

# The identity of *Erica flavisepala*

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## ABSTRACT

The recording of a few scattered plants of *E. flavisepala* Guth. & Bol. among sympatric populations of two other species led to a comparison of their morphological characters. From this comparison a putative hybrid origin was indicated, thus *E. × flavisepala* Guth. & Bol. = *E. thunbergii* Montin × *E. sphaerocephala* Wendl.

## RESUME

### L'IDENTITE D'ERICA FLAVISEPALA

L'observation de quelques plants d'*E. flavisepala* Guth. & Bol., dispersés parmi des populations sympatriques de deux autres espèces, a conduit à une comparaison de leurs caractères morphologiques. Cette comparaison suggère une origine hybride, vraisemblablement *E. × flavisepala* Guth. & Bol. = *E. thunbergii* Montin × *E. sphaerocephala* Wendl.

In Flora Capensis (1905) Guthrie and Bolus described *E. flavisepala* from material that had been sent to them in a consignment of *E. thunbergii* Montin from an unspecified locality in the Cold Bokkeveld. The species were reported as growing together.

The authors stated that their material was difficult to place satisfactorily in any of the sections of the genus and that it constituted a well-marked species with a general aspect strikingly similar to that of *E. thunbergii*. But they noted that it did not have the peculiar globose corolla-tube of *E. thunbergii* and, although anomalous, placed it in the same section, *Cyatholoma*.

Since the original collection of *E. flavisepala* no material has been collected until recently. Mr G. Kirsten, a keen collector of ericas, while examining populations of *E. thunbergii* in the Loch Lynne area of the Cold Bokkeveld, came across a few isolated plants which I was able to confirm were *E. flavisepala*. I decided to visit the area myself to study the species in the wild.

The fine populations of *E. thunbergii* were located without any difficulty in the Hartebeeskloof growing in seepage zones on south-facing slopes being clearly visible from a distance. Growing in the same seepage zones were groups of the pink-flowered *E. sphaeroce-*

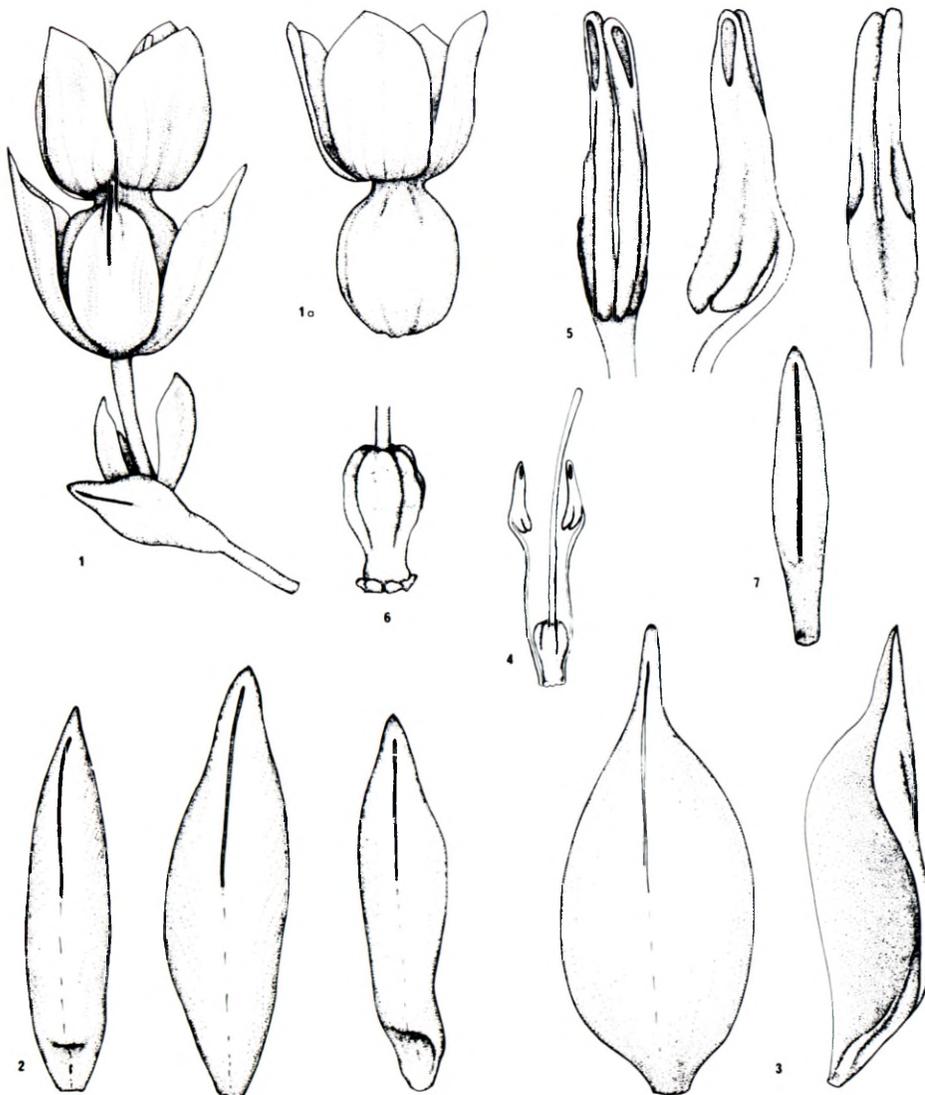


Fig. 1.—*Erica thunbergii*. 1, flower, ×5; 1a, corolla, ×5; 2, bracteoles, ×10; 3, sepals, ×10; 4, androecium and gynoecium, ×5; 5, anther, front, side and back views, ×20; 6, ovary, ×10; 7, leaf, ×10 (from Oliver 5139).

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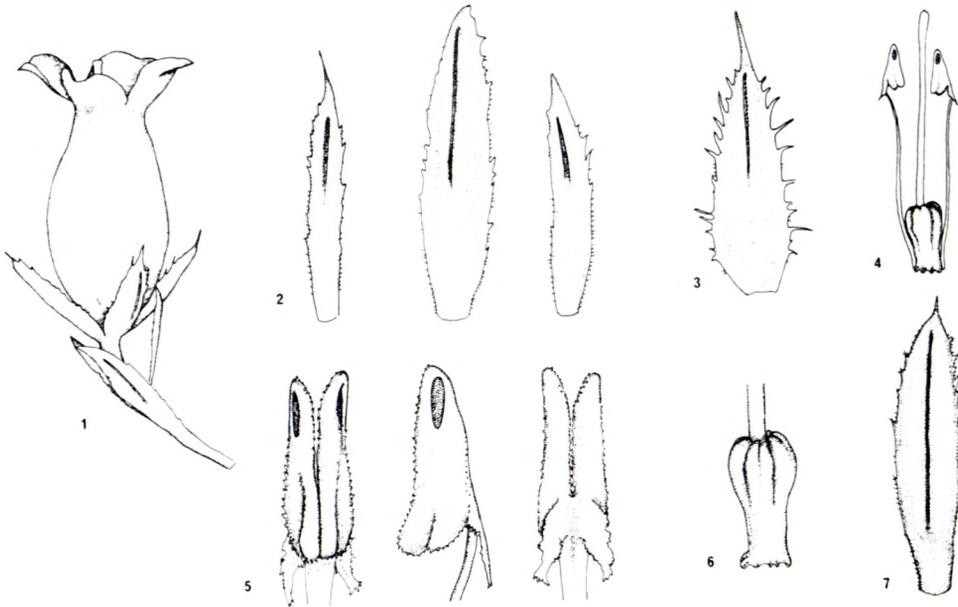


Fig. 2.—*Erica* × *flavisepala*. 1, flower, ×5; 2, bracteoles, ×10; 3, sepal, ×10; 4, androecium and gynoecium, ×5; 5, anther, front, side and back views, ×20; 6, ovary, ×10; 7, leaf, ×10. (from Oliver 5140).

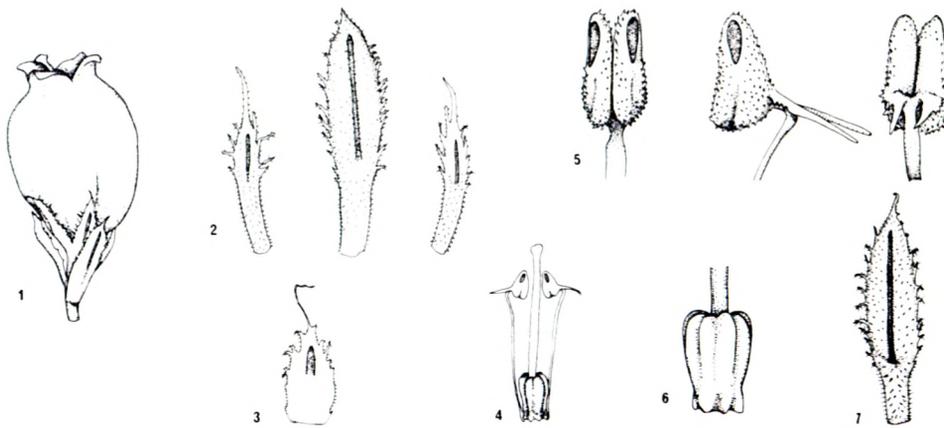


Fig. 3.—*Erica sphaerocephala* 1, flower, ×5; 2, bracteoles, ×10; 3, sepal, ×10; 4, androecium and gynoecium, ×5; 5, anther, front, side and back views, ×20; 6, ovary, ×10; 7, leaf, ×10. (from Oliver 5141).



Fig. 4.—Branches of 1, *Erica sphaerocephala* (Oliver 5141); 2, *Erica* × *flavisepala* (Oliver 5140); 3, *Erica thunbergii* (Oliver 5139)

TABLE 1.—Comparison of morphological characters of *E. thunbergii*, *E. × flavisepala* and *E. sphaerocephala*

|               | <i>E. thunbergii</i>   | <i>E. × flavisepala</i>  | <i>E. sphaerocephala</i>   |
|---------------|--|--|--|
| Branches....  | Glabrous   | Puberulous to glabrescent  | Puberulous with longer plumose cilia in between  |
| Leaves.....   | 3-nate<br>Glabrous<br>Not ciliate<br>Up to 7 mm long   | 4-nate to scattered<br>Glabrous, rarely sparsely puberulous<br>Shortly plumose ciliate<br>Up to 4 mm long                | 4-nate to scattered<br>Puberulous<br>Plumose ciliate<br>Up to 4 mm long  |
| Flowers.....  | 1-3-nate on ends of short lateral branchlets aggregated towards ends of main branches                        | 2-9-nate on ends of short lateral branchlets or main branches, sometimes aggregated                                      | Capitate heads of 6-23 flowers on ends of main or short lateral branchlets   |
| Pedicels..... | 9-12 mm long glabrous<br>Glabrous  | 3-5 mm long<br>Glabrous to very sparsely puberulous  | 1-2 mm long<br>Sparsely puberulous.  |
| Bracteoles... | 5-6 mm long<br>Canary-yellow<br>Glabrous<br>Not ciliate  | 3-4 mm long<br>Yellow tinged red<br>Glabrous<br>Shortly plumose ciliate  | 1,5-3 mm long<br>Green to reddish<br>Puberulous<br>Plumose ciliate   |
| Calyx.....    | 5-7 mm long<br>Canary-yellow<br>Glabrous<br>Not ciliate<br>Carinate, cucullate                               | 2,5-3 mm long<br>Yellow tinged red<br>Glabrous to sparsely puberulous<br>Shortly plumose ciliate<br>Very slight carinate | 1-1,5 mm long<br>Green to reddish<br>Glabrous to sparsely puberulous<br>Plumose ciliate<br>Flat                      |
| Corolla.....  | 9-10 mm long<br>Globose tube, constricted neck and large spreading lobes<br><br>Tube white, lobes orange-red | 7-8 mm long<br>Urceolate with small slight spreading lobes<br><br>Tube and lobes pinkish red                             | 5-6 mm long<br>Globose-urceolate to obovoid-urceolate with small slightly spreading lobes<br><br>Tube and lobes pink |
| Anthers....   | 2,0-2,1 mm long<br>Prognathous at the base<br>Muticous   | 1,2-1,3 mm long<br>Semi-prognathous<br>Aristate  | 0,7-0,8 mm long<br>Not prognathous<br>Long aristate  |
| Ovary.....    | Stipitate  | Stipitate  | Sessile  |

*phala*. While investigating *E. thunbergii*, a few plants of *E. flavisepala* were found. It was immediately suspected that these few scattered plants were hybrids between the frequently occurring *E. thunbergii* and *E. sphaerocephala*.

*E. thunbergii* (Fig. 1) is a very distinct species with yellow, orange and white flowers with globose corolla-tubes. It belongs to the section *Cyatholoma*, which it shares with *E. corydalis* Salisb. and *E. flavisepala* (Fig. 2), the characteristic feature being the globose corolla-tube with a large dilated cup-shaped limb. *E. corydalis* with flowers all white, is also a very distinct species occurring in the coastal mountains of the Caledon district. *E. sphaerocephala* (Fig. 3) belongs to a completely different section, *Pseuderemia*, which is characterized by having the flowers arranged in a many-flowered capitate head. (See Fig. 4).

A comparison of morphological characters of my three collections, Oliver 5139, 5140 and 5141 which are illustrated in the accompanying figures, clearly shows the intermediate nature of *E. flavisepala*. The basic shapes and sizes of the bracteoles, pedicel, sepals, corolla, anthers and ovary of the two parent species are very distinct, while those of *E. flavisepala* are intermediate in most respects.

*E. thunbergii* is almost entirely glabrous except for a few hairs very occasionally found on the petioles, whereas in *E. sphaerocephala* the branches, leaves, pedicels, bracteoles and sepals are all puberulous and ciliate, the cilia being plumose. The anthers of *E. thunbergii* are distinctly prognathous and are distinctly aristate. The ovary in *E. thunbergii* is stipitate and in *E. sphaerocephala* it is sessile.

The flower colours are very distinctive. In *E. thunbergii* the large bracteoles and sepals are bright canary-

yellow, the corolla-tube white and the lobes brilliant orange-red. In *E. sphaerocephala* the bracteoles and sepals, which are relatively small, are green to reddish in colour and the corolla is pink. In *E. flavisepala* the bracteoles and sepals are yellow tinged with red and the corolla is bright pinkish red.

The pollen of *E. thunbergii* and *E. sphaerocephala* is typical of the genus *Erica*, namely in tetrads. The pollen of the collection Oliver 5140 is abnormal in consisting of an equal quantity of tetrads and single grains mixed with some shrivelled grains. This supports the view of the hybrid nature of *E. flavisepala*.

The occurrence of only a few scattered plants of *E. flavisepala* amongst the populations of the other two species indicates that the plants were a chance cross that is not reproductively established. Unfortunately it has not been possible to study the chromosomes. The few species of *Erica* which have so far been investigated all have  $n=12$  and their chromosomes are extremely small. It is therefore unlikely that taxonomically useful information could be derived from a brief investigation of the three taxa.

The facts as set out (in Table 1) indicate the putative origin of *E. flavisepala* Guth. & Bol. (*E. × flavisepala* Guth. & Bol. = *E. thunbergii* Montin × *E. sphaerocephala* Wendl.).

#### UITTREKSEL

Die vermelding van 'n paar verspreide plante van *E. flavisepala* Guth. & Bol. tussen simpatriese populasies van twee ander soorte het gelei tot 'n vergelyking van hul morfologiese eienskappe. Uit hierdie vergelyking kan 'n veronderstelde hibriediese oorsprong aangedui word, dus *E. × flavisepala* Guth. & Bol. = *E. thunbergii* Montin × *E. sphaerocephala* Wendl.