

ERICACEAE

A NEW SPECIES OF *ERICA* FROM THE WESTERN CAPE

Erica magnisylvae E.G.H.Oliv. sp. nov., *E. arenariae* L.Bolus propter pilos ramorum plumosos, flores albos parvos, antheras similes calcaribus parvis, pollinationem vento affinis, sed habitu ad 3 m alta, pedicello brevior, lobis corollae incurvis, antheris inclusis filamentis brevibus, stigmate manifesto peltato-cyathiformi albo dignoscenda. Figura 8.

TYPE.—Western Cape, 3419, Gansbaai area, Baviaansfontein [Grootbos], hills due west of Swartkransberg [Beacon 3], S-facing slopes, 1200 ft, (–CB), 17 April 1997, *Oliver & Lutzeyer 10788* (NBG, holo.; BM, BOL, E, G, K, MEL, MO, NY, P, PRE, S, W).

Shrub erect, slender, up to 3 m high, single-stemmed reseeder. *Branches*: several main branches fast growing, 150–300 mm long within a year, continuing vegetative growth apically, numerous secondary branches 10–100

mm long at each node of main branch, numerous tertiary branchlets 2–5 mm long, secondary and tertiary branches ending in a florescence; all with short simple hairs and numerous plumose longer hairs ± 0.2 mm long. *Leaves* 3-nate, spreading, $2.0\text{--}2.7 \times 0.7$ mm, lanceolate, adaxially flattened, abaxially rounded and narrowly sulcate, with margins acute, ciliate towards base with simple or occasionally plumose hairs, otherwise glabrous; petiole appressed, 0.5 mm long, ciliate. *Inflorescence*: flowers 3-nate in 1(2) whorls, terminal on most secondary and tertiary branches; spreading to subpendulous; *pedicel* 1 mm long, with simple and plumose hairs, pale greenish white; *bract* partially recalcrescent and subapproximate to calyx, 0.9×0.7 mm, elliptic-lanceolate, glabrous, shortly ciliate, narrowly sulcate in upper half, pale green with dark green sulcate apical portion and white lateral zones; *bracteoles* 2, approximate to calyx, 0.9×0.6 mm, elliptic, otherwise like bract. *Calyx* 4-partite; lobes im-

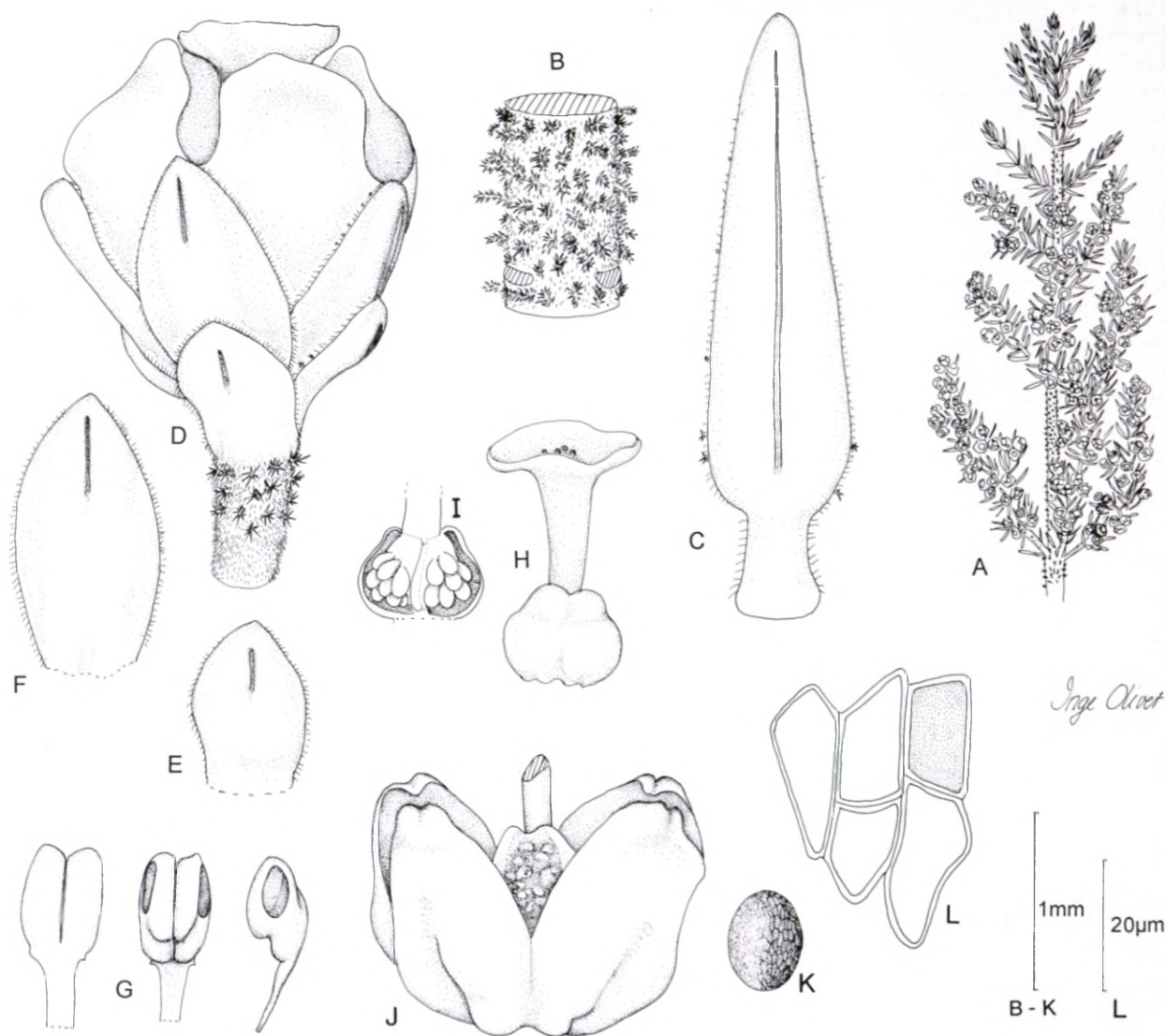


FIGURE 8.—*Erica magnisylvae* E.G.H.Oliv.: A, flowering branch; B, stem; C, leaf; D, flower; E, bract; F, sepal; G, stamen; H, gynoecium; I, ovary, opened laterally; J, capsule; K, seed; L, testa cells, with one cell showing pits. All drawn from the type collection, *Oliver & Lutzeyer 10788*. A, $\times 0.5$. Scale bars: B–K, 1 mm; L, 20 μm .

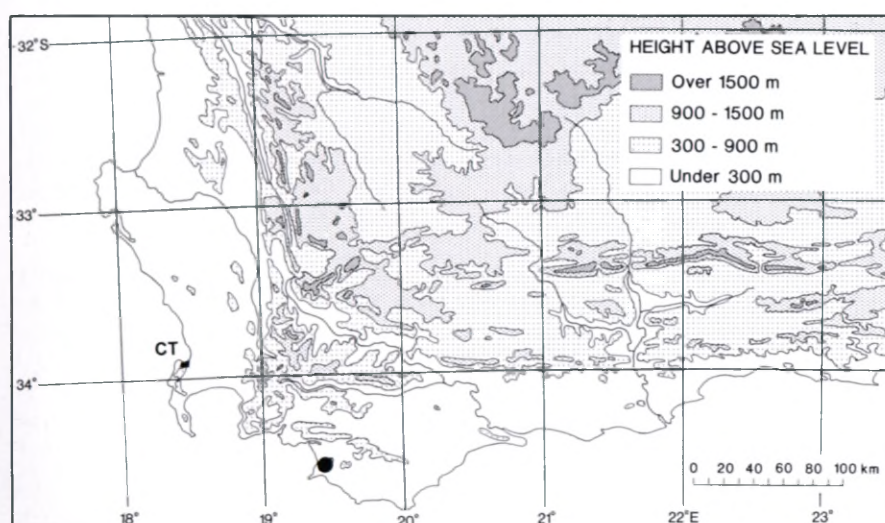


FIGURE 9.—Known distribution of *Erica magnisylvae* E.G.H.Oliv.

bricate, adpressed to calyx, 1.5×0.8 mm, elliptic, glabrous to shortly ciliate, sometimes also with a few small sessile non-sticky glands, colour as in bract but with larger lateral white zones. *Corolla* 4-lobed, 1.6×1.6 mm, ovoid to ovoid-urceolate, with zone between calyx segments bulging outwards, glabrous, smooth, white; lobes 0.8×0.9 mm, broadly triangular, obtuse, entire, bent inwards towards style with slightly recurved margins and elongate-ovate gap between lobes. *Stamens* 8, free, included; *filaments* 0.4 mm long, rectangular, erect, straight, with or without minute lateral spurs below anther, white basally and brown apically; *anthers* bilobed, elliptic, erect, brown, muticous [but see filament]; thecae appressed, 0.6×0.4 mm, narrowly elliptic, glabrous; pore $\frac{1}{2}$ length of theca; *pollen* in tetrads. *Ovary* 4-locular, 0.5×0.7 mm, ovoid, slightly emarginate, glabrous or with a few simple apical hairs, green; nectaries absent; *ovules* 4–7 per locule, pendulous to spreading from placenta covering most of columella; *style* 0.6 mm long, cylindric, erect, straight, glabrous, white; *stigma* peltate-cyathiform, manifest or just above corolla lobes, greenish white sometimes with pinkish tinge, with 4 central reddish stigmatic knobs. *Fruit* a dehiscent capsule, $\pm 2.8 \times 3.8$ mm, cyathiform, valves splitting for $\frac{2}{3}$ their length, septa with 50% portion on valve thick and other 50% portion on columella thin, placenta flattened and indistinct with only seed attachment points visible; *seeds* 0.5×0.4 mm, ovoid to ellipsoid, slightly reticulate, shiny, yellow-brown, testa thin with cells slightly sunken, $\pm 20\text{--}25 \times 15$ μm , slightly longer than broad with straight, slightly thickened anticlinal walls and numerous small pits. Figure 8.

Erica magnisylvae is most similar to *E. arenaria* L.Bolus, which also has an erect habit, but grows only to 1.5 m high, has the same type of plumose hairs on branches and pedicels, small white flowers with similarly shaped anthers with minute spurs and also a wind-pollination syndrome. The new species may easily be distinguished by the shorter pedicel ($\pm \frac{1}{2}$ as long as in *E. arenaria*), the corolla lobes incurved with ovate sinuses (not erect to outcurved with acute sinuses), the well included anthers (not manifest to subexserted), the filaments equal to or shorter than the anthers (not noticeably longer than the anthers), the shorter style about equal to ovary (not $4 \times$ the length of the ovary), and the larger

peltate-cyathiform manifest stigma (not small and well exserted).

E. arenaria is confined to the calcrete ridges near the coast between Still Bay and the mouth of the Breede River some 70 km to the east of the known locality of *E. magnisylvae*. An unusual form of the former species has been recorded from the hills near De Hoop (Oliver 8447), but needs further study to assess its taxonomic status with respect to typical *E. arenaria* and *E. magnisylvae*.

There are a number of species in the genus which possess distinctive plumose hairs. These species are spread throughout the whole genus and its geographical range, including tropical Africa. In certain cases there are clear indications of species alliances sharing this character, but there are also cases where the plumose hairs are found in totally unrelated species thus leading to the hypothesis of convergent evolution.

The first record of this new species was made by S. Privet, the resident ecologist at the Grootbos Nature Reserve which is owned and run by the Lutzeyer family who brought material to us for identification. Their reserve is being developed for ecotourism, hence the interest in the vegetation and flora.

E. magnisylvae is a restricted endemic known thus far only from the hills just inland from the main road between Gansbaai and Stanford (Figure 9). The hills fall within the farm labelled as Baviansfonteyn [Baviaansfontein] on the 1 : 50 000 trigonometrical survey maps, but known locally as the Grootbos Nature Reserve, hence the name [*magnus* = large, great; *sylva* (or *silva* in classical Latin) = wood, forest; *magnisylvae* = of the large forest]. The hills start at Swartkransberg (labelled Beacon 3) and run due west for about 2.5 km. There the species occurs on southern to southwestern slopes mainly in deep brownish grey sand, apparently wind-blown, overlying calcrete deposits which have many sandstone intrusions.

The type population on the westernmost hill, where the plants are locally common, occurs on a fairly steep south-facing slope in vegetation that is mostly of the coastal fynbos type with some elements of strandveld

vegetation intermixed. The vegetation is dominated by large shrubs of *Leucadendron coniferum* (Proteaceae) which is known to prefer habitats of wind-blown sand (A.G. Rebelo pers. comm.) and *Leucospermum pater-sonii* and numerous plants of *Metalasia muricata*. The large size of the proteads and the *Erica* are the result of a long period without any burning. No records are available to pinpoint the date of the last fire, but from the proteads it is possible to estimate an age of about 25 years for the vegetation. Smaller scattered populations occur eastwards towards Swartkransberg where another large population occurs. This grows on a west-facing slope on sandstone covered by mountain fynbos vegetation which includes *Protea cynaroides*.

The old plants were clearly single-stemmed with only the ultimate branches being leafy. Seedlings were noted in the disturbed areas along tracks in the area. Parts of a nearby slope that had been burnt several years ago contained numerous vigorously growing young plants 1 m high.

The pollination syndrome of the species is deduced to be anemophily due to the lack of nectaries, to the enlarged, manifest, peltate-cyathiform stigma complex and

the reduced size of the flowers (Oliver 1991; Rebelo *et al.* 1985). When the populations were visited, the weather was overcast and misty so that no shedding of pollen was possible. However, material brought back to the herbarium for detailed study and placed in vases shed puffs of pollen when the specimens were disturbed the following morning, thus simulating the field situation. Flowering period is from March to May.

WESTERN CAPE.—3419: Grootbos near Gansbaai, 1200 ft, (—CB), 13-04-1997, *Privet* & *Lutzeayer s.n.* (NBG, paratype).

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