Pelargonium uliginosum (Geraniaceae: section Hoarea), a new species from Western Cape, South Africa, and an updated key to the species of the P. dipetalum group

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ABSTRACT

The new species Pelargonium uliginosum is a local endemic of Breede River Alluvial Fynbos in the upper Breede River Valley, Western Cape, South Africa. One of the eight species of sect. Hoarea with only the posterior two petals developed, it is distinguished by its glabrous, bi- or tripinnatisect leaves with subulate ultimate segments each tipped with one or sometimes two setae. The new species is described and illustrated, and we include an updated key to the species of the Pelargonium dipetalum group.

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1. Introduction

Pelargonium L’Hérit. is a large, mainly African genus of ±250 species centred in southwestern South Africa (Vorster, 2012; Manning and Goldblatt, 2012a). The geophytic Sect. Hoarea (Sweet) DC., with ±85 spp., is a well-defined group characterised by its turnip- or carrot-shaped tubers with dark brown, peeling or flaking periderm, radical leaves, and highly condensed stem (Marais, 1994, 2014). Most species are ±hysteranthus, flowering in late spring and summer (Craib, 2001). The section is centred in the Cape Floristic Region (CFR), where over 50 species are recorded, many of them local endemics (Manning and Goldblatt, 2012a).

Sect. Hoarea was monographed relatively recently by Marais (1994) and several additional species have since been described (Marais, 2014; Manning and Goldblatt, 2011, 2012b). Vegetative and floral morphology in the section is extremely diverse but one of the most distinctive groups in the section is the Pelargonium dipetalum group, diagnosed by the reduction of the perianth to just the two posterior (upper) petals (Manning and Goldblatt, 2011). The group currently includes seven species, amongst them two recently described novelties from near Tulbagh in Western Cape, Pelargonium elandsmontanum J.C.Manning & Goldblatt from alluvial flats at the foot of the Elandskloofberge north of Wellington (Manning and Goldblatt, 2011) and Pelargonium saxatile J.C.Manning & Goldblatt from the top of the same mountain range (Manning and Goldblatt, 2012b). Here we describe a third locally endemic species from the upper Breede River Valley, Pelargonium uliginosum J.C.Manning & D.I.W.Euston-Brown from alluvial flats in the Slangoek Valley northwest of Worcester, bringing to eight the number of species in the group. It is distinctive in its glabrous, bi- or tripinnatisect leaves with subulate ultimate segments.

2. Materials and methods

The description and illustration were prepared from fresh material. The examination of herbarium collections at BOL, NBC, PRE and SAM, failed to reveal additional collections (herbarium acronyms after Holmgren et al., 1990).
3.3. P. uliginosum J.C. Manning & D.I. W. Euston-Brown, new species. Type: 
7b Leaves many, prostrate and forming rosette, blade orbicular to 
7a Leaves few, suberect, blade elliptic, simple or irregularly pinnatisect 
6b Leaves ± pubescent, simple or blades irregularly pinnatisect or 
6a Leaves (including petiole) glabrous, blades bipinnatisect or 
5b Leaf blade cordate, glabrous above but densely grey-matted beneath 
5a Leaf blade lanceolate or elliptic, silky, especially on lower surface, 
4fynbos, (Farm Driefontein, near SW boundary on S side of Breede River in alluvial 
3.1. Identification key to the P. dipetalum group of species (adapted from 
Manning and Goldblatt, 2012b) 
2b Leaves ± simple, entire or variously incised: 
2a Leaves trifoliolate: 
3.2. Diagnosis and relationships 
The retrorseley scabrid-papillate staminal column and perianth with only the upper two petals developed (Fig. 3) place Pelargonium uliginosum in the small group of species centred around P. dipetalum LHérit. (Marais, 1994). Within the group, P. uliginosum is distinguished by its 2- to 4-pinnatisect leaves with subulate ultimate segments 4–9 × 0.5–1.0 mm. The ultimate segments are conspicuously aristate, with 1 or 2 apical setae 1.5–2.0 mm long but the leaf blades and petals are otherwise entirely glabrous. The subclavate hairs on the scape are also distinctive. The flowers are unremarkable in the group, with a hypynanthium 10–12 mm long, pink petals feathered with red, and five fertile stamens.
might only be confused with pink-flowered forms of *P. dipetalum* with bipinnatisect leaves but this species of the southern Cape coastal plain between Betty’s Bay and Keurbooms river (Marais, 1994) has fewer leaves (up to five per plant) with the petiole and blade ± densely hirsute, either simple or with laciniate terminal segments 1–3 mm wide. The leaf segments are strongly appressed-ciliate on the margins, lack an evident apical seta, and the patent hairs on the scapes are acute and not subclavate as in *P. uliginosum*. Flowering in *P. dipetalum* takes place from December to May, and the two species are thus separated geographically, ecologically and temporally.

The glabrous, finely bipinnatisect, carrot-like leaves of *P. uliginosum*, about twice as long as wide, are highly distinctive in the section. They bear a striking superficial similarity to the leaves of *Pelargonium rapaceum*, one of the few members of sect. *Horaea* that can be identified with absolute certainty from its foliage alone but the leaves of *P. rapaceum* are conspicuously hirsute. *P. rapaceum*, which is widespread through the Greater Cape Floristic Region and taxonomically isolated in the section, is unique in the genus in its papilionaceous flowers, with reflexed upper petals and conduplicate lower petal covered by the lateral petals.

### 3.2.3. Conservation notes

The species is known from a single population less than 500 m² in extent, numbering over one hundred plants. Suitable habitats around the site have been converted to vineyards and the present site is being utilized for grazing and is being invaded by the alien tree species *Acacia mearnsii* De Wild, *A. saligna* (Labill.) H.L.Wendl. and *Hakea sericea*

![Fig. 1. Pelargonium uliginosum, D. Euston-Brown 3523 (NBG). A, flowering plant; B, detail of ultimate leaf segments showing apical setae; C, detail of scape vestiture; D, detail of peduncle vestiture; E, petals; F, androecium; G, gynoecium. Scale bar: A, 10 mm; B, E–G, 5 mm; C, D, 3 mm. Artist: John C. Manning.](image1)

![Fig. 2. Pelargonium uliginosum in habitat. Photographer: Douglas Euston-Brown.](image2)

![Fig. 3. Pelargonium uliginosum flowers. Photographer: Douglas Euston-Brown.](image3)
Schrad. & J.C. Wendl. The species is thus not only under threat at the only known locality but its range has almost certainly already been reduced by agriculture. Further to this, the species appears to be associated with damper soils that dry out relatively slowly in summer, and drainage of adjacent vineyards and thickening stands of alien vegetation are certain to impact negatively on the natural drainage patterns at the site. We therefore recommend a conservation status of Critically Endangered.

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References