Ceropegia namibiensis (Apocynaceae), a new species of *Ceropegia* sect. *Chamaesiphon* from Namibia

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A new species of *Ceropegia* from Namibia is described.
All photos by the author.

Fig. 1 Painting of *C. namibiensis* by Gillian Condy

Introduction

In January 1997, during a botanical trip to Namibia, I met up with a Frenchman at Grootfontein to proceed to an area near Gam which is close to the border with Botswana. He was tasked with certifying Devil's Claw (*Harpagophytum procumbens*), as organically grown. The root tubers of this plant are used medicinally, and we met up with the ethnic Bushmen inhabitants of the area that had been set aside for this cultural group to carry on with their lives without too much outside 'western' influence. After introductions and explaining the sustainable collection of the swollen horizontal roots (tubers) of Devil's Claw, I showed them photos of *Ceropegia* and *Brachystelma* plants from Dyer's 1983 book.

They immediately recognised the plants and indicated that they collected and ate the corms whilst in the veld. They said they would help me search for a few plants and together with them we came back with plants of *Ceropegia floribunda*, *C. stenoloba*, *C. purpurascens* as well as *C. pygmaea* (= *Brachystelma gymnopodum*). I then wandered off by myself and near the edge of a water-filled pan I saw growing in a grey sandy loam plants of an unfamiliar *Brachystelma* (now all *Ceropegia*). There were half a dozen plants which had a semi-decumbent growth form, long 80×15mm green leaves with wavy margins. What really interested me were the flowers, up to 22mm diameter and having 5mm-long flat filament-like hairs at the base of the corolla lobes. This species was not known to me, and a dried specimen was collected for the HGWJ Schweickerdt Herbarium (PRU), and later a flowering plant was collected to be painted by Gillian Condy, the resident artist in the then Botanical Research Institute, Pretoria. The watercolour painting (Fig. 1) was framed and hung in my office but over the years, other plants were studied and described, and this species was almost forgotten. Fortunately, I had recorded all the plant characteristics in a notebook. After many years I thought I should write up this species, but then could not remember depositing a specimen that might serve as the type in a herbarium. Without this and with no plants available in my live collection, it was impossible to describe the species.

Recently the person in charge of the herbarium specimens at PRU retired but wanted to finalise details of some herbarium specimens that I had deposited there years before. Eureka! She brought along the type specimen collection number 267 to finalise and then I could at last write up this species, for which the name *Ceropegia namibiensis* is proposed. Field work and a comparative morphological study of this pretty-flowering entity revealed several other differences from the two morphologically most similar species, namely *C. discoidea* (a very rare and seldom encountered species seen in habitat near Soutpan outside Pretoria) and *C. incana* (also a rare species known, amongst others, from between Wolmaransstad and Makwassie in the North West Province). Illustrations as well as a comparative table with features to distinguish between the three species are provided. (Figs. 1–8 and Table 1).

Fig. 2 *C. namibiensis* in habitat at Gam

Ceropegia namibiensis is a relatively small, range-restricted species, and is confined to the areas around Gam in north-eastern Namibia. Compared to *C. discoidea and C. incana*, it has much larger leaves, around 80mm in length, with wavy margins, flowers which have the distinctive flat ribbon-like hairs attached at the junction of the corolla lobes, radial projections alongside the guide rails and other notable differences of the corona.

The new species is found at a significant geographical distance

from the known distribution area of the other two species, being near Pretoria, Gauteng and in the North West Province near Wolmaransstad.

The genus *Brachystelma*, with around 116 recognised species, was sunk under several sections of *Ceropegia* by Bruyns *et al*. (2017). *Brachystelma discoidea* and *B. incanum*, to which *C. namibiensis* is morphologically most similar, were transferred to *Ceropegia* sect. *Chamaesiphon*, the section in which we provisionally place *C. namibiensis*. Members of sect. *Chamaesiphon* are confined mostly to southern Africa (around two thirds of the species) with the rest ranging into Africa but also to India and a single species in Australia. All the species now under sect. *Chamaesiphon* have a swollen underground caudex. The stems are deciduous and die back to the swollen underground caudex at the end of the growing season.

Members of *Ceropegia* section *Chamaesiphon* are characterised by leaves that are opposite, linear to elongated, with wavy, sinuate to entire straight margins. These are bright green to greyish and glabrous to very hairy. The flowers are borne in the axils of the leaves or are terminal in panicles. Each flower has five corolla lobes which can be united at their tips or free. The corona contains the pollinia as well in the gynostegium. The paired follicles develop after fertilisation and may be upright, decumbent, slender or very swollen. When mature these fruits split longitudinally to release the tufted seed which are dispersed by the wind. There may be from a few seeds to many in each follicle. The caudices (tubers) of some species of this group have, according to the literature, been used as food by humans, especially by Bushmen (personal interviews with Bushmen, and from Dyer, 1983).

Taxonomic treatment

Ceropegia namibiensis Peckover **sp. nov.**

Diagnosis: *Ceropegia namibiensis* resembles *C. discoidea* and *C. incana* in having a similar underground caudex, but is easily distinguished by the leaves being larger, flowers more numerous, shorter pedicels, corolla bulb with ribbon-like hairs (*C. discoidea* without and *C. incana* having short hairs), as well as other floral features (Table 1).

TYPE: Namibia, around Gam, 2020(BB), 23 January 1997, *Peckover 267* (PRU!, holo.).

Fig. 3 Flower of *C. namibiensis* with long flat ribbon hairs

Fig. 4 Flower of *C. incana* with fine hairs on inner surfaces

Fig. 5 Flower of *C. discoidea*, hairless and with reflexed corolla lobes

Description

Perennial herb up to 150mm long, semi-decumbent, usually single-stemmed, the basal organ a below-ground caudex (tuber), up to 50mm diameter and 25mm thick, with numerous fusiform roots from the bottom surface. Leaves with blade up to 80mm long, 15mm wide, semi lanceolate and with fine hairs on abaxial surface. Flowers 22mm diameter, corolla tips yellow and lower half purplish red, 8mm long. Attached between the base of lobes are long 5mm flat ribbon hairs white with dark purple margins, corolla lobes recurved along longitudinal axis, 2mm broad; corolla bulb 4 × 1mm; corona 2.5mm diameter sunken into the corolla bulb; outer corona appendages forming low bifid 0.5mm projections from the 5 nectar pouches purplish covered with low papillae, exuding moisture (nectar?) between the bifid projections, nectar pouch yellow; inner corona lobes reduced, brownish on the back of the anthers, twin yellow radial projections alongside the stigmatic guiderails, never seen before in this group of plants; pollinia orange or yellow; calyx lobes 2–3mm long also covered with fine incumbent hairs. Seed follicles cylindrical, 100×6mm, greyish green, upright. Seeds 20–25 per follicle, 12×4mm, light brown with a light brown margin (Figs. 1–3 & 6).

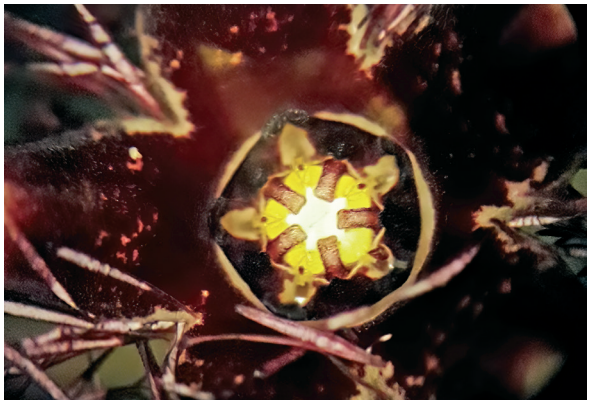

Fig. 6 Corona of *C. namibiensis* depicting radial projections alongside the guide rail

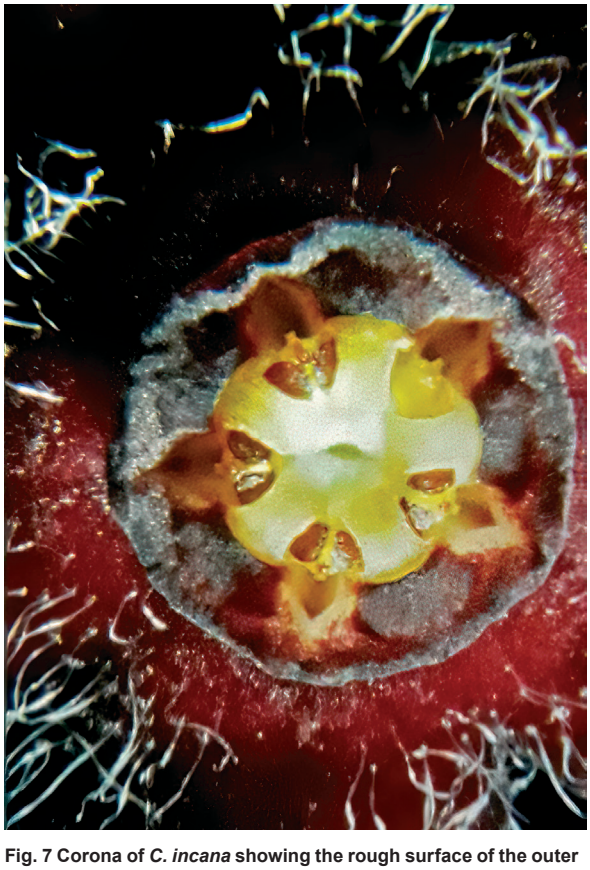

Fig. 7 Corona of *C. incana* showing the rough surface of the outer lobes as well as fine hairs on the corolla bulb

Ceropegia namibiensis appears to be most closely related to *C. discoidea* and to *C. incana* (Figs. 2, 3 & 6). All three species have a swollen below-ground caudex and fusiform roots. However, the three species differ in several floral and vegetative features (Figs. 3–8 & Table 1). The flowers of *C. discoidea* are similar in size to those of *C. namibiensis* but its corolla lobes are thinner and twisted compared to those of the latter. The main qualitative difference here from *C. discoidea* is with the different corona and it not having any flat ribbon hairs on the corona, radial projections alongside the guide rails, also the leaves which are distinctly smaller and ovoid and with a distinct petiole. The leaves of *C. incana* are ovoid as well as having hairs on the inner surface and margin of the corolla lobes (Figs. 4 & 7).

Conservation status

Considering the narrow known distribution range and because the areas where the new species grow are not under considerable threat from illegal plant collectors, urban residential expansion, agriculture, forestry and industry, the status of this species would be as data deficient at present, but it is advisable to carry out surveys in the general area of Gam to determine its population size.

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LITERATURE:

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Dyer, R A (1983) *Ceropegia, Brachystelma and Riocreuxia in Southern Africa*. A.A.Balkema, Rotterdam.

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Table 1	*Ceropegia namibiensis*	*Ceropegia discoidea*	*Ceropegia incana*
Distribution	Namibia, around Gam	South Africa, only at Soutpan, Gauteng	Zimbabwe, Botswana and South Africa
Caudex (form)	Disc-shaped with centre sunken, up to 50×25mm, fusiform roots below	Disc-shaped with centre sunken, up to 80×20mm, fusiform roots below	Disc-shaped with centre sunken, up to 50×25mm, fusiform roots below
Stem	Up to 150mm long, semi-decumbent, covered with incumbent white hairs	Mostly single, upright, up to 30mm tall, covered with fine hairs	Mostly single but also multiple, up to 75mm tall, covered with fine hairs
Leaves	Blade up to 80×15mm with fine incumbent hairs on abaxial surface, margin wavy, semi-lanceolate	Blade up to 25×15 mm; elliptic, edges folded upward, margin entire, fine hairs on both surfaces	Blade up to 25×15mm; elliptic, edges folded upward, margin entire, fine hairs on both surfaces
Flowers	Up to 3–8 flowers per leaf axil; 22mm diameter, pedicels up to 10mm long	Up to 2 flowers borne in the leaf axil; 22mm diameter, pedicels up to 25mm long	Up to 2 flowers borne in the leaf axil; 10mm diameter, pedicel up to 15mm long
Leaf petiole	Absent	Petiole up to 5mm long	Petiole up to 5mm long
Corolla bulb	Not discernible, flat with corona on upper surface	Not discernible, flat with corona on upper surface	Not discernible, flat with corona on upper surface
Corona	Staminal column sunk on the corolla base, 2.5×1mm, white. Outer nectar lobes purplish black and with distinct upward pointed bifid lobes. 2 projections from below the guide rail, nectar pouch black. Inner lobes pressed on the staminal column, brown	Staminal column sunk on the corolla base, 2.5×1mm, white. Outer nectar lobes forming a black disc with very small upward bifid lobes, nectar pouch black. Inner lobes pressed on the staminal column, pale yellow	Staminal column sunk on the corolla base, 2.5×1mm, white. Outer nectar lobes forming a black disc with very small upward bifid lobes, nectar pouch black. Inner lobes pressed on the staminal column, yellow
Corolla lobes	Each 8mm long and inner surface with upper part coloured yellow and lower purplish red and mottled yellow, with long (up to 5mm) flat ribbon like hairs at base	Each 8mm long and inner surface coloured yellow or upper part flesh or light purple and lower purplish red, pinkish or almost white, recurved along the length to almost touch at the back	Each 4mm long and inner surface with upper part yellow and lower purplish red, upper surface and edges with fine white hairs
Seed follicles	Upright, greyish green with red mottles 100×6mm. Seeds 20–25 per follicle, seed 12×4mm, light brown with a light brown margin	Upright, greyish green 100×6mm. Seeds 20–25 per follicle, seed 12×4mm, light brown with a light brown margin	Upright, greyish green with red mottles 80×6mm. Seeds 18–20 per follicle, seed 12×4mm, light brown with a light brown margin

Table 1 Differences between *Ceropegia namibiensis, Ceropegia discoidea* and *Ceropegia incana*