FSA contributions 13: Ulmaceae

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Trees or shrubs, monoeccious or dioecious, sometimes spiny. Leaves alternate, simple, blade often unequal-sided at base; stipules lateral and free or amplexicaul and connate, caducous. Flowers unisexual or bisexual, regular, axillary, solitary or in cymes or clusters. Perianth of (4—)5 tepals, imbricate or valvate, free or shortly united, persistent. Stamens as many as, and opposite, tepals, inserted at base of perianth, erect in bud; anthers 2-locular, opening longitudinally. Ovary superior, 2-carpellate, l-locular; stigma 2, divergent; ovule pendulous from or near apex, anatropous. Fruit usually fleshy: endocarp hard. Seeds without endosperm; embryo curved.

Characters not applicable in South Africa except in cultivated species (Ulmus; see appendix): sepals sometimes 6—8, stamens rarely more than calyx lobes; ovary 2-locular; fruit compressed, dry and ± winged; embryo straight.

Genera 14, with about 120 species, mainly tropical and North Temperate, only four genera represented in South Africa, three in southern Africa together with one commonly cultivated.

1a Plant with axillary spines; stipules united along one margin
1b Plant unarmed (in African species); stipules free
2a Ovary sessile; fruit a thinly fleshy drupe; embryo curved
2b Ovary sessile (Planch.); fruit a flat samara, wing sur-
3a Male flowers with induplicate-valvate calyx lobes; leaves serrate almost from base; stigmas 0.5—1.0 mm long
3b Male flowers with imbricate calyx lobes; leaves entire, coarsely toothed or serrate but then only in upper ½; stigmas 2—5 mm long

 Chaetacme

Chaetacme Planch. in Annales des sciences naturelles, Sér. 3, 10, 266, 340 (1848); E.Phillips: 246 (1951); Polhill: 144 (1964); Polhill: 12 (1966); J.H.Ross: 521 (1925); Burtt Davy: 437 (1932); Henkel: 57, 79 (1934); Brennan: 625 (1949); Codd: 19 (1951); Eggeling: 436 (1952); Andrews: 254, t. 88 (1952); Keay: 593 (1958); Dale & Greenway: 576 (1961); White: 22 (1962); F. von Breitenbach: 84 (1965); Compton: 105 (1966); Letouzy: 56, t. (1968); Pvan Wyk: 39, t. (1972); Compton: 173 (1976); Coates Palgrave: 98 (1977); Pooley: 66, t. (1993). Type: Cape Province, Drège s.n. (K, isolecto.).


C. madagascariensis Baker: 443 (1885). Type: Madagascar. Baron 2397 (K, holo.).


C. macrocarpa Rendle: 13 (1916). Rendle 423 (1928); Peter 61 (1932); Batticcombe 85 (1936); Eggeling 247 (1940); Hauman 51 (1948). Type: Sudan Republic, Bahr el Ghazal, Schweinfurth 2828 (K, isolecto.).

C. macrocarpa Rendle var. crenata Hutch. & Dalz.: 423 (1928). Type: Ivory Coast, Chevalier 21824 (K, holo.).

Scrambling shrub to small, much-branched tree, 1—13 m tall, branches ± drooping, zigzag: twig slowly spreading-pubescent to glabrous, often short and becoming spinose at apex; axillary spines single—paired, 4—30 mm long. Leaves elliptic to elliptic-ovate, (20—)30—90—110 mm x (10—)15—45 mm, apex acute to shortly acuminate, terminal point up to 7 mm long, base broadly cuneate to rounded (to slightly cordate), margin entire or with occasional irregularly-disposed (or many, regular, especially juvenile plants) mucronate teeth; midrib prominent beneath, lateral veins ± 10, indistinct, coriaceous (juvenile foliage sometimes membranaceous-charta
FIGURE 1.—Chaetacme aristata. A, branches showing flowers and fruits, x 0.8. B, C, portions of twigs: B, x 1.6; C, x 0.8. D, cyme of male flowers, x 4.6; E, male flower, 2 tepals and 1 stamen removed, x 9.4; F, female flower, x 9.4; G, mature fruit, x 2.4. A, Acocks 12540; B, Van der Schijff 2456; C, Vahrmeijer 574; D, Gordon-Gray 1726; E, F, Acocks 9455; G, Strey 7364. Artist: Eleanor Catherine.
A genus of ± 15 species in the tropics and subtropics, only one present in Africa.


*Celastrus orientalis* L. 1044 (1753). *Spinaia orientalis* (L.) Planch. 520 (1848).

![FIGURE 2 — Distribution of Chaetacme aristata in southern Africa.](image)


A genus of ± 15 species in the tropics and subtropics, only one present in Africa.
FIGURE 3.— *Trema orientalis*. A, branch with inflorescences and young fruit, × 0.8; B, detail of leaf, lower surface, × 12; C, leaf, × 0.8; D, inflorescence, × 2.4; E, male flower, 1 tepal and 1 stamen removed, × 9.6; F, female flower, × 9.6; G, fruit, × 4.8. A, B, D, F, Mersmuller & Giess 30725; C, Hanaface 1347; E, Pearson 9826; F, Gerrard 14. Artist: Eleanor Catherine.
ly-cut wood unpleasant-smelling; young twigs densely tawny-pubescent-tomentose. Leaves broadly or narrowly ovate to ovate-lanceolate, 30—90(—130, juvenile) × 25—55(-70, juvenile) mm, acuminate, base rounded to cuneate, margin (± entire to coarsely crenate-)dentate-serrate in upper 2/;; basal lateral veins extending well into upper half, upper lateral veins 1 or 2 each side; thinly or thickly chartaceous, often rough, young foliage often densely tawny-pubescent both sides, but glabrescent except veins below; petiole 2.5— 5.0(— 10.0) mm; stipules linear to linear-obovate, 3-8 mm, pubescent.

Inflorescences: lower cymes numerous, of (3-)many male flowers; pedicels 1.5-5.0 mm; uppermost inflorescences of 1-few bisexual flowers; pedicels to 12 mm, intermediate of both male and bisexual; axis and pedicels usually densely tawny-pubescent both sides, but glabrescent except veins below; petiole 2.5-5.0(-10.0) mm; stipules linear to linear-obovate, 3-8 mm, pubescent. Inflorescences: lower cymes numerous, of (3-)many male flowers; pedicels 1.5-5.0 mm; uppermost inflorescences of (1-)many bisexual flowers; pedicels 1.5-5.0 mm; uppermost inferences of 1-few bisexual flowers; pedicels 12 mm, intermediate of both male and bisexual; axis and pedicels usually densely tawny-pubescent.

Tepals 1.5-2.0 mm, pubescent. Ovary ± pubescent; stigmas unbranched. 2.0-2.5 mm. Fruits orange(-blackish), subglobose, 4-angled when dry, 4-6(-7) × 3-5 mm, glabrous; pedicel 3-10 mm. Figure 5A–F.

Found in southwestern and southeastern Botswana (Ukwini, Mochudi; few collections), throughout Northern Province, North-West, Mpumalanga and Gauteng and extreme south, throughout Swaziland, Free State, KwaZulu-Natal. Lesotho, most northeastern parts of Northern Cape, Eastern Cape and along major rivers and in coastal areas of Western Cape excluding the west coast north of Cape Town (Figure 6); widespread from Arabia to Cape, Sudan to Nigeria and Angola. Occurs in a wide range of habitats: dry evergreen and riverine forests, upland forest, coastal forest; found from coast up to 2 000 m.

A useful street tree; also yields hard timber.

Vouchers: Acocks 1616 (PRE); Brueckner 121H (K. PRE); Flanagan 279 (K. PRE); Moll 4455 (NH. PRE); Moll 3359 (K. PRE); Polhill 2966 (K. PRE); White 431 (NH).
Evergreen or deciduous monoeceous tree, 3–40 m tall, buttressed, branches often drooping; bark pale, smooth or scaling in discs; young twigs tawny-pubescent. Leaves elliptic to elliptic-obovate, (75–)90–150 × 40–50 mm, acuminate ± mucronate, base cuneate, (± entire-) oblong-obovate or oblong-obovate, angle of over 45° with midrib; pubescent, soon glabrescent, ribbed when dry, 7–10 × 5–6 mm, glabrous; pedicels 3–13 mm. Figure 5G, H.

Found in KwaZulu-Natal in north (Ubombo) and southeastern South Africa (Stanger to Port Shepstone) (Figure 7), in coastal forests, generally in humid lowland areas with heavy rainfall, with dense laurel-like canopies and ferns, and from Zaire to Angola and West Africa. Occurs in isolated patches of lowland rain forest; uncommon.

Vouchers: Bayer 2 (BM, K, PRE), Dokho 260 (BM, K, PRE), Moll 3233 (K), Ward 4817 (K, NH, NU, PRE).

C. australis L., a Eurasian species closely related to C. africana, but with leaves usually serrate throughout length, grey-pubescent beneath and drying bright yellow-green above, fruits larger, (8–)10 × 9 mm, and C. occidentalis L. (N America), somewhat similar to C. australis but with bright green leaves glabrous beneath, have been cultivated in Pretoria.

Several species and hybrids of Ulmus L. have been cultivated as ornamentals; deciduous trees; bark fissured. Leaves serrate or biserrate. Flowers bisexual or hermaphroditic. Perianth herbaceous, cup-shaped, lobes 4–8, connate. Stamens of same number as perianth lobes. Ovary compressed, stipitate. Fruit a flat samara with encircling wing, emarginate at apex.

REFERENCES


BRENTAN, J.P.M. 1949. Check-lists of the forest trees and shrubs of the British Empire, Tanganyika territory No. 5, 2. Imperial Forestry Institute, Oxford.


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