

# 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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(note Afrikaans translation and changes in title)

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

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### **Volume 27 (1948–1949) to Volume 52 (1992–1993):**

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**Cover illustration:** *Protea namaquana* (Plate 2327)

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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 Condy

Volume 65



Pretoria  
2017

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## Contents

### Volume 65

2321. <i>Codonorhiza azurea</i> . P. Goldblatt and John C. Manning . . . . .	2
2322. <i>Gladiolus crassifolius</i> . J.C. Manning, P. Goldblatt and Gillian Condry . . . . .	8
2323. <i>Aloe braamvanwykii</i> . G.F. Smith, E. Figueiredo, R.R. Klopper, N.R. Crouch and Gillian Condry . . . . .	14
2324. <i>Tinospora fragosa</i> subsp. <i>fragosa</i> . E.J. van Jaarsveld and Marieta Visagie . . . . .	26
2325. <i>Cissampelos hirta</i> . M. Struwig, H. de Wet and Gillian Condry . . . . .	34
2326. <i>Protea foliosa</i> . C.I. Peter, A.P. Dold, C. Melidonis and Susan Abraham . . . . .	42
2327. <i>Protea namaquana</i> . J.P. Rourke and Ellaphie Ward-Hilhorst . . . . .	50
2328. <i>Kalanchoe leblanciae</i> . G.F. Smith, E. Figueiredo, N.R. Crouch and Gillian Condry . . . . .	56
2329. <i>Senna didymobotrya</i> . T.P. Jaca and Gillian Condry . . . . .	68
2330. <i>Caesalpinia bracteata</i> . E.J. van Jaarsveld and Gillian Condry . . . . .	76
2331. <i>Eriosema distinctum</i> . T. Nkonki, S.M. Serumula and Gillian Condry . . . . .	84
2332. <i>Adenia wilmsii</i> . E.J. van Jaarsveld and Gillian Condry . . . . .	90
2333. <i>Esterhuysenia lucilleae</i> . E.J. van Jaarsveld and Marieta Visagie . . . . .	96
2334. <i>Pisonia aculeata</i> . M. Struwig and Gillian Condry . . . . .	106
2335. <i>Schizostephanus alatus</i> . E.J. van Jaarsveld and Marieta Visagie . . . . .	112
2336. <i>Gomphocarpus glaucophyllus</i> . S.P. Bester and Gillian Condry . . . . .	120
2337. <i>Ipomoea bolusiana</i> . W.G. Welman and Gillian Condry . . . . .	132
2338. <i>Ipomoea cairica</i> . W.G. Welman, P.P.J. Herman and Gillian Condry . . . . .	138
2339. <i>Rothea myricoides</i> . P.P.J. Herman and Gillian Condry . . . . .	146
2340. <i>Ruellia kaokoensis</i> . E.J. van Jaarsveld and Marieta Visagie . . . . .	154
Guide for authors and artists . . . . .	159
Index to Volume 65 . . . . .	163

### New taxa published in this volume

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

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

*Schizostephanus alatus*

Apocynaceae

South Africa to east tropical Africa

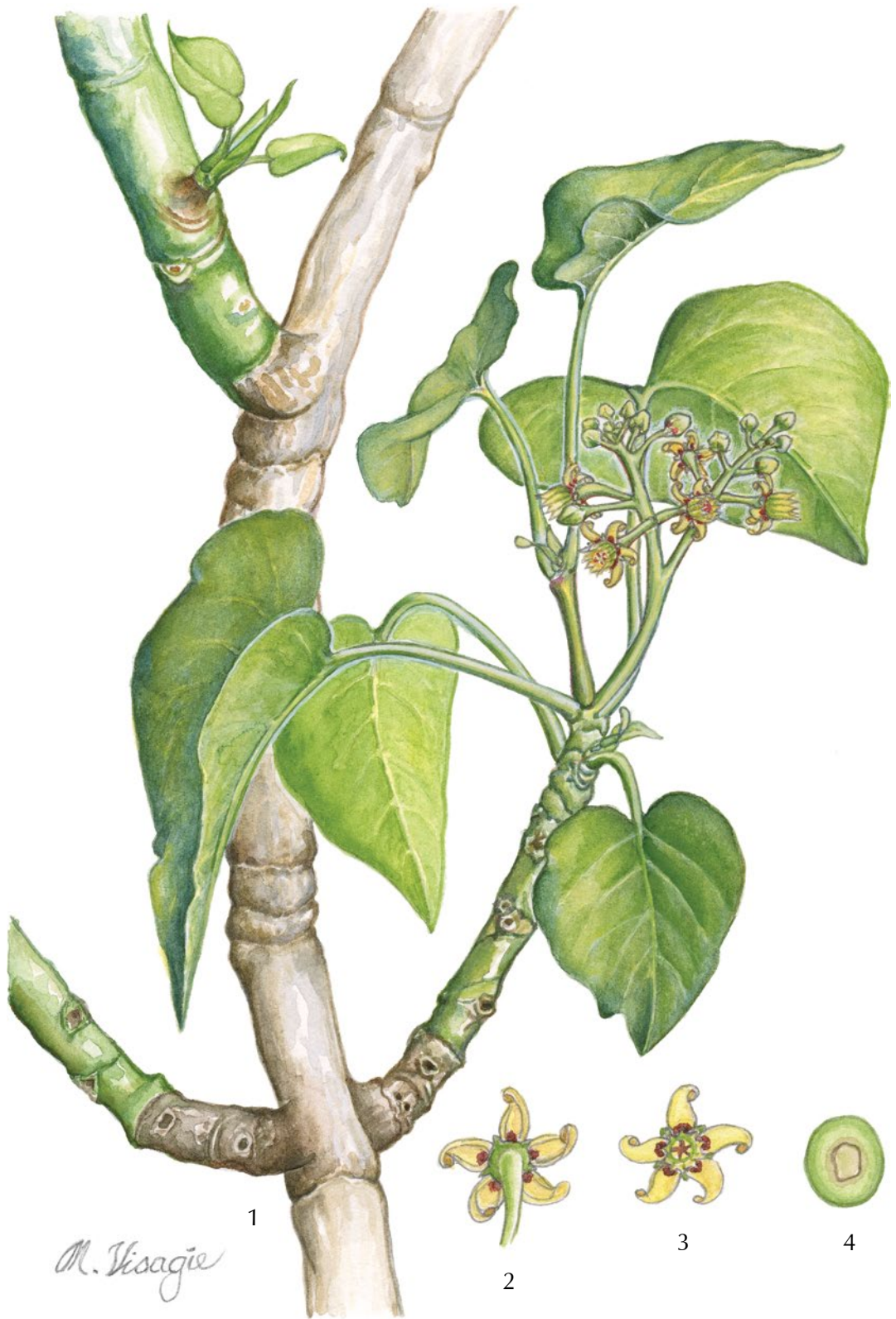
**Schizostephanus alatus** Hochst. ex K.Schum. in *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie*: 139, t.6 (figures N–Q) (1893). Goyder et al.: 466 (2012). *Cynanchum validum* N.E.Brown: 398 (1903), non *Cynanchum alatum* Wight & Arn.: 57 (1834).

*Schizostephanus alatus* is a twining, winter deciduous, succulent-stemmed, creeper bearing greyish, often articulated, stems that are 0.5–4.0 m long. The side branches are somewhat brittle and will root when they become detached or if they touch the substrate. *Schizostephanus alatus* grows in rocky screes in dry river valleys. The mature stems and leaves superficially resemble those of *Tinospora fragosa* (L.Verd.) I.Verd. & Troupin with which it sometimes shares the same habitat in Limpopo Province. It has a widespread distribution range in eastern Africa where it grows on screes from Somalia and Kenya in the north, to Limpopo and Mpumalanga provinces, South Africa, in the south (Figure 1).

The genus *Schizostephanus* was established by Bentham and Hooker (1876). It was sunk under the genus *Cynanchum* L. by Brown in 1903. Liede (1994) reinstated *Schizostephanus* based on the long hairs on the adaxial side of the corolla lobes, stipitate gynostegium and the attachment of the pollinia along the dorsal rims, as well as the clear sap of its only two members, *S. gossweileri* (S.Moore) Liede and *S. alatus*. A contribution on *S. gossweileri* appeared in a previous volume of this journal (Van Jaarsveld & Visagie 2015) and is only known from northern Namibia and adjacent southwestern Angola (Bruyns & Klak 2009). The genus *Schizostephanus* is related to *Cynanchum*, the latter with about 250 species and a cosmopolitan distribution of which 31 are confined to Africa (Liede 1996). *Cynanchum somaliense* N.E.Br. has, for some time, been treated as a close relative of *S. alatus*, however, the evidence is based on superficial morphological character expressions (Liede 1996). Species of *Cynanchum* differ by their usually evergreen foliage, umbellate inflorescences, distinct milky latex and with most members not distinctly succulent (Bruyns & Klak 2009). The familiar *Cynanchum viminale* (L.) Bassi (*Sarcostemma viminale*) is probably the best known species recently transferred to *Cynanchum*. *Schizostephanus alatus* differs from *S. gossweileri* by its smaller stature, leaves and reproductive features. The stems of *S. alatus* are 5–7 mm in diameter, with stems of *S. gossweileri* 10 mm in diameter. Leaves of *S. gossweileri* are slightly pubescent with blades 60–130 mm long, whereas they are glabrous with blades 35–80 mm long in *S. alatus*. Inflorescences are bostrychoid in *S. alatus* and elongated in *S. gossweileri*. The specific epithet, *alatus*, is in reference to the species' follicles which are distinctly winged.

Our depicted plant of *Schizostephanus alatus* (Van Jaarsveld, Haumann & Swanepoel 23008) was collected on Serra das Neves in southwestern Angola in April 2010 on an exposed northeastern scree just above Aalwynnek, where we camped at about 1 300 m

PLATE 2335.—1, plant showing mature branches (left), and younger branches with inflorescence (right), × 1; 2, corolla from below, × 3.5; 3, corolla from above, × 3.5; 4, cross section of the young stem, × 1. Voucher specimen: Van Jaarsveld, Haumann & Swanepoel 23008 in Compton Herbarium, Cape Town. Artist: Marieta Visagie.



M. Visagie

1

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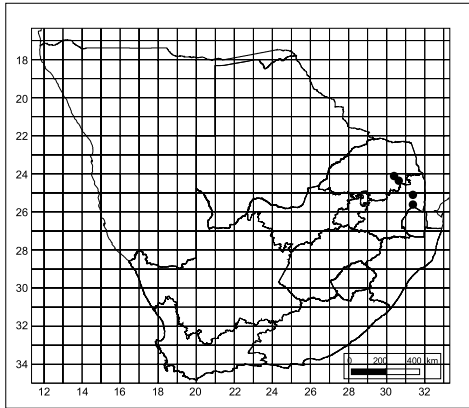


FIGURE 1.—Distribution of *Schizostephanus alatus* in the Flora of southern Africa region.

above sea level (Figure 2). Serra das Neves consists of an isolated granite inselberg. It is situated south of the town of Benguela in southwestern Angola, roughly 60 km from the Atlantic Ocean, with its highest point at 2 489 m. *Schizostephanus alatus* was observed on granite screes growing in shallow soil. The plant tends to scramble and also twine into low vegetation. The vegetation type is moist savanna with associated plants including *Ceraria carrisoana* Exell & Mendonça, *Commiphora crenatoserrata* Engl., *C. mollis* (Oliv.) Engl., *C. tenuipetiolata* Engl., *Cussonia angolensis* (Seem.) Hiern, *Ficus glumosa* Delile, *Mundulea sericea* (Willd.) A.Chev., *Obetia carruthersiana* (Hiern) Redle and *Pouzolzia mixta*

Solms. Associated succulent plants include *Aeollanthus rehmannii* Gürke, *Aloe scorpioides* L.C.Leach, *A. zebrina* Baker, *Bowiea volubilis* Harv. ex Hook.f., *Othonna huillensis* Welw. ex Hiern, *Plectranthus amboinicus* (Lour.) Spreng., *Sansevieria hyacinthoides* (L.) Druce and *S. pearsonii* N.E.Br.



FIGURE 2.—Scree habitat of *Schizostephanus alatus* on Serra das Neves in southwestern Angola at elevation of about 1 500 m. Photograph: E.J. van Jaarsveld.





FIGURE 3.—*Schizostephanus alatus* in habitat at the Strydom Tunnel, Mpumalanga. Photograph: E.J. van Jaarsveld.

*Schizostephanus alatus* was also collected from screes at the base of cliffs on the Leba Pass west of Lubango in southwestern Angola (Van Jaarsveld 22609). Here the plants were growing below steep cliffs on scree in association with *Adenia gummifera* (Harv.) Harms, *Dombeya rotundifolia* (Hochst.) Planch., *Euphorbia vallis* L.C.Leach, *Kalanchoe lanceolata* (Forssk.) Pers., *K. laciniata* (L.) DC., *Myrothamnus flabellifolius* Welw., *Obetia carruthersiana*, *Sansevieria hyacinthoides* and *S. pearsonii*.

In Mpumalanga plants (Van Jaarsveld 1097) were observed along the Crocodile Gorge between Mbombela and Malelane growing in granite screes below *Homalium dentatum* (Harv.) Warb. trees in Malelane Mountain Bushveld of the Lowveld Bioregion (Mucina & Rutherford 2006) at an altitude of about 450 m. During the colder winter months the plants becomes deciduous.

*Schizostephanus alatus* was also observed on sandstone scree adjacent to the Strydom Tunnel in Mpumalanga in April 2015 (Van Jaarsveld 25851) (Figure 3). Plants grew in association with *Cotyledon barbeyi* Schweinf. ex Baker, *Crassula ovata* (Mill.) Druce, *Dombeya autumnalis* I.Verd., *Dracaena transvaalensis* Baker, *Portulacaria afra* Jacq. and *Sclerochiton ilicifolius* A.Meeuse.

One may very well ask what characteristics give a twining shrub a competitive advantage over typical, woody, savanna plants. *Schizostephanus alatus*, with its succulent stems, is

able to survive and grow successfully in dry rocky scree where the soil dries out fast. Therefore, the species has less competition from trees and shrubs in that particular microhabitat, especially in terms of soil moisture for root growth and light. This ecological advantage enables *S. alatus* to grow in soil that remains dry throughout the winter months, where it simply resprouts new shoots and leaves during the summer rainy season.

*Schizostephanus alatus* flowers mainly during midsummer (January to February). Seeds are wind-dispersed in autumn. The climate in which it occurs is subtropical to tropical and frost is absent from the habitat.

*Schizostephanus* grows well in cultivation, both in containers and, if the climate permits, in dry, well-drained, hot gardens. It is best grown in bushveld gardens (Van Jaarsveld 2010). The plant can be propagated from stem cuttings rooted in clean sand. If it is grown outside of its natural habitat, it fares best when grown in a greenhouse under controlled conditions. If the climate permits it is best grown on steep embankments, gabions, or rockeries where frost is either absent or not too severe.

Specimens examined: Angola: Serra das Neves, middle southwestern screes, altitude 1 500 m, 22 April 2010, *Van Jaarsveld, Haumann & Swanepoel 23008* (NBC); Leba Pass, west of Lubango, on screes below cliffs, 1 600 m, 16 January 2009, *Van Jaarsveld 22609* (NBC). South Africa: 26 km from Nelspruit [Mbombela] towards Kaap Muiden–Krokodil Poort, 13 March 1976, *Van Jaarsveld 1097* (PRE); Strydom Tunnel, 1 308 m altitude, 12 April 2015, *Van Jaarsveld 25851* (NBC).

**Description** (partially based on Liede 2003).—Succulent shrubs 0.5–4.0 m tall. Roots fibrous. Stems twining, succulent, sparingly branched, scrambling or ascending, becoming deciduous from autumn to end of spring; branches at first green,  $\pm$  5–7(–14) mm in diameter, becoming sparsely brown and glabrescent eventually becoming pale grey to greyish-brown; main branch up to 16 mm in diameter (at base), internodes 4–35 mm apart often sub-articulated, the younger branches green. Leaves decussate, pendent spreading, bright green, glabrous, broadly ovate-cordate, 35–80  $\times$  30–75 mm, apex acute, base cordate; petioles 20–40  $\times$  2 mm. Inflorescence umbellate, to 50 mm long, axillary on young green side branches, 15–30-flowered (3–12 flowers open at the same time), ascending, bostrychoid, sometimes basally dichasial; peduncles 35–55 mm long; pedicels 6–8 mm long; floral buds 5–6  $\times$  1.5–2.0 mm, elongated conical. Corolla lobes fused basally, 5  $\times$  1 mm, twisted, oblong, apically obtuse, yellow, and sometimes basally purple. Corona white, 3.5–4.0 mm high exceeding the gynostegium; staminal and interstaminal parts fused for more than three-quarters of total corona length, free parts of staminal lobes ovate to bifid, free parts of interstaminal lobes ovate to oblong. Gynostegium 1.0  $\times$  1.5 mm, on top of stipe 1.5–1.8 mm long. Stylar head 1.0  $\times$  0.5 mm; apex flat. Follicles erect 45 mm long, apically shortly beaked, winged, glabrous. Plate 2335.

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