

A FOURTH NATURAL *ERYTHRINA* HYBRID FROM SOUTH AFRICA

Krukoff and Barneby (1974) described two naturally occurring *Erythrina* hybrids from South Africa, *E. × coddii*, an intersubgeneric hybrid of *E. latissima* E. Mey. (subgenus *Chirocalyx*) and *E. lysistemon* Hutch. (subg. *Erythrina*), and *E. × hennessyae*, an intersectional hybrid of *E. lysistemon* (subg. *Erythrina* section *Caffrae*) and *E. humeana* Spreng. (subg. *Erythrina* sect. *Humeanae*).

Subsequently a third natural South African hybrid, *E. × johnsoniae* E.F. Franklin Hennessy, was described (Hennessy 1985) the parents of which are *E. latissima* subg. *Chirocalyx* and *E. caffra* Thunb. (subg. *Erythrina*).

Neither fruit nor seeds have been obtained from any individuals of these three hybrid taxa, which suggests that they are sterile.

A fourth, previously unnamed hybrid taxon exists (Hennessy 1972) which is fertile. Codd (1956) had

already mentioned two specimens with characters intermediate between *E. lysistemon* and *E. caffra*. These are the two Codd collections cited below.

*Erythrina × dyeri* E.F. Franklin Hennessy, hybrid. nov. inter parentes *E. caffra* Thunb. et *E. lysistemon* Hutch. (subgen. *Erythrina* sect. *Caffrae*) quasi intermedia, ab ambobus vexillo brevior differt. Typus: Natal, 2931 (Stanger): Durban, Wentworth and Brighton Beach (–CC), *Hennessy 445* (holotypus Durban-Westville; isotypi NH; PRE).

Tree, c. 10 m tall, branched; bark grey-buff, thin, smooth with shallow longitudinal fissures; branches sparingly armed with short, conical or falcate brown prickles 5 mm long. *Leaves* pinnately trifoliate, terminal leaflet 25–50 mm remote from laterals, green, chartaceous, minutely pubescent on both surfaces when young, becoming glabrous, deciduous; stipules ovate-lanceolate, 5–6 mm long, caducous;

TABLE 2.—Comparison of measurements of corolla parts of *Erythrina caffra*, *E. lysistemon* and *E. × dyeri*

	<i>E. caffra</i> ( $\bar{x}$ of 65)	<i>E. × dyeri</i> ( $\bar{x}$ of 55)	<i>E. lysistemon</i> ( $\bar{x}$ of 65)
Vexillum length (mm)	56,3	53,5	71,1
Vexillum breadth (mm)	37,8	33,8	32,8
Vexillum angle of curvature (°)	47,6	41,0	28,4
Ala length (mm)	25,9	18,9	14,8
Ala breadth (mm)	11,9	7,9	5,7
Carina length (mm)	22,2	15,3	11,1
Carina (1) breadth (mm)	14,9	10,5	7,0

TABLE 3.—Comparison of relative proportions of corolla parts of *Erythrina caffra*, *E. lysistemon* and *E. × dyeri*

	<i>E. caffra</i>	<i>E. × dyeri</i>	<i>E. lysistemon</i>
Vexillum length : breadth	1,49 : 1	1,58 : 1	2,17 : 1
Ala length : breadth	2,18 : 1	2,41 : 1	2,59 : 1
Carina (1) length : breadth	1,49 : 1	1,46 : 1	1,39 : 1
Vexillum length : ala length	2,17 : 1	2,83 : 1	4,80 : 1
Vexillum length : carina length	2,54 : 1	3,50 : 1	6,40 : 1
Ala length : carina length	1,16 : 1	1,24 : 1	1,52 : 1

petiole glabrescent, adaxially grooved, sparingly armed with falcate prickles or unarmed, 70–130 mm long; stipellae 4, paired, one pair at apex of petiole, one at apex of rhachis, green, glandular; petiolules glabrescent, 6–10 mm long; terminal leaflet usually unarmed, broadly ovate with cuneate base, apex acute, obtuse or acuminate, 50–130 × 45–130 mm; lateral leaflets usually unarmed, broadly ovate, equal- or unequal-sided with cuneate base, apex acute or acuminate, 50–120 × 45–85 mm. *Inflorescence* a subterminal pseudoraceme, precocious; peduncle pubescent, olive green, brown or purple, terete, 55–200 mm long; bracts ovate-lanceolate, pubescent, caducous. *Flowers* subverticillate in groups of 3, crowded; pedicel pubescent, 3–6 mm long; bracteoles linear-lanceolate, pubescent, caducous, distally situated, 2–4 mm long. *Calyx tube* ± campanulate, pubescent, splitting laterally to become bilabiate at anthesis, olive-green proximally, reddish brown distally becoming brown, 12–19 mm long; lobes 5, obsolescent, thickened, abaxial lobe prognathous in bud. *Vexillum* conduplicate-falcate, scarlet, glabrous, spread and reflexed at maturity, 49–58

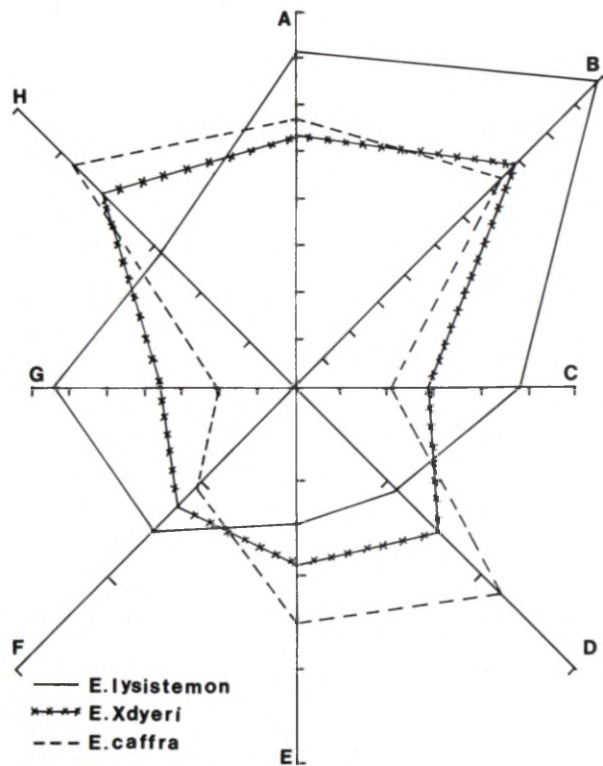


FIG. 7.— Superimposed polygonal graphs of eight corolla characters of plants of *Erythrina caffra*, *E. lysistemon* and *E. x dyeri*:

A	vexillum length	:	unit 10 mm
B	$\frac{\text{vexillum length}}{\text{breadth}}$	:	unit 0,2
C	$\frac{\text{vexillum length}}{\text{ala length}}$	:	unit 1,0
D	carina length	:	unit 10 mm
E	ala length	:	unit 10 mm
F	$\frac{\text{ala length}}{\text{carina length}}$	:	unit 1,0
G	$\frac{\text{vexillum length}}{\text{carina length}}$	:	unit 1,0
H	vexillum curvature	:	unit 10°

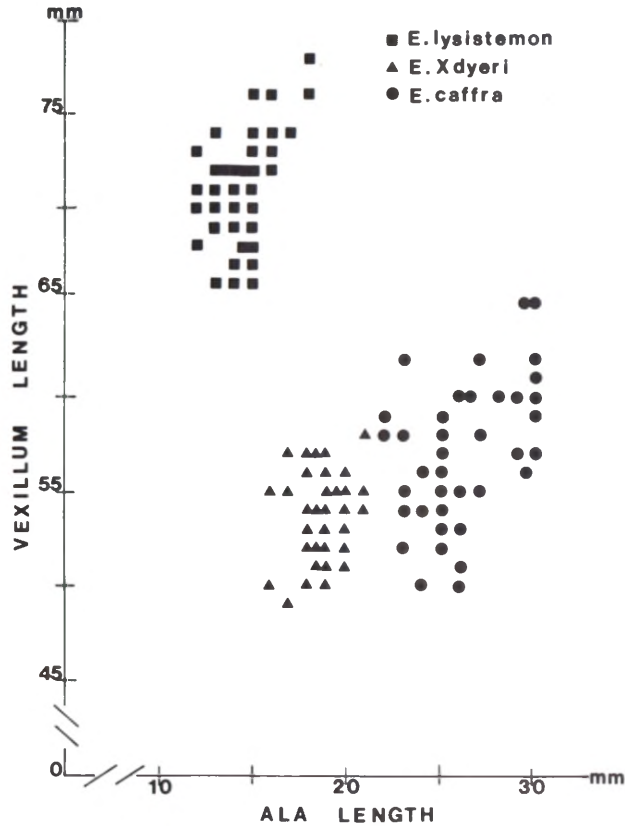


FIG. 8. — Scatter diagram of two corolla characters of plants of *Erythrina caffra*, *E. lysistemon* and *E. x dyeri*.

× 29–36 mm. *Alae* falcate, long-clawed, greenish white flushed scarlet with violet or purple distal marginal zone, 16–21 × 7–9 mm. *Carina* of two broadly boat-shaped, abaxially partly connate or rarely free petals, green spotted with scarlet with purple or violet border distally, each 14–17 × 9–12 mm; alae and carina partially exposed at anthesis. *Stamens* 10, diadelphous, vexillary stamen coherent or free, with a distinct genuflexion proximally; filaments green proximally, purple distally, of two alternating lengths 34–41 and 39–46 mm, connate proximally for 24–34 mm; anthers uniform, bithecate with longitudinal dehiscence, dorsifixed, ochreous, 3 mm long. *Gynoecium* 47–55 mm long; gynophore green, hispid, c. 10 mm long; ovary linear, multiovulate, olive-green, pubescent, c. 20 mm long; style terminal, terete, hispid proximally, purple, 17–25 mm long; stigma terminal, small, capitate, green. *Fruit* stipitate, subligneous, falcate, moniliform, glabrescent, blackish, dehiscing adaxially, up to 200 mm long × 13 mm in diameter in broadest part. *Seeds* scarlet, elliptic, 8–10, × 5–6 mm; hilum oval, depressed, blackish, c. 5 × 2 mm.

NATAL.—2931 (Stanger): Wentworth towards Brighton Beach (–CC), *Hennessy 445* (Durban-Westville; NU; PRE). 3030 (Port Shepstone): Marburg Mission (–CB) *Codd 7999* (K; PRE).

TRANSKEI.—3128 (Umtata): 6 miles NW of Elliotdale, (–DC), *Codd 7983* (PRE).

This hybrid of the winter-flowering species *E. caffra* and *E. lysistemon*, both members of section *Caffrae*, occurs on the coastbelt of Natal and Transkei where the parent species are either sympatric or grow together in cultivation.



Of the four hybrid taxa *E. × dyeri* is the most difficult to recognize. The difficulty is compounded by introgression.

Living specimens of the parent species are not difficult to distinguish on inflorescence and floral characters. Vegetative differences are not as well defined although, in general *E. caffra* is a bigger tree with fewer prickles and larger leaflets than *E. lysistemon*.

The two most conspicuous differences between the parent species are the shape of the inflorescence, which is attributable to the shape and attitude of the vexilla of the open flowers, and the colour of the vexillum. Because the vexillum of *E. caffra* is strongly arcuate, spread and reflexed at anthesis thus exposing the inner whorls, the inflorescence is broader than that of *E. lysistemon* in which the margins of the slightly falcate, conduplicate vexillum remain contiguous at anthesis, concealing the inner whorls. The shape of the inflorescence is fairly well preserved in dried specimens. The colour of the vexillum of both parent species varies in intensity in different individuals. That of *E. caffra* ranges from deep vermilion-red through orange to creamy-white

whereas that of *E. lysistemon* ranges from deep scarlet through pillar-box red to pink to white. Albino forms of both species are very rare. Colour is not preserved in dried specimens.

The shape of the inflorescence of *E. × dyeri* resembles that of *E. caffra* whereas the colour of the vexillum is like that of *E. lysistemon*. Living specimens of *E. × dyeri* are often misidentified as red-flowered plants of *E. caffra*. No pale colour forms of the hybrid have yet been found. Presumably both

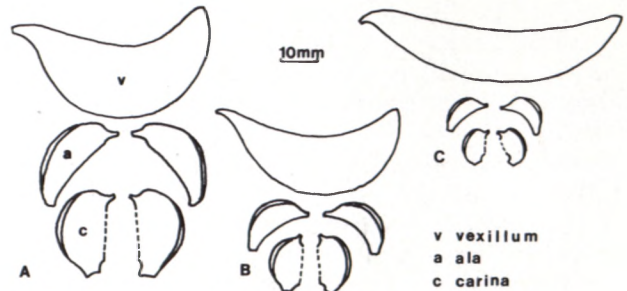


FIG. 9. — Outlines of corolla parts of A, *Erythrina caffra*; B, *E. × dyeri* and C, *E. lysistemon*.



FIG. 10. — Inflorescence: A, *E. caffra*; B, *E. lysistemon*; C, *E. × dyeri*. Young infructescence: D, *E. × dyeri*.

parents would have to be pale forms for such lack of colour to manifest itself in the hybrid.

In order to determine the floral characters which can be reliably and easily used to identify the  $F_1$  hybrid and to distinguish it from its parents, inflorescences were obtained from each of five different trees of *E. caffra* and of *E. lysistemon* and one tree of *E. × dyeri* in the Durban area. Measurements were made of 65 flowers of each parent species and of 55 flowers of the hybrid. Those of the corolla parts are summarized in Table 2. The apparent anomaly of one measurement, vexillum length, which is not intermediate in the flower of the hybrid vanishes when the relative proportions of the corolla parts are considered. These are shown in Table 3 and Figs 7 & 8.

Shrinkage of flower parts occurs in drying, but the relative proportions of these parts do not change. By estimating the relative proportions of the corolla parts of dry herbarium specimens, rehydrated specimens or fresh material, it is possible to distinguish *E. caffra*, *E. lysistemon* and the  $F_1$  hybrid, *E. × dyeri*. Corolla parts of these three taxa are shown in Fig. 9 and photographs of living inflorescences in Fig. 10.

The name *Erythrina × dyeri* is proposed for this taxon in honour of Dr R.A. Dyer.

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