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Taxonomic notes and new species of the southern African genus *Babiana* (Iridaceae: Crocoideae)

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Keywords: *Babiana* Ker Gawl., *B. cuneata* sp. nov., *B. fragrans* comb. nov., *B. longiflora* sp. nov., *B. praemorsa* sp. nov., *B. regia* comb. et stat. nov., biogeography, Iridaceae, southern Africa, systematics

ABSTRACT

A member of Iridaceae subfamily Crocoideae, *Babiana* Ker Gawl. comprises some 80 species from southern Africa. Field studies have shown the need for several taxonomic and nomenclatural changes, while a number of new species have been discovered. The type of *B. flabellifolia* Harv. ex Klatt is a short-tubed plant that matches *B. truncata* G.J.Lewis, and that name falls into synonymy. The name *B. flabellifolia* sensu G.J.Lewis (1959) has been misapplied to long-tubed plants from the western Karoo which are now renamed *B.* **praemorsa** sp. nov. In addition, *B. truncata*, as originally circumscribed, included two species, one short-tubed and a second with a longer tube, which we describe here as *B.* **cuneata** sp. nov. The type of *B. hypogaea* Burch. has also been misinterpreted and matches the species described as *B. flavida*, which thus falls into the synonymy of *B. hypogaea*. A second species, *B. falcata* G.J.Lewis, closely matches this species and is also reduced to synonymy. The widespread southern African species long known as *B. hypogaea* (*hypogea* sensu G.J.Lewis) matches the type of *B. bainesii* Baker and must now be known by that name. *Babiana stricta* var. *erectifolia* (G.J.Lewis) G.J.Lewis is appropriately included in typical *B. stricta* (Aiton) Ker Gawl. However, var. *regia* G.J.Lewis is a very different plant and is treated as a separate species, *B.* **regia** comb. et stat. nov., as is long-tubed var. *grandiflora* G.J.Lewis, which is described as the new species, *B.* **longiflora** sp. nov. Plants included in *B. stricta* var. *sulphurea* sensu G.J.Lewis are also included in var. *stricta*. We are unable to match the type of *Gladiolus sulphureus* Jacq., basionym of var. *sulphurea* (Jacq.) Baker, with any known species and the name is thus excluded. Lastly, the name *B. disticha* Ker Gawl., type of the genus, is superfluous for *Gladiolus fragrans* Jacq. and the new combination *B.* **fragrans** comb. nov. is made, reducing *B. disticha* to synonymy. *Babiana fragrans* Eckl., which was thought to prevent the transfer of *G. fragrans*, is a *nomen nudum* and thus invalid and cannot be taken into account in considerations of nomenclatural priority.

INTRODUCTION

When last revised in 1959 by the South African botanist, G.J. Lewis, the genus *Babiana* Ker Gawl. (Iridaceae: subfamily Crocoideae) was considered to comprise 60 species in southern Africa and one on the Indian Ocean island of Socotra. Since the publication of this monograph, two species, *B. lewisiana* B.Nord. (Nordenstam 1970) and *B. virginea* Goldblatt (Goldblatt 1979) have been described, and a further two, *Antholyza plicata* Thunb. and *A. ringens* L. have been restored to *Babiana* as *B. thunbergii* Ker Gawl. and *B. ringens* (L.) Ker Gawl. respectively (Goldblatt 1990). The latter two species were included in *Babiana* by most 19th century botanists, notably Ker Gawler (1805) and Baker (1892; 1896), although not by Lewis (1959), who followed Brown (1932) in maintaining *Antholyza* L. for *B. ringens*, and *Anaclanthe* N.E.Br. for *B. thunbergii* and its synonym, *A. namaquensis* N.E.Br. The Socotran species, *B. socotrana* Hook.f., is now known to be allied to *Lapeirousia* Pourr. and *Savannosiphon* Goldblatt & Marais, and has been referred to the new genus *Cyanixia* Goldblatt & J.C.Manning, as *C. socotrana* (Hook.f.) Goldblatt & J.C.Manning (Goldblatt *et al.* 2004). Currently then, *Babiana* includes 64 species, all from southern Africa, mainly the winter rainfall zone of the south and west of the subcontinent.

Field research, especially since 1995, often conducted in conjunction with our studies of the pollination biology of *Babiana* and other genera of the Iridaceae, has led to the realization that there are several shortcomings in Lewis's (1959) account of the genus as well as a number of undescribed species. In this paper we deal with changes to the taxonomy of the *B. flabellifolia*, *B. hypogaea* and *B. stricta* species complexes, describe two new species, and make two new combinations resulting from these changes.

Examination of the type specimen of *Babiana flabellifolia* Harv. ex Klatt, most likely collected in northern Namaqualand, reveals that it does not match the western Karoo plant that Lewis (1959) associated with this name. The latter plant, which is distinguished by a long perianth tube and short filaments, is renamed *B. praemorsa* sp. nov. Accordingly, the short-tubed Namaqualand species *B. truncata* G.J.Lewis, which closely matches *B. flabellifolia*, assumes this earlier epithet. Our studies also show that plants referred by Lewis to *B. truncata* represent two species, one largely from Namaqualand with a perianth tube 18–36 mm long, and a second, described here as *B. cuneata* sp. nov., with a perianth tube 40–60 mm long. Similarly, the type of *Babiana hypogaea* Burch. (spelled *hypogea* by Lewis), collected by William Burchell in 1812, closely matches the species described as *B. flavida* by Lewis in general appearance and perianth dimensions, and differs significantly from the widespread southern African plant currently called *B. hypogea sensu* Lewis (1959). The latter must now assume the name *B. bainesii* Baker, and *B. flavida* G.J.Lewis falls into the synonymy of *B. hypogaea*. The revised taxonomy accords with the treatment by Baker (1896) in *Flora capensis*.

In addition, taxonomic changes are needed for the southwestern Cape species, *Babiana stricta* (Aiton) Ker

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Gawl., a complex in which Lewis (1959) recognized five varieties. Some of these closely resemble the type of *B. stricta* but others differ strikingly from that species. No single exclusive feature links the five varieties, except for the more or less subequal tepals and, with the exception of var. *grandiflora* G.J.Lewis, the relatively narrow, rigid leaves with a short rough pubescence. Neither of these features is unique to this complex. Lastly, *Gladiolus fragrans* Jacq. is an earlier name for *Babiana disticha* Ker Gawl., and we make the nomenclatural correction in the new combination *B. fragrans*. The nomenclatural and taxonomic consequences of these conclusions are dealt with formally below.

A more extensive account of *Babiana* is planned for a future paper in which we will describe additional new species and present a revised infrageneric classification of the genus. Including the new species described below and those in manuscript, *Babiana* comprises 80 species. This makes it one of the larger genera of southern African Iridaceae, after *Gladiolus* L. (165 species in southern Africa) and *Moraea* Mill. (147 species), and slightly larger than *Romulea* Maratti (78 species) and *Hesperantha* Ker Gawl. (77 species).

1. The *Babiana flabellifolia* complex

Defined by its unusual, abruptly truncated leaves and by its large floral bracts with the inner notched at the tips, and so provisionally considered a clade by us, the *B. flabellifolia* complex currently includes three species. These are the central and northern Namaqualand species, *B. pubescens* (Lam.) G.J.Lewis, which has an elongate perianth tube ± 50 mm long and curved near the apex, and a dorsal tepal ± 20 mm long; a second long-tubed species from the western Karoo, identified as *B. flabellifolia* by Lewis (1959); and a widespread, relatively short-tubed species, named *B. truncata* by Lewis (1959).

The type of *Babiana flabellifolia* was collected by the Rev. Henry Whitehead at an unrecorded locality in Namaqualand. Whitehead, an Anglican clergyman, was stationed at Modderfontein near Springbok, and his collections are assumed to have been made nearby in northern Namaqualand (Gunn & Codd 1981). The type of *B. flabellifolia*, however, exactly matches *B. truncata* G.J.Lewis (1959) in its short tube, except for conspicuous pubescence on the leaves and bracts, and is from Namaqualand where *B. truncata* is common, and where the long-tubed western Karoo species does not occur. *B. truncata* is typically glabrescent. The latter taxon extends from Steinkopf in northern Namaqualand to the Bokkeveld Plateau near Nieuwoudtville in the south and its range thus includes that of *B. flabellifolia*. We suggest that the glabrescent and pubescent plants with perianth tubes of similar length represent a single species, which must carry the earlier name. The conspicuous pubescence of the type specimen is certainly unusual but sparse pubescence is occasionally encountered in plants matching *B. truncata*, especially in the immediate vicinity of Springbok. We do not regard the hairiness of the type specimen as significant enough to treat it as a separate taxon. We rename the western Karoo plant *B. praemorsa* here.

In addition to a name change for the short-tubed Namaqualand species, which must now be called *Babiana flabellifolia*, a change to its circumscription seems necessary. Some plants from the south of the range of the species have a perianth tube 40–60 mm long and large subequal tepals. We have concluded that they represent a separate species, which we here describe as *B. cuneata*. This species extends from Lokenberg in the Bokkeveld Mountains to the Cold Bokkeveld and Swartruggens near Ceres in the south, and along the Roggeveld Escarpment to near Laingsburg in the east. *B. cuneata* has cupped tepals 26–40 mm long and filaments 15–18 mm long and is thus readily distinguished from the long-tubed western Karoo species *B. praemorsa* (called by Lewis *B. flabellifolia*; see Lewis 1959: plate 21), which has a straight perianth tube 40–60 mm long, horizontally spreading tepals 18–22 mm long, and relatively short filaments, 8–9 mm long. The filaments in the other long-tubed species in the complex, *B. pubescens*, are 14–15 mm long.

A revised description is provided below for *Babiana flabellifolia* (syn. *B. truncata*), as well as formal descriptions of the new species *B. cuneata* and *B. praemorsa*. We also lectotypify *B. cuneifolia* which was treated as a synonym of *B. pubescens* by Lewis. Most specimens of the type, *Drège 2627*, actually have a short perianth tube and accord closely with *B. flabellifolia/truncata*. *Babiana pubescens* is not known to occur in southern Namaqualand where the type collection of *B. cuneifolia* was made and we suspect that specimens of *B. pubescens* from another site were later mislabelled with the Drège collection number.

Babiana flabellifolia *Harv. ex Klatt* in Linnaea 35: 380 (1867–68); G.J.Lewis: 98 (1959), misapplied to *B. praemorsa*. Type: South Africa, Namaqualand [Northern Cape, probably near Modderfontein, west of Springbok], without precise locality or date, *Rev. H. Whitehead s.n.* (K, holo.!).

Babiana cuneifolia Baker: 335 (1876), syn. nov. Type: South Africa, [Northern Cape], Mierenkasteel, karroid slopes, August 1830, *J.F.Drège 2627* (K, holo.!; MO!, P (two sheets), S, iso.).

Babiana truncata G.J.Lewis: 100 (1959), syn. nov. Type: South Africa, [Northern Cape], 2 miles east of Springbok, 26 July 1950, *G.J. Lewis 2203* (SAM, holo.!; SAM, iso.!).

Plants up to 80 mm high. *Stem* short or entirely underground. *Leaves* crowded at base, abruptly truncate and wedge-shaped, pleated, smooth or finely hairy with shortly velvety margins, or rarely coarsely hairy with white hairs up to 2.5 mm long; juvenile leaves filiform with long hairs. *Spike* compact, 2–several-flowered, borne at ground level; bracts 15–30 mm long, more or less membranous or green, smooth or papillate to finely hairy, inner bracts forked apically, tips tapering into slender awns. *Flowers* zygomorphic, mauve to violet, tube cream-coloured or pale yellow and lower lateral tepals with pale yellow or cream-coloured median markings, sweetly scented; perianth tube 18–36 mm long, cylindrical, straight; tepals unequal, dorsal suberect or arching forward, 27–33 mm long, lower tepals slightly shorter, 25–27 mm long. *Stamens* arched; filaments 15–18 mm long; anthers 6–8 mm long. *Ovary* smooth; style dividing near apex of anthers. *Flowering time*: mainly June and July.

Distribution: clay and granitic soils, renosterveld and succulent karroid scrub, in Namaqualand and the western Karoo, from the Anenous Mountains in the north to Nuwerus and Koekenaap in the south and on the Bokkeveld Plateau near Calvinia. Plants cited by Lewis (1959) (*Compton 11504* and *Schlechter 10892*) from the Bokkeveld Plateau south of Nieuwoudtville are *B. cuneata*.

Babiana cuneata *J.C.Manning & Goldblatt*, sp. nov.

TYPE.—Western Cape, 3219 (Wuppertal): Cold Bokkeveld, Katbakkies Pass, (–DC), 5 September 2000, *P. Goldblatt & J.C. Manning 11457* (NBG, holo.; K, MO, PRE, iso.).

Plantae 80–150 mm altae, caule brevi, glabro, foliis usque ad 6, oblongis (6–)8–15 × 8–18(–30) mm plicatis abrupte truncatis glabris vel velutinis, spica compacta 2- ad 5-(ad 7)-flora, bracteis 25–50 mm longis, interiore ad apicem furcata, floribus zygomorphis violaceis tepalis inferioribus albo-notatis, tubo perianthii 40–60 mm longo, tepalis superioribus 26–30(–40) × 6–12 mm, filamentis unilateralibus 15–18 mm longis, antheris 6–8(–11) mm longis, ovario glabro.

Plants 80–150 mm high including leaves. *Stem* short, hairless. *Leaves* crowded at base, up to 6, oblong, (6–)8–15 × 8–18(–30) mm, leathery, plicate, abruptly truncate, hairless or finely velvety hairy. *Spike* compact, 2–5(–7)-flowered, flowers borne at ground level; bracts 25–50 mm long, green with brown attenuate tips, smooth or sparsely hairy, inner about as long as outer and forked apically, basal margins sometimes fused around ovary for ± 2 mm. *Flowers* zygomorphic, pale bluish to violet, lower lateral tepals with white median marks outlined with dark violet to purple below, unscented or sweetly scented; perianth tube 40–60 mm long, cylindrical, straight, widening slightly in upper 8 mm; tepals spreading, subequal or three upper slightly larger, 26–30(–40) × 6–12 mm, upper laterals fused to lower for ± 2 mm. *Stamens* unilateral; filaments 15–18 mm long, exserted 9–10 mm; anthers 6–8(–11) mm long, pale yellow to cream-coloured. *Ovary* smooth, shortly stipitate in lower flowers; style dividing opposite anther bases or apices, branches ± 6 mm long, arching outward between or over anthers. *Flowering time*: August to late September. Figure 1.

Distribution: dry rocky sandstone or dolerite slopes and flats in arid fynbos or renosterveld, from the Bokkeveld Mountains to the interior Cold Bokkeveld as far south as Karoopoort, and eastward on the Roggeveld Escarpment south to the foot of the Witteberg near Laingsburg (Figure 2).

Diagnosis and relationships: *Babiana cuneata* was previously included by Lewis (1959) in the species that she called *Babiana truncata* (now *B. flabellifolia*) but comparison of live plants examined in the field shows that the populations from the south of the range of that species represent a distinct species, geographically and edaphically separated from *B. truncata*. They are recognized by their blue to blue-grey flowers (either fragrant or apparently unscented) with an elongate perianth tube 40–60 mm long; ± equal, ascending tepals 26–30(–40) mm long; and openly displayed stamens with filaments 15–18 mm long and exserted 9–10 mm from the tube. The point of division of the style varies. In the type population from Katbakkies Pass, the branches separate opposite the base of the anthers but in plants to the south, from below the Roggeveld Escarpment, the style reaches the anther apices. Flowering occurs from early August to late September. Plants here included in *B. flabellifolia* have in contrast strongly scented, bilabiate flowers with an arched dorsal tepal more or less concealing the stamens, a perianth tube 18–36 mm long, and often dry, submembranous, or occasionally green, leafy bracts. In specimens where it is possible to see floral details, the style divides opposite the anther apices. Flowering in *B. flabellifolia* occurs from late June through July, rarely in early August in seasons when the rains are late or conditions are particularly cold.

The flowers of *Babiana cuneata* closely resemble those of *B. sambucina*, which is widespread across dry parts of the Cape Floral Region, but does not occur in the Roggeveld and typically has lanceolate, acute or acuminate leaves.

History: *Babiana cuneata* was evidently first collected by Rudolf Schlechter in August 1897 at Papelfontein (*sic.*) [Papkuilsfontein], some 16 km south of Nieuwoudtville at the northern end of its range. In 1941 R.H. Compton collected the species nearby, at Lokenburg in the Bokkeveld Mountains, a short distance to the south. The range of *B. cuneata* falls partly within the arid interior of the Cape Floral Region but there are also several recent records from the Roggeveld Escarpment and Klein Roggeveld to the east. Most collections are from rocky habitats, with the substrate rock either sandstone or dolerite. Plants at the southern end of the range, in the Klein Roggeveld south of Komsberg Pass, have unusually large flowers with the dorsal tepal ± 40 mm long and anthers 9–11 mm long, and the style is also unusual in dividing opposite the anther apices rather than opposite their bases. These plants are also distinctive in their glaucous leaves, which are often 20–30 mm wide, which is exceptionally broad for the species. Despite these differences, however, we see no reason at present to recognize these plants as a separate taxon.

Other material examined

NORTHERN CAPE.—3119 (Calvinia): Papkuilsfontein ('Papelfontein'), (–AC), 17 August 1897, *Schlechter 10892* (MO); Lokenburg, (–CA), 29 August 1941, *Compton 11504* (NBG); near Soutpan, (–CD), 24 July 1961, *Lewis 5820* (NBG). 3120 (Williston): south of Middelpos, (–CC), 30 Aug. 2001, *Horstmann s.n.* (NBG). 3220 (Sutherland): Sutherland, stony ground, (–BC), 15 August 1968, *Hanekom 1094* (NBG); Sutherland–Matjesfontein road at Komsberg turnoff, (–DC), 19 September 2003, *Goldblatt, Manning & Porter 12310*, (K, MO, NBG, PRE); Kleinroggeveld, near Farm Damslaagte, (–DC), 19 Sept. 2003, *Goldblatt & Porter 12312* (MO).

WESTERN CAPE.—3219 (Wuppertal): turnoff to De Plaat, (–DC), 14 September 1986, *Fellingham 1196* (NBG). 3319 (Worcester): Katbakkies Pass, (–AD), 30 September 1974, *Loubser 2250* (NBG); Karoopoort, 3 km north of Sutherland turnoff on Calvinia road, (–BA), 6 August 2002, *Manning 2761* (NBG). 3320 (Montagu): Karoo Garden, Whitehill, Laingsburg, (–BA), 17 August 1942, *Compton 13389* (NBG); foot of the Witteberg near Laingsburg, (–BD), 18 August 2002, *Goldblatt & Porter 12070* (MO).

FIGURE 1.—*Babiana cuneata*. A, whole plant. B, C, flower: B, front view; C, l/s. Scale bar: 10 mm. Artist: John Manning.

Babiana praemorsa *Goldblatt & J.C.Manning*, sp. nov. (see Lewis 1959: plate 21; Manning & Goldblatt 1997: 87). *Babiana flabellifolia* sensu G.J.Lewis: 98 (1959), not of Harv. ex Klatt., misapplied name.

TYPE.—Northern Cape, 3119 (Calvinia): north of Bloukrans Pass, shale flats, (–DA), 25 August 1976, *P. Goldblatt 3935* (NBG, holo.; K, MO, iso.).

Plantae 50–150 mm altae, caule brevi raro usque ad 20 mm supra terram extenso, foliis oblongo-cuneatis plicatis minute villosis, spica 5- vel 6-flora congesta, bracteis viridis minute villosis 25–50 mm longis, interiore parum breviore, exteriore ad apicem furcata, floribus zygomorphis atroviolaceis maculis lanceolatis albis vel cremeis notatis, tubo perianthii 40–60 mm longo cylindrico, tepalis subaequalibus usitate 18–22 × 3.5–5.0 mm horizontaliter extensis, filamentis unilateralibus suberectis 8–9 mm longis, antheris 5–6 mm longis, ovario glabro.

Plants 50–150 mm high. *Stem* short, suberect or decumbent, rarely reaching 20 mm above ground. *Leaves* oblong-cuneate, pleated, minutely hairy, in a spreading fan; juvenile leaves linear, ± 1 mm wide, silky hairy. *Spike* congested, 5 or 6-flowered; bracts green, minutely hairy, 25–50 mm long, inner slightly shorter than outer and forked apically with acuminate tips. *Flowers* weakly zygomorphic, dark violet with white to cream-coloured spear-shaped marks often edged with red or dark blue on lower lateral tepals, unscented or rarely slightly sweet-scented; perianth tube 40–60 mm long, cylindrical, straight; tepals subequal, spreading horizontally, mostly 18–22 × 3.5–5.0 mm. *Stamens* suberect; filaments 8–9 mm long, exserted 4–5 mm; anthers 5–6 mm long, violet or yellow. *Ovary* smooth; style dividing

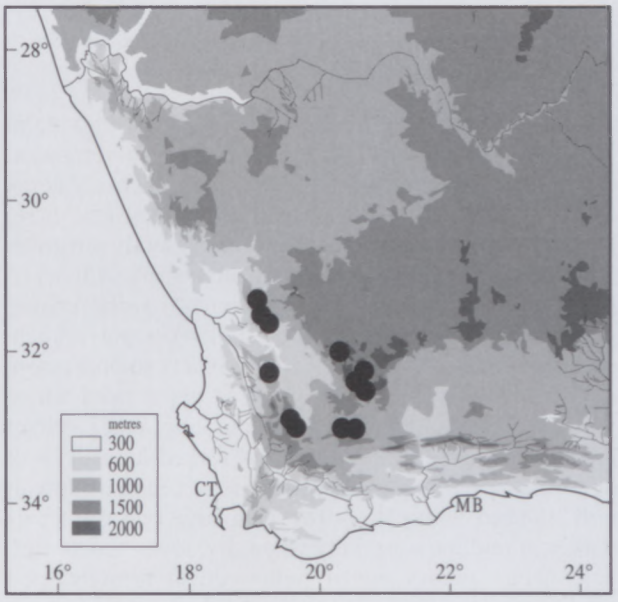

FIGURE 2.—Distribution of *Babiana cuneata*.

opposite upper half of anthers or shortly beyond them, branches 2–3 mm long. *Flowering time*: June–July.

Distribution: dolerite outcrops in the Calvinia District of the western Karoo, from the Hantamsberg to Bloukrans Pass, often growing in rock crevices in dolerite pavement where the corms are secure from predation.

Diagnosis and relationships: in her account of *Babiana*, Lewis (1959) treated *B. praemorsa* as *B. flabellifolia*, a species described by F.W. Klatt in 1867–68, based on a specimen, from 'Namaqualand Minor'. This is certainly not the same as the plants from the Calvinia District with which she associated the name. The type specimen (a single plant) at the Kew Herbarium has flowers with a short, obliquely funnel-shaped perianth tube, ± 18 mm long with the narrow part ± 10 mm long, and broadly cuneate leaves that are densely covered with long hairs on the major veins and margins. Except for the prominently hairy leaves and slightly shorter tube, this specimen corresponds exactly to the Namaqualand plant that Lewis called *B. truncata*, now reduced to synonymy in *B. flabellifolia*.

One of four species of the *Babiana flabellifolia* complex, *B. praemorsa* is recognized by its flowers with a straight, cylindrical perianth tube 40–60 mm long, and firm, narrow, spreading tepals, 18–22 mm long. The perianth is deep violet rather than blue as in the related long-tubed species of the alliance and they are perhaps most like those of the central Namaqualand *B. pubescens*, with which it is easily confused. *Babiana praemorsa* can be distinguished from this and another long-tubed species, *B. cuneata* from the dry interior of northern Western Cape, by its short filaments, 8–9 mm long, exserted 4–5 mm from the perianth tube, and the tepals spreading at right angles to a nearly straight tube of uniform diameter.

As well as occurring in the Calvinia District, *Babiana praemorsa* was cited by Lewis as growing at 'Upington, Namaqualand' (*Orpen s.n.*, NBG), and at Whitehill (*Compton 13389*, NBG) south of Laingsburg. Whitehill was the site of the first Karoo Botanical Garden, no longer extant. The latter plant is *B. cuneata* from the southern limit of its range. The Upington record is, however, almost certainly an error in labelling the provenance of the plant, as *Babiana praemorsa* is evidently a narrow endemic of dolerite outcrops in the Calvinia District. Since it was treated by Lewis, *B. praemorsa* has been collected at several localities not known to her, extending the known range of the species.

Other material examined

NORTHERN CAPE.—3119 (Calvinia): Hantamsberg summit plateau, in cracks in dolerite outcrops, (–BD), 3 September 1994, *Goldblatt & Manning 9961* (MO); Kareeboomfontein, (–DA), 30 August 1974, *Hanekom 2368* (K, M, MO, P, PRE).

2. The *Babiana hypogaea* complex

Recognized by the partly underground spike, the flowers thus with a subterranean ovary, the slender, linear to falcate leaves, and, according to Lewis (1959), a stipitate ovary, the *Babiana hypogaea* complex included three species in Lewis's (1959) account of *Babiana*. These were *B. falcata*, *B. flavida* and *B. hypogaea* (for no apparent reason spelled *hypogea* by Lewis). Examination of type material of *B. hypogaea*, collected by William Burchell in August 1812, and described by him in 1824, shows the slender leaves and pale flower with tepals darkly pigmented along the midline that closely correspond to what Lewis called *B. flavida*. That plant must therefore assume the earlier name *B. hypogaea*, whereas plants with longer leaves and blue to violet flowers in which the lower tepals are marked with white, and which were associated with the name *B. hypogea* by Lewis (1959) and later authors (e.g. Sölch 1969; Goldblatt 1993), must be called *B. bainesii*. Confusingly, in the protologue of *B. hypogaea*, Burchell (1824) described the flower colour as blue (*caeruleis*), possibly an error or the result of basing the description on his pressed specimens in which the tepals have a dull mauve cast, as do all dry specimens of the species. This is a result of the purple pigmentation on the reverse of the tepals, masking the dull yellow colouring of the inside of the tepals. Our revised taxonomy corresponds to the treatment of the complex by Baker (1896) in *Flora capensis*.

The so-called stipitate ovary described by Lewis (1959) in *Babiana hypogaea* is misleading. Species of Iridaceae with an inflorescence (typically a spike) borne at or below ground level often have shortly stipitate lower flowers and we suggest that this is simply a developmental aberration of the inflorescence due to its position. This feature is associated with the underground inflorescence in other Iridaceae, including *Crocus* L., *Duthiastrum* M.P.deVos and *Romulea*, and even some other *Babiana* species with spikes borne at ground level (e.g. *B. cuneata* and *B. sambucina* (Jacq.) Ker Gawl.) and does not in itself mark the complex as sharing a synapomorphy other than the underground spike.

Babiana bainesii and *B. hypogaea* are morphologically similar in their underground spikes with long-tubed flowers arising below the ground, and in their narrow, linear leaves. The significant features of *Babiana*

hypogaea are the pale yellow to buff flowers with a tube 30–40 mm long, and the shorter, often sparsely hairy to almost smooth leaves, sometimes with inclined to prostrate blades. The blades are often visibly constricted and apparently flexible at the base, which suggests an inclined to prostrate orientation even when they appear upright in pressed specimens. In contrast, *B. bainesii* has larger flowers with a tube (40–)50–60(–70) mm long, blue-mauve to violet flowers with prominent white markings edged in darker blue on the lower lateral tepals, and densely hairy leaves, mostly 15–25 mm long. Misunderstanding the identity of the type collection, Lewis (1959: 112), united *B. bainesii* with *B. hypogaea* and described *B. flavida* for pale yellow- to buff-flowered plants largely of Bushmanland, that mostly flower in the winter and early spring. This species matches closely Burchell's type collection in its smaller flower size, colour and other details, as well as in its habitat and winter to spring flowering.

Babiana hypogaea occurs west and south of the range of *B. bainesii*, in the northwestern Great Karoo, Bushmanland, and adjacent southeastern Namibia. It mostly flowers in winter and early spring, June to September (rarely as late as December, according to the type of *B. flavida*), in contrast to February to April or May for *B. bainesii*. The flowering time and ranges of both species overlap to some extent in the Kimberley–Vryburg area of Northern Cape and North-West but there is no indication that they converge in floral morphology along the area of overlap. Flowering in *Babiana hypogaea* appears to be related to rainfall timing, normally coming into bloom in winter and early spring in response to autumn showers but blooming in summer when occasional good early summer rains fall across Bushmanland and the Upper Karoo.

While *Babiana hypogaea* and the plant described by Lewis (1959) as *B. flavida* are essentially identical, another species of Bushmanland with similar flowers, *B. falcata* G.J.Lewis was distinguished by its short leaves, 25–70 mm long and 1.5–3.0 mm wide, that are falcate, firm, strongly plicate, and somewhat pungent. Lewis contrasted the species with *B. flavida* (i.e. *B. hypogaea*), which she described in her key to the species as having leaves erect or decumbent but not firm or falcate. The range of specimens now available make the distinction untenable. Leaf shape ranges without any clear division from the short, falcate, and firm type in the west to the suberect, more prominently hairy type in the east. We therefore, include *B. falcata* in *B. hypogaea*. Some collections even show a range of leaf shapes from linear and erect, to sword-shaped, to falcate.

Babiana hypogaea *Burch.*, Travels 2: 415 (1824). *Antholyza hypogaea* (Burch.) Klatt in Abhandlungen der Naturforschenden Gesellschaft zu Halle 15: 345 (1882). Type: South Africa, [Northern Cape], Pellat Plains near Takun (or Litakun), 24 August 1812, *W.J. Burchell 2241* (K, lecto.!, here designated; B, P, iso.).

Babiana flavida G.J.Lewis: 117 (1959), syn. nov. Type: South Africa, [North-West], Warrenton, December 1922, *C.G. Adams 819* (BOL, holo.!).

Babiana falcata G.J.Lewis: 115 (1959), syn. nov. Type: South Africa, [Northern Cape], 20 miles east of Springbok, red sand flats, 8 September 1950, *W.F. Barker 6671* (NBG, holo.!).

Plants acaulescent, 50–80 mm high, often growing in tufts with leaves up to 150 mm long. *Stem* subterranean, simple or with short or vestigial lateral branches. *Leaves* linear to falcate or sword-shaped, often bent near base, sometimes inclined toward ground or evidently prostrate, 25–150 × 1.5–3.0 mm, slightly pleated, sparsely hairy to finely long-haired, somewhat pungent. *Spike* arising below ground level, with 1 or 2 flowers per branch, seemingly in a 2–6-flowered spike; bracts smooth, more or less membranous below, green in upper third where they reach above ground, 25–50 mm long, inner as long as or slightly exceeding outer and forked apically with attenuate tips. *Flowers* zygomorphic, greenish yellow to buff, flushed with pale brown or mauve outside, tepals darker in midline especially when dry, lower tepals with pale nectar guides edged with reddish arrow-shaped marks near base and with dark reddish streaks in throat, strongly scented; perianth tube emerging from below ground, cylindric, widening at throat, 30–40 mm long; tepals subequal, dorsal 35–42 mm long, lower tepals joined to upper laterals for up to 6 mm, forming a prominent lip, lower tepals 30–35 mm long. *Stamens* unilateral; filaments 15–18 mm long; anthers 8–11 mm long. *Ovary* smooth, shortly stipitate in lower flowers; style dividing close to anther apices. *Flowering time*: mainly June to September, occasionally December to May.

Distribution: flats on red sand plains in the Upper Karoo, Bushmanland, and southeastern Namibia.

Additional collections made since the publication of Lewis's monograph represent range extensions into southern Namibia where *B. hypogaea* in its current sense was previously known only from a collection near Graspoort. The new record from near Kimberley (*Leistner 2635*), identified by Lewis as *B. falcata* subsequent to the publication of her monograph of *Babiana*, is a particularly close match to the type collection of *B. hypogaea*.

Other material examined

NAMIBIA.—2716 (Witpütz): Farm Witpütz Sud, (–DA), 1983, *Lavranos 21225* (NBG); Spitskop, (–DC), 15 July 1986, *Van Berkel 556* (NBG). 2816 (Aus): Farm Kubub, (–CB), 9 Sept. 1973, *Giess 12858* (K, M, NBG). 2718 (Grünau): Farm Carolina, red sandy flats, (–AD), 17 May 1972, *Giess & Müller 12041* (K, M). 2818 (Warmbad): Farm Sperlingspütz, (–CA), sandy plains, 16 May 1963, *Giess, Volk & Bleissner 7009* (K, M, MO).

NORTHERN CAPE.—2724 (Taung) Andalusia, sandboden, (–DD), 9 July 1942, *Giess 298* (M). 2824 (Kimberley): 7 miles northeast of Kimberley, (–DB), 20 August 1961, *Leistner 2635* (K, M, PRE); 4 miles west of Kimberley, red sand, (–DB), 21 July 1963, *Leistner 3148* (K, M, PRE).

Babiana bainesii *Baker* in Journal of Botany 1876: 335 (1876). Type: South Africa, [Gauteng], 'Gold Fields', Witwatersrand, near Johannesburg, 1870, *J.T. Baines s.n.*, (K, lecto.!, here designated).

Babiana schlechteri Baker: 865 (1901), syn. nov. Type: South Africa, [Mpumalanga], Witbank, 22 December 1893, *R. Schlechter 4055* (Z, holo.).

Babiana hypogaea [*hypogea*] var. *longituba* G.J.Lewis: 115 (1959), syn. nov. Type: South Africa, [Limpopo], Mount Myorul, 29 March 1894, *R. Schlechter 4729* (BOL, holo.!; K, iso.!).

Babiana hypogaea [*hypogea*] var. *ensifolia* G.J.Lewis: 114 (1959), syn. nov. Type: South Africa, Eastern Cape, near Murraysburg, August 1879, *W. Tyson 312* (SAM, holo.!; K, SAM, iso.!).

See Lewis (1959) and Goldblatt (1993) for complete synonymy (under the name *B. hypogea*).

Plants mostly 150–250 mm high (leaves only), sometimes growing in tufts. *Stem* underground, often branched. *Leaves* linear to sword-shaped, pleated, much exceeding flowers, 15–25 × 3–10 mm, densely hairy, scabrid, or virtually smooth. *Semi-spike* compact, 2–8-flowered, borne below ground level, lateral flowers usually with short stalks; bracts membranous to papery with dry, rusty tips or dry and rusty throughout, sparsely hairy, mostly 35–60 mm long, inner slightly shorter than outer and forked at tips. *Flowers* zygomorphic, shades of blue to violet or mauve with tepals paler (rarely white) toward edges, lower lateral tepals with white markings often edged in dark blue, usually sweetly scented; perianth tube mostly 40–60(–70) mm long, cylindric with expanded throat; dorsal tepal 40–50 mm long, upper laterals joined to lower for ± 6 mm to form a lip, lower tepals 25–40 mm long. *Stamens* unilateral; filaments 10–15 mm long; anthers 8–10(–12) mm long. *Ovary* smooth, shortly stipitate in lower flowers; style usually dividing more or less opposite anther apices, branches ± 6 mm long. *Flowering time*: mainly in summer, February to April, occasionally in December or January; southern Karoo populations flower in August or September.

Distribution: stony or sandy slopes and flats in dry grassland and bush, across summer-rainfall southern Africa from Murraysburg and Carnarvon in the Upper Karoo to Zimbabwe and southern Zambia in the northeast, and to northern Namibia in the northwest.

The most widespread species of the genus, *Babiana bainesii* extends from the central Upper Karoo to southern Zambia (Lewis 1959; Goldblatt 1993), thus having a range greater than the rest of the genus. It grows in grassland on soils ranging from deep Kalahari sands to stony slopes and flats, and typically flowers from late summer until late autumn, the exact timing in dry areas probably depending on rainfall in areas of low annual rainfall. With their narrow, erect leaves, plants are difficult to see among the grass where they grow, but when in bloom can often be located by the strong, sweet scent of the bluish to violet flowers.

Lewis (1959) recognized two additional varieties of *B. hypogea*: var. *ensifolia* G.J.Lewis from the Upper Karoo, and var. *longituba* G.J.Lewis from the mountains of Limpopo. The latter was distinguished by its densely hairy leaves and bracts, and elongate perianth tube up to 70 mm long. The long tube in these plants is only the extreme of a range that includes many plants with a tube 55–65 mm long (the type of *B. bainesii* from the Witwatersrand has a tube nearly 60 mm long). Near Haenertsburg in Limpopo, close to the type locality of var. *longituba*, plants have a perianth tube 35–59 mm long (n = 15) (P.J.D. Winter pers. comm.). Information now available indicates that var. *longituba* does not merit taxonomic recognition and we reduce it to synonymy in *B. bainesii*.

Babiana hypogea var. *ensifolia* has comparatively short, broad leaves, 50–140 × 10–14 mm, unlike the narrow, sparsely to densely hairy, narrowly sword-shaped to linear leaves, mostly 150–250 × 3–10 mm, of typical *B. bainesii*. It approaches in general appearance the largely southern Cape species, *B. sambucina* but has the entirely subterranean inflorescence, short lateral branchlets, and rusty bracts of *B. bainesii*. These plants flower in early spring, August and September. Var. *ensifolia* is poorly documented and requires additional study before its status can be established. It may be recognized or not at the discretion of the reader but we hesitate to make the new combination in *B. bainesii* until more is learned about these plants from the central parts of the Upper Karoo.

Babiana schlechteri, described by J.G. Baker in 1901, and based on a collection from Witbank, east of Johannesburg, does not differ in any significant way from the type of *B. bainesii* from near Johannesburg.

3. The *Babiana stricta* complex

Lewis (1959) recognized five varieties in the southwestern Cape species, *Babiana stricta*, all with the inner bracts divided to the base and a densely hairy ovary, features present in many other species. Listed in the sequence presented by Lewis, the varieties and their significant taxonomic features are as follows:

1. var. *stricta*—leaves stiff, narrow, with short rough pubescence; stem suberect; flowers zygomporphic, blue; tepals subequal and spreading, lower three with white markings; anthers unilateral [incorrectly said by Lewis to be symmetrically arranged], blue, arrow-shaped with connective wider toward base; style mostly dividing opposite the anther bases.

2. var. *erectifolia*—similar to var. *stricta* but flowers white to cream-coloured, also with spreading tepals, lower with pale yellow markings; anthers unilateral, dark blue-black, with connective broader below.

3. var. *sulphurea*—similar to var. *stricta* but flowers yellow with unilateral dark blue anthers with connective broader toward the base;

4. var. *regia*—strikingly different from the above three varieties—leaves stiff, narrow, with short pubescence; stem spreading horizontally; flowers radially symmetric, blue with dark red centre; tepals cupped; anthers linear, dark brown, without visible connective; style short, dividing below bases of anthers.

5. var. *grandiflora*—leaves broad with soft pubescence; stem suberect; flowers subactinomorphic, blue-mauve; tepals spreading, perianth tube 22–32 mm long; anthers unilateral, dark blue, linear with narrow connective visible; style dividing opposite middle and apex of anthers.

We see no merit in this taxonomy, in which *Babiana stricta* has a wider circumscription than any other species of the genus and seems to comprise disparate elements. Var. *grandiflora*, which we have re-collected at its type locality north of Piketberg, evidently represents a distinct

species. Its broad, soft-textured leaves, and faintly scented flower with relatively long perianth tube, hollow to the base, suggests that it is more closely related to *B. disticha*, the type of the genus. Likewise, the features of var. *regia* are so distinctive that it too must represent a separate species, not obviously immediately related to *B. stricta*.

In contrast to these two examples, we see no reason to separate *Babiana stricta* var. *erectifolia* from var. *stricta*, and thus unite them. Lastly, plants assigned to var. *sulphurea* seem to us merely cream-coloured to pale yellow-flowered variants of *B. stricta* but we cannot identify the type of *Gladiolus sulphureus*, the basionym of var. *sulphurea*.

Babiana stricta *(Aiton) Ker Gawl.* in Curtis's Botanical Magazine 17: t. 621 (1803a). *B. stricta* var. *stricta* Lewis: 40 (1959). *Gladiolus strictus* Aiton, Hortus kewensis 1: 63 (1789). Type: South Africa, without precise locality, illustration in Curtis's Botanical Magazine 17: t. 621 (1803a) (neo., here designated).

Babiana stricta var. *erectifolia* (G.J.Lewis) G.J.Lewis: 43 (1959). *B. erectifolia* G.J.Lewis: 3 (1938), syn. nov. Type: South Africa, [Western Cape], Brand Vlei, near Worcester, Sept. 1932, *G.J. Lewis s.n.* (holo.!, *NBG2686/32* in BOL).

The complete synonymy of *Babiana stricta* is presented by Lewis (1959: 40) and is not repeated here. Note that we also include *B. stricta* var. *sulphurea* sensu G.J.Lewis (based on *Gladiolus sulphureus* Jacq.) in *B. stricta* but do not regard the type, an illustration in Jacquin's *Icones plantarum rariorum* (1793), as matching *B. stricta* and are in fact unable to recognize the plant illustrated.

As here circumscribed, *Babiana stricta* comprises plants with narrow, fairly stiff, roughly hairy leaves and a zygomorphic flower with unilateral stamens and anthers slightly sagittate with the connective expanded in the lower half. Lewis described the flower as actinomorphic or almost so, but we have seen no plants in the field that have such flowers, nor does the type illustration show an actinomorphic flower. The tepals are subequal in length but the dorsal is held somewhat apart from the others and the lower three bear contrasting markings, either white to cream-coloured, edged in a darker colour when the perianth is predominantly blue or pink, or yellow when the perianth is otherwise cream-coloured. The perianth tube is 12–18 mm long and almost filiform, the walls tightly enveloping the enclosed style so that nectar is forced into the slightly wider distal portion of the tube. The stamens are erect, but clearly unilateral, with anthers facing the lower tepals and the style is held against the back of the anthers. Plants with symmetrically disposed stamens as illustrated by Lewis evidently exist but are not usual.

Babiana regia *(G.J.Lewis) Goldblatt & J.C.Manning*, comb. et stat. nov.

Babiana stricta var. *regia* G.J.Lewis in *Journal of South African Botany*, Suppl. 3: 45 (1959). Type: South Africa, [Western Cape], Bottelary road near Stellenbosch, September 1950, *G.J. Lewis & D.K. Davis 2216* (SAM, holo.!, iso.!).

As outlined above, *Babiana regia* has strikingly marked tepals, deep blue with a red base. Although known since at least the early 19th century, when it was collected by J.F. Drège (Lewis 1959), it was long confused with *B. rubrocyanea* (Jacq.) Ker Gawl., which has a similarly coloured flower but unilateral stamens and unusual broad style branches. Lewis realized that these plants were different species and recognized *B. stricta* var. *regia* for plants with symmetrically disposed stamens and short, slender style branches. However, it sits uncomfortably in *B. stricta* because the flower is radially symmetric, the tepals nearly equal and cupped even when fully open, and the brown anthers are linear, lacking the expanded connective of *B. stricta*. Vegetatively the two also differ, for *B. regia* has an arching stem nearly horizontal above, whereas the stem of *B. stricta* is suberect.

Babiana regia is restricted to the Western Cape forelands between Malmesbury and Stellenbosch and favours sandy soils. As far as we are aware, it persists today at just one site, adjacent to the Farm Joostenbergkloof, on the northwest foothills of the Joostenberg, between Durbanville and Paarl. It co-occurs with other rare species, notably *Geissorhiza purpurascens* and *Hesperantha spicata* subsp. *fistulosa* in a small area heavily infested with Australian *Acacia* species. We suspect that all three species will soon be extinct unless some action can be taken to conserve them.

Babiana longiflora *Goldblatt & J.C.Manning*, sp. nov.

TYPE.—Western Cape, 3218 (Clanwilliam): ± 28 km north of Piketberg, (–CC), 31 August 2002, *Goldblatt & Porter 12129* (NBG, holo.; MO, iso.).

Babiana stricta var. *grandiflora* G.J.Lewis: 46 (1959). Type: South Africa, [Western Cape], 18 miles north of Piketberg, 28 July 1950, *G.J. Lewis 2197* (SAM, holo.!, iso.!).

Plantae usitate 150–200 mm altae, caule erecto saepe ramoso, foliis oblongis vel lanceolatis plicatis sparse villosis, spica 6- ad 10-flora inclinata, bracteis viridis ad apicem brunneis pubescentibus 16–20 mm longis, interiore parum breviore, exteriore usque ad basem diviso, floribus zygomorphis lilacinis usque atromalvinis tepalis inferioribus albo-notatis, tubo perianthii 25–30 mm longo cylindrico ad apicem expanso, tepalis subaequalibus 20–24 mm longis adscendentibus, filamentis unilateralibus leviter arcuatis ± 15 mm longis, antheris ± 6 mm longis purpureis, ovario dense piloso.

Plants mostly 150–200 mm high; stem erect, often branched, velvety hairy. *Leaves* lanceolate to oblong, mostly 9–12 mm wide, slightly pleated, fairly soft-textured, sparsely hairy. *Spike* slightly inclined, 6–10-flowered; outer bracts mostly 16–20 mm long, ± obtuse, green with dry, rusty tips, densely hairy; inner bracts slightly shorter than outer, divided to base. *Flowers* zygomorphic, lilac to deep mauve, lower tepals each with spear-shaped dark basal mark, white in centre, or rarely with narrow median white stripe, with faint rose scent; perianth tube slender, straight, widening in upper third, 25–30 mm long; tepals subequal, ascending, 20–24 mm long, dorsal about 1–3 mm longer than lower, upper laterals joined to lower for ± 2 mm. *Stamens* unilateral, slightly arched, mauve, ± 15 mm long; anthers dark pur-

ple, ± 6 mm long, with narrow connective visible. *Ovary* densely hairy; style dividing between middle and apex of anthers, branches 3–4 mm long, expanded and densely ciliate at tips, exceeding anther apices. *Flowering time*: mainly mid August to mid September.

Distribution: sandstone outcrops in transitional fynbos–renosterveld. *B. longifllora* is known only from rocky flats at the foot of the Piketberg and Porterville Mountains of Western Cape.

Diagnosis and relationships: Babiana longiflora has been rarely collected, mostly at the same locality at the foot of the Piketberg or close by, and we consider its affinities to be have been misunderstood. It seems to us not to be closely allied to *B. stricta* nor to any of its four varieties that were recognized by Lewis. In particular, it has fairly broad leaves that are only slightly plicate and with soft pubescence, unlike the fairly rigid, narrow and deeply pleated, ± erect and shortly hairy leaves of *B. stricta*. Plants have long-tubed, pale purple flowers with subequal, ascending tepals, and long, rather blunt outer bracts. We suspect that it may be most closely related to *B. fragrans*, which has comparable, soft-textured, fairly broad leaves with long hairs, and large floral bracts rusty only at the tips. *B. longiflora* can be recognized among the species of section *Babiana* by the short floral bracts, the inner divided to the base, a perianth tube 25–30 mm long (relatively long for the section) and dark violet stamens reaching to about the middle of the dorsal tepal. Other long-tubed species with inner bracts divided to the base, *B. ecklonii* and *B. latifolia*, are unlike *B. longiflora* in their dark violet perianth, the tube 30–47 mm long, curved at the apex, and the lower tepals joined to one another for at least 4 mm (5–7 mm in *B. ecklonii*), thus forming a strongly bilabiate perianth with horizontally extended lower tepals and the dorsal erect. Similar in vegetative features, *B. fragrans* has strongly scented flowers with a perianth tube 18–20 mm long, broader, usually pale blue (rarely pale yellow) tepals, and the style dividing opposite the lower third of the anthers.

We include plants from the foot of the Porterville Mountains at Twenty Four Rivers, some 40 km east of the type locality here. These plants have dark blue flowers but otherwise closely resemble other specimens of *Babiana longiflora*, notably in their straight perianth tube ± 30 mm long, hollow to the base and containing nectar.

Other material examined

WESTERN CAPE.—3218 (Clanwilliam): 18 miles north of Piketberg, (–CC), 28 July 1950, *Barker 6371* (NBG). 3318 (Cape Town): Twenty Four Rivers, sandy alluvium, (–BB), 1 September 1992, *Goldblatt & Manning 9363* (MO, NBG).

The new combination, *Babiana fragrans* for the type of the genus, *B. disticha*

In Lewis's (1959) account of what she called *Babiana plicata*, the type species of *Babiana*, she cited as synonyms both *B. disticha* Ker Gawl. and *Gladiolus fragrans* Jacq. Bullock (1961) in his review of Lewis's monograph of the genus pointed out that *B. plicata* is a superfluous name for *Gladiolus fragrans* and suggested that the correct name for the plant was *B. disticha*. The earlier name *G. fragrans* was not considered by either Lewis or Bullock as available for transfer to *Babiana* because of the homonym, *B. fragrans* Eckl. (1827), a synonym of *B. nana* (Andrews) Spreng. *Babiana fragrans* Eckl., however, is a *nomen nudum* and thus is invalid and cannot be taken into consideration in questions of priority of species epithets. The name for the type species of *Babiana* thus becomes *B. fragrans*. We have examined the type of *G. fragrans*, an illustration in the *Hortus schoenbrunnensis*, and concur with Lewis that this species and *B. disticha* are synonyms.

Babiana fragrans *(Jacq.) Goldblatt & J.C.Manning*, comb. nov.

Gladiolus fragrans Jacq., Plantarum rariorum Horti Caesarei Schoenbrunnensis descriptiones et icones 1: t. 14 (1797). Type: South Africa, [Western Cape], without precise locality or collector, cultivated in Vienna, illustration in Jacq., Hortus Schoenbrunnensis t. 14 (1797).

Babiana plicata Ker Gawl.: t. 576 (1802), nom. illeg. superfl. pro *Gladiolus fragrans* Jacq. (1797). Type: illustration in Curtis's Botanical Magazine 16: t. 576 (1802), South Africa, [Western Cape], without locality.

Babiana disticha Ker Gawl.: t. 626 (1803b). Type: South Africa, [Western Cape], without locality, illustration in Curtis's Botanical Magazine 17: t. 626 (1803b).

See Lewis (1959: 53) for additional synonyms of the species.

A relatively unspecialized species, *Babiana fragrans* is recognized by the subequal, spreading tepals with the dorsal only slightly longer than the lower, and small pale markings edged in darker blue or purple on the lower tepals. The perianth tube is about as long as or slightly longer than the dorsal tepal and the erect, usually branched stem bears spikes of up to 10 flowers. The suberect stamens are unilateral and the anthers parallel and contiguous, and usually dark blue. The soft-textured, hairy leaves are weakly pleated and often oblong rather than the usual sword shape of most species of the genus. Both Ker Gawler (1802), when describing the synonym *B. plicata*, and Lewis (1959) remarked on the strong, pleasing fragrance, likened by Lewis to that of a carnation. Somewhat variable across its range, *B. fragrans* from the interior southwestern Cape has a more strongly bilabiate flower with the dorsal tepal up to 5 mm longer than the lower and the upper lateral tepals are united for a short distance with the lower, thus forming a more pronounced lip than is evident in plants from the Cape Peninsula and nearby.

The confused pre-1800 taxonomic history of *Babiana plicata* was outlined in detail by Lewis (1959) and is not repeated here.

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