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Aloe nicholsii Gideon F.Sm. & N.R.Crouch (Asphodelaceae): a new leptoaloe from KwaZulu-Natal, South Africa

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Summary: A new species of leptoaloe, *Aloe nicholsii* Gideon F.Sm. & N.R.Crouch is described from the midlands of KwaZulu-Natal, South Africa. The species shows affinities with *Aloe kraussii* Baker, but can be readily distinguished from it on reproductive characters: the flowers are smaller, pruinose, green below and a distinct metallic salmon-pink colour above. The flowers of *A. kraussii* are lemon-yellow or yellow, with green tips. Our species further differs from the unkeeled-leaf form of *Aloe cooperi* Baker in having much shorter flowers presented in a denser, capitate raceme, and the flower colour is not orange.

Zusammenfassung: Es wird eine neue Art von Leptaloe, *Aloe nicholsii* Gideon F.Sm. & N.R.Crouch aus dem Mittelland von KwaZulu-Natal, Südafrika, beschrieben. Die Art zeigt Ähnlichkeiten mit *Aloe kraussii* Baker, kann aber leicht aufgrund von Merkmalen der reproduktiven Organe unterschieden werden: Die Blüten sind kleiner, bereift, an der Basis grün, und zeigen darüber eine auffällige, metallische, lachsrosa Farbe. Die Blüten von *A. kraussii* hingegen sind zitronengelb oder gelb mit grünen Spitzen. Unsere neue Art unterscheidet sich von der ungekielt-blättrigen Form von *Aloe cooperi* Baker durch viel kürzere Blüten, die in einem dichteren, kopfigen racemösen Blütenstand angeordnet sind; darüberhinaus sind die Blüten nicht orange.

Introduction

A number of new species of grass aloes and leptoaloes have recently been described from South Africa's immensely rich grasslands (Smith, 2003; Van Jaarsveld & Van Wyk, 2006; Klopper & Smith, 2010). As the leaves of species in these two summer-flowering aloe groups are quite cryptic in resembling the blades of true grasses, non-flowering representatives are easily overlooked. However, more such taxa will likely come to light in the course of further exploration of these highly productive landscapes. We describe a new leptoaloe (Figure 1) known from a restricted region in the high altitude grasslands of Zululand, from near Babanango (Figure 2). It was first collected at the end of the 20th century from residual grassland patches in a region largely transformed to commercial tree plantations of *Acacia mearnsii* and *Eucalyptus* spp. Affinities between the new species and *Aloe kraussii* Baker (*sensu* Reynolds, 1950) are noted, and differences highlighted in Table 1.

Aloe nicholsii Gideon F.Sm. & N.R.Crouch **spec. nov.**

Aloe nicholsii *a* A. kraussii *floribus parvioribus pruinosis infra virosis supra perspicue metallico-salmoneis, nec floribus citrinis vel luteis apicibus viridibus, differt. Praeterea a forma* A. cooperi *foliis non carinatis differt floribus perbrevioribus in racemo capitato densiore dispositis coloreque florum non aurantiaca.*

Type: Republic of South Africa, KwaZulu-Natal, 2831 (Nkandla): Near Babanango, in rocky grassland adjacent to the R68, 1,290 m, (–AC), 17-02-2010, *N. Crouch* 1270, (PRE, holo., NH iso.).

Table 1. Differences between *Aloe nicholsii* and *A. kraussii*.

Character	*A. nicholsii*	*A. kraussii*
Clumping	solitary or in clumps of up to 40 heads	solitary or in clumps with <10 heads
Stem	± 60 (–140) mm	acaulescent or very short (–50 mm)
Leaves	flaccidly spreading, narrowly linear-acuminate	erectly spreading, broadly linear-acuminate
Phenology	January to March	November to February
Flowers	± 13–16 mm long, metallic salmon-pink above to green below, lightly pruinose	± 16–18 mm long, lemon-yellow to yellow, green-tipped, not pruinose
Androecium	filaments included, anthers included or very slightly exserted	filaments exserted, anthers exserted to to 3 mm

Small to medium-sized, herbaceous, slow-growing, succulent, perennial, grass aloe, total height excluding inflorescence ± 300–360 mm, usually clumped, up to 40 heads, sometimes solitary, a single head at mid-rosette up to 160 mm in diameter. Roots cylindrical when young, becoming fusiform with age, central portion 8(–10) mm in diameter. Stems short, stout, ± 60(–140) mm long, 20–45 mm in diameter. Leaves few, distichous becoming semi-rosulate, 9–15, not persistent when dry, narrowly linear-attenuate, tapering to apex, 200–460 mm long, 20–53 mm broad at base, basally sheathing, flaccidly spreading; upper surface distinctly and consistently concave, canaliculate, mid-green to light yellowish green, occasionally with few scattered white spots towards base, smooth; lower surface convex, mid-green to light yellowish green, scattered white spots common towards base; margins with a coarse, faintly ivory-coloured edge, marginal teeth more or less absent, if present, tiny, widely spaced, harmless, triangular; ivory-coloured to greenish white, < 0.5 mm long towards base of leaf, becoming increasingly smaller towards tip of leaf, 5–10 mm distant, ± unevenly and widely spaced; dry leaf sap translucent. Inflorescence an unbranched raceme, 300–460 mm tall, as tall as or exceeding the height of rosette; each rosette producing up to 3 racemes, peduncle sparsely sterile bracteate, denser towards apical part of inflorescence, bracts varying from thickened, somewhat fleshy, light yellowish green with very broad, white margins to light salmon-brown, papery, central part same colour as peduncle when succulent, many-nerved, 18–170 mm long, 10 mm broad at base, tapering to a sharp, harmless tip. Peduncle basally plano-convex, cylindrical above, 260–360 mm long, 6–8 mm broad at base, light yellowish green, dusty bloom lacking. Racemes densely capitate, the flowering portion 30–35 mm long, 50–60 mm in diameter; buds erect to suberect, congested at apex, lowest open flowers suberect to horizontal. Floral bracts amplexicaul around pedicel, large, light yellowish green, somewhat fleshy, to salmon-brown, papery, with 4–7 prominent mid-green or light brown nerves, 10–26 mm long. Pedicels 25–30 mm long. Flowers zygomorphic, unscented, small, 13–16 mm long, slightly stipitate at base, tubular-cymbiform, lightly pruinose, tricoloured, salmon-pink above, greenish below, tip extremity purplish-brown, enlarging towards throat and forming a very slightly open, distinctly upturned mouth; buds similar to open flowers, 5 mm in diameter in middle; buds and flowers not trigonously or cylindrically indented above ovary; outer segments larger than inner segments, lorate to long-triangular, free for most of their length, basally fused for ± 0.5–1.0 mm, free portion with a prominent central nerve, borders the same colour as tepal blade, acute, segment margins folded lengthwise, apex slightly incurved; inner segments narrower than outer, with yellowish white border and more obtusely spreading apex, free for most of their

Figure 1. Densely capitate raceme showing the characteristic flower colour of *A. nicholsii*. Photo: Neil Crouch.

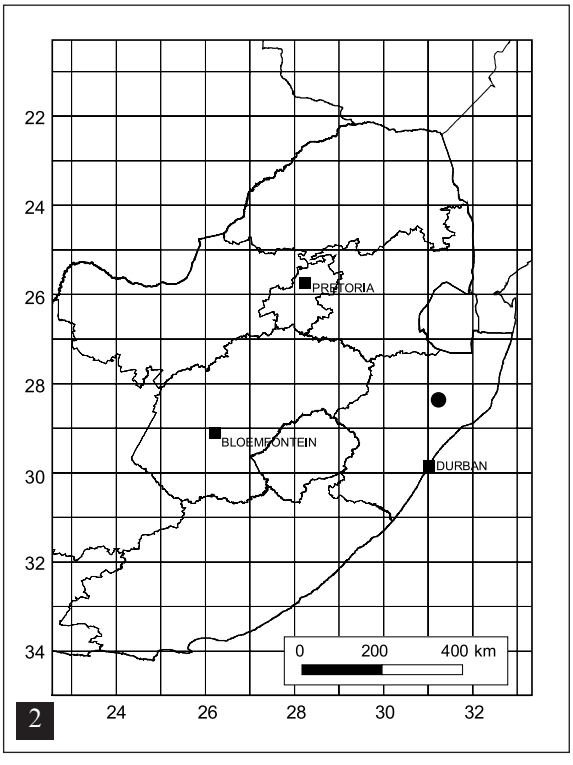

Figure 2. Known geographical distribution range of *A. nicholsii*,●. **Figure 3**. Flowering clump of *A. nicholsii* in its grassland habitat, Babanango, South Africa. Photo: Neil Crouch. **Figure 4**. Geoff Nichols at the type locality with a non-flowering *A. nicholsii*, March 2009. Photo: Neil Crouch.

length. Stamens 6, hypogynous; filaments cylindrically thread-like to very slightly flattened, light yellow, 11–13 mm long, all 6 of ± equal length, not exserted; anthers small, 1.0 mm long, bright orange, versatile, included or only very slightly exserted. Ovary 3–5 mm long, 2 mm in diameter, light green; style short, 8 mm long, minutely capitate; stigma small, becoming exserted during female phase of flower. Fruit an erect, bright green, trilocular capsule, cylindrical, 17–19(–22) mm long, 9–10 mm in diameter, apically truncate, dry remains of tepals persisting around fruit for a long time, dehiscing loculicidally, chartaceous to woody when dry. Seeds, dark greyish brown, angled, laterally compressed, with off-white wing stretching around periphery of seed, 2.5–3.0 mm long. Flowering time January to March, peaking in February. Chromosome number unknown. (See Figures 1 and 3.)

Habitat and conservation status

Plants were collected in full sun in open rocky grassland of Northern Zululand Sourveld (SVl 22) (Mucina *et al.*, 2006) at an altitude of ± 1,290 m, growing in a rocky, clay-loam substrate. Although low rock outcrops are present at the type locality the aloes were not observed to take particular refuge amongst these. Plants found growing in association with *A. nicholsii* were *Syncolostemon parviflorus*, *Searsia dentata, Rhynchosia woodii* and *Ochna serrulata* in the vicinity of low rocky sites, and *Thunbergia atriplicifolia*, *Gladiolus ecklonii*, *Watsonia densiflora* and *Schizocarphus nervosus* in more exposed grasslands. About 80 individual plants or clumps (Figure 3) were found at the type locality (Figure 4), occupying an area of approximately 2,000 m^2. This represents the full extent of the currently known population. An earlier record (*Nichols s.n.* NU) indicates that a decade ago small clumps were frequent along the R68 roadside in that region. However, four excursions along the R68 made during the past two flowering seasons failed to yield a single specimen; notably, the verge is now largely degraded. Although further populations may in time be found, particularly in the nearby Ophate Game Reserve, it would be prudent to presently regard the species' Red List status as Data Deficient.

Eponymy

This species is named for Mr Geoff Nichols of South Africa (Figure 4), who made the first known collection of this new species, and who through initiating and establishing the Silverglen Nursery in Durban pioneered the conservation-through-cultivation of many endangered medicinal and rare plants of KwaZulu-Natal and Pondoland.

Additional specimen examined

2831 (Nkandla): On road verge between Eshowe and Babanango (–AC), *G. Nichols s.n.* (NU), 14-2-1999.

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