A review of the *Litanthus* group of *Drimia* Jacq. (Hyacinthaceae: Urgineoideae) with the description of a second species, *Drimia stenocarpa*, from Western Cape

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ABSTRACT

We review the *Litanthus* group of *Drimia* and describe a second species from Western Cape, *Drimia stenocarpa*, differing from *Drimia uniflora* in its invariably solitary leaf, larger flowers with narrower tepal lobes, longer and thicker pedicels, and distinctive cylindrical–prismatic capsule longitudinally banded in green and white. Both species are fully described and illustrated and a distribution map is provided.

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1. Introduction

The genus *Drimia* Jacq. *sensu lat.* comprises ±100 species of largely deciduous geophytes distributed throughout Africa and extending into Eurasia and the Indian subcontinent (Manning et al., 2004). In this broad circumscription it is characterised by the lower floral bracts (at least) bearing a small or large spur and by short-lived flowers with a ± gametopalous perianth. In this sense it includes the genus *Urginea* with a ± gametopalous perianth. In this sense it includes the genus *Steinh.* as well as several smaller groups of species previous-

Original desc##цион from plants collected near Port Elizabeth, *D. uniflora* is now known to be widespread in southern Africa, ranging from Northern and Western Cape in South Africa to Zimbabwe (Jessop, 1977; Manning et al., 2002). Specimens collected near Papendorp in 1971 by Harry Hall (1906–1986), formerly horticulturist at Kirstenbosch National Botanic Garden, were initially considered to represent a new species of *Litanthus* but were subsequently included in *L. pusillus* [now *D. uniflora*] by Jessop (1977) in his review of the group. Further collections of these diminutive plants made since then suggest that the initial

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surmise was correct and that the Papendorp plants, along with additional populations from the Breede River in Western Cape, do indeed constitute a separate species, which we describe here as *Drinia stenocarpa* for its distinctive capsules. These populations differ most strikingly from *D. uniflora* in their prismatic, strongly bicoloured capsules on longer, stouter pedicels, and in their narrower tepal lobes. *D. stenocarpa* is restricted to the extreme southwestern, winter-rainfall parts of South Africa, with true *D. uniflora* occurring further to the north and east. We review and illustrate both species, based on herbarium and field studies.

2. Materials and methods

All relevant types were examined, as well as herbarium material from BOL, NBG, PRE and SAM (acronyms after Holmgren et al., 1990), the primary collections of southern African species. Both species were also studied in the field.

3. Taxonomy

3.1. Key to species of the Litanthus group

1. Leaves (1)2–5, threadlike; flowers 4–6 mm long, tepal lobes ovate, ±1 mm long; pedicels ±1 mm long at anthesis, hardly elongating in fruit and up to 2 mm long; capsules ovoid, ±3 mm long, unicoloured greenish or brown. *D. uniflora*.

1. Leaf solitary, terete; flowers 6–7 mm long, tepal lobes lanceolate, ±2 mm long; pedicels 1–2.5 mm long at anthesis, elongating markedly in fruit and 5–8 mm long; capsules cylindrical–prismatic, 4–6 mm long, longitudinally banded in green and white. *D. stenocarpa*.

3.2. Species descriptions

*Drinia uniflora* J.C. Manning & Goldblatt in Goldblatt & Manning in Sterletzia 9: 712 (2000), as a new name for *Litanthus pusillus* Harv.: 315, t. 9 (1844) [non *D. pusilla* Jacq. ex Willd. (1799)]; Hooker, 1872. Type: South Africa, [Eastern Cape], ‘shady places in the woods by the Zwartkop’s River, Uitenhage, Cape of Good Hope’; [December 1829], Zeyher s.n. (TCD, lecto., designated by Jessop: 308 (1977); 5–ALUKA image!, SAM!, iso.).

Deciduous, bulbous herb. Bulb solitary or communal, subglobose, 4–10 mm in diameter; outer tunics greyish brown, thinly leathery; inner tunics tightly overlapping, white or flushed pink. Leaves synnathous or dry and withered at flowering, (1)2 or 3(–5), erect, filiform–terete, 20–30 mm long, ±0.25–0.8 mm in diameter, glabrous. Inflorescence 1(2)-flowered, solitary or several in succession; scape erect, 20–30 mm long, minutely longitudinally scabridulous in basal half or ± throughout; bracts two but only one usually subtending a flower, subopposite, terminal, ovate, ±1 mm long, both spurred, spur 0.5 mm long; pedicel decurved at anthesis and ±1 mm long, erect and 1–2 mm long in fruit. Flower cylindrical, cernuous, white to pale pinkish with brown or green keels, opening in morning and fading in late afternoon, without discernible odour; tepals 4–6 mm long, connate for three quarters to four fifths of length into a cylindrical tube 3–4 mm long, lobes erect or slightly spreading, ovate, ±1×1 mm, penicillate. Stamens adnate to perianth for ±2 mm, thus inserted ± at upper third of tube; filaments linear, 0.5 mm long; anthers erect forming cylinder, dorsifixum, theca 1 mm long with connective extended apically into notched, membranous flap, sagittate, longitudinally dehiscent. Ovary ovoid, 1.5–2 mm long, greenish yellow; style columnar, 2.0–2.5 mm long, longer than ovary, extending shortly beyond anthers, white, stigma subcapitate, minutely 6-toothed, teeth erect. Capsules ovoid or subglobose, ±3×2 mm, erect on erect pedicels, concolorous, greyish to brown. Seeds angular, ±1×0.5–1 mm, glossy black, irregularly folded, testa finely rugulose. Flowering time: November to March (Fig. 1).

Distribution and ecology: widespread through the drier, aseasonal and summer-rainfall parts of South Africa, from the Gamsberg in Bushmanland and the Little Karoo through the eastern half of the country into southern Zimbabwe but evidently absent from the more arid central region (Fig. 2). The diminutive plants typically grow in rock crevices or rocky cliffs, in seasonally damp situations generally in protected or sheltered locations, sometimes in mats with moss or other dwarf succulents.

Diagnosis and relationships: distinguished from *D. stenocarpa* by the small, globose bulbs and slightly smaller flowers, 4–6 mm long with ovate tepal lobes ±1 mm long, and the ovoid or subglobose, unicoloured capsules ±3 mm long. The pedicels, 0.5–1 mm long in flower, elongate hardly at all in fruit, reaching at most 2 mm long. Bulbs produce up to five threadlike leaves, only rarely just one.

The diminutive size of the species impressed Harvey (1844), who commented on the bulb as being scarcely larger than a good sized pea* and the scape as ‘no thicker than a bristle’. Its relationships puzzled both Zehy rer and Harvey (1844). The curious inflorescence with two, opposite bracts and the solitary, cylindrical flower misled Zehy rer into considering it to be a dwarf species of Amaryllidaceae, as evinced by his annotation of his collection with the manuscript name *Cyrtanthus minimus*. Harvey (1844) correctly recognised its family affiliations but was misled by the tubular flower to relate it to the genus *Urotepatum* [Urotepatum Burch. ex Ker Gawl.], now a synonym of *Dipcadi* Medik.

Additional specimens seen

**ZIMBABWE—Belingwe Dist., Mt Buwha, rock cracks, ± 1 650 m, 30 Oct. 1973, C. Pope, H. Biegel & N. Gosen 1125 (PRE).**

**NORTH-WEST.—2 527 (Rustenburg): Pilanesberg, near Police Station on Genl. Smut’s Farm, (–AA), 20 Oct. 1970, S. Venter 1134 (PRE); Rustenburg, next to waterfall, (–CA), 1 Feb. 1978, L. Smok 1029 (PRE).**

**GAUTENG—2 527 (Rustenburg): Krugersdorp Dist., Jack Scott Private Nature Reserve, (–DC), 6 Feb. 1961, M. Weels 2485 (PRE), 2628 (Johannesburg): Sandton, NE of Frankenwald, crevices in flat rock faces, (–AA), 18 Aug. 1951, H. Gilliland PRE62138 (PRE).**

**MPUMALANGA.—2 530 (Lydenburg): Carolina, Waterval Boven, (–CB), 26 Sept. 1932 m, Van der Merwe PRE32061 (PRE), 2531 (Komatiport): 4 mi [6.4 km] from Barberton to Havelock Mine, N slopes of Saddleback Hill, (–CC), 17 Oct. 1940, L. Cord PRE63183 (PRE).**

**KLEIN CORN.—2 730 (Vryheid): Piet retief, Hlangapies, (–BB), Dec. without year, F. Van der Merwe 1102 (PRE).**

**FREE STATE.—2 827 (Senekal): Ciocolan, Mequatlingsnek, (–SN), without date, R. Strey PRE32063 (PRE), (–SC); Senekal Dist., Groot Doornkop, (–DA), 7 Dec. 1931, A. Goossens 932 (PRE), 2927 (Maseru): 18 mi [29 km], from Hobhouse on Ladybrand road, (–AB), 29 Jan. 1945, J. Acocks 11186 (PRE).**

**SWAZILAND.—2 531 (Komatiport): Havelock Concession, rocky ridge above Komassan River, (–CC), Sept. 1890, O. Saltmarshe 1042 (PRE, SAM), 2632 (Bela Vista): Ndzingda, Mlwaula Nature Reserve, (–AA), 15 Sept. 1987, K. Braun 530 (PRE).**

**KWAZULU-NATAL.—2 929 (Underberg): Cobham Forest Reserve, Ndlovini, Troutbeck, (–CB), 8 Nov. 1980, O. Hilliard & B. Butt 1336 (PRE), 2930 (Pietermaritzburg): Monteseel, (–DC), 19 Sept. 1982, C. Reid 639 (PRE); Drummond, Alverston Ridge, cliff near radio masts, (–DC), 14 Nov. 2001, J. Manning 2638 (NBG).**

**LESOTHO.—2 927 (Maseru): Mamathes Distr., (–BB), 15 Apr. 1949, A. Jacot-Guillarmod 882 (PRE).**

**NORTHERN CAPE.—2 518 (Garnoep): Aggenys, Gamsberg, (–BB), 15 Feb. 2001, F. Van der Merwe 1102 (NBG).**
Fig. 1. *Drimia uni\textflora*, Eastern Cape, Commandodrif, without voucher. A, flowering plant; B, fruiting plant with foliage; C, flower; D, dissected flower; E, front and side view of anther; F, capsule; G, seeds. Scale bar: A, B, 10 mm; C, F, 2.5 mm; D, E, G, 1 mm. Artist: John Manning.

Fig. 2. Distribution of *Drimia uni\textflora*, ●, and *D. stenocarpa*, ○.
**Fig. 3.** *Drimia stenocarpa*, Western Cape, Robertson, Deacon s.n. (NBG). A, flowering plant; B, fruiting plant with foliage; C, flower; D, dissected flower; E, androecium and style; F, back, front and side views of anther; G, stigma; H, capsules; I, seeds. Scale bar: A, B, 10 mm; C, H, 2.5 mm; D, E, F, I, 1 mm; G, 0.5 mm. Artist: John Manning.
long; anthers erect forming cylinder, dorsifixed, thecae 1.0–1.5 mm long with connective extended apically into small, acute, membranous flap, sagittate, longitudinally dehiscent. Ovary cylindrical, 2–3 mm long, greenish yellow; style columnar, 2.0–3.5 mm long, slightly shorter than to slightly longer than ovary, extending shortly beyond anthers, white, stigma subcapitate, minutely 6-toothed, teeth erect. Capsule erect on erect pedicel, oblong–prismatic, 4–6 × ± 2 mm, strongly bicoloured, dark greyish green with broad whitish longitudinal band along carpel sutures. Seeds angular, ±1 × 0.5–1 mm, glossy black, irregularly folded, testa finely rugulose. Flowering time: December to March (Fig. 3).

Distribution and ecology: known from three localities in the winter-rainfall region of Western Cape, from Papendorp at the mouth of the Olifants River in southern Namaqualand, and from near Robertson and Malgas along the Breede River (Fig. 2). Plants are recorded from exposed sites, either on open flats in loamy soils or in rock crevices in shale, typically among various dwarf succulent species.

Diagnosis and relationships: distinguished from *D. uniflora* by the larger, ± pyriform bulbs with the outer tunics forming a well-developed, wrinkled neck, the slightly larger flowers, 6–7 mm long with lanceolate tepal lobes ± 2 mm long, and especially by the distinctive capsules. These are cylindrical–prismatic and 4–6 mm long and strikingly bicoloured, dull greyish green with broad, whitish longitudinal bands along the carpel sutures. Longer and stouter than in *D. uniflora* at all stages, the pedicels, 1–2.5 mm long at anthesis, elongate significantly in fruit, reaching 5–8 mm long. Plants appear to consistently produce just a solitary, terete leaf.

Additional specimens seen

WESTERN CAPE. –3118 (Vanrhynsdorp): Papendorp, (–CA), 12 Dec. 1971, *H. Hall 4191* (NBG); Papendorp, mouth of Olifants River, in small, shallow declivities on outcrops of sandstone–quartzite conglomerate, (–CA), apparently 1-flowered and but a single leaf, flower dull whitish, opening once only in afternoon, 26 Mar. 1973, *H. Hall 4246* (PRE). 3319 (Worcester): 3 km east of Robertson, (–DD), 19 July 1977 [vegetative], *P.L. Perry 279* (NBG). 3420 (Bredasdorp): eastern banks of Breede River near Malgas, (–BC), 4 Dec. 2004, *K. Louw* s.n. (photo only—NBG).

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