Notes RBG Edinb. 43(2): 189–228 (1986)

NOTES FROM THE
ROYAL BOTANIC GARDEN
EDINBURGH

VOLUME XLIII · NO. 2 · 1986

NOTES ON SOME PLANTS OF SOUTHERN AFRICA CHIEFLY FROM NATAL: XII*

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ABSTRACT. Thirty nine items are annotated. There is one new genus, *Dracosciadium* (Umbelliferae) with two new species; 13 other new species are described in *Cyrtanthus* (1), *Asclepias* (2), *Wahlenbergia* (1), *Gladiolus* (1), *Indigofera* (1), *Limosella* (2), *Sutera* (2), *Gnidia* (1), *Struthiola* (1), *Polemannia* (1). *Helichrysum alticolum* var. *montanum* is raised to specific rank as *H. evansii*, and *Senecio flanaganii* is revived. New subspecies are erected under *Wahlenbergia polytrichifolia* and *Erica woodii*. It is shown that the correct name for *Vallota speciosa* when the genus is reduced to *Cyrtanthus* is *C. elatus*, and that *Hypoxis hemerocallidea* must replace the later *H. rooperi*. Other annotations concern the genera *Lithospermum, Wahlenbergia, Hypoxis, Catalepis, Karroochloa, Indigofera, Lotononis, Macrotyloma, Cliffortia, Limosella* and *Walafrida*. Seven of these record plants new to Natal and, with those newly described, a total of one genus and 22 species are added to the Natal flora.

AMARYLLIDACEAE

433. Cyrtanthus brachysiphon Hilliard & Burtt, **species nova** ob perianthii tubum lobis breviorem *C. brevifloro* Harv. affinis, sed perianthio aurantiaco-rubro (nec flavo) horizontali textura carnosiore praecipue distinguitur. A *C. elato* (Jacq.) Traub (vide infra), specie etiam perianthii tubo lobis breviore distincta, floribus multo minoribus (2·6cm nec 7–9cm longis) et foliis angustioribus (minus quam 2cm latis nec 2–6cm) longe recedit.

Folia synanthia, c.3, c.35 × 1·3–1·8cm, lorata, subobtusa. *Pedunculus* c.16cm longus. *Bracteae* spathae 4–4·5cm longae, basi 7–8mm latae, lanceolatae, acutae. *Flores* in inflorescentia c.5–6. *Pedicelli* inaequales, 1–4·5cm longi, post anthesin paulo elongati. *Perianthium* 2·6cm longum, externe et interne ad lobos aurantiaco-rubrum, in tubo pallide flavum; tubus 10mm longus; lobi omnes c.16–18mm longi, interiores 7mm exteriores 6mm lati. *Stamina* lobis exterioribus opposita filamentis 9mm longis, ea interioribus opposita filamentis 10mm longis; antherae

*Continued from *Notes RBG Edinb.* 42: 227–260 (1985).

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dorsifixae, versatiles, 4mm longae. *Ovarium* 6mm longum; stylus 20mm longus, apice in ramos 3 stigmaticos 2mm longos recurvos divisus.
Type: Natal, Louwsburg, 1300m, 5 xii 1981, *Cunningham* s.n. (NU); cult. in RBG Edinburgh, fl'd 3 x 1984 sub no. 820241 (holo. E).

Cyrtanthus brachysiphon was found by Mr A. B. Cunningham on moist ledges and at the foot of a 30m cliff in the spray zone of a waterfall. The floral measurements in the above description are from flowers of the cultivated plant that had been preserved in alcohol. Dried material shows some shrinkage.

The current concept of the genus *Cyrtanthus* includes both *Vallota* Herb. and *Anoiganthus* Baker. The latter was originally separated on the anthers being sagittate and basifixed rather than dorsifixed. This has proved to be fictitious. Both *Vallota* and *Anoiganthus* differ from most species of *Cyrtanthus* in having the perianth tube shorter than the lobes. However, in *C. guthrieae* L. Bolus, *C. thorncroftii* C. H. Wright and *C. bicolor* R. A. Dyer tube and lobes are described as more or less equal in length, and in the recently published *C. montanus* R. A. Dyer the perianth is said to be divided for about two-thirds of its length. Clearly the reduction of *Vallota* and *Anoiganthus* is justified. The correct name for *Vallota speciosa* when transferred to *Cyrtanthus* is dealt with in the next entry.

Cyrtanthus brachysiphon is interesting because at first sight it looks more like the usual run of *Cyrtanthus* than do the plants previously placed in *Vallota* and *Anoiganthus*. The subsequent observation of its short perianth tube, which seems to place its affinity with these other short-tubed species, came as a surprise. It is thus fair to say that *C. brachysiphon* provides a final link justifying the current concept of the genus.

In the recently published account of the genus (C. Reid & R. A. Dyer, *A review of the southern African species of Cyrtanthus,* 1984) *C. brachysiphon* runs down to *C. bicolor* R. A. Dyer, but differs from it, in addition to the shorter perianth tube, in having broader blunter leaves (in *C. bicolor* they are only 4–5mm broad and gradually narrowed to an acute tip).

434. Cyrtanthus elatus (Jacq.) Traub in Plant Life 25:48 (1969).
Type: Cult. Hort. Schönbrunn (n.v. W?—on location of Jacquin's types see D'Arcy in *Taxon* 19:554–560, 1970).
Syn.: *Crinum speciosum* Linn. f., Suppl. 195 (1781). Type: Cape of Good Hope, *Thunberg* (not in LINN; UPS, IDC sheet 8001).
Amaryllis speciosa (Linn. f.) L'Hérit., Sert. Angl. 12 (1788).
Amaryllis purpurea Ait., Hort. Kew. 1:417 (1789), *nom. illegit.* Type as for *Crinum speciosum* Linn. f.
Amaryllis elata Jacq., Hort. Schoenbr. 1:32, t. 62 (1797).
Vallota purpurea Herb., App. Bot. Reg. 29 (1821) & Amaryllid. 133, 414 (1837), *nom. illegit.*; Baker in Thiselton-Dyer, Fl. Cap. 6:218 (1896); Chittenden in RHS Dict. Gard. 4:2193 (1951). Type as for *Crinum speciosum* Linn. f.
Cyrtanthus purpureus Herb. in Bot. Mag. sub t. 2113 (1829), *nom.*

illegit.; Traub in Plant Life 19:58 (1963) *pro comb. nov.*; Reid & Dyer, Rev. S. Afr. Spec. Cyrt. 40 (1984). Type as for *Crinum speciosum* Linn. f.

Vallota elata (Jacq.) M. Roemer, Fam. nat. syn. mon. 4 (Ensatae): 110 (1847).

Vallota speciosa (Linn. f.) Durand & Schinz, Consp. Fl. Afr. 5:258 (1985); R. A. Dyer in Fl. Pl. Afr. 30:t.1163 (1954).

Cyrtanthus speciosus (Linn. f.) Traub in Plant Life 28:66 (1972)—non *C. speciosus* R. A. Dyer (1942).

The correct name for this well-known plant (called the George or Knysna lily in South Africa, but the Scarborough lily when cultivated in Europe or America), has become sadly confused in recent years, as the synonymy listed above makes clear. The application of the old Kew Rule (the use of the earliest epithet in the genus) accounts for the persistence of *Vallota purpurea*: the change to *Vallota speciosa* followed universal acceptance of the rule that the earliest available epithet should be used.

When Hamilton P. Traub reduced *Vallota* to *Cyrtanthus* and proposed '*Cyrtanthus purpureus* (Ait.) Traub comb. nov.', he seems to have been unaware of two things. First, that Herbert had taken exactly the same action over 100 years previously; secondly, that the epithet *purpureus*, as proposed first by Aiton and used later by Herbert, was illegitimate under our retroactive Code. Whether in *Amaryllis*, *Vallota* or *Cyrtanthus* the correct epithet was, at that time, *speciosus*, derived from *Crinum speciosum* Linn. f. However, as Traub himself pointed out (in *Plant Life* 19:58, 1963), the publication of the entirely independent *Cyrtanthus speciosus* R. A. Dyer in 1942 thenceforth prevented the use of the epithet *speciosus* for the *Vallota*. As the epithet *purpureus*, which Traub adopted, was illegitimate in its original application by Herbert, a new name has to be sought.

In 1797 Jacquin described, without reference to any other species, *Amaryllis elata*. This plant has been generally accepted, at least since Herbert's time, as a synonym of *Vallota*. It thus provides the earliest legitimate epithet for the species that is available in *Cyrtanthus*.

Amaryllis elata was transferred to *Cyrtanthus* without comment by Traub in 1969. On the next line of his paper, however, he continued to use *Cyrtanthus purpureus*: it must therefore be inferred that he thought the species distinct. There are several cultivated varieties of *Vallota* listed by Chittenden (in *RHS Dict. Gard.* 4:2193, 1951), *elata* amongst them; but as Dyer (in *Fl. Pl. Afr.* 30:t. 1163, 1954) has pointed out, there is no discrete variation recorded in the wild though colour variants may occur. Consequently the best course at present is to retain *C. elatus* as the correct name for the whole species and to leave any horticultural recognition of variation that may be desirable to the cultivar level.

In 1972 Traub (in *Plant Life* 28:66) suddenly reversed his previous, and correct, decision that the epithet *speciosus* was not available for the *Vallota* in *Cyrtanthus*. He not only made the incorrect combination *C. speciosus* (Linn. f.) Traub, but illegitimately renamed *C. speciosus* R. A. Dyer as *C. capensis* Traub. No explanations were given.

ASCLEPIADACEAE

435. Asclepias oreophila A. Nicholas, **species nova** *A. cucullatae* (Schltr.) Schltr. affinis sed inflorescentia plerumque solitaria terminali (nec plerumque inflorescentiis pluribus ex axillis foliorum superiorum), floribus majoribus, lobis coronae c.8–11mm (nec c.6–7mm) longis, lobis coronae margine exteriore vix interiori altiore columnam staminalem haud superantibus et uno e pare dentium interiorum in cavitatem inflexo; (in *A. cucullata* lobis coronae margine exteriore interiori distincte altiore et saepe columnam staminalem superantibus, marginibus dentium interiorum ad se appressis).

Herba perennis; caules 5–23cm alti, solitarii vel duo e caudice, erecti, parce pubescentes. *Folia* c.25–90 × 1·5–7mm, ascendentia, linearia vel anguste elliptica, acuta, ad basin anguste cuneata, subsessilia, marginibus revolutis, vel supra hispidula intra pilis ad costam restrictis vel omnino glabra. *Inflorescentiae* umbelliformes, 3–5-florae, pedunculo foliis breviore, saepe solitariae terminales interdum altera ex axilla folii superioris vel ramulum brevem terminante. *Flores* 8–12 × 13–18mm. *Calyx* lobis c.3–4 × 1mm lanceolatis extra hispidis. *Corolla* catilliformis, fere ad basin divisa; lobi 8–11 × 5·5–7mm, late elliptici, intus glabri, extra tenuiter vel dense pubescentes, margine ciliati, intus albi vel eburnei, extra albi vel ochroleuci vel griseo-brunnei roseo-violaceo- vel purpureo-notati. *Coronae* lobi 3·2–4·5 × 2–3·5mm, virides, purpureo-brunneo- vel violaceo-maculati, complicato-cucullati, naviculiformes, sinu saccato, carina sordide violacea brunnea vel viridiuscula, appendicibus proximalibus luteo-viridibus uno e dentibus duobus in cavitatem inflexo. *Columna staminalis* 4–5mm; appendices antherae albi, ovati, 1–1·3 × 1·2–1·7mm, supra gynostegio albo vel pallide viridi inflexi; fissura alaris 1·2–1·5mm longa. *Pollinia* triangularia, c.0·76–0·88 × 0·44–0·52mm. **Fig. 1**.

Type: Natal, Mpendhle distr., 2929 BC, Kamberg area, Storm Heights, c.7000ft, 14 xii 1978, *Hilliard & Burtt* 11703 (NU holo., E iso.).

NATAL. Estcourt distr., 2929 BB, Highmoor State Forest, *Killick & Vahrmeijer* 3579 (PRE). Mpendhle distr., 2929 BC, 'Redruth', c.6900ft, 5 xii 1972, *Wright* 1323 (NU); 'Allendale', 24 i 1978, *Hilliard & Burtt* 11245 (E, NU); Mulangane ridge above Carter's Nek, 7000–7300ft, 30 xi 1983, *Hilliard & Burtt* 16926 (E, NU); 2929 CB, 'River View', hillside W of

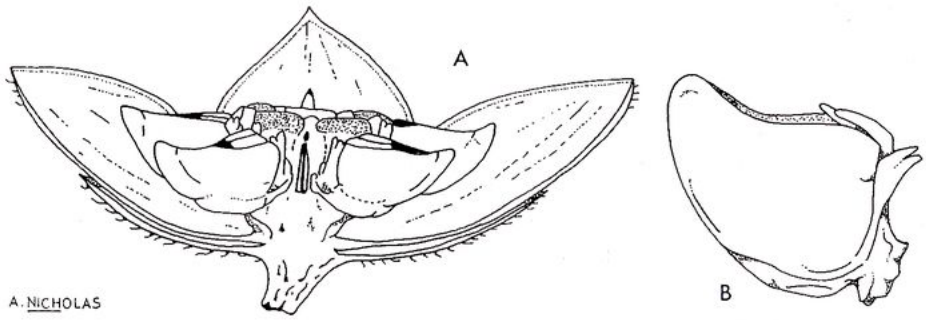

FIG. 1. *Asclepias oreophila*. A, flower with part of the calyx and corona cut away (×4); B, corona lobe (×8). Both from *Hilliard & Burtt* 11703.

Vergelegen, 16 xii 1978, *Stewart* 2083 (NU). Underberg distr., 2929 CB, Gxalingenwa valley, 6500ft, 10 xii 1983, *Hilliard & Burtt* 17173 (E, NU); 'Lakes' cave area, c.7100ft, 13 xii 1982, *Manning, Hilliard & Burtt* 15984 (E, NU); Sipongweni plateau, 5 xii 1978, *Cowan* 115 (NU); 2929 CA, Mlambonja valley, 6800ft, 5 i 1982, *Hilliard & Burtt* 14931 (E, NU); 2929 CC, Bushman's Nek pass, c.6000ft, 4 xii 1979, *L. & R. Davis* 193 (NU); Bushman's Nek, slopes N of hotel, 29 xii 1982, *Manning* 319 (NU). TRANSKEI. 3028 BB, Ramatseliso's Gate, *Boardman* A12 (PRE); ibidem, *Boardman* 184 (PRE).

This attractive asclepiad has so far been found only along the face and in the foothills of the southern Natal and Transkei Drakensberg from Highmoor State Forest to Ramatseliso's Gate, at altitudes between 1700 and 2200m. The specific epithet *oreophila* (mountain loving) refers to this mountainous distribution. The plant grows in grassland, usually amongst stones, and flowers between November and January. Of all the southern African species of *Asclepias*, *A. oreophila* most closely resembles *A. cucullata*, and if keyed out using N. E. Brown's key (in Thiselton-Dyer, *Fl. Cap.* 4(1):664–670, 1907) runs out near to it. The corona-lobes of both species superficially resemble each other: however those of *A. oreophila* are more complex. There are also important vegetative differences as well as differences in flower size and colour (see diagnosis). Although a phylogenetic relationship is possible, it is not close.

436. Asclepias xysmalobioides Hilliard & Burtt, **species nova** *A. vicariae* N.E. Br. affinis sed coronae lobis facile distinguitur. Lobi coronae *A. xysmalobioidis* fere solidi interne sulco parvo notati marginibus interioribus et apicalibus in dentes duos parvos infra summum gynostegium attingentes productis; lobi *A. vicariae* complicato-cucullati, marginibus interioribus et apicalibus in dentes duos in summo gynostegio positos productis.

Herba perennis caudice robusto verticali c.8mm diam.; caules prostrati, annui, ad 20cm longi, 1mm diam., simplices vel inferne parce ramosi, sparsim pilosi, 3–7 paribus foliorum praediti. *Folia* c.10–30 × 7–16mm, lanceolata, acuta, basi ± truncata vel paulo rotundata, utrinque molliter pilosa; petiolus usque ad 3mm longus. *Umbella* solitaria, terminalis, hemisphaerica, 25–30mm diam., c.20–25-flora; pedunculus c.40–70mm et pedicelli c.8–10mm longi, omnes ut caules pilosi. *Flores* fragrantes. *Calyx* lobis c.3 × 1·25mm lanceolatis pilosis. *Corolla* fere ad basin divisa; lobi demum valde reflexi, c.4 × 2·5mm, ovati, supra puberuli, infra pilis paucis grossis patentibus, sordide cremei pallide chocolatino-notati, externe pallide chocolatini. *Coronae* lobi supra basi columnae staminalis orientes, pallide flavi, erecti, c.1 × 1mm, sulco parvo in facie interiore excepto solidi, basi truncati anguste marginati, apice oblique truncati facie exteriore interiori paulo altiore, marginibus interioribus et apicalibus in dentes duos inflexos ad summum gynostegium distincte haud attingentes. *Columna staminalis* c.1·25mm alta; appendices antherarum transverse oblongi, ad summum gynostegium attingentes. *Gynostegium* album, truncatum, levissime sulcatum, appendicibus antherarum ad sulcos appressis. **Fig. 2A.**

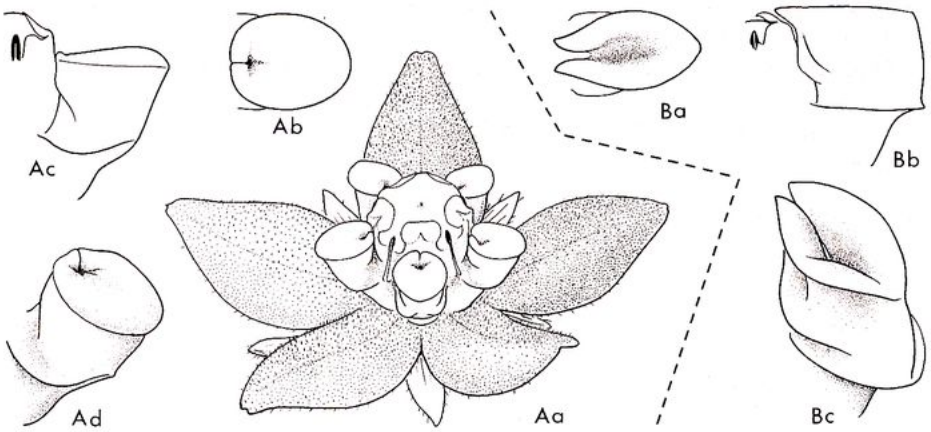

FIG. 2.A, *Asclepias xysmalobioides*; Aa, flower (×6·5), corona lobe, Ab, from above, Ac, from the side, Ad, an oblique view (all ×13), from *Hilliard & Burtt* 17342. B, *Asclepias vicaria*; Ba, corona lobe from above, Bb, from the side, Bc, an oblique view (all ×13), from *Harriss* 145.

Type: Natal, Underberg distr., 2929 CC, vicinity of Tarn Cave, above Bushman's Nek, c.2440m, 19 i 1984, *Hilliard & Burtt* 17342 (NU holo; E, K, PRE, PRF, S iso.)
NATAL. Underberg distr., 2929 CC, on trail to Bushman's Nek in Ngwangwana river canyon, 1900m, 15 xii 1976, *Beverly* 784 (PRE).
LESOTHO. Sehlabathebe, 4–14 i 1973, *Guillarmod, Getliffe & Mzamane* 224 (K).

Asclepias xysmalobioides is locally common on the summit of the Drakensberg in the vicinity of Tarn Cave where the Natal border marches with that of Sehlabathebe National Park in Lesotho. We found the plants in thin damp grassland on poor soil overlying Cave Sandstone, and among rocks on the steep slopes below the summit plateau. Beverly collected it along the horse track leading from Natal up to Sehlabathebe, and it has also been recorded within the Park. It is clearly closely allied to *A. vicaria*, which it resembles in facies, but from which it differs not only on coronal structure (see Fig. 2) but also in its softer pubescence. *Asclepias vicaria* has been recorded from Mt Ayliff and Willowvale districts in Transkei and from Ngotshe and Utrecht districts in northern Natal.

The coronal lobes of *A. xysmalobioides* are nearly solid, only grooved on the inner face, and approach those of *Xysmalobium* (which, however, are entirely without a groove); this has dictated the specific epithet.

BORAGINACEAE

437. Lithospermum papillosum Thunb., Prodr. Pl. Cap. 34 (1794), & in Schrader, Neues Journ. Bot. 1(3):44 (1806), & Fl. Cap. ed. Schultes 161 (1823): Lehmann, Pl. Asperif. 329 (1818); A. DC., Prodr. 10:74 (1846); Wright in Thiselton-Dyer, Fl. Cap. 4(2):21 (1904); Johnston in J. Arn. Arb. 33:358 (1952).

Type: Cape, Lange Kloof prope Wolwekraal, *Thunberg* (UPS-sheet 3950). Selected citations:

CAPE. George div., near George, 200m 24 iii 1893, *Schlechter* 2392 (E). Zuurbergen, Dornek & Bontjiesrivier, *Drège* (E). Stockenstrom div., Lushington Mt, xi 1885, *Scully* 258 (E). Maclear distr., Naude's Nek, c.8500ft, 13 xii 1976, *Stewart* 1895 (E, NU).

NATAL. Alfred distr., Weza, Zuurberg, 4000–4500ft, 14 i 1975, *Hilliard & Burtt* 7675 (E, NU). Underberg dist., 2929 CC, vicinity of Tarn Cave above Bushman's Nek, c.8000ft, 20 i 1984, *Hilliard & Burtt* 17410 (E, NU). Mpendhle distr., 2929 DB, farm Tillietudlem, c.5600ft, 9 xii 1980, *Hilliard & Burtt* 13853 (E, NU); 2929 BC, Highmoor F.R., ridge SE of Giant's Castle, headwaters of Elandshoek river, 5 i 1983, *Hilliard & Burtt* 16215 (E, NU). Lions River distr., Fort Nottingham Commonage, 5500ft, 26 x 1976, *Hilliard & Burtt* 9053 (E, NU).

Thunberg described two species of *Lithospermum* from South Africa: *L. papillosum* and *L. scabrum*. The chief difference between these two species, as given by Thunberg, was that the nutlets were rugose in *L. papillosum*, but smooth in *L. scabrum*. This has been repeated without comment right up to the present. Ripe nutlets are not always easy to find, but whenever we have been successful those of the plant we supposed to be *L. papillosum* were smooth and shining. We are greatly indebted to the authorities at Uppsala for sending the type specimens of these two names on loan.

Examination of the type specimen of *L. papillosum* shows that the rugose nutlet is one that has been dried before it reached full maturity. The specimen agrees well with one at Edinburgh collected by Drège on the Zuurberg; this has one fruit that is similarly rugose, but, slightly below it on the same stem is a fully mature fruit, and this is quite smooth. Plants are not to be excluded from *L. papillosum* because of the smooth nutlets. *L. scabrum* is, however, distinct from *L. papillosum*: it is usually a taller plant with the stems inclined to be branched; the leaves are longer (3–5cm, whereas in *L. papillosum* they seldom exceed 2·5cm) and the internodes are longer too (2–3cm, against 1·5cm at most) and the indumentum is of longer and softer hairs. *L. scabrum* does not occur in Natal and must be removed from Ross's list (Ross, *Fl. Natal* 298, 1973).

CAMPANULACEAE

438. Wahlenbergia cuspidata Brehmer in Bot. Jahrb. 53:126 (1915).
Lectotype (chosen here): East Griqualand [now Transkei, Umzimkulu distr.], Mt Malowe, c.2000m, *Tyson* 3097 (K).

Syn.: *W. dentifera* Brehmer in Bot. Jahrb. 53:99 (1915). Lectotype (chosen here): Natal, Van Reenen, c.2260m, *Schlechter* 6928 (Z; K, isolecto).

W. furcata Brehmer in Bot. Jahrb. 53:124 (1915). Type: Natal, Polela, 5000ft, *Wood* s.n. (Z).

NATAL. Bergville distr., 'The Cavern', 4800ft, i 1956, *Hodson* 3 (NU); Mont aux Sources, 10000ft, 24 iii 1946, *Schelpe* 1380 (NU); Cathedral Peak area, 7300ft, ii 1943, *Schelpe* 120 (NU). Estcourt distr., Giant's

Castle Game Reserve, 8000ft, 17 i 1973, *Wright* 1356 (NU); Kamberg, c.6500ft, 23 iii 1974, *Wright* 1789 (NU). Lion's River distr., 2930 AD, Mt Gilboa, c.5800ft, 29 xii 1978, *Hilliard & Burtt* 11849 (E, NU); Umgeni Poort, farm Ross, 5000ft, 21 xii 1964, *Moll* 1448 (NU). Mpendhle distr., 2929 BC, Mulangane ridge, above Carter's Nek, 7000–7300ft, 3 ii 1984, *Hilliard & Burtt* 17518 (E, K, NU, PRE). Polela distr., 2929 DC, Mawahqua Mt, Sunset farm, 5900ft, 22 iii 1977, *Rennie* 818 (E, NU). Underberg distr., 2929 CB, Bamboo Mt, c.6000ft, 9 iv 1977, *Hilliard & Burtt* 10109 (E, NU); Sani Pass, c.8800ft, 23 iii 1977, *Hilliard & Burtt* 9789 (E, K, NU); Garden Castle F.R., Mlambonja Valley, 6500ft, 5 i 1982, *Hilliard & Burtt* 14918 (E, K, NU, PRE); 2929 CC, Bushman's Nek, Thamathu Cave, 7500ft, 6 ii 1976, *Hilliard & Burtt* 9004 A (E, NU); vicinity Tarn Cave, c.8000ft, 19 i 1984, *Hilliard & Burtt* 17364 (E, K, NU, PRE).

TRANSKEI. Umtata distr., 3128 BD, hill above Mhlanfane Forest Station NW of Umtata, c.5000ft, 31 i 1983, *Hilliard & Burtt* 16327 (E, K, NU, PRE).

CAPE. Elliot–Maclear distr. boundary, 3127 BB, Bastervoetpad, c.7200 ft, 15 ii 1983, *Hilliard & Burtt* 16694 (E, K, NU, PRE).

Wahlenbergia dentifera was placed by von Brehmer in his group *Grandiflorae*, distinguished by its 3-celled capsules, and *W. cuspidata* in group *Undulatae*, distinguished by its 2-celled capsules; but this is an unreliable character; both states may be present in a single collection, and they may be associated with either toothed or entire calyx lobes. The specific epithet *dentifera* presumably draws attention to the callose teeth present on the calyx lobes of some of the syntypes of the name; in a range of material there are all degrees of development of these teeth, from small callosities to teeth 1mm long, and varying from frequent to occasional or wanting, as in the syntypes of *W. cuspidata*. We have chosen to retain the epithet *cuspidata* as the calyx lobes, to which it refers, are always long acuminate.

Wahlenbergia furcata Brehmer is yet another name for the same species. The distinction was said to lie in the shape of the capsule: 'longe obovata vel anguste fusiformis, cuneata' in *W. cuspidata*; 'late obovata usque subfusiformis, basi subcuneata' in *W. furcata*. Ovary-shapes, as seen in flowering material, certainly vary in *W. cuspidata*, but there is no indication that they provide an adequate differential, and any distinction between v. Brehmer's types of these two species is trivial indeed.

The plant is common in the Natal Drakensberg and its foothills, from De Beer's Pass NW of Ladysmith in northern Natal to the Cape Drakensberg and Katberg, between c.1500 and 3000m above sea level, often growing in the shelter of rocks or on damp cliffs, sometimes on scree slopes, where it can be a beautiful sight. The species with which it is most likely to be confused is *W. rivularis* Diels, a less bushy plant in which at least the larger leaves are narrowed to a short but distinct petiolar part; in *W. cuspidata* the leaf base is half-clasping.

439. Wahlenbergia doleritica Hilliard & Burtt **species nova** *W. lobulatae* Brehmer affinis sed foliis semper integris (nec interdum dentatis), calycis

lobis 5–6mm longis (nec 3–4·75mm) basi haud lobulatis, corolla leviter infundibuliformi 9–11mm longa (nec campanulata 6–7·5mm longa), stylo stigmatibus inclusis 4·5mm longo (nec 3·25–3·75mm) distinguenda.

Herba perennis, tenuis; caules laxe caespitosi, c.40–150mm longi, simplices, filiformes, puberuli, foliati. *Folia* c.6–13 × 1mm, linearia vel anguste oblanceolata, apice acuto, basi semiamplectente, marginibus parce ciliatis, axillis quibusdam brachyblastis praeditis. *Flores* solitarii, terminales, pedicello ad 5mm longo. *Calyx* lobis 5–6 × 0·75mm linearibus acutis marginibus interdum pauciciliatis. *Corolla* infundibuliformis, 9–11mm longa; lobi 4·5–6 × 3mm elliptici, apiculati, laete purpureo-caerulei. *Filamenta* c.2mm longa, parte superiore 0·75mm filiformi, parte inferiore expansa elliptico-oblonga 1·25 × 0·75mm marginibus ciliatis; antherae 1·75mm longae. *Ovarium* pro parte maxima inferum, c.3 × 2mm, glabrum, triloculare; stylus 3·5mm longus, eglandulosus, parte superiore 2·75mm stigmata includente barbata, cetera glaber; stigmata c.1mm longa. *Capsula* non visa.

Type: Natal, Underberg distr., Bushman's Nek, Thamathu Pass, c.8200ft, 4 ii 1976, *Hilliard & Burtt* 8908 (NU holo.; E, K iso.).

Wahlenbergia doleritica is known only from the type collection, made on the cliffs of the dolerite plug on Thamathu Pass. It is clearly allied to *W. lobulata*, which it resembles in habit, but is at once distinguished by the calyx lobes lacking lobules at the base. The flowers are probably always larger (see diagnosis) and they are more funnel-shaped than those of *W. lobulata*, which are decidedly campanulate. At least the lower leaves of *W. lobulata* are elliptic, with 1 or 2 teeth each side: those of *W. doleritica* are not expanded, and the margins are entire.

440. Wahlenbergia polytrichifolia Schlechter subsp. **dracomontana** Hilliard & Burtt, **subspecies nova** a subsp. *polytrichifolia* characteribus sequentibus differt. Pedicelli plerumque breviores, subnulli vel 1(–3)mm longi (nec 2–3mm); flores majores (8–14mm longi, nec 6mm); calicis tubus glaber vel pilis paucis longiusculis indutus (nec puberulus); stigmata breviora (0·5mm longa, nec 1mm).

Type: Natal, Mpendhle district, 2929 BC, Mulangane ridge above Carter's Nek, 7000–7300ft, 3 ii 1984, *Hilliard & Burtt* 17539 (NU holo.; E, K, PRE, PRF, S iso.).

NATAL. Estcourt distr., Giant's Castle Game Reserve, Upper Injasuti, 11000ft, 28 i 1966, *Trauseld* 552 (NU, PRE). Mpendhle distr., end of SE ridge from Giant's Castle, c.8200ft, 5 i 1971, *Wright* 1072 (E, NU).

LESOTHO. Summit plateau of Drakensberg, vicinity of Giant's Castle Pass, c.10000ft, 20 i 1971, *Wright* 1089 (E, NU); c.2 miles S of Giant's Castle Pass, c.9500ft, 21 ii 1973, *Wright* 1411 (E, NU); Sani Top, 9400ft, 17 ii 1973, *Hilliard* 5298 (E, K, NU, S); ibidem, 22 iii 1983, *Halliwell* 5178 (PRE); Sehlabathebe, 2300–2500m, i 1973, *Bayliss* 5477 (PRE); ibidem, 2450m, 24 ii 1978, *Hoener* 2038 (PRE).

Wahlenbergia polytrichifolia subsp. *dracomontana* grows in bare sandy or gravelly ground over rock sheets that are poorly drained and subject to seasonal flooding. The plants form small mats, which usually grow in colonies and are a pretty sight in flower with their sky-blue corollas held

erect and sometimes displaying darker blue markings in the throat. These were present in the population at Sani Top, but absent in that at Mulangane.

Wahlenbergia polytrichifolia subsp. *polytrichifolia* was found by E. E. Galpin on Hangklip Mt near Queenstown, and has not been re-collected. It has therefore been difficult to evaluate the differences between the type and the Drakensberg populations. Superficially they look very similar, but there are distinct differences in pedicel-length, indumentum, flower size and stigmas. Clearly the species must be expected between Sehlabathebe and Hangklip Mt and when this area has been better collected it may be possible to re-evaluate the differences. At present recognition of the Drakensberg plant as a distinct subspecies seems appropriate.

COMPOSITAE

441. Helichrysum evansii Hilliard, **nom. et stat. nov.**

Lectotype (chosen here): Natal, Drakensberg, summit Mont aux Sources, 11000ft, March 1898, *Evans* 742 (BOL; K, NH, PRE isolecto.).

Syn.: *H. alticolum* Bolus var. *montanum* Bolus in Trans. S. Afr. Phil. Soc. 18:386 (1907); Moeser in Bot. Jahrb. 44:250 (1910); Hilliard, Compositae in Natal, 161 (1977).

[*H. alticolum* auct., non Bolus; Hilliard, Fl. S. Afr. 33, 7(2):90 (1983), excl. typ.].

Mr Phillipson, University of Fort Hare, recently sent in a specimen that he had collected on Gaika's Kop in the Amatole Mountains (*Phillipson* 822). This proves to be the first collection of true *H. alticolum* since Galpin's original gathering on old Katberg Pass, on the road from Cathcart to Seymour, about 20km north-west of Gaika's Kop. It shows quite conclusively that *H. alticolum* is a stoloniferous grassland herb with a few radical leaves and tall scapes leafy only in the lower part; this was not obvious in the type material. The plant that Bolus described as *H. alticolum* var. *montanum* is a mat-forming perennial herb, so different in habit and foliage from *H. alticolum*, that I have no hesitation in raising it to specific rank. The trivial name honours Maurice Evans, pioneer collector in the Natal Drakesberg.

442. Senecio flanaganii E. P. Phillips in Ann. S. Afr. Mus. 16:153 (1917).

Lectotype: Orange Free State, Witzieshoek, Besters Vlei, 5500ft, i 1894, *Flanagan* 2089 (SAM; K, PRE isolecto.).

ORANGE FREE STATE. Harrismith distr., Qwa Qwa Mountain, above 'Bluegumbosch', c. 6500ft, 8 i 1979, *Hilliard & Burtt* 11991 (E, NU).

NATAL. Klip River distr., farm Boshoek NE of Van Reenen's Pass, 29 xii 1975, *Hilliard & Burtt* 8689 (E, NU). Bergville distr., Royal Natal National Park, N of Tendele camp, c.5400ft, 1 ii 1982, *Hilliard & Burtt* 15373 (E, K, NU); Cathedral Peak Forest Reserve, tributary of Tseketseke, c.6900ft, 18 i 1983, *Hilliard & Burtt* 16288 (E, K, NU). Mpendhle distr., Vergelegen Nature Reserve, boulder bed of Mahlangubo stream, 31 xii 1977, *Hilliard & Burtt* 11146 (E, NU); Loteni Nature

Reserve, 24 xii 1978, *Hilliard & Burtt* 11819 (E, NU); Loteni river valley, c.5300ft, 28 xii 1982, *Hilliard & Burtt* 16148 (E, NU); upper Loteni, vicinity of Ash Cave, c.6500ft, 5 ii 1985, *Hilliard & Burtt* 18115 (E, NU) and 18132 (E, NU).

The reduction of *S. flanaganii* to synonymy under *S. conrathii* N.E. Br. (Hilliard, *Compositae in Natal* 451, 1977) is now considered to have been a mistake. We have become familiar with the species, which can be distinguished from *S. conrathii* by its smaller heads with involucral bracts only c.6·5mm long (not c.8–9mm), calyculus bracts often shorter than the involucre (not about equalling it) and not tending to obscure it, as they do in *S. conrathii*; also, the leaves of *S. flanaganii* are lanceolate (not oblanceolate). *Senecio flanaganii* favours rocky stream banks and boulder beds, while *S. conrathii* is a plant of open grassy places. In both species the heads may be either discoid or radiate, the radiate form being the commoner. The type of *S. flanaganii* is discoid, as are *Hilliard & Burtt* 11991, cited above from Bluegumbosch, which is virtually the same as Bester's Vlei, and our 15373 from Royal Natal National Park; all the other material is radiate.

ERICACEAE

443. Erica woodii Bolus subsp. **platyura** Hilliard & Burtt, **subspecies nova** a subsp. *woodii* caudis antherarum brevibus latis plerumque dentatis (nec c.0·5mm longis, tenuibus), stylo 1·5–2·5mm longo (nec 0·75–1·25mm) differt.

Type: Natal, Mpendhle distr., 2929 BC, Mulangane ridge, above Carter's Nek, 7000–7300ft, 6 ii 1984, *Hilliard & Burtt* 17649 (NU holo.; E, K, PRE, PRF, S, STE, iso.).

Selected citations:

NATAL. Bergville distr., 2828 DB, Royal Natal National Park, Vemvaan river valley, c.5800ft, 7 ii 1982, *Hilliard & Burtt* 15463 (E, NU); Cathedral Peak F.R., 6850ft, 1 ii 1951, *Killick* 1376 (NH, NU). Estcourt distr., Monk's Cowl F.R., Cowl Fork Valley, 2100–2300m, 6 xii 1983, *Balkwill et al.* 781 (E, NU, PRF); Highmoor F.R., c.7000ft, 18 ii 1968, *Hilliard* 4816 (E, NH, NU). Lion's River distr., Nottingham Road, 5500ft, 22 iii 1953, *Gallwey* 15 (NU). Polela distr., Mawahqua Mountain, Sunset Farm, 6500ft, 31 i 1981, *Rennie* 1249 (E, NU). Mpendhle distr., Loteni Nature Reserve, 5300ft, 2 iii 1979, *Phelan* 301 (NU). Underberg distr., 2929 CB, upper tributaries S of Mkomazi river (feeders of Ka-Ntubu), 8000ft, 2 xii 1982, *Hilliard & Burtt* 15802 (E, K, NU, PRE, PRF); Sani Pass, 7800ft, 7 i 1984, *Hilliard & Burtt* 17309 (E, K, PRE, PRF, STE); Cobham F.R., Upper Polela Cave area, c.6900ft, 14 ii 1979, *Hilliard & Burtt* 12532 (E, NU); Garden Castle F.R., valley bottom of Umzimkulu river [i.e. Mlambonja] above Drakensberg Garden hotel, c.5500ft, 27 i 1975, *Hilliard & Burtt* 7764 (E, K, NU, PRE, S); Bushman's Nek, path to Thamathu, 2 ii 1976, *Hilliard & Burtt* 8892 (E, K, NU, S).

Erica woodii has a wide distribution from the mountains of E Zimbabwe and the northern and eastern Transvaal to the eastern Cape.

The type material (*Wood* 4136) came from the Little Noodsberg, NW of Durban: it has slender anther tails c.0·5mm long, short styles c.1mm long, and the longest hairs on the stems scarcely reaching 0·75mm, and these are the characters exhibited over most of its geographical range. We are familiar with the species particularly in the Natal Drakensberg, and here there is a second well marked form, distinguished by its short anther tails, broadened at the base and there often toothed, styles 1·5–2·5mm long, and usually some of the hairs on the stems 1·25–2mm long. We have seen the two forms growing together on Mulangane ridge above Carter's Nek: typical *E. woodii*, in grassland, with white corollas and stigma just exserted, *E. woodii* subsp. *platyura*, nearby on the earth cliff of a small watercourse, with deep pink corollas and stigma well exserted. While *E. woodii* was described as having white corollas, there is no absolute distinction in flower colour between the two subspecies. We think subspecific rank appropriate for our plant, which may be confined to the Natal Drakensberg, where it is far commoner than subsp. *woodii* and appears to reach higher altitudes (c.2550m as opposed to 2200m).

What seems to be a variant of subsp. *platyura* occurs between c.2300 and 2700m in Natal, descending to c.1550m on the eastern Cape mountains: anthers either muticous or with a minute tail: style 0·5–0·75mm long.

NATAL. Underberg distr., 2929 CB, upper tributaries of Mkomazi river (feeders of Ka-Ntubu), 8000ft, 2 xii 1982 [past flowering] *Hilliard & Burtt* 15803 (NU); 5–7 miles NNW of Castle View Farm, headwaters of Mlahlangubo river, 7600ft, 23 xi 1980 [past flowering], *Hilliard & Burtt* 13545 (E, NU, PRE).

CAPE. Barkly East–Elliot distr. boundary, 3127 A–B, Saalboom Nek, S of Clifford, c.6900ft, 21 i 1979, *Hilliard & Burtt* 12256 (E, NU); 3127 BB, Bastervoetpad, c.7200ft, 15 ii 1983, *Hilliard & Burtt* 16671 (E, K, NU, STE). Barkly East distr., 3027 BB, Ben McDhui, 8800ft, 6 ii 1983, *Hilliard & Burtt* 16503 (E, NU); top of Barkly Pass, c.6800ft, 17–20 i 1906, *Rattray* 7279 (PRE). Queenstown distr., sides Andriesberg, facing north, 6000ft, 19 iii 1900, *Galpin* 5656 (PRE). Victoria East distr., Hogsback, 6500ft, i 1920, *Rattray* 216 (PRE); Katberg, 5000ft, i 1896, *Flanagan* 2666 (PRE). Bedford distr., Great Winterberg, 7800ft, 8 iii 1900, *Galpin* 2674 (PRE).

Loss of anther tails and shorter styles suggest a tendency to autogamy at higher altitudes. We hesitate to accord this variant formal recognition because the biology and taxonomy of *Erica woodii* deserve a full investigation over the whole geographical range.

It may be noted here that *E. woodii* var. *robusta* Dulfer (in *Ann. Naturhist. Mus. Wien* 66:33, 1963) is a shrubby variant of *E. woodii* subsp. *woodii* from the Transvaal. We have been able to examine only a single specimen of *E. woodii* var. *rhodesiaca* (Alm & Fries) Dulfer (in *Ann. Naturhist. Mus. Wien* 68:104, 1965) and this (Inyanga, 15 iv 1953, *Corner* s.n., E) also belongs to *E. woodii* subsp. *woodii*: it seems little different from var. *robusta*.

GRAMINEAE

444. Catalepis gracilis Stapf & Stent in Kew Bull. 1929:11 (1929).
Type: Transvaal, Ermelo distr., Nooitgedacht, 1700m, *Potter* sub Henrici 1595 (PRE).
NATAL. Underberg distr., 2929 CB, Sani Pass, c.7900ft, 5 i 1984, *Hilliard & Burtt* 17265 (E, K, NU, PRE, PRF); ibidem, 7800ft, *Manning, Hilliard & Burtt* 17250 (E, K, NU, PRE).

This grass is not recorded by Ross (*Fl. Natal.*, 1973). It is widespread in Lesotho and extends south to the Cape Drakensberg and north to southern and eastern Transvaal, and it is often a pioneer on bare ground: we found it forming small dense mats in the hard-packed ground of part of the old road up Sani Pass. Like *Karroochloa* (below) it is highly palatable to stock, so it is not surprising that it is now established on this well-used route from Lesotho to Natal.

Another marginal record for Natal is *Davidse* 6783 (PRE) collected 6km south of Wakkerstroom on the road to Utrecht, at 1900m; the label records 'Belelasberg', but the collection must have been made almost on the Transvaal–Natal border. Killick records the species in his checklist of the plants at Cathedral Peak (*Bot. Surv. Mem.* 34, 1963), but we failed to find his specimen in PRE (*Killick* 1975).

445. Karroochloa purpurea (Linn. f.) Conert & Türpe in Senckenb. Biol. 50:303, Abb. 24–30 (1969).
Type: 'Martinique' (but correctly Cape of Good Hope, fide Willd., Sp. Pl. 1:450, 1807), LINN 95.29.
Syn.: *Avena purpurea* Linn. f., Suppl. 112 (1781).
Danthonia purpurea (Linn. f.) Roemer & Schultes, Syst. Veg. 2:690 (1817).
NATAL. Underberg distr., Sani Pass, c.7900ft, 5 i 1984, *Hilliard & Burtt* 17271 (E, K, NU, PRE, PRF).

This grass grows on shallow soils across the mountains from the south western Cape to the Witteberg and Cape Drakensberg near Barkly East, Lesotho and the north eastern Orange Free State. This record is the first from Natal. It occurs at Sani Top, in Lesotho, and we have now found it well down the pass into Natal, doubtless spread by sheep and goats, to which it is a palatable fodder. It forms short dense mats on hard bare ground.

The combination *Danthonia purpurea* is commonly attributed to Palisot de Beauvois (*Agrost.* 160, 1812), but his mention of '*Danthonia purpurea?*' without any synonym is inadequate.

HYPOXIDACEAE
(B. L. Burtt)

446. Hypoxis colchicifolia Baker in Gard. Chron. 22:649 (1884), in J. Bot. 27:3 (1889), & in Thiselton-Dyer, Fl. Cap. 6:186 (1896).
Type: 'Cape', without locality, hort. Bull, 1884 (K).
Syn.: *H. latifolia* Hook. in Bot. Mag. 80:t.4817 (1854); Baker in J. Linn.

Soc., Bot. 17:115 (1878), & in Thiselton-Dyer, Fl. Cap. 6:185 (1896)—non *H. latifolia* Wight (1853). Type: Cult. Kew, coll. Natal, *Garden* (no spec. preserved?).

H. oligotricha Baker in J. Bot. 27:3 (1889), & in Thiselton-Dyer, Fl. Cap. 6:187 (1896); Nel in Bot. Jahrb. 51:321 (1914). Type: Natal, coast, *Wood* 1170 (K).

NATAL. Along railway line c.8 miles from Greytown, 1 xi 1936, *Wylie*, NH 27973 (K) [fls. quite glabrous]; sine loc., coll. *Adlam*, cult. Kew, vi 1887 (K) [fls. quite glabrous]; Port Shepstone distr., 7 miles N of Port Shepstone, ±500ft, 26 x 1962, *Strey* 4521 (K, PRE); Greenhart turn-off from Port Edward to Port Shepstone, ±50ft, 7 xi 1974, *S.E. Wood* 172 (K, NU); Wentworth, c.50m, 7 x 1898, *Wood* 7248 (E).

TRANSVAAL. Milner Park, Johannesburg, 10 xi 1926, *C. E. Moss* 13679 (K).

Both *Hypoxis latifolia* Hook. and *H. colchicifolia* Baker were listed by Nel (in *Bot. Jahrb.* 51:337–338, 1914) as species that he had not seen. He therefore had no opportunity to make the above reductions. They were suggested by Miss S. E. Wood (unpublished M.Sc. thesis, University of Natal, 1976), but under the illegitimate name *H. latifolia*. Mrs M. E. Heideman has listed *H. latifolia* in her paper on *Hypoxis* on the Witwatersrand (in *Bothalia* 14:892, 1983), but she tells me that she has never succeeded in finding the plant herself, and knows it only from *Moss* 13679 from Milner Park, Johannesburg. It is remarkable that so conspicuous a plant was found just once in this locality, and one cannot help wondering whether there may not have been some mistake in the labelling. The known range lies otherwise wholly within Natal.

447. Hypoxis costata Baker in J. Linn. Soc., Bot. 17:119 (1878) & in Thiselton-Dyer, Fl. Cap. 6:188 (1896).

Type: Orange Free State, Nelson's Kop, *Cooper* 879 (K).

Selected citations:

ORANGE FREE STATE. Harrismith distr., 2829 AC, Manyanyeza Mt, 5 i 1979, *Hilliard & Burtt* 11947 (E, NU).

NATAL. Mpendhle distr., 2929 BC, Mulangane ridge above Carter's Nek, 7000–7300ft, 6 ii 1984, *Hilliard & Burtt* 17621 (E, NU); 2929 AD, path from Loteni N.R. to Redi, c.7600ft, 26 xii 1982, *Hilliard & Burtt* 16117 (E, NU). Underberg distr., 2929 CB, Gxalingenwa valley between Sani Pass and Polela valley, 6700ft, 9 xi 1983, *Hilliard & Burtt* 17122 (E, NU); 2929 CC, vicinity of Tarn Cave above Bushman's Nek, c.7800ft, 22 xi 1983, *Hilliard & Burtt* 16865 (E, NU).

LESOTHO. Sehlabathebe, xii 1976, *Schmitz* 7007 (PRE).

H. costata is not listed in Ross's *Flora of Natal* (1973).

448. Hypoxis hemerocallidea Fischer & Meyer in Ind. Sem. Hort. Bot. Petrop. 10:49, 50 (1845).

Type: Cape of Good Hope, cult. in Hort. Bot. Petrop. (LE).

Syn.: *Hypoxis rooperi* T. Moore in Garden Companion 1:65 cum icone (1852); Baker in Thiselton-Dyer, Fl. Cap. 6:188 (1897); Nel in

Bot. Jahrb. 51:337 (1914); Phillips in Fl. Pl. S. Afr. 5, t. 172 (1925). Type: cult. Rev. T. Rooper from plant collected by Capt. E. Rooper in Eastern Cape Prov., [East London] Buffalo R. mouth (K).

Selected citations:

CAPE. Grahamstown, *Bolton* (K). Cathcart, *Kuntze* (K). Stockenstrom, summit of Lushington Mt, xi 1884, *Scully* 117 (E). East London, Buffalo river mouth, 20 i 1985, *Batten* 678 (E, NU).

TRANSKEI. Kentani, x 1910, *Pegler* 1143 (K).

NATAL. Isipingo North, 50ft, ix 1948, *Ward* 459 (E, NU). Ingwavuma distr., Ndumu G.R., Ndumu hill, 15 x 1969, *Pooley* 662 (E, NU); Kosi Bay, 50ft, 24 xi 1967, *Strey & Moll* 3807 (K). Camperdown distr., Nagle dam, 1350ft, 21 vi 1957, *Wells* 1578 (E, NU). Ngotshe distr., Ngome–Louwsburg road, 9 xii 1975, *Hilliard & Burtt* 8486 (E, NU). Pietermaritzburg, x 1883, *Wilms* 2316 (K). Bergville distr., 8 miles from Bergville on Rustenburg road, 4000ft, 17 xii 1953, *Edwards* 2407 (E, NU).

LESOTHO. Leribe, 5–6000ft, *Dieterlen* 2299 (K).

ORANGE FREE STATE. Kroonstad airfield, 4600ft, 9 ii 1967, *Scheepers* 1329 (K).

SWAZILAND. Manzini distr., Bremersdorp, 2000ft, 20 x 1958, *Compton* 28104 (K).

TRANSVAAL. Barberton, 1800–2600ft, xii 1890, *Galpin* 1190 (K). Magaliesberg, Hornsnek, 1500m, 7 xii 1955, *Schlieben* 7660 (K). Houtbosch, *Rehmann* 5810 (K). Kruger National Park, Punda Maria, 28 x 1932, *Lane* s.n. (K).

Nel has *H. hemerocallidea* widely separated from *H. rooperi* in his revision of African *Hypoxis*, but he remarks that they may be allied! The divisive character is that Nel places *H. hemerocallidea* amongst the species with the anther-tip split, whereas *H. rooperi* is amongst those with anther-tip entire. However, in his introduction he says that *H. rooperi* is the one species that may have either condition. The type material of *H. hemerocallidea* has been kindly sent on loan to Edinburgh by the authorities in Leningrad. Contrary to Nel's statements the anther tips are not split and the style is not longer than the stigma. In fact, the type specimens run down clearly and unequivocally to *H. rooperi* in Nel's key.

The suggestion has recently been made (Heideman in *Bothalia* 14:892, 1983) that *H. hemerocallidea* is no more than a variety of *H. rigidula* Baker. Were that so, the reduction would have to be the other way round, as *H. rigidula* is the younger name. But it is not so. *H. hemerocallidea* shows no sign of the pseudostem characteristic of *H. rigidula*, though this might be because the leaves on the type are separate. However, they are too broad for *H. rigidula*, they are clearly falcate, the venation is wrong, and also the pedicels are far too long. However, these differences do not apply to the two specimens that Baker referred to *H. hemerocallidea* in *Flora Capensis*. These (*Baur* from Entwanazana, Transkei and *Cooper* 3242) do have a pseudostem, the leaves are not falcate and the pedicels are shorter than in *H. hemerocallidea*: these two specimens are very close to *H. rigidula*.

I am greatly indebted to Mrs A. Batten of East London for going to

the Buffalo River mouth, the type locality of *Hypoxis rooperi*, and collecting wild material of the plant there. The specimens she has sent are undoubtedly *H. rooperi*, but they are rather smaller than the cultivated type specimen, now in the Kew herbarium; they are also smaller than the cultivated type of *H. hemerocallidea* at Leningrad. However there is a considerable range of size in the wild specimens of this species. A small plant was described as *H. rooperi* var. *forbesii* Baker (in *J. Linn. Soc., Bot.* 17:118 (1878), collector by Forbes at Delagoa Bay, but at present recognition of the variety under *H. hemerocallidea* is not justified.

449. Hypoxis iridifolia Baker in J. Linn. Soc., Bot. 17:117 (1878).
Type: 'South Tropical Africa' [probably Matabeleland fide N. E. Brown] *Baines* (K).
Syn.: [*H. obtusa* Burchell MSS ined. et auct. plur.—vix Ker Gawler].
H. nitida Verdoorn in Fl. Pl. S. Afr. 27:tab. 1058 (1949). Type: Pretoria, *Robertson* (PRE No. 28786).
Selected citations:
E CAPE. 3327 BA, Welcome Wood, 1000ft, 1892, *Sim* 1126 (NU).
NATAL. Vryheid distr., 30km from Dundee to Vryheid, 29 x 1974, *Stirton* 1317 (E, NU). Estcourt distr., Giants Castle G.R., 'Dunsink' boundary, 5800ft, 21 xi 1967, *Trauseld* 868 (NU). Mpendhle distr., Loteni N.R., 5300ft, 16 x 1978, *Phelan* 156 (NU). Polela distr., Mawahqua Mt, 'Glengariff', 5000ft, 8 x 1974, *Rennie* 106 (NU). Underberg distr., 5 miles N of Castle View Farm, 'Chameleon' cave area, 7000ft, 3 xii 1984, *Hilliard & Burtt* 17853 (E, NU).
TRANSVAAL. Road to Volksrust, 5km past Balfour, x 1974, *Arnold* 836 (E, NU).
ZIMBABWE. Inyanga distr., Inyanga, Rochdale Vlei, 5450ft, *Nicholas* 502 (NU).

Hypoxis iridifolia, being labelled 'South Tropical Africa' was quite properly not included by Baker in his account of the genus for *Flora Capensis*. It is now housed in the South African covers at Kew and it was not included by Baker when he enumerated the genus for the *Flora of Tropical Africa*. Consequently the species has been ignored. Burchell's specimen of *H. obtusa* seems to me inseparable from *H. iridifolia*.

In 1949 Miss Verdoorn described *H. nitida* as a species distinct from *H. obtusa*, but her concept of *H. obtusa* is not quite clear. Subsequently S. E. Wood (unpublished M.Sc. thesis, University of Natal, 1976) has suggested that *H. nitida* is not distinct from *H. obtusa* (her concept of the latter being no doubt based on Burchell's specimen which she examined at Kew). More recently Mrs Heideman (in *Bothalia* 14:482, 1983) has indicated that she proposed to reduce *H. nitida* to a variety of *H. obtusa*; but the plant to which the name *H. obtusa* must properly be applied is shown below to be something different. I do not have adequate field knowledge of the plants to say whether *H. nitida* really requires distinction from *H. iridifolia*, but I suspect it does not. I am certainly not prepared to justify varietal rank at present; I therefore reduce it to synonymy.

Hypoxis iridifolia has a wide distribution from Zimbabwe to the

Eastern Cape: only a small selection of specimens are quoted above, mostly from Natal.

450. Hypoxis ludwigii Baker in J. Bot. 14:181 (1876), in J. Linn. Soc., Bot. 17:116 (1878), & in Thiselton-Dyer, Fl. Cap. 6:185 (1896).
Syntypes: cult. in Baron Ludwig's garden, Cape Town (TCD, n.v.); [Transkei] Tembuland, Bazeia, *Baur* 301 (K).
NATAL. Mpendhle distr., 2929 BC, Mulangane ridge above Carter's Nek, 7000–7300ft, 30 xi 1983, *Hilliard & Burtt* 16935 (E, NU); ibidem, 1 xii 1983, *Hilliard & Burtt* 16988, 16974 (E, NU); ibidem, 6 ii 1984, *Hilliard & Burtt* 17652 (E, NU); 2929 AD, path from Loteni N.R. to Redi, c.7700ft, 26 xii 1982, *Hilliard & Burtt* 16102 (E, NU). Underberg distr., 2929 CC, vicinity of Tarn Cave above Bushman's Nek, 20 xi 1983, *Hilliard & Burtt* 16811; ibidem, 18 ii 1984, *Hilliard & Burtt* 17331 (E, NU).
LESOTHO. Sehlabathebe National Park, Matsa-a-Mafikeng, 2416m, 21 xii 1975, *Beverly* 27 (PRE); ibidem, in the pass between middle and west Baane, c.2425m, 9 i 1977, *Hoener* 1752 (PRE).

Hypoxis ludwigii is another addition to the flora of Natal and the name does not seem to have been used for material other than that quoted by Baker. It is a plant of moist grassland.

451. Hypoxis obtusa Ker Gawler in Bot. Reg. tab. 159 (1819).
Iconotype: Bot. Reg. tab. 159.
CAPE. Barkly East distr., 3207 DA, Witteberg, Beddgelert, c.6200ft, 1 xii 1981, *Hilliard & Burtt* 14620 (E, NU).

Hypoxis obtusa is usually attributed to Burchell, who proposed the name for a plant that he had brought back from S Africa and was growing in his garden at Fulham. He wrote a long description of this plant and it is preserved in his manuscripts at Kew (Ephemeris Botanica 59 in *Botanical Memoranda* vol. 1). There is a specimen from Burchell's garden in his herbarium (now also at Kew) which clearly matches his description: it flowered on 6 July 1816. Burchell's description was never published.

Ker Gawler took up Burchell's name, attributing it to Burchell, for the plant figured in the *Botanical Register* (tab. 159). He says that the illustration was made from a plant that flowered in Burchell's garden in August 1816. It is Ker Gawler's description, and this alone, that validates the name *H. obtusa*. Unfortunately no corresponding herbarium specimen has been found at the British Museum, Kew or Cambridge.

It is evident that the plant actually illustrated was painted just as the early flowers were open. It could not have been the same plant that Burchell had described a month earlier, part of which, at least, must already have been in Burchell's plant press by the time the painting was made.

Neither Ker Gawler's description nor the illustration match well with Burchell's description and specimen. In particular Ker Gawler's plant lacks the long slender inner leaves that were preserved by Burchell. It seems highly probable that there were two plants in Burchell's garden and that they were not the same.

It is Burchell's specimen in the Kew herbarium that has subsequently been marked up as the type of *H. obtusa*. This cannot be accepted. The identity of Burchell's specimen is discussed further under *H. iridifolia* Baker (see above). *H. obtusa* must be attributed to Ker Gawler and the published illustration is the iconotype.

A corm of the single specimen quoted above from the Barkly East district (*Hilliard & Burtt* 14620) flowered the following year at the Royal Botanic Garden in Edinburgh and then the state of development was a perfect match for Ker Gawler's illustration of *H. obtusa*. The leaves had the same slight spiral twist and the plant subsequently failed to produce any long narrow leaves such as those on Burchell's specimen, also grown in cultivation. This is seen as additional evidence that Burchell's specimen and Ker Gawler's illustration do not represent the same plant. The Barkly East plant was growing on a rather dry rocky dolerite slope.

This note is concerned with the typification of *H. obtusa*, not its circumscription. It may well be that *H. iridifolia* (see above) will have to be included in a very broad concept of *H. obtusa*, with a range reaching northwards to Kenya. Dr Inger Nordal (Oslo) has kindly allowed me to see her manuscript on E African *Hypoxis*; she has found that such a broad concept of *H. obtusa* is at present unavoidable: a wide range of chromosome numbers have been recorded within it and some apomixis is likely. Pending more critical studies in South Africa, however, it seems preferable to try to distinguish there between *H. obtusa* and *H. iridifolia* (incl. *H. nitida*).

IRIDACEAE

452. Gladiolus loteniensis Hilliard & Burtt, **species nova** *G. permeabili* Delaroche subsp. *wilsonii* (Baker) Lewis affinis, sed foliis mollibus ad 4mm latis (nec rigidis durisque subteretibus vel ad 3mm latis), inflorescentia c.3-flora (nec 5–16-flora), et tepalis 3 inferioribus super venis et ad sinus punctis atropurpureis ornatis distinguenda.

Plantae c.40cm altae, solitariae. *Cormus* non visus. *Folia* 3, disticha, basi cataphyllo tubulari c.20mm longo circumcincta, usque ad 350 × 4mm, apice subulato, basi angustata et vaginante, marginibus paulo incrassatis, costa tantum prominente, glabra. *Scapus* foliis bracteiformibus tribus brevibus remotis praeditus. *Flores 2–3*, c.25mm longi, bilabiati. *Bractea* c.11 × 16mm, ovata, obtusa; bracteola 11 × 15mm, oblongo-lanceolata, ut bractea membranacea, viridis pallide violaceo-tincta. *Perianthium* tubo infundibuliformi leviter curvato 5mm longo basi 1·5mm diam. fauce ad 5·5mm ampliato; labium superius cucullatum, lobis tribus ovato-lanceolatis acuminatis ad basin paulo angustatis, mediano c.19 × 9mm, lateralibus c.17 × 8mm, omnibus pallide violaceis ad sinus atropurpureo-punctatis; labii inferioris lobi tres inter se similes, medius c.15 × 5·5mm, laterales c.13·5 × 5mm, lanceolati, pallide violacei, apice acuminati, basi cuneati in unguem brevem (c.1·5mm) angustati, sinubis et venis in dimidio inferiore punctis atropurpureis aspersis. *Stamina* e medio tubo orientia; filamenta 7mm longa, sub cucullo sursum arcuata; antherae 6mm longae, connectivo dorso punctis atropurpureis asperso. *Ovarium* 4·5 × 2·5mm; stylus 13mm longus, rami stigmatosis 2mm longis.

Type: Natal, 2929 AD, Mpendhle distr., Loteni river valley, c.6000ft, 13 i 1982, *Hilliard & Burtt* 15134 (NU holo., E iso.).

Gladiolus loteniensis is as yet known only from the type collection made around large rocks in the grassy narrow valley of the upper Loteni river. The site was revisited in February 1985, but the grassland had not been burnt for some time and there was no sign of the *Gladiolus*. Its particular interest lies in the dark dots on the lower lip and around the sinuses of the perianth. The function of these dots is not yet known (they do not form structurally recognizable glands), and the possibility that they are concerned with pollination awaits investigation.

LEGUMINOSAE

453. Indigofera alpina Ecklon & Zeyher, Enum. pl. Afric. austral., 236 (1836).
Type: E Cape, Katriviersberg, Oct., *Ecklon & Zeyher* (S).
CAPE. Albany distr., near Grahamstown, 2000ft, Nov., *MacOwan* 467 (S); right side of the Great Fish River, between Kaffersdrift and Gouverneurskop, 500–2000ft, Nov., *Zeyher* (S). Cis-Garipina, Zuurepoort, northern border of the Stormberg, 3000–5000ft, Nov., *Zeyher* (S). Katberg, 4000–5000ft, Nov., *Drège* (K).

Harvey (*Fl. Cap.* 2:176, 1862) cited *I. alpina* Ecklon & Zeyher as a synonym of *I. stipularis* Link (printed in error as *I. stipularis* L.). It seems that he did not see Link's type, but relied on E. Meyer's determination of specimens collected by Drège. These are certainly conspecific with *I. alpina*. The question is whether *I. alpina* can safely be regarded as a synonym of *I. stipularis*, a species described rather briefly without a locality or origin and of which the type specimen is no longer known to exist. The description, for instance, mentions oval leaflets; those of *I. alpina* are decidedly obovate-cuneate. There seems little chance of firmly establishing the identity of *I. stipularis* and we recommend abandoning this name in favour of *I. alpina*.

454. Indigofera evansii Schltr. in J. Bot. 35:429 (1897).
Type: Natal, Polela, 6000–7000ft, Feb. 1896, *Evans* 636 (B†)
NATAL. Mpendhle distr., 2929 AD, upper Loteni valley, vicinity of Ash Cave, 6400–6500ft, 6 ii 1985, *Hilliard & Burtt* 18174 (E, NU). Underberg distr., Upper Umzimouti valley, c.6500–6700ft, 27 ix 1976, *Hilliard & Burtt* 9363 (E, K, NU); Garden Castle Forest Reserve, Pillar Cave valley, c.6700ft, 5 xi 1977, *Hilliard & Burtt* 10434 (E, K, NU, PRE); ibidem, Mlambonja valley, 6100ft, 7 i 1982, *Hilliard & Burtt* 15010 (E, NU); Cobham Forest Reserve, Troutbeck stream below Nhlovini, 19 iii 1977, *Hilliard & Burtt* 9710 (E, NU).

This name does not appear in Ross's *Flora of Natal* (1973) nor, so far as we are aware, has it ever been taken into use. We have failed to trace an isotype, but Schlechter gave a good description (though a line, which would be the fourth, is missing), and we are certain that this is a species well known to us and which we were about to describe when we found Schlechter's name. A full description in English may be useful.

Perennial herb, stems of indeterminate length, several from the crown, subsimple, prostrate, very slender, subglabrous, only very occasional appressed biramous hairs present. *Stipules* 2–8 × 0·5–2mm, obliquely lanceolate-acuminate. *Leaves* on petioles 12–80mm long, digitately trifoliolate; leaflets 8–20 × 8–18mm, the terminal one a little larger than the two laterals, obovate-cuneate, apex almost truncate, mucronate, base cuneate, upper surface nearly glabrous, lower sparsely strigillose, the hairs biramous, appressed. *Peduncles* c.100–300mm long, racemes several-flowered, elongating. *Bracts* c.2mm long, linear-acuminate, soon deciduous. *Pedicels* c.1mm long, strigillose. *Calyx* 3mm long, lobed about halfway, lobes lanceolate, very acute to shortly acuminate, strigillose. *Standard* 7–8mm long, glabrous, wings glabrous, keel spurred, tip rounded, upper margin fringed with delicate patent hairs, all petals light scarlet or crimson. *Anthers* with connective produced at apex into a small point, tuft of hair at bases of lobes. *Legume* (immature) 18 × 1·5mm, glabrous, deflexed.

Indigofera evansii is found along streams in the southern Natal Drakensberg between 1800 and 2300m; Evans' locality, Polela, is on the upper reaches of the Polela river, now Cobham Forest Reserve, where we have ourselves collected the plant. It sprawls over damp ground between grass tussocks and may hang in mats from low earth and boulder cliffs along watercourses. The inflorescences become very long and lax, usually with only one or two flowers open together, and this, combined with the shape of the leaflets and the very sparse indumentum, makes the species easy to recognize.

Indigofera evansii is allied to *I. dimidiata* Walp., but is easily distinguished by its small and narrow stipules, up to 2mm broad near the base (not at least 4mm) and obovate-cuneate leaflets (not lanceolate to elliptic). The narrow stipules also distinguish it from *I. mollis* Ecklon & Zeyher which it most resembles in leaf shape. It has much the aspect of *I. procumbens* L. from the SW Cape, but it is a much more delicate-looking plant as Schlechter himself noted: the runners are above ground (not subterranean), the peduncle thin (not thick and fleshy at the base), inflorescence rather lax (not rather dense), standard glabrous on the back (not spreading-pubescent), keel obtuse, glabrous on midline (not acute, spreading-pubescent on midline). *I. evansii* is also very closely allied to *I. pseudoevansii* described below.

455. Indigofera pseudoevansii Hilliard & Burtt, **species nova** *I. evansii* Schlechter affinis sed stipulis appresse pubescentibus (nec glabris nec parcissime pubescentibus), petiolis ad 30mm longis (nec plerumque 25–80mm), foliolis latitudine longioribus (nec latitudine aequilongis nec paulo brevioribus) et supra appresse pubescentibus (nec glabris), calycis lobis lateralibus c.2mm longis (nec 1·25–1·5mm) et densius appresse pubescentibus (nec parcissime pubescentibus) et corolla vivide rosea (nec scarlatina) differt.

Herba perennis; caules decumbentes tegetes parvas formantes, valde ramosi, tenussimi, pilis parcis medifixis appressis praecipue in juventute induti. *Stipulae* ad c.8 × 3·5mm, oblique lanceolato-acuminatae, pilis

medifixis appressis indutae. *Folia* petiolis ad 30mm longis parce appresse pubescentibus; foliola ad 22 × 15mm, terminale lateralibus paulo majus, late elliptica vel elliptico-ovata, apice rotundato mucronato, basi cuneata, utrinque pilis medifixis appresse strigillosa. *Pedunculi* ad c.200mm longi, racemis laxe plurifloris terminati. *Bracteae* c.2mm longae, lineari-acuminatae, mox caducae. *Pedicelli* 1·5–2mm longi, strigillosi. *Calyx* tubo c.1mm longo; lobi 2–2·5mm longi, lanceolato-acuminati, pilis medifixis appressis albis. *Flores* vivide rosei. *Vexillum* c.7mm longum, glabrum; alae vexillum aequantes, glabrae; carina vexillum aequans, calcarata, margine superiore pilis tenuibus patentibus praedita. *Antherae* connectivo in apiculo parvo producto, basi thecarum barbatae. *Legumen* c.22 × 3mm deflexum, glabrum, extra laete brunneum, intus immaculatum in loculos monospermos divisum. *Semina* 2·5 × 2mm, laete brunnea.
Type: Natal, Mpendhle distr., 2929 AD, upper Loteni valley above Ash Cave, c.1980m, 7 ii 1985, *Hilliard & Burtt* 18189 (E holo.; NU, PRE iso.).

Indigofera pseudoevansii is as yet known only from the type collection. It is closely allied to *I. evansii* (see above), but is amply distinct on the characters given in the diagnosis. *Indigofera evansii*, which also grows in the Loteni valley, is well known to us: it has long subsimple prostrate stems that produce extensive mats; in contrast, the stems of *I. pseudoevansii* are shorter, well-branched, decumbent, and form smaller, bushier mats. The differences in the shape and indumentum of the leaflets and in the colour of the flowers are striking.

456. Indigofera trifolioides Baker f. in Rec. Albany Mus. 1:279 (1905).
Type: Transkei, Nqamakwe [3227 BB], c.3000ft, xii 1892, *Rennie* 388 (GRA).
NATAL. Mpendhle distr., 2929 DB, farm Tillietudlem, c.5500ft, 9 xii 1980, *Hilliard & Burtt* 13861 (E, K, NU, PRE); ibidem, c.5000ft, xii 1948, *Huntley* 408 (E, K, NU, S). Polela distr., farm 'Sunset', 6300 ft, 24 xii 1973, *Rennie* 427 (E, NU); ibidem, *Rennie* 699, 727, 1164, 1230 (NU). Mt Currie distr., Mt Currie, 15 xi 1973, *Hilliard & Burtt* 7258 (E, K, NU).
TRANSKEI. Xalanga distr., towards top of Cala Pass [3127 BC], c.4700ft, 17 i 1962, *Acocks* 21892 (PRE). Kentani distr., Kentani, 1200ft, x 1904, *Pegler* 92 (PRE).
CAPE. King William's Town distr., Perie, 4000ft, 1888, *Sim* 19449 (PRE). Komgha distr., grassy hills near Komgha, 2000ft, xi 1889, *Flanagan* 575 (PRE).

It seems desirable to put on record these new identifications of *I. trifolioides*, a species that has been completely neglected since its publication and which is omitted from the recent computer print-out of S African plants (Gibbs-Russell et al. in *Bot. Survey Mem.* 48, 1984).

We have admitted some variation in the presence or absence of indumentum and in the shape of the leaflets in our concept of *I. trifolioides*. The type has obovate leaflets, broad and more or less rounded at the tips, glabrous above, thinly hairy below with long, very unequally biramous hairs, and with similar spreading hairs on stems, petioles and peduncles. The specimen collected by Acocks on Cala Pass, some 80km NNW of the type locality, is a good match of this type; those from

Kentani and Komgha, further south, differ in their more elliptic leaflets. All the material from Natal has the leaflets thinly hairy on both surfaces and varying in shape from broadly elliptic to obovate.

Indigofera trifolioides grows in grassland, particularly among rock outcrops; the stems are prostrate, but the peduncles curve upwards to bear erect racemes of bright coral-red flowers. It is allied to *I. dimidiata* Walp., but is easily distinguished from that species by the long spreading hairs on stems, petioles and peduncles (not short and strongly appressed) and larger flowers with standard c.8mm long (not c.4·5–6mm). *Indigofera alpina* Ecklon & Zeyher has indumentum not unlike that of *I. trifolioides*, but the leaflets are decidedly cuneate-obovate and smaller than those of *I. trifolioides* (up to 20 × 10mm, not 20–50 × 10–25mm), the petioles scarcely exceed the stipules (mostly at least twice as long in *I. trifolioides*) and the flowers are smaller (standard c.6mm long).

457. Lotononis biflora (Bolus) Dümmer in Trans. Roy. Soc. S. Afr. 3:289 (1913).

Type: Zululand, Entumeni, 1500ft, 13 iv 1888, *Wood* 3988 (K, NH).

Syn.: *Buchenroedera biflora* Bolus in J. Bot. 34:18 (1896).

Lotononis wyliei Wood, Natal Plants 4, t. 350 (1906). Types: Zululand, Entumeni, 14 iv 1903, *Wylie* in herb. Wood 8962 (NH); ibidem, 29 iii 1904, *Wylie* in herb. Wood 9442 (NH).

[*L. dichilioides* auct. non Sonder; Trauseld, Wild Flowers of the Natal Drakensberg 94, 95, cum ic.].

NATAL. Mtonjaneni distr., Melmoth, iv 1960, *Sidey* 3471 (NU). Nkandla distr., Insuzi river valley, 2400ft, 20 vi 1956, *Edwards* 1478 (NU). Estcourt distr., Giant's Castle Game Reserve, 6000ft, 6 i 1967, *Trauseld* 718 (NU); ibidem, 29 xi 1962, *Legge* s.n. (NU). Mpendhle distr., Mulangane, below S facing cliffs, c.6800ft, 15 iii 1985, *Hilliard & Burtt* 18402 (E, NU); Loteni Nature Reserve, 5000ft, 8 xi 1978, *Phelan* 176 (NU); ibidem, Elandshoek valley, c.5000ft, 27 xii 1982, *Hilliard & Burtt* 16121 (E, K, NU, PRE, S); upper Loteni valley, vicinity Ash Cave, c.1920m, 6 ii 1985, *Hilliard & Burtt* 18153 (E, K, NU, PRE). Polela distr., Mawahqua Mountain, Glengariff, 6000–6500ft, 5 xii 1980, *Rennie* 1184 (E, NU); ibidem, 6200ft, 1 xi 1976, *Rennie* 782 (E, NU).

It is inexplicable that Dümmer (in *Trans. Roy. Soc. S. Afr.* 3) should have sought to uphold *L. wyliei*: the types of both names came from Entumeni and are precisely alike. His key character, 'peduncle invariably 2-flowered' for *L. biflora* and 'peduncle invariably 1-flowered' for *L. wyliei*, is quite wrong and at variance with both the specimens themselves and with Wood's description and illustration of *L. wyliei*.

The specimens from Zululand that we cite above are a good match of the types of both *L. biflora* and *L. wyliei*; those from the Drakensberg differ slightly in having the standard somewhat narrower (14mm broad at Giant's Castle, 12mm on Mawahqua Mountain, 10mm at Loteni, as opposed to 17mm at Melmoth) and not always so densely sericeous, but we deem it best to equate them with *L. biflora* until *Lotononis* receives the thorough revision it so badly needs.

Dümmer saw no material of *L. biflora* from the Drakensberg: the

specimen he quotes from Mont aux Sources (*Evans* 753, NH) and that drew the comment 'undoubtedly represents a more inland form of this species [*L.wyliei*]' proves to be *L. trisegmentata* E. P. Phillips.

458. Macrotyloma coddii Verdcourt in Hooker, Ic. Pl. 8(4):107 (1982).
Type: Natal, Kranskop, Ntunjambili Mt, *Codd* 10200 (K, holo.).
NATAL. Little Noodsberg, Laager Farm, c.3000ft, 29 xii 1965, *Hilliard & Burtt* 3438 (NU).

When Verdcourt described *M. coddii* in 1982, he had traced no other material. However, our collection cited above proves to be this species. The locality lies some 50km almost due south of Kranskop. We found the plant to be frequent in grassland, but only just beginning to flower at the end of December. The flowers are greenish-yellow, purple in the centre of the standard.

This is an addition not only to Ross, *Flora of Natal* (1972) but also to Gibbs Russell et al., *List of species of South African plants* (*Bot. Surv. Mem.* 48, 1984).

ROSACEAE

459. Cliffortia nitidula (Engl.) Fries & Fries subsp. **pilosa** Weim., Mon. Cliffortia, 49 (1934). **Fig. 3.**
Syntypes: numerous specimens quoted, lectotype not yet chosen.
NATAL. Bergville distr., Royal Natal National Park, Tugela Gorge near Tunnel Cave, 6250ft, 1 ii 1982, *Hilliard & Burtt* 15378 (E, K, NU); ibidem, Dooley, Tiger Falls, 17 ii 1984, *Hilliard & Burtt* 17667 (E, K, PRE). Underberg distr., Sani Pass, 7800ft, 5 i 1984, *Manning, Hilliard & Burtt* 17261 (E, NU); Cobham State Forest, Troutbeck stream below Ndhlovini, 6000ft, 5 iii 1985, *Hilliard & Burtt* 18330 (E, K, NU, PRE, PRF); ibidem, Emerald Dale, c.6200ft, 4 iii 1985, *Hilliard & Burtt* 18315 (E, NU). Alfred distr., Weza, Zuurberg, c.5000ft, iv 1977, *Hilliard* 8228 (NU).
CAPE. Barkly East distr., Ben McDhui, 8700ft, 6 ii 1983, *Hilliard & Burtt* 16489 (E, NU).

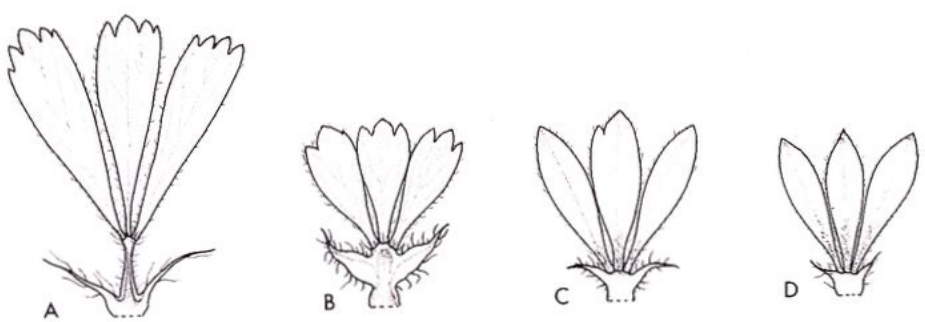

FIG. 3. Variation in leaf-form in *Cliffortia nitidula* subsp. *pilosa*. A, from seedling c.10cm tall; B and C, from lower part of branch on damaged plant; D, from upper part of same branch that bore B and C. All ×2, from *Hilliard & Burtt* 18330.

Seedlings and juvenile material of *C. nitidula* subsp. *pilosa* are easily confused with *C. filicauloides* Weim., a little-known species recorded from the Natal Drakensberg between Cathedral Peak and the catchment of the Loteni river. Weimarck described *C. filicauloides* as an erect shrub; we have thrice seen it spreading over and around rocks near streams, its long straggling branches forming draped mats, but a collection from the Msongwaan valley at Cathedral Peak (*Granger* s.n., NU) records it as an erect shrub on forest margin. However, the foliage is distinctive; petiole short, reddish, somewhat curved, median leaflet cuneate, 3-toothed at the apex with the two lateral teeth incurved, the 2 lateral leaflets smaller, elliptic, entire (see Weimarck, *Monograph of the genus Cliffortia*, p. 26, fig. 2L).

Cliffortia nitidula subsp. *pilosa* ranges from the N Transvaal (Woodbush) to near Queenstown (Andriesberg) in the E Cape. All the specimens cited above represent seedlings and juvenile material. Initially, we mistook them for *C. filicauloides*: the leaves are petiolate, but all three leaflets are cuneate and toothed apically, the number of teeth usually 3, but ranging from 2–6. Our most recent collection (*Hilliard & Burtt* 18330) consists of seedlings as well as branches from shrubs about 2m high. The shrubs were growing on the margin of a forest patch and had been battered: the coppice shoots and some of the twiglets bear toothed petiolate leaves, but the older wood bears the sessile leaves with entire leaflets that are typical of *C. nitidula* subsp. *pilosa*.

SCROPHULARIACEAE

460–462. Limosella L., Sp. Pl. 631 (1753); Hiern in Thiselton-Dyer, Fl. Cap. 4(2):356–360 (1904).

Some 175 years ago, when describing *Limosella australis* from Australia, Robert Brown remarked 'Species hujus generis iterum scrutandae' (the species of this genus require renewed scrutiny) and that is still true today, especially in southern Africa. Many years ago Glück showed that plant-form in *Limosella* may be modified by environmental conditions (Glück, H., *Biologische und morphologische Untersuchungen über Wasser- und Sumpfgewächse*, 3:515–521, 1911). Unfortunately, however good Glück's experimental studies on the European forms of *Limosella*, his later taxonomic work on the genus world-wide was less happy (see *Bot. Jahrb.* 66:488–566, 1934). He described *L. lineata* as a new species, but included *L. australis* R. Br. as a synonym of one of its varieties, so that *L. lineata* is illegitimate. Lourteig (in *Com. Nat. Français Rech. Antarct.—Biol.* 1:166, 1964) studied the type of *L. australis* and its world distribution and decided that some S African material must be included.

Glück and others failed to notice that *Limosella capensis* Thunb. is an illegitimate name, since Thunberg cited *L. diandra* L. as a synonym at the time of publication; the fact that Linnaeus's plant has proved to be the Indian *Glossostigma spathulatum* Arn., now *G. diandrum* (L.) O. Kuntze, does not affect the illegitimacy of *L. capensis*. Glück has also caused complications by proposing habitat forms (*terrestris*, *natans*, *submersa*)

under many different species and sometimes, illegitimately, under different varieties of the same species.

We cannot attempt the needed revision of African *Limosella*; however, certain steps can be taken to clarify the issues. Furthermore, high altitude collections from the Drakensberg, which were not available when Glück made his studies, indicate the need for two new species to be described.

460. Limosella grandiflora Benth. in A. DC., Prodr. 10:427 (1846); Hiern in Thiselton-Dyer, Fl. Cap. 4(2):359 (1904), pp.

Lectotype (chosen here): Cape [Riversdale div.] Karnmelksrivier, below 1000ft, Aug., *Drège* (K; E isolecto.).

Syn.: [*Limosella capensis* auct.; Thunb. Prodr. Pl. Cap. 104 (1800) & Fl. Cap. ed. Schultes 480 (1823) quoad spec., excl. syn. Linn. typ.; Benth. in A. DC. Prodr. 10:427 (1846) p.p.; Hiern in Thiselton-Dyer, Fl. Cap. 4(2):359 (1904) p.p.]

Bentham cited specimens collected by Drège and Burchell (n. 2644) with his original description. At the end he notes that there may be two species in Drège's material, one with shorter subcordate leaves and smaller flowers(?), the other with longer leaves and flowers as described: the specimens of the first were imperfect. Bentham's reference to the flowers restricts the choice of lectotype to either (b) Karnmelks R. [Riversdale] or (c) Uitvlugt, near Styl Kloof [Richmond]: we choose the former.

Thunberg's specimen, the basis for the description of the illegitimate *L. capensis*, is a coarser plant than the Drège lectotype of *L. grandiflora*; nevertheless we feel they are best associated until more critical fieldwork has been carried out. This is far from meaning that every specimen labelled *L. capensis* belongs to *L. grandiflora*! Much careful study is needed. Hiern cites *L. coerulea* Burch. (*Trav. S. Afr.* 1:259 in footnote) as a synonym of *L. capensis*. This, however is a tiny plant with narrowly spathulate leaves and belongs to the *L. australis*/*L. longiflora*/*L. africana* group, which requires more detailed study in the field than we can at present undertake.

The name *Limosella natans* Spreng. is sometimes found in herbaria; it was originally associated with *Zeyher* 285. Schlechtendal (see *Bot. Zeit.* 1854, 918) made an examination of this plant and gave a description of the vegetative parts. However he said the flowers on this specimen were too imperfect for study and he thought the plant was not a *Limosella*. Clearly he did not accept the name *L. natans* and therefore his treatment is nomenclaturally invalid. There has been no subsequent valid publication of the name and it can therefore be ignored.

461. Limosella inflata Hilliard & Burtt, **species nova** ab *L. grandiflora* Benth. stolonibus nudis (nec foliatis), et calycis lobis tubo circa duplo longioribus (nec dimidio brevioribus); a *L. majore* Diels folio lamina natante in petiolum filiformem abrupte contracta (nec in petiolum planum angustata); ab ambabus petioli basi inflata aerenchymatosa facile distinguenda.

Herba caespitosa aquatica, basi tuberosa c.2–3 × 2mm, stolonibus filiformibus nudis plantas conjungentibus praedita. *Folio* omnia radicalis;

partes basales petioli inflatae vivide virides per 10mm, teretes, aerenchymatosae, basi vaginis membranaceo-marginatis et apice auriculatis c.2mm longis apice in petiolos longissimos filiformes flexuosos angustatae; laminae natantes, c.5–40 × 2·5–15mm, ellipticae, a basi 3–5-nerviae. *Pedicelli* uniflori, axillares, filiformes, flexuosi, longissimi (ad aquae superficiem). *Flores* natantes. *Calyx* tubo turbinato c.1–1·75 × 2–2·5mm, lobis oblongo-lanceolatis c.1·75–3·5 × 1mm. *Corolla* tubo turbinato c.5mm longo ore 3·5mm diam., limbo rotato, lobis anguste obovatis c.5·5 × 2·75mm supra parce pilosis, alba, circa orem caeruleo-tincta, basi tubo aurantiaca. *Stamina* 4, breviter exserta, filamentis c.2mm longis in fauce corollae orientibus; antherae c.0·5mm longae, caeruleae. *Ovarium* c.1·75 × 1·25mm; stylus 3·5mm longus; stigma capitatum. *Capsula* ovoidea, c.3 × 2mm, calyce persistente circumcincta.
Type: Natal, Underberg distr., 2929 CC, vicinity of Tarn Cave above Bushman's Nek, c.8000ft, 22 i 1984, *Hilliard & Burtt* 17477 (NU holo., E iso.).
NATAL. Bergville distr., Mont aux Sources area, 10000ft, 25 iii 1946 (sterile), *Schelpe* 1429 (NU); 2929 CB, Underberg distr., Bamboo Mt, summit, c.7200ft, 21 xi 1982 (sterile), *Hilliard & Burtt* 15595 (NU); 2929 CC, vicinity of Tarn Cave, above Bushman's Nek, c.8000ft, 20 i 1984, *Hilliard & Burtt* 17426 (E, NU).
LESOTHO. Sehlabathebe National Park, c.8000ft, 7 xii 1979, *Davis* 170 (NU); ibidem, 2450m, 24 ii 1978, *Hoener* 2043 (PRE). Mafeteng dist., Likhoele, Bamorothole Mountain, 5 iii 1915, *Dieterlen* 1092 (PRE). Sani Pass summit, c.2865m, 12 i 1977, *Killick* 4102 (K, PRE).
CAPE. 3222 BD, foot of Nieuweveld Mountains, Mountain View Farm, 1670m, 18 iv 1978 (sterile), *Gibbs Russell et al.* 394 (NU). Barkly East distr., Witteberg, Ben McDhui, c.9700ft, 11 iii 1904, *Galpin* 6807 (PRE). Queenstown distr., summit Andriesberg, 6700ft, iv 1895, *Galpin* 1923 (K, PRE).
ORANGE FREE STATE. 2926 BB, Thaba 'nchu Mountain, 2100m, 13 xii 1977, *Peeters, Gericke & Burelli* 403 (PRE).
BOTSWANA. 2425 DA, Thamaga, 22 iii 1977, *Camerik* 114 (PRE).

Limosella inflata is locally common in rock pools, less frequently in pools in marshes, where it grows rooted in mud in water up to at least one metre deep. We have seen it in association with *Aponogeton ranunculiflorus* in the pools around Tarn Cave above Bushman's Nek where the Natal border marches with that of Sehlabathebe National Park in Lesotho; the long filiform petioles of *L. inflata* enable the leaf blades to float on the surface of the water, while the leaves of the *Aponogeton* remain submerged; the flowers of both, however, float, attached to long filiform pedicels.

The leaf bases of *L. inflata* resemble long slender cones tapering into the filiform petioles, and look somewhat fleshy to the eye, but in point of fact they are not fleshy but inflated and, in section, aerenchymatous. Most of this inflated part (which suggested the trivial name) is circular in section; only in the lowermost part does it flatten adaxially into the sheath with its membranous stipuloid margins.

Limosella inflata has been much confused in herbaria with *L.*

grandiflora, but the calyx lobes of *L. inflata*, much longer than the tube, will at once distinguish it; the living plants would probably never be confused, because *L. grandiflora* produces long runners that may root at the nodes, there producing flowers, often on very short pedicels, and sometimes leaves as well, but never with the aerenchymatous cone-shaped bases of *L. inflata*.

462. Limosella vesiculosa Hilliard & Burtt, **species nova** *L. grandiflorae* Benth. affinis sed habitu compacto, foliis suborbicularibus in siccitate fuscis (nec ovatis vel ellipticis rarissime suborbicularibus in siccitate viridibus), calycis tubo vesiculoso.

Herba limicola vel subaquatica, tegetiformans, stolonifera; stolones alternifoliati nodis radicantes et ramulo brevi foliato et florifero emittentes. *Foliorum* lamina c.2–6 × 1·5–5·5mm, suborbicularis, basi in petiolum abrupte angustata, foliis majoribus cordata, e basi trinervis; petiolus usque ad 15mm longus, basi in vaginam membranaceam petiolo adnatam vel ab eo superne liberam dilatatus. *Pedicelli* uniflori, axillares, filiformes, petiolos aequantes. *Calyx* tubo campanulato c.1·75–2 × 1·25mm conspicue vesiculoso, lobis deltoideo-lanceolatis c.0·75–1 × 0·5–0·75mm. *Corolla* tubo turbinato c.3mm longo, ore 2·5–3mm diam., limbo rotato, lobis ± oblongis 2·5–4 × 1–2·5mm supra parce pilosis, alba, in fauce flava. *Stamina* 4, exserta; filamenta c.2–3mm, circa medium tubi orientia; antherae 0·5mm, pallide violaceae. *Ovarium* orbiculare c.0·5–0·75 × 0·5–0·75mm; stylus 3–4·5mm; stigma capitatum. *Capsula* non visa.

Type: Lesotho, Sani Top, valley west of border post, c.9400ft, 16 i 1976, *Hilliard & Burtt* 8821 (NU holo.; E, K, PRE iso.).

NATAL. Estcourt distr., Giant's Castle Game Reserve, Giant's ridge, 6500ft, *Stewart* 1776 (E, NU). Mpendhle distr., summit plateau of Drakensberg, source of Loteni river, c.10000ft, 20 i 1971, *Wright* 1113 (NU); East Griqualand, Vaalbank, 27 xii 1889, *Haygarth* in herb. Wood 4227 (K).

CAPE. Maclear distr., ascent to Naudes Nek, c.8000ft, 19 ii 1971, *Hilliard & Burtt* 6612 (E, K, NU, PRE).

LESOTHO. Top of Sani Pass, c.9500ft, 6 xi 1973, *Hilliard & Burtt* 7107 (E, K, MO, NU, S); ibidem, 2860m, 17 i 1977, *Killick* 4186 (K), 4104 (K). Likalaneng, 77km from Maseru, 2430m, 27 xi 1977, *Killick* 4232 (K). Oxbow Agricultural Camp, 8500ft, 18 xii 1969, *Williamson* 413 (K).

Limosella vesiculosa forms extensive mats in marshy turf and in mud around tarns or along streamsides where it is subject to periodic inundation. We know it only from the high Drakensberg in Natal, Lesotho and the eastern Cape, between c.1980 and 3000m.

In habit it agrees with *L. grandiflora* in that both species produce leafy stolons that root mainly at the nodes and there produce new plants. The leaf blade of *L. grandiflora* is usually elliptic to ovate only rarely suborbicular, that of *L. vesiculosa* always suborbicular, and it dries dark, whereas that of *L. grandiflora* dries green.

The calyx, particularly the calyx tube, of *L. vesiculosa* undergoes remarkable swelling and wrinkling of the outer epidermis to produce vesicles; the calyx of *L. grandiflora* is smooth. Among species occurring in

southern Africa, *L. major* Diels shows weak development of vesicles (but is easily distinguished by the leaf blades gradually tapering into the petiole and the corolla tube shorter than the calyx).

463. Sutera beverlyana Hilliard & Burtt, **species nova** *S. pristisepalae* Hiern affinis sed indumento e pilis ad 1mm longis (nec ad 0·5mm) composito, petiolis ad 15mm longis (nec 6mm), floribus paucis ex axillis foliorum solitariis (nec in racemos terminales dispositis) distinguenda.

Herba perennis, radice principali incrassata lignescente; caules e caudice plures, fortasse prostrati, ad 30cm longi, ramosi, glanduloso-pilosi, foliati. *Folia* inferiora opposita, superiora alterna, plerumque 20–45 × 12–24mm petiolo 5–15mm longo incluso; lamina ambitu ovata, pinnatisecta, segmentis pinnatilobis vel dentatis, supra glandulis robustis subsessilibus nitidis pilis sparsis glanduloso-apiculatis intermixtis, subtus pilis glandulosis ad 1mm longis et glandulis sparsis nitidis magnicapitatis praedita. *Flores* ex axillis foliorum superiorum solitarii. *Bracteae* folia similes sed minores. *Pedicelli* c.3mm longi, glanduloso-pilosi. *Calyx* profunde 5-lobus, lobis 5mm longis foliaceis dentatis glanduloso-pilosis. *Corolla* extra glandulis magnis subsessilibus nitidis praecipue in limbo ornata, in tubo pilis glandulosis etiam praedita; tubus 10–12·5mm longus, inferne cylindricus in sicco 1·75mm diam., ad faucem ad 2·5mm ampliatus et illic inferne barba pilorum praeditus; limbus bilabiatus, labio superiore 3·75mm longo lobis oblongis 2·5 × 1·5–1·75mm apicibus rotundatis, labio inferiore 3·5–4·5mm longo lobis 2·5–3·5 × 2mm; lobi omnes pallide lutei, ei labii inferioris linea mediana fusca notati. *Stamina* inclusa, filamentis parte libera c.1·5mm longa; antherae c.1mm longae. *Nectarium* unilaterale. *Ovarium* 2 × 1·25mm, glanduloso-puberulum; stylus 6mm longus; stigma capitatum. *Capsula* non visa.

Type: Lesotho, 2929 CC, Sehlabathebe National Park, c.300m downstream from Phororong, c.2325m, 16 ii 1976, *Beverly* 510 (PRE holo.).

Sutera beverlyana is known only from the type collection. It was recorded as growing 'in rocky soil in the shade of an overhanging outcrop, southern exposure. Flowers pale yellow.' Unfortunately, the habit of the plant was not mentioned, but it may well have been prostrate; if so, this further distinguishes it from its close ally *S. pristisepala*, a stiff twiggy shrublet with branches terminating in long slender racemes; in contrast, the flowers of *S. beverlyana* are relatively few, in the upper leaf axils. In this it resembles *S. dentatisepala* Overkott, another species with foliaceous calyx lobes, but there the ovate leaves are merely toothed in the upper half, and the corolla limb is white with a broad irregular orange-brown band around the throat and the base of the lobes. The flowers of *S. pristisepala* are usually light violet, creamy in the throat, but yellow flowers have also been recorded, as in *S. beverlyana.*

464. Sutera silenioides Hilliard, **species nova** *S. burkeanae* Hiern et *S. brunneae* Hiern affinis sed corollae lobis profunde bifidis (nec integris nec paulo emarginatis) statim distinguenda.

Suffrutex nanus, c.15–20cm altus; caules erecti vel ascendentes, inferne

crebre sursum remotius foliata, multiramosi; rami, folia, calyx, corolla omnia glandulis magnis subsessilibus nitidis albis praedita. *Folia* inferiora opposita et quasi-fasciculata, superiora alterna; lamina c.10–18 × 5–18mm, ambitu ovata, pinnatisecta, vel superiores pinnatipartitae, lobis dentati; petioli plerumque 5–15mm longi, basibus latis amplectentibus. *Flores* in racemos ad 150mm elongatos dispositi. *Bracteae* plerumque oblanceolatae vel lineares, inferiores tantum foliaceae. *Pedicelli* ad 18mm longi. *Calyx* profunde 5-lobus, lobis 4mm longis lineari-spatulatis. *Corolla* rubro-brunnea; tubus ± cylindricus, c.23mm longus, in sicco c.2mm diam. per 6mm superiora 3mm diam., glanduloso-puberulus, glandulis magnis nitidis per 60mm superiora et externe in lobis tantum dispositis; in fauce barba pilorum praeditus; limbus leviter bilabiatus, fere ad faucem divisus; lobi 4 posteriores c.7 × 2mm, anticus c.9 × 3mm, omnes oblongi, apice profunde partiti, marginibus revolutis. *Stamina* inclusa; filamenta parte libera c.1·5mm longa; antherae c.1mm longae. *Ovarium* c.2·5 × 0·75mm; stylus 17mm longus; stigma capitatum. *Capsula* 7 × 4mm, glandulis subsessilibus nitidis induta; semina non visa.
Type: Natal, 2730 DB, Vryheid distr., Hlobane, 8 x 1950, *Johnstone* 474 (NU holo., E iso.).
NATAL. Vryheid distr., 2730 DB, Hlobane, 12 x 1950, *Johnstone* 554 (NU).

Sutera silenioides is known only from Hlobane Mountain in northern Natal, an area still greatly in need of botanical exploration. Mr Johnstone recorded that the plants were common in dry stony areas on the mountain top, that the leaves were fleshy and very shiny (they are clad in large shining glands) and that the flowers were reddish-brown. The whole plant dries dusky. The bifid corolla lobes with revolute margins are reminiscent of many Carophyllaceae and suggested the specific epithet. As noted in the diagnosis, this feature distinguishes the species from its allies *S. brunnea* and *S. burkeana*, in which the lobes are rounded or only slightly emarginate. Both these species are somewhat shrubby and have reddish brown flowers, but their leaves are not so deeply divided as those of *S. silenioides* and are more decidedly quasifasciculate.

465. Walafrida witbergensis (E. Mey.) Rolfe in Thiselton-Dyer, Fl. Cap. 5(1):122 (1912).
Type: Cape, Aliwal North div., Wittebergen, 5000–6000ft, *Drège* (fragment, K).
Syn.: *Selago witbergensis* E. Mey., Comm. 270 (1838).
NATAL. Underberg distr., 2929 CB, Sani Pass, 7900ft, 5 i 1984, *Hilliard & Burtt* 17264 (E, K, NU, PRE, PRF); ibidem, 9000ft, 25 i 1966, *Killick & Vahrmeijer* 3725 (PRE).
CAPE. Barkly East distr., 3027 DB, Ben McDhui, c.8400ft, 3 ii 1983, *Hilliard & Burtt* 16383 (E, K, NU PRE); ibidem, c.9700ft, 11 iii 1904, *Galpin* 6815 (PRE).
LESOTHO. Maseru distr., 2927 BD, Blue Mt Pass, c. 8500ft, 10 i 1979, *Hilliard & Burtt* 12006 (E, NU); ibidem, c.3000m, 20 i 1981, *Schmitz* 9194 (NU). Butha Buthe distr., Namahali Camp, c.9500ft, 24 i 1962, *Lubke* 307 (PRE). Mokhotlong distr., 2929 CB, Sani Top, 9400ft, 31 xii 1973, *Hilliard*

5413 (E); Black Mountains, 10400–10600ft, 13 i 1976, *Hilliard & Burtt* 8759 (E, K, NU); summit plateau c.1 mile downstream from summit of Langalibalele Pass, c.9300ft, 7 i 1972, *Wright* 1236 (NU); Qacha's Nek, 28 ii 1949, *Guillarmod* 974 (PRE); heights above Senqunyane and Makhaleng rivers, 9300ft, 9 i 1954, *Guillarmod* 1692 (PRE); Lehaha-la-Sekhonyana, 9500ft, 30 xii 1946, *Guillarmod* 225 (PRE); Bokong river valley, 7500ft, 9 i 1954, *Guillarmod* 2238 (PRE).

Walafrida witbergensis is a shrublet with prostrate or ascending branches and light purple flowers in congested glomerules (which elongate as the fruits ripen) arranged in narrow panicles. The original material came from the Witteberg near Barkly East, but specimens have lain in herbaria either misdetermined or nameless and its wide distribution on the high Lesotho mountains and the neighbouring Cape Drakensberg, as well as on the Witteberg, has not hitherto been recognized. The Guillarmod specimens cited above are all quoted by Jacot Guillarmod (*Fl. Lesotho*, 1971) under various names in *Selago* and *Walafrida*, but *W. witbergensis* is not recorded there. Nor does the name appear in Ross, *Flora of Natal* (1972). Rolfe's inclusion of Ecklon & Zeyher specimens from the Zwartkops river at Port Elizabeth is a mistake, and the repetition of this record by Bond & Goldblatt (*Plants of the Cape Flora* 423, 1984) must be deleted.

The plant grows between c.2400 and 3250m above sea-level on bare exposed rock sheets, bare ground between bushes, or on stony grassy slopes.

The occurrence of sex-forms in *W. witbergensis* is suggested by two collections: Lesotho, c.$2\frac{1}{2}$ miles downstream from summit of Langalibalele Pass, N-facing slopes of Lekhalabaletse valley c.9200ft, 11 ii 1972, *Wright* 1257 (NU) and Sani Pass [clearly not the pass, but the summit plateau], 10900ft, 21 ii 1970, *Downing* 648 (NU). In *Wright* 1257, all the flowers on the specimen are male-sterile, with staminodes and reduced corolla; in *Downing* 648, most of the flowers are male-sterile, but hermaphrodite flowers are sometimes interspersed with male-sterile ones, and, in a few glomerules, all the flowers are hermaphrodite. Every flower appears to set seed. The specimens seem to be sex-forms of *W. witbergensis* although even the hermaphrodite flowers have corollas noticeably smaller than those of normal *W. witbergensis*; however the leaves and indumentum closely resemble that of *W. witbergensis*. Mr Wright collected normal *W. witbergensis* (*Wright* 1236) not far from the site of his no. 1257; the plants look different because the small male flowers do not hide the bracts, which give the inflorescence a spiky appearance.

THYMELAEACEAE

466. Gnidia renniana Hilliard & Burtt, **species nova** *G. fastigiatae* Rendle et *G. baurii* C. H. Wright affinis. *G. fastigiata* surculis axillaribus novis foliatis inflorescentiam mox superantibus, floribus axillaribus duobus vel pluribus distat. *G. baurii* foliis latioribus 3–5mm latis et floribus geminatis differt.

Suffrutex nanus, 5–15cm altis, stolonibus lignosis subterraneis caules

caespitosos emittentibus; caules simplices vel ramosi, tenuiter pilosi vel glabrescentes, omnino foliati vel basin versus nudi et cicatricibus foliorum asperi. *Folia* conferta, alterna, plerumque 9–10 × 1·5–2·5mm, linearilanceolata, acuta, basi angustata, primum subtus tenuiter pilosa, demum marginibus ciliatis exceptis glabra. *Flores* solitarii, raro geminati, ex acillis foliorum. *Bracteolae* c.3 × 1·25mm, oblongo-lancolatae, dorso tenuiter pilosae. *Calyx* pallide ochroleucus; tubus c.5mm longus, apice basique 1·5mm diam., medio ad 0·75mm constrictus, appresse pilosus. *Petala* 8 vel 10 vel saepe absentia, interdum per paria inter se coalita, 0·75 × 0·5mm, elliptica, carnosa, flava. *Antherae* 8 vel 10, minus quam 0·5mm longae. *Ovarium* 1·25 × 0·5mm; stylus 2·25mm longus, stigmate capitato. *Fructus* 2·5 × 1·5mm, nigro-brunneus, in basi calycis persistente inclusus.
Type: Natal, Polela distr., Mawahqua Mountain, farms Sunset and Glengariff, 5000–6000ft, 10 x 1984, *Rennie* 1443 (NU holo.; E, K, PRE, iso.).
NATAL. Polela distr., Mawahqua Mountain, farm Glengariff, 5200ft, 18 xi 1981, *Rennie* 1268 (E, K, NU); ibidem, 31 x 1982, *Rennie* 1327 (E, NU); farm Sunset, 5000ft, 4 x 1971, *Rennie* 22 (NU); ibidem, 6000ft., 23 xii 1981, *Rennie* 1273 (NU). Underberg distr., Bamboo Mountain, N side, 6700ft, 21 xi 1982, *Hilliard & Burtt* 15631 (E, NU); c.5 miles N of Castle View Farm, Chameleon Cave area, c.7000ft, 1 xii 1984, *Hillard & Burtt* 17759 (E, K, NU, PRE).

Mrs Rennie tells us that this species is common on bare sandstone on parts of Mawahqua Mountain; we found it in short turf on steep slopes below the Cave Sandstone cliffs on the north face of Bamboo Mountain, about 30km almost due west of Mawahqua, and on similar terrain below dolerite cliffs about 50km WNW. It is a dwarf suffrutex, much tufted and branched, very floriferous, and is at the peak of its flowering in October. The flowers are solitary in the leaf axils over nearly the whole length of each branchlet, which makes it easy to distinguish from its allies, *G. baurii* and *G. fastigiata*, in which the flowers are borne only in the upper leaf axils. Furthermore, the flowers are always paired in *G. baurii*; in *G. fastigiata* there are usually two to several in each axil, rarely only one, and in that species, the flowering tips are soon overtopped by new long sterile shoots, giving it a facies quite unlike that of *G. renniana*.

The type material has flowers with petals but several of the other specimens are petal-less (*Rennie* 1268, 1273, 1327, *Hilliard & Burtt* 15631, 17759). As the plants without petals show no other associated differences, we have not thought any taxonomic distinction is necessary.

We take pleasure in naming this plant after Mrs Anne Rennie, who has collected extensively on Mawahqua Mountain.

467. Struthiola angustiloba Peterson & Hilliard, **species nova** a *S. pondoense* C. H. Wright calycis lobis 4mm longis acuminatis (nec 2·25mm acutis vel obtusis), pilis petala circumcingentibus eis longioribus (nec brevioribus), antheris acutis (nec obtusis) facile distinguitur.

Suffrutex c.150–400mm altus, multiramosus; rami inferne nudi, cicatricibus foliorum asperi, glabrescentes, ad apices tenuiter pilosi, crebre foliati. *Folia* opposita, erecta, imbricata, 7–10 × 2–3·5mm, lanceolata,

acuta, ad basin paulo angustata, ciliis marginalibus exceptis glabra, demum omnino glabra. *Flores* solitarii, ad folia superiora axillares. *Bracteolae* c.5 × 1mm, lineares, acutae, ciliis marginalibus et coma pilorum apicali exceptis glabrae. *Calyx* omnino pallide ochroleucus; tubus 8·5mm longus, c.0·5mm diam., fauce ad 1mm ampliatus, glaber; lobi c.4 × 1·25mm, lanceolato-acuminati, glabri. *Petala* c.0·75 × 0·25mm, cylindrica, obtusa, pilis rigidis paulo longioribus circumcincta. *Antherae* 1 × 0·5mm post dehiscentiam, ambitu lanceolatae, acutae. *Ovarium* 1 × 0·5mm; stylus stigmate incluso 4mm longus. *Semen* c.3 × 1·5mm; testa crustacea, nitida, nigra.

Type: Natal, Estcourt distr., Monks Cowl Forest Reserve, spur SE of Champagne Castle, 2200m, 8 xii 1983, *Balkwill, Manning & Meyer* 800 (NU holo.; E, PRE, PRF iso.).

NATAL. Bergville distr., Natal National Park, c.1km NE Tugela gorge, SE slopes above Tugela river, c.1600m, 20 i 1957, *Dahlgren & Peterson* 1700A(GB, LD, NU); ibidem, xii 1928, *Galpin* 10192 (K, PRE); ibidem, c.1800m, x 1938, *Wall* s.n. (LD, S); ibidem, x 1938, *Acocks & Hafström* 1011 (S). Estcourt distr., Giant's Castle Game Reserve, c.8000ft, *Trauseld* 477 (E, NU).

Struthiola angistiloba differs from *S. pondoensis* in its dwarf habit (*S. pondoensis* is a shrub reaching a height of 2·4m), more sharply acute leaves, calyx lobes 4mm (not 2·25mm) long, acuminate (not acute or obtuse), encircling hairs exceeding the petals (not shorter than the petals), and acute (not obtuse) anthers. *S. pondoensis* is endemic to the Table Mountain Sandstone outcrops of southernmost Natal and adjoining Transkei, along the margins of forest patches up to c.300m above sea level; *S. angustiloba* is known only from the Natal Drakensberg between Tugela Gorge in Bergville distr., and Giant's Castle Game Reserve, Estcourt distr., on the Cave Sandstone and basalt, between c.1600 and 2400m above sea level. It favours rocky or stony places: the plant was photographed in its natural habitat by Mr Trauseld (Trauseld, W. R., *Wild Flowers of the Natal Drakensberg* p. 127, 1969); there is also a good illustration of the flowers.

UMBELLIFERAE

468. Dracosciadium Hilliard & Burtt, **genus novum** subfamiliae *Apioidearum* tribus *Amminearum* Drude nulli arcte affinis, sed inter genera austro-africana foliis palmatilobatis vel peltato-digitatis facile distinguitur.

Herbae perennes, rhizomatibus gummiferis, *Dauci carotae* aromaticae, ad 0·5m altae, subglabrae. *Folia* radicalia ambitu orbicularia, palmatilobata vel peltato-digitata profunde divisa segmentis 7 pinnatilobatis et calloso-dentatis, costis segmentorum utrinque paulo elevatis et pilis brevibus crassis parce indutis; petioli longi, basi in vaginam expansi; caulina pauca, radicalibus similia sed minora, suprema (in inflorescentia) ad vaginas redacta. *Umbellae* compositae hemisphaericae in paniculas cymosas apertas dispositae; terminalis hermaphrodita, 5–13-radiata, saepe floribus solitariis pluribus additis; laterales plerumque masculi, minores. *Bracteae* et bracteolae lineari-lanceolatae, integrae, liberae. *Calyx* lobis minus quam 0·75mm longis

deltoideis. *Petala* cremea interdum purpureo-tincta, parte basali late elliptica, apice acuminato inflexo libero. *Stylopodium* hemisphaericum vel conicum. *Styli* divergentes. *Mericarpia* inter se similia, c.2·5–3 × 1·25–1·5mm, glabra, purpureo-brunnea, costis 5 prominentibus pallidioribus, carpophoris tenuibus; vittae anguste ellipticae, 6, 4 valleculares 2 commissurales, vel ad 18 in greges 6 dispositae (fortasse demum in 6 coalescentes); endospermum ambitu laeve. Type species: *D. saniculifolium* Hilliard & Burtt.

This new genus is remarkably distinct amongst the Umbelliferae–Apioideae of southern Africa as it is the only one with palmate or peltate-digitate leaves. In texture and toothing they somewhat recall the leaves of *Lichtensteinia interrupta* (Thunb.) Sonder, and the conversion of such leaves from a pinnatisect to a palmatisect pattern is not too difficult to imagine; but there can be no close affinity here: *Lichtensteinia* has a distinct tall narrow stylopodium and elongate fruit and the vittae are all subcostal, whereas in the round fruit of *Dracosciadium* they are vallecular and commissural. In the present rather uncertain state of the family classification it has not been possible to find a close affinity for *Dracosciadium*, but in Drudè's system (in Engler & Prantl, *Natürl. Pflanzenfam.* 3(8):63–250, 1898) it seems to belong to the tribe *Ammineae*.

The pollen of *Dracosciadium* has been examined for us by Mr A. Bennell and he supplies the following description.

Grains isopolar, tricolporate; medium sized, prolate (P/E: 1·45–1·60), amb (equatorial outline) circular lobate. Ectoapertures long, narrow with tapering ends, grains apocolporate. Endoapertures equatorial lalongate, simple, with some equatorial extension in *D. saniculifolium*. Exine: ectexinous-endexinous, 1–2μm thick with 3 layered ectexine, featuring a distinct foot layer, short interstitium (columellar layer) and overlaying perforate tectum. Tectal surface rugate-reticulate with irregular perforations, tending to imperforate at the poles. *D. italae* (*Porter* 620) grains: 25–30 × 16–19·5μm. *D. saniculifolium* (*Hilliard & Burtt* 17692) grains: 26·5–31 × 17–19·5μm. (See Fig. 4).

The pollen of *Dracosciadium* falls into the class of oval pollen recognized by Cerceau–Larrival (see *Mém. mus. nat. hist. nat. Paris* (Sér. B) 14:1–166, 1962, and in *The evolutionary significance of the exine*, ed. Ferguson & Muller, 481–498, 1976). This author recognizes five classes of pollen in Umbelliferae. The two types believed to be most primitive, the subrhomboidal and the subcircular have not been recorded in southern Africa. All the endemic genera so far studied have oval pollen, which forms the middle class of the five, and *Dracosciadium* therefore falls into line. The two most advanced classes recognized, are essentially northern: the subrectangular being the widespread northern type (and no doubt represented in Africa in some of the genera that also have northern ranges), while the equatorial-constricted type is found only in the Mediterranean region (see Cerceau–Larrival, in *Sci. Geol. Bull. Strasbourg*, 27:117–134, 1974).

The two known species of *Dracosciadium* may be distinguished as follows:

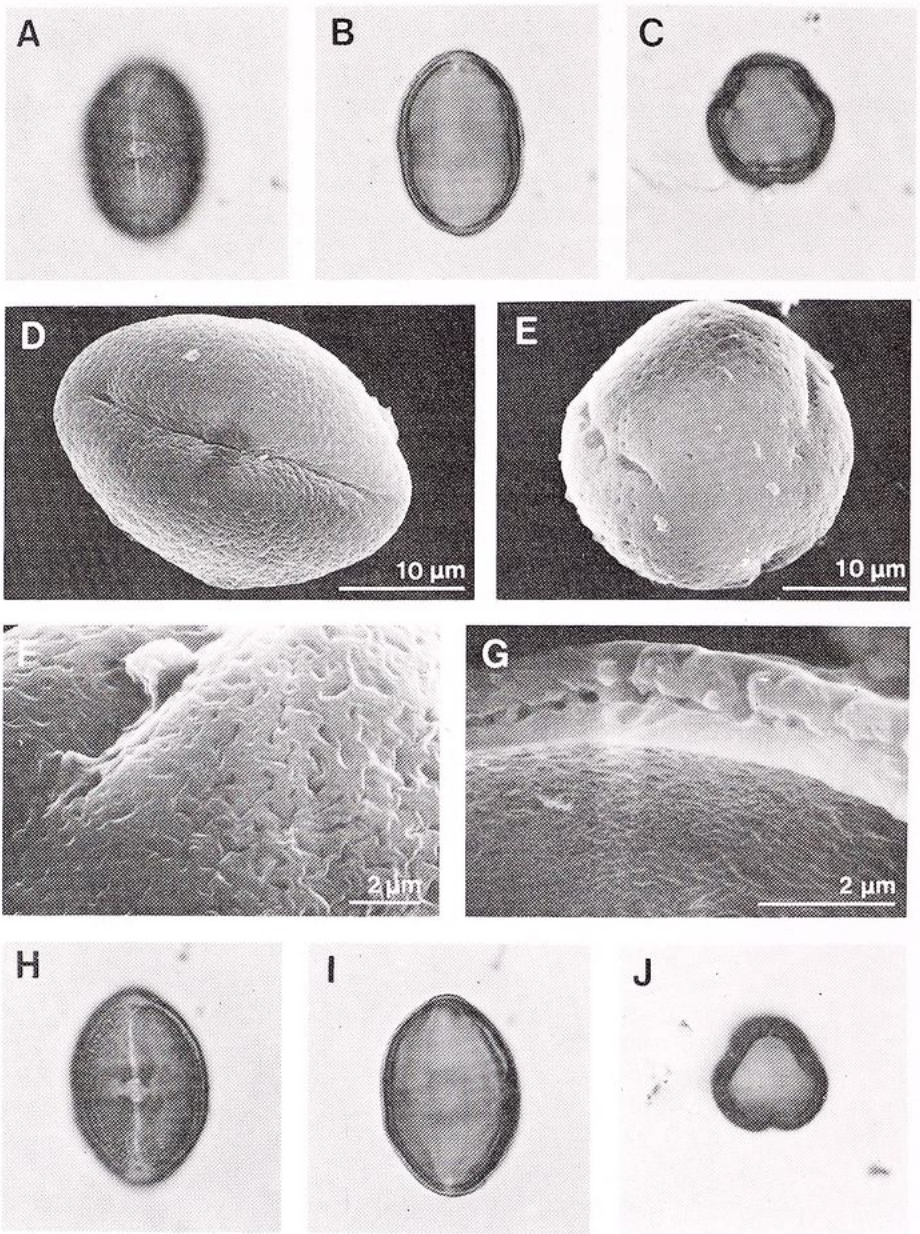

FIG. 4. Pollen of *Dracosciadium*. A–G, *D. italae*: A, meridional view, high focus LM; B, meridional view, low focus LM; C, polar view, LM; D, meridional view showing ectoaperture and perforate tectum, SEM; E, polar view showing imperforate apocolpium, SEM; F, detail of rugate exine sculpturing, SEM; G, fracture through exine to show three layers, SEM; H–J, *D. saniculifolium*: H, meridional view, high focus LM; I, meridional view, low focus LM; J, polar view, LM. All light micrographs × 1000.

Leaves palmate divided to within 5–10mm of base, the segments further lobed two-thirds of way to midrib; flowering shoots sparingly branched; stylopodium hemispherical; infructescence drooping *D. saniculifolium*

Leaves peltate-digitate, usually divided to less than 5mm from base, the segments cut nearly to the midrib; flowering shoots richly branched; stylopodium conical: infructescence erect. . . . *D. italae*

These two species are clearly very close allies; they do not provide the only example of rare species providing a link between the floras of the Royal Natal National Park and the Itala Nature Reserve, or rather between the high Natal Drakensberg and the mountains of northern Natal. *Gladiolus microcarpus* Lewis (in Lewis & Obermeyer, *Rev. S. Afr. Species Gladiolus*, 85, 1972) is a pendulous cliff-dwelling species known from Giant's Castle to Mont aux Sources; its northern counterpart is subsp. *italaensis* Obermeyer (in *Bothalia* 13:457, 1981), from the Itala reserve. This is an erect growing plant with flowers in a denser spike; there are also well-marked diagnostic differences in indumentum. We ourselves would have been tempted to give the Itala *Gladiolus* specific rank, just as we accept the group of red-flowered cliff-dwelling gladioli (*G. cardinalis* Curtis, *G. sempervirens* Lewis, *G. cruentus* T. Moore and *G. flanaganii* Baker as full species. However, the rank accorded is of little importance, we merely draw attention to *Gladiolus microcarpus* and its Itala subspecies as a distributional parallel to *Dracosciadium*.

469. Dracosciadium italae Hilliard & Burtt, **species nova**.

Caules ad 60cm alti, glabri, divaricatim ramosi ramis patentibus; caudex ad 15mm diam., horizontaliter paulo sub terrae superficie dispositus, fusco-brunneus, basibus caulium delapsorum asper. *Folia* pro parte maxima radicalia, petiolis ad 150mm longis suffulta; lamina peltata, ambitu orbicularis, c.70–140mm diam., ad 2–4mm e basi in segmenta 7 divisa, segmentis iterum fere ad costam pinnatim dissecta pinnis ambitu anguste oblongis marginibus grosse et irregulariter et acute dentatis; costae et nervae supra pilis crassis minimis indutae, subtus glabrae. *Umbellae* pedunculis 15–55mm longis suffultae; bracteae c.5, usque ad 5mm longae, lineari-lanceolatae, acuminatae, ad basin liberae; umbella terminalis hermaphrodita, anthesi 70–110mm diam., laterales plerumque masculinae minores. *Umbellulae* plerumque 5–7, in umbella terminali saepe floribus solitariis etiam adsentibus, obconicae, c.15mm diam.; bracteolae 3–5, ad 3mm longae, lineari-lanceolatae, ad basin liberae vel partim connatae; pedicelli 6–10mm longae. *Calyx* lobis minus quam 0·25mm longis, deltoideis. *Petala* c.1·25mm longa, cremea, parte inferiore late elliptica, apice acuminato inflexo libero. *Stamina* 5, filamentis c.2mm longis. *Ovarium* c.1 × 1mm, campanulatum. *Stylopodium* conicum; styli c.0·5mm, angulo semirecto divergentes. *Mericarpia* c.3 × 1·5mm. **Fig. 5B**.

Type: Natal, Ngotshe distr., 2731 CA, Louwsburg, Itala Nature Reserve, c.1300m, 24 ii 1984, *Hilliard & Burtt* 17732 (E holo., NU iso.).

NATAL. Ngotshe distr., 2731 CA, Itala Nature Reserve, c.5000ft, 4 iv 1977, *Hilliard & Burtt* 10041 (E, NU—leaves only); ibidem, 21 i 1983, *Porter* 620 (E, NU). Vryheid distr., Dumuka Mt, 17 iii 1944, *Gerstner* 4588, PRE).

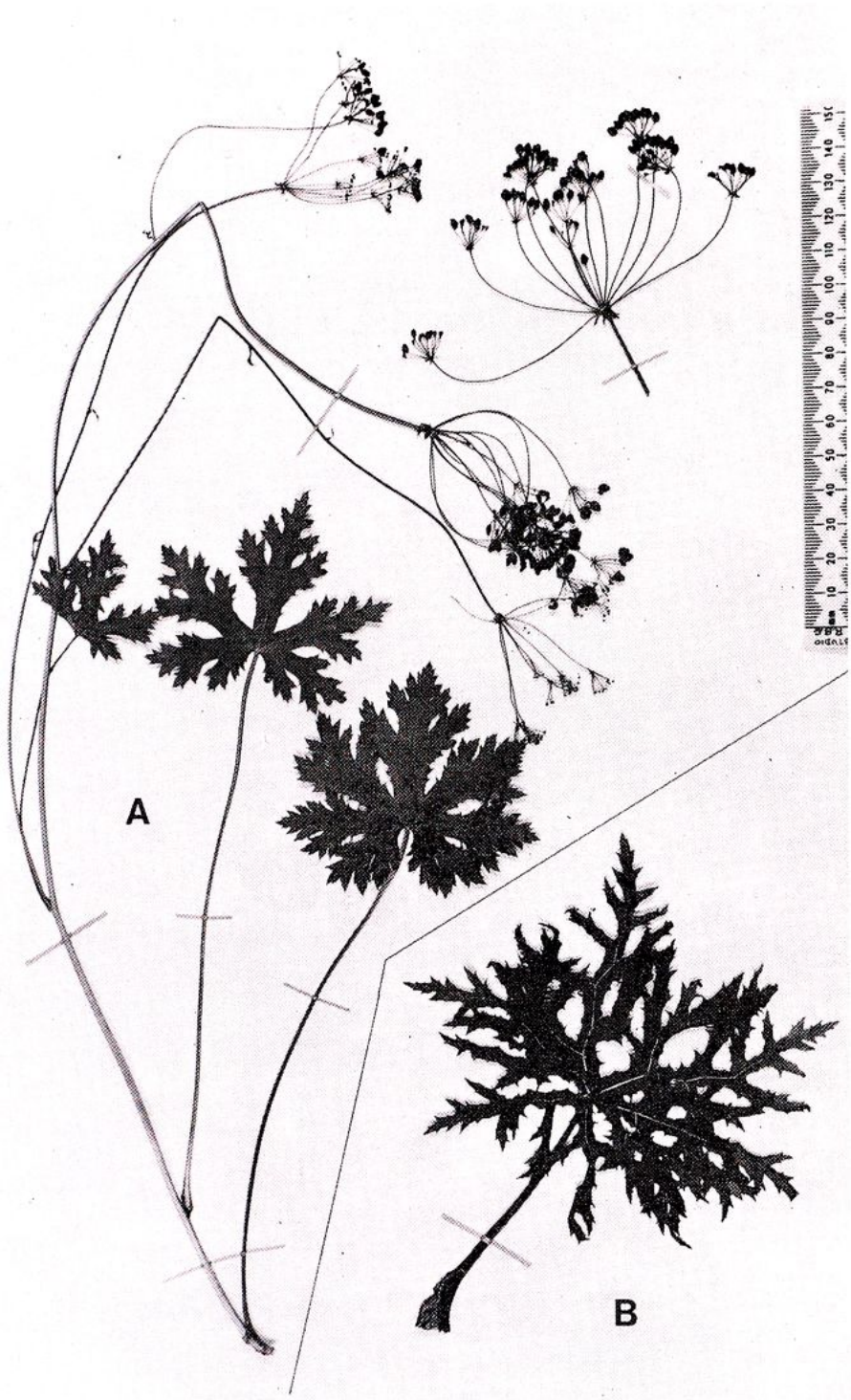

FIG. 5. A, *Dracosciadium saniculifolium*, *Hilliard & Burtt* 17692; B, leaf of *D. italae*, *Hilliard & Burtt* 17732.

Dracosciadium italae grows on and around rock sheets; the soil is shallow and just below ground the rootstock turns horizontal and the plant spreads vegetatively.

The description given above is based entirely on the Itala plant and we are indebted to Mr R. Porter (Natal Parks Board) for help with the collection of fertile material. The specimen from Vryheid distr., Dumuka Mt, consists of a single very large leaf: the petiole 20cm long, the lamina equalling it in diameter; in such a large leaf it is not surprising to find that the segments are cut only to within 10mm of the base: however, apart from its large size the leaf agrees with those of *D. italae*. Clearly Dumuka, and the other mountains of northern Natal need to be searched for this interesting genus.

470. Dracosciadium saniculifolium Hilliard & Burtt, **species nova**.

Caules ad 45cm alti, glabri, inferne parce ramosi, ramis ascendentibus; caudex ad 20mm diam., fusco-brunneus, ramosus, irregularis, basibus foliorum delapsorum notatus. *Folia* pro maxima parte radicalia, petiolis ad 150mm longis suffulta; lamina ambitu orbicularis, c.50–90mm diam., palmatim ad 5–10mm e basi in segmenta 7 divisa, segmentis iterum lobatis et grosse dentatis, marginibus acute calloso-dentatis. *Umbellae* pedunculis 25–60mm longis suffultae; bracteae c.6–10, ad 10mm longae, lineari-lanceolatae, acuminatae, ad basin liberae; umbella terminalis hermaphrodita, anthesi c.120mm diam., laterales masculinae, minores. *Umbellulae* 11–13 in umbella terminali, floribus solitariis paucis interdum adsentibus, obconicae, 10–20mm diam.; bracteolae c.5, 2mm longae, lineari-lanceolatae, acuminatae, ad basin liberae, purpurascentes; pedicelli 5–10mm longi. *Calyx* lobis 0·5–0·75mm longis deltoideis purpurascentibus demum supra stylopodio incurvis. *Petala* 1·25mm longa, cremea, interdum purpureo-tincta, apice fere 0·5mm acuminato inflexo libero. *Stamina* 5, filamentis 1·25mm longis; antherae 0·5mm longae. *Ovarium* c.1 × 0·75mm, campanulatum. *Stylopodium* hermisphaericum. *Styli* 0·5mm longi, patentes. *Mericarpia* c.2·5 × 1·25mm. **Fig. 5A**.

Type: Natal, 2828 DB, Royal Natal National Park, near Basuto Gate, c.7400ft, 18 ii 1984, *Hilliard & Burtt* 17692 (E holo., NU iso.).

NATAL. Bergville distr., Sentinel area, near Mont aux Sources, c.9400ft, 3 xii 1953, *Killick & Marais* 2200 (PRE); foot of Sentinel, c.9000ft, 22 i 1977, *Stewart* 1962 (E, NU); Royal Natal National Park, 7400ft, 1 ii 1982, *Stewart & Manning* 2241 (E, NU).

Killick & Marais recorded *D. saniculifolium* as growing amongst boulders at the foot of a cliff. The population from which the type material came was on damp broken basalt rocks on a steep E-facing slope, the rhizome penetrating deeply between the rocks. Growing with it here were *Gladiolus microcarpus* Lewis, pendulous over shallow steps in the rocks, *Hesperantha candida* Baker on damp ledges, and *Berkheya rosulata* Roessler.

471. Polemannia simplicior Hilliard & Burtt **species nova** a *P. montana* Schltr. & Wolff habitu plerumque multicauli humiliore et foliolis plerumque integris, nec profunde divisis, apicibus minus acutis recedit.

Frutex ad 3m alta; ramuli juveniles rubro-brunnei, foliati, veteres cortice tenui griseo longitudinaliter fisso, lenticellis orbicularibus inconspicuis, foliorum cicatricibus prominentibus. *Folia* in ramulis axillaribus sterilibus congesta, in ramulis florentibus internodiis 10–15mm longis; petioli plerumque 12–30mm longi, tenues, subteretes, supra canaliculati, basi lato amplectente; lamina trifoliolata; foliola plerumque 10–40 × 5–13mm, medio paulo majore, elliptica, utrinque angustata, acuta, mucronata, plerumque integra, interdum laterali (rarissime medio) lobo uno profundo. *Umbellae* terminales globosae, anthesi c.4cm diam.; pedunculi c.1·5–3cm longi, glabri vel pubescentes; bracteae c.5, lanceolatae, c.2 × 0·75mm, mox caducae. *Umbellulae* c.30, globosae, c.8–10mm diam.; pedunculi c.12–22mm longi, brevissimis in umbellulis, glabri vel pubescentes; bracteolae c.5, lanceolatae, 2 × 0·5mm, acuminatae, mox caducae; pedicelli c.20–28, inaequales. *Calycis* lobi minimi, triangulares, carnosi. *Petala* c.1 × 0·5mm, elliptica, apice longe acuminato inflexo. *Stamina* 5, filamentis incurvis. *Stylopodium* conicum, atrobrunneum; stigmata brevissima; ovarium ambitu plus minusve oblongum, c.1 × 0·5mm. *Mericarpia* similia, ambitu plus minusve ellipto-oblonga, 5 × 2mm, complanata, alis marginalibus angustis. **Fig. 6A–D**.

Type: Cape, Barkly East distr., 3027 DB, Rhodes, Carlisle's Hoek, 7000–7500ft, 9 ii 1983, *Hilliard & Burtt* 16566 (E holo., NU iso.).

ORANGE FREE STATE. Harrismith distr., Platberg, W-facing slopes below cliffs, bush to 8ft, 7 i 1979, *Hilliard & Burtt* 11966 (E, NU).

LESOTHO. Sehlabathebe National Park, along road between Rest Hut and Kubutsane Nek, c.2550m, 10 ii 1978, *Hoener* 2016 (E, NU, PRE); ibidem, between Kubutsane Junction and the top of Kubutsane Nek, c.2550m, 28 iii 1978, *Hoener* 2049 (E, NU, PRE). Qacha's Nek, High Maluti Mountains, slopes, yellowish brown flowers, Dec. 1917, *Dieterlen* 1342 (PRE); Mokhotlong, very small bush among grass on N-facing slope of mountain, 28 ii 1949, *Guillarmod* 1009 (PRE); Matsohu River Valley, 8000ft, 12 i 1955, grassy hill slope, forming small shrub, *Guillarmod* 2270 (PRE); Liseleng valley, at upper shrub boundary, 4ft high, 13 i 1955, *Coetzee* 529 (PRE). Maseru distr., Makhaleng valley near Molimo Nthuse Pass, c.7000ft, 11 i 1979, *Hilliard & Burtt* 12047 (E, NU).

NATAL. Underberg distr., Sani Pass, c.8–8800ft, common small bush on steep slopes, 22 iii 1977, *Hilliard & Burtt* 9799 (E, NU).

E CAPE. Lady Grey distr., Witteberg, Joubert's Pass, c.2350m, scattered bushes on hill slope among rocks, 18 i 1979, *Hilliard & Burtt* 12196 (E, NU). Elliot distr., Fetcani Pass, c.2300m, grass slopes, scattered, 22 i 1979, *Hilliard & Burtt* 12346 (E, NU). Barkly East distr., 3027 DA, Witteberg, farm Beddgelert, c.6200ft, 10 ii 1983, *Hilliard & Burtt* 16576 (E, NU); 3027 DB, Ben McDhui, 8600–8900ft, 6 ii 1983, *Hilliard & Burtt* 16487 (E, NU); 3028 CC, Rhodes to Naude's Nek, 8000ft, 13 ii 1983, *Hilliard & Burtt* 16593 (E, NU); ibidem, Dunley, 7500ft, 13 ii 1983, *Hilliard & Burtt* 16617 (E, NU). Molteno distr., $8\frac{1}{2}$ miles SSW of Henning Station, 5700–6400ft, *Acocks* 15962 (PRE). Tarkastad, Mt Martha, 6330ft, 20 iv 1950, *Killick* 856 (PRE).

The distinguishing characters given between *Polemannia simplicior* and *P. montana* are admittedly slender for the recognition of a full species. Nevertheless the two are remarkably easy to distinguish in the field and

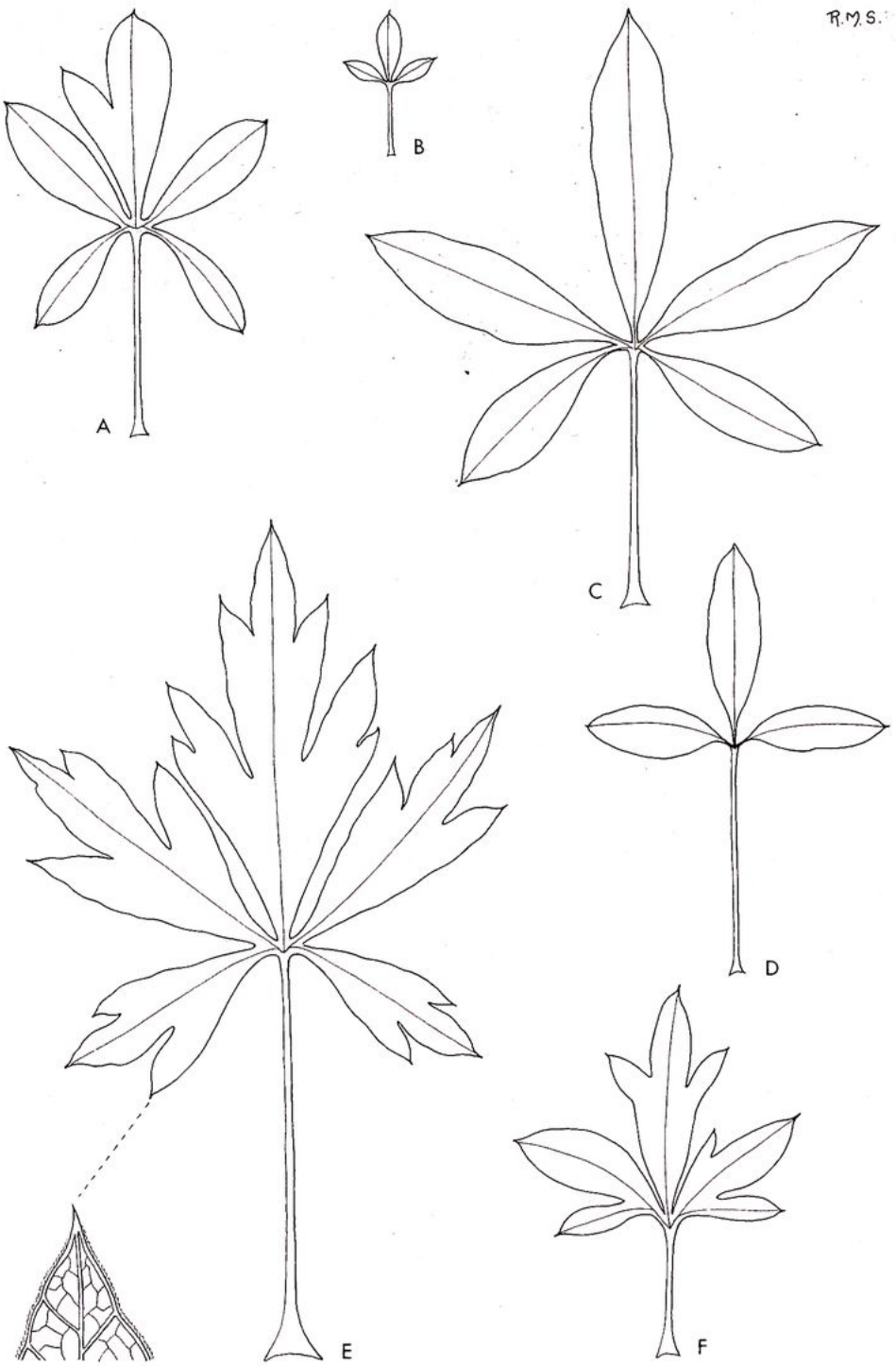

FIG. 6. A–D, *Polemannia simplicior* Hilliard & Burtt: A, leaf from long shoot (*H & B* 16576); B, leaf from short shoot (*H & B* 16487); C, leaf from long shoot (*H & B* 16566); D, leaf from coppice shoot (*H & B* 16566). E–F, *Polemannia montana* Schlechter & Wolff: E, leaf from coppice shoot (*H & B* 15263) with tip of leaflet to show cartilaginous-serrulate margin and intramarginal nerve common to both species (×3); F, leaf from flowering shoot (*H & B* 7751). A–F all nat. size.

they occur in parallel over a wide range, a fact which argues strongly against their being ranked as subspecies. *P. simplicior* has been found from Platberg Mt near Harrismith to Mt Martha near Tarkastad, between Queenstown and Cradock in the eastern Cape: *P. montana* ranges from Van Reenen's Pass, on the escarpment near Harrismith, to Hangklip Mt near Queenstown. *P. montana* is the commoner in the southern Natal Drakensberg, *P. simplicior* is more frequent in the eastern Cape Witteberg.

Polemannia montana is a spindly shrub with cane-like branches or occasionally a small tree found on the rocky banks of mountain streams or in the boulder beds of rivers or mixed with a variety of other shrubs in boulder bed scrub. *P. simplicior*, on the other hand, is a bushy shrub that favours open mountain slopes, but may also be found on rocky streamsides at high altitudes, as on Ben McDhui. They differ in foliage too; the leaflets of *P. montana* are always coarsely toothed, or more deeply dissected, and are very acute to acuminate (Fig. 6A–D); those of *P. simplicior* are seldom divided (which suggested the specific epithet) and are only moderately acute (Fig. 6E–F). Both species may produce vigorous coppice shoots from the base, and the leaf-differences are well-maintained on these (Fig. 6D, E).

In only one place have we found them difficult to distinguish, and that is in the Sani Pass. Here *P. montana* probably occurs along the riverside, *P. simplicior* on the steep and unstable valley slopes. But collections made here can show a wide range of leaf form with many intermediates between those of the two species. There seems little doubt that hybridization is taking place in this area: collections exemplifying this are *Killick & Vahrmeijer* 3770 (PRE) and *Hilliard & Burtt* 15646 (E, NU).

Sterile twigs of *Polemannia simplicior* have been confused with *Heteromorpha*, but the venation in *Polemannia* is more coarsely reticulate than in *Heteromorpha*, and *Heteromorpha* lacks the distinctive submarginal vein of *Polemannia*.

Polemannia grossulariifolia Ecklon & Zeyher, the type species of the genus, has deeply divided leaflets like those of *P. montana*, but the lobes are obtuse, rounded or very nearly truncate. It is widely distributed in the mountains of the central and eastern Cape: we have seen it at Hogsback in the Amatola Mountains, a small shrub in scrubby growth near a stream. These three species are closely allied. We have seen only poor specimens of *P. verticillata* Sond., and its attribution to the genus is doubtful. The remaining species, *P. marlothii* Wolff is certainly an interloper and a note on this will be published shortly.

ACKNOWLEDGEMENTS

We are indebted to Mr A. Nicholas for agreeing to the inclusion here of *Asclepias oreophila*, to Dr B. Peterson for collaboration on *Struthiola*, and to Mrs M. E. Heideman for a discussion on *Hypoxis* and access to her thesis. Mr A. Bennell kindly examined and described the pollen of *Dracosciadium*. We are grateful to Mrs L. Davis, Miss R. M. Smith and Mr J. Manning for the line illustrations and to Mr K. Grant for the photographs. We are, as always, deeply indebted to the Directors of the herbaria cited for the loan of material.