A revision of *Ledebouria* (Hyacinthaceae) in South Africa. 1. Two new species

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**ABSTRACT**

A revision of *Ledebouria* in South Africa has revealed a number of undescribed species. This paper deals with two new species, *Ledebouria atrobrunnea* S.Venter and *L. dolomiticola* S.Venter. Both species possess cylindrical bulbs, erect leaves (rare in *Ledebouria*) and prominent shoulders on the carpel apices. These synapomorphies are also seen in *L. viscosa* Jessop, and its allies.

**INTRODUCTION**

*Ledebouria* Roth includes some highly variable species and this has led to a proliferation of synonyms within the genus. Species plasticity, however, has also resulted in distinct taxa being overlooked in previous revisions (Jessop 1970). The species described in this account (*L. atrobrunnea* and *L. dolomiticola*) are based on characters which do not vary significantly between populations or in cultivated specimens. They form a natural group with *L. viscosa*, sharing cylindrical bulbs, erect leaves (rare in *Ledebouria*) and prominent shoulders on the carpel apices. All three species are exceedingly rare with very narrow distributions, features which make them particularly vulnerable to extinction.

1. *Ledebouria atrobrunnea* S.Venter, sp. nov. similis *L. viscosa*, sed foliis 4-6 (non solum 1-3), attenuatis (haud oblanceolatis usque spatulatis), non-viscosis tortisque et squamarum apicibus duris distincte differt.

**TYPE.**—North-West, 2527 (Rustenburg): Kroondal, Farm Zuurplaat 337, (-CD), Venter 13460 (PRE, holo.; NU, UNIN).

Plants solitary. Bulb hypogeal, 30-60 × 20-30 mm, cylindrical, dead bulb scales purplish brown, very hard, attenuate, apices truncate, live bulb scales loose with threads when torn, bulb white and often purple-spotted. Leaves partly emerged at anthesis, 4-6, erect, spirally twisted, linear-lanceolate, 60-80 × 3-10 mm, with threads when torn, fleshy, dull glaucous, venation obscure; margin undulate in lower half, smooth above; base canaliculate, apex acute. Inflorescences 1-4, flaccid, lax, 30-60-flowered, longer than leaves; peduncle compressed at base, purple with darker spots, 25-60 mm long; rachis longitudinally ridged; raceme lax, oblong, 20-50 × 25-30 mm; bracts and bracteoles always present, slightly fleshy, 0.8-1.0 × 0.25-0.5 mm, linear to bifurcate, grey-white. Pedicels spreading, 6-7 mm long, speckled or pink. Tepals recurved, subequal, linear-oblong, 4.0-5.0 × 1.5-2.0 mm, pink to purple, keel green; apex acute, slightly cucullate. Stamens erect, 3-4 mm long; filaments pink, base slightly flattened, epitepalous; anthers 0.75-1.0 mm long, violet. Ovary depressed, obtusely 6-lobed, 1.0-1.5 × 2.0-2.5 mm, lobes obtusely delate, apical shoulders present, basal lobes present; stipe 0.25 × 0.25 mm; style 2.0-2.5 mm long, triangular in section, glabrous, purple. Capsule

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**Figure 1.**—*Ledebouria atrobrunnea*, Venter 13460. A, habit, × 0.9; B, section through lamina, × 3; C, tepal apex, × 12; D, bract, × 12; E, flower, × 7; F, tepal with stamen, × 7; G, ovary lateral view, × 9. Drawing modified from Burrows (1993).
Bothalia 28,1 (1998)

Bothalia 28,1 (1998)

clavate, base truncate. Seed 4–5 mm long, drop-shaped, strongly wrinkled, reddish brown. Figure 1.

This species is known only from Magaliesberg Quartzites of the Pretoria Group (SACS 1980) in the foothills of the Magaliesberg in the Kroondal area near Rustenburg (Figure 2). It occurs in shallow red-brown lithosols derived from coarse-grained recrystallised rock. Vegetation of the area is Bankenveld and consists of low closed deciduous Protea caffra–Lannea discolor Woodland (Acocks 1988).

The degree of leaf twisting and the prominence of bulb scales vary within L. atrobrunnea. Plants from exposed situations tend to have more prominent bulb scales and leaves more twisted than shaded individuals. The species flowers from September to late December.

L. atrobrunnea is related to L. viscosa Jessop which also has cylindrical bulbs and erect leaves. It is distinguished by its linear-lanceolate, non-viscid, twisted leaves and its hard purplish brown (hence the specific epithet) bulb scales. In L. viscosa the leaves are viscid, untwisted and oblanceolate to spatulate.

2. Ledebouria dolomiticola S.Venter, sp. nov. similis L. viscosa et L. atrobrunnea, sed ab ambobus differt bulbis epigaeis. Praeterea ab illa foliis non-viscidis et ab hac bulbi squamis mortuis membranaceis (non duris) recedit.

TYPE.—Northern Province, 2429 (Zebediela): Strydpoort Mountain, Donkerkloof, Farm Rivierplaats 354, (-BA), Venter 13089a (PRE, holo.; NU, UNIN).

Bulbs epigean, 40–100 × 15–30 mm, ellipsoid to cylindrical, in dense groups; dead bulb scales thinly membranous, brown, apices truncate, without threads when torn, live bulb scales tightly appressed, white inside, bulblets often present. Leaves fully developed at anthesis, 3–5, erect, lanceolate, 80–100 × 8–20 mm, without threads when torn, fleshy, glaucous, immaculate, venation obscure; margin smooth; base canaliculate, apex acute. Inflorescence solitary, flaccid, lax, 30–40-flowered, longer than leaves; peduncle smooth, terete at base, green, 60–90 mm long; rachis smooth; raceme lax, cylindric, 40–60 × 20–30 mm; bracts with bracteoles, membranous, 1.50 × 0.25 mm, linear-lanceolate, grey to white. Pedicels spreading horizontally, 8–10 mm long, white to purple. Tepals recurved, subequal, oblong, 5 × 1.0–1.5 mm, pink to purple, keel green. Stamens erect, 3 mm long; filaments maroon, epitepalous; anthers 0.5 mm long, yellow. Ovary spheroidal, 1.5 × 2.5 mm, lobes narrowly transversely oblong; apex shouldered raised, basal lobes present; stipe 0.25–0.50 mm long; style 3 mm long, triangular in section, glabrous, purple above and white below. Capsule subglobose, base truncate. Seed 4 mm long, globose, strongly wrinkled, brown. Figure 3.

L. dolomiticola occurs in the Strydpoort Mountains near Pietersburg, Northern Province (Figure 2). Plants are limited to the Eccles Formation of the Chuniespoort Group (SACS 1980). The steep dolomitic slopes and cliffs on which L. dolomiticola grows experience high temperatures, especially during the summer months. Plants occur commonly in rock fissures and lithosols. Flowering occurs from January to April, as in L. viscosa.
L. dolomitica is a close relative of L. atrobrunnea and L. viscosa which also possess cylindrical bulbs, erect leaves and prominent shoulders on the carpel apices. L. dolomitica is distinguished from both by its epigeal bulbs and from L. viscosa by its non-viscous leaves and from L. atrobrunnea by its membranous dead bulb scales.

Specimens of L. viscosa examined

NORTHERN PROVINCE.—2427 (Thabazimbi). Kransberg, (-BC), Meeuse 10493 (PRE); Farm Waterval, Dyer & Eihrens 4201 (PRE); Farm Buffelshoek 446, (-DA), Venter 13455 (UNIN).

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REFERENCES


