

## **Studies in the Ericaceae (Ericoideae), XXI. *Erica oakesiorum*, a new tree species from South Africa.**

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*Erica oakesiorum* is a new, floriferous species which has been overlooked in many years of botanical collecting in the mountain ranges above Greyton and Genadendal, Western Cape. This is all the more surprising seeing that the species grows there on the lower slopes as well as the rocky upper reaches of these impressive mountains. The nearby village of Genadendal has been a mission station of the Moravian Church since the eighteenth century and as such was a favourite stopping-off post for many early travellers including botanical collectors – there are numerous old collections from there. A small collection of this species was present in the problem collections in the Compton Herbarium, collected in the eastern end of the same long mountain range. Then fresh material appeared at the Caledon Wildflower Show in 1994, but its origin could not be traced. The ‘discovery’ of the species in the wild is linked to the Heather Society because when material was required by the first author for taking over to the Heather Society’s Conference in Dublin in 1995, he asked two local enthusiasts to scour the Greyton mountains for as many species as possible to take with him. When he came to pick the material up he discovered the new species which had been found by the last author in a kloof (ravine) above Greyton, but with most of the material slightly past peak flowering. However, one small branch was present in the display of 115 species at the Conference. This prompted us to investigate the populations in early August 1996.

We visited the population growing in wet areas in a fairly steep shallow kloof (ravine) running south between Greyton and Genadendal at about 500m altitude. With the main peak nearby being 1466m high, this population was clearly on the lower slopes.



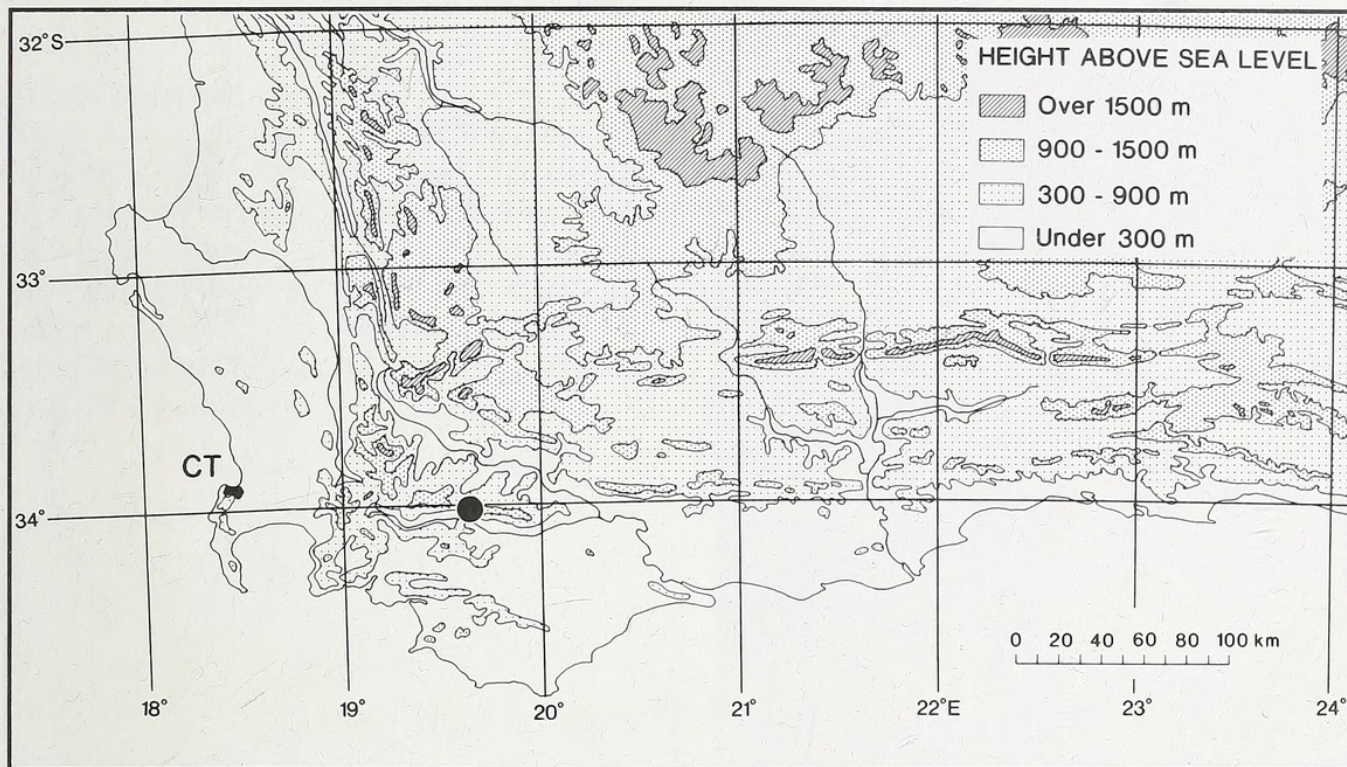


**Fig. 1.** Population of *Erica oakesiorum* above Greyton with Inge Oliver to show scale.

The plants were mostly 2–4m tall with the largest in the centre of the kloof being 4m tall. As such the species must be counted among the tallest of southern African heathers as only three other species are reported to reach this height in the wild, *E. caffra* L., *E. canaliculata* Andr. and *E. dracomontana* E. G. H. Oliv. The size of the plants of the new species is all the more surprising because the whole area was devastated by a fire only nine years ago. This was confirmed by the branching pattern indicating a remarkable yearly growth of 30–40cm.

The plants were growing with tall *Psoralea aphylla* (Fabaceae) and the large fern *Todea barbara*, and with a few plants of the tree *Cunonia capensis*, which is usually an indicator of moist habitats. Despite their size the plants were not all that visible from a distance being tucked down in the small kloof. Outside the kloof the dominant species was *E. hispidula* L., a small flowered, wind-pollinated species, with patches of *E. perlata* Sinclair and *E. pannosa* Salisb. in flower and *E. tomentosa* Salisb. and *E. floccifera* Zahlbr. just coming into





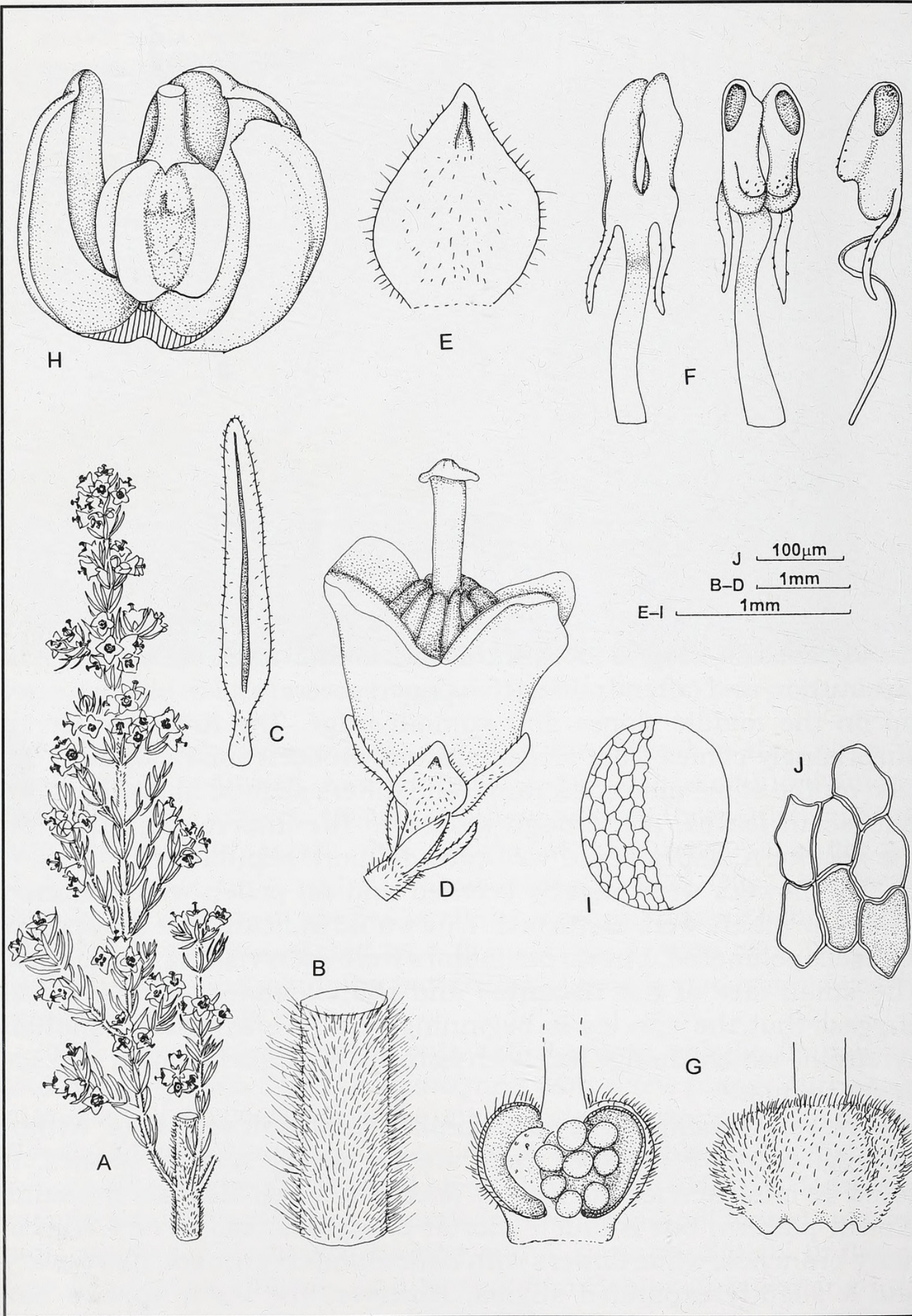
**Fig. 2.** Distribution of *Erica oakesiorum* in the Western Cape, South Africa

flower. Some more populations of the new species were subsequently noted past flowering at low altitude in a few kloofs to the west by the last author, and (after drafting this paper) several still in bloom higher up on the middle slopes and summit ridge. The Kruger material surprisingly comes from a high altitude (4600ft) some 30km to the east on the same mountain range and differs slightly in having more pubescent leaves. A thorough search in the intervening kloofs on the southern slopes could well provide more populations.

The flowers were slightly scented and no pollen was scattered when the plants were disturbed. This would indicate that the species is insect pollinated, but no pollinators were seen visiting the flowers. The small size of the nectaries and the expanded stigma would suggest that the species is beginning to evolve a wind-pollination syndrome which change has been noted in a number of other species in the genus.

The relationships of *E. oakesiorum* are difficult to assess. Within the region where it grows there are no closely related species. It could be mistaken for the local *E. floccifera* which also has the same growth pattern, but is much shorter in stature, has ternate leaves, hairy branches, white flowers with dark manifest anthers, hairy ovary and a slightly expanded stigma. However, the latter species has







**Fig.3. (opposite, p. 16)**

*Erica oakesiorum*. A, flowering branch, natural size; B, branch; C, leaf; D, flower; E, sepal; F, stamen, back, front and side views; G, ovary, whole on left & opened laterally on right; H, capsule with one valve removed; I, subalveolate seed; J, testa cells; all drawn from the type collection. © Inga Oliver.

**Fig. 4. (right)**

*Erica oakesiorum* flowering branch.

distinctly plumose branched hairs on the stem, larger and more petaloid bract, bracteoles and calyx, and the seeds are dark brown and smooth as opposed to light brown and alveolate. Further afield there are species like *E. simulans* Dulfer and *E. inconstans* Zahlbr. which have somewhat similar floral and vegetative characters and have been recorded up to 2m tall.

This new species is named to honour John and Nerine Oakes, very keen botanically-oriented hikers, who with great dedication and enthusiasm have scoured the mountain slopes above their village of Greyton for interesting, unusual and rare species from all families of plants, some of which were new to science, *Watsonia minima* and *Geissorhiza callista*. In the Ericaceae John Oakes brought to our attention the rare *E. diotiflora* Salisb., known till then from only two collections from this mountain range and located excellent populations of the beautiful *E. tomentosa* and a new form of the widespread *E. calycina* L. He is still on the lookout for an elusive undescribed species first collected somewhere on the mountains above Greyton by some visiting Swedish collectors in 1938.



***Erica oakesiorum* E.G.H. Oliv., sp. nov.**

Frutex ad arbor ad 4m altus. Rami dense albopubescenti. Folia ternata anguste oblonga, adaxiale pubescentia abaxiale sparse pubescentia ad glabra. Flores ternati 1(2)-fasciculati pedicello pubescenti bractea bracteolisque parvis. Calyx quadripartitus segmentis triangularibus ad ovatis sparse pubescentibus ciliolatis. Corolla quadrilobata, 2.3 x 2.3 mm, cyathiformis glaber albida. Stamina 8 libera, antheris oblongis manifestis, calcaris pendulis, polline in tetradis. Ovarium quadriloculare, emarginatum late obovoideum pubescens, stylo exerto, stigmathe peltato-cyathiformi. Semina subalveolata.

TYPE: SOUTH AFRICA, Western Cape, 3419 BA, Greyton area, SE slopes of Uitkykkop, 520m, 9 September 1996, *Oliver, Oakes & Volk 10698* (**NBG** holotype; isotypes **BM, BOL, E, K, MO, NY, PRE, S**).

Large erect single-stemmed shrub to tree 2–4m tall, stems up to 60mm diam. **Branches:** numerous erect main branches with erect secondary branchlets 10–50mm long and numerous tertiary branchlets 2–10mm long, erect to subspreading, all terminating in a florescence or main branch occasionally continuing vegetative growth, with dense subspreading short and long white hairs up to 1mm long, occasionally with forked tips. **Leaves** 3-nate, suberect, imbricate to much shorter than internodes, 3.0–4.0 x 0.4mm, narrowly oblong, flattened adaxially, rounded and narrowly sulcate abaxially, edges acute, sparsely pubescent or glabrous abaxially, always pubescent adaxially, petiole 0.5mm long, appressed, finely pubescent. **Inflorescence:** flowers 3-nate in 1(2) whorls, terminal, numerous, densely arranged; pedicel 1.0–1.3mm long, pubescent, pale greenish white; bract basal to midposition, 0.7(–1.5) x 0.2mm, lanceolate, sparsely hairy to glabrous, ciliolate, white sometimes tinged cream or reddish; bracteoles 2, in midposition, 0.7 x 0.2mm, otherwise like bract. **Calyx** 4-partite, segments free to slightly imbricate, 1.2 x 0.8mm, triangular to ovate, narrowly sulcate in upper third, sparsely pubescent, ciliolate, basally and in middle pale greenish with white margins and cream keel-tip. **Corolla** 4-lobed, 2.3 x 2.3mm, cyathiform, glabrous, white; lobes erect or very slightly spreading, triangular, subacute, entire, third as long as corolla. **Stamens** 8, free; filaments linear with an apical sigmoid bend, white, glabrous; anthers just manifest, bilobed, oblong, appendiculate, dark reddish brown abaxially and yellowish brown adaxially with dark red apex to filament and basal half of spurs with white tips; thecae subtriangular-ovate,  $\pm 0.7 \times 0.3$ mm, minutely strigose adaxially otherwise glabrous, pore  $\pm$  the length of theca; spurs pendulous,  $\pm$  length of theca, reddish, strigulose; pollen in tetrads. **Ovary** 4-locular,  $\pm 0.6 \times 1.0$ mm, broadly obovoid, emarginate, densely pubescent, pale green with small pale red nectaries around the base; ovules 6–10 per locule, spreading from a complete placenta; style exserted,  $\pm 3$ mm long, glabrous, white; stigma cyathiform-peltate with central raised darker stigmatic lobes, yellowish to reddish. **Capsule** ovoid to broadly cylindrical,  $\pm 1.7 \times 1.6$ mm, with very delicate valves splitting to base, septa mostly on the columella; seed  $\pm 1.0 \times 0.7$ mm, ovoid, elliptic in transverse section, subalveolate, golden brown.

Paratypes: W. CAPE. 3419: (-BA), Greyton, S slopes of Uitkyk Peak, 600m, 25 Aug. 1996, *Oakes 56* (**NBG**); Greyton, Nooienskop, head of kloof, 1280m, 9 Oct. 1996, *Oliver 10755* (**G, K, NBG, P, PRE**); Greyton, edge of Die Plaat above Tiergat, 1040m, 9 Oct. 1996, *Oliver 10760* (**NBG, PRE**); Greyton, SE slopes of Uitkykkop, 520m, 9 Aug. 1996, albino plant, *Oliver, Oakes & Volk 10699* (**NBG**); Greyton area, W & above 'Chicken Rock' below Kanonkop [Uitkykkop], 24 Aug. 1995, *Volk 81* (**NBG**, herb Volk); (-BB), Riviersonderend Mts, Pilaarkop, steep S slopes, 4600ft [1403m], 6 May 1971, *Kruger 1257* (**NBG, PRE**)





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