginate, cuneate at the base, paler beneath, glabrous, with the margins entire undulate and the veins distinct. *Inflorescence* a few-flowered cyme. *Peduncle* 2–8 mm. long. *Flowers* 5-parted. *Sepals* equal, 1 mm. long, orbicular, with the margins irregularly lacinated. *Petals* 3 mm. long, oblong or sub-orbicular, ciliolate, reflexed. *Filaments* 2 mm. long, flatter and broader at the base; anthers 0.5 mm. long. *Disc* fleshy, flat, furrowed, crenate on the margin, surrounding the base of the ovary. *Ovary* 1-chambered, 6–8-ovuled, with parietal placentation; style very short, slightly lateral in young stage, distinctly lateral in mature fruit; stigma peltate. *Fruit* a curved dry 1-locular 1-seeded capsule, bearing a scar half-way up the curve on one side. (This is caused by the style which becomes lateral as the ovary matures.)

COAST REGION: Kologha, north of Kingwilliamstown, *Hutchins in Nat. Herb. Pretoria!* and in *Herb. Kew!* and in *Herb. Norm. Austro Afric 915!* and in *Herb. Bolus!* Perie Forest, near Kingwilliamstown, *Tyson in Herb. Bolus 5956!* Line Drift, Peddie, *Sim in Herb. Galpin 6283!* in woods near Komgha, *Flanagan 623 in Nat. Herb. Pretoria!* and in *Herb. Kew!* and in *Herb. Norm. Austro Afric.* and in *Herb. Bolus!*, Kentani, *Pegler 857 in Herb. Kew!* and in *Herb. Bolus!*

EASTERN REGION: Amanzamnyana Forest, Umtata, *Niblock-Stuart in Herb. Forest Dept. 3098!* and in *Nat. Herb. Pretoria!* Natal and Zululand, *Gerrard 1596 in Herb. Kew!*

8. MAUROCENIA, Lian.

An erect unarmed glabrous shrub, with grey terete branches and purplish angular twigs. *Leaves* opposite, very leathery, with entire hard-ridged revolute margins, and a prominent thick midrib on the under surface. *Inflorescence* a several-flowered cyme, with short stout peduncle and articulated pedicels. *Flowers* 5-parted. *Sepals* equal. *Disc* saucer-shaped. *Ovary* 2-chambered, with 2 pendulous ovules in each chamber. *Fruit* a somewhat fleshy drupe containing an exarillate endospermous seed.

This is a monotypic genus, occurring chiefly in the coast region from Saldanha Bay to Caledon. It was named in honour of a Venetian horticulturist, F. Mauroceni. It is commonly known as "Hottentot Cherry" on account of the succulent drupe, which is about the size of a small cherry.

1. *M. frangularia*, Mill. *Dict. edit.* 8a (1768), No. 1.

Maurocencia capensis, *Sond. in Harv. and Sond. Fl. Cap.* i, 465; *Hooker Icones Plantarum*, t. 552; *Cassine Maurocencia*, *Linn. Spec. edit. 1a* (1753), 269; *edit 2a* (1762) 385; *Reich. Syst. Pl.* 1 (1779), 736; *Lam. Dict.* 1 (1783), 653; *Murr. Syst. Veget.* (1784), 295; *Thunb. Prod. Cap.* (1794), 52; *Gmel. Syst. Veget.* (1796), 497; *Murr. Syst. Veget. edit. Pers.* (1797), 313; *Willd. Spec. 1* (1798), 1493; *Pers Synops 1* (1805), sp. 4; *Willd. Enum.* (1809), 328; *Ait Hort. Kew Edit. 2a*, cI (1811), 170; *Thunb., Fl. Cap. ed. Schultz* (1823), 268; *Ecklon and Zeyher, Enum. Pl. Afric. Austr.* (1834–1837), 984, p. 128. *Frangula sempervirens*, *Dill. Elth.* 146, t. 121. f. 147.



Plate XIX.

Maurocenia frangularia, Mill.
(Lion's Head ; Pappe in Herb. Kew.)

An erect glabrous unarmed shrub, 4-5 feet high. *Branches* terete, greyish. *Twigs* purplish, angular. *Leaves* opposite, extremely leathery; petiole very stout, 3 mm. long; lamina 3.5-6 cm. long, 2-4 cm. wide, sub-orbicular, ovate or obovate, obtuse, sub-emarginate, rounded at the base, with entire hard-ridged revolute margins, and with the veins, especially the midrib, raised on the under surface. *Inflorescence* a several-flowered cyme. *Peduncle* stout, 1-3 mm. long. *Flowers* 5-parted. *Pedicels* 4-7 mm. long, articulated near the base. *Sepals* equal, 1 mm. long, sub-orbicular, with deeply lacinated margins. *Petals* 2 mm. long, oblong, with slightly irregular margins. *Filaments* 1 mm. long. *Disc* fleshy, saucer-like, with a crenulate margin. *Ovary* situated in the concave disc, but not enveloped by it, 2-chambered, with 2 pendulous ovules in each chamber; stigma sub-sessile, 2-lobed. *Fruit* a somewhat fleshy drupe. *Seed* exarillate, endospermous.

Pappe, in "Silva Capensis," p. 10, says of this plant: "Shrubby, usual height of stem 3 feet, diameter 3-4 inches. Bark grey, very craggy. Wood fine, pretty hard and tough. It looks well when polished, being yellow with brownish veins. It is very fit for the manufacture of musical instruments."

COAST REGION: Saldanha Bay, *Grey in Herb. Kew!* Hottentot Holland Mts., Caledon Div. *Ecklon and Zeyher in Herb. Musei Austro. Afric.!* Hout Bay, *Wolley-Dod 1045 in Herb. Kew!* Green Point and Camps Bay, *Alexander Prior in Herb. Kew!* Camps Bay, *Alexander Prior in Herb. Kew!* Kloof between Lion's Head and Table Mountain, *Burchell 255 in Herb. Kew!* Devil's and Lion's Mount, *Pappe in Herb. Kew!* and in *Nat. Herb. Pretoria!* and in *Herb. Norm. Austro Afric.!* Table Mountain, *Ecklon and Zeyher 984 in Nat. Herb. Pretoria!* Table Mountain, *Ecklon and Zeyher in Herb. Kew!* Muizenberg, *MacOwan 580 in Herb. Kew!* and in *Nat. Herb. Pretoria!* and in *Herb. Bolus!* Fish Hoek, *Page in Herb. Bolus 16020!* Castle Rock, near Miller's Point, *Wolley-Dod 836 in Herb. Bolus!* Hottentot Holland Mts., *Pappe in Herb. Bolus!* Hills near Genadendal Caledon Dist., *Ecklon and Zeyher in Herb. Musei Austro. Afric.!*

9. HARTOGIA, Thunb.

A small unarmed shrub or tree. *Branches* and *twigs* grey. *Leaves* opposite, coriaceous, petiolate. *Inflorescence* a several-flowered, fairly lax cyme. *Flowers* 4-parted. *Sepals* equal. *Disc* fleshy, deeply 4-lobed. *Ovary* 2-chambered, with 2 ovules in each chamber. *Fruit* fleshy when young, finally dry, indehiscent. *Seed* exarillate, exendospermous. *Thunb. Diss. Nov. Gen. 5, 35, cum ic. (Schrebera, Thunb. Nov. Act. Ups. i, 91, t. 5, f. 1, ex Harv. and Sond. Fl. Cap. i, 464.)*

This is a monotypic genus found commonly in the south-western districts on the edge of forests or in small patches of bush. It is named in honour of John Hartog, an early Dutch traveller who visited South Africa.

1. *H. capensis*, Thunb. nov. Gen. Plant. (1781-1801) 5, 87, with plate facing p. 96. (Pl. XII, Fig. 2.)

Linn. Syst. Nat. Ed. 13 (1791), 2, 278; DC. Prod. 2, 12; Thunb. Fl. Cap. ed Schultz (1823), 142; Ecklon and Zeyher Enum. Pl. Afric. Austr. (1834-1837), 980, 127. Sond. in Harv. and Sond. Fl. Cap. i, 464. Schrebera schinoides, Thunb. nov. act. Ups. i, 91, 5, f. i; Thunb. Prod. 28, Prod. t. 2. Hartogia riparis, Ecklon and Zeyher Enum. Pl. Afric. Austr. (1834-1837), 982, p. 127. Hartogia multiflora, Ecklon and Zeyher Enum. Pl. Afric. Austr. (1834-1837) 981, p. 127. Hartogia capensis, β ., E. Mey. in Drège Zwei Pfl. Docum. 87.

A small unarmed usually much-branched tree, growing to a height of 10-20 feet, with a diameter of 1-1½ feet breast high. *Branches* terete, with a grey somewhat wrinkled bark. *Twigs* angular, greyish. *Leaves* opposite, coriaceous, extremely variable; petiole 5-7 mm. long; lamina 3.5-5.5 cm. long, 1-1.8 cm. wide, ovate-lanceolate or lanceolate obtusely acuminate, emarginate, cuneate at the base, glabrous, with coarse serrations on the upper

three-quarters of the slightly revolute margins, with the venation reticulate and with the midrib raised on the upper surface. *Inflorescence* a several-flowered fairly lax cyme. *Flowers* 4-parted. *Sepals* equal, 0.75 mm. long, triangular, with dark-brown lacinated margins. *Petals* 2.5 mm. long, oblong, with slightly lacinated margins. *Filaments* 1 mm. long. *Disc* fleshy, deeply 4-lobed; each lobe forming a fleshy cushion between the filaments, which are situated in the sinuses. *Ovary* 4-sided and 2-chambered, with each chamber 2-ovuled; style 0.5 mm. long; stigmas 2, bifid. *Fruit* fleshy when young, finally dry, indehiscent. *Seed* exarillate and exendospermous.

Pappe gives it the common names "Swal-blad" and "Lepel-hout," and states in "Silva Capensis," p. 10: "Height from 12-15 feet; diameter from 1-1½ feet. Bark thin, greyish white, more or less wrinkled. Wood hard, fine-grained, close and tough. It is adapted for all kinds of fancy furniture, and invaluable to the cabinetmaker for veneering. Turners also and instrument-makers will find it well adapted for the manufacture of the articles of their trade. In the interior it serves for the construction of wagons and rural utensils."

COAST REGION: Berg River and Saldanha Bay, *Ecklon and Zeyher 982 in Herb. Musei Austro. Afric!* Ceres, *Bolus in Herb. Bolus!* Du Toit's Kloof, Worcester Div., *Drège a in Herb. Kew!* and in *Herb. Musei Austro. Afric!* Du Toit's Kloof, *Drège β in Herb. Musei Austro. Afric!* Tulbagh and Worcester, *Ecklon and Zeyher 981 in Herb. Kew!* and in *Herb. Musei Austro. Afric!* Paarl Mountain, *Drège β in Herb. Kew!* Ravines, south of Kirstenbosch, Cape Peninsula, *Pillans 3796 in Nat. Herb. Pretoria!* and in *Herb. Kew!* Kirstenbosch, *Bolus in Herb. Bolus!* Lower part of Platte Klip Ravine, Table Mountain *Page in Herb. Bolus 16340!* Table Mountain *Ecklon and Zeyher 982 in Herb. Musei Austro. Afric!* Alexander Prior in *Herb. Kew!* Genadendal, *Alexander Prior in Herb. Kew!* Zonder Einde, Caledon, *Zeyher 307 in Herb. Musei Austro. Afric!* Zwartberg, Caledon, *Schlechter 9771 in Herb. Bolus!* Kleinriversberg and Twenty-four Rivers, *Zeyher 2206 and 307 in Herb. Musei Austro. Afric!* Swellendam, *Ecklon and Zeyher 980 in Herb. Kew!* and in *Herb. Musei Austro. Afric!* Burchell 7225 in *Herb. Kew!* Mund in *Herb. Kew!* and in *Herb. Musei Austro. Afric!* *Zeyher in Herb. Musei Austro. Afric!* Grootvadersbosch, Swellendam, *Zeyher in Herb. Musei Austro. Afric!* Pearson in *Herb. Bolus 15542!* Langebergen, near Swellendam, *Schlechter 2054 in Herb. Bolus!* Corenti River Farm, Riversdale Dist., *Muir 5067 in Nat. Herb. Pretoria!* above the waterfall at Garcia's Pass, Riversdale Div., *Burchell 6970 in Herb. Kew!* Lower part of the Langebergen, at Garcia's Pass, Riverdale Div., *Burchell 6931 in Herb. Kew!* Milkwood, Sheep Bos Creek, Knysna, *Keet 603 in Nat. Herb. Pretoria!* Kleinbos, Buffel's Nek, *Keet, Herb. Forest Dept. No. 2372 in Nat. Herb. Pretoria!* In forest, Ashkop, Zitzikamma, *Fourcade 155 in Herb. Bolus!* and in *Nat. Herb. Pretoria!* Grahamstown, *Schlechter 2674 in Herb. Bolus!*