

FABACEAE

A NEW SPECIES OF *XIPHOTHECA* FROM THE WESTERN CAPE, SOUTH AFRICA

Xiphotheca Eckl. & Zeyh. is a papilionaceous genus which belongs to the tribe Podalyrieae, together with *Amphithalea* Eckl. & Zeyh., *Liparia* L., *Podalyria* Lam., *Stirtonanthus* B.-E. van Wyk & A.L. Schutte, *Cyclopia* Vent., *Virgilia* Poir. and *Calpurnia* E. Mey. (Schutte & Van Wyk 1998).

In a taxonomic revision of the genus, Schutte (1997) recognized nine distinct species, all of which are endemic to the Cape Floristic Region of South Africa. Based on a cladistic analysis of morphological data, two sections were established within the genus: *Xiphotheca* sect. *Congestae* A.L. Schutte, comprising four species (all with congested, non-pedunculate inflorescence units and the lower calyx lobe longer than the lateral lobes) and *X.* sect. *Xiphotheca*, comprising five species (all with extended and pedunculate flowering units and the lower calyx lobe as long as the lateral lobes).

While doing field work during 2000 and 2001 as part of the Cape Lowland Project of the Botanical Society of South Africa, Nick Helme collected an odd specimen in the Overberg area. Follow-up field work confirmed that it is indeed an unknown species of *Xiphotheca*. This species is described below.

Xiphotheca rosmarinifolia A.L. Schutte, sp. nov., *X. phyllicoidi* A.L. Schutte & B.-E. van Wyk similis, sed foliis angustioribus, floribus minoribus, pedunculis, pedicellis bracteisque brevioribus differt.

TYPE.—Western Cape, 3420 (Bredasdorp): 33 km NE of Bredasdorp on Farm Plaatjieskraal 54; 0.6 km NW of farmhouse on road to Sonderkopskop, 240 m, (–AD), 1 Aug. 2001, N.A. Helme 2086 (NBG, holo.).

Erect, multi-stemmed shrub, up to 0.5 m tall, sprouting from woody rootstock after fire. *Branches* sericeous, glabrescent. *Leaves* alternate, simple, 10–16 × 1–2 mm, lamina linear, with strongly revolute margins, pubescent on adaxial surface, glabrescent, densely sericeous on abaxial surface, apex acute; petiole ± 1 mm long, sericeous; stipules inconspicuous. *Inflorescences* axillary, with paired (geminate) flowers, grouped into flowering units of up to 20 flowers; peduncle short, < 1 mm long, sericeous. *Bracts* linear, ± 1 mm long, fused at base with pedicel for 0.5 mm. *Pedicel* 3 mm long, sericeous. *Bracteoles* minute, situated at thickening on pedicel. *Corolla* yellow, fading brown with age, longer than calyx, glabrous. *Calyx* narrowed to base, not intrusive; lobes triangular, acuminate; upper two lobes fused higher up than lower three lobes; lower lobe as long as upper four lobes, pubescent. *Standard petal* suborbicular, apex emarginate, base cuneate. *Wing petals* oblong, longer than keel; auricle weakly developed, pocket developed as a thickened lobe towards inside, inconspicuous on outer surface. *Keel petals* oblong, pocket weakly developed, apex obtuse. *Stamens* diadelphous, vexillary filament free; anthers ± uniform in shape and size, alternately dorsifixed and sub-basifixed. *Ovary* with 2 or 3 ovules, densely sericeous; pistil sessile; style slender, curved upwards, glabrous. *Pods* coriaceous,

obliquely oblong, laterally compressed, constricted between seeds, 2- or 3-seeded, densely pubescent, glabrescent. *Seeds* oblong-reniform, brown to deep dark brown; hilum elliptic, surrounded by a fleshy collar-like aril. *Flowering time*: August (flowering after fire). Figure 7.

Diagnostic features and affinities: *Xiphotheca rosmarinifolia* falls within *X.* sect. *Xiphotheca*, owing to its characteristic pedunculate inflorescences, extended flowering units and the lower lobe of the calyx being as long as the lateral lobes. Within this section, it is closely related to *X. phyllicoides*—both species are sprouters and both have leaves with strongly revolute margins. However, *X. rosmarinifolia* differs from *X. phyllicoides* in the narrower and linear leaves, 1–2 mm wide, the shorter peduncle (< 1 mm long), bracts (± 1 mm long) and pedicel (3 mm long). In *X. phyllicoides* the leaves are 2.5–5.0 mm wide and elliptic, the peduncle is 1.5–2.5 mm long, the bracts are 3–4 mm long and the pedicel is 3.5–5.0 mm long. The two species are allopatric, with the latter recorded from three localities on the Outeniqua Mtns near Mossel Bay, whereas *X. rosmarinifolia* is known only from a single locality near Bredasdorp.

The specific epithet refers to the leaves that resemble those of the well-known herb, rosemary.

Distribution and habitat: the species is known only from the type locality on the Farm Plaatjieskraal near Bredasdorp (Figure 8), where it was discovered by Nick Helme in 2001. It grows in Renosterbos-Fynbos transitional vegetation in a very dry habitat on the northwestern slope of a silcrete hill in deep, pink, clayey soil with white quartz pebbles.

The type material was collected in flower during August 2001, following a fire in summer earlier that year. This species appears to flower only within the first year after a fire. Follow-up visits to the site during spring in subsequent years confirmed this observation.

Conservation: *Xiphotheca rosmarinifolia* appears to be a very restricted species, known from only a single location in the Lower Breede River Valley. Despite additional field work in the area, no more populations could be found. This species is seriously threatened because it grows in an area of high agricultural potential that could be ploughed in future. In addition, the area is subject to inappropriate fire management and grazing by livestock. Less than 200 mature individuals are known. Hence the species is listed as Critically Endangered (CR) in Raimondo *et al.* (2009).

According to Mucina & Rutherford (2006) the vegetation type in the area is classified as Eastern Rûens Shale Renosterfeld, which is classified as Critically Endangered, since over 80 % of the original extent of this vegetation has been lost, mainly for cropland. The Farm Plaatjieskraal harbours one of the largest remaining patches of this vegetation type in the Overberg area. Several other threatened species have also been recorded from this site: *Acmadenia macropetala*

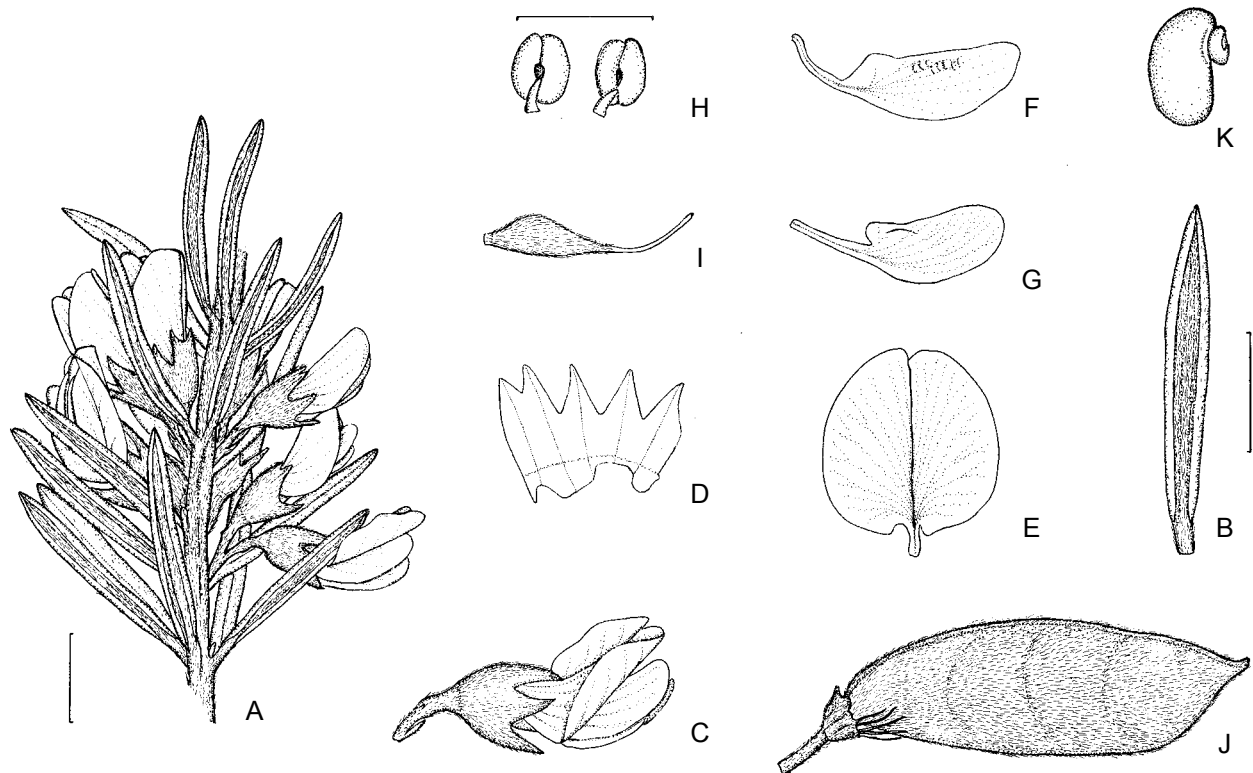


FIGURE 7.—*Xiphothea rosmarinifolia*. A–I, Helme 2086, NBG: A, flowering branch, showing arrangement of flowers; B, leaf abaxial view, showing revolute margins; C, flower in lateral view; D, calyx (upper lobes to left); E, standard petal, adaxial view; F, wing petal; G, keel petal; H, anthers; I, pistil. J, K, Vlok & Schutte 445, NBG: J, pod in lateral view; K, seed. Scale bars: A, J (at A), 5 mm; B–G, I, K (at B), 5 mm; H, 1 mm. Artist: A.L. Schutte-Vlok.

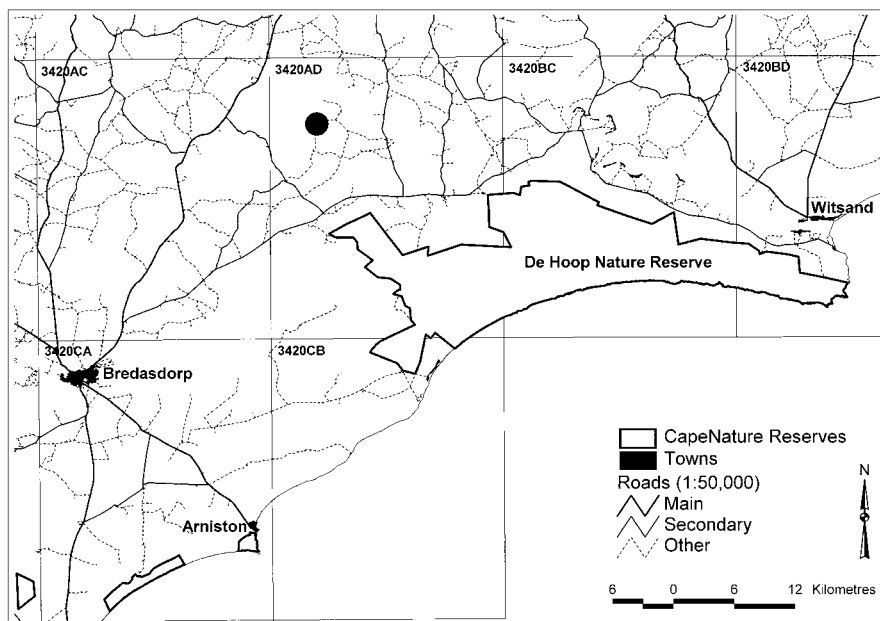


FIGURE 8.—Known distribution of *Xiphothea rosmarinifolia*, ●.

(VU = Vulnerable), *Acrodon deminutus* (VU), *Aspalathus grobleri* (EN = Endangered), *Brownanthus fraternus* (EN), *Drosanthemum quadratum* (EN), *Erica venustiflora* subsp. *glandulosa* (VU), *Gibbaeum haaglenii* (EN), *Leucadendron coriaceum* (EN) and *Relhania garnotii* (VU) (pers. obs.; N.A. Helme pers. comm.). The site is therefore of very high conservation significance and every effort should be made to secure this site under the Stewardship programme of CapeNature (Western Cape Nature Conservation Board).

Other material examined

WESTERN CAPE.—3420 (Bredasdorp): Farm Plaatjieskraal, NE of Bredasdorp, on silcrete hill NW of farmhouse on road to Sonderkopskop, (–AD), 09-09-2001, J.H.J. Vlok & A.L. Schutte 445 (NBG).

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