

## OROBANCHACEAE

### A NEW SPECIES OF *HARVEYA* FROM WESTERN CAPE, SOUTH AFRICA

The hemi- or holoparasitic genera of Scrophulariaceae *sensu lato*, in which the upper lip of the corolla is fully or partially enclosed by the lower in bud, are now recognized to comprise the family Orobanchaceae (Angiosperm Phylogeny Group 1998). Among the four holoparasitic genera of Orobanchaceae that are regarded as native in southern Africa, the genus *Harveya* Hook. is distinguished by its large, brightly coloured and often attractive flowers with a 5-lobed,  $\pm$  bilabiate corolla. The well-developed corolla tube is straight or slightly curved and the anthers, with one exception, are 2-thecous with one theca reduced in size and sterile. Currently 40 species of *Harveya* are recognized from Africa and the Mascarenes (Smithies 2000), with  $\pm$  25 species from southern Africa, but the genus is urgently in need of revision. The South African species were last treated by Hiern (1904), who recognized 21 species from the subcontinent, 14 of them from the Cape Floral Region. The description of three additional species from KwaZulu-Natal by Hilliard & Burt (1986) increased the number to the current total. It was evident to Goldblatt & Manning (2000), however, that several of the species from the Cape Floral Region were of dubious status. In their account of the genus they admitted just nine species from the region. This treatment has recently been supported by Randle (2004).

Among the undetermined collections at the Compton Herbarium was a specimen from the Little Karoo, determined as *H. hyobanchoides* Schltr. ex Hiern, but the accompanying colour notes indicated the anomalous colour combination of white flowers among red floral bracts. A recent colour photograph from a second population of plants sent to the herbarium alerted us to the likelihood that this taxon represented an undescribed species and an expedition was mounted to the original locality to collect fresh material. This confirmed that the plant was distinct and we name it *Harveya roseoalba*.

***Harveya roseoalba* J.C.Manning & Goldblatt, sp. nov.**

TYPE.—Western Cape, 3321 (Ladismith): Gamkaberg Nature Reserve, (–BD), stony slopes at 910 m, 24 September 2004, P. Goldblatt & J.H.J. Vlok 12547 (NBG, holo.; E, K, MO, PRE, iso.).

Plantae holoparasiticae 100–180 mm altae, partibus omnibus, praeter corollam, roseis ad carmineis, dense viscido-villosis vel lanatis, inflorescentia spica congesta vel racemus spiciformis, bracteis obovato-rhomboides 15–25  $\times$  10–15 mm, adaxialiter glabris, calyce

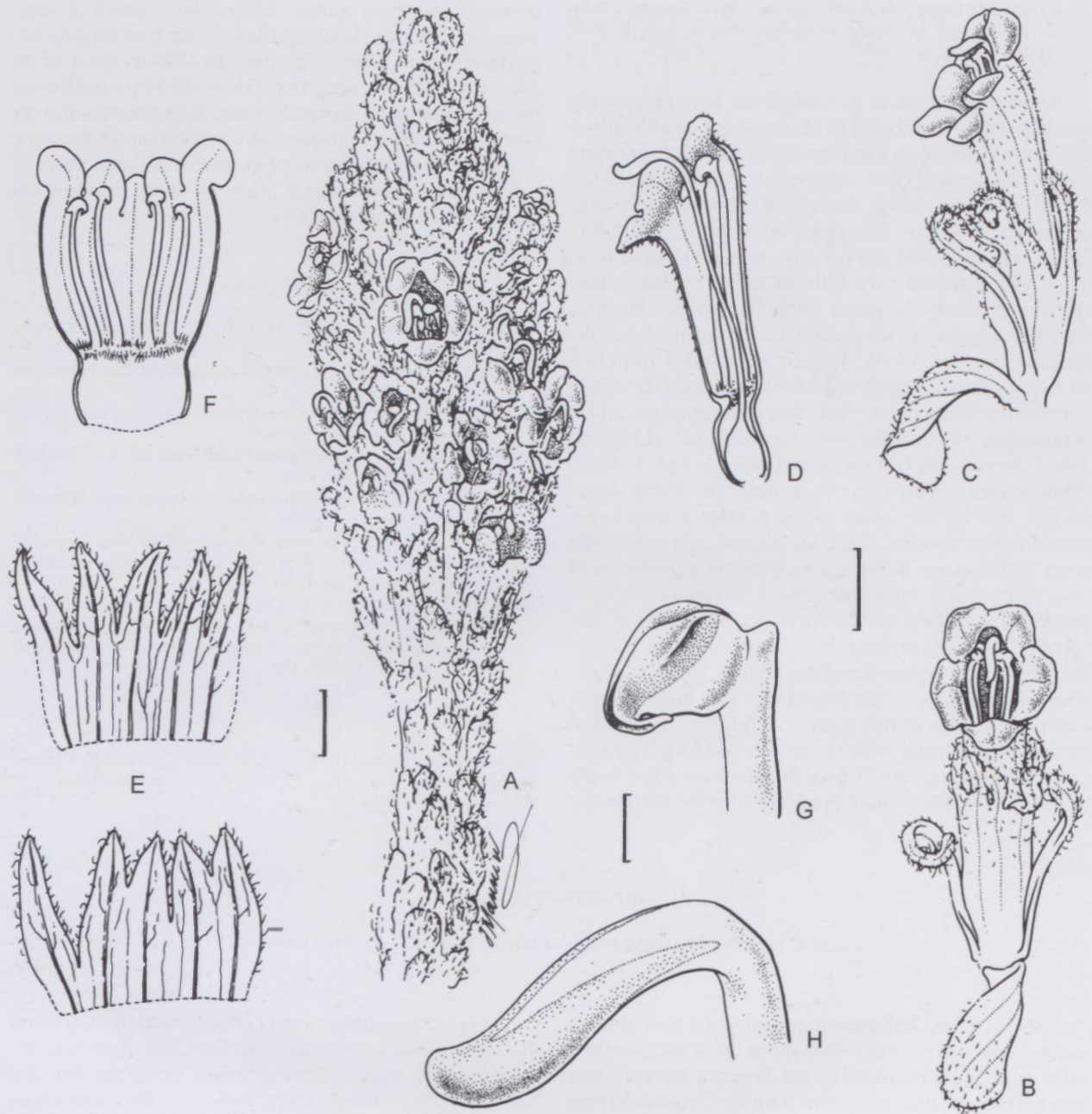


FIGURE 12.—*Harveya roseoalba*, Goldblatt & Vlok 12547. A, whole plant. B–D, flower: B, front view; C, side view; D, l/s. E, calyces from two different flowers laid out; F, corolla laid out; G, anther; H, stigma. Scale bars: A–F, 10 mm; G, H, 1 mm. Artist: John Manning.

campanulato, 25–30 × ± 10 mm, glabrescenti ad basem, adaxialiter glabrato, ± aequilobato usque ad medium, sepalis deltoideis ad linearo-lanceolatis vel bilabiatis, sepalo posteriore longissimo; tubo corollae pallide viride, anguste et oblique campanulato, 38–40 mm longo, circa 10 mm supra basin constricto, interne glabrato praeter anulum setarum ad partem constrictum, petalis 5(6–7) albis sub anthesi, postea erubescens, subaequalibus, patentibus, suborbicularibus, 5–6 × 5–6 mm; staminibus subdidynamis, in quarta parte inferiore tubi corollae ad anulum setarum insertis, antheris glabris theca fertili una ± 2.5 mm longa, subulata, ad basem uncinata et theca sterili ad lobum perparvum deminata; stigmate valde decurvato, oblongo, 5 × 1 mm.

Plants holoparasitic, 100–180 mm high, all parts deep pink to carmine red except corolla, densely viscid-villous or -lanate. *Stem* fleshy, simple, 15–25 mm diam.; caudal

scales imbricate, reduced below, grading into floral bracts above, concave, lower scales transversely obovate, upper scales obovate, 5–15 × 5–9 mm. *Inflorescence* a dense spike or spike-like raceme of 25–50 flowers, all subsessile or lowermost shortly pedicellate with pedicels up to 5 mm long; bracts sessile, adpressed, obovate-rhomboidal, concave, 15–25 × 10–15 mm, fleshy, densely villous abaxially, glabrous adaxially; bracteoles arising from base of calyx or on pedicel if present, opposite, linear-oblongate, 20–25 × 3–4 mm, canaliculate, densely villous abaxially, glabrous adaxially. *Calyx* campanulate, 25–30 × ± 10 mm, densely villous adaxially above but glabrescent towards base, glabrous abaxially, variously lobed, varying from ± equally lobed for up to halfway with all lobes deltoid or lanceolate to linear-lanceolate, 7–10 × 2–4 mm, or bilabiate with anterior lip comprising four lobes divided for quarter to halfway and a single posterior lobe divided from anterior lip for three

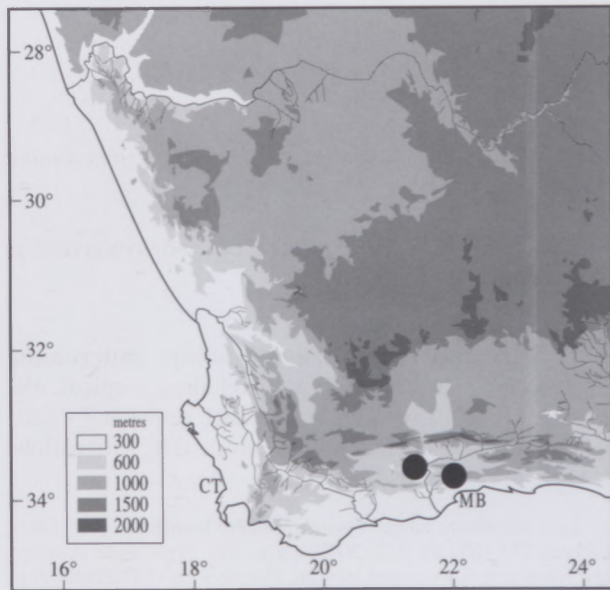


FIGURE 13.—Distribution of *Harveya rosealba*.

quarters. *Corolla*: tube pale greenish, narrowly and obliquely funnel-shaped,  $\pm$  straight or slightly curved at mouth, 38–40 mm long dorsally and 25–30 mm long ventrally, 5–6 mm diam. at base, constricted  $\pm$  10 mm from base and then gradually expanded to apex, mouth oblique, 8–10 mm diam., pubescent in upper half but glabrescent below, glabrous internally with exception of dense ring of stiff hairs encircling tube at point of constriction; limb white in bud and at anthesis but later turning pink, 5(6 or 7)-lobed, usually bilabiate with 2-lobed upper lip and 3-lobed lower lip; lobes subequal, patent, suborbicular, 5–6  $\times$  5–6 mm, glandular-hairy on both sides with shorter hairs on adaxial surface. *Stamens* arising in lower quarter of corolla tube at constriction among ring of hairs, subdynamous, shorter anterior pair  $\pm$  20 mm long, posterior pair exceeding anterior by  $\pm$  1 mm, exerted for up to 4 mm; filaments linear, glabrous; anthers glabrous, 1-theous with sterile theca reduced to minute deltoid protrusion, fertile theca subulate-fusiform, hooked at apex and dehiscing from apical suture,  $\pm$  2.5 mm long. *Ovary* subglobose,  $\pm$  4 mm diam., glabrous; style exerted,  $\pm$  25 mm long, strongly decurved apically, glabrous; stigma oblong to slightly clavate, 5  $\times$  1 mm. *Fruit and seeds* unknown. *Flowering time*: September to October. Figure 12.

*Distribution and ecology*: *Harveya rosealba* appears to be a local endemic of the Gamkaberg and adjacent Attakwasberg in the central Little Karoo, south of Oudtshoorn (Figure 13). Recorded hosts are *Phyllica lanigera* (Rhamnaceae) and *Hermannia velutina* (Malvaceae).

*Diagnosis and relationships*: this distinctive species is readily recognized by its bicoloured, spiciform inflorescence in which the white or cream-coloured corollas of the fresh flowers contrast strongly with the deep pink to carmine bracts and calyces. With age the flowers turn pink and then blend in with the rest of the inflorescence. In general appearance the dense, reddish spike of *H. rosealba* recalls the genus *Hyobanche* L., with which it also shares a 1-lobed anterior calyx lip and 1-theous anthers. In *Hyobanche*, however, the corolla is  $\pm$  3-lobed, and there is no doubt that *H. rosealba* is appropriately

placed in *Harveya*.

*Harveya rosealba* is most similar to *H. hyobanchoides*, with which it shares a dense, spiciform inflorescence bearing narrowly funnel-shaped flowers with relatively small corolla lobes, stamens that arise in the lower quarter of the tube from a ring of stiff hairs, and an oblong stigma. In addition, the 1-lobed anterior calyx lip of *H. hyobanchoides* is sometimes evident in *H. rosealba*, although the latter species is rather variable in the division of the calyx. *Harveya rosealba* is also variable in the number of corolla lobes, which may number 6 or 7 in the upper flowers of some spikes. The two species are well-separated geographically, with *H. hyobanchoides* restricted to the southeastern seaboard, from Humansdorp to East London (Goldblatt & Manning 2000). *Harveya rosealba* is readily distinguished from *H. hyobanchoides* by its white, rather than yellow to yellow-green corolla, completely glabrous adaxial surfaces of the bracts, and by the truly 1-theous anthers in which the second theca is completely absent and represented merely by a minute bump on the connective. The only other species in the genus with 1-theous anthers, *H. speciosa* Bernh., is a very different plant from the Drakensberg of KwaZulu-Natal and Eastern Cape, in which the sterile theca has apparently been independently lost.

#### Other material examined

WESTERN CAPE.—3321 (Ladismith): Gamka Nature Reserve, (–DA), eastern slopes in clay soil, 14 September 1981, J.H.J. Vlok 312 (NBG); mountain west of Fouriesberg near Cloete's Pass, (–DD), September 2003, A. Mohl s.n. NBG195623 (photo.).

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J.C. MANNING\* and P. GOLDBLATT\*\*

\* Compton Herbarium, South African National Biodiversity Institute, Private Bag X7, 7735 Claremont, Cape Town.

\*\* B.A. Krukoff Curator of African Botany, Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166, USA.

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