

***Daubenyia alba* (Hyacinthaceae, tribe Massonieae), a new species from the Roggeveld, Northern Cape Province**

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***Daubenyia alba* A.M. van der Merwe, from the edge of the Roggeveld escarpment in the Northern Cape Province, is described as a new species. It resembles *D. capensis* (Schltr.) A.M. van der Merwe & J.C. Manning in leaf**

shape, floral structure and the presence of a staminal tube, but is distinguished by its delicate white to pale lilac flowers and lack of a staminal disc.

Introduction

The genus *Daubenyia* was established by Lindley in 1835 when he described *Daubenyia aurea* Lindl. He regarded it as a new genus because, although it agrees remarkably in habit with *Massonia* Thunb. ex Houtt., it differs in its tubular, not campanulate, very irregular perianth and in the absence of the nectaries typical of *Massonia*. Two more *Daubenyia* species were described, *D. fulva* by Lindley (1839) and *D. coccinea* by Harvey (1871), although Marloth (Phillips 1922) suggested that the genus should be treated as monotypic.

Recent molecular systematic work (Van der Merwe *et al.* in prep.) has shown that the monotypic genera *Amphisiphon* Barker, *Androsiphon* Schltr., as well as three *Neobakeria* Schltr. species are very closely related to *Daubenyia aurea*. These species were subsequently transferred to the genus *Daubenyia* (Goldblatt and Manning 2000).

Daubenyia now comprises eight species of which *D. alba* is newly described. The genus is restricted to southern Africa occurring mostly along the edge of the winter rainfall region along the Bokkeveld and Roggeveld escarpments.

Daubenyia alba was first collected in 1992 by GC Summerfield. Only in 1999, when the specimen was brought to the attention of the first author, was it recognised as an undescribed species. Flowering material for the preparation of a type specimen was collected from the wild in June 2001.

Daubenyia alba A.M. van der Merwe, sp. nov., foliis glabris, distincte striatis, inflorescentia corymbosa, floribus parum zygomorphis albis vel lilacineis tinctis, tubo staminali longo, tepalis apice viridibus. *Daubenyia capensis* similis, sed structura coloreque florum, absentia disco staminalis differt.

TYPE – Northern Cape Province, 3120 (Williston): Farm Bo-tuin, 25km SW of Middelpoos, roadsides between ploughed lands in heavy doleritic clay soil (-CC), June 2001, A.M. van der Merwe 195 (NBG, holo).

Bulb: subglobose, 20–35mm in diameter; outer layers

leathery, dark brown, extending in a short papery neck to 5mm. *Leaves* 2, suberect or somewhat spreading, ovate-lanceolate, acuminate, dark green, glabrous, 45–100 x 20–55mm, leaf bases purple-red, enfolding the peduncle for ca. 5mm. *Inflorescence*: corymbose, capitate, exerting ca. 20mm above leaves; bracts small, ovate-lanceolate; pedicels well developed, 10–20mm long, elongating in fruit. *Flowers* white, sometimes lilac-tinged, tepals tipped with green, filaments and style lilac-tinged; perianth tube 10–25mm long, 1.5–2mm in diameter; perianth segments patent, linear to narrowly oblanceolate, 10–18mm x 1.5–2mm. *Stamens* fused, forming a tube ca. 20mm long, free parts suberect or with tips slightly incurved, up to 15mm long; anthers purple, ca. 2mm long. *Ovary*: ovoid, ca. 4mm long; style up to 55mm long; protruding from the middle of staminal tube, reaching 2mm beyond the anthers; stigma penicillate. *Capsule* loculicidal, trilobed, ca. 15mm long, seeds ellipsoid, black. (Figures 1 and 2).

Diagnostic Features and Affinities

Daubenyia alba is characterised by its delicate white (sometimes lilac-tinged) flowers and a long staminal tube. It is similar to *D. capensis* (Schltr.) A.M. van der Merwe & J.C. Manning with regard to the floral structure and presence of a staminal tube, but differs in flower colour and size as well as lack of a staminal disc. The flowers show a slight zygomorphy, evident in the stamens. This zygomorphy is shared by other members of the genus *Daubenyia* like *D. aurea* where the outer flowers are strongly zygomorphic and *D. namaquensis* (Schltr.) J.C. Manning & Goldblatt where zygomorphy can be observed in the lower, older flowers of the inflorescence, as well as in *D. comata* (Burch. ex Baker) J.C. Manning & A.M. van der Merwe where the lowermost flowers are very slightly bilabiate.



Figure 1: Flowering plant of *Daubenya alba*

The veins give a very prominent striate pattern to the leaves and cross sections through the leaves show parenchymatous bundle sheaths surrounding the vascular bundles. Leaves are amphistomatic and covered with a thick waxy cuticle. Both the adaxial and abaxial epidermis extend laterally at the leaf margins with no mesophyll in between (Figure 3). In this extended epidermis the cell walls are slightly thickened, strengthening the leaf margins. This characteristic is shared with some species of the genus *Polyxena* Kunth. A unicellular hypodermis is also present at the leaf margins in the area where the adaxial and abaxial epidermis start their lateral extension (Figure 3). The mesophyll comprises three rows of palisade-like parenchyma adaxially and three rows of spongy parenchyma abaxially.

Distribution and Habitat

Daubenya alba occurs in scattered colonies along the edge of the Roggeveld escarpment, around the Middelpos area (Figure 4). The species grows in heavy doleritic clay, as do most of the other *Daubenya* species. Plants appear to be restricted to the lower lying drainage areas. The flowers are strongly scented during the day and night. Flowering time is from May to June. The conservation status of the species is not yet known as it is only known from two localities. However, it is quite likely that it occurs in other low-lying areas of doleritic clay in the Middelpos and Sutherland areas and that more colonies will be found. The plants of the two known colonies appear healthy. Fruiting specimens and



Figure 2: *Daubenya alba* (a) young plant; (b) longitudinal section of the flower; (c) fruiting inflorescence

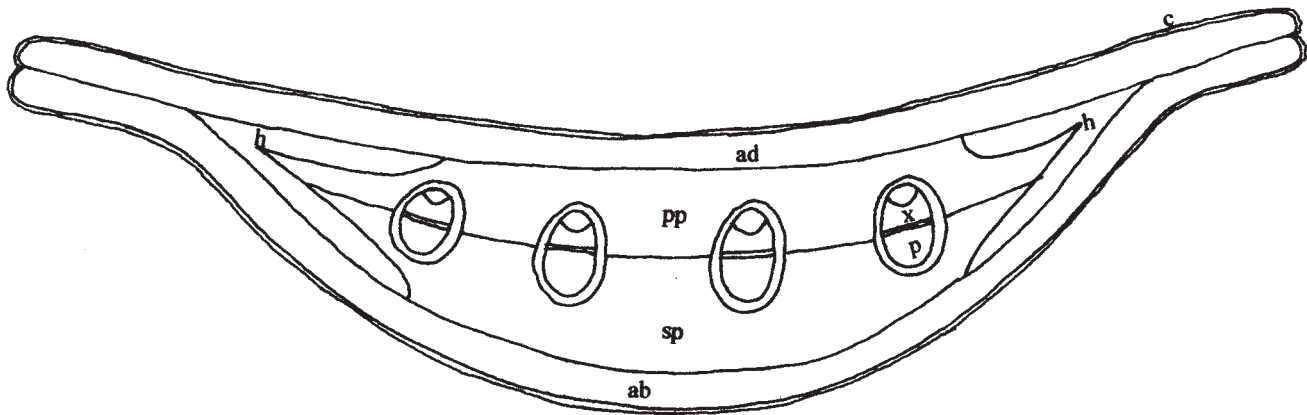


Figure 3: Diagrammatic representation of a transverse section of a mature leaf; ab = abaxial surface; ad = adaxial surface; c = cuticle; h = hypodermis; p = phloem; pp = palisade-like parenchyma; sp = spongy parenchyma; x = xylem

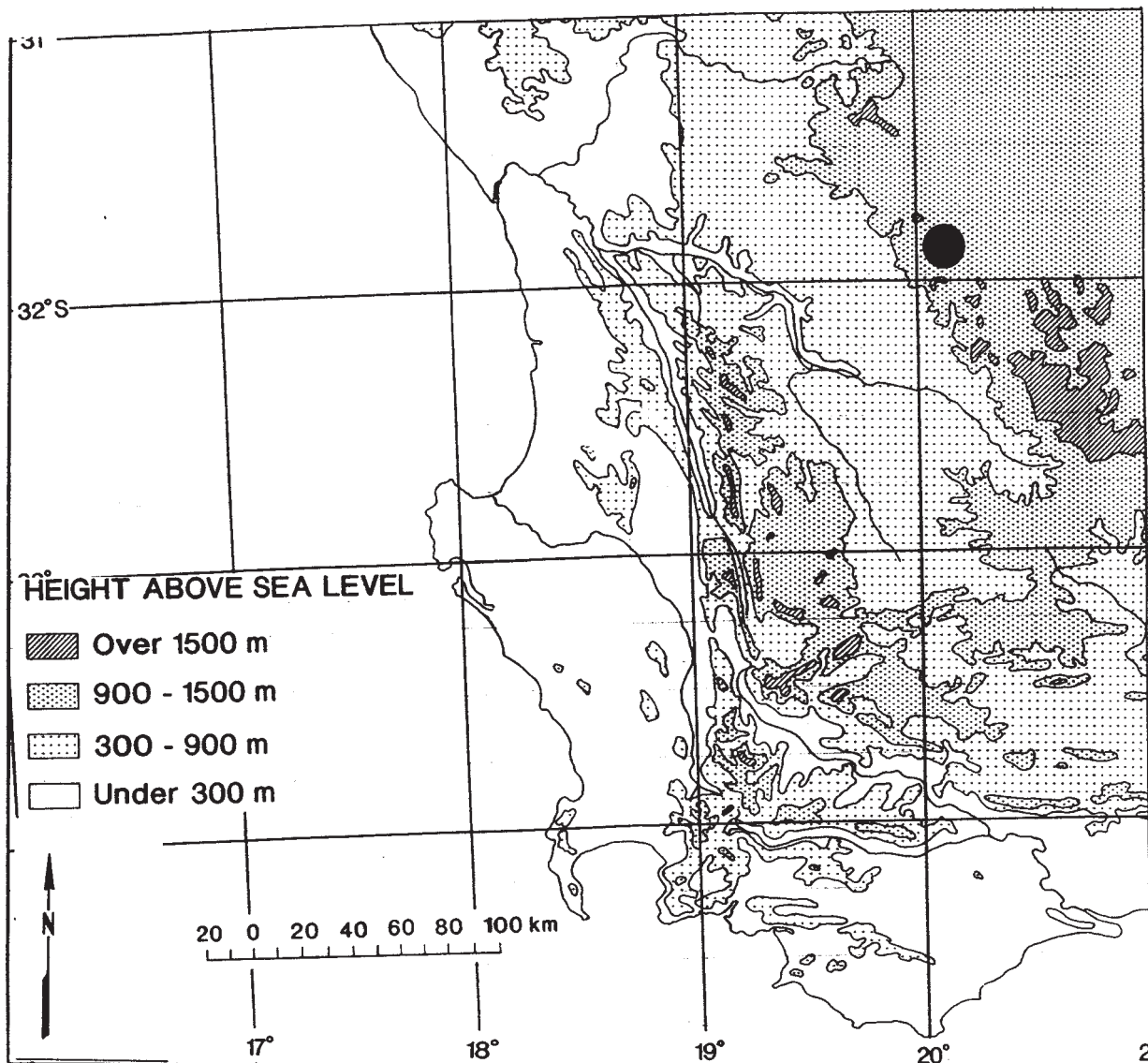


Figure 4: Known distribution of *Daubenya alba*

young plants are common in the populations and plants did not show any signs of having been grazed. Thus, although occurring in a restricted area the species seems not to be endangered.

Material Studied

Northern Cape Province, 3120 (Williston); Farm Bo-Tuin, 25km SW of Middelpos, at roadside between ploughed lands in heavy doleritic clay soil (-CC), *Van der Merwe 195* (NBG); Roggeveld, Farm Vaalhoek, 25km SW of Middelpos (-CC), *Manning 2345* (NBG).

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References

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