

A new species of *Eugenia* (Myrtaceae) from southern Natal

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Eugenia umtamvunensis Van Wyk, a new species from southern Natal is described. It is closely allied to *E. natalitia* Sond. Differentiating characteristics include the more leathery foliage leaves with obtuse or rounded apices, conspicuous flowering brachyblasts on branchlets of previous seasons, flowers sessile or with relatively short pedicels and larger, two-seeded fruits with a much thicker pericarp.

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Eugenia umtamvunensis Van Wyk, 'n nuwe spesie van Suid-Natal word beskryf. Dit is nou verwant aan *E. natalitia* Sond. Onderskeidende kenmerke sluit in die meer leeragtige blaarlaminas met stomp of geronde punte, opvallende blomdraende bragiblaste op die takke van vorige seisoene, sittende blomme of met relatief kort blomstiele en groter, twee-sadige vrugte met 'n veel dikker perikarp.

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Introduction

A number of undescribed species presently included in the genus *Eugenia* L. s.str. occur in southern Africa. Two species groups (X and Y) are distinguished among the native members of the genus (Van Wyk 1978; additional papers cited under discussion). One of these new species belongs to Group X and is described in this paper. The exact taxonomic position of Group Y is doubtful and its new taxa must await formal description pending further study.

Description

Eugenia umtamvunensis Van Wyk, **sp. nov.**, *E. natalitia* affinis, a qua imprimis differt ramulis crassioribus et rigidioribus, cortice primo atro-ferruginea, foliis magis coriaceis, apicibus obtusioribus vel rotundatis, brachyblastis floriferis in ramulis vetustioribus plures annos florentibus, floribus vel sessilibus vel cum pedicellis relative brevioribus, fructibus maioribus ac globosioribus et saepe sessilibus et plerumque biseminalibus et cum crassiore pericarpio.

TYPE. — Natal, 3030 (Port Shepstone): Beacon Hill near Port Edward (– CC), *Van Wyk* 3631 (PRU, holo.; NH; PRE).

Androdioecious tree up to 10 m high. *Bark* grey or whitish, smooth or flaking off in thick irregular pieces, slash dark brown. *Branchlets* dark rusty-brown becoming grey when mature, often with irregular longitudinal ribs, initially flattened, glabrous; buds glabrous to densely pubescent; internodes (7)15–25(35) mm long. *Leaves* decussate, petiolate, lamina reddish-brown when young, becoming deep green and shiny above, light green, dull and clearly dotted with secretory cavities below, glabrous, usually elliptic to broadly elliptic or obovate to broadly obovate, (25)40–80(90) mm long, (15)30–55(60) mm wide; apex obtuse or rounded and sometimes shortly and bluntly acuminate; base obtuse, thick and coriaceous; margin revolute in dried and fresh leaves; venation pinnately net veined, midrib in dried leaves usually with basal half concave and slightly raised, or plane in upper half above, strongly elevated below; plane or slightly elevated above and prominently elevated below in fresh leaves; primary lateral veins alternate or opposite, (3)5–6(8) pairs, spreading, raised on both sides in dried

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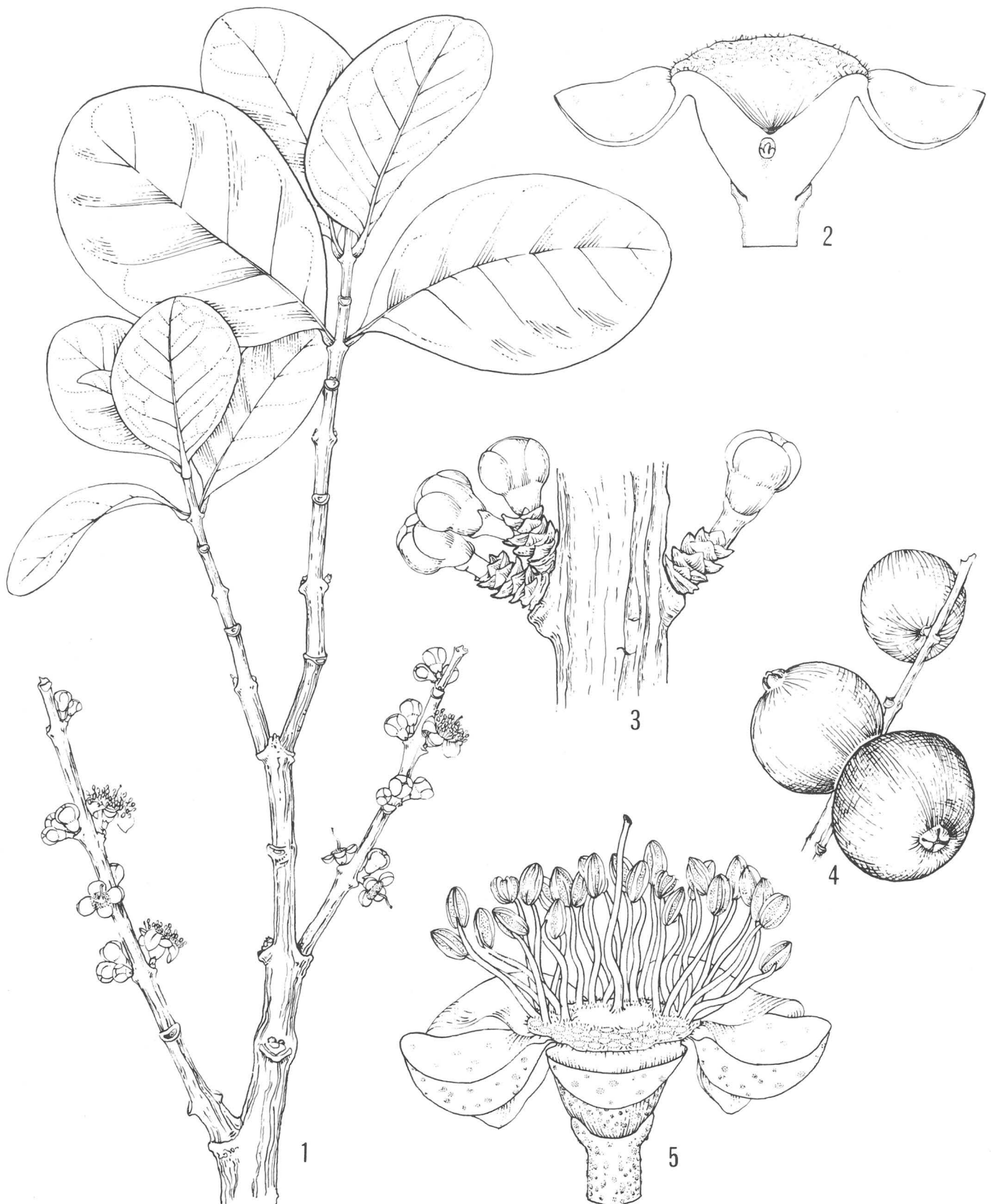


Figure 1 *Eugenia umtamvunensis*. 1, leafy twig with flowers, $\times 1$ (Van Wyk 5132); 2, longitudinal section of staminate flower with petals and stamens removed, $\times 8$ (Van Wyk 5132); 3, brachyblasts with flower buds, $\times 4$ (Van Wyk 4210); 4, branchlet with fruits, $\times 1$ (Van Wyk 3631); 5, bisexual flower with some petals and stamens removed, $\times 8$ (Van Wyk 5134).

leaves, slightly raised or flat on both sides in fresh leaves, fused into a longitudinal lobed marginal vein about 1–4(6) mm from the margin of the lamina; tertiary veins slightly raised on both sides in dried leaves, obscure in fresh ones;

petiole (2)3–4(5) mm long, ventrally plane, glabrous. *In-florescences* consisting of usually 1–5 brachyblasts (fasciculiform-racemiform confluences) up to 6 mm long in the axils of fallen leaves on branchlets of previous

seasons, each brachyblast with 1–5 flowers and remaining floriferous for a number of seasons, very rarely with flowers solitary in the axils of bracts on the first few nodes of the new season's growth. *Staminate flowers* sessile or with pedicels up to 4(6) mm long; bracteoles 2, fleshy, attached at the base of the hypanthium, ca. 1,0 mm long, ca. 0,75 mm wide, ovate with the apex obtuse or rounded, glabrous or with a few scattered hairs, secretory cavities usually present. *Sepals* 4, subrotund with rounded apices, 2 large, ca. 3,0 mm long, ca. 3,2 mm wide, 2 small, ca. 2,0 mm long, ca. 3,0 mm wide, outer surface sparingly gland-dotted, glabrous or margins often with a few scattered hairs. *Petals* 4, white, usually elliptic or ovate, ca. 5,0 mm long, ca. 4,0 mm wide, glabrous or with a few scattered hairs on the margin, sparingly gland-dotted. *Disc* with a central depression, surface even, fleshy and sparingly pubescent between filaments. *Stamens* usually 40–55, arising from the disc in ca. 3 series; filaments of various lengths, ca. 2–6 mm long; anthers 2-theous, 1 × 0,75 mm, all fertile. *Hypanthium* more or less obconical, ca. 1,75 mm long, glabrous and conspicuously gland-dotted. *Ovary* aborted or rudimentary; style rudimentary, ca. 0,5 mm long or absent. *Bisexual flowers* with the pedicels, bracteoles, *sepals*, *petals* and *stamens* as in staminate flowers. *Disc* slightly convex with an even surface, fleshy, sparingly pubescent between filaments, with a smooth zone ca. 1,0 mm wide surrounding the base of the style. *Hypanthium* obconical, ca. 2,0 mm long, resembling that of the staminate flowers. *Ovary* fused to the lower part of the hypanthium, 2-locular; ovules usually 2 per locule, 2 or rarely 1 or 3 developing; style filiform, terete, glabrous, ca. 4,5 mm long; stigma small, somewhat capitate, covered with small papillae. *Fruit* a fleshy berry, changing yellow through reddish-orange to dark purple when ripe, subglobose, usually 25,0–30,0 mm diam., glabrescent with persistent calyx lobes at the apex; pericarp 6,0–12,0 mm thick, flesh whitish. *Seeds* subreniform to oblong globose, often with one flattened lateral side in 2-seeded fruits, testa leathery, ca. 0,25 mm thick, brownish; embryo with cotyledons partly fused, gland-dotted (Figure 1).

Flowers were collected during October/November and ripe fruits in February.

Distribution

The first collections of *E. umtamvunensis* were made on the farm Beacon Hill near Port Edward in 1979. In January 1982 a further number of trees of this species were discovered a few kilometres to the south of Beacon Hill in the adjoining Umtamvuna Nature Reserve. Known only from these two localities, *E. umtamvunensis* not only shows the most restricted distribution of the native tree species of *Eugenia*, but is one of the rarest trees in southern Africa (Figure 2).

E. umtamvunensis is a forest tree growing on sandy, poor black acidic soil overlaying Table Mountain sandstone. It has been found growing in association with *E. erythrophylla* Strey, *E. verdoorniae* Van Wyk, an undescribed *Eugenia* species (all belonging to Group Y) and *E. natalitia* Sond. (Group X). Other associated trees often include rare species such as *Beilschmiedia natalensis* J.H. Ross, *Manilkara nicholsonii* Van Wyk, *Memecylon*

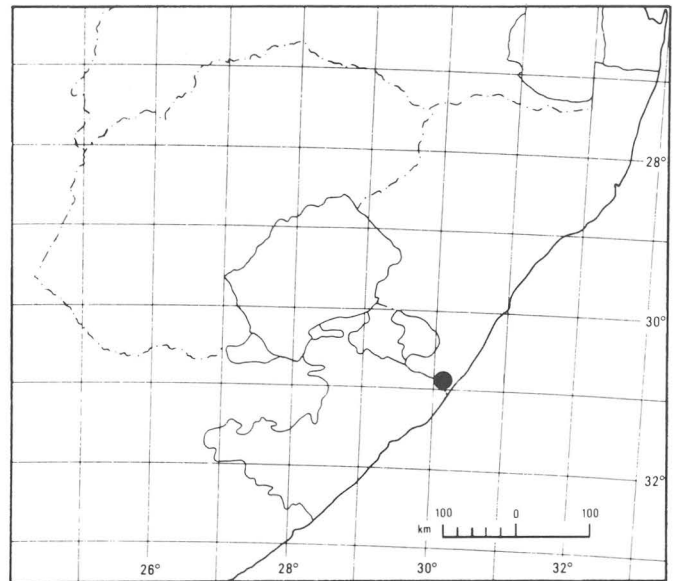


Figure 2 Distribution of *Eugenia umtamvunensis*.

grandiflorum R. & A. Fernandes, *Pseudoscolopia polyantha* Gilg and *Rhynchocalyx lawsonioides* Oliv.

Specimens examined

NATAL.—3030 (Port Shepstone): Beacon Hill near Port Edward (—CC), Van Wyk 3283, 3338, 3341, 3631 (PRU, holo.; NH; PRE), 4210, 4230, 4232, 4502, 5030, 5132, 5133, 5134, 5135 (all in PRU); Umtamvuna Nature Reserve, Amphitheatre, Van Wyk 5374, 5379, 5385, 5395, 5400 (all in PRU).

Discussion

Judged by the criteria established for the morphology of the first-formed stem periderm (Van Wyk *et al.* 1980), seeds (Van Wyk 1980) and stomata (Van Wyk *et al.* 1982), *E. umtamvunensis* without doubt belongs to Group X. It is evidently closely allied to the widespread *E. natalitia*. Although both species occur sympatrically in the Umtamvuna Nature Reserve, no intermediate plants have been found during field work.

E. umtamvunensis differs from *E. natalitia* in especially the thicker and stouter branchlets, initially covered by a darker rusty-brown bark; more leathery leaves; blunter or rounded leaf apices; brachyblasts on the older branchlets that remain floriferous for more seasons; flowers sessile or with relatively short pedicels; larger, more globose and often sessile fruits which are predominantly 2-seeded and with a much thicker pericarp.

Sessile flowers are absent in *E. natalitia* where the pedicels are usually (3)4–8(12) mm long. The short axillary racemes (anauxotelic inflorescences according to Briggs & Johnson 1979) frequently found in this species, appear to be absent in *E. umtamvunensis*. Brachyblasts, when present in *E. natalitia*, are never conspicuous and remain floriferous for a limited number of seasons (probably two or three).

Fruits of *E. umtamvunensis* are edible with a sweetish, although somewhat acrid, taste. Maximum thickness of the pericarp varies from 1,0–2,0 mm in *E. natalitia* and from 6,0–12,0 mm in *E. umtamvunensis*. Of all the species included in Group X, *E. umtamvunensis* possesses by far the largest fruit and thickest pericarp. The fruits of *E. um-*

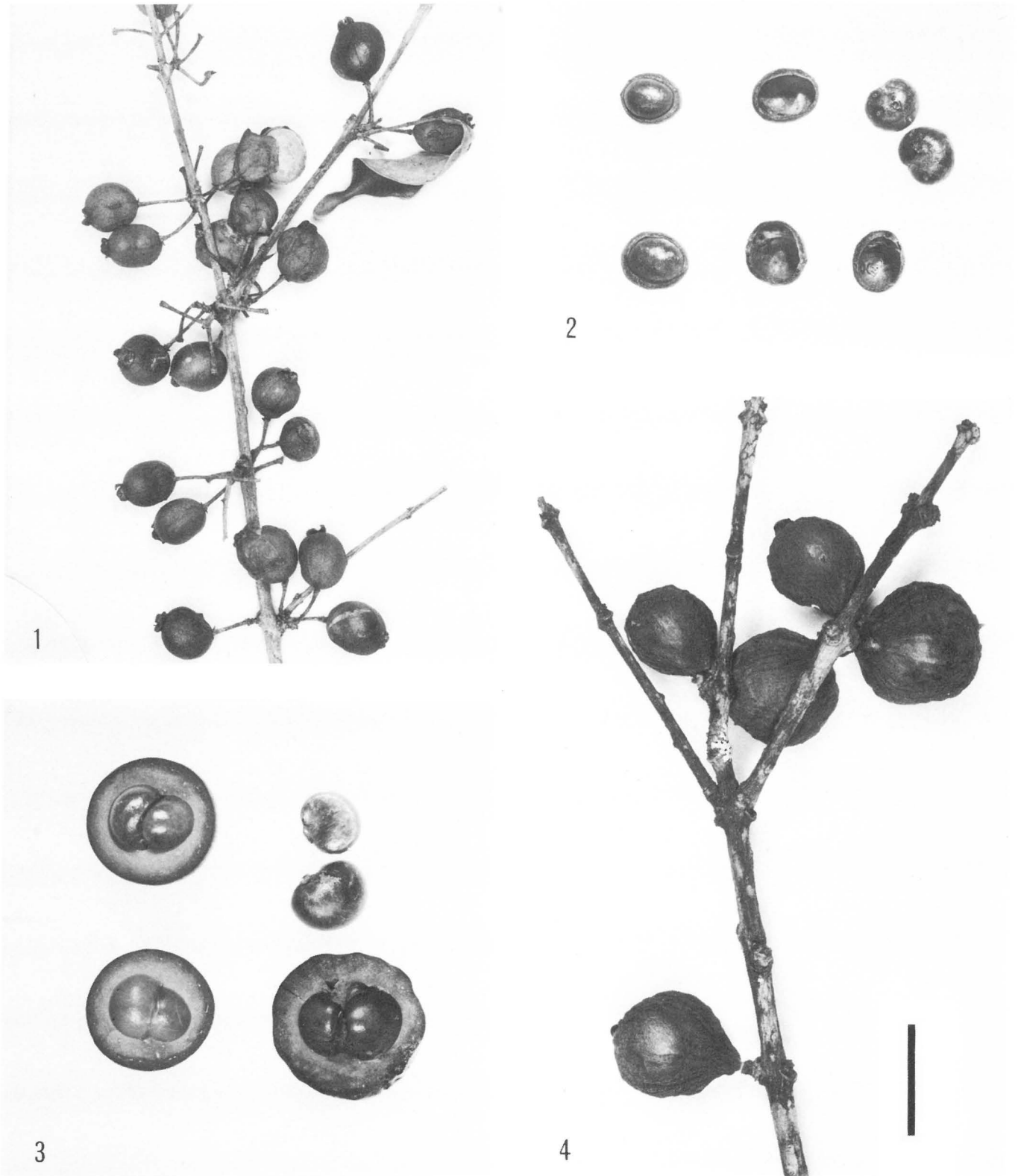


Figure 3 Fruits of *Eugenia natalitia* (1 & 2) and *E. umtamvunensis* (3 & 4). Almost ripe fruits from herbarium specimens: 1, *E. natalitia* (Hemm s.n.); 4, *E. umtamvunensis* (Van Wyk 3631). Cut-open FAA-preserved ripe fruits with intact and removed seeds: 2, *E. natalitia* (Van Wyk A138); 3, *E. umtamvunensis* (Van Wyk 3631). All natural size (length of scale = 20 mm).

tamvunensis are predominantly two-seeded. This is unique among species of both groups which are usually one- and only rarely up to three-seeded. However, more fruiting material is required to ascertain the constancy of this feature (Figure 3).

Owing to its robust habit and thick leathery leaves, *E.*

umtamvunensis is more likely to be confused with *E. erythrophylla* than with *E. natalitia*. However, in *E. erythrophylla* the young leaves are densely tomentose and the abaxial lamina surface of mature leaves is usually whitish-green with the secretory cavities obscure. Young leaves of *E. umtamvunensis* are glabrous and the abaxial

surface of the mature lamina is usually light green with the secretory cavities clearly visible.

With the description of *E. umtamvunensis*, another tree is added to the growing list of species endemic to the Table Mountain sandstone area of southern Natal and northern Transkei (Van Wyk 1981). This unique centre of endemism offers considerable scope for further study especially by students of plant geography, systematics and ecology.

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