

FSA contributions 1: Aquifoliaceae

S. ANDREWS*

Trees or shrubs. *Leaves* alternate, rarely opposite, simple, mostly evergreen; stipules minute. *Inflorescences* in axillary cymes. *Flowers* unisexual, regular, small, sepals and petals usually fused at base, rarely free. *Sepals* 4–6(–8), imbricate. *Petals* 3–5(–8), imbricate, white. *Stamens* 4–5(–8), usually adnate to petals; anthers 2-theous. *Ovary* superior (2)4–6(–22)-locular; style terminal; stigma capitate or discoid. *Fruit* a globose or ovoid berry, containing 2–10(–20) pyrenes. *Seeds* with copious endosperm.

Found throughout the tropical, subtropical or temperate regions of the world. *Ilex* and *Nemopanthis* are recognised in the family, which is often placed in the Celastrales. Other genera such as *Phelline*, *Sphenostemon* and *Oncotheca* are now placed in separate families by several authors.

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Ilex L., Species plantarum 1: 125 (1753); L.: 60 (1754); Sond.: 473 (1860); Benth. & Hook. f.: 356 (1867); Harv.: 51 (1868); Oliv.: 359 (1868); Marloth: 150 (1925); Loes.: 53 (1942); H. Perrier: 1 (1946); Keay: 623 (1958); A. Robyns: 110 (1960); Mendes: 353 (1966); Verdc.: 1 (1968); Mendes: 1 (1973); R.A. Dyer: 331 (1975); Troupin: 321 (1983); Verdc.: 329 (1989). Type species: *I. aquifolium* L.

Description as for family but petals fused at the base with adnate stamens.

A genus of about 400 species of which only one is indigenous to southern Africa.

The name *Ilex* is derived from its resemblance to the leaves of *Quercus ilex*, the evergreen oak.

Ilex mitis (L.) Radlk. in Reports of the British Association for the Advancement of Science 1885: 1081 (1886); Loes.: 246 (1895); Loes.: 240 (1901); Baker f.: 43 (1911); Loes.: 463 (1912); Engl.: 218 (1921); Exell: 74 (1927); Burt Davy: 445 (1932); Lebrun: 134 (1935); Loes.: 65 (1942); H. Perrier: 2 (1946); Robyns 1: 493 (1948); Brenan: 58 (1949); Adamson: 569 (1950); Exell & Mendonça 1: 348 (1951); Brenan: 235 (1953); Keay: 623 (1958); F. White: 215 (1962); Von Breitenbach: 611 (1965); Mendes: 353 (1966); Verdc.: 1 (1968); Palmer & Pitman: 1269 (1972); Mendes: 1, 2 (1973); Compton: 333 (1976); Palgrave: 492 (1977); Troupin: 322 (1983); Verdc.: 329 (1989). Type: South Africa, specimen 261.2 Herb. Linnaeus [LINN, lecto.]; fide Verdc.: 243 (1967).

var. *mitis*

Sideroxylon mite L. Systema naturae, edn 12.2: 178 (1767); Jacq.: 249 (1789); Willd.: 1089 (1798); Sims: t. 1858 (1816). *Scleroxylum mite* (L.) Willd.: 249 (1809). *Myrsine mitis* (L.) Spreng.: 663 (1824); Papp: 22 (1854).

Prinos lucidus Aiton: 478 (1789); Aiton: 313 (1811); Willd.: 226 (1799); Pers.: 388 (1805); DC.: 17 (1825); Roem. & Schult.: 61 (1829). Type: not traced in BM.

Chrysophyllum millerianum Lam.: 45 (1797); Poir.: 447 (1810); Poir.: 17 (1812). *Manglilla milleriana* (Lam.) Pers.: 237 (1805); Roem. & Schult.: 504 (1819). Type: South Africa, Cape of Good Hope, Mill. Fig. pl. Gardeners' Dictionary 2: 199, t. 299 (1760).

Leucoxylon laurinum E. Mey. in Drège: 77, 79, 199 (1843), nom. nud.

Ilex capensis Sond.: 473 (1860); Papp: 12 (1862); Oliv.: 359 (1868); Hiern: 143 (1896); Sim: 151 (1907); Eyles: 403 (1916). Types: South Africa, Magaliesberg, *Zeyher 1129* (K, SAM, isosyn.); Uitenhage, *Zeyher 3365* (SAM, isosyn.); *Zeyher 3366* (K, SAM, isosyn.); Winterhoeksberg and Nieuwekloof, *Drège* (K, isosyn.) and many other sheets and plates.

Ilex mitis (L.) Radlk. forma *capensis* (Sond.) Loes.: 242 (1901).

Celastrus sieberi Bernh. in Hb. Krauss., nom. nud.

Densely crowned tree or shrub to 16 m tall, occasionally to 33 m. evergreen; trunk up to 1 m in diameter, rarely to 5.5 m. *Bark* smooth when young, whitish or grey, later becoming pustulate and somewhat chunky or fissured, (older Cape trees often have a pinkish red bark). *Young branchlets* often puberulous, purplish. *Leaves* alternate, glabrous, elliptic to elliptic-lanceolate, oblong-elliptic or obovate-elliptic, 2.4–9.5(–11.0) × 0.9–2.5(–3.5) mm, acute, apiculate or rounded at apex, rarely acuminate (often kinked when dried), obtuse or cunate at base, dark green, often dull above, paler below; midrib pale, sunken; entire or sometimes spiny near apex or in upper half of leaf only, (young foliage olive or reddish green, spiny), petiole 0.7–2.0 mm long, glabrous, channelled, usually reddish purple; stipules semi-persistent. *Inflorescence* 1–few-flowered cymes, pubescent. *Calyx* pubescent, lobes 5 or 6, 0.5–1.0 mm long, ciliate. *Petals* white, glabrous, 2.3–3.0 × 1.5–2.0 mm, lobes 5 or 6, ciliate, fragrant. *Stamens* 5 or 6, 1.5–2.5 mm long, staminodes shorter. *Ovary* globose, 1.6 × 1.3 mm, stigma sessile, discoid, prominent; rudimentary ovary conical. *Fruit* 4–6 mm in diam., globose, slowly ripening from greenish pink to dark crimson; pyrenes 5 or 6, 3.0–3.5 × 1.0–1.5 mm.

Widespread in Africa south of the Sahara, down to the Cape. Does not occur in Namibia, Botswana and in the drier parts of the Transvaal, Orange Free State and the Cape. Most frequently growing beside rivers and streams, in moist evergreen forests or low montane grassveld. Flowering from September to February and fruiting from December to June. Usually found between 7–600 m near the coast and 1 000–2 130 m further inland. Ranges from common to rare depending on locality. Figure 1.

Vouchers: *Compton 32099* (PRE); *Hemm 29* (PRE); *Scheepers 772* (K, PRE); *Strey 9880* (K, PRE); *Williams 593* (K, PRE).

Has been used as an enema for colic in children (southern Sotho); as a purgative (Kgatla); a lather is used

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FIGURE 1.—*Ilex mitis* var. *mitis*. A–F, male: A, flowering branch, $\times 1$; B, bud, $\times 4$; C, flower, $\times 4$; D, calyx, opened out, $\times 4$; E, corolla, opened out to show stamens, $\times 4$; F, rudimentary ovary, $\times 4$. G–J, female: G, flower, $\times 4$; H, corolla, opened out to show staminodes, $\times 4$; I, ovary and calyx, $\times 4$; J, detail from fruiting branch, $\times 1$. A–F, *Jessel 61*; G–I, *Battiscombe 643*; J, *A.S. Thomas 2650* (Reproduced from the *Flora of tropical East Africa*, with permission of the Director of the Royal Botanic Gardens, Kew. Artist Dorothy Thompson.).

for washing the bodies of influenza sufferers (Zulu) and in witchcraft (Sotho). The wood is used for furniture and ceilings, brake blocks, railway sleepers and for firewood.

Common names: Litota, liBota (Swati); Munamiti (Bakone Suto); Mutanzwa-Khamelo (Venda); Phukhu, Motoo a phofu, Mofusata (S Sotho); iPhuphuma (Zulu); monamane (N Sotho); unDuma (Xhosa, Zulu); phukgu, phugile (S Sotho); waterboom, waterhout, without, wit-waterhout (Afrikaans); Cape holly, wild holly, water tree, African holly (English).

Cultivated in Europe as a glasshouse or stove plant before 1816.

Var. *schliebenii* Loes. is only known from the Morogoro District, Tanzania and differs from var. *mitis* in its smaller, almost round leaves.

Introduced species

Voucher specimens have been seen for the following species which are cultivated. Other taxa are mentioned in *Hollies—underused trees and shrubs for cultivation in southern Africa* (S. Andrews in prep.).

***Ilex aquifolium* L.** Common or English holly. Native of S & W Europe, North Africa and W Asia. Shrub, evergreen. Bark grey. Leaves elliptic or ovate, dark glossy green, undulate, entire or when spinose, divaricating. Flowers white, rarely tinged pink. Fruits spherical, red. In parks and gardens.

Vouchers: *S. Andrews 956* (PRE); *L.E. Codd 10449* (PRE); *F. Venter 12107* (PRE).

Ilex cornuta Lindl. & Paxton. Horned holly. Native of China and Korea. Shrub, evergreen, dense rounded habit. *Leaves* rectangular, dull green, spines variable, from 5–9 on older plants. *Flowers* white. *Fruits* spherical, red. In parks and gardens.

Voucher: S. Andrews 985.

I. cornuta 'Burfordii'. *Leaves* with terminal spine only. Female. In gardens.

Vouchers: S. Andrews 986 (PRE); L.D. du Toit 130 (PRE).

Ilex × **koehneana** Loes. (*I. aquifolium* L. × *I. latifolia* Thunb.). Evergreen tree or shrub. *Leaves* oblong to elliptic, large, glossy mid-green, strongly spined. *Flowers* white. *Fruits* globose, bright red. In gardens.

Voucher: S. Andrews 914 (K. PRE).

Ilex paraguariensis A. St.-Hil. Mate. Yerba Mata. Paraguay tea. Native of Paraguay, Brazil, Uruguay, Argentina. Evergreen tree to 12 m. *Bark* grey. *Leaves* oblong to obovate-oblong, obtuse, serrate, dull mid-green. *Flowers* greenish white. *Fruits* globose, glossy dark red. Planted at Westfalia Estate, Duiwelskloof, probably for economic beverage which is made from the dried leaves.

Voucher: J.J. Bos 1093 (K. PRE).

Ilex pernyi Franch. Native of Central and W China. Shrub, evergreen. *Leaves* nearly sessile, triangular, 5-spined, squared at base, dark glossy green. *Flowers* yellowish. *Fruit* spherical, red. Seen in gardens.

Voucher: S. Andrews 983 (PRE).

Ilex vomitoria Aiton (*I. cassine* Walter non L.) Yaupon. Native of SE United States and Mexico. Tree or shrub to 7 m, evergreen. *Leaves* ovate or elliptic, obtuse, crenate, dark glossy green. *Flowers* white. *Fruit* globose, scarlet. Planted in Grahamstown Botanic Garden. Foliage contains a caffeine used by the North American Indians.

Voucher: S. Andrews 1162 (K. PRE).

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