Manilkara nicholsonii (Sapotaceae), a new species from southern Natal

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Manilkara nicholsonii Van Wyk, a new species from southern Natal is described. A key to the southern African Manilkara species is provided.

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Manilkara nicholsonii Van Wyk, ‘n nuwe spesie van Suid-Natal word beskryf. ‘n Sleutel tot die Suider-Afrikaanse Manilkara-spesies word verskaf.

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Introduction
Fieldwork and a comparative morphological study of the Manilkara material in NH, NU, PRE and PRU revealed an undescribed species from southern Natal. This paper provides a description and comparison with existing Manilkara species in southern Africa.

The specific epithet honours Mr. H.B. Nicholson, amateur botanist, whose extensive collecting in southern Natal has contributed considerably to our knowledge of the flora of that region.

Description
Manilkara nicholsonii Van Wyk, sp. nov., M. concolori affinis, a qua imprimis differt foliis majoribus (50–70 mm longis, 25–35 mm latis) et magis ellipticis, basibus acutioribus, floribus raro plus quam tribus in fasciculo, ovario glabro, stylo longiore (5–6 mm), fructu majore (25–30 mm longo, 15–20 mm diam.), pedicello fructifero incrassato lignosoque et partim corticato, seminibus majoribus (15–20 mm longis, 7–8 mm latis, 6–7 mm crassis) et magis compressis, cicatrice lineari vel lineari-elliptica cum crista longitudinali.

TYPE. — Natal, 3030 (Port Shepstone): Farm Beacon Hill near Port Edward (–CC), Van Wyk 4492 (PRU, holo.; PRE;NH;NU).

Tree up to 10 m high; stem up to 0.5 m in diam., bark grey or whitish, longitudinally fissured; vegetative parts glabrous, or at least very soon glabrous. Branches terete, brownish grey becoming grey when mature, often with conspicuous lenticels. Leaves more or less terminal on the branches but not in dense terminal clusters; lamina dark green and shiny above, paler and dull below, varying from elliptic-ovate or elliptic-oblong to usually elliptic, (30)50–70(100) mm long, (15)25–35(50) mm wide, apex obtuse, emarginate or retuse, base acute; midrib in dried leaves more or less immersed and prominently keeled above, prominent below, in fresh leaves keeled above and prominent below; primary lateral veins alternate or opposite, 8–15 pairs, parallel, more or less straight and ascending at an angle of 60–80°, slightly immersed on both sides in dried leaves and raised in fresh leaves; petiole (5)8–10(14) mm long, semi-terete, flattened and canaliculate above. Flowers trimerous, solitary or in usually 3-flowered fascicles in the axils of leaves or scars of fallen leaves, often parasitized and transformed into woody
galls; pedicel 4–8 mm long, stout, terete, sparingly covered with reddish brown appressed hairs, abruptly widening into the calyx. Sepals ovate or ovate-elliptic, obtuse, about 3.75–4 mm long; the outer ones brownish tomentose outside and inside near the apex, 1.5–3.0 mm wide; the inner ones thinner, petaloid, slightly narrower, about 2 mm wide, with vague midrib, whitish tomentose outside, glabrous or sparingly pubescent inside. Corolla cream or

Figure 1 *Manilkara nicholsonii*. 1. leafy twig with flowers (mainly past flowering) and insect galls, × 1 (Van Wyk 4492); 2. flower with calyx and corolla removed to show the ovary, × 10; 3. corolla tube opened and seen from inside, × 10 (both from Van Wyk 4485); 4. branchlet with fruit, × 1 (Strey 11309); 5. seed, ventral and lateral views, × 3 (Strey 11119).
whitish, glabrous, the tube 0.75–1.2 mm long, the lobes oblong-linear or oblanceolate-spathulate, obtuse or rounded, with a very narrow base, 3.5–4.2 mm long and about 0.75 mm wide; the appendages arising from a broad base, 2–3 mm long and about 0.75 mm wide, lanceolate-linear, acute or acuminate, often with a few coarse serrations near the apex. Staminodes sometimes fewer than the number of corolla lobes, glabrous, fleshy, ovate-suborbicular or subquadrate, about 0.5 mm long and 0.5–0.7 mm wide, usually more or less trilobed or tridentate, occasionally long tapering and filament-like, often with a rudimentary or apparently functional anther. Stamens 6 (rarely 7 or 8); filaments 1.7–2.5 mm long, glabrous; anthers somewhat sagittate, apiculate, about 2 mm long and 1 mm wide. Ovary 6 (rarely 8)-locular, semiglobose-conical, glabrous, about 1.5 mm long and 2 mm in diameter, more or less gradually passing into the rather thick, subulate, glabrous and truncate, usually 5–6 mm long style. Fruiting pedicels not or slightly lengthened but becoming thicker, more woody and partly covered by periderm; calyx persistent. Berry 1- or 2-seeded, ellipsoid, orange when ripe, 25–30 mm long and 15–20 mm in diameter, often crowned by the remains of the style. Seeds obovate-oblong, slightly compressed, obliquely truncate at the base, 15–20 mm long, 7–8 mm wide, 6–7 mm thick; testa brown, smooth and shiny, hard; cicatrix linear or linear-elliptic with a longitudinal central ridge, occupying the truncate basilateral side of the seed, 7–9 mm long and 2–2.5 mm wide (Figure 1).

Flowering from June to August. Ripe fruits collected during February and March.

Distribution

Manilkara nicholsonii is found in ravine forest in southern Natal (Figure 2). It occurs on sandy soils derived from Table Mountain sandstone and often grows among rocks on forest margins or streambanks.

Although not yet collected in Transkei, Manilkara nicholsonii seems to be restricted to the Table Mountain sandstone area of southern Natal and northern Transkei—an area particularly rich in endemic tree species. It is the only Manilkara species yet recorded from this area. Associated tree species often include endemics such as Eugenia erythrophylla Strey, E. verdoorniae Van Wyk, Pseudosalacia streyi Codd and Rhynchocalyx lawsonioides Oliv.

Manilkara nicholsonii is a rare species threatened by the large scale destruction of the few remaining patches of forest within its distribution range.

Specimens examined

NATAL. — 3030 (Port Shepstone): Beacon Hill near Port Edward (– CC), Van Wyk 4229, 4492 (PRU, holo.; PRE; NH; NU), 4502 (PRU); Umtamvuna Nature Reserve, plot 10, Nicholson s.n. (herb. Nicholson); Upper Uvongo River tributary (– CD), Cooper 32 (NH; PRE), Nicholson 688 (PRE), Strey 11119 (NH; PRE), 11309 (PRE), Van Wyk 4485, 4487 (PRU). 3130 (Port Edward): Hills behind Port Edward (– AA), Nicholson 1290 (PRE).

Discussion

In his treatment of the Sapotaceae for the Flora of Southern Africa, Meeuse (1963) recognized three Manilkara species viz. M. concolor (Harv. ex C.H. Wr.) Gerstn., M. mochisia (Bak.) Dubard and M. macaulayae (Hutch. et Corbishley) H.J. Lam. Hemsley (1966) included the latter under M. mochisia and transferred Muria discolor (Sond.) Hartog to Manilkara with the new combination M. discolor (Sond.) J.H. Hems!. The description of Manilkara nicholsonii therefore brings the number

![Figure 2](image-url)  
Figure 2  The known distribution of Manilkara nicholsonii.

![Figure 3](image-url)  
Figure 3  Manilkara nicholsonii. Branchlet with characteristic woody flower galls (Van Wyk 4229).
Figure 4  Seeds of southern African Manilkara species as seen from the ventral (A), lateral (B) and dorsal (C) side. 1. *M. nicholsonii* (Strey 11119); 2. *M. concolor* (Kemp 1469); 3. *M. mochisia* (Lamont 33); 4. *M. discolor* (Mogg 27082). Length of scale = 3 mm.
of *Manilkara* species presently recognized in southern Africa to four.

*M. nicholsonii* (Figure 1) seems to be most closely related to *M. concolor*. Vegetatively the two species can easily be confused. However, *M. nicholsonii* can usually be distinguished by its larger and more elliptic leaves, often more acute lamina basis and characteristic woody flower galls on the branchlets (Figure 3). Similar galls (probably caused by a member of the insect family Psyllidae) have not yet been found on material from other *Manilkara* species in southern Africa.

The flowers of *M. nicholsonii* are larger and not produced in such many-flowered fascicles as in *M. concolor*. In southern Africa *M. nicholsonii* is unique in being the only member of the Sapotaceae with the ovary glabrous. Furthermore, the fruits and seeds of *M. nicholsonii* are the largest of the local *Manilkara* species. It also differs in being the only species in which the comparatively short pedicels become conspicuously thicker, woody and partly covered by periderm during the fruiting stage.

Seed characteristics are usually highly rated in the taxonomy of the Sapotaceae (Baehni 1965). It was found that the external seed morphology of the *Manilkara* species studied provides excellent criteria for distinguishing the species (Figure 4). These findings confirm the results of Meeuse (1960, 1963) which can be consulted for detailed descriptions of the seeds of the different species. In addition it may be noted that despite its apparent relationship with *M. concolor*, the shape of the cicatrix on the seeds of *M. nicholsonii* shows some resemblance to that of *M. mochisia*. In fact, the seeds of *M. concolor* are quite different in being only slightly compressed and without the longitudinal ridge within the cicatrix. Two slightly raised and often differently coloured areas often occur within the more elliptic or ovate cicatrix of this species.

**Key to the southern African *Manilkara* species (partly based on Meeuse 1960, 1963).**

1. Leaf lower-surface densely adpressed—silvery pubescent except on the midrib; stamens usually 12 (occasionally abortive and resembling staminodes); alternipetalous staminodes absent; testa pale fawn-coloured .......................... *M. discolor*

1. Leaf lower-surface glabrous or with vestiges of an adpressed whitish pubescence especially near the midrib and towards the base; stamens usually 6, rarely 7 or 8; alternipetalous staminodes present; testa brown:

   2. Twigs thick, conspicuously zig-zag, divaricate or subverticillate; leaves usually densely rosulate on the very tips of branches or on short lateral shoots, glabrous or slightly whitish pubescent below .......................... *M. mochisia*

   2. Twigs slender, not conspicuously zig-zag, divaricate or subverticillate; leaves not congested on the very tips of branches, glabrous:

   3. Ovary glabrous; style 5–6 mm long; berry 25–30 mm long, 15–20 mm in diameter; woody flower galls usually present on branchlets; recorded only from southern Natal .......................... *M. nicholsonii*

   3. Ovary densely pubescent; style 2–3 mm long; berry 10–15 mm long, 8–15 mm in diameter; woody flower galls absent from the branchlets; recorded from Natal as far south as Umkomaas, Transvaal, Mozambique and parts of East-Africa .......................... *M. concolor*

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**References**

BAEHNI, C. 1965. Mémoire sur les Sapotacées 3: Inventaire des Genres. *Boissiera* 11: 1–262.

HEMSLEY, J.H. 1966. Notes on African Sapotaceae. *Kew Bull.* 20: 461–510.

MEEUSE, A.D.J. 1960. Notes on the Sapotaceae of southern Africa. *Bothalia* 7: 317–379.

MEEUSE, A.D.J. 1963. Sapotaceae. In: Flora of Southern Africa, ed. Dyer, R.A. et al., Vol. 26. Government Printer, Pretoria.