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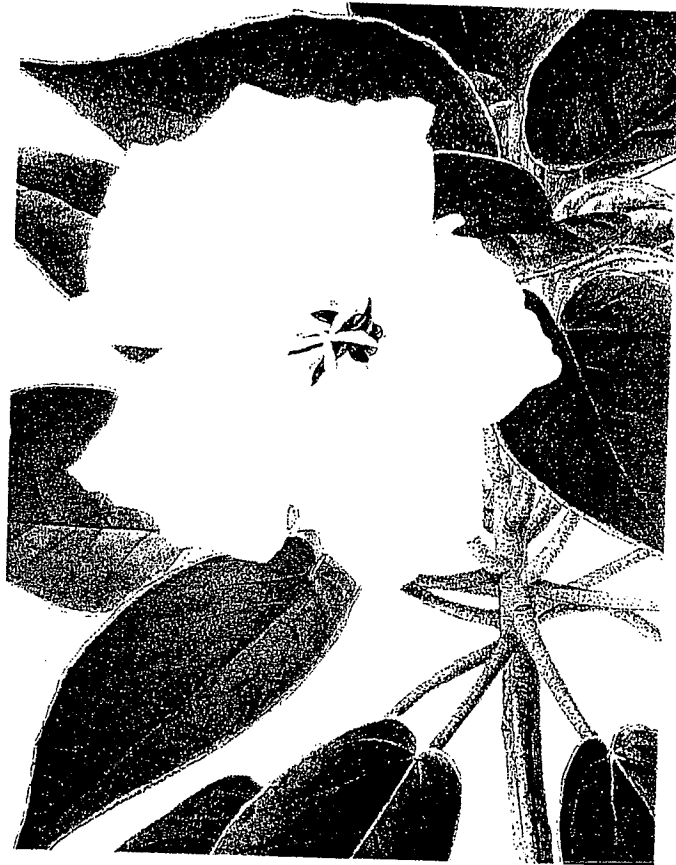
KEYWORDS:

Africa, African Violet, Conservation, Kenya, *Saintpaulia*, Tanzania

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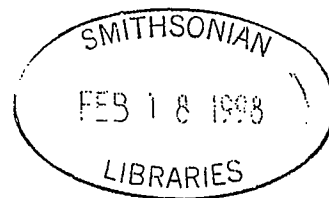
# CURTIS'S Botanical Magazine

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PLANTS IN PERIL, 24  
 NOTES ON LOWLAND AFRICAN VIOLETS  
 (SAINTPAULIA) IN THE WILD

G. P. Clarke

**Summary.** *Saintpaulia* (Gesneriaceae) is confined in the wild to small patches of forest in East Africa (Tanzania and Kenya), with most of the species occurring in submontane or montane forest. However, a few species are known from lowland forests and this paper outlines the distribution and ecology of some of the species recorded from lowland sites. Additional sites for *S. confusa* B.L. Burtt, *S. diplotricha* B.L. Burtt, *S. grotei* Engl., *S. ionantha* H. Wendl., *S. tongwensis* B.L. Burtt and two, possibly new, species, have been located during recent field studies. One of the critically endangered species, *S. tongwensis*, has featured previously in *Curtis's Botanical Magazine* (N.S. t. 11) and its illustration and description are repeated here.

*Saintpaulia* is predominantly an upland genus at elevations exceeding 800 m, with 17 of the species occurring in the submontane and montane rainforests of the Eastern Arc mountain chain that runs from south-western Tanzania into south-eastern Kenya. However, both of the species from which all the domesticated cultivars have been bred, *S. ionantha* H. Wendl. and *S. confusa* B.L. Burtt, are also found in lowland dry forests.

Until recently only five AFRICAN VIOLET species were known from just three lowland sites (Johansson, 1978), but since 1989 there have been further discoveries in the lowlands of East Africa. In Tanzania the Frontier-Tanzania Coastal Forest Research Programme located two new sites for *S. tongwensis* B.L. Burtt in the Pangani River basin (Clarke & Stubblefield, 1995), as well as a third site for the type

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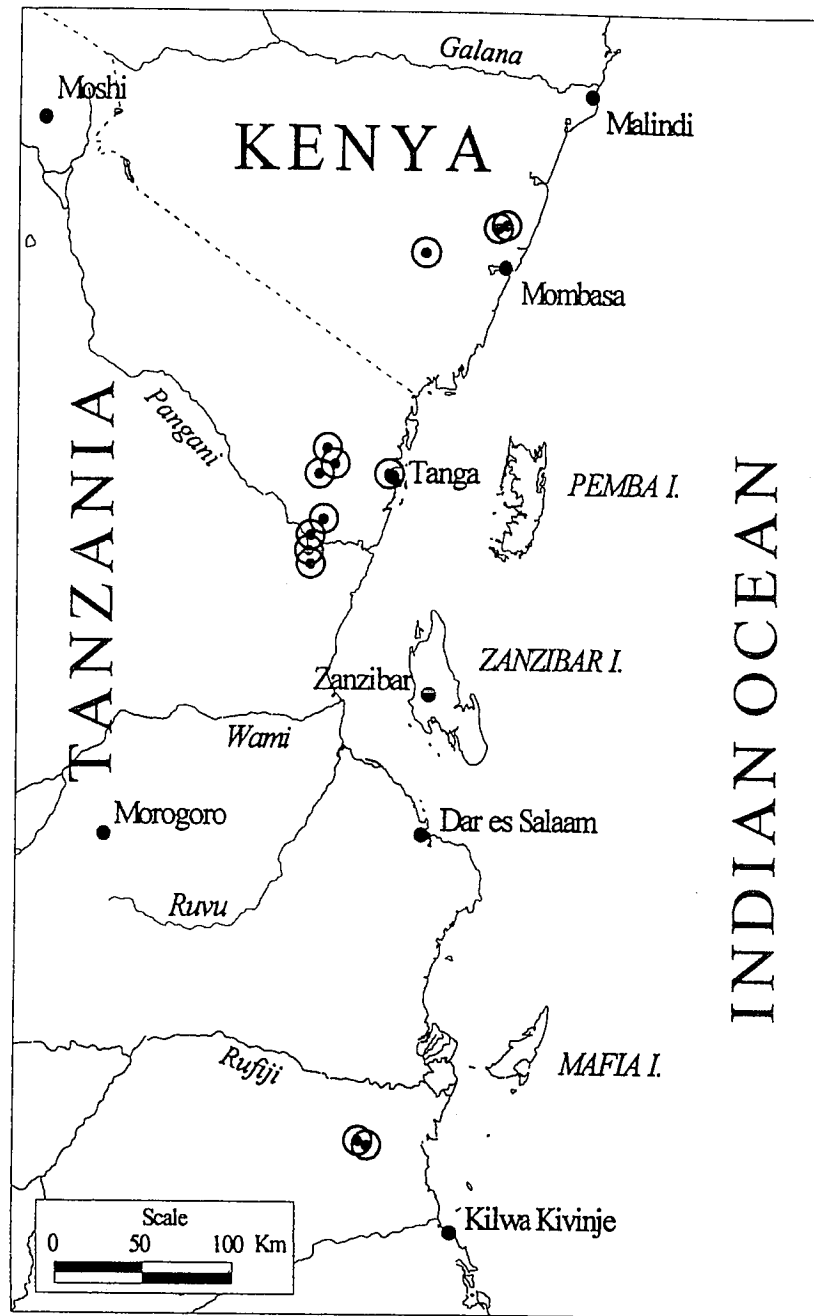


Fig 1. Lowland African Violet Sites in East Africa. Sites are shown in open circles.

species, *S. ionantha* (see p. 50), in the Matumbi Hills south of the Rufiji River. In addition, scientists from the University of Uppsala, the Cambridge-Tanzania Rainforest Project (1994) and the Frontier-Tanzania Coastal Forest Research Programme have discovered many new lowland sites for *S. grotei* Engl. and *S. confusa* (formerly known only from elevations above 900 m), together with new lowland sites for *S. diplotricha* B.L. Burt in the Sigi Valley of the East Usambara Mountains. Many African violet populations have been found in this valley, yet these are limited to small colonies of no more than one hundred square metres (Cambridge Tanzania Rainforest Project, 1994).

In Kenya an undescribed species of *Saintpaulia* has been found in two different lowland sites, the Kachararoni Gorge and the Mwachi Forest Reserve (see also Eastwood et al., 1998: Table 1) by the NMK/WWF Coast Forest Survey; in fact, it is thought possible that these two new populations may be distinct and represent two separate species (Robertson & Luke, 1993). A total of eight or nine species (depending on the status of the new species from Kenya) of *Saintpaulia* have now been found below 800 m elevation, and these discoveries have raised the number of known lowland African violet sites from four to ten, covering a combined area of no more than a hectare.

Johansson (1978) considered the rarity of the wild African violets to be due to the narrow ecological niche which they occupy, yet these plants have proved to be easy to propagate and grow as house plants. African violets require well drained, shady sites with little competition from other plants (Johansson, 1978) but, although many such potential sites do exist in the lowland forests of Tanzania, searches at these sites have failed to discover further *Saintpaulia* populations.

The Matumbi Hills contain two separate populations of *S. ionantha*, one on rocks in a steep-sided, forested valley, near a seasonal river; and the other above a low cliff on one side of an elephant watering hole. Although there are plenty of other, apparently suitable, sites (rocky areas in deep forest shade) in the 100 square kilometres of the forest on the Matumbi Hills, extensive exploration has not revealed any other populations.

The majority of the lowland African violet populations in Sigi Valley of the East Usambara Mountains are confined to rock outcrops or large boulders within the forest, although a colony

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*Saintpaulia tongwensis* from *Curtis's Botanical Magazine* 165: N.S. t. 11 (1948)  
by Lilian Snelling.

located in leaf-litter at the base of a tree has also been noted (Cambridge Tanzania Rainforest Project, 1994).

Wild African violets can therefore be found in a range of micro-habitats; on rocks or on soil, near seasonal streams or in deep rock clefts far from running water, in deep shade in forest, or surviving forest clearance where sufficient shade is available from rocks. These observations would suggest that they are fairly hardy and able to thrive in a wider range of micro-habitats than indicated by Johansson (1978), which might explain their success as a house plant. African violets may formerly have been more widespread, both in areas where the forest has been cleared, as well as in forests that are still extant today. They may have become extinct from some of these forests following heavy disturbance or clearance (and subsequent regeneration), so it is possible that the presence of *Saintpaulia* is an indicator of those forest areas in East Africa where clearance or severe disturbance has not occurred for a very long time.

The small areas in which the lowland populations of African violets are confined puts at least four species of *Saintpaulia* (which have not been found in submontane or montane forest) in great risk of extinction, since the lowland forests of East Africa are more threatened by forest clearance than the submontane and montane forests (Johansson, 1978; Mather, 1989).

#### SAINTPAULIA TONGWENSIS

*Saintpaulia tongwensis* (see colour plate opposite p. 64) was originally discovered on Tongwe Hill (Burt, 1948; 1958) and was for many years assumed to be endemic there but, more recently, the Frontier-Tanzania Coastal Forest Research Programme has located two new sites for the species in the Pangani River basin, both in steeply sided river valleys. Rocks do not appear to be a micro-habitat requirement as many specimens of *S. tongwensis* were observed growing on the ground, and even on the stilt roots of the screw-pine *Pandanus rabaiensis*. Although the Pangani River basin has many seasonal and permanent tributaries, a number of which flow through lowland forest, only three valleys contained African violet populations, and these were not necessarily the most shaded or the wettest; these valleys were separated by other apparently suitable valleys which did not contain *Saintpaulia*.

*Saintpaulia tongwensis*, as with several other species, is regarded as Critically Endangered (Eastwood et al., 1998). It has been illus-

trated in *Curtis's Botanical Magazine* (N.S. t. 11, reproduced here) and was described there fully by B.L. Burt (1948) as follows:

**Saintpaulia tongwensis** B.L. Burt in *Gard. Chron. Ser. 3*, 122: 23 (1947). Type: Tanzania, [Tanga Region, Muheza District], Mt Tongwe, [5°18'S, 38°44'E], near Pangani, 2300–2400 m, *H.R. Herring* s.n. [comm. Mrs R.E. Moreau 4] (K, holotype).

**DESCRIPTION.** *An almost stemless herb* bearing a rosette of long-stalked leaves. *Leaf-blades* elliptic or ovate-elliptic, subacute at the apex, rounded or somewhat cordate at the base (and slightly unequal-sided), 4.5–6.5 cm long, 3–3.5 cm broad, slightly crenulate on the margin, somewhat fleshy, dark green above, lighter green or purplish-red below, when young densely white-silky, later shortly pilose with multicellular hairs; lateral nerves about 5 on each side, prominent below; petioles up to 9 cm long, purplish-red, pilose with spreading hairs. *Inflorescence* up to 15 cm long, pilose; pedicels about 1.5–2 cm long, paired; bracts linear, the lowest almost 1 cm long, the upper shorter. *Calyx-lobes* linear, about 6 mm long, the upper 2 slightly shorter than the lower 3, pilose. *Corolla* purple, paler on the back; the tube 3 mm long, the lobes spreading at right angles to it; the two upper lobes joined for half their length, 15 mm long and 9 mm broad, the lateral ones 17 mm long and 15 mm broad, the lowest 21 mm long and 15 mm wide, with an open sinus between each. *Anthers* bright yellow, borne on curved glabrous filaments 2.5 mm long inserted in the mouth of the corolla-tube. *Ovary* very densely white-pilose, 2 mm long, sharply narrowed into the 7 mm long glabrous style. *Capsule* cylindrical, sometimes slightly curved, 1.5 to 1.8 cm long, densely covered with crisped hairs.

**DISTRIBUTION.** North-eastern Tanzania.

**ACKNOWLEDGMENTS.** Searches for African violet sites in the lowland Coastal Forests of Tanzania were carried out by scientists and volunteers participating on the Frontier-Tanzania Coastal Forest Research Programme, a joint initiative of the Faculty of Science of the University of Dar-es-Salaam, Tanzania, and of the Society for Environmental Exploration in London. Many thanks to Dr Kaj Vollesen of the Royal Botanic Gardens, Kew for identifying the plants collected during this project, to B.L. Burt (RBG Edinburgh) for permission to repeat his description of *S. tongwensis* from *Curtis's Botanical Magazine* and to Justin Moat (RBG Kew) for assistance with the map.

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ADDENDUM. More recent fieldwork by the Frontier-Tanzania Coastal Forest Research Programme has noted further occurrences of African violets growing as epiphytes on trees along the Bamba Ridge (approx. 600 m altitude) in the East Usambara Mountains (J. Bayliss, pers. comm.).

## THE ANDROCYMBIUM SPECIES OF THE CANARY ISLANDS

Joan Pedrola-Monfort and Juli Caujapé-Castells

**Summary.** The history, taxonomy, biology and cultivation of the Canary Islands endemics *Androcymbium hierrense* A. Santos and *Androcymbium psammophilum* Svent. (Colchicaceae) are discussed, together with hypotheses about their mainland origin; full botanical descriptions and illustrations are provided.

The genus *Androcymbium* was originally described as a consequence of the splitting of the genus *Melanthium* L., as proposed by Willdenow (1808). The species included in *Melanthium* by Linnaeus in *Species Plantarum* were reassigned by this author so that those with an African distribution formed the new genus *Androcymbium* and those found in America remained in *Melanthium*.