

Notes on African plants

VARIOUS AUTHORS

ERICACEAE

TWO NEW SPECIES OF *ERICA* FROM WESTERN CAPE, SOUTH AFRICA

Erica hansfordii E.G.H.Oliv., sp. nov., habitu gracili repenti, floresentibus floris singularis, floribus parvis pendulis, corolla flava laevi, sepalis latis ovatis, antheris muticis, ovulo singulari in quoque loculo dignoscenda.

TYPE.—Western Cape, 3319 (Worcester): Slanghoek Valley, Witelsrivier Farm, 900 ft [274 m], (–CC), 16

December 1997, *Oliver & Hansford 10999* (NBG, holo.; BM, BOL, E, G, K, MO, NY, P, PRE, S, W). Figure 1.

Shrublet diffuse, straggling amongst restiads, sometimes stouter up to 300 mm high in open areas, single-stemmed reseeder. *Branches*: a few thin intertwining main branches up to 300 mm long with internodes 4–10 mm long, numerous secondary branches 2–15 mm long,

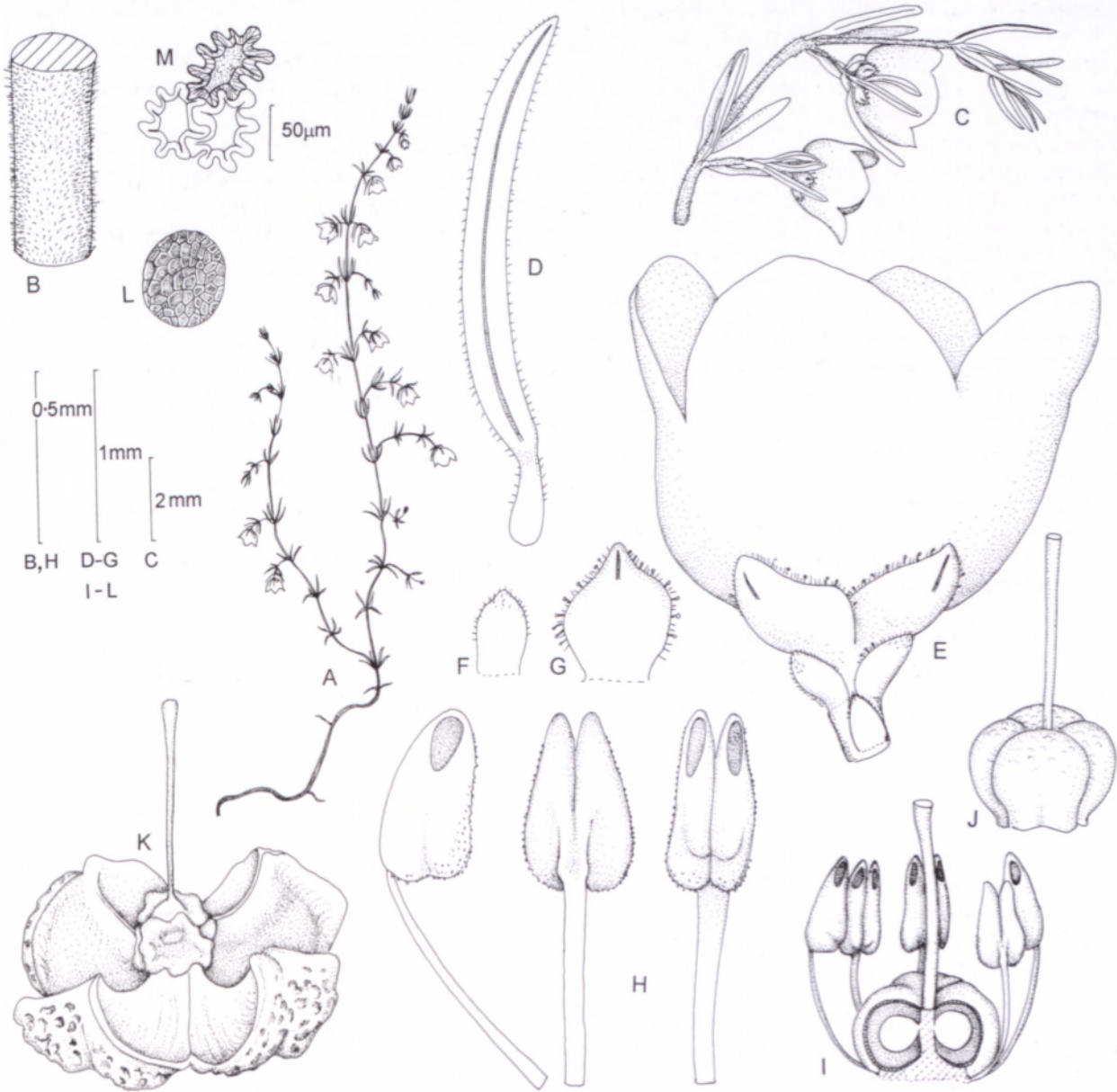


FIGURE 1.—*Erica hansfordii*. A, flowering branch; B, stem; C, flowering branchlet; D, leaf; E, flower; F, bract; G, sepal; H, anther, side, back and front views; I, stamens and gynoecium with ovary opened laterally; J, capsule; K, seed; L, seed; M, testa cells, with jigsawed inner anticlinal portion. All drawn from type, *Oliver & Hansford 10999*. A, $\times 1$. Scale bars: B, H, 0.5 mm; D–G, 1 mm; C, 2 mm. Drawings by Inge Oliver.

reflexed, 1(2) per node of main branch, bearing 1 apical inflorescence; all branches reddish brown with fine short spreading hairs. *Leaves* 4-nate, $\pm 3.5 \times 0.3$ mm, subspreading to spreading, slightly incurved to slightly recurved, acute, adaxially flattened, very sparsely and shortly hairy, abaxially rounded, glabrous and narrowly sulcate, margins rounded, sparsely ciliolate, sometimes with a few small sessile glands; petiole appressed, ± 0.6 mm long, sparsely ciliolate, yellowish. *Inflorescence*: a 1-flowered unit, terminal on secondary branches only, mostly pendulous; pedicel very short ± 0.6 mm long, glabrous to slightly hairy, yellowish green; bract basal, minute, 0.4×0.3 mm, oblong, rounded to subacute, lacking a sulcus, ciliolate, pale yellow to white; bracteoles 2, partially recaulescent, in middle position, otherwise like the bract. *Calyx* 4-partite; lobes slightly imbricate, 0.8×0.7 mm, ovate, subacute, glabrous, yellow, margins edged with a few short hairs and non-sticky gland-tipped hairs, very narrowly sulcate in upper $\frac{1}{4}$ to $\frac{1}{3}$. *Corolla* 4-lobed, $2.0\text{--}2.3 \times 2.5\text{--}2.8$ mm, broadly campanulate to cyathiform, glabrous, smooth, yellow with a tinge of green; lobes 1.0×1.5 mm, broadly rounded or with slight acute apex, entire. *Stamens* 8, free, included; filaments straight, ± 0.8 mm long, glabrous, yellow to golden brown apically; anthers bilobed, ovate, muticous or with remnant of minute decurrent spur; thecae 0.5×0.25 mm, narrowly ovate, aculeate, golden brown, pore $\frac{1}{3}$ length of theca; pollen in tetrads. *Ovary* 4-locular, $1.5\text{--}2.0 \times 2.5$ mm, obovoid to oblate, emarginate, glabrous but pustulate, semitransparent when fresh, yellow with reduced basal nectaries; ovules 1(2) per locule, spreading from a central position on columella, placenta not swollen; style included, 1.2 mm long, straight, yellow with slightly wider brown apex; stigma simple truncate. *Capsule* 2.0–0.8 mm, broadly cyathiform; valves splitting only half their length with slightly incurved apices, splitting completely from columella to 135° angle, outside reticulate-foveolate; septa only on valves. *Seeds* 0.3×0.25 mm, ellipsoid, golden brown and shiny, testa deeply reticulate, anticlinal walls thick and jigsawed towards base becoming semi-straight at outer limits.

E. hansfordii is distinguished by its delicate creeping habit, single-flowered florescences, by the flowers being small and pendulous with a clear yellow, smooth corolla, small broad ovate sepals, muticous anthers and a single spreading ovule per locule. This species is probably related to another localised species, *E. rehmsii* Dulfer, which occurs nearby in the mountains of the northeastern end of Bain's Kloof and is also confined to marshy seeps. The latter also has yellow flowers, similar sepals, bract/bracteoles, anthers and ovary, but differs in being much larger in stature (woody up to 1 m high), with prominent larger flowers which are erect and arranged in 4-flowered florescences.

There are several *Erica* species that look very similar to *E. hansfordii* with the same distinctive habit, which is associated with marshy habitats dominated by short tufted restiads, but none occurs in the same region. *E. myriocodon* Guthrie & Bolus occurs in the Franschhoek area and has pale pink flowers, which are hairy with linear sepals, a longer pedicel, appendiculate anthers and a hairy ovary. The two very closely related species, *E.*

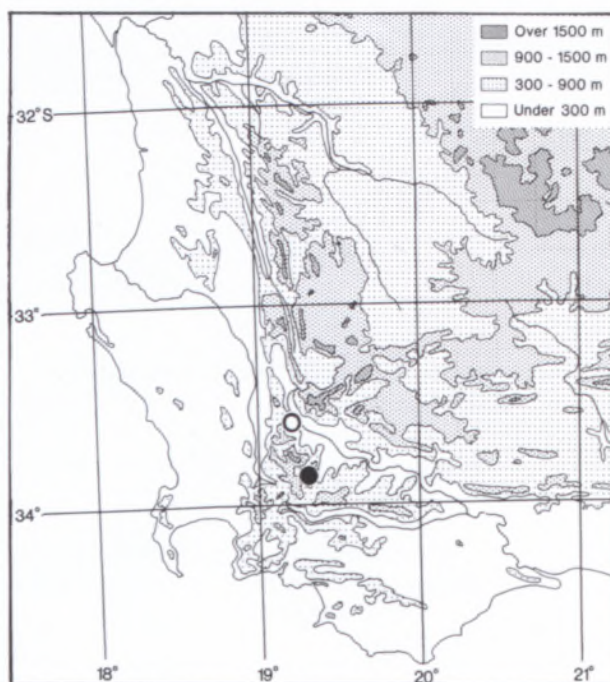


FIGURE 2.—The known distribution of *Erica hansfordii*, ○; and *E. feminarum*, ●.

limosa L.Bolus and *E. salteri* L.Bolus, both endemic in the Cape Peninsula also have similar muticous anthers and a glabrous ovary, but the flowers are hairy and are a dirty pinkish cream colour on a longer pedicel and with linear sepals.

This species is a highly restricted one occurring in only two seepage areas on the sandy flats in the Slanghoek Valley between Worcester and Wolseley, flats which are covered with short fynbos (Figure 2). These seepage areas are rather far from the source of their water, namely the very dominant Cossacks Peaks, and thus it is surprising that this special habitat is situated there. There is much encroachment of farming (mainly vineyards) in the valley and therefore the species is clearly endangered, but fortunately the owner of the ground is aware of its importance.

The plants of *Erica hansfordii* are very inconspicuous in their habitat being very delicate and intertwining among the dominant matted restiad, *Restio zwartbergense*. Also they are mostly below the upper levels of the restiad and have their flowers hanging downwards. The habitat remains wet for the whole year so the plants tend to have a continuous flowering period throughout the year (G. Hansford pers. comm.).

With only very reduced nectaries and inconspicuous pendulous pale yellow-coloured flowers, it is difficult to postulate what the pollinating agent could be for this species. None was evident when the type material was collected. *Flowering time*: flowers can be found in most months of the year, but the peak flowering period is in early summer.

The species is named after Gerard Hansford, an agricultural consultant from Tulbagh, who discovered it very recently during one of his many botanical forays in the district. He has provided the National Botanical Institute with many useful and interesting records of plants.

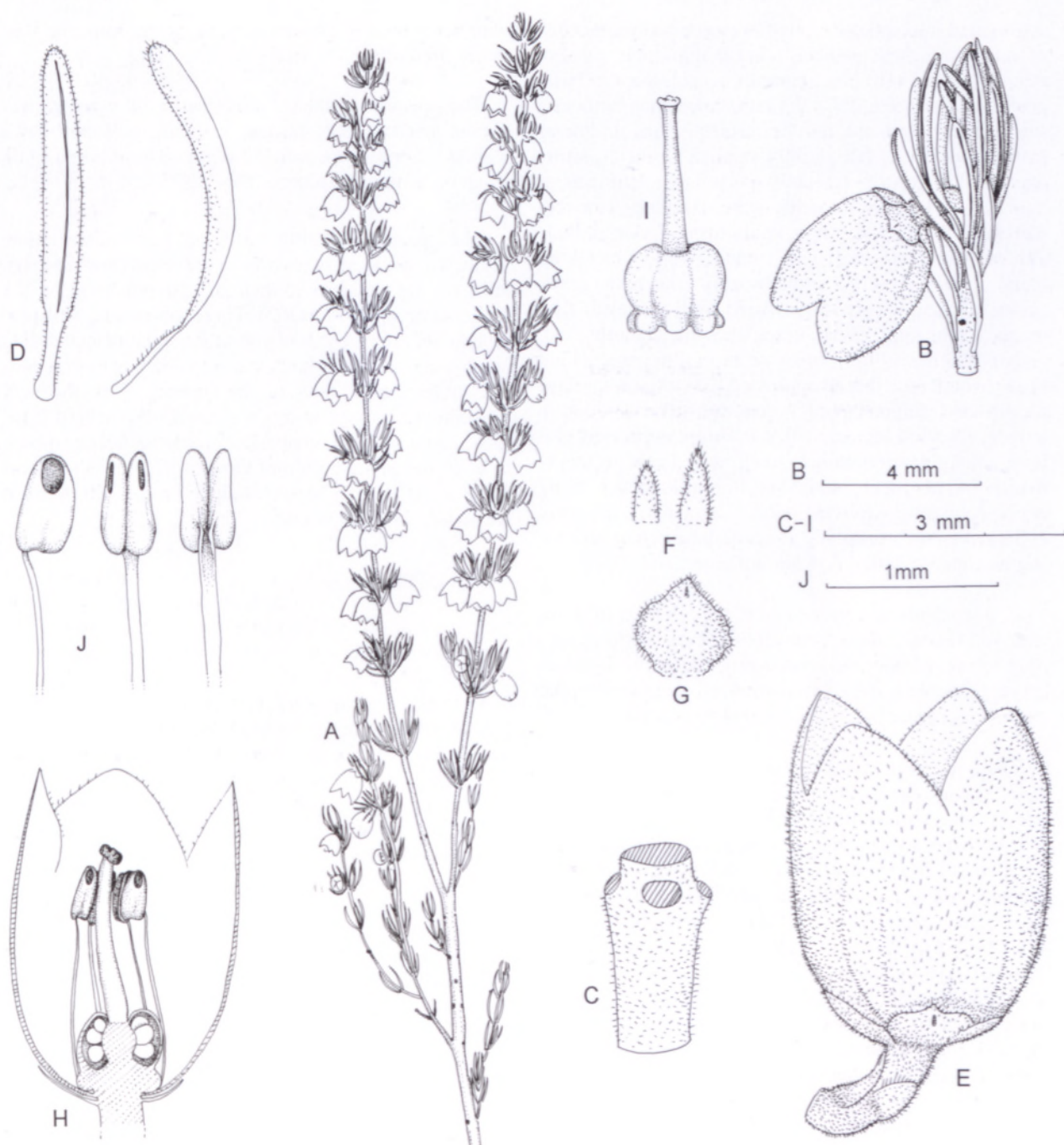


FIGURE 3.—*Erica feminarum*. A, flowering branch; B, flowering branchlet; C, stem; D, leaf, abaxial and lateral views; E, flower; F, bracteole and bract; G, sepal; H, half flower with ovary opened laterally; I, gynoecium; J, anther, side, front and back views. All drawn from type, Oliver 10844. A, $\times 1$. Scale bars: B, 4 mm; C–I, 3 mm; J, 1 mm. Drawings by Inge Oliver.

WESTERN CAPE.—3319 (Worcester): Slanghoek area, Witelsrivier Farm, 280 m, (–CC), 15-02-1997, *Hansford 96* (K, NBG, PRE, para.); *ibid.*, 1-06-1997, *Hansford 99* (MO, NBG, PRE, para.); *ibid.*, 24-08-1997, *Hansford 100* (BOL, NBG, para.).

***Erica feminarum* E.G.H.Oliv.**, sp. nov., floribus atrorubentibus subtiliter pilosis, saepe in synflorescentibus pseudospicatis, sepalis latis ovatis et antheris muticis notabilis.

TYPE.—Western Cape, 3319 (Worcester): Stettynsberg, slopes east of Beacon 68 above Elandskloof, 3860 ft [1176 m], (–CD), 9 August 1997, *E.G.H. & I.M. Oliver 10840* (NBG, holo.; BM, BOL, E, K, MO, NY, P, PRE, S).

Erect, slender shrublet 200–300 mm high, single-stemmed reseeded. **Branches:** 1–3 erect main branches, 50–130 mm long, continuing vegetative growth, rarely ending in a florescence, numerous erect secondary branchlets, (2)3 at every node, 2–5 mm long, with a terminal florescence; all branches with simple short spreading hairs; internodes on main branches ± 10 mm long, on secondary branchlets 0.5 mm long. **Leaves** 3-nate, erect, $\pm 4.0 \times 0.5$ mm, narrowly oblong, incurved, adaxially flattened and minutely hairy, abaxially rounded and narrowly sulcate, with subacute margins, minutely hairy towards margins, ciliate; petiole appressed, 0.8 mm long, ciliate (Figure 3). **Inflorescence:** 1-flowered terminal on short secondary branchlets, pendent, often

aggregated into spike-like synflorescences towards ends of main branches; pedicel 1.5–1.8 mm long, curved, minutely hairy, red; bract partially recaulescent in basal position, appressed, 0.9×0.3 mm, lanceolate, without a sulcus, minutely hairy, red; bracteoles 2, near middle of pedicel, like bract but slightly smaller. *Calyx* 4-partite, appressed to corolla, minutely hairy; lobes imbricate at base, 1.1×1.1 mm, broadly ovate, ciliolate, dark red. *Corolla* 4-lobed, 4×3 mm, cyathiform, dark red, buds almost black, covered with minute white unicellular hairs; lobes 1.1×1.8 mm, broadly triangular, erect, acute, ciliolate, entire. *Stamens* 8, free, included; filaments 2 mm long, linear, erect, straight, glabrous, red; anthers bilobed elliptic to ovate in outline, erect, light brown, mucous; thecae appressed, 0.5×0.3 mm elliptic to ovate, smooth, pore $\frac{1}{3}$ length of theca; pollen in tetrads. *Ovary* 4-locular, 1.0×0.9 mm, depressed globose, emarginate, glabrous, green, with basal nectaries; ovules 4–6 per locule, spreading from placenta covering entire columella; style included, 2 mm long, narrowly cylindrical but broadening towards base, glabrous red; stigma capitate dark red. *Fruit* not seen.

E. feminarum is a very distinct species with its dark, wine-red flowers that appear almost black in direct sunlight, are very finely hairy, occurring singly on very short lateral branchlets, these often arranged in a pseudospike on the main branches, and have mucous anthers.

There are indications that a relationship exists with the *E. xanthina/cremea* complex despite the difference in size of the corollas, the latter having long tubular flowers. All have a finely hairy corolla with non-spreading lobes, small broad sepals with similar appressed bract and bracteoles and similar anthers. They also have the same habitat preferences, namely seeps or moist gullies at high altitude. *E. cremea* Dulfer with cream-coloured flowers is a restricted endemic in the mountains of Bain's Kloof and *E. xanthina* Guthrie & Bolus occurs along the western part of the Riviersonderend Range. It has pale cream to pinkish flowers. There is also an alliance, but more remote, with the long-tubed *E. kogelbergensis* E.G.H.Oliv. with orange and yellow or plain yellow flowers from the Kogelberg area and *E. colorans* Andr.

with white to pink flowers from the lower hills and flats in the Bredasdorp District.

The specific epithet, *feminarum* = of women, was chosen because the species was first collected by a woman, Elsie Esterhuysen, 50 years ago and found again by us on National Women's Day, 1997.

The species is highly restricted in its distribution, occurring, as far as is known, in only one small seepage area on the eastern slopes of Stettynsberg in the Villiersdorp area (Figure 2). These slopes are well provided with seeps, but a search of the area located only a single population of plants that were very inconspicuous due to the dark colour of the flowers. With the very mountainous terrain in this region of the Western Cape there could well be other habitats on the nearby mountains of the under-collected Goudini Range. The plants occur at sufficiently high altitude to be covered by snow for short periods in winter.

The pollinating agent of the species is unknown. The species is obviously entomophilous with its small, included stigma and nectaries around the base of the ovary. The flowers had a very slight musty odour in the field. With the dark colour of the flowers that hang downwards, there appears to be no clear attraction for a foraging insect flying overhead. However, when viewed from below with the sun shining through the flowers, the colour turns to a glowing red that could well be an attraction for an insect below the plant. This feature coupled with the odour may indicate that flies could be the pollinating agent of the species. *Flowering time*: July and August.

WESTERN CAPE.—3319 (Worcester): Stettynsberg, E side, 4000 ft [1 219 m]. (—CD), 31-07-1949, *Esterhuysen 15587* (BM, BOL, K, MO, NBG, NY, PRE, para.).

E.G.H. OLIVER* and I.M. OLIVER*

*Compton Herbarium, National Botanical Institute, Private Bag X7, 7735 Claremont, Cape Town.
MS. received: 1998-05-25.