

Ceropegia macmasteri (Apocynaceae–Asclepiadoideae–Ceropegieae), a new species from Eastern Cape, South Africa

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Abstract

Ceropegia macmasteri, a new species from Cathcart in the Eastern Cape Province of South Africa, is only known from a single population in Dohne sourveld grassland where it occurs with another rare local endemic species of the Ceropegieae, *Brachystelma cathcartense* R.A.Dyer. The new species, an herbaceous grassland plant with a tuberous rootstock, most closely resembles *C. stentiae* E.A.Bruce, but is distinguished by its linear-erect corona lobes and inner corona conniving to form a central column.

1. Introduction

The genus *Ceropegia* L. comprises approximately 200 species from southern Africa, around the perimeter of the Indian Ocean to Australia (Bruyns, 1985). Since the revision of the southern African species by Dyer (1980), relatively few new species have been described from southern Africa, where taxa are often rare and known from limited material. Bruyns (1985) notes that the classification of the genus remains unclear and that further field studies are required for a better understanding of species relationships. A new species from Cathcart in the Eastern Cape Province of South Africa is described, following Dyer's (1980) preliminary classification of the species. It most closely resembles *C. stentiae* E.A.Bruce. Although the Albany Centre of Floristic Endemism (Van Wyk and Smith, 2001) appears to be an important centre for *Ceropegia*, with the largest concentration of species found in hot, dry river valleys, few species are recorded in the higher grassland biome. The new species is the first herbaceous species (sensu Dyer, 1980) of *Ceropegia* to be found in true grassland (Dohne sourveld) in the Albany Centre.

2. Description

Ceropegia macmasteri A.P.Dold, sp. nov., *C. stentiae* E.A.Bruce, affinis sed caule usque ad 60 mm longo, foliis petiolatis patulis ovatis vel ellipticis 25–45 mm longis 20–30 mm latis, pedicello ad 2–4 mm longo, sepalis usque ad 6 mm longis, tubo corollae viridi, longitudinaliter purpureo-lineato, albo-pubescenti, basin versus globose inflato, intus purpureo-bullato, lobis corollae basi deltoideo, lobis coronae interioribus exterioribusque linearibus erectis, basi purpureis, supra laete viridibus, differt. TYPE—Eastern Cape, 3227 (Stutterheim): Middledrift farm (–AC), 1200 m, 24-11-2004, A.P. Dold 4699 (GRA, holo.).

Perennial non-succulent geophytic herb with tuber. *Tuber* depressed-globose, $\pm 25 \times 50$ mm. *Stem* unbranched, up to 60 mm long, up to 3 mm thick at base, erect, glabrous, green, tinged pinkish at nodes, internodes 5–8 mm long. *Leaves* ovate at base of stem, 45–55 \times 20–30 mm, younger leaves more elliptic, 25–45 \times 10–15 mm, spreading, lamina glabrous, dark green, margin and lower midrib sparsely hispidulous; petiole 4.0–12.0 \times 1.5–2.0 mm, shallowly grooved above, glabrous. *Flowers* solitary, extra-axillary at nodes, opening successively; bract linear-lanceolate, green, up to 4 \times 1 mm; pedicels 2–4 mm long, up to 1.5 mm diam., recurved; sepals linear-lanceolate, up to 6.0 \times 1.4 mm, acute, spreading with incurved apices, green, tinged pinkish above, with sparse, small white bristles. *Corolla* pale green with lines of purple speckling and sparse pubescence externally, 50–60 mm long, asymmetrical globose inflation pale yellow-green, densely purple-bullate internally, with a fringe of 1 mm long retrorse purple hairs at constriction, up to 12 \times 9 mm diam., tube reddish-purple within, abruptly up-curved above inflation, narrowly funnel-shaped, up to 15 mm long, 5 mm diam. at base, broadening to 7 mm diam. at throat, sparsely clothed with long spreading white hairs up to 1 mm long; lobes up to 35 mm long, base deltoid, 2–5 mm long, abruptly narrowed into attenuated, linear-oblong lobes up to 30 mm long, 0.4 mm wide at base widening to 1.6 mm near apex, connivent-erect, connate at tips forming a cage, margins recurved with sparse long white hairs on outer surface and margin. *Corona* cupular at base, up to 2.9 \times 2.3 mm, pale green; outer corona lobes linear, erect, $\pm 1.6 \times 0.4$ mm, bifid almost to base, lobules purple in basal half, pale green in distal half; inner corona lobes linear, $\pm 2.0 \times 0.4$ mm, adpressed to backs of anthers, then connivent and erect, forming a column in centre over style-head, slightly longer than outer lobes, apices divergent, purple at base, pale green above, glabrous. *Pollinium* ellipsoidal and flattened,

up to 0.25×0.15 mm, with insertion crest along outer edge, golden brown; corpusculum oblong, up to 0.2×0.1 mm, brown, broadly and transparently winged, caudicle short, narrow, brown.

Flowering time: December to January ([Fig. 1](#) and [Fig. 2](#)).

3. Diagnosis and relationships

Ceropegia macmasteri belongs to a group of non-climbing species with tubers, non-succulent leaves and large solitary flowers with corolla lobes fused at the apex. These species (*C. turricula*, *C. conrathii*, *C. insignis* and *C. stentiae*) all occur in the northern regions of South Africa. *C. macmasteri* is most closely related to *C. stentiae* but is distinguished from this species by having linear, erect, bifid outer corona lobes and inner corona lobes conniving to form a central column. Furthermore, the yellow-green inner surface of the globose inflation of the corolla is densely purple-bullate, with a fringe of 1 mm long retrorse purple hairs at the constriction. The tube is glabrous within. *C. stentiae* has subquadrate, minutely three lobuled, ciliate outer corona lobes and erect, membranous inner corona lobes loosely conniving in the upper half and recurving at the apex ([Fig. 1f,g](#)). The inner surface of the globose inflation of the corolla is not bullate nor is the constriction fringed with hairs. The tube is sparsely villous within. *C. stentiae* is represented by three specimens from Naboomspruit and Pietersburg in Limpopo Province, ± 1000 km north of *C. macmasteri*. A further four records of cultivated plants from Pietersburg and Kayaseput in Limpopo Province and Wolmaransstad in the North West Province are documented ([Peckover, 1994](#), [Peckover, 1995](#) and [Venter, 1993](#)) but no specimens are preserved. These recent records indicate that the species is variable in leaf and corolla shape and coloration. However, an examination of the specimens confirms Dyer's description and illustration of the diagnostic coronal structure ([Dyer, 1980](#) and [Dyer, 1983](#)). These were taken directly from Mrs. Howard Flandey's notes and illustrations from the living plant, later pressed as the type specimen.

4. Distribution and biology

This new species is only known from Middledrift farm near Cathcart ([Fig. 2](#)) where it occurs together with *Brachystelma cathcartense* R.A.Dyer, another rare localized endemic, in Moist Upland Grassland ([Bredenkamp et al., 1996](#)), better known as Dohne sourveld ([Acocks, 1988](#)). Both species typically occur on the margins of exposed sandstone rock sheets (Beaufort series of

the Karoo system) where there is less competition from the *Themeda triandra* and *Tristachya hispidula* dominant grassveld. Farm records show that the average annual rainfall on Middledrift farm is 750 mm, falling mostly in the summer months, and temperatures at this altitude, 1200 m, vary between – 5 °C in winter and 34 °C in summer (C. McMaster, pers. comm.). Grass fires occur every 4 to 6 years.

A search by the author and Nigel McMaster, owner of Middledrift farm, indicates that the species is rare and solitary in habitat. Due to the small population size and small area occupied by the species, an IUCN (2000) category of Vulnerable (VUD2) is recommended. The species is named for Cameron McMaster, a plant enthusiast and sheep and wool consultant previously from Stutterheim who has discovered several new plant and insect taxa in inaccessible and poorly collected areas in the Eastern Cape Province.

5. Specimens examined

5.1. *C. stentiae*

LIMPOPO—2329 (Pietersburg): Bloedrivier Farm, Pietersburg (–CD), 13-04-1986, *F. Venter* 11866 (UNIN). 2428 (Nylstroom): Ridding Meads, Naboomspruit (–DA), 00-12-1912, *S.M. Stent* in *PRE 10179* (PRE, iso); Mosdene (–DA), 29-02-1924, *E.E. Galpin M215* (PRE).

Acknowledgements

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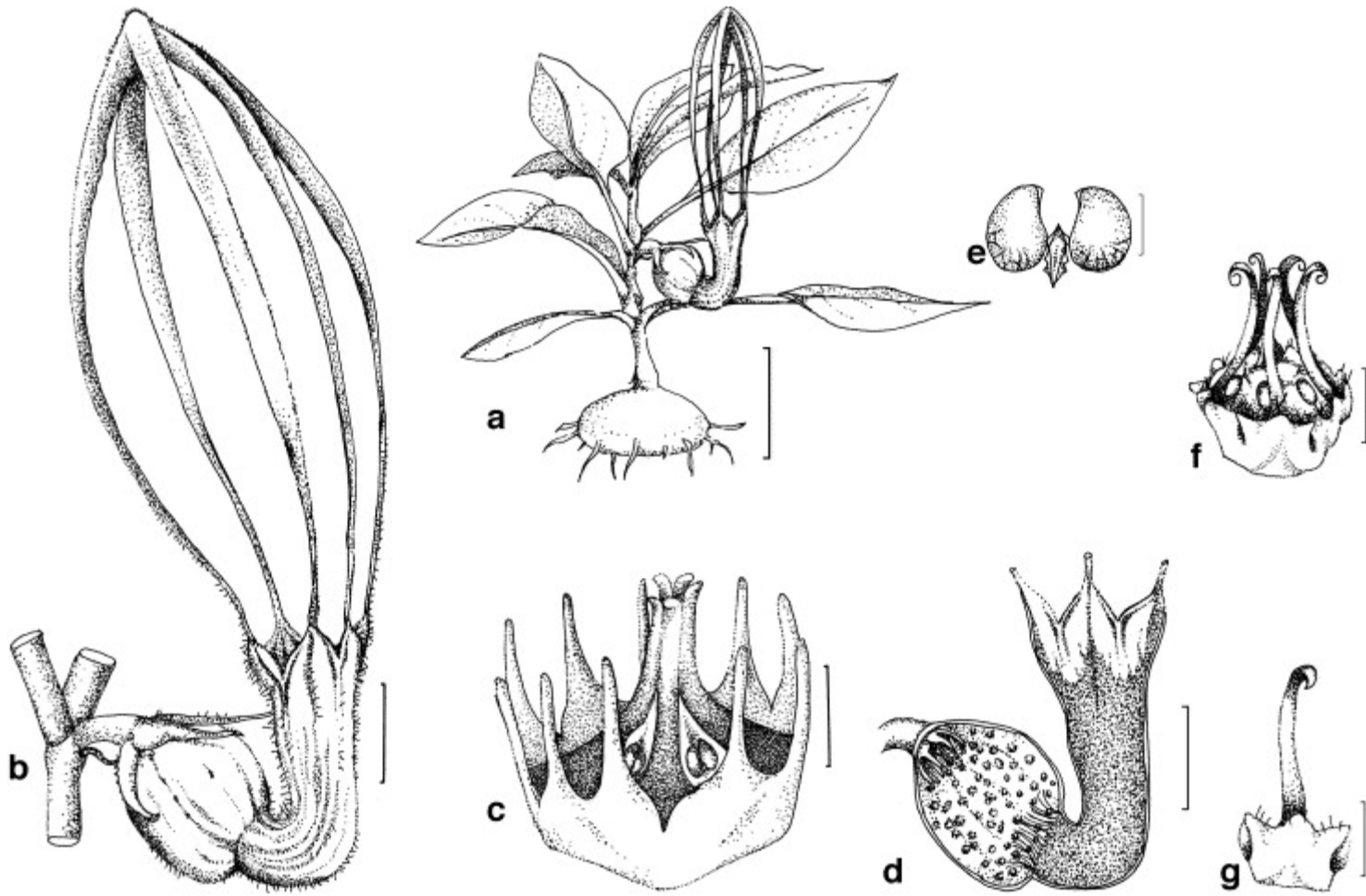


Fig. 1. *Ceropegia macmasteri* (A.P. Dold 4699): (a) whole plant, (b) flower, (c) corona, (d) section of corolla tube, (e) pollinium; *C. stentiae* (S.M. Stent in PRE 10179): (f) corona, (g) corona lobes. Scale bars: (a) 35 mm, (b) 5 mm, (c) 1 mm, (d) 6.6 mm, (e) 0.2 mm, (f) 1.25 mm, (g) 1 mm. Line drawings: Leigh-Ann De Wet.

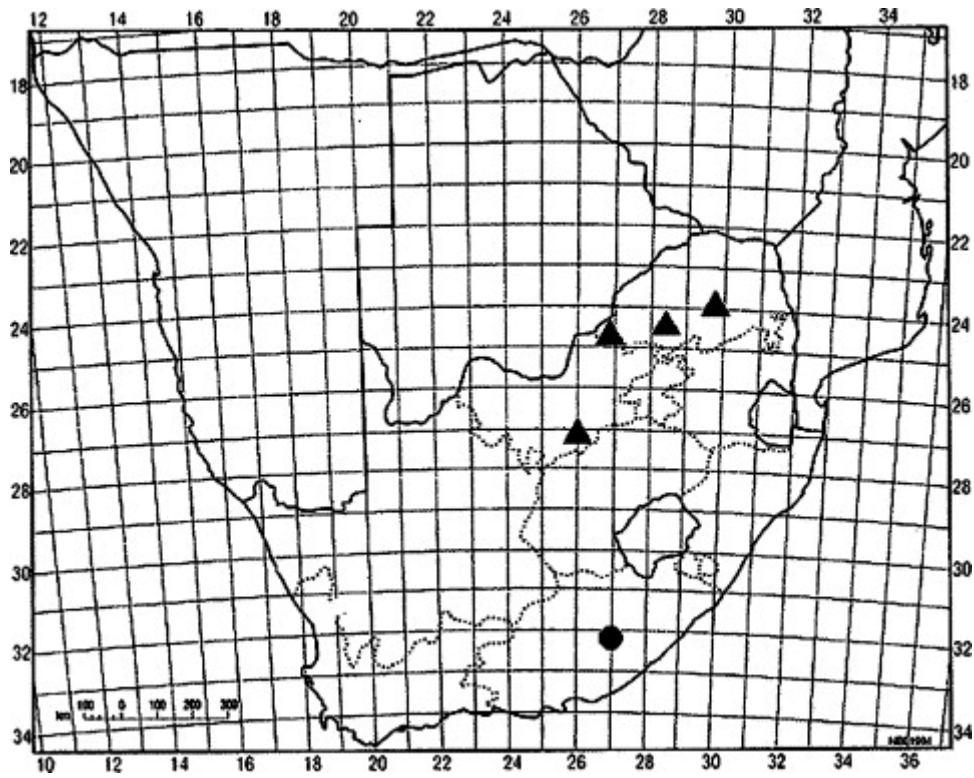


Fig. 2. Known distribution of *Ceropegia macmasteri* (●) and *C. stentiae* (▲).