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Aloe liliputana, a new grass aloe from Pondoland, Eastern Cape, Republic of South Africa

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Summary: *Aloe liliputana* is a new species endemic to coastal Pondoland, north of Port Saint Johns, in the Eastern Cape Province, South Africa, is described. It belongs to section Graminialoe Reynolds, a group of small grass aloes with which it shares a grassland and often Afromontane habitat (Reynolds 1950). The new species is related to *Aloe parviflora* Bak. from which it is distinguished by its thin wiry spreading subterete leaves 2mm in diameter, not broadening towards the apex and lacking the dense basal raised tubercles, as well as its floral bracts which are as long or a little longer than the pedicel length, and its perianth of 8–11mm long. This represents one of the smallest aloes of the world and, in fact, of all southern African aloes this species has the narrowest leaves.

Zusammenfassung: *Aloe liliputana* wird als neue, endemische Art aus dem küstennahen Pondoland, nördlich von Port Saint Johns, in der Provinz Eastern Cape, Südafrika, beschrieben. Sie gehört in die Sektion Graminialoe Reynolds, d.h. in eine Gruppe kleiner Grasaloen, mit welchen sie das Vorkommen in Grasländern und oftmals afromontanen Habitaten teilt (Reynolds 1950). Die neue Art ist mit *Aloe parviflora* Bak. verwandt, von welcher sie sich durch dünne, drahtige, ausgebreitete, annähernd drehrunde, 2 mm dicke Blätter unterscheidet, die sich spitzwärts nicht verbreitern und denen die dichten, basalen, erhabenen Warzen fehlen, sowie durch die blütentragenden Brakteen, die so lang wie oder wenig länger als die Blütenstiele sind, und durch das 8–11mm lange Perianth. Die Art ist eine der kleinsten Aloen der Welt, und es handelt sich unter allen Arten des südlichen Afrikas um die Art mit den schmalsten Blättern.

Introduction

The new species was collected by one of us (Adam Harrower) on an expedition to Luphathana and surrounding area. The expedition was arranged by Dirk Bellstedt (University of Stellenbosch), and accompanied by both authors. It was first spotted on shallow quartzitic sandstone bedrock at the Mkweni Gorge just north of Luphathana Gorge April 2011. Plants were grown on at Kirstenbosch Botanical Gardens and came into flower during the summer of 2012 and illustrated by the botanical artist, Lisa Strachan.

***Aloe liliputana* Van Jaarsv. & Harrower sp. nov.**, ab *A. parviflora* foliis anguste linearibus, subteretibus., rigidis, primum 2mm latis sed apicem versus haud expansis, etiam tuberculos densos basales carentibus, atque bracteis floralibus a pedicello dimidio brevioribus, perianthiis 9–10 mm longis satis differt

Type: Eastern Cape, 3129 (Port Saint Johns): near Mkweni Gorge, north of Luphathana, on shallow quartzitic bedrock (–BD), *Harrower* 4664 (PRE, holo.).

Perennial dwarf acaulescent ascending to decumbent rosulate succulent up to 130mm high, solitary but sometimes proliferate from the base forming a small cluster. Leaves ascending spreading at first, becoming more or less prostrate. *Roots* fleshy, brittle, whitish brown, fusiform, 20–180mm long, 1.5mm in diameter at base, widening to 4–6.7mm in the centre. *Leaves* thin and wiry base clasping, 3–9 per plant, linear, 80–190mm [1.7–2.5mm] somewhat recurved, subterete, leathery and mildly succulent and channelled during the dry season, smooth, dark green to purplish green, especially towards base, with small faint oval white spots on lower surface (prominent and larger in the lower one third of the



Figure 1. A drawing of *Aloe liliputana*.

Artist: Lisa Strachan



Figure 2. *Aloe liliputana* in its natural habitat north of Lupathana Gorge. Photograph: Adam Harrower



Figure 3. The plant with its distinctive fusiform fleshy roots. Photograph: Adam Harrower

leaf); abaxial side convex, adaxial side flat during the rainy season; margin denticulate, especially in the lower three quarters; teeth white, cartilaginous 0.3 x 0.2mm, 1.5mm apart; apex acuminate, [dead leaf tips persistent). *Inflorescence* simple, ascending to decumbent, 100–145 (180mm) mm tall; *peduncle* wiry 97–130mm long, 1–2mm broad and slightly flattened at base, bi-convex, with 4–6 spirally arranged sterile bracts, 8 x 1mm long and clasping peduncle at intervals of 10–30mm; *raceme* short, capitate 15mm long

flowers subdensely arranged 13–27-flowered, ascending at first becoming horizontally spreading; *floral bracts* scariosus, ovate acuminate, 4 x 2.5mm; pedicles 7–9mm long, ascending. *Perianth* cylindrical, angular and trigonous at the apex, pink coloured, greenish at the tip, 8–11 mm long, base shortly stipitate; segments free to base, outer three, 8 x 2.5 mm, lorate-ovate canaliculate; inner three lorate obovate 9 x 3mm;. Stamens yellowish, 6–7mm long. Ovary linear ovate 2.5 x 1.5mm, grooved, brownish green; style 4 mm long. Flowering time: mainly in late summer (February to March).

Distribution and habitat

Aloe liliputana is known only from the shallow quartzitic sandstone bedrock and about 2.7km inland from the sea (Figure 5). It grows at an altitude of 150m. Plants are solitary, scattered and well camouflaged among lichens, geophytes, grasses and succulents. Rainfall is 900–1350mm per annum, and is experienced mainly in summer. Vegetation of the region includes Pondoland-Ugu Sandstone Coastal Sourveld and Scarp Forest in the adjacent protected kloofs (Mucina 2006). The new species grows in the Pondoland centre of plant endemism (Van Wyk & Smith 2001) and

Key to the Graminialoe in South Africa

- 1a Plants bulbous2
- 2a Inflorescence slightly conical, very densely flowered.....*A. modesta*
- 2b Inflorescence not conical, laxly flowered*A. inconspicua*
- 1b Plants not bulbous,
- 3a Perianth mouth bilabiate
 - 4a Leaves 3–4mm broad 10–15cm long, perianth 18mm long*A. albida*
 - 4b Leaves 4–8mm broad, 25–30cm long perianth 20mm long*A. myriacantha*
- 3b Perianth regular (not bilabiate)
 - 5a Leaves rosulate
 - 6a Leaves 2mm diameter*A. liliputana*
 - 6b Leaves more than 2mm in diameter
 - 7a Leaves 3mm broad, 4–8cm long*A. saundersiae*
 - 7b Leaves 4–6mm broad 5–35cm long perianth 10mm long*A. minima*
 - 5b Leaves distichous*A. parviflora*



Figure 4. The capitulate raceme of *A. liliputana*.
Photograph: Adam Harrower



Figure 5. The basal portion of the rosette showing the base of the leaves.
Photograph: Adam Harrower



Figure 6. *Aloe liliputana* in its coastal habitat growing on shallow bedrock (Mkweni Gorge) near Lupathana, Pondoland.
Photograph: Adam Harrower



Figure 7. A close-up of the perianth of *A. liliputana*. Photograph: Adam Harrower



Figure 8. A close-up of the distal view of the perianth Photograph: Adam Harrower

was found in association with other endemic succulents such as *Aeollanthus parvifolius*, *Merwillia kraussii*, *Eriospermum natalensis*, *Senecio orbicularis*, *Euphorbia woodii*, *Crassula natalensis* and *Cyanotis speciosus*. The vegetation is heavily grazed by cattle and there is evidence of frequent fires.

Discussion

There are 8 species of *Aloe* indigenous to South Africa belonging to the Section Graminialoe Reynolds (Reynolds, 1950, Glen & Smith 2003, Craib 2005). In common are their fusiform roots, narrow linear leaves, simple inflorescence and capitate to conic-capitate racemes and bilabiate to trigonous flowers. These include *A. albida*, *A. saundersiae*, *A. modesta*, *A. inconspicua*, *A. minima*, *A. parviflora* and *A. myriacantha*, all of them confined to grassland vegetation.



Figure 9. *Aloe liliputana* in cultivation at Kirstenbosch National Botanical Garden

Photograph: Adam Harrower

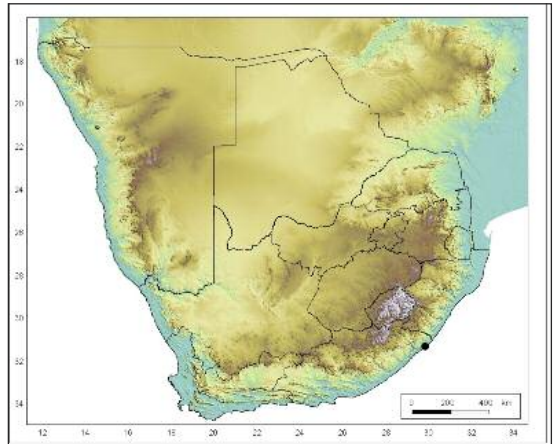


Figure 10. Known geographical distribution of *Aloe liliputana*.

Of these *A. modesta*, *A. minima*, *A. saundersiae* and *A. myriacantha* have fairly widespread distributions whilst *A. albida*, *A. parviflora*, *A. modesta* and *A. liliputana* are only known from a fairly small region. *Aloe albida* is confined to the Saddleback Mountain south of Barberton; *A. parviflora* to a small region near Durban (KwaZulu-Natal); *A. inconspicua* close to Escourt (KwaZulu-Natal) and *A. liliputana* to a solitary kloof in Pondoland. Due to its small size and well camouflaged nature it is exceptionally difficult to spot. This species might well be widespread in Pondoland, still awaiting discovery in other locations [as its shallow bedrock habitat is quite abundant in the area].

A. liliputana is at once distinguished from

other members of section Graminialoe by its very narrow linear leaves of 2mm in diameter and short floral bracts less than half the pedicel length.

Etymology

The specific epithet 'liliputana' pertains to its small size.

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