



## On African violets and Cape primroses—towards a monophyletic *Streptocarpus* (Gesneriaceae)

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### Abstract

Recent phylogenetic studies have shown that *Colpogyne*, *Hovanella*, *Linnaeopsis*, *Saintpaulia* and *Schizoboaea* (Gesneriaceae) are embedded in *Streptocarpus*. *Saintpaulia* had been expanded to over 20 species, but this narrow species concept was challenged by recent studies that showed that most of these taxa were poorly genetically and morphologically differentiated. The number of species in *Saintpaulia* has been reduced to six, with the majority of former species reduced to subspecies and varieties of *S. ionantha*. A key to the species in *Streptocarpus* subgenus *Streptocarpella* in tropical East Africa, and new combinations in *Streptocarpus* are provided here.

### Introduction

The African violet, *Saintpaulia* Wendland (1893: 321), is a genus with six species of herbaceous, subsucculent perennials native to the rain forests in the Eastern Arc Mountain Range and Coastal Forest biodiversity hotspot in southern Kenya and northern Tanzania, an area with exceptionally high species richness and endemism (Myers *et al.* 2000).

The genus *Saintpaulia* has been promoted as a flagship taxon, and has even been called “the giant panda of East African plant conservation”, because of the threatened status of the genus as a whole (Eastwood *et al.* 1998), in combination with familiarity and popularity as a pot plant (Baatvik 1993, Watkins *et al.* 2002). The conservation of habitats with *Saintpaulia* could preserve the entire biodiversity hotspot in the Eastern Arc which houses a high percentage of endemic species. Additionally protecting the genetic resources of African violets in their natural populations could contribute to developing new varieties in horticulture and possibly financially support local communities (Nagoya protocol; CBD 2011a).

African violets are well-known houseplants and are easily cultivated from cuttings. This asexual propagation, which also occurs freely in the wild, has probably contributed to populations looking identical in certain areas that are geographically isolated due to topography (Darbyshire 2006). Because most species were initially described from cultivated material, which was derived from relatively few original accessions, the ‘species’ recognised were discrete in cultivation due to cloning. When further material from the wild became available intermediate strains were found, which some authors treated as new species, but increasingly an appropriate broader concept has been sought. In the floristic treatment of Gesneriaceae for the *Flora of Tropical East Africa*, Darbyshire (2006) recognised only six species, and treated the majority of the remaining taxa as subspecies of *S. ionantha* Wendland (1893), or placed them in synonymy. This was supported by molecular and morphological research (e.g. Möller & Cronk 1997a, 1997b, Lindqvist & Albert 1999, 2001) that showed most of the species to be poorly differentiated, if at all.

Moreover molecular research (Möller & Cronk 1997a) showed that *Saintpaulia* evolved from the caulescent group of *Streptocarpus* Lindley (1828) or Cape primroses, better known as *Streptocarpus*