

Ornithoglossum pulchrum (Colchicaceae: Colchiceae), a new species from southern Namibia

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ABSTRACT

We describe a new species in the sub-Saharan genus *Ornithoglossum* Salisb. from southern Namibia. *Ornithoglossum pulchrum* from near Aus, is remarkable in having bright to dark pink flowers, a feature previously unknown in the genus. The perigone is almost concolorous apart from a contrasting, pale yellow nectary region, narrowly outlined with darker red, near the base of each tepal. The undulate leaves together with the long filaments, which are nearly as long as the tepals, suggest a relationship with *O. undulatum*, a widespread species in the western parts of southern Africa, and *O. zeyheri* from Namaqualand and the northwestern Cape.

INTRODUCTION

Ornithoglossum Salisb. is a small, sub-Saharan genus in the family Colchicaceae (Nordenstam 1998). All but one of the eight species recognized by Nordenstam (1982) are concentrated in the western half of southern Africa, mostly in the winter rainfall region. Only *O. vulgare* B.Nord. is found in southern Africa's eastern parts and as far north as East Africa. Previously the genus was placed in the tribe Iphigenieae (Buxbaum 1936), but in a new classification, based on an analysis of molecular data of the family, the genus now falls within the tribe Colchiceae, together with *Colchicum* L., *Gloriosa* L., *Hexacyrtis* Dinter and *Sandersonia* Hook. (Vinnersten & Manning 2007).

Considering its small size, the genus shows remarkable diversity in floral morphology. The perianth is actinomorphic or zygomorphic in form and coloured cream to attractive yellow, green, brown or purple, sometimes almost black, and often bicoloured. In species such as *Ornithoglossum undulatum* Sweet, the flowers are large, showy and sweetly scented, but in *O. parviflorum* B.Nord. they are small, inconspicuous, dull and unscented (Manning *et al.* 2002). Other variable features are the shape of the nectaries on the basal part of the tepals and the length and thickness of the filaments. Several micromorphological differences in the pollen and seeds also help to distinguish groups of species. All the species are reported to be highly toxic to stock due to their colchicine-type alkaloids, which accounts for their common name 'slangkop' (Watt & Breyer-Brandwijk 1962).

While collecting material for a photographic guide to the wildflowers of the southern Namib, the third author found an unusual population of *Ornithoglossum* near the small town of Aus, Namibia, in which the flowers were

deep pink to crimson and almost concolorous except for a pale yellow patch towards the base of each tepal. Due to their undulate leaves, the plants were initially thought to be *O. undulatum* (Mannheimer *et al.* 2008), a species that has been recorded previously from southern Namibia (Nordenstam 1982). Subsequent examination of these specimens, however, has revealed further distinguishing characters, which together with the unique flower colour, justify the description of the plants as a new species of *Ornithoglossum*.

***Ornithoglossum pulchrum* Snijman, B.Nord. & Mannheimer, sp. nov.**

Cormus ovoideus, brevilobus. Caulis simplex gracilis ad ± 110 mm altus. Folia 4–7, lanceolata margine conspicue crispato-undulato. Racemus 3–10-florus ad 40–80 mm longus. Perianthium actinomorphy, segmentis 27–32 \times 4–5 mm, roseis vel rubineis, luteolis prope basim. Nectarii margo simplex. Filamenta plerumque longitudine tepala aequantia. Antherae 2.5 \times 0.5 mm. Styli ± 25 mm longi.

TYPE.—Namibia: 2616 (Aus): riverbed, western extent of Aus town lands, 1 386 m, (–CA), 22 Jun. 2005, C.A. Mannheimer CM2710 (WIND, holo.).

Glabrous, cormous herb. *Corm* ovoid, $\pm 45 \times 30$ mm, shallowly bilobed at base with lobes directed downwards, interior firm, whitish; tunics leathery, dark brown, extended into a slender neck up to 80 mm long, sheathing subterranean portion of stem, inner tunics rust-coloured. *Cataphyll* apparently absent. *Stem* erect, simple, subterranean part slender, up to ± 110 mm long, as long as leafy aerial portion, terminated by a bracteate, racemose inflorescence. *Leaves* alternate, 4–7, lanceolate from sheathing base, recurved, 10–180 \times 8–15 mm, broadest at base, tapering distally to a narrow, mucronate tip, \pm conduplicate, glaucous, margins undulate, often crisped. *Inflorescence* a compact, 3–10-flowered raceme, 40–80 mm long and clustered among upper leaves; bracts leaf-like, narrowly lanceolate, successively smaller acropetally, 30–50 \times 4–6 mm, as long as or slightly longer than pedicels, glaucous tinged pinkish, margins plane. *Flowers* suberect to spreading on

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FIGURE 1.—*Ornithoglossum pulchrum*. A, plant in habitat showing sheathing, undulate leaves and compact inflorescence; B, detail of campanulate flower showing long stamens and six large, concave nectaries each with a simple margin near base of tepals. Photographs: C. Mannheimer.

erecto-patent pedicels 20–35 mm long, actinomorphic, \pm widely campanulate, \pm 40 mm diam.; tepals equally spreading, $27\text{--}32 \times 4\text{--}5$ mm, claw tubular-flattened, $\pm 4.0 \times 1.5$ mm, blade lanceolate, faintly 7–9-veined, slightly canaliculate, bright to dark pink, with a pale yellow nectary region narrowly outlined with darker red, becoming paler with age; nectary concave, wide-mouthed, ventral margin simple. *Stamens* slightly spreading; filaments straight, slightly curved distally, \pm filiform but slightly thickened in proximal half, 25–28 mm long, uniformly dark pink; anthers oblong, 2.5×0.5 mm, slightly curved, dull yellow. *Ovary* oblong-globose, 5.0×3.5 mm, dark pink; styles free from base, spreading, straight proximally, slightly curved distally, \pm 25 mm long, dark pink; stigma capitate, minutely papillate. *Capsule* elliptical-oblong, shortly and bluntly lobed, 7×4 mm (when immature but not known when mature), erect, coriaceous. *Seeds* unknown. *Flowering time*: June to early Aug. Figures 1; 2.

Distribution and ecology: *Ornithoglossum pulchrum* is currently known from just one locality in the pro-Namib, a broad, undulating plain in southern Namibia (Figure 3). The species has been recorded in ephemeral watercourses from the uplands near Aus, which lie just below the inland escarpment, at approximately 1 380 m. The plants grow in coarse gravel, close to gneiss outcrops of the Namaqua Metamorphic Complex. Lying on the border of the winter and summer rainfall zones, Aus has bimodal rainfall, averaging 85 mm per year. Most rain falls in late summer (January to April) with a second, lower peak in June (Pallett 1995). Precipitation also occurs in the form of occasional fog which moves in from the coast, as well as rare snowfalls. Winds in the region are a powerful climatic force which can severely limit plant growth. Like most other *Ornithoglossum* species from southern Africa's winter rainfall region, *O. pulchrum* flowers in winter, usually from mid to late June into August.



FIGURE 2.—*Ornithoglossum pulchrum*. A, type specimen, Mannheimer CM2710 (WIND); B, specimen on left shows shallowly bilobed corm, specimen on right shows undulate, crispulate-edged leaves and young, upright capsules, Mannheimer CM4004a (WIND). Scale bars: A, B, 100 mm.

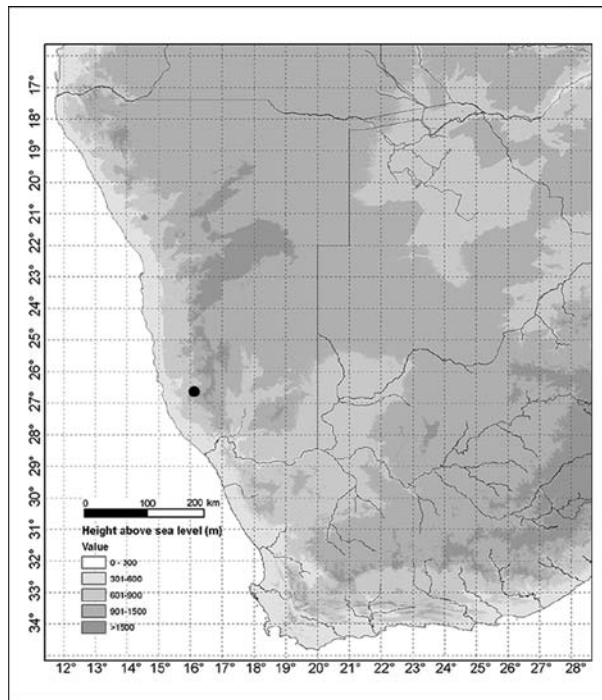


FIGURE 3.—Known distribution of *Ornithoglossum pulchrum*.

Diagnosis and relationships: *Ornithoglossum pulchrum* is distinguished by its flowers, which are suberect to spreading in a compact raceme that barely exceeds the leaves, and in which the \pm filiform filaments are almost as long as the tepals. The flowers are easily distinguishable from those of other *Ornithoglossum* species by their bright to dark pink colour (47C, 48C in R.H.S Colour Chart 1966). This colouring is almost unbroken apart from a pale yellow patch, narrowly outlined with dark red, near the base of each tepal in the region of the nectary. *O. pulchrum* shares the character of undulate, crispulate-edged leaves with four other taxa in the genus, viz. *O. undulatum*, *O. gracile* B.Nord. and *O. zeyheri* B.Nord., and also *O. parviflorum* var. *namaquense* B.Nord. Compared with the floral characters, however, this vegetative feature is of less taxonomic importance, as quite plane-edged leaves are known in some populations of *O. undulatum* (Nordenstam 1979, 1982). Nevertheless, the undulate leaves together with the long filaments, which nearly equal the length of the tepals, suggest a relationship with both *O. undulatum*, a widespread species in the western parts of southern Africa, and *O. zeyheri* which is confined to Namaqualand between the Steinkopf region and the lower Olifants River Valley. *O. undulatum* differs from *O. pulchrum* in its markedly asymmetric flowers in which one or two tepals point downwards and the other tepals flare upwards at anthesis. These are slightly smaller than those of *O. pulchrum* (16–30 \times 2–5 mm vs 27–32 \times 4–5 mm) and are bicoloured, white in the centre with reddish purple tips. In contrast, the flowers of *O. pulchrum* are actinomorphic and campanulate, features that are shared with *O. zeyheri*. Unlike *O. pulchrum*, however, this species has few and inconspicuous flowers which are typically produced in May, with tepals that are short and narrow (12–15 \times 1–3 mm) and coloured pale greenish with a purplish tinge towards the base and tip. The regular symmetry of the flowers of *O. pulchrum* prevent possible confusion

with any other species from southern Namibia even in the early fruiting stages, since its withered tepals remain evenly spread around the developing suberect to spreading capsule, unlike those of *O. undulatum* which are distinctly reflexed from a markedly down-turned capsule. Both *O. zeyheri* and *O. undulatum* share a simple-margined nectary with *O. pulchrum*, although this feature is variable in *O. undulatum*, sometimes taking the form of an entire or bifid lobe.

Ornithoglossum pulchrum has only been collected twice so far, once when in flower and again in the early stages of fruiting. As yet, mature fruits and seeds are not available for comparison with other species.

Species from other families that are narrowly endemic to the Aus area are *Moraea graniticola* Goldblatt (Iridaceae) and *Oxalis ausensis* R.Knuth. (Oxalidaceae), both geophytic herbs, and the succulent shrub *Juttadinteria ausensis* (L.Bolus) Schwantes (Aizoaceae). *M. graniticola* and *J. ausensis* flower only after winter rain and when temperatures begin to rise. *O. ausensis* is one of four autumn-flowering *Oxalis* species in the vicinity of Aus.

Other specimen seen

NAMIBIA.—2616 (Aus): Aus town lands, (–CA), 11 Sept. 2008, C.A.Mannheimer CM4004a (WIND).

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