

A new small-flowered *Pelargonium* species (Geraniaceae) from the Western Cape Province, South Africa

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A new small-flowered annual from the Western Cape Province in South Africa, *Pelargonium buysii* Hellbrügge, is described. It is a typical representative of *Pelargonium* L'Hérit sect. *Peristera* DC. *P. buysii* is probably closely related to *P. columbinum* Jacq.

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Introduction

In the last revision of the genus *Pelargonium*, Knuth (1912) recognized 15 sections. One of these, sect. *Peristera* DC., accommodates small-flowered, small-fruited herbs with sprawling/procumbent habits. It exhibits annuals or perennials, in the latter case with annual exposed stems. The reproductive behaviour of the species is allogamous or autogamous, although both forms occur within one species (Hellbrügge unpubl.). The above concept of the section is applicable to the more or less 25 *Peristera* species occurring in Africa, including *P. buysii* Hellbrügge. Problems arise, however, when the six disjunct Australian *Peristera* species are included. In these species, the flowers as well as the whole plants are much larger than in the South African species (Carolin 1961).

In this study, a new species is described that is probably closely related to *P. columbinum* Jacq.

Pelargonium buysii Hellbrügge sp. nov.

Simile est *Pelargonio columbino* Jacq., tamen synflorescentiae prostratae sunt, perviridibus usque ad subviridibus foliis, serico, similibus, palmatisect-partite usque ad pinnatisect-partite. Flores et fructus minores sunt, antherae tres vel quattuor, stigma albida est.

TYPUS.— South Africa, Western Cape, 3319 (Worcester), Koo, Rooihogte Pass (–DB), 1 150 m, 29 Oct. 1994, Hellbrügge & Buys 881 (PRE, holo; MSUN, iso).

Rosette annual herb, well-branched in prostrate synflorescence axis, up to 100 mm tall, 500 mm diameter, herbaceous, indumentum with short (25 µm) and long (60 µm) glandular hairs, with long erect non-glandular hairs (150–200 µm) interspersed, aromatic. Roots fibrous. Leaves simple, cordiform in outline, base truncate, apex obtuse to rounded, palmatifid-palmatisect, margins of segments irregularly deeply lobed, adaxially short glandular hairs and sometimes long hairs interspersed, abaxially additional long hairs on margins and veins, membranous, dark green, 15–40 × 12–35 mm. Petiole 30–70 mm long, 1 mm in diameter, light to dark green. Stipules triangular, light to dark green, 3–6 × 3 mm, ciliate. Synflorescence axis up to 500 mm long, prostrate, light to dark green. Internodes 15–90 mm long, 1–5 mm in diameter. Inflorescence bracts trifoliolate, cordiform in outline, base truncate-cordate, apex obtuse-acute, lobed, palmatisect-partite to pinnatisect-partite, margins deeply crenate to lobed, 10–30 × 10–25 mm; petiole 5–60 mm long; stipules triangular, light green, 3–4 × 2 mm, ciliate. Inflorescence umbelliform, 2–4(–5)-flowered, presented on unbranched lateral

peduncles, 11–60 mm long. Flower bracts small triangular, small (3 × 1 mm), ciliate. Pedicel filiforme, 4–18 mm long, elongating in fruiting stage. Hypanthium 0.5–1.5 mm long during flowering stage, up to 2 mm long during fruiting stage, covered with short and long glandular hairs, sparsely interspersed with short and long hairs. Sepals triangular, 2.5–4 × 0.8–1.5 mm, elongating to 4.5–5 mm during fruiting stage, light to dark green, margins hyaline, indumentum as on hypanthium. Petals 5, dark pink, occasionally with purplish markings, posterior petals 2, narrowly lanceolate, apex obtuse, 4 × 1 mm, reflexed to at most 90°, anterior petals 3, narrowly lanceolate, apex acute to obtuse, base long narrow claws, 3–3.5 × 0.8 mm, gradually recurved through 45°. Fertile stamens 3–4, equal in length, 2.5–3 mm long; pollen yellow-orange. Pollen grains oblate (50 × 40 µm), tricolporate, nexine and sexine distinguishable in exine, sexine consists of columellae and tectum, tectum striate-reticulate. Gynoecium 2.8–3 mm long, stigma with 5 recurved branches, white. Mericarp base 2–2.8 mm long, apically sparsely covered with long hairs, awn 16–18 mm long, distance between base and awn-screws 2.3 mm long, screws 5–6 × twisted. Seed 1.8 × 0.7 mm, dark brown. Chromosome number 2n = 22 (vouchers: Van der Walt 1628; Hellbrügge & Buys 881). (Figures 1 & 2).

Distribution and ecology

Western Cape Province, South Africa (Figure 3). *P. buysii* occurs in open, often-disturbed areas or along streams or river banks in fynbos. It prefers moist or at least well-drained locations, growing in sand or loamy sand soil. It occurs at an altitude ranging from 670 to 1 150 m. The peak flowering time is from September to April. The reproductive regime is autogamous.

This species is named after Matt Buys, University of Stellenbosch, who accompanied the first author on several field trips, on one of which the new species was collected.

Discussion

Since Jacquin's (1797) description of *Pelargonium columbinum*, all resembling specimens were included in this species. This resulted in *P. columbinum* being regarded as a species with a high morphological variability. However, although closely related to *P. columbinum*, *P. buysii* is a distinct species. Although both exhibit a rosulate growth form, *P. buysii* is more compact, prostrate and richly leaved. The flower-bearing stems of *P. buysii* are prostrate whereas those of *P. columbinum* are almost erect. Furthermore, the leaves and bracts of *P. buysii* are thinner and more incised. The two species also differ in flower and fruit sizes: the

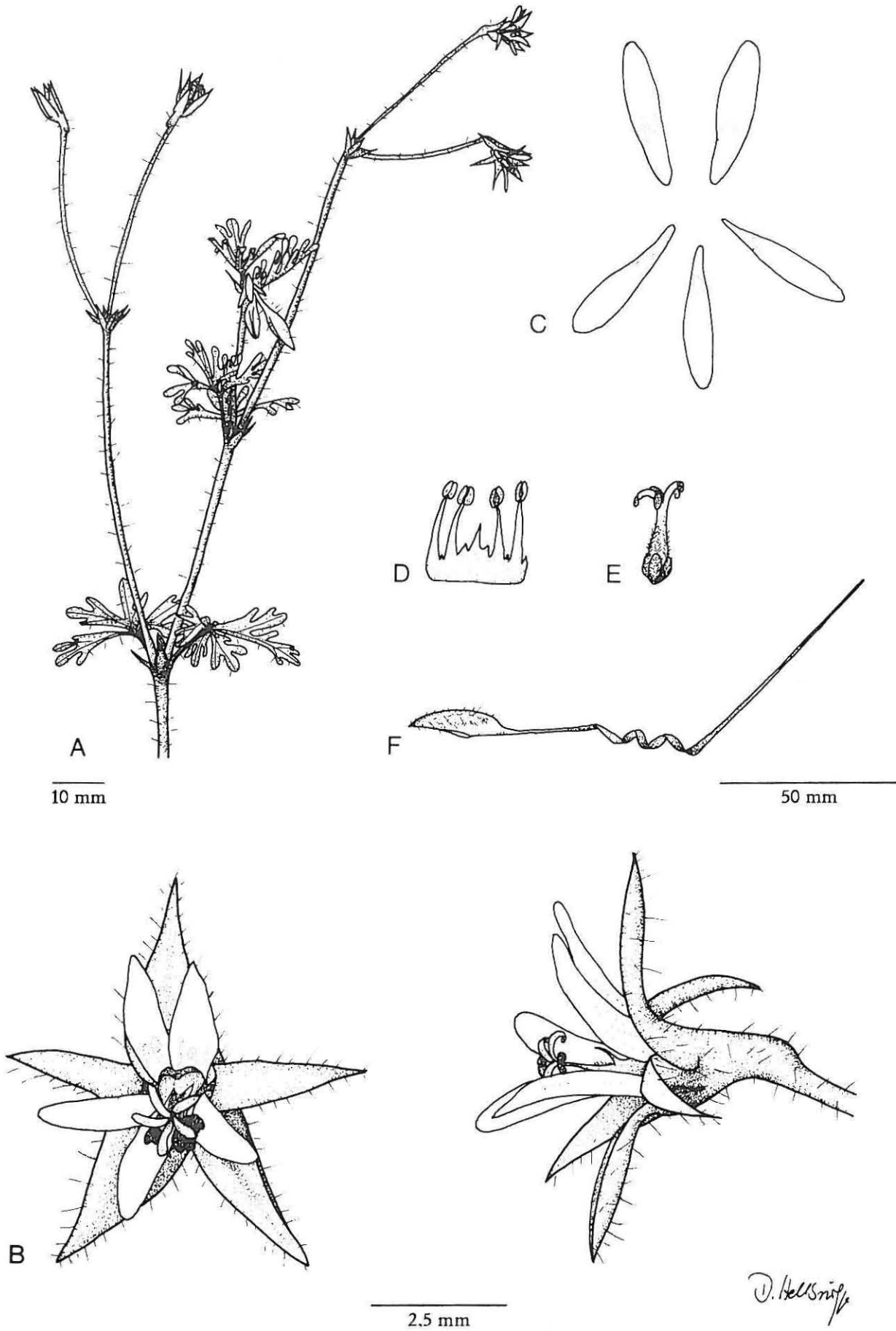


Figure 1 *Pelargonium buysii* Hellbrügge. A. Part of synflorescence; B. flowers; C. petals; D. androecium; E. gynoecium; F. mericarp (from Van der Walt 1628).

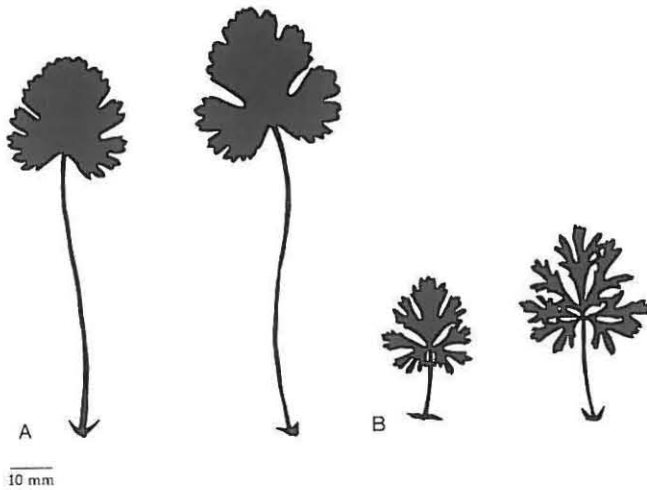


Figure 2 *Pelargonium buysii* Hellbrügge. A. Leaves; B. inflorescence bracts (from Van der Walt 1628).

purple and well-developed hypanthium of *P. columbinum* is 1.5–4(–6) mm long, the petals (6–7 × 1.5–2 mm) are distinctly longer than the sepals, and the androecium and gynoecium are up to 4.5 mm long. In contrast, the hypanthium of *P. buysii* is only 0.5–1.5 mm long, and the petals (3–4 × 0.8–1 mm) do not overtop the sepals. The androecium and gynoecium are also smaller in sizes (2.5–3 mm). Finally, *P. buysii* is characterized by the white stigma branches, which are in strong contrast to the purple ones of *P. columbinum*.

P. buysii (Van der Walt 1628) and *P. columbinum* (Albers 2156) have the same chromosome number ($2n = 22$) and a similar karyotype length, but artificial cross pollination was undertaken without success, although successful hybridization attempts between different species of *Pelargonium* do occur (Albers *et al.* 1992).

These two autogamous annuals are predominantly sympatrically distributed in the Western Cape and show similar demands to the habitats (van der Walt & Vorster 1988). Nevertheless, *P. columbinum* is more common and can also be found at higher altitudes (200–1 900 m).

Specimens examined

Western Cape Province:

—Drége 7464 (MO; E),

—Friburg, 1849, *Braun s.n.* (MO).

—3119 (Calvinia): Boklandskloof (–AA), 670 m, 11 Oct. 1958, *Acock 19733* (PRE).

—3318 (Cape Town): Bothmaskop, near Rozendal (–DD), 30 March 1976, *Van der Walt 528* (STEU).

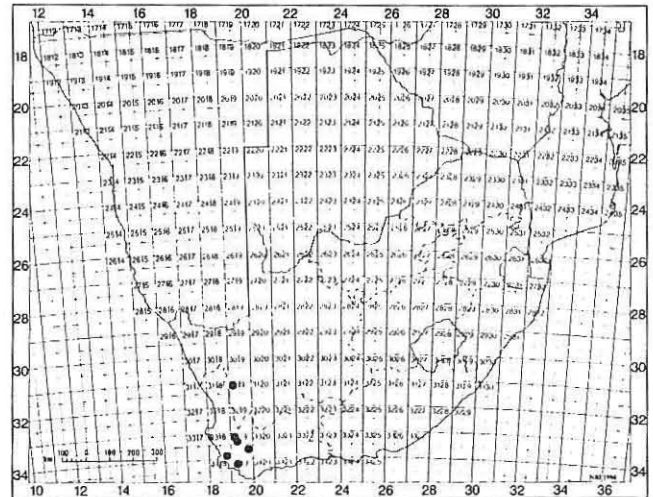


Figure 3 Distribution of *Pelargonium buysii* Hellbrügge.

—3319 (Worcester): Groot Winterhoek (–AA), 24 Oct. 1979, *Van der Walt 1082* (STEU); Prince Alfred Hamlet, along railway line (–AD), 13 Nov. 1979, *Marais 38, Fischer 339* (STEU); Koo, Rooihooft Pass (–DB), 1 150 m, 29 Oct. 1994, *Hellbrügge & Buys 881* (MSUN); Koo Valley, Farm Concordia (–DB) 975 m, 7 Dec. 1992, *Van der Walt 1628* (STEU).

—3419 (Caledon): Botanic Garden (–AB), 18 Sept. 1977, *Van der Walt 804* (STEU).

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