

Flowering Plants of Africa

Volume 65

June 2017



L. Ward
1980

Flowering Plants of Africa

Since its inception in 1921, this serial, modelled on the former *Curtis's Botanical Magazine*, has published well over 2 000 colour plates of African plants prepared by some 80 artists.

The object of the journal is to convey to the reader the beauty and variety of form of the African flora, to stimulate an interest in the study, conservation and cultivation of African plants, and to advance the science of botany as well as botanical art.

The illustrations are mostly prepared by artists on the staff of the South African National Biodiversity Institute (SANBI), but we welcome other contributions of suitable artistic and scientific merit. Please see *Guide for authors and artists* on page 159.

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History of this series

(note Afrikaans translation and changes in title)

Volume 1 (1921) to Volume 24 (1944):

The Flowering Plants of South Africa

Volume 25 (1945–1946) to Volume 26 (1947):

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Flowering Plants of Africa

A peer-reviewed journal containing colour plates with descriptions of flowering plants of Africa and neighbouring islands

Edited by

Alicia Grobler

with assistance of

Gillian Condry

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Pretoria
2017

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New taxa published in this volume

Esterhuysenia lucilleae Van Jaarsv. sp. nov., p. 96

Ruellia kaokoensis Van Jaarsv. sp. nov., p. 154



3



2



4



gandy

Rothea myricoides sensu lato

Lamiaceae: Ajugoideae

Throughout Africa, from Ethiopia south to South Africa

Rothea myricoides (Hochst.) Steane & Mabb. *sens. lat.*, Novon 8: 205 (1998); Fernandes & Verdcourt: 150 (2000); Fernandes: 136 (2005). *Spironema myricoides* Hochst. no. 330 (1840); Hochst. & Steud. (1838). *Cyclonema myricoides* (Hochst.) Hochst.: 226 (1842); Richard: 171 (1851); Hooker: t. 5838 (1870). *Clerodendrum myricoides* (Hochst.) Vatke: 535 (1882) [as *Clerodendron myricoides* R.Br.]; Gürke in Engler: 341 (1895) [as *Clerodendron myricoides* R.Br.]; Briquet: 176 (1895) [as *Clerodendron myricoides* (Hochst.) Gürke]; Baker: 310 (1900) [as *Clerodendron myricoides* R.Br.]; Medley Wood: t. 282 (1902) [as *Clerodendron myricoides* R.Br.]; Pearson: 223 (1912) [as *Clerodendron myricoides* R.Br.]; Thomas: 86 (1936); Moldenke: 329 (1987) [as *Clerodendrum myricoides* (Hochst.) R.Br.]; Verdcourt: 130 (1992); Retief & Herman: 641 (1997); Fernandes: 47 (1998). *Clerodendrum myricoides* R.Br. in Salt: lxx (1814), *nom. nud.*

The genus *Rothea* Raf. comprises about 30 species in sub-Saharan Africa (Fernandes 2005) with one species (*R. serrata* (L.) Steane & Mabb.) native to eastern India, Sri Lanka and Malaysia, and three species native to Madagascar (*R. microphylla* (Blume) Callm. & Phillipson, *R. mirabilis* (Baker) Callm. & Phillipson and *R. nudiflora* (Moldenke) Callm. & Phillipson) (Madagascar Catalogue 2013). About nine species are known from southern Africa (Namibia, Botswana, Swaziland, Lesotho and South Africa). Members of the genus *Rothea* were previously included under *Clerodendrum* L., subgenus *Cyclonema* (Hochst.) B.Thomas (1936). The genus name *Rothea* was reinstated by Steane & Mabberley (1998) based on differences in morphology and DNA. *Rothea* can be distinguished from *Clerodendrum* by the shape of the flower bud: in *Rothea* the flower bud is markedly asymmetrical and the corolla expands abruptly on the lower side so that it looks something like a golf club; the anterior corolla lobe is usually much larger than the other four lobes. In *Clerodendrum* the flower bud is usually symmetrical or, if asymmetrical, it expands abruptly on the upper side; the anterior corolla lobe is only slightly (if at all) larger than the other four lobes (Steane & Mabberley 1998). The genera *Clerodendrum* and *Rothea* were previously treated in the family Verbenaceae, but were transferred to the family Lamiaceae by Cantino et al. (1992). Subfamilies Ajugoideae and Viticoideae have fruits which either do not split into 4 distinct mericarps, or rarely do split late in development to produce 4 nutlets (Fernandes 2005).

The genus name *Clerodendrum* was used by Linnaeus in his *Species plantarum* (1753) and *Genera plantarum* (1754). The spelling was changed to *Clerodendron* as early as 1763 by Adanson (Moldenke 1985). Since then, there seems to have been considerable confusion about the correct spelling of the name and both names were used randomly by various authors. Moldenke (1985) pointed out that, according to the rules of botanical nomenclature, there was no reason to change the name and it should remain *Clerodendrum* L. Robert Brown (R.Br.) is often given as the author for the species name *myricoides*, but according

PLATE 2339.—1, flowering branch, × 1; 2, flower, × 2; 3, stamen with ciliate filament, × 2; 4, leaf, × 1. Voucher specimen: Burrows 6531 in Buffelskloof Nature Reserve & Herbarium, Lydenburg. Artist: Gillian Condy.

to Verdcourt (1992), Brown only mentioned the name in one of his publications without a description or any references.

Rothea myricoides is a highly variable species. Thomas (1936), Verdcourt (1992), Fernandes & Verdcourt (2000) and Fernandes (2005) distinguished several subspecies, varieties and formas based on, *inter alia*, leaf shape, leaf margin and pubescence of the leaves. Many of the subspecies and varieties are confined to specific small areas. In her account of *Rothea* for *Flora zambesiaca*, Fernandes (2005) did not mention any occurrence of *R. myricoides* representatives in South Africa as she did for instance under *R. hirsuta*. Neither did Verdcourt (1992) in his treatment of *Clerodendrum* for *Flora of Tropical East Africa*, as he for instance did for *C. glabrum* and *C. ternatum*. The South African material could perhaps be classified as subsp. *myricoides* var. *myricoides* forma *myricoides* and subsp. *myricoides* var. *discolor* (Klotzsch) Verdc. forma *discolor* taxa, but no attempt was made to try and classify southern African material to subspecific level, as the characters tend to merge into each other. Fernandes (2005) recognised a separate species, *R. reflexa* (H. Pearson) R. Fern., which is confined to the *Flora zambesiaca* area that approaches some varieties of *R. myricoides*. Some specimens in the National Herbarium, Pretoria (PRE) fit the description of *R. reflexa* and these two species could probably prove to be conspecific.

The variation in the leaf shape of South African *Rothea myricoides* material housed in PRE is illustrated in Figure 1: the leaves are mostly ovate to rhomboid in outline with the margins dentate in the upper half to very deeply incised to almost lobed, but can also be elliptic, or in a few cases, obovate in outline and the entire margin dentate. The indumentum of the leaves varies as much: usually sparsely hairy on upper surface and sparsely to densely hairy on lower surface, sometimes almost velvety. In some cases the leaf surfaces seem to

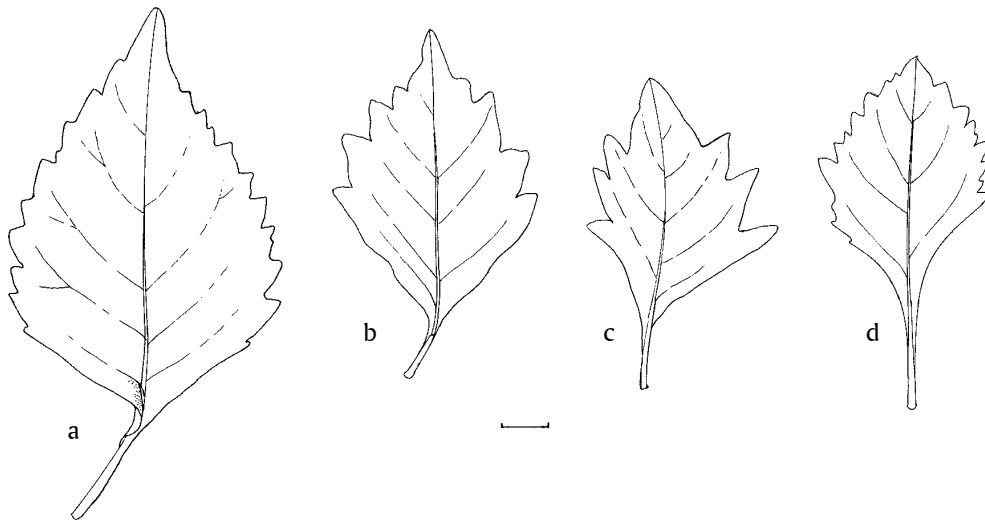


FIGURE 1.—Line drawings to illustrate different leaf shapes and margins of *Rothea myricoides* leaves: a, ovate with dentate margin (voucher: *Joffe 198*, PRE); b, rhomboid with coarsely dentate margin (voucher: *Smuts PRE39965*, PRE); c, rhomboid with deeply lobed margin (voucher: *Van Vuuren 1824*, PRE); d, broadly elliptic, dentate (voucher: *Galpin 601*, PRE). All drawings $\times 1$. Artist: Gillian Condy.

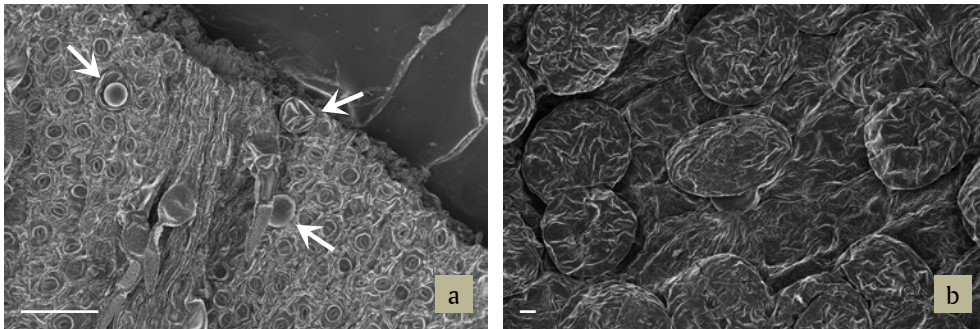


FIGURE 2.—Scanning electron microscope (SEM) images of peltate hairs: a, upper leaf surface, scale bar = 100 μm ; b, inside of calyx lobes, scale bar = 10 μm . Voucher: Van Wyk 4731, PRE. Micrographs taken with SEM at Electron Microscopy Unit, University of Pretoria, Pretoria.

be glabrous, but even then some hairs are present, especially along the margins. Most of the Namibian specimens housed in PRE have narrowly elliptic to elliptic to sometimes obovate, usually fairly small leaves with the margins entire or shallowly dentate in the upper half.

The leaves of *Rotheca myricoides* are often described as glandular punctate beneath (Verdcourt 1992; Fernandes 2005). These ‘glands’ are peltate hairs or peltate glands (Figure 2A). They are not always easy to observe when the leaf surface is densely hairy. Similar peltate hairs were described for *Clerodendrum triphyllum* (= *R. hirsuta*) and *C. louwalbertsii* (= *R. louwalbertsii*) (Herman 1998). They are possibly responsible for the unpleasant scent when the leaves are crushed. Similar peltate glands were observed on the inside of the calyx lobes of *R. myricoides* (Figure 2B) as well as on the skin of the fruit. These glands on the inside of the calyx lobes were described for *Clerodendron myricoides* by Medley Wood (1902), Pearson (1912) and Moldenke (1987), but none of the more recent publications mention them (Verdcourt 1992; Fernandes & Verdcourt 2000; Fernandes 2005). Peltate hairs or glands are often present in representatives of the family Lamiaceae (Ascensão et al. 1995; Shan-Shan Huang et al. 2008; Ping Jia et al. 2013; Rusydi et al. 2013).

There seems to be as much variation in the flower colour as in the leaf shape. The colour of the flowers, as noted on herbarium specimen labels, varies from green and blue or mauve, white and blue, or blue to mauve. The flower colours of most of the Namibian material housed in PRE are noted on the labels as whitish blue, blue or bluish, purple, four petals whitish and one blue, or green and blue. Most of the material was identified by Moldenke as *Clerodendrum dekindtii* var. *dinteri* or quoted by Friedrich-Holzhammer (1967) as *C. dekindtii*. Fernandes (2005) sank *C. dekindtii* var. *dinteri* sensu Moldenke under *R. myricoides* subsp. *myricoides* var. *moldenkei*. She sank *C. dekindtii* sensu Moldenke under *R. myricoides* subsp. *myricoides* var. *discolor* forma *discolor*. However, she recognised a separate taxon, subsp. *namibiensis*, under *R. myricoides* mainly based on the arrangement of the flowers in axillary cymes and the flowers being white or with four petals whitish green and the median petal blue, not all the petals violet.

Rotheca myricoides occurs in the South African provinces of Limpopo, Gauteng, Mpumalanga, KwaZulu-Natal (Figure 3) and possibly also North-West. In neighbouring coun-

tries it occurs in Namibia, Swaziland, possibly Botswana and further north in Africa. The species grows in a variety of vegetation types and habitats, including woodland, savanna, grassland, forest, bush, thickets, dune forest, and on mountain and hill slopes, among rocks, boulders or on rocky ridges, river or stream banks. The Red List status of *R. myricoides* in South Africa is Least Concern (LC) (Foden & Potter 2005).

According to Van Wyk et al. (2011) *Rotheca myricoides* is commonly known as: rough-leaved cat's whiskers, smelly cat's whiskers, bicoloured cat's whiskers, blue cat's whiskers, blue-flowered tinderwood, Namibian cat's whiskers; *growwe-blaarkatsnorbos*, *bloukatsnorbos*, *Namibiese katsnorbos*, *tweekleurkatsnorbos* (Afrikaans); *neigogana* (Jul'hoan); *ndimbiswilisi* (Kwangali, Manyo); *mutume* (Lozi); *bandamuchenene*, *muparamhosva*, *nyamhepo* (Manyika); *busuku* (Ndau); *bandamuchenene*, *chidzimamuriro*, *mudzimamuriro*, *nyamhepo*, *zanzi* (Shona); *umbozwa* (Swati); *mutilingwa* (Tonga); *umtyaty-ambane* (Xhosa); *umbozwa* (Zulu). The Flora of southern Africa national tree number is 667.1 and the Zimbabwe tree number is 898 (Van Wyk et al. 2011).

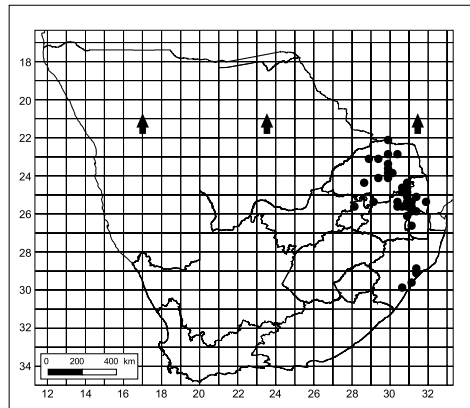


FIGURE 3.—Distribution of *Rotheca myricoides* in South Africa and Swaziland.

Rotheca myricoides has long been used in traditional medicine. According to Watt & Breyer-Brandwijk (1962) and Hutchings (1996) European and African people at Ixopo used a teaspoonful of the powdered bark for snake bite; the Masai used the root bark as a remedy for East Coast fever in cattle, and for diarrhoea in their calves; the Haya and Shambala used the plant for dysmenorrhoea, as well as a remedy for cough, furunculosis and swellings of the body associated with debility; and the root is an East African remedy for the enlargement of the spleen. The root is also used for pains in the chest, colds, bleeding of the gums, indigestion and in Zimbabwe for headaches, leaf decoctions for bathing patients with convulsions, while the leaves are used in West Africa for analgesic and antipyretic purposes (Hutchings 1996).

Description.—Shrub or small tree, up to 6 m high, sometimes scrambling or climbing. *Young branches* ± angular, pale greyish to whitish, usually with conspicuous white lenticels, glabrous or sparsely to densely whitish to rusty brown hairy, especially at growth points; side branches often opposite and rectangular to main branches, leaf scars prominent. *Leaves* opposite, decussate, rarely 3 in a whorl, almost sessile to distinctly petiolate, petiole up to 20 mm long, sometimes tinged purplish, sparsely to densely hairy; blade ovate to rhomboid, elliptic or rarely obovate, up to (100)75 × 60(75) mm, apex acute, base attenuate, margin entire in lower half, upper half dentate to coarsely dentate, sometimes almost deeply lobed, or entire margin dentate; upper and lower surfaces sparsely to densely hairy, with peltate hairs, foul smell when crushed. *Flowers* in terminal cymes, 1–3 together at a node, pedunculate, peduncle simple or branched up to 3 times, 1–3-flowered, primary peduncle up to 45 mm long, secondary peduncles up to 40 mm long, bracteate, 2 bracts

at each furcation, bracts at first furcation linear, linear-elliptic, obovate to almost leaf-like, up to 6 mm long; bracts at secondary furcations linear, up to 3 mm long, peduncles and bracts hairy; pedicles up to 8 mm long, hairy. *Calyx* with tube cup-shaped, green but sometimes purplish, up to 4 mm long, hairy; calyx lobes 5, semi-circular, up to 4 × 4 mm, apex roundish to obtuse, hairy on outside, peltate hairs on inside, persistent in fruit. *Corolla* zygomorph, tube 7–10 mm long, with 5 free petals, 4 lateral petals (two on each side) 5–12(15) × 4–7 mm, oblong-obovate, often ciliate, greenish, whitish, pale blue or purple, lower petal pyriform/ob-spathulate, 8–12 × 3.5–10.0 mm, dark blue or purple. *Stamens* 4, inserted in corolla throat, opposite lower corolla lip and curved towards it, long exerted, filaments 23–32 mm long, lower 5–7 mm ciliate-hairy, purple, anthers 2 mm long. *Style* long exerted, up to 36 mm long, curved towards lower corolla lip, with 2 uneven stigmatic lobes, upper lobe 1–3 mm long, lower lobe 1.5–4.0 mm long. *Ovary* superior, ± globose, ± 2 × 1.5–2.5 mm. *Fruit* 1–4-lobed drupe, 7–10 × 8–12 mm, purple or black at maturity, some peltate hairs present on exocarp. *Seeds* 1–4 pyrenes, reniform. *Flowering time*: August to June. Plate 2339.

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