Notes RBG Edinb. 43(3): 407–438 (1986)

HESPERANTHA (IRIDACEAE) IN NATAL AND NEARBY

O. M. HILLIARD* & B. L. BURTT

ABSTRACT. *Hesperantha* is revised for Natal and nearby. Twenty species are enumerated, each with description and cited specimens. A key for their identification is provided. Sixteen of the species occur in Natal itself (5 endemic): the others are *H. pulchra* (Transkei & E Cape), *H. hutchingsiae* (Transkei), *H. huttonii* (E Cape) and *H. crocopsis* (Lesotho). There are 5 new species, *H. hutchingsiae, H. curvula, H. scopulosa, H. pubinervia* and *H. alborosea*, and one new subspecies, *H. baurii* subsp. *formosa*. The sectional classification of the genus is briefly discussed.

This is a preliminary study. The genus is a difficult one and needs much careful field work coupled with experimental investigations. It is likely that the results of this will require the full range of taxonomic categories for their satisfactory expression. Here we restrict ourselves to the use of binomials (except for *Hesperantha baurii* subsp. *formosa*), our aim being to give the simplest possible ground plan from which more detailed work can be launched. In recent years workers in herbaria have tended towards a very broad species concept, particularly in relation to *Hesperantha baurii*. Here we have tried to reach greater precision, and where a broad concept is still unavoidable we have indicated the pattern of variation within the species. We have felt able to maintain, at this stage, a majority of the available species names, but readily admit that the boundaries between some of them are tenuous indeed: this is where the experimental work and extensive field collections are needed. For example, *H. pulchra* and *H. woodii* may be no more than geographically restricted variants of a single species: intermediates and geographical overlapping may yet be found. Full specific rank for these may well prove untenable, but we feel that the nomenclatural complexity of subspecies and varieties should not be introduced ahead of more detailed studies. Demonstration of inter-sterility or sharp geographical segregation would always enhance the claims of somewhat doubtful species to continued recognition.

The scope of this paper is the genus as it occurs in Natal, but we have also taken into consideration material from Lesotho, the Transkei and the Eastern Cape where appropriate; we also include notes on species from the Transvaal. Collections of many species from the Transvaal are inadequate and we lack field knowledge of them. It would therefore be premature to take decisions.

Of the twenty species enumerated, sixteen occur in Natal itself; the others, which have been included because they are particularly relevant to the study of the Natal species, are: 3, *H. pulchra* (Transkei & E Cape); 4, *H. hutchingsiae* (Transkei); 5, *H. huttonii* (E Cape) and 19, *H. crocopsis*

*University of Natal, Pietermaritzburg, S Africa; financial assistance from CSIR (Pretoria) is acknowledged.

(escarpment summit just inside Lesotho). There are five species endemic to Natal, four of which are montane and there must be a good chance that they will eventually be found on one of the Drakensberg extensions outside the province. They are 6, *H. curvula* and 10, *H. alborosea*, both known only from the southern part of the Berg between Sani Pass and Bushman's Nek; 8, *H pubinervia*, only found once, in the Royal Natal National Park at the northern end of the main escarpment, and 7, *H. scopulosa*, which occurs all along the face of the Berg from National Park to Bushman's Nek. The fifth endemic, *H. gracilis*, is the one that seems most likely to remain so. It is restricted to the cliffs of Table Mountain Sandstone around the Valley of a Thousand Hills north, and inland, from Durban. This formation is recognized as the home of a number of endemics (for Compositae see Hilliard, 1978, pp. 414–415); one, found growing near *H. gracilis*, is *Gladiolus cruentus* T. Moore (see Hilliard & Burtt, 1983, p. 306).

Sectional classification. Goldblatt (1982) has recently proposed an infrageneric classification in which he recognizes four sections, in whose diagnosis characters of the corms are strongly emphasised. In the Natal area one species, *H. tysonii*, stands apart: the bract is tubular at the base, the flower is zygomorphic and opens in the evening. It belongs to sect. *Radiata* Goldblatt and is the only species of the section in our area. Two other species also form a discrete group: they are *H. crocopsis* and *H. schelpeana*, both from the summit plateau. The distinctive features of these two species are the solitary, erect, chalice-shaped flowers and the fact that the flowering shoot bears no foliage leaves, these being hysteranthous and produced from a separate bud. Goldblatt has included *H. crocopsis* and *H. schelpeana* in sect. *Concentrica* Goldblatt, but this perhaps needs reconsideration.

It is certainly possible to work on the remaining species dealt with here, both in the field and in the herbarium, without feeling that more than one sectional group is involved. The only one having a distinctive feature is *H. grandiflora*, in which the long perianth-tube is curved at the top at anthesis and the flower-face is held more or less vertically with the anthers grouped together on the upper side: even this is probably only a temporary posture, the curvature developing late and disappearing as the flower fades. One would therefore expect all the species to fall into one section, but it is difficult to assign them to either sect. *Concentrica* Goldblatt, in which 'the old tunic layers split from base and apex into somewhat elliptic sections which completely enclose the new tunic layers produced in successive years' (Goldblatt 1984, 35) or to sect. *Imbricata*: 'In corms with imbricate tunics the older layers are split in the lower part and displaced upwards. As successive layers accumulate above, the tunics overlap one another in a distinctive way. The upward displacement of the older tunics is usually easy to determine, but occasionally the displacement is minimal and then the tunic type is difficult to recognize.'

These characters of the corm tunic are difficult to use because the outer tunics are very often lost in digging out the corm, and even if extracted intact they are often broken up when pressed. But not withstanding this,

it is clear that in the species with which we are dealing the old tunic layers envelop the new as in sect. *Concentrica*, but they are split more or less evenly in the lower part as in sect. *Imbricata*. In our view, this group of species is best accommodated in sect. *Imbricata*, most of them showing only slight upward displacement of the corm tunics. Goldblatt, however, has referred to sect. *Concentrica* as having 'radiated extensively in the southern African Drakensberg' (Goldblatt, 1982, p. 376); with this we cannot agree.

KEY TO THE SPECIES

1a. Flowering stem bearing cataphylls or bracts only; foliage leaves produced from a separate shoot 2
b. Flowering stem bearing leaves as well as bracts 3

2a. Tepals at least 14mm long . . . . . **18. H. schelpeana**
b. Tepals c.6–7mm long . . . . . **19. H. crocopsis**

3a. Bract tubular in lower part; flowers opening in the evening . . . . . **20. H. tysonii**
b. Bract split to the base; flowers opening in sunshine 4

4a. Perianth tube at least 14mm long 5
b. Perianth tube less than 14mm long 14

5a. Leaves puberulous . . . . . **8. H. pubinervia**
b. Leaves glabrous 6

6a. Anthers 4·5–6mm long, or rarely reaching 7mm but then perianth tube about twice as long as tepals 7
b. Anthers at least 7mm long 8

7a. Perianth tube c.9–16mm long; tepals white to palest pink or lilac; leaves mostly 1·5–4mm broad . . . . . **9. H. candida**
b. Perianth tube c.20–40mm long; tepals bright magenta pink; leaves mostly at least 5mm broad . . . . . **7. H. scopulosa**

8a. Perianth tube curved in upper part at anthesis (not always visible in young or faded flowers); filaments (7–)8–14mm long . . . . . **1. H. grandiflora**
b. Perianth tube straight at anthesis; filaments 3–9mm long . . 9

9a. Filaments (6–)7–9mm long 10
b. Filaments 3–6mm long 11

10a. Leaves 1·5–2·5(–3)mm broad; stem without axillary cormlets near base . . . . . **2. H. woodii**
b. Leaves (2–)3–9mm broad; stem usually with axillary cormlets near base . . . . . **5. H. huttonii**

11a. Stem curved at base . . . . . **6. H. curvula**
b. Stem straight 12

12a. Perianth tube 14–28mm long; stem without axillary cormlets near base 13

b. Perianth tube either longer (21–39mm) or stem with axillary cormlets near base . . . . . **5. H. huttonii**

13a. Leaves 240–520mm long, 3–5·5mm broad; flowers 5–11 **3. H. pulchra**
b. Leaves 100–220mm long, 1·5–2mm broad; flowers 2 **4. H. hutchingsiae**

14a. Perianth tube 3–5·5mm long 15
b. Perianth tube 6–13mm long 18

15a. Perianth white, sometimes flushed pink outside or reddening with age . . . . . **17. H. hygrophila**
b. Perianth bright pink (white sports may occur in pink populations) 16

16a. Leaves 5·5–7mm broad, falcate . . . . **13. H. ingeliensis**
b. Leaves up to 4mm broad, straight or slightly falcate . . . 17

17a. Leaves 0·75–1·5(–2)mm broad; anthers 3·5–6.5mm long **14. H. glareosa**
b. Leaves mostly 2·5–4mm broad; anthers mostly 5–8·5mm long, rarely 4·5mm . . . . . **15. H. baurii**

18a. Inner and outer tepals concolorous 19
b. Inner and outer tepals not concolorous 24

19a. Perianth white or creamy white 20
b. Perianth pale mauve 23

20a. Plant pendent; seeds longer than broad . . . **11. H. gracilis**
b. Plant erect; seeds about as long as broad 21

21a. Perianth creamy-white; grasslands; coast to Midlands **16. H. lactea**
b. Perianth pure white or pink; marshes, wet rocky places, damp overhangs; montane 22

22a. Perianth tube 5–7mm long. . . . . **17. H. hygrophila**
b. Perianth tube (7–)9–16mm long. . . . . **9. H. candida**

23a. Plant pendent; seeds longer than broad: Midlands . **11. H. gracilis**
b. Plant erect; seeds about as long as broad; montane . **9. H. candida**

24a. Inner tepals pale pink or white inside, the outer usually marked outside with darker veins on lilac or greenish ground; flowering Aug.–Oct. . . . . **12. H. vernalis**
b. Inner tepals white, outer pink outside; flowering Nov.–Apr. . 25

25a. Outer bracts 6·5–10mm long; perianth tube (6–)7–9mm long; anthers (3–)4mm long . . . . . **10. H. alborosea**
b. Outer bracts 9·5–15mm long; perianth tube 5–7mm long; anthers mostly 5–10mm long . . . . **17. H. hygrophila**

1. Hesperantha grandiflora Lewis in J.S. Afr. Bot. 7:30 (1941); Foster in Contrib. Gray Herb. 166:14 (1948).
Type: Natal, East Griqualand, Mt Currie, near the waterfall, 5300ft, iv 1883, *Tyson* 1151 (BOL, K, both with coloured sketches, NBG).
Syn.: *Acidanthera tysonii* Baker, Handb. Irid. 187 (1892) & in Thiselton-Dyer, Fl. Cap. 6:133 (1896). Type as above.
Hesperantha galpinii Foster in Contrib. Gray Herb. 166:13 (1948).

Type: Lesotho, valley above Buffalo River waterfall, c.8200ft, 14 iii 1904, *Galpin* 6856 (K, BOL, GRA, NH, SAM).

Corm turbinate, c.15 × 15mm, tunics concentric, dark brown, tips splitting into narrow, almost fibrous, cusps, bases splitting into broader, oblong, segments, often truncate and lacerate. *Stem* (including spike) 150–700mm long, simple, erect, straight. *Cataphyll* solitary, membranous, pale or purplish. *Leaves* 4, the lowermost basal, the others inserted on the stem, the uppermost usually reduced to a sheathing bract, with or without a free tip, developed leaves 150–750 × 1·5–6(–8)mm, straight, obtuse to subacute, soft-textured. *Spike* 1–6-flowered, rarely more, straight or very weakly flexuous. *Outer bracts* (18·5–)24–39mm long (inner smaller), green often tipped reddish. *Perianth* 49–74mm long, tube (23–)26–40mm long, curved at tip at anthesis, c.1mm diam., dilated in throat; tepals subequal, (23–)25–37 × 6–12mm, elliptic, obtuse to subacute, bright magenta pink (rarely a white sport), open during the day; ratio of tube length to tepal length roughly 1–1·25:1. *Stamens* exserted; filaments (7–)8–14mm long; anthers (7·25–)8–13mm long. *Capsules* c.15 × 4–5mm, oblong; seeds c.1–1·5mm diam., more or less globose, with a narrow wing at each end; funicle filiform, soon deciduous.

NATAL. Lion's River distr., Kamberg area, farm 'Allendale', 24 i 1978, *Hilliard & Burtt* 11257 (E). Mpendhle distr., 2929 BC, Mulangane ridge, above Carter's Nek, 7000–7300ft, 3 ii 1984, *Hilliard & Burtt* 17522 (E, NU); upper Loteni, vicinity of Ash Cave, 6400–6500ft, 5 ii 1985, *Hilliard & Burtt* 18113 (E); ibidem, pure white sport, *Hilliard & Burtt* 18133 (E). Underberg distr., 2929 CB, Sani Pass, c.8600ft, 17 ii 1982, *Hilliard & Burtt* 15500 (E, NU); Cobham Forest Station, Upper Polela Cave area, c.6800ft, 14 ii 1979, *Hilliard & Burtt* 12523 (E, NU); ibidem, Sipongweni, 7100ft, 20 ii 1981, *Hilliard & Burtt* 14006 (E, NU); ibidem, c.6500ft, 13 iv 1974, *Hilliard* 5509 (E, K, MO, NU, PRE); ibidem, Emerald Dale, 6200ft, 4 iii 1985, *Hilliard & Burtt* 18327 (E, NU); 5–7 miles NNW Castle View Farm, headwaters Mlahlangubo river, 8000ft, 20 i 1982, *Hilliard & Burtt* 15217 (E, NU); 2929 CC, Garden Castle Nature Reserve, c.6200ft, 31 i 1975, *Hilliard & Burtt* 7878 (E, NU); Bushman's Nek, Thamathu Pass, c.8100ft, 5 ii 1976, *Hilliard & Burtt* 8973 (E, MO, NU); ibidem, c.6500ft, 13 ii 1982, *Stewart & Manning* 2273 (E, NU); Castle Gardens, 9 iv 1970, *Solomon* 36 (E, NU). Polela distr., Mawahqua Mt, farm Glengariff, 6200ft, 26 iii 1977, *Rennie* 815 (NU); ibidem, farm Sunset, 6000ft, 17 ii 1979, *Rennie* 1006 (NU). Mt Currie distr., Kokstad, iii 1951, *Kelly* 42 (NBG).

LESOTHO. Summit of Drakensberg c.1 mile S of Giant's Castle Pass, c.9500ft, 17 i 1973, *Wright* 1361 (E, NU). Sehlabathebe, 2350–2450m, 31 iii 1977, *Hoener* 1811 (E, PRE); ibidem, 2300–2500m, 4–14 i 1973, *Guillarmod, Getliffe & Mzamane* 347 (K, PRE). Near Qacha's Nek, summit of Maqaba Peak, 13 iii 1936, *Galpin* 14247 (BOL, PRE).

TRANSKEI. Mjika, 3128 BC, slopes above Mhlahlane Forestry Reserve, c.1600m, 23 iv 1985, *Hutchings* 1636, 1637 (E, NU). Near Tsolo, Tsitsa waterfall, iii 1910, *Kolbe* 1769 (BOL).

CAPE. Maclear distr., Tsitsa footpath, c.7750ft, 20 iii 1904, *Galpin* 6857 (BOL); Naude's Nek pass, 27 ii 1982, *Batten* 595 (E, NU); ibidem, 8000ft,

19 ii 1971, *Hilliard & Burtt* 6632 (E, K, MO, NU, PRE). Barkly East distr., summit Doodman's Krans Mountain, c.9650ft, 9 iii 1904, *Galpin* 6850 (BOL, PRE): Rhodes, Buttermead, 15 iii 1945, *Naude* 3 (NBG).

Hesperantha grandiflora is endemic to the southern Drakensberg and its outliers, ranging from the heights above the headwaters of the Loteni and Elandshoek rivers in Lesotho, immediately south of Giant's Castle, to the vicinity of Naude's Nek in the Cape Drakensberg and the Mhlahlane Forest Reserve NW of Umtata, Transkei, over an altitudinal range of c.1600–3000m. It favours damp, and often grassy, partially shaded places such as stream banks, drainage lines and the margins of forest patches, flowering between the middle of January and early April. The flowers are bright cyclamen pink (though pure white sports have been recorded) and open in sunshine. *Hesperantha grandiflora* is the only pink-flowered species to have more or less zygomorphic flowers: the top of the perianth tube curves at anthesis and the anthers are then held on the upper side.

The type specimens of *H. grandiflora* came from Mt Currie near Kokstad in southernmost Natal, roughly halfway between the northern and southern limits of the distribution range of the species. The leaves vary in width from 2–6mm, and in this they are matched by many collections from the Natal Drakensberg. The type of *H. galpinii*, which we include in *H. grandiflora*, came from the valley of the Buffalo river in SE Lesotho, near the southern limit of the species; it has leaves 2mm wide: so do specimens from nearby Naude's Nek across the Cape Drakensberg, and from near Qachas Nek and Tsolo in Transkei, while both narrow- and broad-leaved plants have been recorded from Mawahqua Mountain about 80km NE of Mt Currie, as well as from Sehlabathebe National Park in SE Lesotho. These narrow-leaved plants resemble the closely allied *H. woodii*, which may be distinguished by its mostly shorter perianth tube (14–27mm, not 26–40) which is straight, not curved, at anthesis. The Transvaal species, *H. brevicaulis* (Bak.) Lewis, which is known with certainty only from the type collection made in the Barberton Mountains, is also allied to *H. grandiflora*: it too has a long perianth tube (c.36mm), but this is straight, not curved, at anthesis.

A distinctive plant that may be a broad-leaved ally of *H. grandiflora* or possibly a hybrid between *H. grandiflora* and *H. scopulosa* is represented by four gatherings:
Underberg distr., 2929 CB, Cobham Forest Reserve, Sipongweni, c.7000ft, 20 ii 1981, *Hilliard & Burtt* 14005 (E); Polela, 6000–7000ft, ii 1896, *Evans* 646 (K); Garden Castle Forest Reserve, tributary of Umzimkulu W of forester's house, c.6200ft, 31 i 1975, *Hilliard & Burtt* 7878 (E); Bushman's Nek, Thamathu Pass, 8000–8200ft, 4 ii 1976, *Hilliard & Burtt* 8924 (E).

It has the curved perianth tube and long anthers of *H. grandiflora* but the leaves are remarkably broad (5·5–10mm, not generally 1·5–5·5) and the plants grow in rock crevices on cliffs. Both habitat and leaf width are reminiscent of *H. scopulosa*. At the sites known to us, the three plants grow in close proximity, *H. grandiflora* on the grass slopes, *H. scopulosa* on the cliffs. *Hesperantha scopulosa* is normally isolated from *H. grandiflora* by its very late flowering, but of course an occasional overlap may occur.

2. Hesperantha woodii Baker, Handb. Irid. 150 (1892) & in Thiselton-Dyer, Fl. Cap. 6:63 (1896–97).
Type: Natal [Richmond distr.], stony places on the Peak of Byrne, 3500ft [sic; 5500ft], *Wood* 1868 (K, NH).

Corm turbinate, c.15 × 12mm, tunics concentric, dark brown, tips splitting into narrow cusps, bases splitting into narrowly oblong segments. *Stem* (including spike) 400–700mm long, simple, erect, straight. *Cataphyll* solitary, membranous, dark. *Leaves* 4, lowermost basal, the others inserted on the stem, the uppermost often much reduced; developed leaves 300–750 × 1·5–2·5(–3)mm, straight, acute, firm. *Spike* 1–9-flowered, straight or very weakly flexuous. *Outer bracts* 22–33mm long (inner smaller), green sometimes tipped reddish. *Perianth* 37–52mm long, tube 14–28mm, straight, c.1mm diam., dilated in the throat; tepals subequal, 21–28 × 6–8mm, elliptic, obtuse, bright magenta pink, the colour varying in intensity, open in daylight; ratio of tube length to tepal length 1:1–1·5. *Stamens* exserted; filaments 6–9mm long; anthers 8–11mm long. *Capsules* c.15–18 × 5mm, oblong; seeds c.1mm diam., dark, with a short broad pale apical wing; funicle filiform, soon deciduous.
NATAL. Estcourt distr., Mooi River, 22 iii 1902, *Johnston* 881 (E). Pietermaritzburg distr., Swartkop, v 1945, *McElligot* 24 (NU). Richmond distr., Byrne, Peak of Byrne, c.5500ft, 17 iv 1977, *Hilliard & Burtt* 10160 (E, NU); ibidem, c.5000ft, 10 iv 1976, *Hilliard* 8108 (E, NU). Underberg distr., Bamboo Mt, N face, 5500–6500ft, 8 iv 1977, *Hilliard & Burtt* 10072 (E, NU); Underberg, iii 1938, *McClean* 753 (PRE). Polela distr., Bulwer, 5100ft, 14 iv 1945, *Clarkson* 187 (NU); ibidem, 6000ft, *Badenhuizen et al.* J28927 (PRE). Ixopo distr., road to Donnybrook, farm Lynn Avis, 11 iv 1977, *Hilliard & Burtt* 10135 (E, NU).
TRANSKEI. Mjika, 3128 BC, slopes above Mhlahlane Forest Reserve, 1600m, 23 iv 1985, *Hutchings* 1638, 1632 (E).

Hesperantha woodii favours rough grassy places, along streams and particularly among rocks near forest margins. It is known from only a limited area of south central Natal, with one record from Transkei: from the environs of Mooi River and the top of the escarpment above Pietermaritzburg south through the hills near Richmond to Ixopo and west to the faces of Mawahqua and Bamboo Mountains at Bulwer and Underberg respectively, then the hills west of Umtata, Transkei, from c.1350 to 1980m above sea-level. Its area thus lies largely east of, and at mostly lower altitudes than, that of its ally *H. grandiflora*, and it generally flowers later than that species, in April and May. They are closely allied, and narrow-leaved plants of *H. grandiflora* much resemble *H. woodii* (see above for distinguishing characters), but being familiar with both species in the field, we are convinced of their distinctness.

3. Hesperantha pulchra Baker, Handb. Irid. 150 (1892) & in Fl. Cap. 6:63 (1896–97); Batten & Bokelmann, Wild Fl. E. Cape 42, pl. 33, 7 (1966).
Type: Transkei, Bazeia Mt, 2500–3000ft, iv, *Baur* 159 (K).

Corm 15–20 × 12–16mm, tunics concentric, dark brown, tips splitting into narrow, almost fibrous, cusps, bases splitting into narrowly oblong segments, ultimately lacerate. *Stem* (including spike) 400–800mm tall,

simple, erect, straight. *Cataphyll* solitary, membranous. *Leaves* 4, lowermost basal, the others inserted on the stem, the uppermost reduced to a sheathing bract, the tip free or not, developed leaves 240–520 × 3–5·5mm, straight, acute. *Spike* 5–11-flowered, straight or slightly flexuous. *Outer bracts* 17–36mm long (inner smaller). *Perianth* 28–52mm long, tube 14–25(–28)mm long, straight, c.1mm diam., dilated in throat; tepals subequal, 14–24 × 5–9mm, elliptic, obtuse or subacute, bright pink, open during the day; ratio of tube length to tepal length c.1:1. *Stamens* exserted; filaments (3–)4–6mm long; anthers 7–11mm long. *Capsules* 10–17 × 5–6mm, oblong; seeds c.1·25mm diam., with weakly or strongly developed wings.

TRANSKEI. Mqanduli, 1923, *Walker* BOL 17673 (BOL). Kentani, 1000–1200ft, 1902 and 1906, *Pegler* 450 (BOL, K, PRE, SAM).

CAPE. Maclear distr., between Mt Fletcher and Maclear, 'The Klip', 4500–6200ft, 5 iv 1947, *Whitworth* s.n. (BOL). Komgha distr., between Kei Mouth and Komgha, 1300ft, iii 1963, *Bokelmann* s.n. (NBG); near Komgha, Annexation Farm, iii 1890, 1500ft, *Flanagan* 502 (BOL, K, PRE, SAM). King William's Town, 2000ft, 1888, *Sim* 19929 (NU, and very poor). Keiskama Hoek distr., West Peak Pirie, 3500ft, 21 iv 1949, *Story* 3769 (PRE). Amatole Mts, Hogsback, 24 iv 1982, *Phillipson* 561 (Fort Hare).

We have no field knowledge of this species and the herbarium material available to us is rather inadequate. It is recorded as growing in 'marshy spots' (Flanagan), 'moist grassy places' (Bokelmann) (the latter adding 'open afternoon') and 'middle of *Bobartia* clumps' (Story), and appears to occupy a coherent geographical area from somewhere north of Maclear south to Komgha and west to the mountains around King William's Town and the Amatole Mountains, between c.300 and 1800m above sea-level. But two specimens from northern Natal (Zululand) need mention here. These are *Gerstner* 6713 (PRE), from Nkandla at 5000ft (1525m) and *Fakude* 3 from Useme Hill in Hlabisa district at c.1800ft (550m). They appear to be the same plant and are the only specimens of *Hesperantha* in this group (no's 1–6) to have been recorded north of the Tugela. Fakude's specimen has the perianth tube only 12mm long, which is short for *H. pulchra*, but in Gerstner's specimen it is 15mm long. We hesitate to equate them with *H. pulchra* until the species is more adequately collected.

4. Hesperantha hutchingsiae Hilliard & Burtt, **species nova** *H. pulchrae* affinis sed foliis brevioribus angustioribus c.10–22cm × 1·5–2mm (nec 24–52cm × 3–5·5mm) et floribus duobus tantum (nec 5–11).

Cormus c.8 × 8mm, tunicis non visis. *Caulis* (spica inclusa) c.30cm alta, simplex, uti folia rigide erecta. *Cataphyllum* solitarium, membranaceum, fuscum. *Folia* 4, 3 inferiora basalia, summum in vel supra medio caule oriens, vaginans; folia evoluta c.10–22cm longa, 1·5–2mm lata, linearia, acuta, marginibus incrassatis, costa prominente, venis lateralibus utrinque 1–3. *Spica* biflora. *Bractea* exterior 16–20mm longa, viridis sordide rubro-purpureo suffusa; interior minor. *Perianthium* c.37mm longum; tubus 21mm longus, c.0·5mm diam., fauce abrupte dilatatus; tepala subaequalia,

c.16 × 5·5mm, elliptica, obtusa, roseo-purpurea. *Stamina* exserta; filamenta 5mm longa; antherae 7·5mm longae. *Capsula* non visa.
Type: Transkei, 3128BC, Mjika, slopes above Mhlahlane Forest Station, c.1500m, 21 iii 1985, *Hutchings & Plumstead* 1621 (E holo.).

Mrs Hutchings tells us that towards the end of March this species produced a sheet of colour in a wet marsh. When, however, she returned in early June to get fruiting specimens, the plants had entirely disappeared.

Hesperantha hutchingsiae is allied to *H. pulchra*, the original material of which came from Bazeia mountain, some 30km south-west of Mhlahlane; but it clearly differs from that species in its shorter and narrower leaves and few-flowered inflorescence. The extent of the population and the marshy habitat ensure that we are not looking at a few depauperate specimens.

5. Hesperantha huttonii (Baker) Hilliard & Burtt in Notes RBG Edinb. 40:278 (1982).
Type: E Cape, Stockenstrom div., Katberg, *Hutton* s.n. (K).
Syn.: *Acidanthera huttonii* Baker in J. Bot. 14:339 (1876) & in J. Linn. Soc., Bot. 16:160 (1877) & Handb. Irid. 187 (1892) & in Fl. Cap. 6:133 (1896).
Hesperantha longituba auct., non (Klatt) Baker; G. Lewis in J. S. Afr. Bot. 7:30 (1941); R. C. Foster in Contr. Gray Herb. 166:19 (1948), p.p.

Corm c.8–10 × 8mm, turbinate, tunics concentric, dark brown, tips splitting into narrow cusps, bases splitting into oblong segments, truncate, lacerate; cormlets often produced in the axils of the lower leaves. *Stem* (including spike) 250–600mm long, simple, weak. *Cataphyll* wanting. *Leaves* usually 5, rarely 6, lowermost basal, the others inserted on the stem, the uppermost often reduced to a sheathing bract, sometimes well-developed, developed leaves 100–450 × (2–)3–9mm, straight or slightly falcate, acute to subobtuse, soft-textured. *Spikes* 2–7-flowered, more or less straight. *Outer bracts* 20–40mm long (inner shorter). *Perianth* 39–62mm long, tube 21–39mm, straight, c.1mm diam., dilated in throat; tepals subequal, 15–24 × 5–7·5mm, elliptic, obtuse to subacute, bright pink, open during the day; ratio of tube length to tepal length 1–1·5:1. *Stamens* exserted; filaments 6–7·5mm long; anthers 7·5–10mm long. *Capsules* 13–20 × 4–5mm; seeds c.1·5 × 1·25mm with a broad membranous wing at each end, nearly as long as the body of the seed.
CAPE. Stockenstrom div., Katberg Pass, c.3500ft, 6 ii 1945, *Adams* 155 (E, NU); Katberg, 2500–3000ft, iii, *Baur* s.n. (K); ibidem, near Black bridge, i 1930, *Dyer* 2319 (K). Victoria East distr., Hogsback 3800–4500ft, i 1891, *Rattray* BOL 15793 (BOL); ibidem, 4200ft, 24 ii 1935, *Giffen* s.n. (Fort Hare); ibidem, 4000ft, i 1962, *Bokelmann* s.n. (NBG); ibidem, 4500ft, 11 xii 1963, *Bokelmann* s.n. (NBG); ibidem, 26 vi 1962, *Hardwick* s.n. (NBG); ibidem, 3900ft, 6 ii 1981, *Phillipson* 163 (Fort Hare). Stutterheim distr., Qolora [=Kologha] range, Kabusie Forest, 3000ft, 6 iii 1982, *Batten* 598 (E, NU). King William's Town distr., Perie Forest, *Scott Elliot* 898 (K).

Hesperantha huttonii is known only from the Amatole Mountains and nearby in the eastern Cape, having been collected at Katberg, Hogsback, Perie and Kabusie. It favours damp partially shaded rocky sites, sometimes growing in the crevices of the rocks, particularly on forest margins and along forest streams. It flowers mainly between December and February, but there is one record for June.

The original material came from Katberg; Hutton's specimen and several other collections that we have seen from Katberg lack axillary cormlets; they are, however, present on *Dyer* 2319. In all the Katberg specimens, the perianth tube ranges in length from 33 to 39mm. The specimens from Hogsback, Kabusie and Perie Forest all have axillary cormlets and the perianth tube is 22 to 27mm long. But the similar facies of all the specimens, the unusual leaf number and lack of cataphyll, and the fact that they are all early flowering suggests that only one species is involved.

Hesperantha huttonii has been confused with *H. pulchra* with which it is partially sympatric, but that is a stiffer plant, with 4 (not 5) leaves and a cataphyll, and generally more flowers in the spike. *Hesperantha brevicaulis* from the Barberton Mountains is similar in aspect to *H. huttonii* and needs to be sought again so that careful comparisons can be made.

6. Hesperantha curvula Hilliard & Burtt, **species nova** *H. scopulosae* Hilliard & Burtt affinis sed habitu, perianthii tubo breviore (17–25mm, nec 32–42mm), antheris longioribus (7–9mm, nec 5–6mm) recedit. *H. pulchrae* Baker etiam similis sed caulibus brevioribus (12–30cm, nec 40–75cm) curvatis (nec rectis) et foliis 6–20cm longis (nec 24–52cm) distinguenda.

Cormus non visus. *Caulis* (inflorescentia inclusa) 120–300mm longus, simplex vel interdum semel ramosus, basi curvatus, suberectus. *Cataphyllum* solitarium, membranaceum, pallidum, parte libera fusco-marginata et ad apicem brunnea. *Folia* 4; duo basalia; tertium caulinum sed saepe basalibus aequale; summum in superiore parte caulis oriens, redactum, vaginans, sed apice libero; folia evoluta 60–20 × 1·5–4mm, minimo excepto leviter falcata, acuta, textura firma. *Bractea* exterior 14–21mm longa, 7–9-nervia, viridis, saepe apice rubente; interior paulo minor. *Inflorescentia* 1–5-flora, paulo flexuosa. *Perianthium* c.35–40mm longum; tubus (18–)19–25mm, c.1mm diam., fauce dilatatus. *Tepala* inter se et tubo subaequalia, 16–25mm × 6–8mm, elliptica, obtusa vel subacuta, vivide roseo-magentea. *Stamina* exserta; filamenta (3–)4mm longa; antherae 7–9mm longae. *Capsula* seminaque non visa.

Type: Natal, Underberg distr., 2929 CC, Bushman's Nek, Thamathu Pass, c.8100ft, 5 ii 1976, *Hilliard & Burtt* 8981 (NU holo.; E, MO iso.).

NATAL. Underberg distr., 2929 CC, Bushman's Nek, Thamathu Pass, c.7600ft, 5 ii 1976, *Hilliard & Burtt* 8954 (E, MO, NU); ibidem, 5 ii 1976, *Hilliard & Burtt* 8976 (E); vicinity of Tarn Cave above Bushman's Nek, c.8000ft, 20 i 1984, *Hilliard & Burtt* 17407 (E, NU); Drakensberg Gardens, 2000m, 7 ii 1982, *Bamps* 7195 (PRE).

Hesperantha curvula is known from a very limited area of the Natal Drakensberg. It grows in wet turf ledges above sheets of outcropping

Cave Sandstone or under boulders resting on wet turf, c.2000–2470m above sea level. The stems curve out and up to carry the spikes erect; the curve of the stem is followed by the rather stiff leaves, which reach roughly to the base of the spike of large bright pink flowers (rarely pale) that open only in sunshine; this curvature suggested the specific epithet.

We have diagnosed it against both *H. pulchra* and *H. scopulosa*, to which it seems most closely allied. *Hesperantha pulchra* is a plant of the E Cape and Transkei, and grows at much lower altitudes than *H. curvula*. The species that grow in the same area as *H. curvula* are *H. scopulosa* and *H. grandiflora*. *H. grandiflora* favours grassy streamlines and moist grassy slopes and has erect stems, leaves up to 750mm long, and big flowers, c.50–75mm long, with much longer filaments (7–15mm) than those of *H. curvula* (c.4mm).

7. Hesperantha scopulosa Hilliard & Burtt, **species nova** *H. huttonii* (Bak.) Hilliard & Burtt affinis sed bulbillis axillaribus semper deficientibus, antheris brevioribus (4·5–)5–6(–7) (nec 8–10mm), longitudinis tubi cum tepalis proportione (1·5–2:1, nec 1–1·5:1) differt. Etiam semina *H. scopulosa* uno latere anguste alata, funiculo semine multo longiore, in *H. huttonii* semina apice basique alata, funiculo semine breviore in fructu facile distinguenda.

Cormus turbinatus, c.15–20 × 10–15mm; tunicae veteres sursum motae, fusco-brunneae, apicibus in cuspides angustas fere fibrosas fissis, basi in segmenta truncata lacerata fissa. *Caulis* (inflorescentia inclusa) 50–250(–450)mm longo, simplex vel semel (raro bis) ramosus, pendulus, sursum curvatus. *Cataphyllum* solitarium, membranaceum, pallidum. *Folia* plerumque 4, interdum 3; duo basalia, tertium caulinum sed saepe basalibus aequaliter evolutum, summum in parte superiore caulis oriens, redactum, vaginans sed apice libero; folia evoluta 45–370 × (2·5–)5–10·5mm, recta vel paulo falcata, obtusa vel subacuta, textura molli. *Inflorescentia* 1–8-flora, paulo flexuosa. *Bracteae* exteriores 20–35mm longae, 7–9-nerviae, virides, saepe apice rubente; interiores minores. *Perianthium* 43–63mm longum; tubus (20–)32–42mm, c.1mm diam., fauce dilatato; tepala inter se subaequalia, 16–25 × 5·5–7·25mm, elliptica, obtusa vel subacuta, vivide roseo-magentea, proportione longitudinis tubi cum tepalis 1·5–2:1. *Stamina* exserta; filamenta 3–4·5mm longa; antherae (4·5–)5–6(–7)mm longae. *Capsulae* 8–13 × 3·5mm, oblongae. *Semina* 1·25 × 0·5mm, oblongo-elliptica, uno latere anguste alata, laete brunnea, ala pallida; testa laxa mamillata; funiculus longus pallidus.

Type: Natal, Underberg distr., 2929 CB, Bamboo Mountain, N face, 5500–6500ft, 8 iv 1977, *Hilliard & Burtt* 10074 (NU holo., E iso.).

NATAL. Bergville distr., 2828 DB, Royal Natal National Park, cliffs below Dooley, facing E, c.6200ft, 17 ii 1984, *Hilliard & Burtt* 17673 (E, NU); Cathedral Peak Forest Reserve, Mike's Pass, c.1700m, 17 iv 1982, *Manning* 221 (NU); ibidem, Rainbow Gorge, 14 iv 1978, *Hilliard* 8133 (E, NU); ibidem, 5500ft, 14 iv 1953, *Killick* 1943 (PRE); below Champagne Castle, Umhlwasine Valley, 7200ft, 25 iii 1962, *Edwards* 2750 (K, NU, PRE); Champagne Castle, 5000ft, v 1954, *Odhner* 17 (NU); ibidem, 15 iv 1935, *Obermeyer* s.n. (PRE). Estcourt distr., Giant's Castle Game

Reserve, 6200ft, 3 iii 1965, *Trauseld* 342 (NU, PRE); Kamberg Mountain, N-facing slope, c.6950ft, 13 iii 1974, *Wright* 1751 (NU); Kamberg Nature Reserve, 6200ft, 27 ii 1980, *Stewart* 2167 (E, NU). Lion's River distr., Nhluzane, 27 ii 1977, *Coleman* s.n. (NU). Mpendhle distr., Mulangane, above Carter's Nek, c.7000ft, 13 iii 1985, *Hilliard & Burtt* 18379 (E, NU, PRE); Loteni Nature Reserve, 5000ft, 7 iv 1978, *Phelan* 85 (E, K, NU). Underberg distr., Cobham Forest Station, Sipongweni Caves, c.6500–7000ft, 13 iv 1974, *Hilliard* 5503 (E, K, MO, NU); near Sani Pass, 4 iv 1975, *Dundas-Starr* 9 (NU).

Hesperantha scopulosa grows in the crevices of dripping wet cliffs, either sandstone or dolerite, or occasionally on mossy rock faces wet from the spray of waterfalls. The corms are usually deeply wedged in horizontal cracks, and the whole plant is pendulous, with the spike curving upwards; in well-grown plants, the leaves equal or exceed the spike in length. It is endemic to Natal, where it grows along the face of the Drakensberg and its outlying mountains, between c.1500 and 2200m above sea-level. The flat green leaves hanging rather limply from horizontal rock crevices are a common sight throughout the summer, but the species flowers late, coming into bloom in the latter half of February in some localities, more often in March and April.

It has been confused with *H. longituba* (Klatt) Bak., but that is a very different species, an upright plant, flowering in August and September, the perianth white, often pink or brownish on the backs of the tepals, and opening in the evening; it occurs in the mountains of the eastern Karroo. The relationship of *H. scopulosa* lies with *H. huttonii*; both species have bright pink flowers that open during the day. *Hesperantha huttonii* may also grow on damp cliffs in the mountains of the E Cape, but it has much smaller corms (c.8 × 8mm) and usually develops cormlets on the lower part of the stem; the perianth tube is shorter in proportion to the length of the tepals (c.1–1·5:1, not c.1·5–2:1) and the anthers are larger (8–10mm, not 4·5–6mm). There is a striking difference too in the seeds: in *H. scopulosa*, the brown, fertile part is nearly three times as long as broad with only an ill-developed wing at one end, the other end being drawn out into a long colourless funicle; in *H. huttonii*, the fertile part is about as long as broad, with a well developed wing, about as big as the body of the seed, at each end, and the funicle is shorter than the seed.

We have seen only the type of *H. brevicaulis*, a plant collected by Galpin on 'mountain tops among rocks' on the Devil's Bridge, Makwonga Range, near Barberton, in March 1891. The filaments, which are about 8mm long, at once distinguish it from *H. scopulosa* (3–4·5mm). A plant that is clearly allied to *H. brevicaulis* is known from God's Window, near Graskop, and MacMac Falls, a little further south (*McNeil* s.n. PRE; *Germishuizen* 116/50, PRE; *Goldblatt* 73, J). It differs in its shorter anthers (6mm, not 9·25–9·5), shorter filaments (c.6mm, not 8) and mostly narrower leaves (1·5–3·5mm, not 4mm). In these plants, as well as in the type of *H. brevicaulis*, the ratio of tube length to tepal length is 1–1·5:1, as in *H. huttonii*, but they lack the axillary cormlets common in *H. huttonii*. Clearly more collections from the eastern Transvaal are desirable.

8. Hesperantha pubinervia Hilliard & Burtt **species nova** nulli arcte affinis, nervis et marginibus foliorum conspicue puberulis distincta. Ab *H. pilosa* (L.f.) Ker et *H. ciliolata* Goldbl., speciebus austro-occidentalibus foliis pilosis vel ciliatis notatis, peranthii tubo c.20mm longo (nec 3–12mm) statim distinguenda.

Cormus turbinatus, c.10 × 10mm; tunicae veteres sursum motae, fusco-brunneae, apicibus in cuspides angustas fere fibrosas, basibus in segmenta truncata lacerata fissis. *Caulis* (inflorescentia inclusa) c.180–220mm, longus, simplex, erectus. *Cataphyllum* solitarium, membranaceum, glabrum. *Folia* 4, 2 basalia, 1 caulinum lamina bene evoluta, summum in parte caulis superiore oriens redactum vaginans sed apice libero; folia evoluta 90–120 × 3–3·5mm, recta vel paulo falcata, subacuta; margines foliorum onium incrassatae; costa utrinque prominens venis secondariis utrinsecus saltem una interdum 2 vel 3, venis omnibus marginibusque utrinque puberulis. *Flores* solitarii. *Bractea* exterior 21–23mm longa, c.9-venosa, viridis, apice rubente; interior c.17mm longa. *Perianthium* c.36mm longum; tubus c.20mm longus, 1mm diam., fauce dilatatus; tepala subaequalia, c.16 × 3·5mm, elliptica, subacuta. *Stamina* exserta, filamentis 5mm longis; anthera 4·5mm. *Styli* rami 11mm. *Capsula* ignota.
Type: Natal, [Bergville distr.], National Park, Mont aux Sources, ii 1927, *Prescott-Decie* s.n. (BOL).

Hesperantha pubinervia is only the third species of *Hesperantha* known to have hairy leaves. The indumentum is, however, quite different in each. *H. pilosa* (L.f.) Ker has rather long, thin scattered hairs; *H. ciliolata* Goldbl. has short hairs confined to the grooves between the veins. In *H. pubinervia*, however, the grooves between the veins are glabrous, the short thickish hairs being confined to the veins themselves and the thickened margins.

Hesperantha pubinervia should be sought again in the Royal Natal National Park. Unfortunately, Mrs Prescott-Decie did not record locality, habitat, or altitude. The puberulous leaves would be easy to recognize when examined, but if the flower colour (unrecorded) is pink and the plants grow in the same area as *H. baurii* the search may be tedious.

9. Hesperantha candida Baker, Handb. Irid. 151 (1892) & in Fl. Cap. 6:62 (1896).
Type: Orange Free State, 1861, *Cooper* 746 (K holo.; E, NH, PRE iso.).
Syn.: *H. leucantha* Baker, Handb. Irid. 150 (1892) & in Fl. Cap. 6:60 (1896). Type: Natal, Oliviershoek Pass, 14 i 1886, *Wood* 3437 (K).

Corm turbinate, c.10 × 10mm, tunics concentric, dark brown, tips splitting into short sharp cusps, bases splitting into truncate, finely lacerated segments. *Stem* (including spike) 80–300(–450)mm tall, simple or forking once, erect, but often curved, weak. *Cataphyll* solitary, membranous, pale. *Leaves* 4–5, lower 2–3 basal, the others inserted on the stem, all but the uppermost usually with a well-developed blade, uppermost reduced, sheathing, the tip usually free; developed leaves c.60–300 × (1–)1·5–4(–6)mm, straight or slightly falcate, acute, soft-textured, margins thickened, midrib raised. *Spike* 1–6-flowered. *Outer bract*

8–18mm long, inner smaller, with c.5 main veins, lesser ones sometimes visible as well, green, sometimes tipped reddish. *Perianth* 20–33mm long; tube (7–)9–16mm long, c.0·5mm diam., dilated in throat; tepals subequal, 10–17 × 3–5mm, elliptic, obtuse to subacute, colour ranging from white or palest pink to pale lilac-mauve, outer tepals sometimes washed pale green outside, open during the day; ratio of tube length to tepal length 1:1–1·5. *Stamens* exserted; filaments (2·5–)3–5mm long; anthers (3–)4–6(–7)mm long. *Capsules* 7–9 × 4mm, oblong; seeds c.1–1·5 × 1–1·5mm, light brown, angled by pressure, very narrowly margined.

TRANSVAAL. Letaba distr., The Downs, 5400ft, *Speedy* s.n. (PRE). Waterberg distr., Krantzberg, farm Groothoek, 6000ft, 6 iv 1941, *Codd* 6489 (PRE). Lydenburg distr., Graskop, Fairyland, 1400m, 28 iii 1979, *Kluge* 1852 (PRE); Mt Anderson, 7300ft, 9 iii 1933, *Galpin* 13781 (BOL, PRE); 13780 (PRE). Johannesburg distr., near Milner Park, 23 iii 1930, *Moss* 18225 (BOL, J, PRE); Witpoortjie Kloof, 15 iii 1929, *Moss* 4308 (PRE). Wakkerstroom distr., farm Oshoek, 21 ii 1978, *Smook* 1213 (PRE).

ORANGE FREE STATE. Harrismith distr., 2829 AC, near Swinburne, Manjanets Mountain, 6500ft, 21 ii 1970, *Hilliard* 4966 (E, NU, PRE); ibidem, Manyanyeza Mountain [orthographic variant], 5 i 1979, *Hilliard & Burtt* 11955 (E, NU); ibidem, 2000m, 23 i 1965, *Jacobsz* 468 (PRE); Kerkenberg, 1500m, 4 i 1979, *Jacobsz* 1485 (PRE). Bethlehem distr., Golden Gate National Park, c.2200m, i 1963, *Liebenberg* 7011 (PRE).

NATAL. Utrecht distr., farm Naauwhoek, 6600ft, 18 i 1961, *Devenish* 484 (PRE). Bergville distr., 2828 DB, Royal Natal National Park, near Basuto Gate, c.7200ft, 18 ii 1984, *Hilliard & Burtt* 17689 (E, NU); ibidem, 25 iii 1984, *Manning* 531 (NU).

LESOTHO. Maseru distr., 45 miles on Mountain road from junction with Roma road, 2660–2700m, 15 ii 1963, *Nordenstam* 2093 (NBG). Blue Mountain Pass, c.2500m, ii 1980, *Schmitz* 8967 (NU, PRE). Phutha, 10000ft, 26 ii 1949, *Compton* 21579 (NBG). Leribe, 5–6000ft, i 1913, *Dieterlen* 788 (PRE, SAM). Near Mateka, c.6000ft, 22 iii 1951, *Bruce* 353 (PRE).

Hesperantha candida ranges from the mountains of the Transvaal south to Lesotho and neighbouring parts of the Orange Free State, and just enters Natal in the northern Drakensberg, from National Park to the low Berg on the Natal–Transvaal border, at altitudes ranging from c.1500–3000m. It grows in sedge and grass mats at the edges of wet sloping rock sheets and on wet cliffs, or in moist bare ground under sandstone overhangs, or at high altitudes, on moist stony slopes. The flowers, which appear between January and March, vary in colour from white to palest pink or lilac, and open in daylight.

Goldblatt (1984, p. 69) reduced *H. candida* to synonymy under *H. longituba* (Klatt) Baker, a spring-flowering species with tepals white inside and opening in the evening. Unfortunately, Cooper did not record the month in which he collected the specimen on which the name *H. candida* is based, nor did he give any biological or ecological information. The measurements of the floral parts of *H. candida* and *H. leucantha* accord, although, as Dr Goldblatt himself notes (op. cit.,

p. 71), the type specimen of *H. candida* has smaller flowers than those of *H. longituba* (tube 20mm, anthers 10–11mm in *Bowker* s.n., lectotype of *H. longituba*; 9–10mm and 5·5–6·5mm respectively in *Cooper* 746, type of *H. candida*; 9mm and 5·25mm in *Wood* 3437, type of *H. leucantha*).

As in *H. longituba*, the upper part of the leaves is often withered or missing; this is a common feature too in *H. vernalis*, another close ally. *Hesperantha vernalis* flowers in spring and has pale lilac or pink and white flowers that open during the day.

Hesperantha candida is easily confused with *H. glareosa* (no. 14), but the leaves of *H. candida* are softer than those of *H. glareosa*. This is partly reflected in their anatomy: in *H. candida* the raised midrib is hemispherical in outline and in dried material is uniformly pale; in *H. glareosa*, the midrib, though raised, is usually clearly flattened and is bicoloured, the median pale portion being flanked by green bands. The leaves of *H. candida* are mostly broader than those of *H. glareosa*, the filaments longer, and the flowers paler.

10. Hesperantha alborosea Hilliard & Burtt, **species nova** *H. candidae* affinis sed bracteis plerumque brevioribus 6·5–10mm longis (nec 8–18mm), perianthii tubo breviore 6–9mm longo (nec 9–16mm), tepalis bicoloribus (nec concoloribus), filamentis 1·5–2·5mm longis (nec plerumque 3·5mm) differt.

Cormus c.15 × 8mm; tunicae concentricae, fusco-brunneae, apice in cuspides angustos, basi in segmenta latiora oblonga truncata lacerata fissae. *Caules* (spica inclusa) 70–110mm alti, simplices vel semel ramosi, erecti, saepe paulo flexuosi. *Cataphyllum solitarium,* membranaceum, plerumque apice fusco. *Folia* 4, 2 inferiora basalia, alia caulina, supremo redacto vaginante; folia evoluta 45–150 × 2–4·5mm, rigida, recta vel paulo falcata, obtusa vel subacuta, marginibus incrassatis, costis prominentibus, venis lateralibus obscuris. *Spica* 1–11-flora, paulo flexuosa. *Bracteae* exteriores 6·5–10mm longae, virides, apice rubro; interiores minores. *Perianthium* 15·5–22mm longum; tubus (6–)7–9mm longus; tepala subaequalia, 9·5–15 × 4–5·5mm, elliptica, obtusa vel subacuta, omnia interne alba, 3 exteriora externe roseo-suffusa; proportio tubi tepalo 1:1·5–2. *Stamina* exserta; filamenta 1·5–2·5mm longa; antherae (3–)4mm. *Capsula* haud visa.

Type: Natal, Underberg distr., 2929 CB, Cobham Forest Reserve, Upper Polela Cave area, c.7800ft, 13 ii 1979, *Hilliard & Burtt* 12497 (E holo., NU iso.); cult. in RBG Edinb. sub 790994 (E).

NATAL. Underberg distr., 2929 CB, Sani Pass, 8700ft, 7 i 1984, *Hilliard, Burtt & Manning* 17299 (E).

Hesperantha alborosea is known as yet from only two localities in the southern Natal Drakensberg, where it grows in damp sedge mats in streamlines, rock-flushes and wet gravelly areas. Its white flowers are marked with pink on the backs of the outer tepals. It is allied to *H. candida*, against which we have diagnosed it, but it is a much stiffer looking plant than that species. In the key it runs down next to *H. hygrophila* and resembles the occasional specimens of that species in which the three outer tepals become reddish on the backs. However,

H. alborosea has mostly smaller flowers and the ratios of tube to tepal length differ—1:1·5–2 in *H. alborosea*, 1:2–3(–4) in *H. hygrophila*, which also has mostly longer filaments and bigger anthers.

11. Hesperantha gracilis Baker, Handb. Irid. 149 (1892) & in Fl. Cap. 6:61 (1896).

Type: Natal, in the bush at the base of perpendicular rocks at Isangwaan, April, *Wood* 923 (K holo.).

Corm c.12 × 10mm (only one damaged one seen), tips of tunics splitting into cusps, bases wanting. *Stem* (including spike) 300–450mm long, pendulous, slightly curved, simple or forking once or twice low down. *Cataphyll* solitary, membranous, pale. *Leaves* 4, lower 2 basal, the other 2 inserted on the stem, the third with a well-developed blade, the fourth reduced, sheathing, the tip free or not; developed leaves 150–450 × 2–5mm, equalling or exceeding the inflorescence, straight, acute, soft-textured, margins slightly thickened, midrib raised. *Spike* 2–14-flowered. *Outer bract* 12–25mm long, inner much smaller, green. *Perianth* 22–29mm long; tube 6–8mm long, c.0·5mm diam., dilated in throat; tepals subequal 14–21 × 4–6mm, elliptic, obtuse to subacute, white or lilac-mauve, open during the day; ratio of tube length to tepal length 1:2–3. *Stamens* exserted; filaments 2–3mm long; anthers 6–7·5mm long. *Capsules* 5–8 × 3–4mm, oblong; seeds c.1·5 × 1mm, narrowly obovate in outline, light brown, testa loose, mamillate, narrowly margined on one side, this drawn out into the long slender funicle.

NATAL. Umvoti distr., 2930 BB, Ahrens, farm Mowbray, c.5000ft, 9 ii 1946, *Fisher* 964 (NU). New Hanover distr., 2930 BD, Little Noodsberg, 24 iv 1981 [fruiting], *Hilliard & Burtt* 14517 (E, NU); ibidem, 3500ft, 12 ii 1982, *Hilliard & Burtt* 15494 (E, NU); 2930 DA, Table Mountain, 3 iii 1984, *Balkwill & Manning* 1313 (E, NU).

Hesperantha gracilis is aptly named, for the plants hang gracefully from moss cushions or patches of humus on dripping wet cliffs, and are mostly highly inaccessible. Baker described the flowers as bright red, but this is not so: they are either lilac-mauve or pure white, in colonies of one colour or the other. Medley Wood, who collected the original specimen, did not record the colour of the flowers on his label, but his register, which is housed in Natal Herbarium, Durban, records against no. 923 'Flowers lavender in cleft of rocks Isangwaan'.

We have failed to trace Isangwaan (Wood's register threw no light on its location), but thought it likely to be somewhere in The Valley of a Thousand Hills in the Durban–Inanda hinterland. We therefore visited Laager Farm in the Noodsberg, on the western margin of the Valley, and eventually found an extensive colony on wet cliffs standing clear of the forest on the steep slopes below, precisely as Wood had described.

The species is ill-known, and the name is ignored in Gibbs-Russell *et al.* (1984). It is probably endemic to Table Mountain Sandstone cliffs in Natal at c.1000–1500m above sea-level, and flowers mainly in February. Its affinity lies with *H. candida*, which differs in its erect habit and longer perianth tube.

12. Hesperantha vernalis Hilliard & Burtt in Notes RBG Edinb. 40:279 (1982).

Type: Natal, Estcourt distr., S side of Kamberg, c.6950ft, 9 ix 1973, *Wright* 1530 (E holo.; MO, NU, iso.).

Corm turbinate, c.10–15 × 8–10mm, tunics concentric, displaced upwards, dark brown, tips splitting into cusps, bases splitting into truncate to acute segments. *Stems* (including spike) 50–150(–300)mm tall, straight or curved, simple or rarely forking once very low down. *Cataphyll* solitary, membranous, pale. *Leaves* usually 4, lower 2 basal, two lowermost usually wholly or partially withered at flowering, the upper two inserted on the lower part of the stem, sheathing, the tips free or appressed; developed leaves 40–180(–300) × (1–)3·5–7(–12)mm, oblong, obtuse, slightly falcate, firm-textured, margins thickened, midrib prominent, many lesser veins also visible. *Spike* 1–4(–6)-flowered. *Outer bract* 10–24mm long, inner smaller, with 7 principal veins, lesser ones sometimes visible, green sometimes tipped reddish. *Perianth* (16–)20–33mm long, tube (5–)7–12(–15)mm long, 1mm in diam., dilated in throat; tepals subequal, 10–21 × 5–9mm, elliptic, obtuse, colour ranging from pale pink or pale lilac to almost white inside, 3 outer flushed brownish pink or greenish outside, veins reddish, open during the day; ratio of tube length to tepal length roughly 1:1–2·5. *Stamens* exserted; filaments (2–)3(–4)mm long; anthers 5–10mm long. *Capsules* c.6–10 × 3·5–5mm, oblong; seeds c.1 × 1mm light brown, slightly angled by pressure, testa loose, mamillate.

ORANGE FREE STATE. Harrismith distr., 2829 AD, farm Pitcher's Rest, 12km NE Van Reenen on De Beer's Pass road, 1820m, 27 viii 1974, *Van der Zeyde* 87 (NBG); Swinburne, Rensburg's Kop, 27 viii 1961, *Jacobsz* 4 (E, PRE).

LESOTHO. Leribe, *Dieterlen* 609 (PRE, SAM); southern slope of Tsikoane Plateau woodlot, 1650m, 23 viii 1983, *Richardson* 224 (E); Teyateyaneng, 10 viii 1954, *Martin* 1019 (NBG). Maseru distr., Maseru, 1500m, 27 viii 1983, *Richardson* 227 (E, NU); Pass of the Jackals, on Maseru to Thaba–Tseka road, 2720m, 25 x 1982, *Richardson* 160 (NU); 20km N of Maseru, Tsereoane woodlot, 1640m, 25 viii 1963, *Richardson* 225 (E, NU); Maletsunyane Falls, 19 x 1946, *Esterhuysen* 13188 (BOL). Mafeteng distr., Ribaning Dip Post, 22 x 1946, *Esterhuysen* 13205 (BOL). Sehlabathebe National Park, c.2425m, 15 ix 1978, *Hoener* 2059 (E, NU); ibidem, 27 ix 1978, *Hoener* 2068 (E); ibidem, 12 ix 1977, *Hoener* 1839 (E).

NATAL. Estcourt distr., Kamberg, c.6800ft, 11 ix 1974, *Wright* 1822 (E, NU). Underberg distr., Bamboo Mt, viii 1973, *Grice* s.n. (NU). Polela distr., Mawahqua Mountain, farm Sunset, 5500ft, 2 ix 1976, *Rennie* 751 (NU). Mount Currie distr., Mt Currie, 10 x 1972, *Coleman* 611 (NH).

TRANSKEI. Umtata distr., 3126 BC, above Mhlahlane Forest Station, c.1300m, 8 ix 1974, *Hutchings* 1246 (E, NU); 3127 DB, Satanna's Nek, 4700–4800ft, 28 xi 1981 [fruiting only], *Hilliard & Burtt* 14541 (E).

CAPE. Barkly East distr., 3027 DA, Witteberg, farm Beddgelert, c.7000ft, 16 x 1980, *Hilliard & Burtt* 13161 (E, NU). Barkly East distr., 3127 AB, Saalboom Nek, 6900ft, 14 x 1980, *Hilliard & Burtt* 13117 (E, NU). Elliot distr., 3127 BB, farm Fetcani Pass, 7700ft, 15 x 1980, *Hilliard & Burtt* 13137 (E).

Hesperantha vernalis is relatively widely distributed in the mountains from the Orange Free State through Lesotho and along the Natal Drakensberg and its outliers to the Cape Drakensberg and Witteberg, at altitudes ranging from c.1500–2700m. It grows in damp grassy and often rocky places on slopes and by streams, sometimes on tussocks in marshes, or in the crevices of cliffs. As the name implies, it flowers in spring, as does its ally, *H. longituba*, but *H. longituba* is a true *Hesperantha* ('evening flower'), while *H. vernalis* is day-flowering.

13. Hesperantha ingeliensis Hilliard & Burtt, **species nova** *H. vernali* affinis sed perianthii tubo breviore (5mm longo, nec 5–12mm), antherae 4–5mm (nec 5–10mm) et tempore florendi aestivali (nec vernali) recedit.

Cormus c.10 × 8mm. *Caulis* (spica inclusa) 12–18cm altus, curvatus, simplex. *Cataphyllum* non visum. *Folia* 3, 2 inferiora basalia, summum in parte caulis inferiore oriens, redactum, vaginans, apice libero; folia evoluta 70–120 × 5·5–7mm, falcata, subacuta, marginibus incrassatis, costa prominente venis multis minoribus etiam visibilibus. *Spica* biflora. *Bractea* exterior 9mm longa, 7-nervosa, viridis, apice rubicundo; interior brevior. *Perianthium* 15–17mm longum; tubus 5mm, c.0·75mm diam., fauce dilatatus; tepala subaequalia, 10–12 × 4–5·5mm, elliptica, obtusa, pallide purpurea vel rosea. *Stamina* exserta; filamenta 2mm longa; antherae 4–5mm. *Capsula* non visa.

Type: Natal, Alfred distr., 3029 DA, Ngeli Mountain, c.6000ft, 4 i 1969, *Hilliard & Burtt* 5838 (NU holo., E iso.).

TRANSKEI. Mjika, 3128 BC, slopes above Mhlahlane Forestry Reserve, c.1400m, 21 iii 1985, *Hutchings & Plumstead* 1623 (E).

While it was known only from our collection on Ngeli Mt we hesitated to describe this plant as a new species, although believing it was so. Its discovery at a new station in the hills north of Umtata put an end to our hesitation. On Ngeli the habitat was damp cliff crevices, above Mhlahlane it was on a flat rocky area. The flowering time of *H. ingeliensis*, January to March as recorded so far, is in sharp contrast to that of its ally *H. vernalis* which blooms from August to October. It is only rarely that *H. vernalis* has a perianth tube as short as 5mm, it is usually 7–12mm, and the leaves are rather blunter than in *H. ingeliensis*.

14. Hesperantha glareosa Hilliard & Burtt, **species nova** ab omnibus formis *H. baurii* Baker foliis angustioribus 0·75–1·5(–2)mm latis (nec plerumque saltem 2·5mm), et ab *H. candida* Baker foliis angustioribus (1·5–5mm in *H. candida*), filamentis brevioribus 2(–3mm) longis (nec (2·5–)3–5mm) et floribus plerumque vivide roseis (nec pallidissime lilacinis vel pallide roseis) distinguenda.

Cormus turbinatus, c.10–12 × 10–12mm; tunicae veteres sursum motae, fusco-brunneae, apicibus in cuspides breves acutas fissis, basibus in segmenta truncata tenuiter laceratis fissis. *Caulis* (inflorescentia inclusa) 100–200mm altus, simplex vel inferne semel ramosus. *Cataphyllum* solitarium, membranaceum. *Folia* 3 vel 4; due basalia, duo caulina; tria inferiora plerumque lamina bene evoluta; summum redactum vaginans apice plerumque libero; folia evoluta 45–200 × 0·75–1·5(–2)mm, recta vel

paulo falcata, acuta, textura firma, marginibus incrassatis, costa elevata in transectione plerumque plana. *Inflorescentia* 1–5(–7)-flora. *Bractea* exterior 6·5–14mm, venis primariis 7, viridis, saepe apice rubente; interior brevior. *Perianthium* 14–29mm longum; tubus (3–)5–15mm longus, c.0·5mm diam., fauce dilatata; tepala subaequalia, 10–14·5 × 3·5–5mm, elliptica, obtusa vel subacuta, vivide rosea; tubus in proportione tepalorum 1:1–2. *Stamina* exserta; filamenta 2–3mm longa; antherae 3–6·5mm. *Capsulae* 5–7 × 3·5–4·5mm. *Semina* c.1 × 1mm, laete brunnea, angulata, angustissime marginata.

Type: Natal, 2929 CB, Underberg distr., 5–7 miles NNW of Castle View Farm, headwaters of Mlahlangubo river, 7500ft, 23 i 1982, *Hilliard & Burtt* 15367 (NU holo., E iso.).

TRANSVAAL. Pilgrim's Rest distr., Black Hill, 6800ft, 1 iii 1937, *Galpin* 14329 (BOL, PRE). Belfast distr., Elandshoogte Plantation, 6495ft, 7 i 1978, *Jacobsen* 4780 (PRE).

ORANGE FREE STATE. Harrismith distr., Platberg, around Gibson's Dam, 30 xii 1975, *Hilliard & Burtt* 8696 (E, MO, NU); ibidem, *Jacobsz* 2575 (PRE); ibidem, c.7000ft, 21 xii 1981, *Blom* 131 (PRE).

NATAL. Klip River distr., 2829 AD, Van Reenen, 5–6000ft, i 1904, *Haygarth* sub Wood 9539 (NBG). Mpendhle distr., on Little Berg between Loteni and Giant's Castle, 7500ft, 19 i 1968, *Killick* 3881 (PRE); 2929 AD, path from Loteni Nature Reserve to Redi, c.7700ft, 26 xii 1982, *Hilliard & Burtt* 16129 (E, NU); 2929 BC, Mulangane Ridge, above Carter's Nek, 7000–7300ft, 4 ii 1984, *Hilliard & Burtt* 17558 (E, NU); Mpendhle distr., 2929 DB, farm Tillietudlem, c.5800–5900ft, 9 xii 1980, *Hilliard & Burtt* 13857 (E, NU); ibidem, xii 1948, *Huntley* 476 (E, NU, PRE). Polela distr., 2929 DC, Mawahqua Mountain, farm Sunset, 6500ft, 31 xii 1980, *Rennie* 1214, 1215 (E, NU). Underberg distr., 2929 CB, 5–7 miles NNW Castle View Farm, headwaters of Mhlahlangubo river, 7100ft, 18 i 1982, *Hilliard & Burtt* 15148 (E, NU). Alfred distr., Zuurberg, 5500ft, 17 ii 1976, *Hilliard & Burtt* 9030 (E, MO, NU).

LESOTHO. Butha Buthe distr., Tsehlanyane Oxbow, 1 ii 1970, *Herbst* 5815 (PRE). Maletsunyane valley, iii 1915, *Dieterlen* 1095 (PRE; SAM, but localized Ketane river high mountain). Between Oxbow and Mokhotlong, 2928 BB, c.3200m, 15 i 1973, *Werger* 1662 (PRE).

Hesperantha glareosa has been recorded from Platberg in the NE Orange Free State, from Lesotho, and from the Drakensberg and its foothills in Natal, between c.1600 and 2800m above sea-level. It grows in damp turf around and between rock sheets and in marshy turf, in silty and gravelly places, and it has also been recorded on the damp earth banks of an incised streamlet. We at first thought that the plant from this habitat (on the farm Tillietudlem in Mpendhle distr., Natal) differed from typical *H. glareosa* in its smaller flowers with tube only 3–5·5mm long, but now that we have seen similar short-tubed plants from the high Drakensberg, we accept it as part of the variation range. The specimens from the Orange Free State and Transvaal, as well as some from Lesotho, have a rounded, not flattened midrib, but do not otherwise differ from the typical plant.

Hesperantha glareosa is closely allied to *H. candida*, which has softer

and often broader leaves, longer filaments (mostly 3–5mm, not c.2–3mm) and very pale-coloured flowers. The two species are sympatric.

The narrow leaves of *H. glareosa* will distinguish it from most forms of the complex *H. baurii*, a plant of mainly open grassy places. We have seen this strikingly demonstrated on Mulangane (see citations above) where *H. glareosa* is common in damp stony ground along the crest of a small ridge, while *H. baurii* (*Hilliard & Burtt* 17617) is equally common scattered on the nearby grass slopes and valley bottom.

15. Hesperantha baurii Baker in J. Bot. 14:182 (1876), in J. Linn. Soc., Bot. 16:96 (1877) & Handb. Irid. 151 (1892) & in Fl. Cap. 6:63 (1896).
Type: Transkei, Baziya Mountain, 2500–3000ft, March, *Baur* 628 (K).
Syn.: *H. rubella* Baker in J. Bot. 14:239 (1876). Type: Orange Free State, 1862, *Cooper* 1027 (E, K).
H. disticha Klatt, Ergänz. 59 (1882). Type: Transkei, between Umtata and Umzimvubu rivers, *Drège* 4548 (K).
?*H. modesta* Baker, Handb. Irid. 150 (1892) & Fl. Cap. 6:61 (1896). Type: Natal, near Bevaan river [Vryheid distr.?] 17 vii 1885, *Wood* 3201 (K holo., NH iso., but see comments in discussion below).
?*H. subexserta* Baker in Fl. Cap. 6:62 (1896). Type: Natal [Camperdown distr.], in a valley near Botha's Hill, 2000ft, 6 x, *Wood* 4543 (K holo., NH, iso.).
H. bifolia Baker in Bull. Herb. Boiss. sér. 2, 1:865 (1901). Type: Natal, mountains near Howick, 1000m, *Junod* 374 (Z).

Subsp. **baurii**

Corm turbinate, up to c.15–20 × 15–20mm, tunics brown, concentric, displaced upwards, tips splitting into narrow cusps, bases splitting into broad truncate segments. *Stem* (including spike) 150–750mm long, simple or rarely forking once low down, erect, axis of spike usually flexuous. *Cataphyll* solitary, membranous. *Leaves* 4, lower 2 basal, the third inserted on the lower part of the stem, sheathing, blade well-developed or not, uppermost reduced, sheathing, tip free or not; developed leaves of the typical plant c.200–550 × (3–)4–7mm, (*modesta* and *subexserta* c.75–150 × 2·5–5·5; *rubella* 130–450 × (4·5–)6–10; narrow-leaved form 110–450 × (1·5–)2–3(–3·5); N Natal–E Transvaal 140–600 × 2·5–4·5), straight or slightly falcate, acute or subacuate, firm-textured, margins thickened, midrib raised, at least 5 secondary veins visible each side. *Flowers* (3–)5–15(–18). *Outer bracts* 10–20(–35)mm long, inner smaller, c.11-nerved, green often tipped reddish. *Perianth* 17–28mm long, tube 6–12·5mm long (*modesta* and *subexserta* 5–6; *rubella* 6·5–10; narrow-leaved form 7–12; N Natal–E Transvaal 6–9), c.1mm diam., dilated in throat; tepals subequal, 12–16(–18) × 4·5–5mm (*modesta* and *subexserta* 11–14·5 × 3·5–5; *rubella* 12–18 × 5–6·5; narrow-leaved form 12–17 × 4–6; N Natal–E Transvaal 12·5–17 × 4–5), bright magenta pink; open in sunlight; ratio of tube length to tepal length 1:1·5–2 (*modesta* and *subexserta* 1:2(–3 in type of *modesta*); *rubella* 1:1·5–2·5; narrow-leaved form 1:2; N Natal–E Transvaal 1:1·5–2·5). *Stamens* exserted; filaments 3–4mm long (*modesta* and *subexserta* 2–3·5; *rubella* 3–5; narrow-leaved form (2·5–)3(–3·5); N Natal–

E Transvaal 3–5·5); anthers 6–8·5mm long (*modesta* and *subexserta* 4·5–6; *rubella* 6–9; narrow-leaved form 5–8·5; N Natal–E Transvaal 5·5–8·5). *Capsules* c.7 × 9mm, oblong; seeds c.1 × 1mm, angled by pressure, light brown, with pale narrow margins.

Selected citations:

TRANSVAAL. Letaba distr., The Downs, 5000ft, iv 1945, *Crundall* s.n. (PRE). Lydenburg distr., Mt Anderson, 6000ft, 29 iii 1933, *Galpin* 13779 (PRE). Barberton distr., Nelspruit to Kaapsche Hoop by old road, 9 iii 1981, *Hilliard & Burtt* 14282 (E, NU); Nelshoogte, 11 iii 1963, *Schlieben* 9594 (PRE). Carolina distr., between Dalriach and Oshoek, c.5200ft, i 1906, *Bolus* 12340 (BOL). Wakkerstroom distr., summit South Hill, 7500ft, 26 i 1930, *Galpin* 9834 (PRE).

SWAZILAND. Piggs Peak distr., 7 miles W of Pigg's Peak, 4500ft, 7 iii 1951, *Codd* 6417 (PRE). Mbabane distr., Usùtu Forests, c.3000ft, 10 iii 1961, *Compton* 30599 (NBG).

NATAL. Ngotshe distr., Itala Nature Reserve, c.4500ft, 10 xii 1975, *Hilliard & Burtt* 8508 (E, MO, NU); Ngome, c.4000ft, 31 iii 1977, *Hilliard & Burtt* 9838 (E, NU). Vryheid distr., Lancaster Hill, 2 i 1930, *Galpin* 10239 (PRE). Dundee distr., Mpati Hill, 27 xii 1964, *Shirley* s.n. (NU). Klip River distr., Van Reenen, farm Nolens Volens, 1700m, 16 iii 1974, *Jacobsz* 1553 (PRE). Bergville distr., Royal Natal National Park, near Basuto Gate, c.7200ft, 18 ii 1984, *Hilliard & Burtt* 17690 (E, NU); ibidem, Devil's Hoek valley, c.4500ft, 22 iii 1981, *Hilliard & Burtt* 14443 (E, NU). Nkandla distr., 9 miles S of Nkandla, 4200ft, 29 ii 1952, *Codd* 6981 (PRE). Mtunzini distr., Eshowe, 2–3000ft, 26 iii 1904, *Wylie* comm. Wood 9533 (SAM). Mapumulo distr., 4 miles Mapumulo on Kranskop road, 3100ft, 1 iii 1963, *Edwards* 3068 (NU, PRE). New Hanover distr., Little Noodsberg, Laager Farm, c.3500ft, 12 ii 1982, *Hilliard & Burtt* 15475 (E, NU). Estcourt distr., Cathkin Park, 6000ft, 7 iii 1932, *Galpin* 11843 (BOL, PRE); Hlatikulu Mountain, c.5000ft, 9 iii 1944, *Acocks* 10176 (PRE); near Mooi River, xii 1928, *Hutchinson* 1858 (PRE). Umvoti distr., Greytown, iii 1930, *Wylie* TM 34284 (PRE). Lion's River distr., Nottingham Road, iii 1939, *McClean* 841 (PRE); Howick, Shafton, 17 xii 1901, *Hutton* 393 (PRE). Mpendhle distr., Everglades–Boston road, 5000ft, 2 iii 1964, *Moll* 709 (NU, PRE); upper Loteni, vicinity of Ash Cave, 6400–6500ft, 5 ii 1985, *Hilliard & Burtt* 18140 (E, NU); upper Mkhomazi, Nhlangeni valley, near Bird's Nest Cave, c.6100ft, 22 ii 1985, *Hilliard & Burtt* 18294 (E, NU). Pietermaritzburg distr., Pietermaritzburg, World's View 3000ft, 24 iii 1957, *Lawson* 458 (NU). Camperdown distr., Cato Ridge, 3500ft, 14 i 1962, *Keytel* 14 (PRE). Richmond distr., Peak of Byrne, 5000ft, 31 iii 1932, *Galpin* 11945 (PRE). Underberg distr., Sani Pass, 7500–8500ft, 24 iii 1977, *Hilliard & Burtt* 9812 (E, NU); Cobham Forest Reserve, Upper Polela Cave area, c.6700ft, 15 ii 1979, *Hilliard & Burtt* 12606 (E, NU); Coleford, Sunnyside, c.5000ft, 9 xii 1970, *Moll* 5142 (PRE); Bushman's Nek road, farm Waterford, 4800ft, 3 i 1980, *Rennie* 1077 (NU). Polela distr., farm 'Sunset', 6000ft, 17 ii 1979, *Rennie* 1007 (E, NU). Alfred distr., Ngeli foothills, 1200m, 29 i 1985, *Balkwill & Cadman* 2887 (E, NU). Mt Currie distr., Mt Currie, 5700ft, 22 ii 1944, *Edwards* 102 (NU). Umzinto distr., Ifafa, 600m, *Rudatis* 311 (PRE). Port Shepstone distr., Izotsha Kloof, 25 iii 1967, *Strey* 7423 (NU, PRE).

ORANGE FREE STATE. Harrismith distr., Oliviershoek Pass 1 mile from Natal border, 5700ft, 27 iii 1951, *Bruce* 402 (PRE); c.1 mile W of top of Normandien Pass, c.6200ft, 13 ii 1966, *Acocks* 23800 (PRE); Swinburne, farm Rensburgskop, 4 iii 1962, *Jacobsz* 181 (PRE). Bethlehem distr., Golden Gate, 6000–7500ft, 2 iii 1947, *Story* 1963 (PRE).
LESOTHO. Sehlabathebe National Park, 2325m, 22 ii 1978, *Hoener* 2032 (NU, PRE). Bushman's Pass woodlot, 2400m, 19 ii 1984, *Richardson* 243 (NU). Qacha's Nek, ii 1938, *Fawkes* 346 (NBG). Quthing Mountain area, *Staples* 312 (PRE).
TRANSKEI. Ramatseliso, c.7600ft, 27 ii 1972, *Acocks* 22095 (PRE). Qacha's Nek, 13 iii 1970, *Mauve* 4826 (PRE). Pondoland, Omsakaba, 300ft, x 1885, *Tyson* 2637 (SAM). Port St John's distr., Lupatana, 13 xi 1970, *Strey* 1314 (PRE). Engcobo distr., Baziya Forest Station, 14 iii 1970, *Mauve* 4869 (PRE). Mqanduli, 11 iii 1955, *Marais* 746 (PRE).
E CAPE. Maclear distr., between Elliot and Maclear, 23 ii 1980, *Batten* 519 (E, NU); Maclear, farm 'Woodlands', c.5600ft, 5 iii 1904, *Galpin* 6851 (PRE).

Hesperantha baurii subsp. *baurii* is essentially a plant of moist open grasslands, and is widely distributed from the mountains of the eastern Transvaal and western Swaziland, throughout Natal, from sea-level to c.2450m, to the Transkei and E Cape, Lesotho and NE Orange Free State. The flowers are almost invariably bright pink; only very occasionally do white or pale pink sports occur in populations of pink-flowered plants.

The most easily observed variation is in the dimensions of the leaves, but there is also variation in the size of the floral parts. Variation is almost continuous, but some very slight geographical patterning can sometimes be observed. Plants more or less conforming to the parameters of the type of *H. baurii* are found in Natal and Transkei up to an altitude of c.1200m, but others differing in little save either shorter or narrower leaves range up to c.2450m (and see the discussion under subsp. *formosa*, below). We have no hesitation in equating *H. bifolia*, *H. disticha* and *H. rubella* with *H. baurii* sens. strict.: the types of *H. bifolia* and *H. disticha* are indistinguishable from that of *H. baurii*, and although the type of *H. rubella* (which came from the Orange Free State) is a robust specimen with long anthers (6–9mm), long filaments (3·5–5mm), and broad leaves (5·5–10mm), similar plants have been collected sporadically throughout Natal north of Durban. Another form with narrower leaves than *H. rubella* (2·5–4·5mm) but the same longish filaments ranges northwards from northernmost Natal into the eastern Transvaal and Swaziland (and is perhaps the only form of *H. baurii* represented there).

Specimens that can be assigned to *H. modesta* [=*H. subexserta*]:
NATAL. Mpendhle distr., 11km past Boston turnoff on Dargle–Impendhle road, c.5000ft, 6 i 1982, *Stewart & Manning* 2236 (NU). Richmond distr., Nels Rust Estate, xi 1923, *Vet. Officer* s.n. (PRE).
TRANSKEI. Lusikisiki distr., Ntusubane Forest Station, near Fraser Falls, 450m, 22 viii 1976, *Venter & Vorster* 39 (PRE); close to junction of Mbotyi and Magwa Falls roads, 500m, 23 viii 1984, *Balkwill et al.* 1914 (NU).

CAPE. Albany distr., Grahamstown, Howison's Poort, viii 1893, *Schonland* 775 (PRE; the same number in Z cited by Goldblatt, 1984, as *H. longituba*).

We have some hesitation in including *H. modesta* and *H. subexserta* in the synonymy. They are clearly the same thing, a plant with short, soft-looking leaves and anthers that may be shorter than usual for *H. baurii*. Similar plants have been recorded from widely scattered sites from central Natal to Grahamstown (see citations above). When recorded, the habitat is 'bog', 'seepage area', 'marshy ground', and 'streamside', and the flowering times July (1), August (3), October (1), January (1). They are probably no more than another form of *H. baurii*, but require further investigation.

The holotype of *H. modesta* (K) bears a ticket in Wood's hand 'no. 3201, nr. Bevaan river, 17 vii 1885, red.' The isotype (NH), which certainly appears to be part of the same collection, bears a label, also in Wood's hand, but this states 'Umlaas location, July 1885, red.'. The Bivane river rises in Utrecht distr., northern Natal, and flows eastwards to form the southern boundary of Paulpietersburg distr., then part of the northern boundary of Ngotshe district before it joins the Pongola, which is there the boundary between Transvaal and Natal. The Umlaas location, on the other hand, lies immediately south of Durban. Wood's register (housed in NH) is unhelpful.

Much careful field work is needed in the eastern Transvaal to elucidate *H. baurii* and its allies there. We can do no more than comment on some of the names that have been used for Transvaal plants.

Hesperantha schlechteri (Baker) Foster, based on *Schlechter* 4701 from Woodbush, NE Transvaal, has rather short leaves, but in all other respects agrees with the form of *H. baurii* recorded from the Transvaal. The type of *Gladiolus inconspicuus* Bak. is *Schlechter* 4138 (Z) from Donkerhoek about 30km east of Pretoria, and it was determined by Dr G. J. Lewis as *H. baurii*; however, it should be sought again near Donkerhoek, as the type is not good enough to exclude the possibility that it is *H. rupestris* Foster, described from 'rocks at Waterval Boven'. That is at once distinguished by its wholly white inner tepals, the outer tepals white inside, speckled red outside. We have ourselves collected it between Machadodorp and Waterval Boven, in seepage among outcropping rocks, and in similar marshy rocky terrain at Elandshoogte, south of Machadodorp, the flowers wide open in sunshine. It has also been recorded from Dullstroom, Graskop, and Spitzkop near Ermelo. *Hesperantha similis* Foster also seems to be a distinct species that favours marshy places; it has very narrow leaves (1–1·75(–2)mm broad) that are often longer than the flowering stem, and 'pink' flowers (they often look very pale when dried), and has been recorded from Mariepskop, Mt Anderson, The Devil's Knuckles (type locality) and Mt Sheba. Then there is a small-flowered plant (perianth 12–18mm long, anthers 3·75–4·5mm) recorded from Mt Anderson, Mauchsberg, Mt Sheba, Witklip near Sabie, MacMac Falls south of Graskop and Kaapsche Hoop; it appears to be a distinct but nameless species exemplified by *Codd* 9481 (BOL, PRE).

We have seen too little material from tropical Africa to make more than a brief comment on *H. petitiana* (A. Rich.) Baker. Dr Goldblatt (in

Ann. Miss. Bot. Gard., in press) takes a very broad view of this species complex, which he finds difficult to separate from the *H. baurii* complex in southern Africa. We have twice collected *H. petitiana* s.l. on Mt Mulanje in Malawi, and would unhesitatingly distinguish it from *H. baurii* by its pale lilac perianth and short anthers (4–4·75mm); it grew in grass tussocks in a marsh and in sedge sheets over rocks.

Subsp. **formosa** Hilliard & Burtt **subspecies nova** a subsp. *baurii* foliis brevioribus 35–190mm longis (nec plerumque 200mm superantibus), tepalis plerumque majoribus 15–21 × 5–9 (nec 12–18 × 4·5–5mm) recedit.

Corm turbinate, c.10–15 × 10–15mm, tunics brown, displaced upwards, tips splitting into cusps, bases splitting into truncate, lacerated segments. *Stem* (including spike) 80–300mm long, simple, axis of spike straight or flexuous. *Cataphyll* solitary, membranous. *Leaves* 3 or 4, lower 2 basal, the third inserted on the lower part of the stem, sheathing for about two thirds of its length, uppermost, when present, much reduced, sheathing, tip free or not; developed leaves 35–130(–170) × (2–)2·5–6mm, straight or slightly falcate, acute or subacute, margins thickened, midrib raised. *Flowers* mostly 1–4(–6). *Outer bracts* 10–15mm long, inner smaller, c.11-nerved, green often tipped reddish. *Perianth* 20–30mm long, tube 7–11mm, c.1mm diam., dilated in throat; tepals subequal, 15–21 × 5–9mm, elliptic, obtuse to subacute, bright pink, 3 outer sometimes light to dark reddish outside, ratio of tube length to tepal length usually c.1:2–3. *Stamens* exserted; filaments 3mm long; anthers 5–6·25(–7)mm. *Capsules* c.6–10 × 4–6mm, seeds 1–1·5 × 1–1·5mm, angled by pressure, light brown with pale narrow margins.

Type: Lesotho, Sani Top, west of border post, c.9500ft, 16 i 1976, *Hilliard & Burtt* 8829 (NU holo.; E, MO, iso.).

Typical subsp. *formosa*: above 2440m (8000ft); flowering peak in January:
LESOTHO. Summit plateau of Drakensberg vicinity Giant's Castle Pass, c.10000ft, 11 ii 1971, *Wright* 1117 (E, NU); c.1 mile S of Giant's Castle Pass, c.9500ft, 17 i 1973, *Wright* 1362 (E, NU). Sani, valley towards Hodgson's Peak, c.9800ft, 9 i 1977, *Hilliard & Burtt* 9675 (E, NU); ibidem, 1–2km N of chalet, 2850m, 15 i 1977, *Killick* 4119 (K, PRE).
ORANGE FREE STATE. Witzieshoek area, foot of Sentinel, c.9000ft, 22 i 1977, *Stewart* 1957 (NU).
NATAL. Estcourt distr., Giant's Castle, 9150ft, 17 i 1949, *Bruyns-Haylett* 34 (E, NU). Mpendhle distr., 2929 BC, Highmoor Forest Reserve, ridge SE of Giant's Castle, headwaters of Elandshoek river, c.8000ft, 4 i 1983, *Hilliard & Burtt* 16163 (E, NU). Underberg distr., Sani Pass, 8800ft, 23 iii 1977 [fruit only], *Hilliard & Burtt* 9810 (E, NU); 2929 CB, 5–7 miles NNW of Castle View Farm, headwaters of Mlahlangubo river, 8200–8500ft, 23 i 1982, *Hilliard & Burtt* 15327 (E, NU).

Plants from mostly lower altitudes (down to c.2000m, 6600ft) often with more flowers in the inflorescence, (2–)4–9, flowering peak in February:
NATAL. Mpendhle distr., 2929 BC, Mulangane ridge, above Carter's Nek, 7000–7300ft, 5 ii 1984, *Hilliard & Burtt* 17617 (E, NU). Underberg distr.,

2929 CB, Gxalingenwa Valley, between Sani Pass and Polela valley, c.6600ft, 10 xii 1983, *Hilliard & Burtt* 17177 (E, NU); Upper Polela Cave area, c.7300ft, 13 ii 1979, *Hilliard & Burtt* 12517 (E, NU); ibidem, c.6700–6900ft, 15 ii 1979, *Hilliard & Burtt* 12605 (E, NU); Cobham Forest Station, Sipongweni, c.7000ft, 20 ii 1981, *Hilliard & Burtt* 14015 (E, NU); Bushman's Nek, Thamathu Pass, c.7000ft, 6 ii 1976, *Hilliard & Burtt* 9017 (E, MO, NU); ibidem, 8000–8200ft, 4 ii 1976, *Hilliard & Burtt* 8924 (E, MO, NU); ibidem, c.8100ft, 5 ii 1976, *Hilliard & Burtt* 8980 (E, MO, NU).

Hesperantha baurii in the high Drakensberg shows a distinct pattern of variation that presents considerable difficulties in classification. In the marshes at Sani Top, and elsewhere at high altitudes, there is a short-leaved plant with few, large, flowers, which may occur in sheets visible from afar. The backs of the tepals are noticeably darker than the inner ones, being heavily flecked. This plant is at the peak of its flowering in January, and occurs down to c.2440m.

Between c.2000 and 2450m, a plant is found that is similar to the higher level plant in floral measurements, but it has more flowers in the spike, and is often taller, with relatively longer leaves, which are, however, shorter than the inflorescence, as in the plant from higher altitudes. It is often in grass around wet rock sheets, or may be on damp grass slopes, and is at its flowering peak in February. In facies, it is like some forms of *H. baurii* from lower altitudes, but the floral measurements are different; it does not seem reasonable to associate it with the high level plant and divorce it specifically from *H. baurii* purely on slight differences in floral measurements.

One clear piece of evidence of a discontinuity comes from our observations near the Upper Polela Cave where plants of this 'lower altitude' form of the high level plant grew next to *H. baurii* subsp. *baurii* and were distinguishable from it on both floral and leaf characters (*Hilliard & Burtt* 12605, 12606). A second piece of evidence is provided by *Hilliard & Burtt* 9810 and 9812, collected in March in Sani Pass: 9810, the high level plant, was in fruit; 9812, *H. baurii*, was in flower.

The high level plant is too distinctive to be accepted in *H. baurii* without special recognition, though the whole problem requires much more critical study. The interim solution proposed is to recognize the high level plant as a subspecies of *H. baurii*, and tentatively to include the intermediate plant within its circumscription. There is at present no evidence of hybridization. It should be noted that the form of *H. baurii* subsp. *baurii* that reaches 2400m has leaves more than 250mm long and only 2–2·75mm broad (see specimens from Lesotho cited under *H. baurii* subsp. *baurii*).

16. Hesperantha lactea Baker, Handb. Irid. 151 (1892) & in Fl. Cap. 6:62 (1896).

Lectotype (here selected): Natal, Inanda distr., near Verulam, xi, *Wood* 1118 (K).

Corm turbinate, c.10–13 × 10–13mm, tunics brown, concentric, dis-

placed upwards, tips splitting into cusps, bases splitting into truncate segments, eventually lacerate. *Stem* (including spike) c.200–900mm long, erect, simple or forking low down, axis of inflorescence eventually flexuous. *Cataphyll* solitary, membranous. *Leaves* 4, lower 2 basal, the third inserted on the lower part of the stem, sheathing for about two thirds its length, upper much reduced, sheathing, the tip free or not; developed leaves 120–450 × (2–)2·5–5·5mm, straight or slightly falcate, acute, margins thickened, midrib raised, side nerves obscure. *Flowers* 4–14(–18). *Outer bracts* 10–17mm long, inner shorter, c.11-nerved, green, sometimes tipped reddish. *Perianth* 21–27mm long, tube 6–8·5mm, c.1mm diam., dilated in throat; tepals 14–20 × 4–6mm, elliptic, subacute, creamy yellow, open in sunlight; ratio of tube length to tepal length 1:2–3. *Stamens* exserted; filaments (3–)4mm long; anthers 5–7mm. *Capsules* 6–8 × 4mm oblong; seeds c.1 × 1mm, angled by pressure, light brown with pale narrow margins.

NATAL. Vryheid distr., Hlobane, 2 xii 1950, *Johnstone* 556 (E, NU). Umvoti distr., Muden, xi 1936, *Wylie* s.n. (PRE). Durban distr., Clairmont, 8 viii 1893, *Schlechter* 3051 (BOL, E, PRE); ibidem, 14 x 1887, *Wood* 1380 (BOL, SAM); Umlazi, Adams Mission Station, 600ft, 6 iv 1947, *Walker* 112 (NU); Northdene, 500ft, 19 iii 1900, *Wood* 7834 (PRE). Pinetown distr., Kloof, 9 iii 1972, *Gibson* s.n. (E, NU); Field's Hill, 1500ft, ii 1884, *Wood* 243 (K). Camperdown distr., Inchanga Hill, c.600m, 5 iii 1971, *Hilliard & Burtt* 6776 (E, K, MO, NU, PRE); Shongweni Dam, 1500ft, 23 ii 1966, *Morris* 806 (NU, PRE). Umzinto distr., Umdoni Park, 28 iii 1969, *Guy & Jarman* 132 (NU); Dumisa, Friedenau, 600m, 6 xii 1908, *Rudatis* 539 (E, K, PRE); ibidem, Umgaye, 500m, 21 iii 1909, *Rudatis* 624 (E, K); Ifafa, 600m, 16 iii 1908, *Rudatis* 311 (E). Port Shepstone distr., Hibberdene, *Strey* 9259 (PRE); Highlands Farm, Hell's Gate near Gilbert Eyle's Dam, 400m, 30 xi 1976, *Nicholson* 1673 (PRE); St Michael's-on-Sea, 25 xii 1973, *Nicholson* 1356 (PRE); Port Edward, Beacon Hill, 2 xi 1981, *Van Wyk* 5139 (PRE); Umtamvuna river reserve, 300m, 4 xii 1980, *Nicholson* 2135 (PRE).

TRANSKEI. Elliotdale distr., The Haven [Bashee river mouth], 11 vii 1966, *Gordon-Gray* 527 (NU).

Hesperantha lactea has been recorded mainly in lowland Natal and Transkei, up to c.600m above sea-level, but there are also two records from Vryheid district in northern Natal at c.1300m. In common with its close ally *H. baurii*, it favours moist grassland and Baker (in *Fl. Cap.* 6:62, 1896) suggested it might be no more than a colour form of *H. baurii*. But in *H. baurii* the side nerves in the leaf are usually clearly visible, whereas in *H. lactea* they are not. Furthermore, they have never been recorded growing together, although they range over the same general area and appear to have the same ecological requirements. The white sports occasionally found in populations of the pink-flowered *H. baurii* have nothing to do with *H. lactea*. In fact they rather emphasize that the two species are distinct, for the sports of *H. baurii* that lack anthocyanin are snow-white (as are those of *H. grandiflora*), whereas the flower of *H. lactea* is cream-coloured.

17. Hesperantha hygrophila Hilliard & Burtt in Notes RBG Edinb. 40:278 (1982).

Type: Natal, Alfred distr., Mt Ngeli, c.5000ft, 2 i 1969, *Hilliard & Burtt* 5762 (E holo.; NH, NU iso.).

Corm turbinate, c.12 × 8mm, tunics brown, concentric, displaced upwards, tips splitting into cusps, bases splitting into truncate segments. *Stem* (including spike) 150–750mm long, erect, simple or forking once low down, inflorescence axis straight to slightly flexuous. *Cataphyll* solitary, membranous. *Leaves* 4, lower 2 basal, the third inserted on the lower part of the stem, sheathing for about two thirds of its length, uppermost much reduced, sheathing, the tip free or not; developed leaves (70–)150–500 × 1–5(–6)mm, straight or slightly falcate, margins thickened, midrib raised but flattened, secondary veins clearly visible. *Flowers* (1–)3–6(–12). *Outer bracts* 9·5–15mm long, inner shorter, c.11-nerved, green often tipped reddish. *Perianth* (15–)20–30mm long; tube 5–7mm long, c.1mm diam., dilated in throat; tepals subequal, (9–)13–23 × (3–)5–7·25mm, elliptic, subacute, snow white, or more rarely slightly creamy, outer tepals sometimes flushed pink outside or becoming reddish with age, opening in sunlight; ratio of tube length to tepal length 1:2–3(–4). *Stamens* exserted; filaments 2–3mm long; anthers (4–)5–10mm. *Capsules* (immature) c.7 × 4·5, seeds about as long as broad.

TRANSVAAL. Pilgrim's Rest distr., 2430 DD, Graskop, 2km from town on road to Blyde River Canyon, 14 iii 1981, *Hilliard & Burtt* 14334 (E, NU). Ermelo distr., ½ mile W of Vossman's Beacon, 5800ft, 20 ii 1951, *Codd* 6384 (PRE); 17 miles W of Amsterdam, 4000ft, 10 iii 1962, *Mauve* 4210 (PRE).

NATAL. Bergville distr., Cathedral Peak Forest Reserve, Gogok Caves, c.5500ft, i 1960, *Germishuizen* 33 (PRE). Estcourt distr., Highmoor Forest Reserve, 6000ft, 3 ii 1964, *McKeown* 1 (NU); Tabamhlope Research Station, 5000ft, 26 xi 1937, *West* 452 (PRE); Cathkin Park, 6000ft, 7 iii 1932, *Galpin* 11884 (PRE); Mooi River, 14 iii 1902, *Johnston* 867 (E); ibidem, 8 iv 1902 [fruiting], *Johnston* 906 (E). Lion's River distr., Soutar's Hill on Nottingham Road–Underberg road, 26 xii 1973, *Hilliard* 5385 (E, K, NU, PRE). Polela distr., Mawahqua Mountain, farm 'Sunset', 6500ft, 8 i 1978, *Rennie* 886 (E, NU); ibidem, farm 'Glengariff', 7000ft, 1 i 1982, *Rennie* 1286 (NU). Underberg distr., Cobham, 1 mile on road to Drakensberg Garden, c.5500ft, 28 xi 1976, *Hilliard & Burtt* 9418 (E, NU); Garden Castle Nature Reserve, c.6200ft, 30 i 1975, *Hilliard & Burtt* 7873 (E, NU); Coleford, above Endawana river, c.5000ft, 25 xii 1976, *Hilliard & Burtt* 9565 (E, NU); above Bushman's Nek, vicinity of Tarn Cave, c.8000ft, 18 i 1984, *Hilliard & Burtt* 17324 (E, NU). Alfred distr., Weza State Forest, c.8km from King's Halt, 1820m, 26 i 1985, *Balkwill & Cadman* 2702 (E, NU).

LESOTHO. Sehlabathebe National Park, c.2375m, 4 ii 1979, *Hoener* 2154 (NU); ibidem, 2325m, 22 ii 1978, *Hoener* 2031 (NU, PRE); ibidem, 2350m, 20 i 1976, *Beverly* 376 (E); Sani Top, c.9500ft, 20–26 ii 1985, *Manning* 553 (NU).

Hesperantha hygrophila has been recorded from the eastern Transvaal, Natal and Lesotho, between c.1500 and 3200m above sea-level in grassy

marshes or in marshy ground over flat rocks or occasionally on wet grassy cliffs. The flowers open during the day. In the Transvaal, it overlaps in distribution with *H. rupestris* Foster, which has the three outer tepals heavily speckled with red outside (not merely sometimes turning pinkish or reddish with age), tepals mostly narrower than those of *H. hygrophila*, filaments at least 4mm long, and the midrib of the leaves rounded in section, not flattened; *H. rupestris* grows in marshy ground among rock outcrops. *Hesperantha lactea*, the other species with which *H. hygrophila* is likely to be confused, grows in ordinary grassy places, its flowers are decidedly yellowish, filaments often longer and tepals narrower.

18. Hesperantha schelpeana Hilliard & Burtt in Notes RBG Edinb. 37:302 (1979).

Type: Lesotho, Mokhotlong distr., Black Mts between Sani and Mokhotlong, c.3050m, 5 xi 1973, *Hilliard & Burtt* 7075 (E holo., NU iso.).

Corm turbinate, c.10–15 × 10–15mm, tunics brown, apex splitting into narrow cusps, base into narrowly oblong, lacerate segments. *Flowering stem* (peduncle) 40–150(–250)mm long, simple, erect, leafless. *Cataphylls* usually 2, 25–65(–120)mm long, the lower one the shortest, sheathing, mostly subterranean and there white, membranous, emergent part green. *Leaf* 1, hysteranthous, the flowering stem arising adjacent to it and within the lowermost cataphyll, up to c.8–100 × 2–5mm, falcate, midrib strongly raised, margins strongly thickened. *Flower* solitary. *Bracts* 2, subequal, 10–22mm long, green often suffused purple. *Perianth* c.20–30mm long, tube 5–10mm long, narrowly funnel-shaped, outer tepals 14–22 × 6–9mm, the inner slightly shorter, elliptic obtuse, whitish or pale pink inside, the 3 outer feathered red-purple outside, (or sometimes white?) opening in sunshine. *Stamens* exserted; filaments 1·5–3mm long; anthers 6–8mm. Capsule 6–8 × 4–6mm; seeds c.2 × 1mm, narrowly winged (immature).

LESOTHO. Mokhotlong distr., Kotisephola Mountain, 29°13′S 29°13′E, 3350m, *Trewren* 446 (PRE); between Mashai Pass and head of Mashai river, c.2740m, 7 xi 1977, *Wright* sub Hilliard & Burtt 10494 (E, NU); Sani Top, 22 ix 1973, *Smook & Shaw* 518 (NU).

NATAL–LESOTHO border. Cathedral Peak area, near Organ Pipes Pass, 2900m, ix 1944, *Schelpe* 815 (E, NU); between Indumeni Dome and Cleft Peak, 2960m, 3 x 1963, *Killick* 3515 (PRE); top of Organ Pipes Pass, 23 x 1973, *Hilliard & Burtt* 6900 (E, NU). Giant's Castle Pass, 1970, *Wright* 1011, 1030 (E).

NATAL. Bergville distr., The Sentinel, 8500ft, 10 x 1979, perianth purple-mauve, *Cubitt* s.n. (NBG).

CAPE. Maclear distr., Naude's Nek Pass, 4 x 1977, *Bigalke* s.n. (NU).

Hesperantha schelpeana is confined to the High Drakensberg from The Sentinel and Mont aux Sources to Naude's Nek. It grows in short wet turf or in other grassy and sometimes stony places that may be seasonally waterlogged. It flowers early, mainly in October, and the chalice-shaped, solitary flowers are borne on a bracteate scape, the single leaf appearing only later, beside the flowering stem. The perianth may be pink or whitish

inside, but the three outer tepals are feathered red-purple outside. Schelpe, who made the first collection of the plant, recorded 'flowers purplish occasionally white', and when we described the species, we commented on two collections of a white-flowered plant made near The Gable in Giant's Castle Game Reserve, *Trauseld* 670 (NU, PRE) and 1104 (PRE), saying that they might represent a white-flowered form of the species. However, this white-flowered plant has now been re-collected, at 2590m in Royal Natal National Park, below The Sentinel (*Cubitt* s.n., NBG). These plants all have a much longer perianth tube than that of *H. schelpeana*: 20–27mm long, as opposed to 5–10mm, and it seems likely that they represent a distinct species. Some careful field observations are needed in the Drakensberg in early spring.

Hesperantha schelpeana and *H. crocopsis*, with much smaller flowers (see below), are unique in *Hesperantha* in their production of leaves on a separate shoot beside the flowering shoot.

19. Hesperantha crocopsis Hilliard & Burtt in Notes RBG Edinb. 37:302 (1979).

Type: Lesotho, Mokhotlong distr., above Mashai Pass, c.2870m, 7 xi 1977, *Hilliard & Burtt* 10489 (E holo., NU iso.).

Corm depressed-globose, tunics brown, papery, apex splitting into narrow cusps, base into narrowly oblong segments. *Flowering stem* (peduncle) subterranean, 20–30mm long, elongating to 60mm in fruit, simple, erect, leafless. *Cataphylls* 3, lowermost up to c.25mm long, dark, upper 2 up to c.55mm long, membranous, subterranean part white, emergent part green, both sheathing, tip of upper one free. *Leaves* 1–2, synanthous, but elongating only after flowering, arising from a separate shoot adjacent to the peduncle, enclosed within a cataphyll up to c.50mm long, blade about equalling the flower at anthesis, up to c.30mm above ground level, 1–1·5mm broad, elongating to c.70mm after anthesis. *Flower* solitary, or rarely geminate. *Bracts* 2, outer c.5mm long, briefly united at the base, inner smaller, both white, hidden within the sheathing cataphylls. *Perianth* c.17–20mm long, tube 9–14mm long, cylindric below, c.0·5mm diam., abruptly dilated to c.2mm in the throat, tepals 6–7 × 2–3mm, inner slightly shorter, elliptic, obtuse, all white inside, 3 outer rosy or purplish outside, opening in sunshine. *Stamens* exserted; filaments 1·5–2·5mm long; anthers 2·25–3·5mm long. *Capsule* c.5mm long; seeds 1·5 × 1mm.

LESOTHO. Mokhotlong distr., Black Mountains between Sani and Mokhotlong, c.3050m, 5 xi 1973, *Hilliard & Burtt* 7074 (E, NU).

We have found this plant in short wet turf and in silt along marshy streamlines at Sani Top, in the Black Mountains and at the top of Mashai Pass, but it is certainly elsewhere in the mountains of Lesotho. It flowers in November, which is early spring on the summit plateau, and then only the upper part of the perianth tube and the crocus-like limb as well as the tip of the leaf are visible above ground. The peduncle elongates after flowering so that the capsule is borne well above ground.

20. Hesperantha tysonii Baker, Handb. Irid. 151 (1892) & in Fl. Cap. 6:65 (1896); Batten & Bokelmann, Wild Fl. E. Cape 39, pl. 31, 5 (1966). Trauseld, Wild Fl. Natal Drakensberg 41 (1969), as *H. radiata.*
Type: Natal, East Griqualand, banks of stream near Kokstad, 5000ft, x 1883, *Tyson* 1585 (K holo.; NH, SAM iso.).

Corm turbinate, c.10–13 × 8–10mm, often with several lateral cormlets at the base, tunics brown, papery, concentric, displaced upwards, tips splitting into narrow cusps, bases splitting into narrowly oblong segments, margins smooth or fimbriate, bases often lacerate. *Stem* (including spike) mostly 300–800mm tall, rarely shorter, erect, simple, axis of spike straight. *Cataphyll* wanting. *Leaves* usually 5–6, the lower 3–4 basal or inserted low down on the stem, the upper 2 sheathing, reduced, the tip usually not free; produced leaves c.100–300 × 1–2·5mm, short in relation to the stem, soft-textured. *Spike* secund, (2–)4–9(–12)-flowered, the flowers well-spaced, the tip of each bract seldom reaching more than half way to the base of the bract above it when the spike is fully expanded. *Outer bract* 11·5–25mm long, inner about equalling it, tubular in the lower half. *Perianth* 17–33mm long, tube 7–13mm long, c.1mm diam., cylindric, strongly curved at the tip so that the flower faces out or down at anthesis; tepals 10–21 × 3–5·5mm, elliptic, acute to obtuse, silvery white to pale cream, the 3 outer lightly to heavily suffused or speckled with dull red or red-brown outside, opening at night, the tepals then strongly reflexed. *Filaments* 5–7(–9)mm long, anthers 5·5–9mm. *Capsules* c.15–20 × 4–5mm, oblong-cylindric, seeds c.1 × 1mm, with an apical and basal wing longer than the body of the seed linked by a narrow unilateral wing.

ORANGE FREE STATE. [Volksrust, 2792] Moordraai, 6000ft, 17 xi 1892, *Wood* 4793 (E).
SWAZILAND. Mbabane distr., Forbes Reef road, c.4500ft, 1 xi 1957, *Compton* 27185 (NBG).
NATAL. Utrecht distr., farm Naauwhoek, c.1800m, 17 xi 1979, *Devenish* 1955 (E, NU). Bergville distr., Mont aux Sources, 10000ft, 25 iii 1946, *Schelpe* 1426 (NU); Cathedral Peak area, Cathedral path, 7300ft, ii 1943, *Schelpe* 121 (NU). Estcourt distr., Giant's Castle Game Reserve, 6000ft, 12 xi 1965, *Trauseld* 434 (NU). Lion's River distr., Fort Nottingham Commonage, c.5700ft, 7 xi 1981, *Hilliard* 8176 (E, NU); Kamberg [Mountain], c.6200ft, 13 xi 1974, *Wright* 1924 (NU); near Howick Falls, 3000ft, xi 1939, *Thomas* 13 (NBG). Underberg distr., 2929 CB, Sani Pass, 9500ft, 18 ii 1973, *Hilliard* 5362 (E, NU); 5–7 miles NNW of Castle View Farm, headwaters Mlahlangubo river, 8100–8500ft, 23 i 1982, *Hilliard & Burtt* 15352 (E, NU); Cobham Forest Reserve, Upper Polela Cave, c.7000ft, 20 xi 1976, *Hilliard & Burtt* 9254 (E, NU); Garden Castle Forest Reserve, stream valley beyond Forester's house, c.6400ft, 11 xi 1980, *Hilliard & Burtt* 13451 (E, NU); Upper Umzimouti valley, c.6500ft, 26 xi 1976, *Hilliard & Burtt* 9360 (E, NU); Bamboo Mountain, 15 xi 1975, *Grice* s.n. (NU); Bushman's Nek area, 3 xi 1977, *Shirley* s.n. (NU); above Bushman's Nek, Tarn Cave, c.8000ft, 21 i 1984, *Hilliard & Burtt* 17430 (E). Polela distr., Mawahqua Mountain, Sunset farm, 6500ft, 6 xii 1980, *Rennie* 1183 (E, NU). Alfred distr., Weza State Forest, Ngeli Mountain, c.8km from King's Halt, 1820m, 26 i 1985, *Balkwill & Cadman* 2703

(NU). Mt Currie distr., Mt Currie, 15 xi 1973, *Hilliard & Burtt* 7243 (E, K, MO, NU).
LESOTHO. Maseru distr., Bushman's Pass, c.7000ft, 14 i 1979, *Hilliard & Burtt* 12127 (E, NU). Sani Top, saddle on escarpment N of pass, c.9800ft, 8 i 1977, *Hilliard & Burtt* 9651 (E, MO).
TRANSKEI. Mjika, 3128 BC, above Mhlahlane Forestry Station, 13 xi 1984, *Hutchings* 1311 (NU). Flagstaff, 3129 AB, along road between Tabankulu and Gomo Forest, 1150m, 20 xi 1984, *Hutchings* 1324 (NU).
E CAPE. Elliot distr., Barkly Pass, 6500ft, 28 xi 1981, *Hilliard & Burtt* 14557 (E, NU). Maclear distr., Naude's Nek, c.8000ft, 13 xii 1976, *Stewart* 1882 (NU). Cathcart, Windvogelberg, c.5200ft, *Hilliard & Burtt* 14775 (E, NU). Stockenstrom div., summit of Lushington Mt, xi 1885, *Scully* 260 (E, NBG). Victoria East distr., Hogsback, c.4500ft, 11 xii 1963, *Bokelmann* 9 (NBG).

Hesperantha tysonii is largely montane in its distribution, with an altitudinal range from c.1000m above sea-level to c.3300m, and a geographical range from western Swaziland through Natal to the mountains of the eastern Cape. It is a plant of damp or marshy places, often along streams or drainage lines, less commonly in wet rock crevices. The flowers open at dusk, and then emit a sharp sweet scent; the tepals become strongly reflexed, the style arms spreading and, like the anthers, deflexed. It is the only night-flowering species of *Hesperantha* occurring in Natal and is very easily recognized by the secund spike, floral bracts tubular in the lower half, and perianth tube strongly curved at the top. It flowers mainly in spring and early summer, from October onwards, but has been recorded as late as January.

Goldblatt (1984, pp. 123–130) has included *H. tysonii* in his broad concept of *H. radiata* (Jacq.) Ker-Gawler. The differences, noted by Goldblatt, are the consistently large size of plant and flower in *H. tysonii* (at the top of the range of variation found in the Cape) and the softer, less well-developed corm tunics, which are possibly related to the moist habitats to which *H. tysonii* is restricted. Goldblatt adds 'I prefer not to consider them of taxonomic significance, at least at specific rank.'

Hesperantha tysonii is remarkably constant over a wide area in the Drakensberg, even if it may become difficult to distinguish from forms of *H. radiata* in the SE Cape. Our own conclusion is that its features (including the lack of basal elaboration of the corm, the tall laxly-flowered raceme and the constant flower size and colour) are certainly of taxonomic significance, even if they are not eventually found to justify full specific rank. We are strongly opposed to losing it in the polymorphic Cape *H. radiata*, and feel that the introduction of that name into the Drakensberg flora would be a grave mistake. The inauguration of intraspecific nomenclature in *H. radiata* must, if proved necessary, await a wide-ranging critical study. Until that is carried out we prefer to maintain the binomial *H. tysonii*.

REFERENCES

GIBBS RUSSELL, G. E., *et al.* (1984). List of species of southern African plants. *Mem. Bot. Surv. S. Afr.* 48.

GOLDBLATT, P. (1982). Corm morphology in Hesperantha (Iridaceae, Ixioideae) and a proposed infrageneric taxonomy. *Ann. Missouri Bot. Gard.* 69:370–378.

—— (1984). A revision of Hesperantha (Iridaceae) in the winter rainfall area of southern Africa. *J. S. Afr. Bot.* 50:15–141.

HILLIARD, O. M. (1978). The geographical distribution of Compositae in Natal. *Notes RBG Edinb.* 36:407–425.

—— & BURTT, B. L. (1983). Notes on some plants from southern Africa chiefly from Natal, X. *Notes RBG Edinb.* 41:299–319.