

**Two new species of Streptocarpus (Gesneriaceae) from
South Africa.**

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Two New Species of *Streptocarpus* (Gesneriaceae) from South Africa

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ABSTRACT. A new species of the *Streptocarpus rexii* aggregate is described from Itala Game Reserve in KwaZulu-Natal, South Africa. The geographic isolation of *S. kunhardtii*, its pale methyl violet flowers, and long fruits distinguish it from *S. roseoalbus*, its closest relative. A second new species, *S. hiltburianus*, is described from two high-altitude localities in Mpumalanga, South Africa. The alliances of this species are unclear, although corolla coloration and leaf vestiture approach *S. galpinii*; however, it differs in its cylindrical corolla tube, its much shorter pedicels, and its distinctive pollen.

Key words: Gesneriaceae, South Africa, *Streptocarpus*.

The recognition of species limits within *Streptocarpus* Lindley is complicated by the lack of fertility barriers between species of the typical subgenus. This feature has considerable impact on species concepts for the genus and heightens the importance of allopatry in the speciation process. For the most part, *Streptocarpus* species are limited to forest patches that have shrunk and expanded, with climatic vicissitudes, through geological history. Over the last 2 million years, southern Africa has experienced 20 climatic cycles, each lasting ca. 100,000 years (Deacon, 1983; Tyson, 1986; Deacon & Lancaster, 1988). The resulting fragmentation of populations produces a powerful driving force for allopatric speciation, which in my opinion has been fundamental in the divergence of *Streptocarpus* (see Weigend & Edwards, 1994a, 1994b).

1. ***Streptocarpus kunhardtii*** T. J. Edwards, sp. nov. TYPE: South Africa. KwaZulu-Natal: Itala Nature Reserve, Mpophomeni Gorge, S-facing cliffs, 14.12.1996, C. Carbutt 35 (holotype, NU; isotypes, E, MO, PRE).

Haec species ad gregem *Streptocarpus rexii* pertinens quoad corollae formam notasque ad *S. roseoalbum* maxime accedit, sed ab eo foliis majoribus plerumque suberectis, fructu majore atque lobulis corollinis inferioribus pallide malvicolouribus distinguitur.

Perennial rosulate, rhizome poorly developed. Leaves suberect, up to 120–250 × 40–55 mm, margin crenate, base cuneate, decurrent on the petiole; petiolode 10–15 × 6–8 mm, red-brown to green, pilose. Inflorescence 1- or 2(to 4)-flowered; pilose with glandular and filiform trichomes throughout; peduncle up to 100–240 mm, maroon to green; bracts lanceolate, 2–3 × 0.75 mm; pedicel 9–15 mm. Calyx segments linear, 5.5–6.5 mm, glandular pilose. Corolla broadly infundibuliform, tube white, 24–29 × 3 mm broadening to 10 mm in the throat, bent in the lower third; pilose with glandular and filiform trichomes on the outside; yellow stripe on the tube floor sometimes broadened in the basal third; lower limb 15–20 mm long, lobes 10–15 × 10–12 mm, pale methyl violet (Wilson, 1941) with darker central stripes; upper lobes 7–13 × 10–11 mm. Stamens 2; filaments 8–9 mm, white, with stalked glandular trichomes; anthers connate; staminodes 2–3 × 0.5 mm, glabrous. Pollen prolate, 17–20 × 9–10 μm, tricolpate; mesocolpium diffusely perforate, scabrate (Fig. 1). Ovary 10–14 mm long, densely pubescent, green; style 8–12 mm long, glandular, white. Fruit 80–110 × 2.5 mm. Seeds 0.5–0.7 mm long, sculpturing reticulate.

Distribution. Chris Kunhardt collected this rosulate *Streptocarpus* from Itala Game Reserve in the 1980s, shortly before his death. Vague provenance details of the population were kept in his living collection, and relocation of the population proved difficult. Recently the species was rediscovered at Itala Nature Reserve (Carbutt 35) in sparse populations, deeply shaded on south-facing cliffs, usually near streams of the Mpophomeni Gorge.

Phenology. The species flowers through December and January, fruiting between December and February.

Etymology. The species epithet honors its discoverer, the late Chris Kunhardt, an avid amateur botanist and *Streptocarpus* enthusiast.

Corolla morphology and color patterning suggest an alliance with *S. roseoalbus* Weigend & T. J. Edwards, which occurs in Lowveld vegetation (Acocks, 1988) around Barberton (Mpumalanga). In

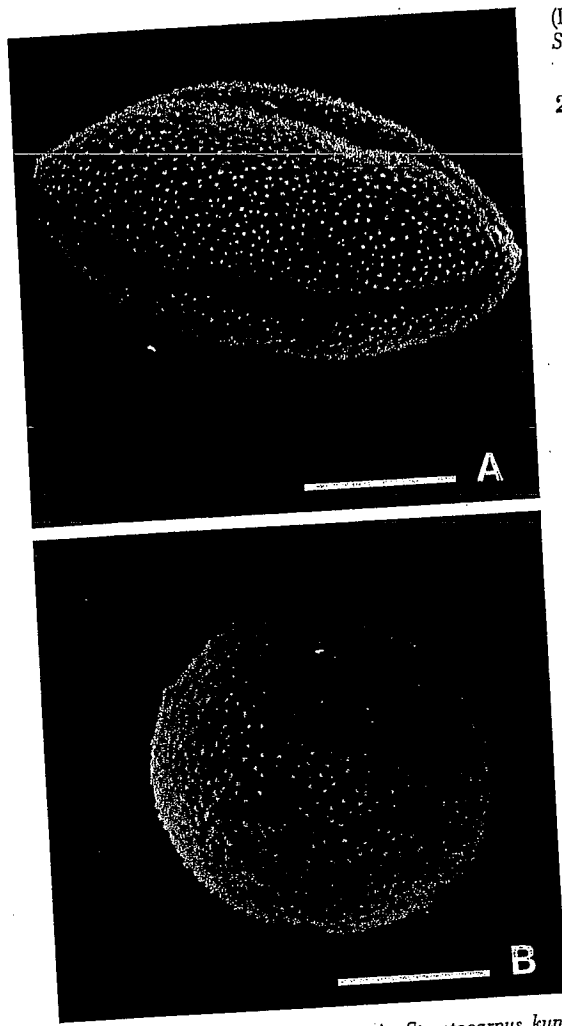


Figure 1. Pollen micrographs. —A. *Streptocarpus kunhardtii* (Carbutt 35). Scale bar 6 μm . —B. *Streptocarpus hilburtianus* (Edwards 682). Scale bar 5 μm .

S. roseoalbus the corolla is 34–45 mm long with a short tube of 25–30 mm; its proximal width is 3 mm broadening to 9–10 mm in the throat. Corolla color is, however, distinctive: *S. roseoalbus* is always pink and *S. kunhardtii* is always methyl violet. The leaves of *S. roseoalbus* are small and more or less prostrate, while in *S. kunhardtii* leaves are usually suberect. In addition, the mature fruits of *S. roseoalbus* are significantly shorter than those of the new species, never exceeding 55 mm.

Streptocarpus kunhardtii further plugs the disjunctions between the closely allied rosulate *Streptocarpus* species of the eastern seaboard of South Africa: its morphology closely approximates these species, and its pollen is indistinguishable (Weigend & Edwards, 1996).

Paratypes. SOUTH AFRICA. KwaZulu-Natal: 2731

(Louwsburg) Itala Game Reserve (CB), 14 Dec. 1996, R. Scott Shaw 8597 (MO).

2. *Streptocarpus hilburtianus* T. J. Edwards, sp. nov. TYPE: South Africa. Mpumalanga: Long Tom Pass, Die Geut, 09.12.1992, T. J. Edwards 682 (holotype, NU). Figure 2.

Haec species *Streptocarpo galpinii* similis, sed ab eo corollae tubo elongato cylindricoque labio inferiore ad basim macula alba luteave carente atque pedicellis brevioribus distinguitur.

Plants perennial. Leaves 1 to 3, prostrate, lamina 50–100 \times 30–70 mm, base broadly cuneate, densely pilose, sericeous. Inflorescence cymose 2- to 10-flowered, lower flowers often sub-opposite; peduncle 50–140 mm long, densely glandular pilose; pedicels 10–14 mm long, densely glandular pilose; bracts spatulate, 2.5–3 \times 0.5 mm. Calyx segments deltoid, 2.5–3 \times 1.5 mm, slightly spreading, densely glandular pilose. Corolla 28–30 mm long, sparsely glandular pilose outside, glabrescent inside but sparingly pubescent on the floor; tube cylindric 18–23 mm, basal width 3–4 mm, mouth width 4.5–5 mm, deep mauve outside, white inside; lower lip 10 mm long, three-lobed, lobes 6 \times 9 mm, pale mauve diluting to white in the throat, 2 mauve sinus chevrons sometimes present; upper lip 7 mm long, 2-lobed. Stamens 2, filaments arising in the lower third of the corolla tube, filaments 4–5 mm long, connective sparsely glandular pilose, anthers connate, 2 mm long; staminodes 2, 2–3 mm long, glabrous. Pollen spheroidal, 10–12 \times 10–12 μm , tricolpate, colpi weakly verrucose, mesocolpi scabrate, apparently imperforate, poles apocolpate. Gynoecium 10–12 mm long; ovary 5–6 mm long, densely sericeous; style 5–6 mm long, pilose; stigma stomatomorphic. Capsule 25–30 \times 2.5–3 mm, pilose.

Distribution. This species has only been collected twice, in Mpumalanga, South Africa. Populations occur at high altitudes (ca. 2000 m) on lithosols above cliffs in afro-montane grasslands. The plants grow in very exposed positions, sparingly shaded by rock ledges and associated scrub.

Phenology. Flowering and fruiting collections of this species were made in November and December.

Etymology. The epithet is a combination of two names in recognition of the combined contributions made by O. M. Hilliard and B. L. Burt to the systematics of *Streptocarpus*.

The niche and vegetative form of *S. hilburtianus* is similar to *S. galpinii* J. D. Hooker, but they are distinguished by pedicel length and corolla mor-

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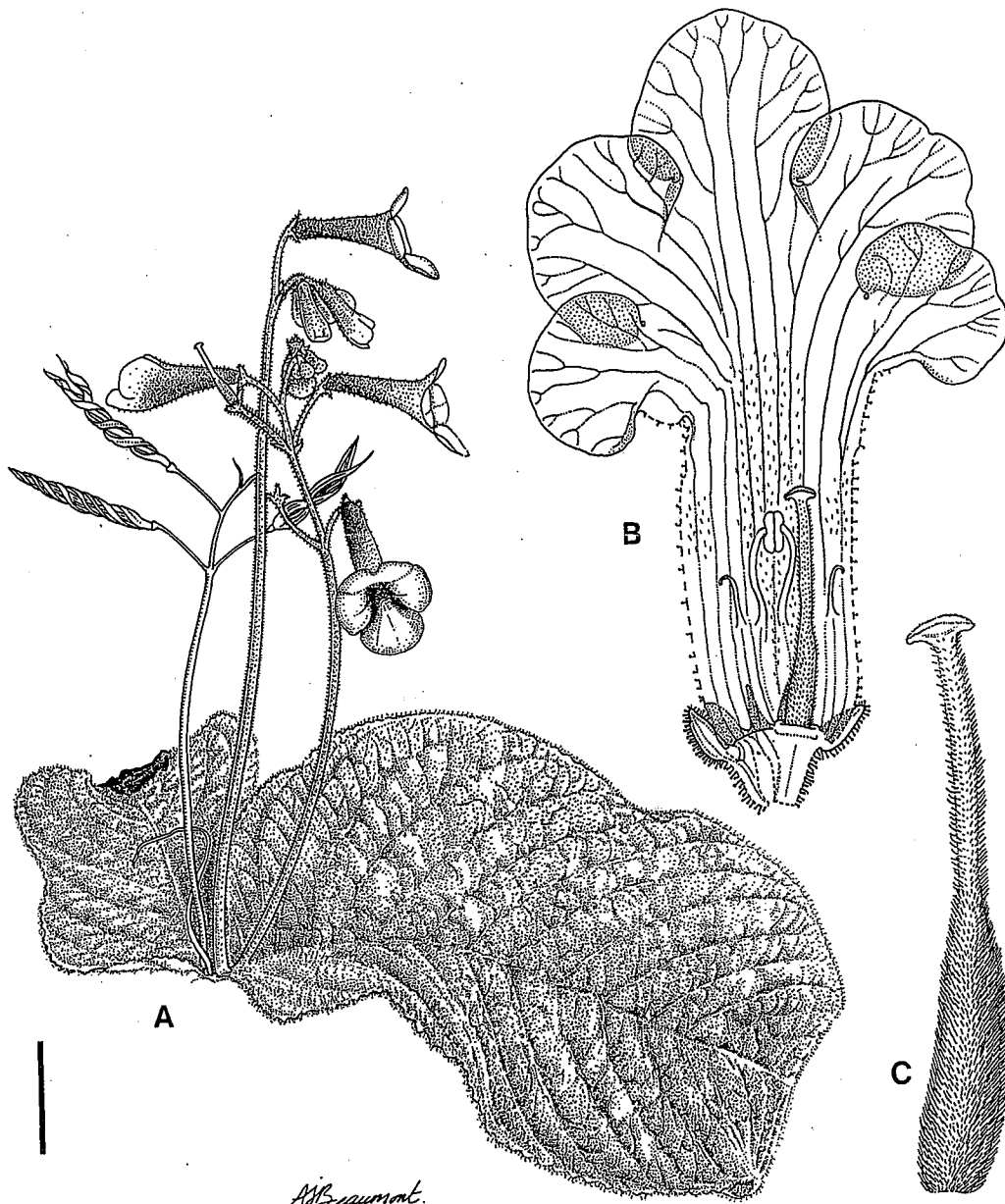


Figure 2. *Streptocarpus hilburtianus* (Edwards 682). —A. Flowering plant. Scale bar 20 mm. —B. Floral dissection. Scale bar 5 mm. —C. Gynoecium. Scale bar 2 mm. Drawn by A. J. Beaumont.

phology. In *S. hilburtianus* the pedicels are consistently shorter, 10-14 mm long, compared to 25-90 mm long in *S. galpinii*. The corolla of *S. galpinii* is distinctive for the genus, being short and open with a violet purple limb and a white patch, often colored with yellow, at the base of the lower lip. In contrast the new species has a cylindrical corolla tube usually with two chevrons of deep mauve flanking the medial lobe of the lower lip. The pollen of *S. hilburtianus* is unique in the genus (Fig. 1).

The tectal ornamentation is very similar to that of the *S. rexii* aggregate but the grains are spheroidal and not prolate.

Paratype. SOUTH AFRICA. Mpumalanga: 2530 (Lydenburg) Hartebeesvlakte, J. Kluge 2026 (PRE).

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