OLD WORLD *GESNERIACEAE*: VI. SIX MISCELLANEOUS NOTES

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I. *Lenbrassia* G.W. Gillett, which has a zygomorphic corolla and four didynamous stamens with anthers joined, is reduced to *Fieldia* A. Cunn., which has an actinomorphic corolla and four equal stamens with anthers free; the new combination, *F. australiana*, is made. II. *Boea wallichii* R.Br. is distinguished from *B. hygrometrica* (Bunge) R.Br. with which it has been confused. III. *Cyrtandra oblongifolia* sensu Kraenzlin is described as a new species, *C. kalimantana*, allied to *C. oblongifolia* (Blume) C.B.Cl. but distinguished by its hairy leaves, fruits, calyx and corolla; the sterile specimens from Borneo quoted under *Cyrtandra rufa* Bakh.f. are tentatively referred to *C. kalimantana*. IV. A specimen of *Cyrtandra* from the Natuna Islands is identified with *C. suffruticosa* Ridley from Pulau Tioman and the Malay Peninsula; in contrast two other *Gesneriaceae* from these islands are of Bornean affinity. V. *Didymocarpus pteronema* is a new species from Tenasserim province of Burma (= Myanmar): it is anomalous in its campanulate corolla and filaments with unilateral membranous wing. VI. *Streptocarpus huamboensis* is a new species from Angola allied to *S. rhodesianus* S. Moore.

Keywords. Angola, Australia, Borneo, Burma, flora, India, Indonesia, new combinations, new species, Thailand.

CONTENTS

I. THE REDUCTION OF *LENBRASSIA* TO *FIELDIA*

The late G.W. Gillett, in his studies of Pacific *Gesneriaceae*, reduced the monotypic genera *Protocyrtandra* Hosokawa (Gillett in *J. Arnold Arbor.* 51: 241–246, 1970) and *Cyrtandroidea* F. Jones (Gillett in *Univ. Calif. Publ. Bot.* 66: 4, 55, 1973) to synonymy under the very large genus *Cyrtandra* J.R. & G. Forst., pointing out that in each case their distinguishing characters were merely instances of the diandrous zygomorphic flower, usual in *Cyrtandra*, reverting to a more or less actinomorphic form with regular corolla and at least 4 fertile stamens, the anthers of which are free from one another.

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Shortly afterwards Gillett turned his attention to the one Australian species of the genus *Coronanthera*, a genus then known only from New Caledonia. C.T. White had already discovered that this plant had a fleshy fruit, whereas other species had dry dehiscent capsules. Gillett was able to collect the plant himself in N Queensland, confirmed White's observation on the fruit and described a new genus *Lenbrassia* (Gillett in *J. Arnold Arbor.* 55: 431–434, fig. 1, 1974).

Gillett correctly compared *Lenbrassia* with another monotypic genus of the family, *Fieldia* A. Cunn. from more temperate SE Australia. The main differences on which Gillett relied for the generic status of *Lenbrassia* were its zygomorphic, bilabiate, corolla (tubular, actinomorphic and pendulous in *Fieldia*) and the androecuim of four stamens with united anthers (anthers free in *Fieldia*). There are also vegetative differences: *Lenbrassia* is a shrub or small tree, *Fieldia* a sprawling or climbing shrublet; the leaves of *Lenbrassia* are larger, but the fruits of the two genera are of the same type: fleshy berries with thin skins through which the seeds are visible, the fleshiness being largely in the placenta. In relying on the floral characters Gillett seems to have forgotten that when reducing *Protocyrtandra* and *Cyrtandroidea* to *Cyrtandra* he was actually downgrading equivalent features.

The situation has already been mentioned in print (Burtt in Ingram & Hudson, *Shape & Form in Plants*, 146, 1992) but the formal transfer of the species has not been made. Living seedlings of *Lenbrassia* were brought back from Sydney to Edinburgh recently by Dr Q. Cronk and it was possible to confirm that the seedling has equal cotyledons, as is to be expected in *Coronantheroideae*.

Fieldia australiana (C.T. White) B.L. Burtt, **comb. nov.**

Syn.: *Coronanthera australiana* C.T. White in Proc. Roy. Soc. Queensland 47(5):73 (1936)

Lenbrassia australiana (C.T. White) G.W. Gillett in J. Arn. Arb. 55: 433 (1974).

Type: N Queensland, Mt Demi, *Brass* 2087 (holo. BRI, iso. K).

II. ON *BOEA WALLICHII* R. BR.

Boea wallichii R.Br., Cyrtandreae 120 (1839) & in Bennett, Pl. Jav. Rariores 120 (1840); DC., Prodr. 9: 271 (1845); C.B.Cl. in A. & C. DC., Mon. Phan. 5: 147 (1883).

Syn.: *Didymocarpus helicteroides* Wall., Numerical List no. 789 (1829) nom. nud.

[*Boea hygrometrica* auctt.; Fischer in Rec. Bot. Surv. India 12(2): 117 (1938); Barnett in Fl. Siam. Enum. 3(3): 231 (1962) – non (Bunge) R.Br.]

Type: Upper Burma (=Myanmar), Taong Doon, *Wallich* 789 (BM holo.; E, K iso).

Specimens examined. INDIA. Mizoram, Lushai Hills, Champhai, 5000ft, 1 vii 1926, *Parry* 14 (K); Lushai Hills, *Wenger* (water-colour sketch only, E).

BURMA (=MYANMAR). N. Shan States, Gokteik, 2000ft, 7 x 1911, *Lace* 5451 (E, K).

THAILAND. Various localities in a band from c.12°30′N to 18°30′N and between 98°30′ and 100°E. Specimens are *Kerr* 2026, 2178, 2178A, 12948, 13506: *Larsen et al.* 834, 34018; *Smitinand* 11360; *Geesink, Phanichapol & Santisuk* 5516, 5518.

This is a difficult species. The type specimen is in fruit only, as is most of the other material cited. It is by no means impossible that more than one species is involved; however, the rather definite pattern of distribution in Thailand, where much of the variation is found, suggests otherwise. The variation is perhaps ecological rather than geographical. The material available is too poor for critical study. The important point to be established is that none of the specimens cited belongs to *Boea hygrometrica*. That Chinese species has very distinctive rosettes, whose leaves maintain their opposite and decussate phyllotaxis. This is not normally a viable system in rosette plants because they usually produce numerous leaves and alternate pairs would quickly overshadow one another. In *Boea hygrometrica*, however, the leaves, which are very broadly spatulate in shape, are apparently produced very slowly; an old leaf that is obviously past its functional prime will only just have begun to be overlapped at the base by the one, two internodes above, that will succeed it in that position. *Boea wallichii* does not show this rigidly decussate pattern; its leaves, narrower and with a longer attenuate base than in *B. hygrometrica*, are more irregularly disposed. The possibility that there are floral differences between these two species must remain in abeyance until good flowering material of *B. wallichii* becomes available for study. *B. hygrometrica* has been in cultivation in Britain intermittently and has been illustrated (Hook. fil. in *Curtis's Bot. Mag.* 105: tab. 6468, 1879): above the base the corolla tube widens abruptly into a broad ventricose region and the anthers are included. I have not been able to confirm these details on the poorly pressed flowers of *B. wallichii* that I have seen.

III. A NEW NAME FOR *CYRTANDRA OBLONGIFOLIA* SENSU KRAENZLIN

F. Kraenzlin (in *Mitt. Inst. Bot. Hamburg* 7: 97, 1927) wrote the account of *Gesneriaceae* for the series of papers, edited by E. Irmscher, dealing with the plants collected by Prof. J. (Hans)Winkler on his expedition to Dutch Borneo in 1924–1925. One entry in this paper deals with *Cyrtandra oblongifolia* (Bl.) C.B. Clarke. Kraenzlin's citation of Clarke's work is 'C.B. Clarke, Monogr. 206, t.24 (icon omnino erronea)': he then gave a full latin description under the heading *Characteres reformatae*. Kraenzlin gave no indication of ever having considered the possibility that he had misidentified the specimen from Winkler's collection (no. 242) about which he was writing. *Cyrtandra oblongifolia*, based on *Whitia oblongifolia* Blume, is a well-known species in Java and is common in Sarawak; there are a few records from Sumatra and in Borneo it reaches one or two localities in Sabah. The plant that Kraenzlin named as *C. oblongifolia* (*Winkler* 242) is distinctly different and is easily recognized by its leaves, flower buds and fruits being densely covered with an indumentum of short hairs. True *C. oblongifolia* is not entirely glabrous but the hairs on the young leaves and bracts are long and silky, while the corolla is glabrous. Kraenzlin included with *Winkler* 242 a specimen collected by *Hubert Winkler*

(no. 2692) in the Samarinda area. This I have not seen, but nor do I know of any records of true *C. oblongifolia* from that area.

Plants agreeing with *Winkler* 242 have been collected recently in the same area (*Church et al.* 1253, 2850, *Kessler* 1502 cited below). I was at first inclined to accept these as a hairy form of *C. oblongifolia*, but the fact that the hairs on the young parts of true *oblongifolia* are of a different nature, and also that those on *Winkler* 242 and the other specimens extend to the outside of the corolla and to the fruit weighed against that view. The plants are therefore recognized as an independent species.

Cyrtandra kalimantana B.L. Burtt **species nova**, *C. oblongifoliae* (Bl.) C.B.Cl. affinis et adhuc cum illa confusa sed ramulis, foliis, floribus, fructibus breviter pubescentibus (nec foliis primum longe sericeo-pilosis demum glabris, floribus et fructibus glabris) facile distinguitur.

Syn.: [*Cyrtandra oblongifolia* auct.: Kraenzlin in Mitt. Inst. Bot. Hamburg 7: 97 (1927) cum descr. lat., non (Bl.) C.B. Clarke]

Type: Indonesian Borneo, W Kalimantan, am Unterlauf des Serawei, um 80m, epiphytisch, 20 xi 1924, *Hans Winkler* 242 (holo. HBG, iso. E).

Shrub to 0.5m high (*Church et al.* 1253), but usually epiphytic with pendulous branches which are quadrangular when young with a dense velvety indumentum of short, spreading brown hairs but soon becoming glabrous; mature internodes 6–8cm long. *Leaves* opposite, those of a pair unequal, but both usually distinctly laminate, very variable in size; the larger elliptic-oblong sometimes elliptic, 12–25 × 3.8–5cm, acuminate at the apex, abruptly or gradually narrowed at the base and these unequal-sided, shortly appressed pubescent above with hairs denser and slightly longer on the raised midrib, pilose-pubescent below especially on the veins; lateral veins 7–10, slightly raised below; petiole 10–20mm, densely velvety-pubescent with brown hairs; the smaller leaves also very variable, some rather more than half the size of the larger one, others barely quarter as long. *Flowers* in small axillary cymes enclosed in two ovate-acuminate bracts c.8 × 20mm. *Calyx* segments triangular, acute, barely 2mm long. *Corolla* funnel-shaped from a very narrow base, strongly dilated towards the mouth, sparingly pilose at the base, very thin, white 2.5–2.8cm long, 2cm in diameter when open; lobes 10mm long, c.8mm wide. *Stamens* arising in the upper part of the tube; anthers large, 2.5mm long, strongly coherent; disc very short; ovary and style as well as the fruit more or less curved; style brown pilose. *Fruit* (not yet fully mature) 3.5cm long shortly brown hairy.

The floral details given above are taken from Kraenzlin's description as I have no additional flowering materials for examination. Kraenzlin's description of the fruit as glabrous can only have resulted from a quick, naked-eye inspection. It retains the short, velvety, brown indumentum of the young ovary, but the fruit, as it grows develops a surface with low rounded tubercles and these to some extent hide the short brown hairs, at least on the herbarium specimen.

Additional material. W. KALIMANTAN, Serawei, 3km SW of Nanga Jelundung, 0°29′S, 112°32′E, 31 x 1995, *Church et al.* 2850 (E).

C. KALIMANTAN, Sintang, HPH km. 84–87, north of camp along Sungai Posang, 0°49′S, 112°3′E, 110m, 30 iv 1994, *Church et al.* 1253 (E); PT Meranti Mustika logging area, 1°07′S 112°10′E, 130m, 26 x 1996, *Kessler et al.* PK 1502 (E).

The specimens collected by Church are duplicates kindly sent from the Harvard University Herbaria for determination. The same source has provided other specimens from Kalimantan which have proved referable to some of Kraenzlin's little known species. Bakhuizen (in *Blumea* 6: 398. 1959) referred a specimen collected by Korthals in Borneo, without locality, to *Cyrtandra rufa* Bakh.f. The specimens (two sheets at L) are sterile but I think they are more likely to belong to *C. kalimantana.* I certainly do not accept them as valid evidence that *C. rufa* occurs in Borneo.

IV. *CYRTANDRA SUFFRUTICOSA* ON THE NATUNA ISLANDS

Although van Steenis gave a general account of his visit to the Anamba and Natuna Islands, his collections as a whole were never critically determined. One *Cyrtandra* was mentioned (*Bull. Jard. Bot. Buit. sér.* 3, 12: 174, 1932); he had collected this at 200m on Mt Ranai on Bunguran (Great Natuna), growing on rocks in primary forest. Now, 70 years after its collection, it is identified as *Cyrtandra suffruticosa* Ridl. This species was described from a specimen collected by Ridley on Pulau Tioman, an island off the east coast of the Malay Peninsula about 500km WSW of Natuna, but the species is now also known from Pahang, Perak and Trengganu.

At first I had supposed that the Natuna plant was undescribed as Ridley's description of *C. suffruticosa* seemed to present two barriers to its identification with that species. First, *C. suffruticosa* was said to have linear calyx lobes (in the Natuna plant they are shortly triangular) and the corolla glabrous outside, a point which Ridley emphasised rather strongly (the Natuna plant has short subpapillose hairs in the upper part, though glabrous in the lower part). Having no flowering material for comparison in Edinburgh, I asked Professor A. Weber (Vienna University) if he could check these two features for me. Fortunately he had collected a flowering specimen from Sekayu in Trengganu and was able to report that the calyx lobes were triangular and the corolla bore short hairs in the upper part only. Ridley's mistake in regard to the indumentum on the corolla is easily explained: in 1893, when he described *C. suffruticosa*, Ridley would probably have examined his specimen under a ×8 lens: the hairs are small and confined to the upper part of the corolla and could easily have been missed; Ridley then drew special attention to this feature because most species of *Cyrtandra* on the Malay Peninsula have corollas that are very densely hairy all over the outside. The mistake about the calyx lobes must have been because Ridley saw only the tips of the lobes, the broad triangular base merging into the very short tube: he gave no measurements.

Cyrtandra suffruticosa belongs to sect. *Whitia* (Blume) C.B. Clarke which is a west Malesian group of about ten species found in the Malay Peninsula, Sumatra, Java and Borneo, with one borderline species (*C. angularis* Elmer) being found in NE Sabah and SE Philippines. Van Steenis could only look at the phytogeography of the Natuna Islands in respect of the species he was able to identify with ease. This did not include *Gesneriaceae*. Two other species of the family have been collected there in addition to *Cyrtandra suffruticosa*: these are *Ridleyandra natunae* B.L. Burtt and *R.ornata* (C.B.Cl.) B.L. Burtt. Both belong to *Ridleyandra* sect. *Stilpnothrix*, previously placed in *Didissandra,* the section being otherwise endemic to Borneo (see Weber & Burtt in *Beitr. Biol. Pflanzen* 70: 166–167, 264–271, 1998). Phytogeographically the *Gesneriaceae* are therefore divided in any attempt to relate the Natuna Islands more closely either to the Malay Peninsula or to Borneo. But that may be the wrong way to look at the problem: in fact it may be making a problem where none exists. The better interpretation of these distributions is that they emphasise that both groups are simply part of the Sundaland flora.

V. A NEW, AND ANOMALOUS, SPECIES OF *DIDYMOCARPUS* FROM BURMA (=MYANMAR)

Didymocarpus pteronema B.L. Burtt, **species nova,** anomala nulli arcte affinis; ob corollam campanulatam et filamenta curvata in uno latere membranifera et in medio incrassata et glandulosa recognoscenda.

Type. Burma (=Myanmar), Tenasserim, Tavoy distr., hills west of Paungdaw Power Station, c.14°N98°30′E, in earthy damp patches near streamside in mixed forest, 1200ft, viii 1961, *J. Keenan, U Tun Aung & R.H. Rule* 930 (holo. E).

Dwarf herb. *Stem* 40–100mm long, c.3–5mm in diam., simple, erect, lower part sometimes rooting, clad in patent acute hairs up to 2–3mm long, leafy throughout. *Leaves* up to 5 pairs, opposite, connate, blade up to 100–200 × 65–100mm, broadly elliptic, apex acute, base cuneate, tapering into petiole, occasionally oblique, margins serrate or doubly serrate, acute hairs up to 2–3mm long all over upper surface, sparser below and nearly confined to veins and veinlets; petiole 15–60mm long, uppermost pair of leaves ± sessile, patent hairs up to 2–5mm long. *Flowers* many in lax cymes c.120–180mm long including the peduncle. *Peduncles* 45–110mm long, 1 or 2 from each leaf axil, glabrous or occasionally with a very few long hairs. *Bracts* paired, lowermost c.5–10 × 2.5–4mm, more or less leaflike, soon deciduous, other bracts much smaller, lanceolate, glabrous. *Pedicels* up to 6–10mm long, glabrous. *Calyx* glabrous, purplish, tube very short, c.0.2mm, lobes 5, subequal, c.1.6 × 1.1mm, ovate, acute, tipped with a large sessile gland. *Corolla* glabrous inside and out, varying in colour from 'pink to rich blue purple', campanulate, c.7mm long, tube c.2mm, posticous lip c.3 × 5.5mm, lobes c.3 × 3.2mm, broadly ovate, apex rounded, anticous lip c.5 × 10mm, lobes c.4 × 2.8mm, oblong, apex rounded. *Stamens* 2,

inserted at base of corolla tube, filaments c.4.5mm long, twisted at base, much expanded about the middle, thickened on functionally inner face, domed, thickly clad in relatively large reddish glands c.0.1mm long, outer part thin-textured, glabrous; anthers c.2mm long, held vertically, cohering at their tips, dehiscing down inner face; staminodes conspicuous, all inserted at base of tube, c.1mm long. *Nectary* annular, c.0.25mm long, rim crenulate. *Ovary* c.2 × 0.8mm, glabrous. *Style* (including stigma) c.4.2mm long elongating to c.6mm, glabrous. *Stigma* subcapitate, minutely papillose, scarcely broader than style. *Capsules* c.9–13 × 1.2–1.8mm, splitting initially down both sutures, later each half splitting into two. *Seeds* c.0.2 × 0.15mm fusiform, testa reticulate, red-brown.

Additional material. BURMA (=MYANMAR), Tenasserim, Tavoy distr., hills immediately SW of Paungdaw Power Station, 1000ft, viii 1961, *J. Keenan, U Tun Aung & R.H. Rule* 781 (E); hills NE of Paungdaw Village, 800ft, 24 viii 1961, *Keenan, Tun Aung & Rule* 1287 (E).

A large genus will almost always contain a few anomalous species, and this still applies to *Didymocarpus*, despite the recent drastic restriction of its limits (Weber & Burtt in *Beitr. Biol. Pflanzen* 70: 293. 1998). While most species of *Didymocarpus* sens. strict. belong to sect. *Didymocarpus* and a few (perhaps five) to the Malesian sect. *Elati* Ridley, there are several awkward species that stand individually apart. One such species is *D. aureoglandulosus* C.B.Cl. (see Hilliard & Burtt in *Edinb. J. Bot.* 52: 215, 1995), another is *D. cordatus* C.B.Cl. from the Malay Peninsula and Sumatra. Others are *D. barbinervius* C.B.Cl., *D. platycalyx* C.B.Cl., *D. rufipes* C.B.Cl. and *D. elatior* Prain. *D. pteronema*, described here, is an addition to these peripheral species. With the exception of *D. cordatus*, they are from S Burma and Thailand – they all grow near the southern fringe of *Didymocarpus* sens. strict. Only *D. aureoglandulosus* and *D. cordatus* are reasonably well known and their retention in *Didymocarpus* is justified. The rest are represented in herbaria only by their type specimens, and these do not adequately show the important characters of habit (duration of flowering shoots), flowers and fruits to permit certainty about their classification. *D. barbinervius* apparently has a perennial rosette, without showing any resemblance to the aberrant group in S China that also has perennial rosettes; these Chinese plants are discussed elsewhere in a paper on *Calcareoboea* (Burtt in press). Perennial rosettes are a growth pattern foreign to *Didymocarpus* sens. strict.

Complete plants are present on the herbarium specimens of *D. pteronema* and are unbranched dwarf herbs with inflorescences arising from the upper leaf axils; there are scars of 2–3 pairs of leaves lower down, at least in some plants, and the leaves are too broad and flimsy to suggest that they are long-lived. However it is not possible, partly because of insect damage, to see if there is still a terminal bud that is likely to grow on. The collector's notes imply that the plants, which grew in small colonies, were all of much the same size. There is no sign of a regenerative shoot on any of the specimens, as would be expected in a typical *Didymocarpus*, nor is there an indication, such as the base of an old dead stem, that any of the flowering plants had originated in that way. The precise growth pattern of *D. pteronema* therefore

remains to be discovered. In the meantime it is best placed as an anomalous species of *Didymocarpus* of which it has the characteristic dark-coloured corolla, smooth entire and probably red bracts and loculicidal fruits.

VI. A NEW SPECIES OF *STREPTOCARPUS* FROM ANGOLA

Streptocarpus huamboensis Hilliard & Burtt **sp. nov,** a *S. rhodesiano* S. Moore habitu unifoliato (nec rosulato), floribus majoribus, tubo c.10mm longo (nec 8mm), labio inferiore 9mm longo (nec 6mm), capsulis crassioribus c.2.5mm diam. (nec 1.5mm) pilis patentibus glandulosis (nec pilis acutis ascendentibus) indutis differt.
Type: Angola, Huambo distr., Mt Moco, alt. 2335m, 18 xii 1973, *Huntley, Roberts & Ward* 48 (holo. E).

Monocarpic herb. *Leaf* 1, c.100 × 80mm, base cordate, margins entire, upper surface pilose, hairs coarse, acute, to 5mm long, shorter and less dense on lower surface. *Inflorescences* 2–3-flowered, several in succession from base of midrib. *Peduncles* c.45mm long, glandular-pubescent, scattered patent acute hairs to c.2.5mm long as well; pedicels c.15mm long, glandular-pubescent, hairs to 0.5mm long, very occasional acute ones to c.2mm long. *Bracts* elliptic, c.1.3 × 0.5mm, glandular. *Calyx* divided almost to base into 5 narrowly triangular subacute lobes c.4.5 × 0.8mm, densely glandular-pubescent outside together with scattered acute hairs to c.1.4mm long. *Corolla* tube c.11 × 4mm, cylindric, outside sparsely glandular-pubescent, hairs to 0.5mm long, in dried state dorsal surface dark violet, ventral much paler with dark violet blotches, 2 bands of coarse clavate hairs up to 1mm long on floor of tube, becoming cylindric on palate, elsewhere inside tube delicate subacute hairs to c.0.8mm, a short broad median band of dark purple globular glands at base of anticous lobe, similar band at base of two lateral lobes but inside tube; posticous lobes 5 × 4mm, broadly ovate, anticous lip 9 × 15mm, lobes 6 × 6mm, suborbicular, 'very pale mauve'. *Stamens* 2, filaments inserted 2mm above base of corolla tube, c.4mm long, cylindric, curved, subglabrous; anthers cohering face to face, 2mm across the strongly divergent thecae; staminodes 2, c.1.25mm long. *Ovary* c.3 × 1mm, densely glandular puberulous, nectary annular; style c.6mm long, glandular-puberulous near base, glabrous upwards; stigma capitate with short horizontal cleft. *Capsules* c.10 × 2.5mm, densely glandular-puberulous. *Seeds* not seen.

Streptocarpus huamboensis is known only from the type collection, which was 'growing in moist shallow soil on rock face of small east-facing cliff above main forest patch; occasional; flower very pale mauve.'

The new species is compared in the diagnosis with the well-known *S. rhodesianus* S. Moore, which differs in having, amongst other characters, acute upward pointing (not gland-tipped) hairs on the ovary. However, there is a variety of *S. rhodesianus* that is distinguished especially by having a very much denser indumentum than the type. This is var. *perlanatus* Duvigneaud, and it proves to have glandular hairs on the ovary, like *S. huamboensis*, and may indeed have flowers of a similar size – it is

however too ill-known to be certain. Its very dense indumentum and habit prevent any confusion. Furthermore the purple globular glands found at the base of the lobes of the lower lip in *S. huamboensis* could not be detected in any form of *S. rhodesianus*.

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