



Petalidium bembeense (Acanthaceae), a new species from Angola and Namibia

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Abstract

Petalidium bembeense, easily confused with *P. welwitschii*, is described here as a new species. It is a range-restricted species, only known from the Zebra Mountains in Namibia, and the northern extension of this mountain complex across the Kunene River in Angola, within the Kaokoveld Centre of Endemism. It typically grows on plains, hillsides, and along ephemeral riverbeds and drainage lines, mainly in soils derived from anorthosite and gabbro of the Kunene Igneous Complex. Key distinguishing features for *P. bembeense* include the green to reddish green appearance of the plants, indumentum on stems, petioles and inflorescence branches consisting mainly of multicellular stalked glandular trichomes and on the lamina and bracts stellate-dendritic, bifurcate, trifurcate and dendritic trichomes, interspersed with stalked glandular or simple trichomes. The flowers are borne in racemose dichasia and are notable for a relatively large corolla, lilac or mauve (pale violet) corolla lobes with contrasting paler or white traces (veins). A comparison of key morphological features distinguishing *P. bembeense* from *P. welwitschii*, its closest look-alike, is provided. Brief comparisons are also made with *P. ohopohense* and *P. rossmannianum*, species with which it was previously confused. Based on IUCN Red List criteria, a provisional conservation status of Endangered (EN) is recommended for the new species.

Key words: anorthosite, Cunene Province, Kunene River, endemism, Epupa, flora, Garganta do Bembe, Kaokoveld Centre of Endemism, Kunene Igneous Complex, Kunene Region, Oncocua, Ruellieae, taxonomy, ultramafic rocks, Zebra Mountains

Introduction

Currently, 47 described species of *Petalidium* Nees von Esenbeck (1832: 75) are recognised in Africa. The primary centre of diversity for this genus is in northwestern Namibia and neighbouring southwestern Angola. Namibia is home to 37 species, while 15 species are recorded in Angola, six in South Africa, and a total of 39 species are noted in the *Flora of southern Africa region*, which includes South Africa, Namibia, Botswana, Eswatini, and Lesotho (Germishuizen & Meyer 2003, Figueiredo & Smith 2008, Swanepoel 2020, Swanepoel & Manzitto-Tripp 2022, Swanepoel *et al.* 2022, 2023, 2024, 2025a, b, Dexter *et al.* 2023, Swanepoel & Van Wyk 2023a, b, 2024, 2025a, b).

Currently, no updated key exists for identifying all accepted species of *Petalidium*. This paper contributes to a long-term project, led by one of us (WS), focused on extensive fieldwork in underexplored regions of Angola and Namibia to discover and document undescribed species. The ultimate aim is to produce a comprehensive monograph of the genus, a task that will take considerable time. To justify the effort and cost of exploration, we describe new taxa as they are discovered.

In the present contribution a new species of *Petalidium* is described. This new entity is restricted to the Kunene Igneous Complex in the Kaokoveld Centre of Endemism—a biogeographical region rich in range-restricted plant species in northwestern Namibia and adjacent southwestern Angola (Van Wyk & Smith 2001). The Kunene Igneous Complex is notable for being one of the largest known outcrops of anorthosite, with associated mafic-ultramafic rock types, on Earth (Maier *et al.* 2013, Lehmann *et al.* 2023, Swanepoel & Van Wyk 2025b) (Fig. 1). Soils derived from

mafic-ultramafic rocks are typically rich in heavy metals, which are often linked to high levels of plant endemism (Siebert *et al.* 2001, Van Wyk & Smith 2001, Adhikari *et al.* 2022).



FIGURE 1. View of the Zebra Mountains in Namibia, dominated by outcrops of the Kunene Igneous Complex. This mountain range, extending north across the Kunene River into Angola, is home to the newly described *Petalidium* species presented in this study. The mountains are named for the distinctive striped and spotted patterns on their slopes, formed by alternating bands of dark, sparsely vegetated leucotroctolite boulders and denser vegetation. Visible in the foreground is a vegetation band with the tall succulent tree *Euphorbia eduardoi* Leach (1968: 161), an endemic species of the Kaokoveld Centre of Endemism. Photograph by W. Swanepoel.

During a botanical expedition to the Kunene Igneous Complex in southwestern Angola in June 2025, one of us (WS) encountered a *Petalidium* characterised by its dwarf shrub habit, multi-stemmed from just below or above ground level, green to reddish green leaves, and lilac or mauve, relatively large flowers in racemose dichasia. The plants were immediately recognised as representing an undescribed species. Specimens collected during the expedition form the basis of the present study. The new species may be confused with *Petalidium welwitschii* Moore (1880: 227), which is widespread in the arid and semi-arid parts of southwestern Angola and northwestern Namibia. It shares several morphological features with *P. welwitschii*, likely its closest relative, including aspects of habit, indumentum, leaves, and flowers.

A study of the *Petalidium* holdings in the Herbs PRE, PRU, and WIND revealed one earlier collection of the new species (*Giess 9341* in Herbs PRE and WIND), filed under *P. rossmannianum* (Meyer 1961: 68). In his treatment of *P. rossmannianum* in the *Prodromus einer Flora von Südwestafrika*, Meyer (1968) adopted a broad circumscription of the species and recognised seven forms, labelled a–g. He included the gathering *Giess 9341* under form “g”, which is now recognised as representing the new species. However, when Meyer (1973) subsequently described form “d” as a new species, *P. ohopohense* Meyer (1973: 108), he also suggested that *Giess 9341* should be referred to *P. ohopohense*.

The Kaokoveld Centre is a pronounced centre of diversity and endemism for *Petalidium* (Craven 2009, Tripp *et al.* 2017, Dexter *et al.* 2023, Loiseau *et al.* 2023) and related Acanthaceae (e.g., Tripp & Dexter 2012, Darbyshire *et al.* 2020). However, the Centre remains botanically underexplored, making the discovery of yet another new species unsurprising. In recent years, the Kunene Igneous Complex (Zebra Mountains) have been recognised as a distinct subcentre of plant endemism within the Kaokoveld Centre. Over the past nine years, at least five new endemic woody species have been described from this area: *Maerua sebrabergensis* Swanepoel (2015: 123), *Ocimum sebrabergensis* Swanepoel & Van Jaarsveld (2019: 204), *Carissa sebrabergensis* van Jaarsv. & Swanepoel in Van Jaarsveld *et al.*

(2021: 150), *Petalidium sebrabergense* Swanepoel & Van Wyk (2025b: 19), and *Premna sebrabergensis* Swanepoel, van Jaarsv. & A.E.van Wyk in Swanepoel *et al.* (2025c: 156).

Methods

Morphological descriptions and ecological information presented here are based primarily on field observations and material collected following extensive field work in Angola and Namibia. Diagnostic features for the new species and *P. welwitschii* (also for all other species mentioned in the text) were determined through examination of fresh material, the type material in Herb. WIND, as well as high-resolution images of type material available on JSTOR Global Plants (<https://plants.jstor.org/>). This was supplemented by the study of the protologues and available herbarium collections in the National Botanical Research Institute in Namibia (WIND), the South African National Biodiversity Institute, Pretoria (PRE), and the University of Pretoria (PRU) (herbarium codes follow Thiers 2026). A 6.5–45.0× magnification stereo microscope was used for studying morphological features. Descriptive terminology follows Beentje (2016), Manktelow (2000), and for the distinction between the various trichome types, we followed the terminology of Hewson (2019), who provides definitions and illustrations for the different types. Locality information for specimens cited also provides the quarter degree grid squares based on the degree reference system of Edwards & Leistner (1971). The distribution map was compiled from specimen data using ArcView 3.1 software. A preliminary conservation assessment was conducted using the standard procedures based on IUCN (2012) recommendations, and the online GeoCAT tool (Bachman *et al.* 2011).

Taxonomic treatment

Petalidium bembeense Swanepoel & A.E.van Wyk, *sp. nov.* (Figs 2–6)

Diagnosis:—A woody dwarf shrub up to 0.75 m tall, morphologically most similar to *Petalidium welwitschii*, differing by its green to reddish green appearance (*vs.* grey-green to grey); indumentum on stems, petioles and inflorescence branches consisting mainly of multicellular stalked glandular trichomes up to 2 mm long (*vs.* mainly dendritic interspersed with multicellular stalked glandular and long simple trichomes up to 5 mm long); indumentum on lamina sparsely to densely scattered, but not matted, consisting of stellate-dendritic, bifurcate, trifurcate and dendritic trichomes, interspersed with multicellular stalked glandular or simple trichomes (*vs.* matted, consisting of dendritic trichomes, sometimes with isolated stalked glandular trichomes on margins); indumentum abaxially on bracteoles up to 3 mm long, not or barely visible to the naked eye (*vs.* up to 7 mm long, clearly visible to the naked eye); lamina 1.7–3.6× as long as broad (*vs.* usually wider, 0.9–2.1× as long as broad), base attenuate, cuneate or obtuse (*vs.* cuneate, cordate, subcordate or truncate); corolla relatively large (27.7–37.5 mm long) (*vs.* smaller [23.0–26.5 mm long]), colour of lobes abaxially lilac or mauve (pale violet) (*vs.* magenta, different shades of pink, pale yellow, cream-white or white).

Type:—ANGOLA. Cunene Province: Garganta do Bembe, ca. 25 km south-southeast of Oncocua, rocky mountain side, 1613DC, 840 m a.s.l., 17 June 2025, *Swanepoel 685* (holotype LUBA!; isotypes PRE!, PRU!).

Woody dwarf shrub up to 0.75 m tall. *Stems* single or multi-stemmed from just below or above ground level, up to 80 mm diam., erect to procumbent, older distal stems cylindrical, bark peeling in longitudinal strips, light brown, grey-brown or grey; young stems quadrangular, green to brown-green, indumentum of short and fine to longer and more robust stalked multicellular glandular trichomes, up to 2 mm long, longer ones visible to the naked eye, sometimes with few isolated simple, bifurcate or sparsely branched dendritic trichomes in addition, glabrescent, cystoliths visible, narrowly elliptic, oblanceolate or circular. *Leaves* opposite and decussate on new shoots, fascicled on older stems; petiole 3–25 mm long, indumentum similar to branches; lamina broadly lanceolate to narrowly ovate, less often lanceolate [*sensu* Lindley's definition (Beentje 2016)], oblong or elliptic, flat, rarely sub-conduplicate or undulate towards margin, 7–50 × 3–23 mm, decurrent onto petiole, green, dark green, olive-green or reddish green, some young leaves grey-green (due to white indumentum), when dry, olive-green, khaki, brown or red, indumentum of dense stellate-dendritic, bifurcate, trifurcate and sparsely branched dendritic trichomes, branches rarely with an apical gland, interspersed with multi-cellular stalked glandular or simple trichomes of various lengths, certain types of trichomes often absent, glabrescent, apex acute or obtuse, usually apiculate, base attenuate, cuneate or obtuse, margins

entire, midrib and the 4 to 6 principal lateral veins on each side of it prominently raised adaxially, cystoliths linear or curved, usually visible. *Flowers* in axillary racemose dichasia 35–130 mm long, indumentum similar to branches; bracts foliaceous, oblanceolate, sessile, 5–18 × 1–4 mm, indumentum similar to leaves; pedicels (below bracteoles; “peduncle” of some authors) 1.0–3.5 mm long; bracteoles ovate, symmetrical, coriaceous, translucent, free from base, separate when dry, 17–20 × 11–13 mm, apex attenuate, pale green, green or maroon-green, stramineous when dry, venation reticulate, green, maroon-green or maroon, indumentum abaxially sparsely puberulent, also scattered small (weak and short) stalked glandular trichomes, on veining and margins in addition beset with more robust, isolated to sparsely multicellular stalked glandular, simple, bifurcate or sparsely branched dendritic trichomes 0.1–3.0 mm long, not or barely visible to the naked eye, some types often absent, adaxially sparsely strigose in places, also with isolated stalked glandular trichomes, margins lanate towards apex, cystoliths visible both sides, linear or curved, dense. *Calyx* 10.0–12.4 mm long including basal tube of ca. 3 mm deep, lobes 4, regular, narrowly triangular (lanceolate when flattened), acute, unequal, 8.5–9.4 mm long, anticus lobe bifid for ca. 1.1 mm; strigose both sides, densely towards base, also multicellular stalked glandular trichomes abaxially and on margins, cystoliths visible both sides, linear, dense. *Corolla* with narrow unexpanded portion of tube cylindrical, laterally slightly flattened, 27.7–37.5 mm long with lobes straightened, narrow portion 10.3–14.4 mm long, 2.8–3.3 mm diam., outside glabrous, inside puberulous distally on anterior side otherwise glabrous, expanded portion not at an angle to anterior side of narrow portion, 7.6–11.5 mm long, outside glabrous, inside of anterior part with scattered long stiff white simple trichomes towards mouth, inside otherwise glabrous, herringbone pattern transversely 5–7-ribbed, prominently outside; lobes spreading or ascending-spreading, anterior lobe suborbicular or obovate 8.2–11.6 mm long, other lobes obovate, often recurved towards margins, then appearing rectangular, lateral lobes 6.9–9.0 mm long, upper lobes 8.3–10.0 mm long, connate for ca. 16% of their length, lobe apices entire or crenulate, truncate, rounded or retuse, all lobes similarly coloured or anterior lobe slightly darker, outside and inside concolorous or slightly discoloured, lilac or mauve (pale violet), traces (veins) white or paler in colour than associated lobe, nectar guides narrowly triangular, conspicuous, yellow on anterior lobe, maroon or orange-red on other lobes; lobes glabrous adaxially except for few long stiff white simple trichomes towards bases. *Stamens* didynamous, inserted dorsally in throat, fused portion ca. 2.1 mm long, free parts slightly tapering towards apex, glabrous, long filaments ca. 8.0 mm long, short filaments ca. 4.6 mm long, outer filament with basal ridge from point of insertion on corolla (“trace”) decurrent to ca. 6.7 mm from base of tube; filament curtain reduced (*sensu* terminology of Manktelow 2000); anthers 2-theous, equal, thecae elliptic-oblong, ca. 4.2 mm long excluding short basal spur, mauve, lilac or cream, glabrous. *Gynoecium* ca. 23 mm long, glabrous; ovary ovoid, laterally compressed, ca. 3.2 × 2.0 mm, inserted in fleshy disc; style filiform, ca. 18.2 mm long, stigma lobes linear, sub-equal, ca. 0.8 and 1.2 mm long. *Capsule* flattened ovoid or ellipsoid, 9.8–10.5 × 5.3–6.6 mm, smooth, khaki or tawny, glossy, glabrous; seeds cordate, 4.6–5.2 × 3.2–3.5 mm, densely covered with white hygroscopic trichomes.

Phenology:—Flowers and fruit have been recorded in June (early winter).

Distribution and habitat:—Currently, *Petalidium bembeense* is only known to occur in the Kaokoveld Centre of Endemism, southwestern Angola and Namibia, specifically in the Bembe Gorge and intermontane valleys between the Viluoviaengua, Onongoengoe, and Matupa Mountain ranges to the southeast of Oncocua in Angola, and in the Zebra Mountains in Namibia (Fig. 1, 5). However, it is possible that the species has a wider distribution within the Kunene Igneous Complex, as many areas remain difficult to access. It typically inhabits plains, hillsides, ephemeral riverbeds and drainage lines, primarily thriving in clay soils derived from the Kunene Igneous Complex, which includes dark leucotroctolite, olivine-bearing anorthosite, dunite, gabbro, and norite (Miller & Schalk 1980, Maier *et al.* 2013). The species is found at elevations of 750–840 m a.s.l., 170–190 km inland from the Atlantic Ocean. The region receives average annual rainfall of 200–300 mm, mainly during the summer months (Atlas of Namibia Team 2022, Mendelsohn & Huntley 2023).

Conservation status:—*Petalidium bembeense* has been recorded in the Garganta do Bembe [Bembe Gorge] area in Angola at three sites within 10 km from each other where it is occasional to locally common and in Namibia at one site in the Zebra Mountains. Although a brief search at various other sites with seemingly suitable habitat did not reveal any plants, it is probably more widespread than currently known. The extent of occurrence (EOO) has been calculated as 199 km² and the area of occupancy (AOO) as 40 km², based on a cell width of 2 km as recommended by the IUCN Standards and Petitions Committee (2024). Due to its limited geographical range (EOO < 5000 km²), with only two known localities (the Bembe Gorge area in Angola and Zebra Mountains in Namibia) and habitat under pressure from prolonged drought conditions, *Petalidium bembeense* is here provisionally assessed as Endangered (EN) B2ab(iii) (IUCN 2012).



FIGURE 2. *Petalidium bembeense*. Habitat and habit. **A.** Sprawling dwarf shrub ca. 300 mm high with flowers, growing in whitish anorthosite-derived soil. **B.** Dwarf shrub ca. 200 mm high with flowers, growing among dark rocks of leucotroctolite. The upright growing shoots with bright green leaves towards the centre of the plant belong to a seedling of a tree species. Photographs by W. Swanepoel.

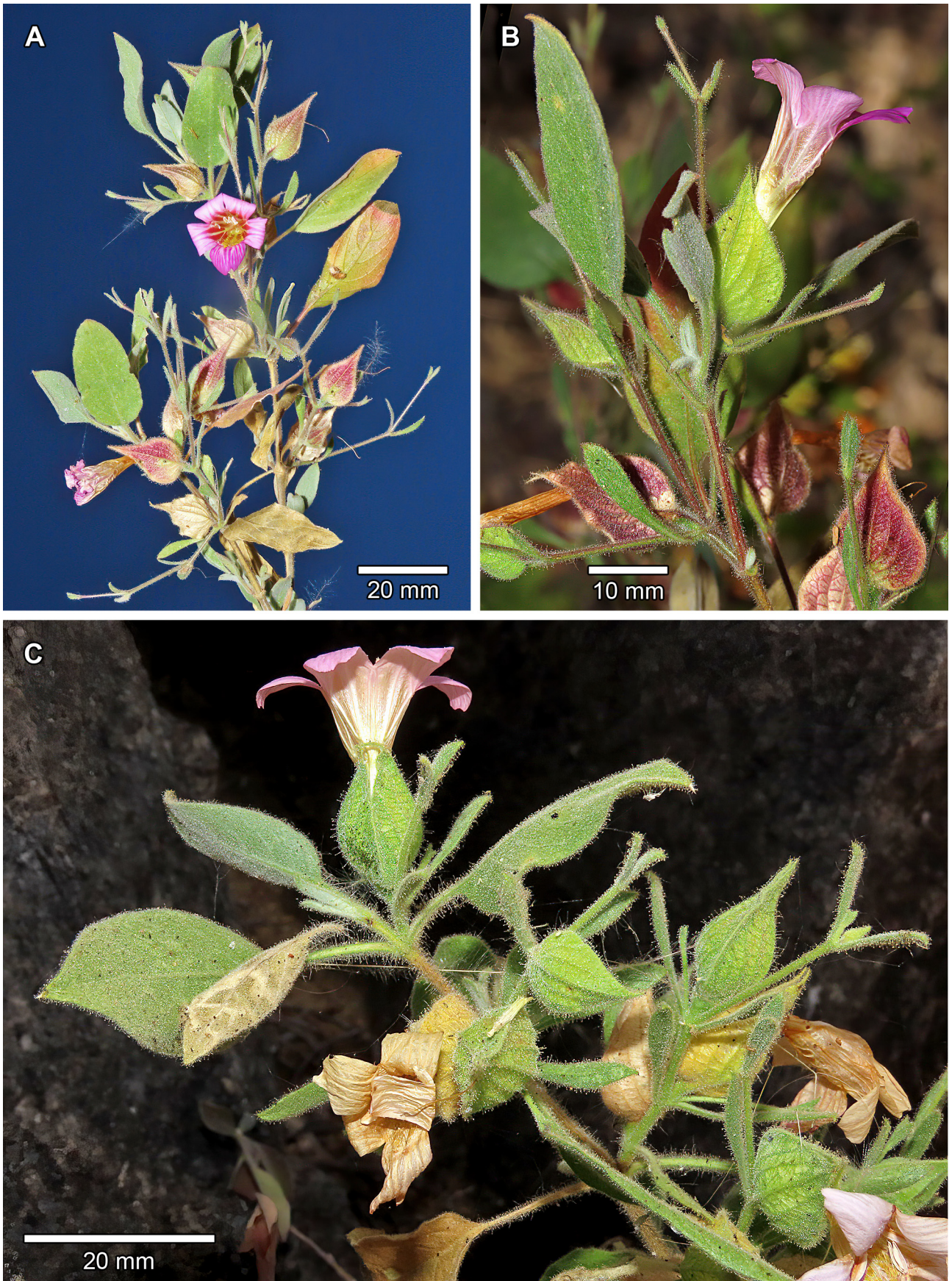


FIGURE 3. *Petalidium bembeense*. A–C. Morphology of shoots with leaves and flowers. The plants are sticky due to the presence of glandular trichomes. The white feathery structures attached to the shoot in A are wind-blown feathery awns of a member of the grass genus *Stipagrostis*. Photographs by W. Swanepoel.

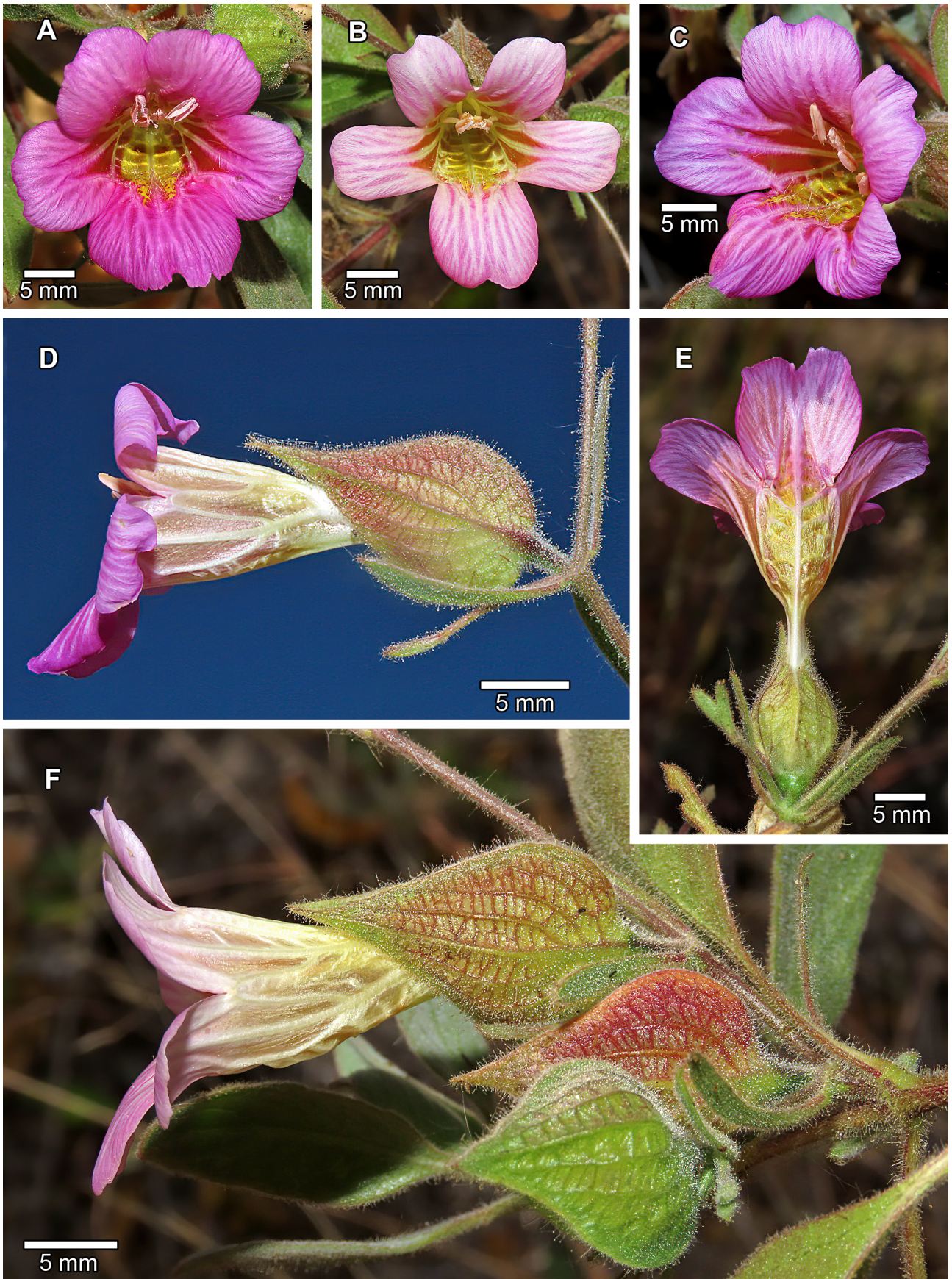


FIGURE 4. *Petalidium bembeense*. Morphology of flowers. **A, B.** Flower in front view. **C.** Flower in oblique-front view. **D.** Flower with bracteole in side view. **E.** Flower and bracteole viewed from below. **F.** Flower in side view and with bracteoles. Photographs by W. Swanepoel.

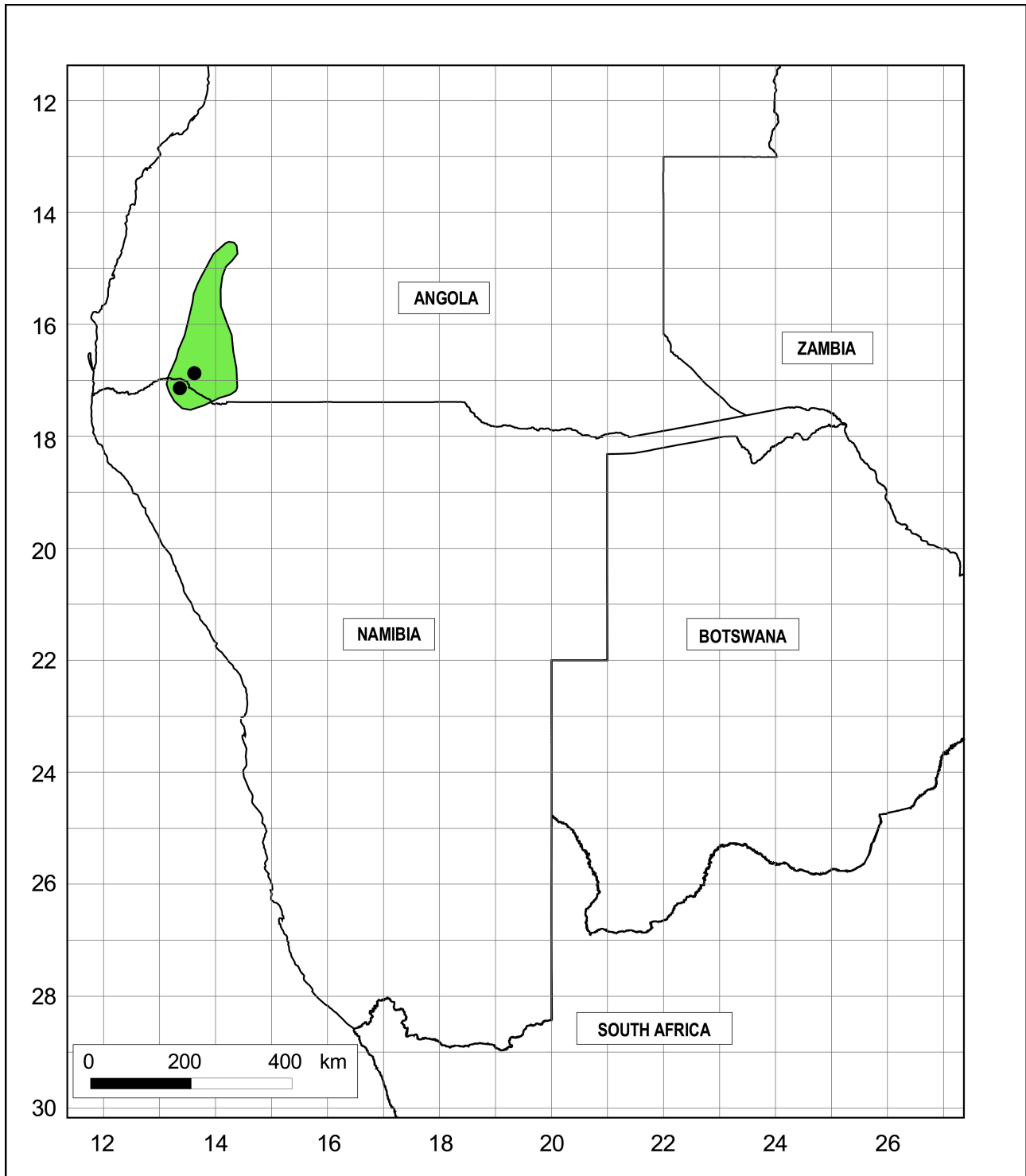


FIGURE 5. Known distribution of *Petalidium bembeense* (black dots). Based on herbarium specimens in Herbs LUBA and WIND, and duplicates in Herbs PRE and PRU. The green shaded area indicates the general extent of rocky outcrops associated with the Kunene Igneous Complex, adapted from Lehmann *et al.* (2023).

Etymology:—The specific epithet refers to the Garganta do Bembe [Bembe Gorge] (Fig. 2A), located in southwestern Angola, where the type material of *Petalidium bembeense* was collected.

Notes:—*Petalidium bembeense* is morphologically most similar to *P. welwitschii*, perhaps its closest relative. Hence these two species were compared in the diagnosis above. Some of the morphological features to distinguish between *P. bembeense* and *P. welwitschii* are provided in Table 1; also see Fig. 6.



FIGURE 6. *Petalidium bembeense*; flowers, compared with those of its morphologically most similar species with which it was previously confused. **A.** *P. bembeense*; corolla lobes lilac or mauve (pale violet), traces (veins) white or paler in colour than the associated lobe, nectar guides narrowly triangular, yellow on anterior lobe (not fully visible due to orientation of the lobe; compare Figs 4A–C), maroon or orange-red on other lobes. **B.** *P. welwitschii*; corolla lobes cream or mauve, with claret longitudinal lines. **C.** *P. ohopohense*; corolla lobes mauve to violet-red. **D.** *P. rossmannianum*; corolla white, with pinkish centre. Photographs by W. Swanepoel.

In Herbs PRE and WIND, *Petalidium bembeense* was previously confused with *P. rossmannianum* and in the *Prodromus einer Flora von Südwestafrika* with both *P. rossmannianum* and *P. ohopohense*. However, the new species can readily be distinguished from these by its indumentum, which includes, among other features, stalked glandular trichomes that are absent in *P. ohopohense* and *P. rossmannianum*. In addition, *P. bembeense* has the corolla larger (27.7–37.5 mm long vs. 18.2–25.7 mm long [*P. ohopohense*], and 16.3–20.4 mm long [*P. rossmannianum*]); the corolla lobes broader than long (vs. longer than broad [*P. ohopohense*]) and the lobes are coloured lilac or mauve (pale violet) with the traces (veins) white or paler in colour than the associated lobe (vs. lobes mauve to violet-red [*P. ohopohense*], white [*P. rossmannianum*], and the traces (veins) blend with the lobes).

Both *Petalidium bembeense* and *P. welwitschii* are from the group composed of plants with irregular, four-parted calyces (Obermeijer 1936, Tripp *et al.* 2017).

Additional specimens examined (paratypes):—ANGOLA, Cunene Province: Intermontane valley between Serra Onongoengoe and Serra Matupa, 35 km south-southeast of Oncocua, 1613DC, 842 m, 17 June 2025, *Swanepoel 684* (LUBA!, PRU!).

—NAMIBIA, Kunene Region: 6 Meilen westlich Enjandi, 1713AB, 18 April 1966, *Giess 9341* (PRE!, WIND!).

TABLE 1. Morphological comparison between *Petalidium bembeense* and *P. welwitschii*.

Character	<i>P. bembeense</i>	<i>P. welwitschii</i>
Indumentum on stems, petioles and inflorescence branches	Multicellular stalked glandular trichomes, up to 2 mm long, sparse to dense; rarely isolated simple, bifurcate or dendritic trichomes in addition; glabrescent	Dendritic trichomes, dense, interspersed with small and short to robust and much longer, dense, multicellular stalked glandular trichomes up to 0.5 mm long; also isolated to dense simple trichomes up to 5 mm long; some types of trichomes sometimes absent; glabrescent
Indumentum on lamina	Stellate-dendritic, bifurcate, trifurcate and dendritic trichomes, interspersed with multicellular stalked glandular or simple trichomes; sparsely to densely scattered, but not matted	Dendritic trichomes, sometimes with isolated stalked glandular trichomes on margins; matted
Bracts (indumentum)	As for lamina	Different than on lamina; dendritic trichomes, multicellular stalked glandular trichomes, in addition robust, much longer stalked glandular and/or eglandular trichomes, also robust dendritic trichomes, sparsely branched towards apex; some types of robust trichomes sometimes absent
Bracteoles (indumentum abaxially)	Scattered stalked glandular trichomes (weak, short) also sparsely puberulent in places; trichomes on veining and margins more robust: stalked glandular, simple, bifurcate and dendritic, up to 3 mm long, not or barely visible to the naked eye; some types of trichomes often absent	Scattered stalked glandular trichomes (weak, short), longer multicellular stalked glandular trichomes, also dense and much longer, robust multicellular simple, bifurcate and long-stalked sparsely branched dendritic trichomes up to 7 mm long, clearly visible to the naked eye
Leaves (shape)	Usually broadly lanceolate to narrowly ovate, less often lanceolate [<i>sensu</i> Lindley's definition (Beentje 2016)], oblong or elliptic	Usually ovate to broadly ovate or broadly elliptic
Leaves (lamina/margin conformation)	Flat, rarely sub-conduplicate or undulate towards margin	Flat, or recurved towards margin, margin often revolute towards apex
Lamina (apex)	Acute or obtuse, usually apiculate	Acute, obtuse, rounded or truncate, usually apiculate
Lamina (base)	Attenuate, cuneate or obtuse	Cuneate, cordate, subcordate or truncate
Lamina colour	Green, dark green, olive-green, grey-green or reddish green; when dry, olive-green, khaki, brown or red	Dark green, grey-green or grey (due to dense whitish indumentum); when dry grey, grey-green, olive-green or tawny
Bracteoles (shape)	Ovate, symmetrical	Narrowly ovate, broadly lanceolate, asymmetrical, apex attenuate
Bracteoles (size) (mm)	17–20 × 11–13	18–21 × 6.0–6.7
Bracteoles (colour)	Pale green, green or maroon-green	Green or yellow-green
Calyx (length) (mm)	10.0–12.4	Ca. 8.7
Corolla (length, lobes flattened) (mm)	27.7–37.5	23.0–26.5
Corolla anterior lobe (shape; length) (mm)	Suborbicular or obovate; 8.2–11.6	Suborbicular; 6.4–7.0
Corolla lateral lobes (shape; length) (mm)	Obovate, often recurved towards margins, then appearing rectangular; 6.9–9.0	Broadly ovate, obovate or rectangular; 5.2–6.7
Corolla upper lobes (shape; length) (mm)	Obovate, often recurved towards margins, then appearing rectangular; 8.3–10.0	Broadly ovate or obovate; 5.7–7.8
Corolla lobes (colour, adaxially)	Lilac or mauve (pale violet)	Burgundy, magenta, different shades of pink, salmon, pale yellow, cream-white or white
Anther thecae (shape; length) (mm)	Elliptic-oblong; 4.2	Oblong; 2.6
Distribution	Angola: southwestern Cunene Province in mountainous area south-southeast of Oncocua Namibia: northwestern Kunene Region in Zebra Mountains	Angola: western Namibe Province from south of Bentiaba to Kunene River Namibia: northwestern Kunene Region from Kunene River to Khumib River

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References

- Adhikari, S., Silva, J.M., Rajakaruna, N. & Siebert, S.J. (2022) Influence of land use and topography on distribution and bioaccumulation of potentially toxic metals in soil and plant leaves: a case study from Sekhukhuneland, South Africa. *Science of the Total Environment* 806 (2): 150659 [10 pp.].
<https://doi.org/10.1016/j.scitotenv.2021.150659>
- Atlas of Namibia Team. (2022) *Atlas of Namibia: its land, water and life*. Namibia Nature Foundation, Windhoek, 390 pp.
- Bachman, S., Moat, J., Hill, A.W., De la Torre, J. & Scott, B. (2011) Supporting Red List threat assessments with GeoCAT: geospatial conservation assessment tool. *ZooKeys* 150: 117–126.
<https://doi.org/10.3897/zookeys.150.2109>
- Beentje, H. (2016) *The Kew plant glossary: an illustrated dictionary of plant terms*. 2nd ed. Kew Publishing, Kew, 184 pp.
- Craven, P. (2009) *Phytogeographic study of the Kaokoveld Centre of Endemism*. Ph.D. Thesis. University of Stellenbosch, Stellenbosch, 234 pp. [<https://hdl.handle.net/10019.1/1325>]
- Darbyshire, I., Kiel, C.A., Astroth, C.M., Dexter, K.G., Chase, F.M. & Tripp, E.A. (2020) Phylogenomic study of *Monechma* reveals two divergent plant lineages of ecological importance in the African savanna and succulent biomes. *Diversity* 12 (6): a237 [25 pp.].
<https://doi.org/10.3390/d12060237>
- Dexter, K.G., Swanepoel, W., Loiseau, O., Darbyshire, I., Nanyeni, L., Gonçalves, F.M., Chase, F. & Manzitto-Tripp, E.A. (2023) High endemism of the genus *Petalidium* (Acanthaceae) in the highlands and escarpments of Angola and Namibia. *Namibian Journal of Environment* 8: 135–147.
<https://doi.org/10.64640/dr0jnh96>
- Edwards, D. & Leistner, O.A. (1971) A degree reference system for citing biological records in southern Africa. *Mitteilungen der Botanischen Staatssammlung München* 10: 501–509. [<https://biostor.org/reference/185348>]
- Figueiredo, E. & Smith, G.F. (2008) *Plants of Angola/Plantas de Angola*. Strelitzia 22. South African National Biodiversity Institute, Pretoria, 279 pp. [<https://www.sanbi.org/documents/plants-of-angola-strelitzia-22/>]
- Germishuizen, G. & Meyer, N.L. (2003) *Plants of southern Africa: an annotated checklist*. Strelitzia 14. National Botanical Institute, Pretoria, 1231 pp.
- Hewson, H.J. (2019) *Plant indumentum: a handbook of terminology*. revised ed. Australian Biological Resources Study, Commonwealth Department of the Environment and Energy, Australia, 47 pp. [<https://ausflora.net/wp-content/uploads/2019/05/plant-indumentum-2.0.pdf>]
- IUCN. (2012) *IUCN red list categories and criteria*. Version 3.1. 2nd ed. Gland, Switzerland and Cambridge, U.K., iv + 32 pp.
- IUCN Standards and Petitions Committee. (2024) *Guidelines for using the IUCN Red List Categories and Criteria. Version 16*. Prepared by the Standards and Petitions Committee, IUCN Species Survival Commission, Gland, 122 pp. [<https://www.iucnredlist.org/documents/RedListGuidelines.pdf>]
- Leach, L.C. (1968) Euphorbiae succulentae angolenses—I. *Boletim da Sociedade Broteriana* 42: 161–179.
- Lehmann, J., Brower, A.M., Owen-Smith, T.M., Bybee, G.M. & Hayes, B. (2023) Landsat 8 and Alos DEM geological mapping reveals the architecture of the giant Mesoproterozoic Kunene Complex anorthosite suite (Angola/Namibia). *Geoscience Frontiers* 14 (5): 101620 [21 pp.].
<https://doi.org/10.1016/j.gsf.2023.101620>
- Loiseau, O., Manzitto-Tripp, E.A., Swanepoel, W. & Dexter, K.G. (2023) Net diversification rates of the woody plant genus *Petalidium* (Acanthaceae) are highest in the ancient and arid Namib Desert. *Frontiers in Ecology and Evolution* 11: 1–10.
<https://doi.org/10.3389/fevo.2023.1193728>
- Maier, W.D., Rasmussen, B., Fletcher, I.R., Li, C., Barnes, S.J. & Huhma, H. (2013) The Kunene Anorthosite Complex, Namibia, and its

- satellite intrusions: geochemistry, geochronology, and economic potential. *Economic Geology* 108 (5): 953–986.
<https://doi.org/10.2113/econgeo.108.5.953>
- Manktelow, M. (2000) The filament curtain: a structure important to systematics and pollination biology in the Acanthaceae. *Botanical Journal of the Linnean Society* 133 (2): 129–160.
<https://doi.org/10.1006/bojl.1999.0309>
- Mendelsohn, J.M. & Huntley, B.J. (2023) Introducing the highlands and escarpments of Angola and Namibia. *Namibian Journal of Environment* 8: 7–22.
<https://doi.org/10.64640/esp7q72>
- Meyer, P.G. (1961) Beiträge zur Kenntnis der Acanthaceen Südwesafrikas (III). *Mitteilungen der Botanischen Staatssammlung München* 4: 59–72. [<https://www.biodiversitylibrary.org/item/52384#page/747/mode/1up>]
- Meyer, P.G. (1968) Acanthaceae. *Prodromus einer Flora von Südwestafrika* 130: 1–65.
- Meyer, P.G. (1973) Neue und enig bekannte Acanthaceen aus dem Kaokoveld (Südwesafrika). *Mitteilungen der Botanischen Staatssammlung München* 11: 101–113. [<https://www.biodiversitylibrary.org/item/51768#page/111/mode/1up>]
- Miller, R.McG. & Schalk, K.E.L. (1980) *Geological map of South West Africa/Namibia* (1: 1000000). Geological Survey of the Republic of South Africa and South West Africa/Namibia, Windhoek, 4 sheets.
- Moore, S. (1880) Enumeratio Acanthacearum Herbarii Welwitschiani Angolensis. *Journal of Botany, British and Foreign* 18: 225–233. [<https://www.biodiversitylibrary.org/item/108761#page/236/mode/1up>]
- Nees von Esenbeck, C.G. (1832) Acanthaceae India Orientalis. In: Wallich, N. (Ed.) *Plantae Asiaticae rariores: or descriptions and figures of a select number of unpublished East Indian plants, Vol. 3*. Treuttel & Würtz, London, pp. 70–117. [<https://www.biodiversitylibrary.org/item/9716#page/172/mode/1up>]
- Obermeijer, A.A. (1936) The South African species of *Petalidium*. *Annals of the Transvaal Museum* 18: 151–162.
- Siebert, S.J., Van Wyk, A.E. & Breidenkamp, G.J. (2001) Endemism in the flora of ultramafic areas of Sekhukhuneland, South Africa. *South African Journal of Science* 97: 529–532. [<https://journals.co.za/doi/abs/10.10520/EJC97254>]
- Swanepoel, W. (2015) *Maerua sebrabergensis* (Capparaceae), a new species from Namibia. *Phytotaxa* 207 (1): 123–128.
<https://doi.org/10.11646/phytotaxa.207.1.7>
- Swanepoel, W. (2020) *Petalidium kaokoense* (Acanthaceae), a new species from Namibia. *Phytotaxa* 468 (3): 236–242.
<https://doi.org/10.11646/phytotaxa.468.3.1>
- Swanepoel, W., Dexter, K.G., Loiseau, O. & Van Wyk, A.E. (2023) Reinstatement of the name *Petalidium ovatum* (Acanthaceae), with an amplified description of the species. *Phytotaxa* 626 (3): 159–169.
<https://doi.org/10.11646/phytotaxa.626.3.2>
- Swanepoel, W. & Manzitto-Tripp, E. (2022) *Petalidium sesfonteinense* (Acanthaceae), a new species from the Kaokoveld, Namibia. *Phytotaxa* 549 (2): 127–135.
<https://doi.org/10.11646/phytotaxa.549.2.1>
- Swanepoel, W., Manzitto-Tripp, E.A., Dexter, K.G. & Van Wyk, A.E. (2024) *Petalidium etendekaense* (Acanthaceae), a new species from Namibia, with notes on the taxonomic identity of *P. glutinosum*. *Phytotaxa* 636 (1): 35–47.
<https://doi.org/10.11646/phytotaxa.636.1.3>
- Swanepoel, W., Nanyeni, L. & Van Wyk, A.E. (2022) *Petalidium mannheimerae* (Acanthaceae), a new species from Namibia and South Africa, with notes on the taxonomic identity of *P. parvifolium*. *Phytotaxa* 561 (1): 1–13.
<https://doi.org/10.11646/phytotaxa.561.1.1>
- Swanepoel, W. & Van Jaarsveld, E.J. (2019) *Ocimum sebrabergensis* (Lamiaceae), a new species from Namibia. *Phytotaxa* 405 (4): 203–209.
<https://doi.org/10.11646/phytotaxa.405.4.4>
- Swanepoel, W. & Van Wyk, A.E. (2023a) *Petalidium konkiepense* (Acanthaceae), a new species from Namibia. *Phytotaxa* 585 (1): 29–38.
<https://doi.org/10.11646/phytotaxa.585.1.3>
- Swanepoel, W. & Van Wyk, A.E. (2023b) *Petalidium karasbergense* (Acanthaceae), a new species from Namibia. *Phytotaxa* 609 (1): 1–9.
<https://doi.org/10.11646/phytotaxa.609.1.1>
- Swanepoel, W. & Van Wyk, A.E. (2024) *Petalidium namibense* (Acanthaceae), a new species from Namibia. *Phytotaxa* 671 (2): 128–138.
<https://doi.org/10.11646/phytotaxa.671.2.2>
- Swanepoel, W. & Van Wyk, A.E. (2025a) *Petalidium hoarusibense* (Acanthaceae), a new species from Namibia. *Phytotaxa* 681 (1): 1–10.
<https://doi.org/10.11646/phytotaxa.681.1.1>

- Swanepoel, W. & Van Wyk, A.E. (2025b) *Petalidium sebrabergense* (Acanthaceae), a new species from Namibia. *Phytotaxa* 728 (1): 17–30.
<https://doi.org/10.11646/phytotaxa.728.1.2>
- Swanepoel, W., Becker, R.W. & Van Wyk, A.E. (2025a) *Petalidium engoense*, (Acanthaceae), a new species from Angola and Namibia, with notes on phenotypic plasticity in the genus. *Phytotaxa* 734 (1): 9–19.
<https://doi.org/10.11646/phytotaxa.734.1.2>
- Swanepoel, W., Dexter, K.G., Adamo, M., Manzitto-Tripp, E.A. & Van Wyk, A.E. (2025b) *Petalidium saxatile* (Acanthaceae), a new species from Namibia. *Phytotaxa* 716 (3): 161–174.
<https://doi.org/10.11646/phytotaxa.716.3.1>
- Swanepoel, W., Van Jaarsveld, E.J. & Van Wyk, A.E. (2025c) *Premna sebrabergensis* (Lamiaceae, Premnoideae), a new species from Angola and Namibia. *Phytotaxa* 726 (3): 155–164.
<https://doi.org/10.11646/phytotaxa.726.3.3>
- Thiers, B. (2026) *Index Herbariorum: A global directory of public herbaria and associated staff*. New York Botanical Garden's Virtual Herbarium. Available from: <http://sweetgum.nybg.org/ih/> (accessed January 2026)
- Tripp, E.A. & Dexter, K.G. (2012) Taxonomic novelties in Namibian *Ruellia* (Acanthaceae). *Systematic Botany* 37 (4): 1023–1030.
<https://doi.org/10.1600/036364412X656509>
- Tripp, E.A., Tsai, Y.E., Zhuang, Y. & Dexter, K.G. (2017) RADseq dataset with 90% missing data fully resolves recent radiation of *Petalidium* (Acanthaceae) in the ultra-arid deserts of Namibia. *Ecology and Evolution* 7 (19): 1–17.
<https://doi.org/10.1002/ece3.3274>
- Van Jaarsveld, E.J., Swanepoel, W. & Visagie, M. (2021) *Carissa sebrabergensis*. *Flowering Plants of Africa* 67: 150–157.
- Van Wyk, A.E. & Smith, G.F. (2001) *Regions of floristic endemism in southern Africa: a review with emphasis on succulents*. Umdaus Press, Hatfield, Pretoria, 199 pp.