Available online at www.sciencedirect.com
ScienceDirect
South African Journal of Botany 74 (2008) 214–217
SOUTH AFRICAN JOURNAL OF BOTANY
www.elsevier.com/locate/sajb

Ledebouria mokobulanensis A.J.Hankey and T.J.Edwards (Hyacinthaceae) a new species from the high altitude grasslands of Mpumalanga

A.J. Hankey [a,*], T.J. Edwards [b]

[a] *Walter Sisulu National Botanical Garden, PO Box 2194, Wilro Park 1731, South Africa*
[b] *School of Biological and Conservation Sciences, University of KwaZulu-Natal Pietermaritzburg, Private Bag X01, Scottsville 3209, South Africa*

Received 14 September 2007; received in revised form 26 October 2007; accepted 29 October 2007

Abstract

A new species, *Ledebouria mokobulanensis* from Mpumalanga, is described and illustrated. Its alliances with its closest ally, *L. galpinii*, are discussed.

Keywords: Hyacinthaceae; *Ledebouria*; Mpumalanga; New species

1. Introduction

Ledebouria Roth was proposed as a genus in 1821 with *L. hyacintha* L. as the type (Roth, 1821). The genus *Ledebouria* together with *Resnova* Van Der Merwe and *Drimiopsis* Lindl. constitute the subtribe Ledebouriinae U and D (Muller Doblies, 1997) of the tribe Massoniae Hutch. emend. Jessop 1975. Most species are endemic to southern Africa and the delimitation of species is problematical (Venter, 1993). Some of the species are widespread and embrace a wide range of morphological plasticity. This is especially true of gross morphological characters such as leaf shape and maculation (Venter, 1993).

Ledebouria mokobulanensis A.J.Hankey and T.J.Edwards sp. nov. *L. galpinii* (Baker) S.Venter and T.J.Edwards affinis, sed bulbis semper minoribus, foliis minoribus solitariis cordatis, superficie adaxiali cum maculis rubris foveatis differt.

TYPE: South Africa, Mpumalanga—2530 Long Tom Pass: Farm Zomerplaats 207 JT, Mokobulaan Plantations, (-BA), *Hankey and Mutshinyalo 1151* (PRE, holo.).

Plants solitary. *Bulbs* hypogeal, ovoid to spherical, 9.0–18.0×15–23 mm, dead bulb scales few, pale brown or tan, thin and membranous, not persistent, live bulb scales white, truncate, fleshy, tightly clasping. *Basal stem* well developed in older individuals, up to 15 mm long. *Leaves* deciduous, 1 (−2) fully developed at anthesis, appressed to substrate, ovate to broadly ovate, acute to obtuse, 6–26×19–40 mm, adaxial surface pale to dark dull reddish-green with conspicuous red pits, abaxial surface green suffused with red, margin red, minutely papillate. *Inflorescence* 1, rarely 2, erect, 27–56 mm long, 10–40-flowered, raceme 5–15 mm long, subglobose, scape terete, green below, purple above, glabrous, 20–35 mm long. *Bracts* narrowly triangular to filamentous, 1.0–1.5 mm long, green, purple-tipped, bracteoles vestigial. *Pedicels* 5–7 mm long, pale mauve. *Perianth* stellate; tepals oblong, obtuse, cucullate, 3.0–4.0×1.0–1.5 mm, mauve to violet. *Stamens* epitepalous, filaments ±2 mm long, purple to violet distally, becoming white basally. *Ovary* globose, 6-lobed, ±1×2 mm; stipe 0.3 mm long; style 1.5–2.0 mm long, purple to violet. *Seed* not seen.

Flowering time—September to November.

2. Distribution and ecology

L. mokobulanensis occurs in the Mpumalanga province, South Africa; and is currently known from four collections along the

* Corresponding author. South African National Biodiversity Institute, Walter Sisulu National Botanical Garden P O Box 2194, Wilro Park, 1731, South Africa. Tel.: +27 11 958 1750, (mobile) +27 82 588 4914; fax: +27 11 958 1752.
E-mail address: hankey@sanbi.org (A.J. Hankey).
URL: http://www.sanbi.org (A.J. Hankey).

0254-6299/$ - see front matter © 2007 SAAB. Published by Elsevier B.V. All rights reserved.
doi:10.1016/j.sajb.2007.10.018

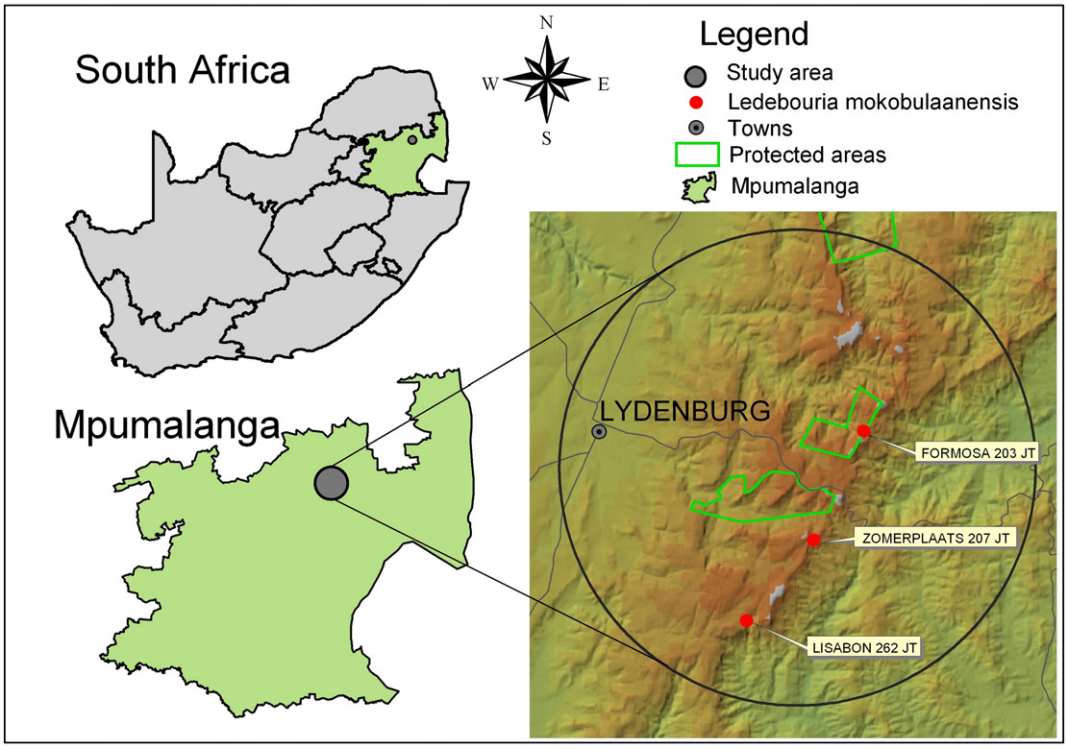

Fig. 1. Known distribution of *L. mokobulanensis*.

Mokobolwane Mountain Range (Fig. 1). It occurs in Lydenburg Montane Grassland (Mucina and Rutherford, 2004) within the Lydenburg Centre of Plant Endemism (Lötter et al., 2002). The new species was discovered in 1989 by Sandie Burrows in short, open, rocky grassland on mountain slopes and summits.

3. Relationships

L. mokobulanensis can easily be distinguished from all other members of the genus by its conspicuously red-pitted upper leaf surface. The only other *Ledebouria* which produces leaves with a pitted upper surface is *L. galpinii*, *L. mokubalanensis* can be distinguished from the former, its closest ally, in having smaller, solitary (rarely 2), dull green, cordate leaves with red pits adaxially, as well as a solitary, erect inflorescence. In contrast, *L. galpinii* produces 3 or 4 adaxially lacunate, glossy purple–brown leaves that are canaliculate at the base, with two or more flaccid inflorescences (Edwards and Venter, 2003). Furthermore, *L. galpinii* has a three-lobed ovary (Edwards and Venter, 2003) compared to the six-lobed ovary of *L. mokobulanensis* (Fig. 2). *L. mokobulanensis* (Figs. 3 and 4) occurs as solitary individuals in open patches in grassland, and at the base of grass tussocks and rocks, with the associated geology comprised of diamictite. *L. galpinii* occurs in protected shallow humus-rich pockets among outcrops of Black Reef Quartzite in the vicinity of Kaapsehoop, Mpumalanga (Edwards and Venter, 2003; Craib and Hankey, 1998). Further differences are provided in Table 1.

The significant number of discontinuities (Table 1), coupled with ecological and geographic separation (Fig. 1) between *L. mokobulanensis* and *L. galpinii*, provides sound evidence that the former warrants specific status.

3.1. Conservation

This species is restricted in distribution and its habitat is favoured for afforestation. It is hoped that current conservation of the type locality at the Mokobulaan Plantations will continue indefinitely. The Mount Formosa population occurs within the Mount Anderson Nature Reserve under auspices of Mpumalanga Parks and Tourism Board.

3.2. Etymology

The species is named after Mokobulaan Plantations, the farm on which the type specimen was discovered. The farm is

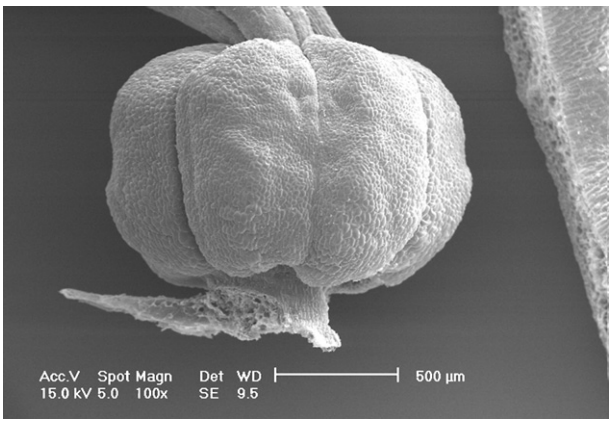

Fig. 2. *L. mokobulanensis*: ovary. Voucher: Hankey and Phungula 2067.