

HYACINTHACEAE

DRIMIOPSIS LINIOSETA, A NEW SPECIES FROM THE SEKUKHUNELAND CENTRE OF ENDEMISM, SOUTH AFRICA

The most recent taxonomic treatise on *Drimiopsis* Lindl. & Paxton is by Müller-Doblies & Müller-Doblies (1997). They recognized nine infrageneric taxa in southern Africa and provided keys to their identification. Lebatha (2005) subsequently revised both the subtropical and tropical African material. In her study it became evident that a plant collected by the first author and Sharon Turner in Sekukhuneland, South Africa was new to science as it could not be keyed out using Müller-Doblies & Müller-Doblies (1997). It also displayed a unique set of morphological character states when compared to the other known species.

Different opinions exist regarding the generic status of *Drimiopsis* in relation to *Resnova* Van der Merwe and *Ledebouria* Roth. In this regard we subscribe to Lebatha *et al.* (2006) who view any formal generic reclassification in the Ledebourinae as premature, for example as recently proposed by Manning *et al.* (2004). Hence this new species is placed in *Drimiopsis*.

Drimiopsis linioseta A.J.Hankey & P.D.Lebatha, sp. nov., *D. reilleyanae* U.Müll.-Doblies & D.Müll.-Doblies similis, sed praesentia pseudopetiolis, et setis solum seriebus rectis differt.

TYPE.—Mpumalanga, 2529 (Witbank): between Roosenekal and Lydenburg, west-facing slopes opposite La Ronelle guest house, (–BB), 25 November 1999, Hankey & Turner 900 (PRE, holo.; K, iso.).

D. liniopapilla Lebatha, nom. inval., non rite publicatum (2005).

Plants 100–140 mm high, leaves appearing before or with the flowers, bulbaceous. *Bulbs* hypogaeal, ovoid to oblong, 30–40 × 30–45 mm, gregarious, nonstoloniferous, whitish; apices truncate; bulb scales loosely packed, without threads when torn; outer scales white and fleshy; dead bulb scales absent. *Leaves* 1 or 2, conduplicate, cordiform to broadly lanceolate, 30–80 × 100–140 mm, without threads when torn, mostly unspotted adaxially, immaculate or variously streaked and mottled purple/brown abaxially; apex acuminate, base attenuate, amplexicaul on scape; indumentum present, in form of hairs arranged in rows on adaxial and abaxial lamina surface, pseudopetiole and scape; lamina margin entire becoming crenulate towards base, soft, pseudopetiolate; pseudopetiole off-white and horizontally banded with purple/brown, especially toward base, ± as long as lamina. *Inflorescence* 1(2) per bulb, a dense erect raceme and flaccid post anthesis, ± as long as leaves; rachis ovoid-terete, 20–40 mm long; peduncle dark green-purplish; bracts in mature inflorescence vestigial. *Flowers* 20–30, densely distributed becoming more lax post anthesis, small, 2–3 mm long, actinomorphic, sextepalous, hyacinth-scented, inner and outer lobes becoming green to purple-brown, post anthesis; hypanthium inconspicuous with base rounded, pedicellate; pedicel glabrous, 1 mm or less. *Tepals* dimorphic, outer tepal

lobes purple-brown, apices and margins whitish in bud becoming whitish green at anthesis, partially spreading, longitudinally cucullate, apically conduplicate; inner tepal lobes purple-brown with whitish green margins and yellowish green conduplicate apices, hardly spreading at anthesis, connivent, shorter than outer whorl, longitudinally cucullate. *Stamens* 6, greenish to whitish, erect, epitepalous, as long as pistil; filaments free, deltoid to acuminate; anthers dorsifixed. *Gynoecium* tricarpellate; ovary sessile, globose, whitish to greenish; ovules 2 per locule; style as long as ovary, terete; stigma trilobed. *Flowering time*: late spring and early summer. Figure 5.

Etymology: the specific epithet *linioseta* is named for the conspicuous rows of setae that adorn all parts of the plant except the flowers.

Diagnostic features and discussion: the phylogenetic relationships within *Drimiopsis* are unclear at present. A cladistic analysis by Lebatha (2005) grouped *D. linioseta* with undescribed entities as well as *D. atropurpurea* N.E.Br. and *D. pusilla* U.Müll.-Doblies & D.Müll.-Doblies. However, these groupings are tentative due to the absence of synapomorphies and bootstrap support. In terms of appearance, *D. linioseta* may also be related to *D. reilleyana*. *Drimiopsis linioseta* is characterized by leaves possessing hairs exclusively in rows that trace the veins in the leaf (Figure 6). This character state distinguishes *D. linioseta* from *D. reilleyana* as well as the prominent pseudopetiole, longer inflorescence and larger stature and smaller flowers (Table 1). *D. comptonii* U.Müll.-Doblies & D.Müll.-Doblies also possess epidermal structures in rows, as well as scattered in between. *D. linioseta* is 100–140 mm high at anthesis with larger conduplicate laminae, whereas *D. comptonii* is a dwarf species ± 30–60 mm high at anthesis, with flat to somewhat recurved laminae. The hairs in *D. comptonii* also possess a swollen base which does not occur in *D. linioseta*. Furthermore, *D. linioseta* also differs from *D. comptonii* in the flowers that are densely distributed in the inflorescence, are minutely pedicellate ± 1 mm long, and yellowish green as opposed to sparsely distributed purple-blue flowers with pedicels ± 0.4 mm long. Other species that possess hairs on the leaves are *D. atropurpurea*, *D. pusilla* and *D. reilleyana*, but here the distribution of the hairs differs (Table 1).

In the past, *Drimiopsis linioseta* may have been misidentified as *D. burkei* subsp. *burkei*. However, as mentioned, *D. linioseta* differs not only by the possession of rows of hairs, but also by the possession of a pseudopetiole, a state not found in *D. burkei* subsp. *burkei*. In this regard, *D. linioseta* resembles *D. atropurpurea*. However, the possession of well-defined rows of hairs again as compared to longer more scattered hairs, as well as flower colour—purple in *D. atropurpurea*—sets them apart (Table 1).

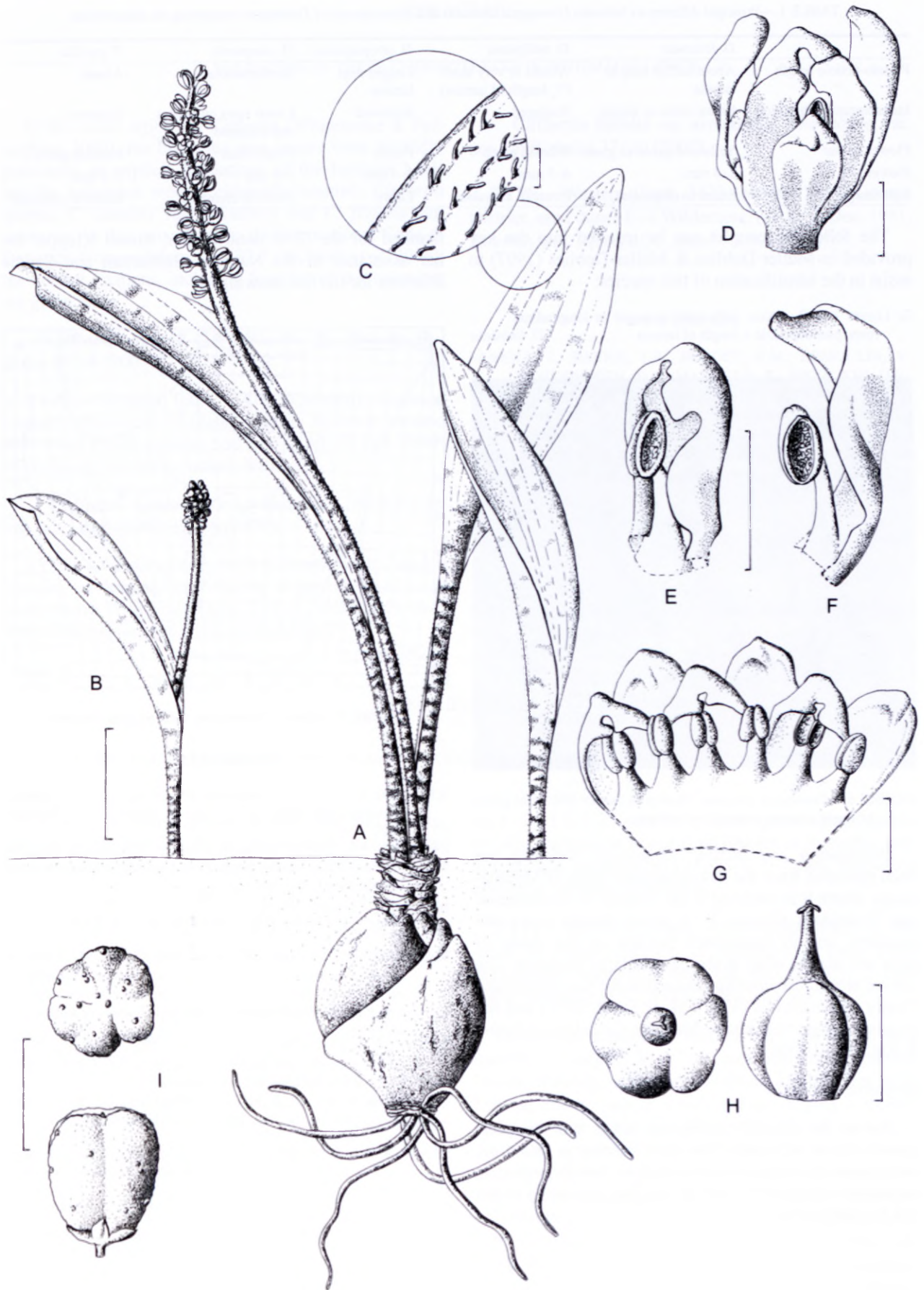


FIGURE 5.—*Drimiopsis linoiseta*, Hankey & Turner 900. A, bulb and plant, $\times 1$; B, inflorescence and leaf; C, indumentum; D, flower; E, inner tepals and stamen; F, outer tepal and stamen; G, opened perianth. H, gynoecium: left, from above; right, from side. I, capsule: top, from above; bottom, from side. Scale bars: B, C, 20 mm; D, G, H, 1 mm; E, F, 2 mm; I, 7 mm. Artist: S. Burrows.

TABLE 1.—Principal differences between *Drimiopsis linioseta* and other species of *Drimiopsis* possessing an indumentum

	<i>D. linioseta</i>	<i>D. reilleyana</i>	<i>D. atropurpurea</i>	<i>D. comptonii</i>	<i>D. pusilla</i>
Pseudo-petiole length	About half as long as lamina	Absent or very short ($\frac{1}{6}$ length of lamina)	Longer than lamina	Inconspicuous	Absent
Indumentum distribution	Linear rows on nerves	Scattered	Scattered	Linear rows on nerves and scattered	Scattered
Flower colour	Yellowish green to green	Whitish green	Purple	Purple-blue	Purplish green
Flower size	2–3 mm	4–5 mm	2–4 mm	3–4 mm	1–2 mm
Leaf margin	Entire to crenulate	Entire to crenulate	Entire	Entire to crenulate	Entire to crenulate

The following couplet can be inserted into the key provided in Müller-Doblies & Müller-Doblies (1997) to assist in the identification of this species:

3c Leaves 1 or 2, setose, with setae arranged in longitudinal rows, pseudopetiole \pm length of lamina *D. linioseta*

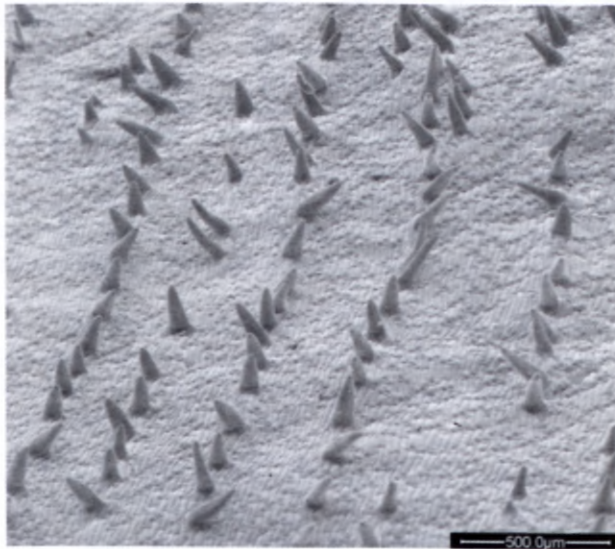


FIGURE 6.—*Drimiopsis linioseta*, Hankey & Turner 900. SEM photo of linear setae on adaxial leaf surface.

Distribution and habitat: *Drimiopsis linioseta* has been recorded from the Sekukhuneland area of Mpumalanga, where it is confined to the vicinity of Roosenekal and Tonteldoos (Figure 7). It grows among rocks and boulders, and in humus-rich pockets in the shade of trees and shrubs often at the base of large boulders. The known area of distribution places it in the Sekukhuneland Centre of Endemism (Van Wyk & Smith 2001) and the vegetation type Sekukhune Montane Grassland (Mucina & Rutherford 2006).

Conservation status

Due to the limited distribution range and the ever-present threat of habitat loss from mining in this area, we consider the species at present to be best described as vulnerable and give it a VU D2 ranking according to the IUCN (2000) criteria.

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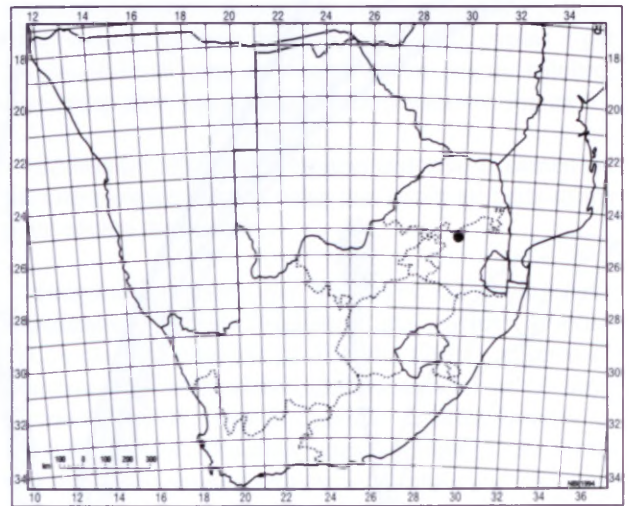


FIGURE 7.—Known distribution of *Drimiopsis linioseta*.

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