

# An Enumeration of the *Maytenus* Species of Southern Africa.

By

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The revision of the South African *Celastraceae* by Davison in *Bothalia* 2: 289–346 (1927), was, for many years, the latest work available in South Africa. Loesener's treatment of the family in *Engl. & Prantl, Nat. Pflanzenfam.* ed. 2, 20b: 87–197 (1942), did not become available until several years after the war. He transferred the unarmed African species of *Gymnosporia* to *Maytenus*, a genus which had, up to that time, been regarded as being restricted to tropical and subtropical America.

Exell in *Bol. Soc. Brot., Sér. 2*, 26: 222 (1952) regards *Gymnosporia*, as defined by Loesener, as too artificial to be maintained, and transfers several of the armed species to *Maytenus*. Brenan in *Mem. N.Y. Bot. Gard.* 8: 238 (1953) and Blakelock in his series of notes on African *Celastraceae* [the first in *Kew Bull.* 1956: 237 (1956)] also hold the view that the separation of the two genera on a basis of the presence or absence of spines and short shoots is unsatisfactory when the supposed difference of a two-loculed versus a three-loculed ovary breaks down.

Ding Hou in *Ann. Miss. Bot. Gard.* 42: 215–302 (1955) expresses the view that *Gymnosporia* and *Maytenus* are distinct, though very closely related, and provides a tabular key using a large number of characters. After a careful comparison, however, there seems to be no character or combination of characters constant enough to justify the retention of *Gymnosporia*.

The following key and enumeration is tentative, but it has become imperative to make the combinations under *Maytenus* and to try and clarify some of the specific-level problems.

See *Taxon* 3: 196 (1954) for the proposal to conserve the generic name *Maytenus* H.B.K.

My thanks are extended to the Directors of all the herbaria who kindly sent material on loan to Kew.

Flowers in axillary fascicles, common peduncle none or less than 2 mm. long; plants unarmed and without short shoots; internodes sometimes much abbreviated, but leaves never in true fascicles:

Leaves with resinous threads on being broken..... *M. acuminatus*.

Leaves without resinous threads:

Leaves entire, suborbicular, obovate to obovate-elliptic..... *M. lucidus*.

Leaves variously dentate, serrate or angled:

Capsules yellow, orange to orange-brown; leaves green or yellow-green; margin strongly revolute with 3–5 (rarely 6) teeth or angles on either side; apex rounded or obtuse..... *M. procumbens*.

Capsules greenish or whitish, never brightly coloured; leaves green, grey-green or whitish on lower surface; margin flat or slightly revolute, obscurely angled to sharply and spinously dentate or serrate, usually with more than 6 teeth on either side; apex often acute or acuminate, but some rounded or obtuse..... *M. undatus*.

Flowers in cymes; cymes axillary or appearing fascicled on short shoots; peduncle sometimes reduced, but then plants armed and with short shoots; leaves often fascicled:

Plants unarmed and without short shoots; leaves never fascicled:

Leaves with resinous threads on being broken..... *M. acuminatus*.

Leaves without resinous threads:

Plants, or at least the young parts pubescent..... *M. peduncularis*.

Plants glabrous:

Leaf-margin closely serrulate; blade narrowly lanceolate; veins prominent on lower surface..... *M. bachmannii*.

Leaf-margin entire; blade broadly ovate to narrowly lanceolate, thick and leathery with veins more or less immersed..... *M. oleoides*.

Plants armed and with short shoots; leaves often fascicled:

Young parts puberulous or pubescent:

Leaves lanceolate, oblanceolate or narrowly elliptic, entire or scarcely dentate.

Capsule papery. Flowers greenish-white to cream..... *M. tenuispinus*.

Leaves ovate to ovate-elliptic, closely serrate or crenate-serrate; capsule leathery to almost woody; flowers pink to red..... *M. mossambicensis* var. *ruber*.

Plants glabrous:

Ovary two-celled:

Leaves oblanceolate to obovate, finely and regularly serrate..... *M. senegalensis*.

Leaves linear to lanceolate or lanceolate-oblong, entire, repandly dentate or coarsely serrate..... *M. linearis*.

Ovary three-celled:

Leaves entire or nearly so; bark developing very early on young twigs which are brown or whitish, sometimes longitudinally wrinkled but not angular-striate (see also *M. cymosa*):

Leaves obovate-cuneate, thick, the veins usually completely immersed; capsule thick, woody..... *M. capitatus*.

Leaves oblanceolate or oblanceolate-oblong, often discoloured, the veins raised, at least on lower surface; capsule thin-leathery..... *M. polyacanthus*.

Leaves serrate, dentate or crenate-serrate, rarely almost entire, but then young twigs usually green and angular-striate:

Mature leaves thin, ovate or ovate-lanceolate, often rounded at the base or broadest below the middle; margin often sharply serrate; twigs slender, often reddish; inflorescence very lax, often few-flowered, with long, slender main branches

*M. mossambicensis*  
var. *mossambicensis*.

Mature leaves leathery to very thick leathery, variable in shape, often cuneate and broadest above the middle, except for leaves on young growth, or else very thickly leathery if rounded at the base; margin crenate-serrate to subentire or entire; twigs brown, grey or green; inflorescence lax to very dense, with rather stout or short main branches:

Leaf margin revolute; blade more or less elliptic above the distinct petiole, almost invariably drying brownish, discoloured; spines absent or present, the whole or at least their tips often shiny dark-brown; twigs sometimes longitudinally wrinkled but often striate with definite raised lines

*M. nemorosus*.

Leaf-margin usually flat; blade very variable in shape and texture, but not often as above; petiole sometimes distinct but when blade cuneate it is often decurrent on the petiole; usually drying green or grey-green, only rarely discoloured; spines absent or up to 20 cm. long, but never shiny dark-brown; twigs often strongly angled or striate.... *M. cymosus*.

1. **M. lucidus** (L.) Loes. in Engl. & Prantl, Nat. Pflanzenfam. ed. 2, 20b: 140 (1942).  
*Celastrus lucidus* Linn., Mant. 49 (1767); Sond. in Harv. & Sond., Fl. Cap. 1: 456 (1860).  
*Gymnosporia lucida* Loes. in Engl. & Prantl, Nat. Pflanzenfam. 3, 5: 208 (1892); Davison in Bothalia 2: 294 (1927).
2. **M. procumbens** (L.f.) Loes. in Engl. & Prantl, Nat. Pflanzenfam. ed. 2, 20b: 140 (1942).  
*Celastrus procumbens* Linn. fil., Suppl.: 153 (1781); Sond., l.c. 457.  
*Gymnosporia procumbens* Loes. in Engl., Bot. Jahrb. 39: 169 (1906); Davison, l.c. 297.
3. **M. undatus** (Thunb.) Blake in Kew Bull. 1956: 237 (1956).  
*Celastrus undatus* Thunb., Prodr. Pl. Cap.: 42 (1794); Sond., l.c.  
*C. ilicinus* Burch., Trav. Int. S. Afr. 1: 340 (1822); DC., Prodr. 2: 7 (1825).  
*Catha fasciculata* Tul. in Ann. Sci. Nat., Sér. 4, 8: 98 (1857).  
*Celastrus zeyheri* Sond., l.c. 456.  
*Gymnosporia undata* Szyszyl., Polypet. Discifl. Rehmann.: 34 (1888); Loes. in Engl. & Prantl, Nat. Pflanzenfam. 3, 5: 208 (1892); Davison, l.c. 296.  
*G. rehmannii* Szyszyl., l.c.; Loes., l.c.  
*G. zeyheri* Szyszyl., l.c. 33; Loes. in Engl., Bot. Jahrb. 17: 548 (1893); Davison, l.c. 294.  
*G. fasciculata* Loes. in Engl. & Prantl, Nat. Pflanzenfam. 3, 5: 208 (1892); Davison, l.c. 298.  
*Celastrus albus* N.E. Br. in Kew Bull. 1906: 16 (1906).  
*Gymnosporia deflexa* Sprague in Kew Bull. 1906: 246 (1906); Davison, l.c. 299.  
*G. albata* Sim, For. & For. Fl. Col. Cape Good Hope: 186 (1907); Davison, l.c.  
*G. ilicina* Loes. in Engl., Pflanzenw. Afr. 3, 2: 225 (1921); Davison, l.c. 296.  
*G. peglerae* Davison, l.c. 298.  
*Maytenus ilicinus* Loes. in Engl. & Prantl, Nat. Pflanzenfam. ed. 2, 20b: 140 (1942).  
*M. fasciculatus* Loes., l.c.  
*M. zeyheri* Loes., l.c. 138.
4. **M. oleoides** (Lam.) Loes., l.c. 137.  
*Celastrus laurinus* Thunb., l.c. non *Maytenus laurinus* Briq. 1919.  
*C. oleoides* Lam., Tabl. Encycl. & Meth. 2: 293, No. 2696 (1797).  
*Scytophyllum laurinum* E. & Z., Enum. Pl. Afr. Austr.: 124, No. 966 (1834–5); Sond., l.c. 471.  
*Scytophyllum angustifolium* Sond., l.c. 472.  
*Gymnosporia laurina* Szyszyl., l.c. 35; Loes. in Engl. & Prantl, Nat. Pflanzenfam. 3, 5: 208 (1892); Bolus & Wolley-Dod in Trans. S. Afr. Phil. Soc. 14: 247 (1903); Davison, l.c. 310.  
*G. angustifolia* Loes., l.c.; Bolus & Wolley-Dod, l.c.; Davison, l.c. 300.  
*G. monococca* Davison, l.c.  
*Maytenus monococcus* Loes. in Engl. & Prantl, Nat. Pflanzenfam. ed. 2, 20b: 138 (1942).  
*M. angustifolius* Loes., l.c.
5. **M. acuminatus** (L.f.) Loes., l.c.  
*Celastrus acuminatus* Linn. fil., l.c. 154 (1781); Sond., l.c. 454.  
*C. cordatus* E. Mey. ex Sond., l.c.  
*Gymnosporia acuminata* Szyszyl., l.c. 33; Loes. in Engl. & Prantl, Nat. Pflanzenfam. 3, 5: 208 (1892); Davison, l.c. 311.

*C. cordata* Sim, l.c. 184; Davison, l.c. 300.

*Maytenus cordatus* Loes. in Engl. & Prantl, Nat. Pflanzenfam. ed. 2, 20b: 138 (1942).  
*Gymnosporia filiformis* Davison in Bothalia 2: 311 (1927), may belong here. All the flowers examined showed a 5-celled ovary with more than 2 ovules in each cell. More material is required before this can be cleared up.

6. **M. peduncularis** (*Sond.*) *Loes.*, l.c. 136.

*Celastrus peduncularis* Sond., l.c.

*Gymnosporia peduncularis* Loes. in Engl. & Prantl, Nat. Pflanzenfam. 3, 5: 208 (1892); Davison, l.c. 308.

7. **M. bachmannii** (*Loes.*) *Marais*, comb. nov.

*Gymnosporia bachmannii* Loes. in Engl., Bot. Jahrb. 19: 232 (1894); Davison l.c.

8. **M. capitatus** (*E. Mey. ex Sond.*) *Marais*, comb. nov.

*Celastrus capitatus* E. Mey. ex Sond., l.c. 458.

*Gymnosporia capitata* Loes. in Engl. & Prantl, Nat. Pflanzenfam. 3, 5: 207 (1892); Davison, l.c. 293; Loes. in Engl. & Prantl, Nat. Pflanzenfam. ed. 2, 20 b: 150 (1942).

9. **M. polyacanthus** (*Sond.*) *Marais*, comb. nov.

*Celastrus polyacanthus* Sond., l.c. 455.

*Gymnosporia polyacantha* Szyszyl., l.c. 34; Loes. in Engl. & Prantl, Nat. Pflanzenfam. 3, 5: 207 (1892); Davison, l.c. 302; Loes. in Engl. & Prantl, Nat. Pflanzenfam. ed. 2, 20b: 150 (1942).

*G. vacciniifolia* Conrath in Kew Bull. 1908: 211 (1908); Davison, l.c. 303.

10. **M. tenuispinus** (*Sond.*) *Marais*, comb. nov.

*Celastrus tenuispinus* Sond., l.c. 456.

*Gymnosporia tenuispina* Szyszyl., l.c. 33; Davison, l.c. 306; Loes., loc. cit.

*G. botsabelensis* Loes. in Bull. Herb. Boiss. 4: 429 (1896).

11. **M. linearis** (*L.f.*) *Marais*, comb. nov.

*Celastrus linearis* Linn. fil., l.c. 153; Sond., l.c. 455.

*C. lanceolatus* E. Mey. ex Sond., l.c. 456.

*Gymnosporia linearis* Loes. in Engl. & Prantl, Nat. Pflanzenfam. 3, 5: 207 (1892) Davison, l.c. 305; Loes. in Engl. & Prantl, Nat. Pflanzenfam. ed. 2, 20b: 149 (1942).

*G. lanceolata* Loes. in Engl. & Prantl, Nat. Pflanzenfam. 3, 5: 207 (1892); Davison, l.c.; Loes. in Engl. & Prantl, Nat. Pflanzenfam. ed. 2, 20b: 149 (1942).

12. **M. senegalensis** (*Lam.*) *Exell* in Bol. Soc. Brot., Sér. 2A, 26: 223 (1952).

*Celastrus senegalensis* Lam., Encycl. Meth. Bot. 1: 661 (1785).

*Gymnosporia senegalensis* Loes. in Engl. & Prantl, Nat. Pflanzenfam. 3, 5: 207 (1892); Davison, l.c. 320; Loes. in Engl. & Prantl, Nat. Pflanzenfam. ed. 2, 20b: 147, 149 (1942).

*G. dinteri* Loes. in Bull. Herb. Boiss., Sér. 2, 3: 823 (1903).

13. **M. mossambicensis** (Klotzsch) Blakelock in Kew Bull. 1957: 37 (1957) var. **mossambicensis**.

*Celastrus mossambicensis* Klotzsch in Peter's Reise Mossamb. Bot. 112 (1861).  
*Gymnosporia mossambicensis* Loes. in Engl., Bot. Jahrb. 17: 547 (1893); in Engl. & Prantl, Nat. Pflanzenfam. ed. 2, 20b: 152<sup>l</sup>(1942).

*Celastrus concinnus* N.E. Br. Kew Bull. 1906: 16 (1906).

var. **ruber** (Harv.) Blakelock, l.c.

*Celastrus ruber* Harv. in Harv. & Sond., Fl. Cap. 2: 592 (1862).

*Gymnosporia rubra* Loes., l.c.; Davison, l.c. 309; Loes. in Engl. & Prantl, Nat. Pflanzenfam. ed. 2, 20b: 150 (1942).

14. **M. nemorosus** (E. & Z.) Marais, comb. nov.

*Celastrus nemorosus* E. & Z., l.c. 129, No. 938; Sond., l.c. 460.

*Gymnosporia nemorosa* Szyszyl., tom. cit.: 35; Davison, tom. cit.: 316.

15. **M. cymosus** (Soland.) Exell, l.c. 222.

*Celastrus buxifolius* Linn., Sp. Pl.: 197 (1753) pro parte, excl. Tab. Plukenet; Sond., l.c. 459; non *Maytenus buxifolius* Griseb.

*C. ellipticus* Thunb. in Hoffm., Phytogr. Blaett. 1: 22 (1803); Thunb., Fl. Cap. 119 (1818); Sond., l.c. 458; non *Maytenus ellipticus* Krug. & Urb. ex Duss. (1897).

*C. cymosus* Soland. in Sims, Bot. Mag. t. 2070 (1819).

*C. heterophyllus* E. & Z., l.c. 120, No. 943; Sond. l.c.

*C. angularis* Sond., l.c. 460.

*Gymnosporia buxifolia* Szyszyl., l.c. 34; Loes. in Engl. & Prantl, Nat. Pflanzenfam. 3, 5: 207 (1892); Davison, tom. cit.: 317; Loes. in Engl. & Prantl, Nat. Pflanzenfam. ed. 2, 20b: 152 (1942).

*G. woodii* Szyszyl., l.c. 35; Loes., l.c.

*G. heterophylla* Loes. in Engl. & Prantl, Nat. Pflanzenfam. 3, 5: 207 (1892); Davison, l.c.; Loes. in Engl. & Prantl, Nat. Pflanzenfam. ed. 2, 20b: 152 (1942).

*G. condensata* Sprague in Kew Bull. 1906: 246 (1906); Davison l.c. 305.

*G. angularis* Sim, l.c. 186; Davison, l.c. 314.

*G. elliptica* Schonl. in Bot. Surv. Mém. S. Afr. 1: 73 (1919); Davison, l.c. 306.

*G. angularis* var. *orbiculata* Davison, l.c. 316.

*G. angularis* var. *grandifolia* Davison, l.c.

*G. cratoegiflora* Davison, l.c. 314; Loes., l.c. in syn.

*G. uniflora* Davison, l.c. 294.

Solander, in his manuscript in the library of the British Museum of Natural History, gives the following reference: "H.S. 261. 34. Habitat ad Prom. b. spei (Desmaretz.)" Vol. 261 in the Sloane Herbarium contains plants collected by Desmarest at the Cape. The specimen on p. 34 must be the type of *Celastrus cymosus* Soland., and not the specimen figured on Bot. Mag. t. 2070. I can trace no specimen of the figured plant, which seems to be nearer to the form described as "*Gymnosporia angularis*".

It has not been possible to ascertain the identity of all the species described from South African plants. Those not identified are as follows:—

*G. eremoecusa* Loes. in Engl., Bot. Jahrb. 41: 299 (1908).

The type of this has been destroyed. Judging from the description I have no doubt that it is the same as *M. senegalensis* (Lam.) Exell.

*G. crenulata* Engl., Bot. Jahrb. 10: 38 (1888).

Type destroyed. I have examined several sheets that have been called by this name, but they all belong to either *M. cymosus* (Soland.) Exell or *M. senegalensis* (Lam.) Exell.

*G. acanthophora* Loes. in Engl., Bot. Jahrb. 41: 299 (1908).

The type has been destroyed. All material that I have seen under this name belongs to *M. cymosus* (Soland.) Exell.

*Maytenus rudatisii* (Loes.) Loes. in Engl. & Prantl, Nat. Pflanzenfam. ed. 2, 20b: 138 (1942). *G. rudatisii* Loes. in Engl., Bot. Jahrb. 41: 307 (1908).

I have not been able to locate the type specimen; it has probably been destroyed. From the description it seems to be related to *Cassine eucleaeformis* (Sond.) O. Ktze.

*G. schlechteri* Loes. in Bull. Herb. Boiss. 2: 193 (1894).

Schlechter 241 differs from *M. cymosus* (Soland.) Exell in the very lax and slender inflorescences, and its leaves are somewhat narrower than those of other specimens from the Cape Peninsula. It seems remarkable that no other material like it is available from such a well-collected area, and I am inclined to regard it as just another local form of the extremely variable *M. cymosus* (Soland.) Exell.

*G. integrifolia* (L.f.) Glover in Ann. S. Afr. Mus. 9: 206 (1915).

I have not yet been able to examine any authentic material. All the specimens quoted by Davison were misidentified; most of them belong either to *Maytenus cymosus* (Soland.) Exell or to *Putterlickia pyracantha* (L.) Endl.

*G. saxatilis* (Burch.) Davison in Bothalia 2: 303 (1927). *Celastrus saxatilis* Burch., Trav. Int. S. Afr. 2: 264 (1824).

Burchell cites only his No. 1671, which has 6 ovules per locule and therefore belongs to *Putterlickia*. In making the new combination, Davison added 3 more Burchell specimens. One of these is a sterile scrap, and both the others are, like the type, *Putterlickia pyracantha* (L.) Endl.