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Erica ignita, a showy new species from South Africa

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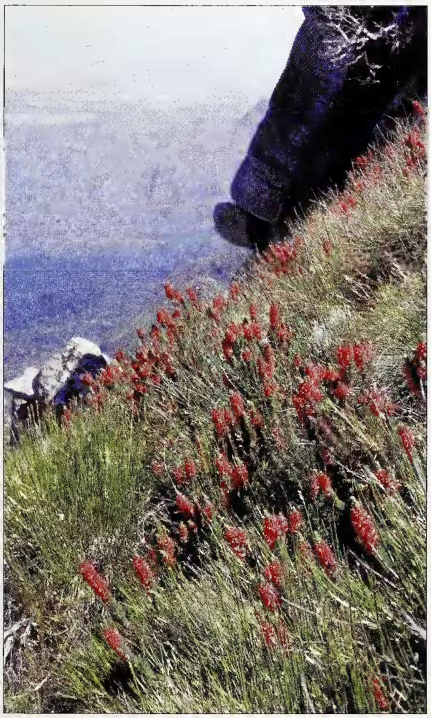

Fig. 1. Plants of *Erica ignita* in their natural habitat.

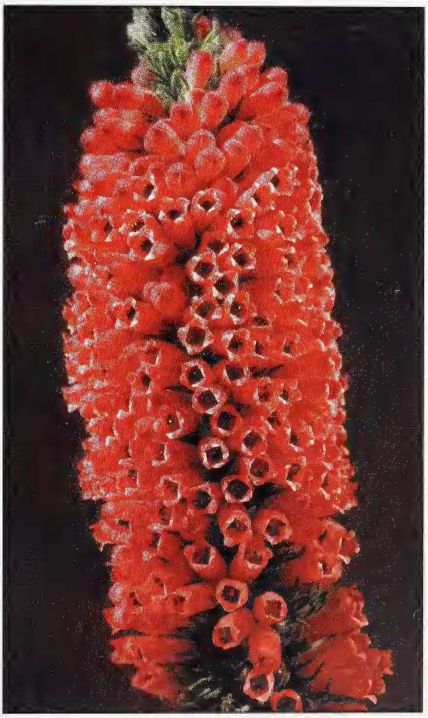

Fig. 2. *Erica ignita*. Close-up of a dense synflorescence.

In the previous five issues of the *Yearbook* we have described five new species of *Erica* from the Cape, some of which were recent discoveries, *E. magnisylvae* and E. *hanekomii*, whereas the others had been languishing in the unnamed or incorrectly identified collections in the local herbaria waiting to be 'discovered' and investigated. There are still several dozen new species among the latter category that we need to re-collect in the wild and work on. One of them we have kept for *Yearbook 2000* because of its striking appearance.

The new species we are describing here was first noted by the botanist Neville Pillans as long ago as 1926 when he saw some specimens exhibited at the Caledon Wildflower Show, but without any indication of their origin. Then it was turned up by that indefatigable mountaineer and collector Thomas Stokoe in 1940 and again in 1945 when climbing the very long range of mountains near Riviersonderend, but again without any exact details. The exact location of the populations was only recorded when Elsie Esterhuysen of the Bolus Herbarium, University of Cape Town, started climbing this range in the 1960s. Together with Prof. Peter Jackson, she brought back material several times. She had problems with the identification and thought the material should be placed under *E. xanthina* Guthrie & Bolus which was a poorly understood and, unfortunately, misinterpreted species from further west in this long mountain-range.

We have examined the case of *E. xanthina* which Guthrie and Bolus based on a single collection at Kew made by Dr R. C. Alexander-Prior above Genadendal in the 1840s, a few scraps of which are in the Bolus Herbarium. No subsequent material was attributed to this species. In 1969 Col H. A. Baker described material collected in the Genadendal/Greyton area as *E. parvulisepala*. He made no mention of *E. xanthina* or the collections of material mentioned above, and regarded his species as allied to *E. colorans*. Comparison with the fragments of Guthrie and Bolus's type clearly shows that *E. xanthina* and *E. parvulisepala* are the same species.

We have made two trips to the populations on Pilaarkop and have examined much fresh material for variation. The new species clearly shows several characters that differ from those of *E. xanthina* which we have also studied in the wild. In *E. xanthina* the flowers are finely hairy, i.e. the pedicel, bract, bracteoles, corolla and ovary (all glabrous in the new species), the sepals are very broadly ovate (not ovate-trullate), the ovary is constantly 4-locular (not variably locular from five to seven), and the seeds are very different (see below). Of course the most striking difference is the colour which, however, is not always a good differentiating character in *Erica*, at least not as the sole character on which to base a species – *E. xanthina* being pale pinkish yellow and the new species red flushed with orange.

Other species that are possibly related to *E. ignita* are *E. patersonia*, and *E. galpinii*, both having similar densely flowering synflorescences but with a yellow, glabrous corolla, glabrous 4-locular ovary, and anthers with long appendages. Several tubular-flowered species from the Bredasdorp to Kogelberg area, *E. macowanii*, *E. kogelbergensis* (see *Yearbook* 1996) and *E. colorans*, have the similar unusual feature of ovaries with more than four

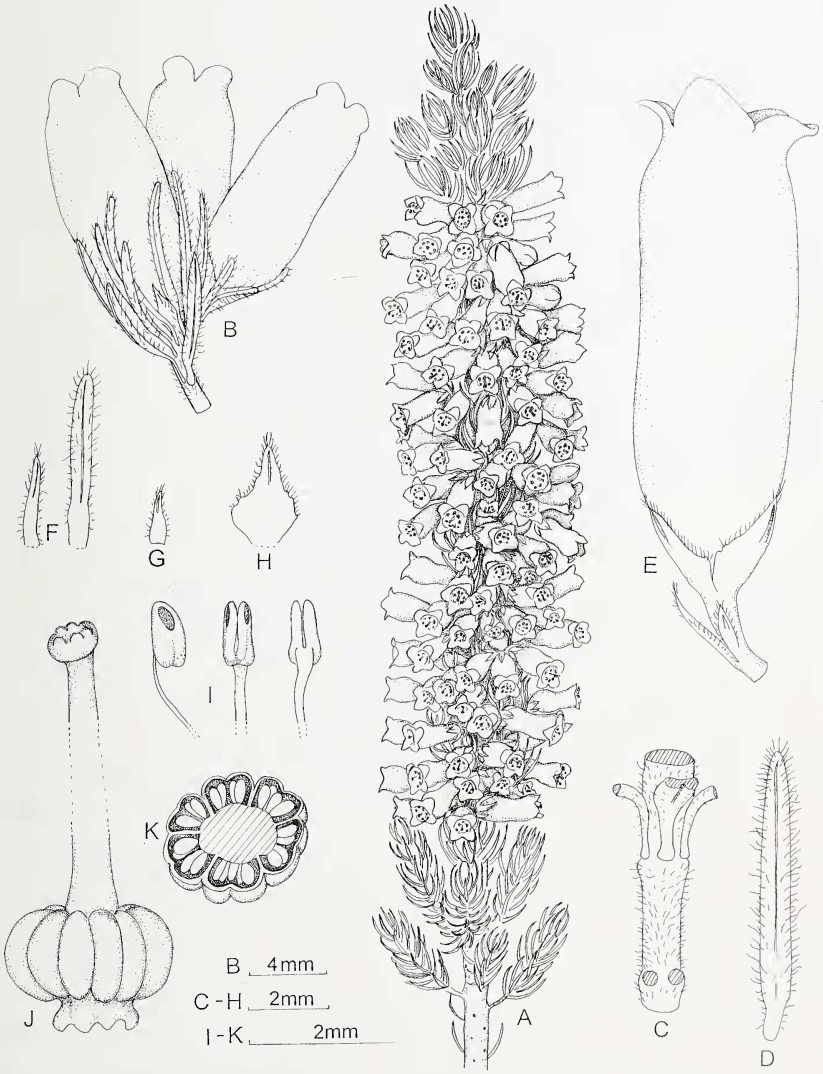

Fig. 3. *Erica ignita*. A, flowering main branch with a single spike-like synflorescence, natural size; B, flowering branchlet with 3-flowered inflorescence; C, stem; D, leaf; E, flower; F, two bracts showing size variation; G, bracteole; H, sepal; I, anther, side front & back views; J, gynoecium; K, ovary, half section. All drawn from the type collection, *Oliver 10944*.

locules, but their flowers are hairy and arranged in a looser spikelike synflorescence. There are other differentiating characters in the calyx, anthers, and fruits.

The name chosen for this new species (*ignitus* = fiery, glowing) refers to the immediate impression one gets when seeing the flowering plants for the first time in the wild – long dense spikes of fiery red flowers (as if ignited), seen to great effect on looking up the very steep slopes with the sun shining from behind the plants. This colour dulls when viewed with light from the front. Adding to the attractiveness of the flowers are the pale orange-brown spreading corolla lobes.

When investigating differentiating characters between *E. xanthina* and the new species we were surprised to find very good differences in the seeds. The seeds at first glance appear to be similar, certainly in their shape and colour, but on microscopic examination are very different. The testa of *E. xanthina* is composed of numerous small cells which are slightly invaginated with low anticlinal walls whereas *E. ignita* has few large cells which are deeply sunken producing very 'high' anticlinal walls. The outlines of the cells are very different with thick and slightly undulate anticlinal walls in the former species, and straight and very thin in the new species. The cells have numerous very fine pits in the inner periclinal and the anticlinal walls in *E. xanthina* whereas the pits in *E. ignita* are larger and coalesce. The seed type in *E. ignita* surprisingly has only been recorded so far in *E. conferta* which grows on the same slopes but also extends into the Langeberg. Seed morphology we believe is a whole new field that has not been studied before in *Erica* and could be of invaluable assistance with species delimitation and possibly with the problems of subgeneric classification in the genus.

Erica ignita appears to be very restricted in its distribution (see Fig. 5, p. 62, this issue), occurring as a single, slightly scattered population only on the cool, moist, very steep southern slopes below the summit of the ridge just west of Pilaarkop. West of this ridge the range of mountains up to Skilpadkop has never been botanised due to its very dissected and steep nature. The northern dry slopes can be climbed reasonably easily but not the southern slopes due to the steep dip in the geological strata. East of Pilaarkop to the Olifantskloof divide we have not located any plants and regard their presence there as unlikely due to the less favourable habitat – more open and drier and consisting mainly of rather grassy shale bands. The closely related *E. xanthina* grows in moist grassy-restioid open places, mostly not on very steep slopes, and occurs at the western end of the Riviersonderend Mountains from above Greyton westwards as far as Olifantsberg. Its populations are surprisingly very much smaller than that of *E. ignita*.

The locality is quite remarkable because growing with *E. ignita* are two other undescribed species, both of which are confined to this steep moist slope. These are in the process of being published – *E. columnaris* and *E. orthiocola*, the former common and in places dominant, the latter rare and restricted to a few rock ledges and cliffs. The large, woody *E. pillarkopensis*, which used to be very common before the extensive fire of 1991, is confined to the Pilaarkop area. Also there is the endemic *Lonchostoma esterhuyseniae* in the Cape family Bruniaceae, of which we found only five woody plants on the cliffs. The habitat would appear to be strongly affected by the position of the ridge in relation to the peak itself when south-east clouds come in from sea and swirl past the peak and up over the ridge and could be used to explain the number of endemic species

Despite two visits to the populations during excellent weather conditions and with the plants in full flower, no pollinators were observed visiting the flowers. With their red colour the obvious conclusion is that sunbirds must be the pollinators, but none was seen in the area.

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

Species in genere distincta propter synflorescentias densas spicatas usque 20 cm longas floribus breve tubulosis atrorubentibus glabris; sepala ovato-trullata; pedicellum cum bractea bracteolisque glabrum; ovarium latissime ellipsoideum glabrum plerumque 6-loculare; antherae muticae.

TYPE: SOUTH AFRICA, Western Cape, 3419BB, Riviersonderend Mtns, Pilaarkop, moist S-slopes below ridge WNW of peak, *c.* 4800ft, 28 October 1997, *Oliver 10944* (**NBG**, holotype; **BM**, **BOL**, **K**, **MO**, **NY**, **P**, **PRE**, **S**).

Erect bushy single-stemmed **shrub** up to 0.5(–1)m tall. **Branches**: 1–5 erect main branches 10–25(–40)cm long continuing vegetative growth, with few short to long side branches 2–5cm long, sparsely puberulous with spreading hairs. **Leaves** 4-nate, imbricate subspreading incurved, 6–10 x 0.8mm, oblong-linear, apex subobtuse, adaxially flattened and abaxially rounded, margins acute, sparsely hirsute; petiole 10mm long, appressed, glabrous ciliate. **Inflorescence**: **flowers** (1–)4(–6) terminal on short side branchlets *c.* 5mm long, these arranged in a dense cylindrical spike-like synflorescence 4–20 x 2–3cm; pedicel 2mm long glabrous; **bract** partially recaulescent more or less basal in position, 2–4 x 0.4–0.5mm linear to lanceolate, leaflike to bracteose, the longest leaf-like oblong hirsute and green, the smallest bracteose oblong-lanceolate white to pale green, glabrous, ciliate; **bracteoles** 2, on lower half of pedicel, *c.* 1.3 x 0.4mm, bracteose, lanceolate, white, glabrous, ciliate. **Calyx** 4-partite, segments appressed to corolla, *c.* 2.5 x 1.5mm, ovate-trullate, apex

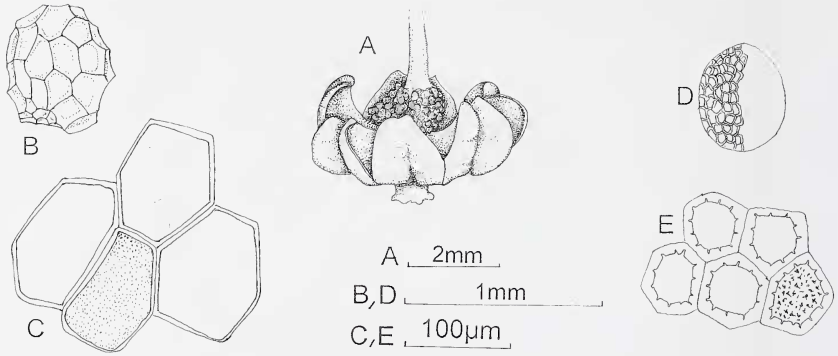

Fig. 4. Fruit details. – *Erica ignita*. A, open capsule; B; seed; C, testa cells (drawn from Oliver 10944). – *Erica xanthina*. D, seed; E, testa cells (drawn from *Steyn s.n.* in **NBG**).

acute, margins slightly serrated at base otherwise entire, apically narrowly sulcate for $^{1}/_{3}$ their length, glabrous, ciliate, white. **Corolla** 4-lobed, *c.* 12 x 4mm, tubular oblong slightly contracted towards the mouth, glabrous, with a distinct bloom, dull brick-red flushed with orange, glowing orange-red in transmitted light; lobes 2.0 x 1.5mm, subacute to obtuse, entire, spreading to slightly reflexed. **Stamens** 8, included, just reaching the mouth; filaments linear, slightly bent inwards at apex, glabrous white; **anthers** bilobed, oblong in front view, dorsifixed near the base, muticous; thecae ovate, *c.* 0.9 x 0.6mm, roughly textured due to collapsed cells, dark brown; pore third length of theca; **pollen** in tetrads. **Ovary** (5)6(7)-locular, *c.* 2.0 x 1.5mm, very broadly ellipsoid (depressed globose) with a very short stipe, (10)12(14)-lobed, emarginate, with small green nectaries at base of the stipe, glabrous, green; ovules 15–20 per locule spreading, placenta the full length of locule; **style** broad at base tapering to apex, glabrous white; **stigma** included at mouth of corolla, capitate, dark reddish green. **Fruit** a dehiscent capsule, *c.* 2.5 x 5.0mm, septa on valves only, splitting to halfway down, valves subspreading, cucullate, red, thin texture; **seeds** globose-ellipsoid rounded, *c.* 1.3 x 1.0mm, testa light yellow to white, consisting of few large collapsed cells with relatively tall straight anticlinal walls, numerous pits present. Figure 3.

Paratypes: WESTERN CAPE – 3419: (-BB), Riviersonderend Mtns, Pilaarkop, *c.* 4000ft, 17 November 1965, *Esterhuysen 31404* (**BOL**); *ibid. c.* 5000ft, 25 November 1967, *Esterhuysen 31810* (**BOL**); ibid., *c.* 4500ft, 24 October 1971, *Esterhuysen 32717* (**BOL**, **NBG**); *ibid., c.* 5000ft, 23 October 1971, *Jackson in NBG 93226* (**NBG**); *ibid.*, 1500±1540m, 9 October 1998, *Oliver 11176* (**K**, **NBG**, **PRE**).
Without precise locality: Riviersonderend Mountains, October 1940, *Stokoe 7500* (**BOL**); *ibid.*, 17 October 1945, *Stokoe in NBG 166044* (**NBG**).
Without locality: Caledon Wildflower Show, 11 September 1926, *Pillans in BOL 18547* (**BOL**).