

COMBRETACEAE

A NEW SPECIES OF *COMBRETUM* FROM NATAL

Combretum mkuzense Carr & Retief, sp. nov., a *C. kirkii* Laws. frutice semi-scandenti ramulis terminalibus rigidis nec sinuosis, inflorescentiis puberulis difert.

TYPE.—Natal, 2732 (Ubombo): Mkuze Game Reserve headquarters (—CA), Carr 187 (PRE, holo.; K).

Large shrub up to 5 m tall, widely spreading (to 12 m) with many near-horizontal lateral branches with apices sometimes twining; bark mainly smooth, pale buff-coloured with longitudinal reticulation and occasionally with dark grey bands, flaking; young branchlets light green, glabrous to sparsely puberulous and lepidote. *Leaves* opposite, exstipulate, petiolate; lamina elliptic to oblong-elliptic, (30–)45(–80) × (15–)20(–30) mm, base rounded, apex obtuse or occasionally retuse, slightly discolorous, upper surface deep green, glabrous except for scales, sometimes with a few cilia at the base, veins slightly immersed, lower surface paler green, gla-

brous except for scales and a few trichomes on the midrib, hairy pockets sometimes present, 5–7 pairs of lateral veins raised; petioles 4–9 mm long, lepidote, puberulous. Scales 45–85 μm in diam., 8-celled with a number of tangential walls. *Inflorescence* a spike, up to 25 mm long, singly or in pairs at the apices of previous year's growth and in axils on current extensions; peduncle and rhachis light green, sparsely puberulous, densely lepidote. *Flowers* sessile, 4-merous; bracteoles ± 0,5 mm long, lepidote; lower receptacle 2–2,3 mm long including restriction at junction with upper receptacle, brownish green, sparsely puberulous with dense yellowish stalked scales; upper receptacle cupuliform, surrounding the disc, distal portion infundibuliform, overall length ± 3 mm, width at sepal apices ± 3 mm, green, sparsely puberulous with whitish scales. *Sepals* triangular, ± 0,8 mm long, apices fringed with short whitish hairs. *Petals* 4, pale green, spatulate, glabrous, ± 1,5 mm long. *Stamens* 8; filaments light green, 6–6,5 mm long; anthers light yellow, 1 mm long.



FIGURE 14.—*Combretum mkuzense* Carr & Retief, holotype in PRE.

Style light green, $\pm 3,5$ mm long with stigma slightly expanded and darkened. *Disc* square in outline with long silvery hairs. *Fruit* 4-winged, up to 50×50 mm, outline subcircular with a wide shallow basal notch and a small apical notch, apical peg up to 1 mm long, lepidote, stipe up to 20 mm long, densely lepidote; wings brown-tinged limegreen when ripening, cinnamon when ripe. *Seed* ellipsoidal, up to 16×9 mm, dark purplish brown. *Cotyledons* 2, up to 33×45 mm, transversely elliptic, arising above soil level; petioles ± 3 mm long. Figure 14.

NATAL.—2632 (Bella Vista): 15 km ENE of Makane's Drift (-CD), *Stephen 717* (PRE), 2732 (Ubombo): 3 miles W of Sihangwane store (-AA), *Moll 5370* (PRE); 1 mile E of Pongola pont (-AB), *Strey & Moll 3778* (PRE); Mkuze Game Reserve (-CA), *White 10388* (FHO, PRE); eastern side of farm 'Shotton 13810' (-CD), *Ward 8793* (PRE).

Combretum mkuzense, which is evidently rare, occurs in the northernmost part of Natal. It is found in mixed woodland in association with other combretaceous species, *Acacia*, *Sclerocarya*, *Strychnos*, *Dialium*, *Newtonia* and *Albizia*. It grows in deep sand at altitudes of up to 100 m and within 60 km of the coast.

C. mkuzense normally flowers in September but a second flowering late in March has also been recorded. The flowers are sweetly scented and appear to be bee-pollinated.

C. mkuzense is placed in the subgenus *Combretum*, section *Macrostigmatea*. According to Exell (1978) this section comprises three species, namely *C. schumannii*, *C. kirkii* and *C. gillettianum*. The section can be divided into two subsections on the basis of the disc, which is glabrous with only a very short free margin in *C. schumannii* and with a pilose margin free for ± 1 mm in *C. kirkii* and *C. gillettianum*. *C. mkuzense* has a disc with

a pilose margin and is therefore thought to be more closely related to *C. kirkii* and *C. gillettianum* and to *C. schumannii* (Table 1).

C. mkuzense is most closely allied to *C. kirkii*. There are, however, several differences between the two species. The seeds of *C. kirkii* are as large as 25×9 mm while the seeds of *C. mkuzense* seen did not exceed 16×9 mm. Unlike the new species which has a peduncle and rachis sparsely puberulous and densely lepidote, the inflorescence of *C. kirkii* is glabrous except for the scales. Habit differences clearly separate these two species. *C. kirkii* is a liane with slender, sinuous, flexible, readily damaged apices many of which die back in winter. *C. mkuzense* is a scrambling shrub with numerous characteristic elongated lateral branches taking off in opposite pairs and at right angles. These branches are fairly straight and maintain appreciable rigidity right up to the apices but sometimes the apices may twine. It has been established, using thin film chromatography, that for each species of *Combretum* there is a characteristic profile of compounds in the leaf material (Carr & Rogers 1987). An examination of the profiles of *C. mkuzense* and *C. kirkii* shows similarities but also a significant difference.

Fruits of *C. zeyheri*, a tree which occurs in the same area as the new species, are similar to those of *C. mkuzense* but the habits of the two species differ so widely that they should not be easily confused. *C. zeyheri* is a small to medium-sized tree while *C. mkuzense* is a scrambling shrub. The scales of the new species (Figure 15) agree well with those of other representatives of the section *Macrostigmatea*. They differ markedly from those of *C. xanthothyrsus* (sect. *Chionanthoideae*) (Figure 16) a species which has sometimes been confused with our species.

TABLE 1.—A comparison of *Combretum mkuzense*, *C. kirkii* and *C. gillettianum*. Based partly on Exell (1978)

Characters	Species		
	<i>C. mkuzense</i>	<i>C. kirkii</i>	<i>C. gillettianum</i>
Habit	large shrub up to 5 m high, widely spreading with many near-horizontal lateral branches	liane, reaching 15 m	shrub to small tree up to 4 m high, sometimes scandent
Lateral nerves	5–7 pairs	5–7 pairs	3–5 pairs
Bracteoles	0,5 mm long	0,7 mm long	1,5 mm long
Lower receptacle	2–2,3 mm long, densely lepidote, sparsely puberulous	2–3 mm long, lepidote otherwise glabrous	2–2,5 mm long, tomentellous
Upper receptacle	3 \times 3 mm, cupuliform in upper part then infundibuliform, puberulous and lepidote	3–4 \times 2–3 mm, infundibuliform, lepidote otherwise glabrous	3,5–4 \times 3–4 mm, cupuliform, appressed pubescent with 4 tomentellous nerves running up into the sepals
Fruit	up to 50×50 mm, subcircular	up to 50×50 mm, subcircular to elliptic	up to 30×25 mm, oval to subcircular, wings decurrent at the base
Stipe	up to 20 mm long	up to 30 mm long	up to 12 mm long
Distribution	northern Natal	Zambia, Zimbabwe, Malawi and Mozambique (confined to the valley of the Zambezi and its tributaries)	Zambia, Zaïre and Tanzania

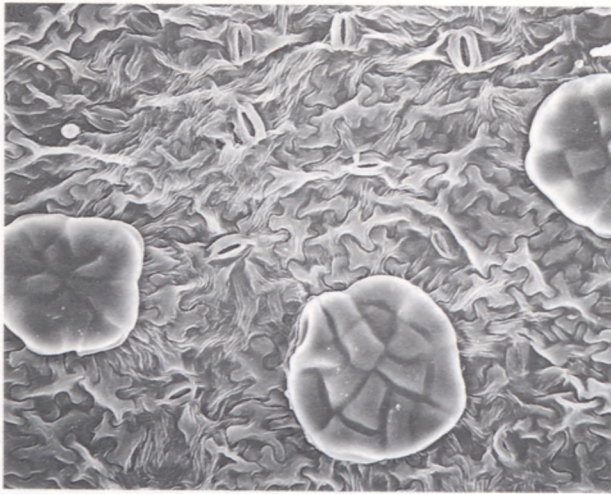


FIGURE 15.—Scales on the leaf surface of *Combretum mkuzense* Carr & Retief, $\times 360$. Carr 187. Scanning electron micrograph taken at the Royal Botanic Gardens, Kew.

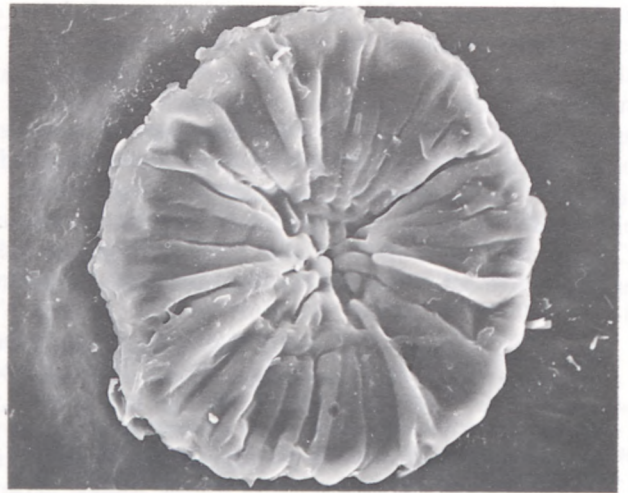


FIGURE 16.—A scale on the leaf surface of *Combretum xanthoerythrum* Engl. & Diels, $\times 600$. Proctor 2759. Scanning electron micrograph taken at the Royal Botanic Gardens, Kew.

REFERENCES

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EXELL, A. W. 1978. Combretaceae in *Flora Zambesiaca* 4: 100–183.

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