

New combinations in *Drimia* Jacq. ex Willd. (Hyacinthaceae: Urgineoideae) and an updated key to the southern African species

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Five species recently described in the genus *Geschollia* Speta (Hyacinthaceae: Urgineoideae) are transferred to *Drimia* Jacq. ex Willd. as *D. brachyandra* (Mart.-Azorín et al.) J.C.Manning & Goldblatt, *D. globuligera* (Mart.-Azorín et al.) J.C.Manning & Goldblatt, *D. longipedicellata* (Mart.-Azorín et al.) J.C.Manning & Goldblatt and *D. prolifera* (Mart.-Azorín et al.) J.C.Manning & Goldblatt, with the new name *D. zebrinella* J.C.Manning & Goldblatt provided for *G. zebrina* Mart.-Azorín et al. since that epithet is pre-occupied in *Drimia*. *Austronea patersoniae* Schönl. ex Mart.-Azorín et al. is treated as a synonym of *D. chalumnensis* A.P.Dold & E.Brink. The two names *Urginea amboensis* Baker and *Albuca reflexa* K.Krause & Dinter are formally placed in synonymy under *Drimia zambesiaca* (Baker) J.C.Manning & Goldblatt to accord with the current taxonomy. The recently described monotypic genus *Triandra* Mart.-Azorín et al. is also included in *Drimia* and the necessary transfer of *T. pellabergensis* Mart.-Azorín et al. to *Drimia* is effected, along with the second known locality for the species, representing a significant range extension. A total of 80 species of *Drimia* are now recognised in southern Africa. Updated identification keys to the species in sections *Capitatae*, *Lebedouriopsis*, *Macrocentrae*, *Physodia* and *Thuranthos* are provided.

Introduction

The most recent taxonomic review of the species of *Drimia* Jacq. ex Willd. in southern African recognised 70 species distributed among 19 sections (Manning & Goldblatt 2018). This work serves a valuable role in summarising the taxonomic knowledge in the genus to that date but is, as the authors themselves make clear, far from complete. At the time that the review by Manning & Goldblatt (2018) appeared, several species were still incompletely known, and others were anticipated to exist. Several of these additional species have since been described or treated in the segregate genera *Austronea* Mart.-Azorín et al. (Martínez-Azorín et al. 2018a, 2019a), *Iosanthus* Mart.-Azorín et al. (Martínez-Azorín et al. 2019b), *Vera-duthiea* Speta (Martínez-Azorín et al. 2018b), *Zingela* N.R.Crouch et al. (Crouch et al. 2018), and more recently *Geschollia* (Martínez-Azorín et al. 2019c). A simplified phylogeny of Urgineoideae was presented in Martínez-Azorín et al. (2019b), but publication of the full analysis is still pending. Until then it is not feasible to meaningfully assess the available options for circumscribing genera in the subfamily. All of these genera were included in a broadly circumscribed *Drimia* by Manning & Goldblatt (2018) and Manning (2019), where a full discussion of the issues surrounding these two classifications is provided.

Since then, a further monotypic genus *Triandra* Mart.-Azorín et al. has been described for a nocturnal species from northern Namaqualand in Northern Cape that is unique in the family in lacking the outer staminal whorl (Martínez-Azorín

et al. 2021). Aside from the striking loss of the outer stamens, *Triandra pellabergensis* Mart.-Azorín et al. is morphologically similar to *Drimia hesperantha* J.C.Manning & Goldblatt (= *U. revoluta* A.V.Duthie) (sect. *Thuranthos*) from the southwestern winter-rainfall region of Western Cape, although unpublished molecular analyses suggest that the two species may not be immediately related (Martínez-Azorín et al. 2021). Available molecular data (Buerki et al. 2012; Ali et al. 2013) certainly indicate that sect. *Thuranthos* was not monophyletic as circumscribed by Manning and Goldblatt (2018), confirming the suspicions of the authors themselves, who clearly recognised that it reflected a pollination syndrome, defined by a lax raceme of nodding flowers with nocturnal anthesis and narrow, reflexed tepals, filaments that are much longer than the anthers, and a ± clavate style. As suggested by them, larger species with caducous bracts and thickened fruiting pedicels such as *D. macrantha* (Baker) Baker, *D. pauciflora* Baker (= *D. basutica* (E.P.Phillips) J.C.Manning & Goldblatt) and *D. zambesiaca* Baker (as *D. indica* (Roxb.) Jessop), likely comprise a clade not immediately related to other species that were included in sect. *Thuranthos*. The southeast Asian species that were included in sect. *Thuranthos* have since been segregated as sect. *Indurgia* (Speta) J.C.Manning & Lekhak (Yadav et al. 2019). More fully sampled and resolved phylogenies will guide the further fragmentation of sect. *Thuranthos*, but until then it serves a purpose in providing a morphological framework for taxonomic study in the group.

Most of the relevant species described by Martínez-Azorín and co-workers since the review of the genus by Manning and Goldblatt (2018) were subsequently transferred to *Drimia* by Manning (2019) (who also synonymised a few), but one additional species of *Austronea* and five species recently described in *Geschollia* have still to be dealt with, as has *Triandra pellabergensis*. In addition, the two names *Urginea amboensis* Baker and *Albuca reflexa* K.Krause & Dinter, formerly treated as synonyms of *Drimia indica* (Roxb.) Jessop, need to be placed in synonymy under *Drimia zambesiaca* (Baker) J.C.Manning & Goldblatt, which is the earliest available name for this sub-Saharan taxon as circumscribed by Manning and Goldblatt (2018). These nomenclatural changes are necessary to integrate the newly described taxa into the classification of *Drimia* that was proposed by Manning and Goldblatt (2018) and which has been adopted by various institutes and checklists. A total of 80 species of *Drimia* are now recognised from southern Africa.

Finally, a few nomenclatural changes were also made by Martínez-Azorín et al. (2019d) and Manning (2019) to the taxa that were recognised by Manning and Goldblatt (2018). In view of both the increase in the number of species and the changes to the nomenclature of others, it seems useful to provide updated sectional keys to the species that have been affected, to facilitate both

their identification and the correlation of the taxa with those enumerated by Manning and Goldblatt (2018). Updated keys to the southern African species of sects. *Capitatae*, *Ledebouriopsis*, *Macrocentrae*, *Physodia* and *Thuranthos* are accordingly provided. The system of numbering of species used in Manning and Goldblatt (2018) is retained, with new species inserted into that system with decimal points.

Taxonomic treatment

Drimia Jacq. ex Willd., Species Plantarum 2: 165 (1799). Type species: *Drimia elata* Jacq. ex Willd.

1. Sect. ***Capitatae*** J.C.Manning & Goldblatt in Strelitzia 40: 76 (2018). Type: *Drimia marginata* (Thunb.) Jessop

Austronea Mart.-Azorín et al. in Pytotaxa 365: 105 (2018a). Type: *Austronea marginata* (Thunb.) Mart.-Azorín et al. = *Drimia marginata* (Thunb.) Jessop

Drimia chalumnensis A.R.Dold & E.Brink in South African Journal of Botany 70: 631 (2004). Type: South Africa, Eastern Cape, Peddie (3327): Cornfields farm, near Chalumna River, (–BA), 25 Oct. 2002, Dold 4619 (GRA, holo.).

Austronea patersoniae Schönl. ex Mart.-Azorín, A.P.Dold & M.B.Crespo in Martínez-Azorín et al. in Phytotaxa 427: 94 (2019c), *syn. nov.* Type: South Africa, Grahamstown (3326): Aicedale, (–AC), 1 Jul. 1919, Cruden 300 (GRA, holo.; PRE, iso.).

Note: *Drimia chalumnensis* is an Eastern Cape endemic described from two populations near Chalumna east of Grahamstown and diagnosed in sect. *Capitatae* by the loose bulb scales and several subterete or linear-channelled leaves with papillate margins. Two additional populations, from Aicedale west of Grahamstown and from Port Elizabeth respectively, were provisionally included in *D. chalumnensis* by Manning and Goldblatt (2018) on the basis that they differed from that taxon essentially only in their taller inflorescences (60–110 mm vs 15–50 mm) and slightly longer pedicels (4–6 mm vs 2–6 mm). Plants matching these populations have now been recorded from further locations along the Eastern Cape coast between Jeffrey's Bay and Aicedale, and have been segregated from *D. chalumnensis* under the name *Austronea patersoniae* (Martínez-Azorín et al. 2019c). The cited differences between the two taxa remain essentially the mostly slightly longer, erect foliage (exposed portion 30–45 vs 15–30 mm long) and the longer peduncle (80–150 vs 10–20 mm), all of which are consistent

with a more mesic habitat. Purported minor differences in the length of the lower bract spur and tepals are not consistent. In addition, Martínez-Azorín et al. (2019c) record a second locality for smaller plants consistent with *D. chalumnensis* from Aberdeen far to the northwest of the original material. As there do not appear to be any additional substantive differences between the Jeffrey's Bay–Aicedale plants and those from Aberdeen and Peddie it seems reasonable to regard them as representing a single species as suggested by Manning and Goldblatt (2018). Following this interpretation, *Drimia chalumnensis* is now known to occur more widely along the Eastern Cape coast from Jeffery's Bay to Peddie and inland near Aberdeen.

2. Sect. **Ledebouriopsis** (Baker)

J.C.Manning & Goldblatt in *Strelitzia* 40: 24 (2018). *Ornithogalum* subg. *Ledebouriopsis* Baker in *J. Linn. Soc., Bot.* 13: 284 (1873). Type: *Drimia anomala* (Baker) Baker, lecto., designated by Manning & Goldblatt (2018: 24).

Geschollia Speta in *Stapfia* 75: 169 (2001); Martínez-Azorín et al. in *Phytotaxa* 427: 88 (2019c). Type: *Geschollia anomala* (Baker) Speta = *Drimia anomala* (Baker) Baker

Drimia brachyandra (Mart.-Azorín et al.) *J.C.Manning & Goldblatt*, comb. nov. *Geschollia brachyandra* Mart.-Azorín, A.P.Dold & M.B.Crespo in Martínez-Azorín et al. in *Phytotaxa* 427: 94 (2019c). Type: South Africa, Eastern Cape, Grahamstown (3326): 19 km from Grahamstown on Cradock road, (–AD), 27 Nov. 1993, *Dold* 438 (GRA, holo.).

Note: This species is distinguished from *D. calcarata* (Baker) Stedje by the more heavily barred cataphylls and the slightly smaller, reddish flowers. These differences are very slight and its status may need to be revised.

Drimia globuligera (Mart.-Azorín et al.) *J.C.Manning & Goldblatt*, comb. nov. *Geschollia globuligera* Mart.-Azorín, A.P.Dold & M.B.Crespo in Martínez-Azorín et al. in *Phytotaxa* 427: 101 (2019c). Type: South Africa, Eastern Cape, Port Elizabeth (3325): Thornhill, Van Stadens Wildflower Reserve, (–CC), 20 Jan. 2018, *Dold* 16021 (GRA, holo.; ABH, iso.).

Drimia longipedicellata (Mart.-Azorín et al.) *J.C.Manning & Goldblatt*, comb. nov. *Geschollia longipedicellata* Mart.-Azorín, Wetschnig, M.Pinter & M.B.Crespo in Martínez-Azorín et al. in *Phytotaxa* 427: 103 (2019c). Type: South Africa, Eastern Cape, Willowmore (3323): Willowmore, ± 1 km E

of town, (–BC), 4 May 2015 (fl. ex hort in Austria), Wetschnig & Huber 494 (GRA, holo.; ABH, iso.).

Drimia prolifera (Mart.-Azorín et al.) *J.C.Manning & Goldblatt*, comb. nov. *Geschollia prolifera* Mart.-Azorín, A.P.Dold & M.B.Crespo in Martínez-Azorín et al. in *Phytotaxa* 427: 107 (2019c). Type: South Africa, Eastern Cape, Fort Beaufort (3226): Fort Fordyce Reserve, (–DA), 25 Nov. 2017, *Dold* 16026 (GRA, holo.).

Drimia zebrinella *J.C.Manning & Goldblatt*, nom. nov. pro *Geschollia zebrina* Mart.-Azorín, A.P.Dold & M.B.Crespo in Martínez-Azorín et al. in *Phytotaxa* 427: 109 (2019c), non *D. zebrina* (Oberm. ex Mart.-Azorín et al.) *J.C.Manning & Goldblatt* in Manning in *Bothalia* 49: 5 (2019). Type: South Africa, Western Cape, Oudshoorn (3322): Grootkop Nature Reserve, (–CA), 4 May 2015, Martínez-Azorín et al. 893 (GRA, holo.; ABH, iso.).

3. Sect. **Thuranthos** (C.H.Wright)

J.C.Manning & Goldblatt in *Strelitzia* 40: 62 (2018). *Thuranthos* C.H.Wright in *Kew Bull.* 1916: 233 (1916). Type: *Thuranthos macrantha* (Baker) C.H.Wright = *Drimia macrantha* (Baker) Baker

Triandra Mart.-Azorín, M.B.Crespo, M.Á.Alonso, N.R.Crouch & M.Pinter in *Phytotaxa* 487: 66 (2021), syn. nov. Type: *Triandra pellabergensis* Mart.-Azorín et al. = *Drimia pellabergensis* (Mart.-Azorín et al.) *J.C.Manning & Goldblatt*

Drimia pellabergensis (Mart.-Azorín, M.B.Crespo, M.Á.Alonso, N.R.Crouch & M.Pinter) *J.C.Manning & Goldblatt*, comb. nov. *Triandra pellabergensis* Mart.-Azorín, M.B.Crespo, M.Á.Alonso, N.R.Crouch & M.Pinter in *Phytotaxa* 487: 68 (2021). Type: South Africa, Northern Cape, Pofadder (2919): Pella se Berge, 29 Jun. 2018 [fl. ex hort. Spain], Martínez-Azorín et al. 671b (GRA, holo.; ABH, K, PRE, iso.).

Note: This extraordinary species was known only from the type locality Pella se Berge in Bushmanland in Northern Cape. A collection of an unidentified *Drimia* that was collected in leaf on the Koe-doesberge near Touwsrivier in Western Cape has subsequently flowered in cultivation at Kirstenbosch National Botanical Gardens and clearly represents the same species, viz. 2 or 3 filiform leaves that are dry at flowering; diminutive inflorescence 30–90 mm tall with obscurely flecked, minutely striate-puberulous scape; nodding pedicels 4–6 mm long at flowering [the dimensions of 12–15 mm long at anthesis given in the protologue are clearly a mistake and refer to the elongated fruiting pedicels as is evident from Fig. 2 in the protologue]; pendulous buff-coloured flowers with nocturnal anthesis and

linear, revolute tepals \pm 5 mm long, connate at the base; only the three inner stamens developed, with filiform filaments \pm 4 mm long closely appressed to the ovary and style, and minute yellow anthers; narrowly subclavate style \pm 2 mm long and as long as the ovary; small subglobose capsules \pm 4 mm long; and elliptic, peripherally winged seeds \pm 2.0–2.5 \times 1 mm. This collection represents a range extension of some 200 km south of the type locality.

Additional specimen seen

South Africa, Western Cape, Sutherland (3220): Pienaarsfontein-se-Berge, Koedoesberge, (-CD), 17 Feb 2022 [fl. in cult], Harrower 6188 (NGB).

Drimia zambesiaca (Baker) J.C.Manning & Goldblatt in Manning et al. in Edinburgh Journal of Botany 60: 557 (2004); Manning in Bothalia 49: 4 (2019) [superfl. comb. nov.]. Type: Mozambique, Expedition Island, without date, Kirk s.n. (K, holo.).

Urginea amboensis Baker in Bull. Herb. Boissier, sér. 2, 3: 665 (1903), syn. nov. *Vera-duthiea amboensis*

(Baker) Mart.-Azorín, M.B.Crespo, M.Pinter & Wetschnig in Martínez-Azorín et al. in Phytotaxa 397: 296 (2019d). Type: Namibia, Ondangwa (1715): Ondonga, Rautanen 773 (Z, holo.)

Albuca reflexa K.Krause & Dinter in Bot. Jahrb. Sys. 51: 445 (1914), syn. nov. *Vera-duthiea reflexa* (K.Krause & Dinter) Mart.-Azorín, M.B.Crespo, M.Pinter & Wetschnig in Martínez-Azorín et al. in Phytotaxa 397: 296 (2019d). Type: Namibia, Tsumeb (1917): Nord-Hereroland bei Tsumeb, without date, Dinter 2694 (SAM [2 sheets], lecto., designated by Manning & Goldblatt, 2018: 67).

Note: These three names were treated as synonyms of *Drimia indica* (Roxb.) Jessop by Manning and Goldblatt (2018) following conventional usage but since the realisation that *D. indica* is restricted to the Indian subcontinent (Martínez-Azorín et al. 2018b; Yadav et al., 2019), the earliest available name for the African taxon as currently circumscribed is *Drimia zambesiaca* and the other two names are accordingly placed in synonymy.

Updated keys to species in selected sections

Sect. *Capitatae*

1a. Leaf margins thickened and cartilaginous, either papillate/colliculate or scabridulous:
 2a. Bulb scales loose; leaves linear-channelled, 2.0–2.5 mm wide; pedicels 2–6 mm long; plants from Eastern Cape 37. *D. chalumnensis*
 2b. Bulb scales closely packed; leaves plane, 4–25 mm wide; pedicels 5–10 mm long; plants from Western and Northern Cape:
 3a. Leaf blades obtuse; margins colliculate; plants from Western Cape Fold Mtns 31. *D. ecklonii*
 3b. Leaf blades acute-apiculate; margins partly or entirely scabridulous on upper surface; plants not from Western Cape Fold Mtns:
 4a. Leaf margins simple, densely retrorse scabridulous along upper surface 32. *D. marginata*
 4b. Leaf margins duplex, narrowly colliculate along edge with submarginal band of erect or retrorse trichomes along upper surface 33. *D. pulchromarginata*
 1b. Leaf margins not thickened and cartilaginous, sometimes pubescent or scabridulous:
 5a. Leaves usually 2 or more, plane or channelled above, with narrow hyaline margins:
 6a. Leaves glabrous but minutely scabridulous along margins, at least distally 28. *D. virens*
 6b. Leaves pubescent or scabridulous on one or both surfaces:
 7a. Leaves in a rosette, (15–)20–30 (–70) \times (3–) 5–7(–9) mm, margins with long cilia and softly pubescent on one or both surfaces; tepals not fringed 29. *D. barkerae*
 7b. Leaves in a loose tuft, 12–26 \times 1.0–1.5 mm, margins glabrous, upper surface recurved-scabridulous; inner tepals fringe 30. *D. fimbrimarginata*
 5b. Leaf solitary (rarely two), without a distinct hyaline margin:
 8a. Leaf glabrous, fleshy and semiterete to terete or clavate:
 9a. Dwarf plants, inflorescence 15–30 mm long 38. *D. acarophylla*
 9b. Taller plants, inflorescence 40–100 mm long:
 10a. Aerial portion of leaf 35–70 \times 2–6 mm 34. *D. vermiciformis*
 10b. Aerial portion of leaf 15–25(–40) \times 5–9 mm 34.1. *D. pinguis*
 8b. Leaf plane, ciliolate or pubescent:
 11a. Leaf retrorse ciliolate along margins only with hairs \pm 0.5 mm long 35. *D. ciliolata*
 11b. Leaf softly retrorse pubescent on one or both surfaces and along margins with hairs \pm 1.0–2.5 mm long:
 12a. Leaf plicately grooved adaxially, with soft spreading trichomes 2.5 mm long on upper surface only 35.1. *D. hispidoplicata*
 12b. Leaf not grooved, with scattered retrorse trichomes \pm 1 mm long on both surfaces. . . 36. *D. trichophylla*

Sect. *Ledebouriopsis*

1a. Floral bracts 1.5–7.0 mm long:

2a. Plants evergreen with leaves synanthous; leaf blades concave above, the margins narrowly hyaline and smooth; bulb scales never fibrous, dark red below ground 9. *D. delagoensis*

2b. Plants deciduous with leaves hysteranthous or emergent at flowering; leaf blades canaliculate, the margins slightly thickened and papillate; bulb scales \pm fibrous, white to pink:

3a. Bulbs with a conspicuous collar of stiff, apical fibres 7. *D. multisetosa*

3b. Bulbs with at most a weak collar of fine, pale fibres. 6. *D. echinostachya*

1b. Floral bracts mostly up to 1 mm long:

4a. Raceme 1- to 3-flowered; plants from southern Namibia. 13. *D. occultans*

4b. Raceme $>$ 3-flowered; plants from South Africa:

5a. Raceme congested, ellipsoid to subglobose with flowers mostly 0.5–2.0 mm apart:

6a. Scape longitudinally colliculate-scabridulous basally; perianth cup puberulous within; plants from Richtersveld 16. *D. barbata*

6b. Scape glabrous; perianth cup glabrous within; plants from extreme southwestern Western Cape:

7a. Leaf terete or clavate, 1–2 mm diam. 15. *D. salteri*

7b. Leaf lorate-oblong, 10–16 mm wide. 15.1. *D. densiflora*

5b. Raceme elongate, laxly cylindrical with flowers mostly more than 3 mm apart, rarely 1-flowered:

8a. Leaf solitary and stiffly erect, (2–)3–5 mm diam., sheathing base with wide, chestnut brown, papery margins; bulb often with a thick papery collar. 8. *D. anomala*

8b. Leaves 1 to 5, either solitary and erect but then less than 2 mm diam., or flexuous to drooping, sheathing bases with pale-papery margins, not forming a thick papery collar:

9a. Capsules ellipsoid to fusiform (rarely ovoid), usually more than twice as long as wide, 2–3 mm diam.; plants from southwestern South Africa 14. *D. dregei*

9b. Capsules ovoid, up to twice as long as wide, 3–4 mm diam.; plants from southern and eastern South Africa:

10a. Filaments retrorsely scabrid-papillate:

11a. Bulb scales loose, subglobose; cataphylls not barred 11.1. *D. globuligera*

11b. Bulb scales cohering, flattened; cataphyll transversely barred with thickened ribs 11.2. *D. zebrinella*

10b. Filaments smooth:

12a. Bulb scales loose and stalked; scape puberulous basally 10. *D. edwardsii*

12b. Bulb scales usually tightly packed, rarely loose and subglobose but not stalked; scape glabrous throughout or minutely puberulous basally:

13a. Bulbs elongated and proliferous, forming clumps; leaves 2 or 3 per bulb 11.3. *D. prolifera*

13b. Bulbs subglobose, not proliferating; leaf mostly solitary:

14a. Racemes 40- to 90-flowered; pedicels 17–25 mm long:

15a. Bulbs epigeal, keeled; leaves up to 500 mm long 12. *D. flagellaris*

15b. Bulbs hypogean, smoothly rounded; leaves up to 200 mm long. 11.4. *D. longipedicellata*

14b. Racemes 3- to 30(40)-flowered; pedicels 2–10 mm long:

16a. Flowers white, tepals 4–6 mm long; filaments 2–4 mm long 11. *D. calcarata*

16b. Flowers buff to brown, tepals 3.3–4.2 mm long; filaments 1.4–1.9 mm long. 11.5. *D. brachyandra*

Sect. *Macrocentrae*

1a. Dwarf plants to 30 mm tall; leaves linear, 1.0–1.5 mm wide; pedicels 1.5–2.0 mm long 5.1. *D. toxicaria*

1b. Larger plants more than 60 mm tall; leaves linear to lanceolate or cylindrical and 3–14 mm wide; pedicels 2–14 mm long:

2a. Bulbs dark red; inflorescence (60–)200–450(–600) mm tall, scape mostly shorter than rachis, often less than half as long; bracts 1–3 mm long, spur of lower bracts up to 1 mm long; leaves 3 to 8, linear to narrowly lanceolate, channelled; plants from western and northern interior South Africa. 4. *D. sanguinea*

2b. Bulbs white to greenish; inflorescence 300–800(–900) mm tall, scape longer than inflorescence rachis; bracts 4–6 mm long, spur of lower bracts 20–35 mm long, forming a skirt below raceme in bud; leaf solitary, cylindrical, resembling scape; plants from eastern Drakensberg 5. *D. macrocentra*

Sect. *Physodia*

1a. Inflorescence globose-capitate, all pedicels \pm 0.5 mm apart and rachis not elongating in fruit; scape glabrous; lower bracts 1.5–4.0 mm long with a spur 1–6 mm long; plants from mesic grasslands along eastern Escarpment. 39. *D. depressa*

1b. Inflorescence subcapitate-racemose or congested-racemose, lower pedicels often distant and rachis somewhat elongating in fruit; scape usually longitudinally puberulous; lower bracts 0.5–2.0 mm long with reduced spur up to 1.5 mm long; plants from drier habitats along western and southern coast and interior:

2a. Leaves subterete-filiform, 0.5–1.0 mm wide; pedicels arcuate-suberect in fruit 42. *D. minor*

2b. Leaves linear to lanceolate, 1–25 mm wide; pedicels spreading-reflexed with tips abruptly erect in fruit:

3a. Pedicels (3.0–)5.0–6.5 mm long; ovary white with yellow shoulders edged with purple speckles; base of bulb and roots bulbilliferous 40. *D. montana*

3b. Pedicels (8–)15–20(–30) mm long; ovary uniformly white; plants not bulbilliferous 41. *D. physodes*

Sect. *Thuranthos*

1a. Stamens 3 (inner whorl only), filaments \pm 4 mm long; tepals 4.5–5.5 mm long 21.1. *D. pellabergensis*

1b. Stamens 6, filaments >5 mm long; tepals >6 mm long:

2a. Inflorescence to 400 mm long; pedicels 8–12 mm long, abscising \pm midway if not pollinated; tepals 7–8 mm long; filaments 6–8 mm long; capsules 5–7 mm long; plants from southwestern Western Cape 21. *D. hesperantha*

2b Inflorescence 150–1 300 mm long; pedicels 15–80 mm long, abscising at base if not pollinated; tepals 8–33 mm long; filaments 7–20 mm long; capsules 7–40 mm long; plants from Eastern Cape northwards:

3a. Filaments fusiform, constricted basally, \pm 7 mm long; anthers subglobose-sagittate, \pm 1 mm long at anthesis; capsules on slender, horizontally spreading pedicels, subglobose-ovoid, \pm 7 mm long; leaves terete-canaliculate, 0.5–1.0 mm diam. 22. *D. vespertina*

3b. Filaments filiform or lanceolate, sometimes abruptly narrowed midway but never constricted basally, 5–20 mm long; anthers oblong, 1.5–7.0 mm long; capsules on thickened, suberect pedicels, subglobose to ellipsoid, 3-lobed, 8–40 mm long; leaves linear-canaliculate, 4–18 mm wide:

4a. Leaf sheaths unmarked; tepals 22–33 mm long; filaments 15–20 mm long, basal 6–12 mm flattened and incurved around ovary forming a cage-like structure, sharply constricted and terete-fusiform above; style several times longer than ovary; stigma large and capitate 25. *D. macrantha*

4b. Leaf sheaths barred or blotched with purple towards base; tepals 9–20 mm long; filaments 5–11 mm long, simple and lanceolate or fusiform; style as long as or slightly longer than ovary; stigma 3-angled:

5a. Inflorescence more than 500 mm tall; pedicels 35–80 mm long; tepals 14–20 mm long; filaments 7–11 mm long 24. *D. pauciflora*

5b. Inflorescence mostly up to 500 mm tall; pedicels 10–30 mm long; tepals 6–12 mm long; filaments 5–6 mm long:

6a. Bulb scales loose and spatulate; leaves keeled beneath; pedicels 10–12 mm long at anthesis; filaments \pm 6 mm long 23. *D. zambesiaca*

6b. Bulb scales cohering; leaves rounded beneath; pedicels 20–30 mm long at anthesis; filaments \pm 10 mm long 23.1. *D. zebrina*

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