

INTRODUCTION

Brunsvigia Heist., a genus of about 23 species, is endemic to southern Africa. Although the genus is widespread, the highest concentration of species is in the northwest region of Western Cape and the midlands of KwaZulu-Natal (Vorster 1999). When last reviewed, Dyer (1950, 1951) recognized 17 species, one of which was later formally described by Barker (1963). Since then studies in the genus have been limited to the winter rainfall region. Goldblatt (1972) and D. & U. Müller-Doblies (1994) transferred two further species to *Brunsvigia* after their respective re-assessments of *Nerine* Herb. and *Boophone* Herb. In addition, D. & U. Müller-Doblies (1994) described two new *Brunsvigia* species from Namaqualand and the western Cape.

Independent cladistic analyses of morphological and molecular data based on nrDNA ITS sequences have indicated that *Brunsvigia* is closely allied to *Nerine* (Snijman & Linder 1996; Meerow & Snijman 2000). Both genera are recognized by their pink, rarely red or white, more or less zygomorphic flowers, in which the filaments are fused into a short basal tube. *Brunsvigia* is distinguished from *Nerine* by its specialized fruiting heads. These have long, stiff pedicels that radiate outward in all directions and carry large, transversally veined capsules which are tardily dehiscent. When dry, the infructescence detaches from the bulb at ground level and seed is dispersed while the entire head tumbles in the wind. Other specialized features, shared by many, but not all *Brunsvigia* species, are the brittle, yellowish brown bulb tunics and the flattened leaves that are pressed to the soil surface. The possible adaptive significance of the prostrate-leaved habit, a particularly characteristic growth form of many geophytes in southern Africa's winter rainfall region, has been fully discussed by Esler *et al.* (1999).

The current re-assessment of species for the IUCN Red List of threatened plants has stimulated renewed

interest in the critically transformed Coastal Renoster-veld, which is now largely confined to the Elandsberg Private Nature Reserve between Wellington and Tulbagh (Rebello 1996). Recent collections from this botanically rich site have generated many new and unexpected records. Most significant for the family Amaryllidaceae has been the discovery of an unknown species of *Brunsvigia*, which is formally described here as *B. elandsmontana*.

***Brunsvigia elandsmontana* Snijman, sp. nov.**, species insignis perigonio actinomorpho, tubo perigonii (2–5 mm longo), staminibus centralis, a speciebus nobis notis bene distincta; differt a *B. marginato* (Jacq.) Aiton floribus roseis vividis et staminibus brevibus (10–16 mm). Figura 4.

TYPE.—Western Cape, 3319 (Worcester): Wellington, Elandsberg Private Nature Reserve, on well-drained pebbly flats, (–AC), 14-3-2000, *Snijman 1731* (NBG, holo.; E, K, MO, PRE).

Deciduous bulbous herb, 110–200 mm tall when flowering. *Bulb* solitary, hypogaeal, ± ovate, 30–45 mm diam., extended into a stout neck 30–50 mm long; outer tunics tan-coloured and brittle; inner tunics cream-coloured and fleshy. *Foliage leaves* 4–6, usually absent at flowering, distichous, prostrate, overlapping at first becoming falcate and outspread when mature, elliptical, up to 1250 × 25–70 mm, adaxial surface dark green, somewhat rough, abaxial surface pale green with darker green veins, smooth, margin cartilaginous, pink, crisped, apex obtuse or somewhat acute. *Inflorescence* 6–18-flowered, initially compact, ultimately hemispherical, 80–130 mm diam., enlarging to 200 mm diam. in fruit; scape erect, elliptical in cross section, 50–140 × 5–10 mm, dull rose pink, breaking at ground level when dry; spathe valves 2, oblong-lanceolate, 20–35 × 8–20 mm, leathery, spreading, greenish pink; bracteoles at base of flowers linear, 20–35 mm long; pedicels straight, ± radiating, 20–45 mm

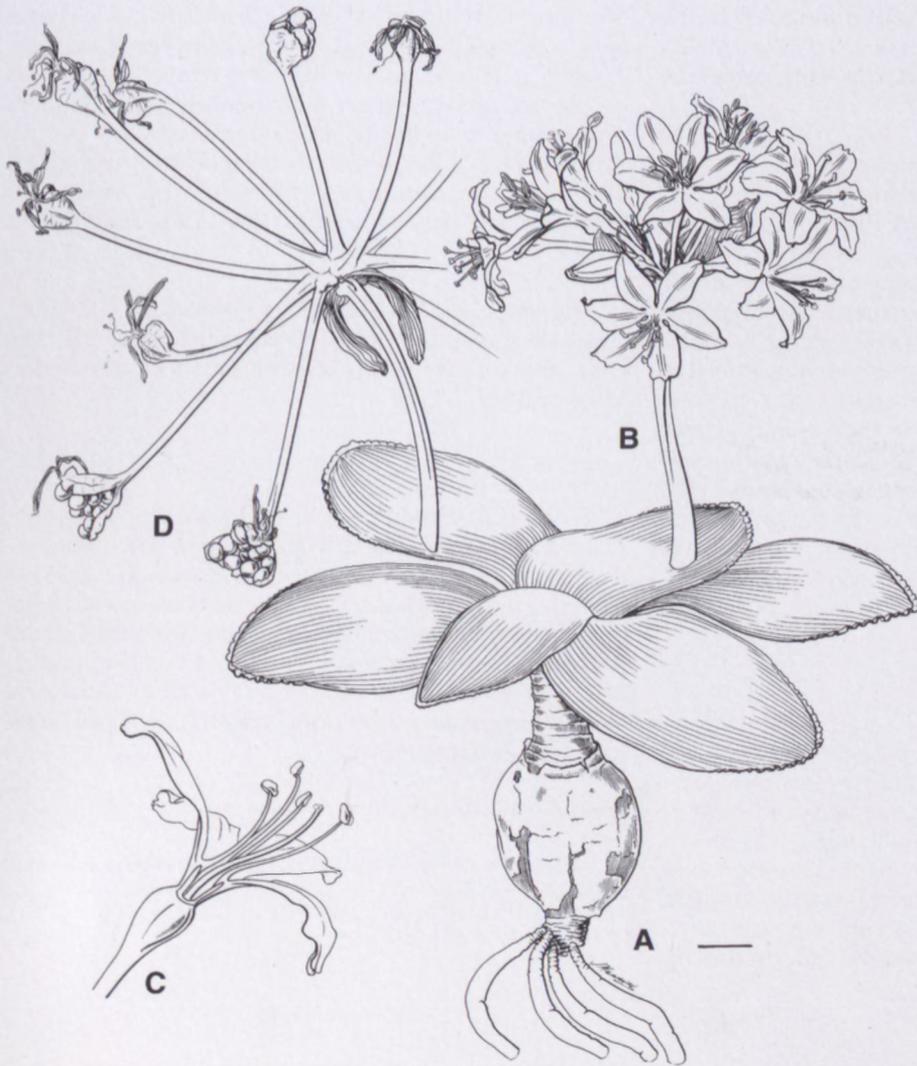


FIGURE 4.—*Brunsvigia elandsmontana*: A, bulb and mature leaves; B, inflorescence; C, flower with two lateral tepals and stamens removed; D, inflorescence. Drawn from *Snijman 1731* by John Manning. Scale bar: A, B, D, 10 mm; C, 0.5 mm.

long, elongating to 40–75 mm in fruit, greenish pink, turning pinkish when dry. *Perigone* actinomorphic, 17–23 × 20–30 mm, vivid rose-pink, throat usually concolorous with tepals, abaxial surface with paler midrib, unscented; tube 2–5 mm long, expanding slightly to 2–3 mm diam. at throat; tepals oblong-lanceolate, 15–20 × 5–7 mm, separate or slightly overlapping at base, outspread, sometimes somewhat recurved towards apex, margin plain or slightly undulate; stamens 6, centrally arranged, the inner almost as long as tepals, the outer somewhat shorter; filaments 10–16 mm long, pale and swollen at base, otherwise slender and pink, tightly clustered in lower third then slightly spreading and upturned towards apex; anthers dorsifixed, 4 mm long, dusky pink before opening; pollen cream-coloured. *Ovary* turbinate and 3-angled, 4–5 mm across, greenish pink; ovules axile, 5 or 6 per locule; style 20–25 mm long, slender, central, slightly upturned towards apex when mature; stigma trifid, papillate. *Capsule* inflated, turbinate, 10–25 × 10–15 mm, 3-angled with papery, transversally veined walls, the angles thinly ribbed, rounded near apex, loculicidally dehiscent in upper two thirds, pinkish to straw-coloured. *Seeds* non-dormant, greenish, ± 5 mm diam.

Diagnostic features

Brunsvigia elandsmontana is distinguished from other species in the genus by the combination of its

bright pink flowers, an actinomorphic perigone with an elongated tube, and centrally arranged filaments which are upturned towards the apex.

Only two other species of *Brunsvigia* have an actinomorphic perigone: *B. pulchra* (W.F. Barker) D. & U. Müll.-Doblies from northern Namaqualand and *B. marginata* (Jacq.) Aiton from Western Cape, between the Kouebokkeveldberge and Franschoekberge (Figure 5). With respect to the widely flared tepals, *B. elandsmontana* is most like the highly ornamental *B. marginata*. This scarlet-flowered species, however, is characterized by a long perigone tube (5–10 mm) and well-exserted stamens (30–45 mm long), whereas in *B. elandsmontana*, the perigone tube reaches only 2–5 mm long and the 10–16 mm long stamens never exceed the tepals. Both species occupy fire-prone fynbos habitats but at different elevations. *Brunsvigia marginata*, a montane species, is found at 450–1 200 m above sea level, whereas *B. elandsmontana* is restricted to the lowlands at altitudes of ± 100 m.

Most species in the genus have pink flowers. Field studies in the Western Cape suggest that colour intensity is often variable within a species while the floral markings are usually constant. Thus in *B. bosmaniae* Leighton, *B. minor* Lind. and *B. striata* (Jacq.) Aiton, the flowers vary from pale to dark pink but the tepal colour

on the adaxial surface is always broken by darker veins or borders. In contrast, the flower colour of *B. elandsmontana* is pure, and the adaxial tepal surface is unbroken by darker streaking.

It is well established that the major pollinator of the red-flowered *B. marginata* is the big brown butterfly, *Aeropetes tulbaghia* (L.) (Johnson & Bond 1994). Less is known about the pollination ecology of the pink-flowered species of *Brunsvigia*. Preliminary work has shown that the scented flowers of *B. bosmaniae* are regularly visited at dusk by noctuid moths and two species of hawk moth: *Agrius convolvuli* (L.) and *Hippotion celerio* (L.) (Raimondo 1998). Occasionally noctuid moths visit the unscented flowers of *B. striata* but they mainly attract butterflies and the anthophorid bee, *Amegilla niveata* (Friese) (J.C. Manning & J.C. Paterson-Jones pers. comm.). As yet nothing is known about the pollination biology of *B. elandsmontana*. However, the lack (to humans) of any scent and the almost regular floral form suggest that the flowers are likely to attract generalist, diurnal, nectar-feeding insects.

Phenology

The population flowers between March and May, for \pm two weeks. Within a month after flowering the infructescence dries out, breaks loose and scatters seed as it tumbles across the ground in the wind. The leaves usually emerge in May after flowering, but they are shed as soon as the dry season approaches, usually towards the end of September. Flowering appears to be most prolific after fire, not only in the first season, but for as long as the habitat remains open.

Distribution and habitat

About 700 mature plants of *B. elandsmontana* are known from a single population in the Elandsberg Private Nature Reserve, northeast of Wellington (Figure 5). The Reserve, which extends from the western slopes of the Elandsberg to the adjacent flats, covers a variety of soil types and moisture regimes. These provide diverse habitats within a mosaic of vegetation types, mainly fyn-

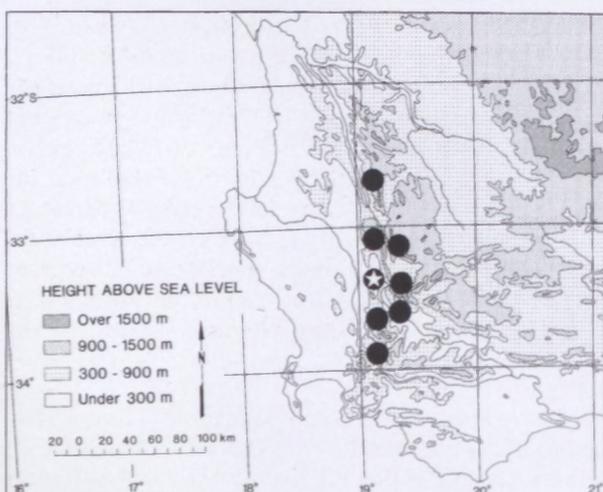


FIGURE 5.—Distribution of *Brunsvigia elandsmontana*, ☆, and *B. marginata*, ●.

bos, renosterveld and sandveld. *Brunsvigia elandsmontana* is typically confined to marginal fynbos on well-drained, pebbly flats. The habitat is remarkably rich in geophytes, among which is a pink-flowered form of *Haemanthus sanguineus* that extends eastwards into the Breede River Valley. When the vegetation is mature the overstorey is dominated by *Cliffortia ruscifolia*, *Leucadendron corymbosum*, *L. lanigerum*, and *Serruria acrocarpa*.

The population's area of occupancy is extremely small (less than 1 km²). Consequently, the IUCN Red Data status of *B. elandsmontana* has been assessed as Vulnerable D2.

Etymology

Brunsvigia elandsmontana is named to honour the Elandsberg Private Nature Reserve, which apart from protecting the endangered geometric tortoise, *Psammobates geometricus* (L.), is home to many rare plant species. Some of the vulnerable or endangered plants protected here are *Aristea lugens*, *Haemanthus pumilio*, *Lachenalia polyphylla*, *Lampranthus scaber*, *Moraea villosa* subsp. *elandsmontana*, *Oxalis natans*, *Protea mucronifolia*, *Serruria candidans*, and *Watsonia dubia*.

Specimens examined

WESTERN CAPE—3319 (Worcester): Wellington, Elandsberg Private Nature Reserve, (–AC), Parker 141 (NBG); Parker sub NBG167399 (NBG); Snijman 1678 (NBG); Snijman 1731 (NBG, E, K, MO, PRE); Steyn A54 (NBG).

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