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A taxonomic revision of *Stenoglottis* (Orchideae, Orchidoideae, Orchidaceae)

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Abstract

Based on a published morphological and phylogenetic analysis, species delimitation in *Stenoglottis* is here revised, and five species (six taxa) are now recognized: *S. fimbriata* (with two varieties), *S. longifolia*, *S. inandensis*, *S. woodii*, and *S. macloughlinii*. *Stenoglottis fimbriata* subsp. *saxicola* and *S. zambesiaca* are synonymised here with *S. fimbriata*, *S. modesta* is reduced in rank to *S. fimbriata* var. *modesta* and *S. molweniensis* is synonymised with *S. longifolia*. The three spurred species, *S. inandensis*, *S. woodii* and *S. macloughlinii*, are retained. We include revised descriptions, diagnoses and a morphological key, in which characteristics of the floral spurs, labella, leaves, bracts, and auricles contribute most clearly to distinguishing the taxa. Distributions maps and photos showing important diagnostic characters and morphological variation are also presented.

Introduction

Stenoglottis Lindley (1837: 209) is a small genus of orchids endemic to continental Africa, with a distribution extending from its centre of diversity in the summer rainfall regions of eastern South Africa to the southern highlands of Tanzania. The plants occur most commonly in forests or along forest margins, usually as lithophytes in shaded, rocky habitats, occasionally as terrestrials or epiphytes (la Croix & Cribb 1995, Linder & Kurzweil 1999, Cribb *et al.* 2001). The genus is monophyletic and a member of Orchidinae (Ngugi *et al.* submitted). It is morphologically well circumscribed by a combination of vegetative and reproductive characteristics: leaves arranged in a basal rosette growing from clusters of fleshy, tuberous roots, patent and fimbriate labellum, peculiar column with lateral appendages on the anther (= auricles; Kurzweil 2000) and unusual stigma morphology (Kurzweil & Weber 1992). The leaves vary from concolourous in some taxa to variously spotted with dark brown or maroon in others, and the small resupinate flowers are borne on an erect raceme arising from the centre of the leaf rosette. These may be white to various shades of pink or lilac frequently spotted with a darker shade of pink or purple and in some taxa have a short spur at the base of the labellum.

The type species, *S. fimbriata* Lindley (1837: 210), was described on the basis of material collected by J.F. Drége between the Mzimvubu and Msikaba rivers, in what is now the Eastern Cape, South Africa. The genus was monospecific for over 50 years until the description of *S. longifolia* Hooker (1891: t.7186), followed soon thereafter by *S. zambesiaca* Rolfe (1897: 190), a new variety of the type species, *S. fimbriata* var. *saxicola* Schltr. ex Kraenzlin (1898: 567), and then *S. woodii* Schlechter (1924: 242). *Stenoglottis zambesiaca* was synonymized with *S. fimbriata* by Summerhayes (1968) but was later resurrected in a review of the genus by Stewart (1989), who recognized four species: *S. fimbriata*, *S. woodii*, *S. zambesiaca* and *S. longifolia*. Stewart (1989) also synonymized *Cynorkis macloughlinii* Bolus (1928: 139) with *S. woodii* and did not recognize the infraspecific subdivision of *S. fimbriata*. Since then, *Stenoglottis* has been informally reviewed three times (McDonald 1995, 2006, 2008), and three new species have been described: *S. molweniensis* G.McDonald ex Shaw (2007: 24), *S. inandensis* G.McDonald & D.Styles in McDonald (2008: 10) and *S. modesta* Truter & Joliffe (2011: 12), in addition to recognition of *S. macloughlinii* (L.Bolus) G.McDonald ex Shaw (2003: 79) as distinct from *S. woodii* and elevation of *S. fimbriata* var. *saxicola* to the rank of subspecies (McDonald 2008: 11).

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Whereas *Stenoglottis* is easily distinguished from other orchid genera, taxon boundaries within the genus have been problematic. Several factors have contributed to this, foremost of which is substantial continuous morphological variation within and between species that makes recognition of consistent and reliable diagnostic characters difficult. Taxonomic studies have tended to recognize morphological extremes as distinct taxa with little consideration for the possibility of continuity in supposed diagnostic traits without genetic support. A recent systematic study aimed to resolve these issues by means of a combined phylogenetic analysis of nuclear and plastid DNA sequence data and thorough morphological investigation (Phillips & Bytebier 2020). DNA sequence variation within *Stenoglottis* was found to be low, perhaps indicative of a recent radiation. Plastid DNA is almost completely invariant, only *S. macloughlinii* can be distinguished from the rest of the genus using plastid markers and nuclear markers (ribosomal ITS and ETS), although more variable, still exhibit relatively low sequence divergence, resolving some but not all of the described taxa. In contrast, morphological variation within *Stenoglottis* is greater, but much of this variation is continuous rather than discrete, and the morphological boundaries between several described taxa are not clear (Phillips & Bytebier 2020). Consequently, on the basis of combined morphological and molecular phylogenetic evidence, only five *Stenoglottis* species (six taxa) are accepted: *S. fimbriata* (with two varieties), *S. longifolia*, *S. inandensis*, *S. woodii*, and *S. macloughlinii*. Characteristics of floral spurs (length, shape and nectar presence), labella (lobe shapes and fimbriation of the side lobes), leaves (margin type and maculation), bracts (orientation relative to the ovaries) and auricles (shape, size, and orientation) contribute most clearly to distinguishing these taxa. The taxonomic changes proposed by Phillips & Bytebier (2020) are formalized here. In addition, some putative natural hybrids are identified.

Specimens examined here are arranged alphabetically by country, province/region, and district (where applicable). For southern African specimens, this arrangement is based on the degree reference system (Edwards & Leistner 1971, Leistner & Morris 1976). Within the smallest regional divisions, specimens are arranged alphabetically by collector. Locality information from herbarium specimen labels and GPS coordinates from the authors field collections were used to map taxon distributions using the quarter degree reference system (Edwards & Leistner 1971).

Taxonomic treatment

Stenoglottis Lindley (1837: 209). Type:—*Stenoglottis fimbriata* Lindley (1837: 210).

Lithophytic, epiphytic or terrestrial herbs with perennial, tuberous roots, ellipsoid to elongate, cylindrical, fascicled, sometimes with a woolly velamen. Leaves annual, ca. 5–20 in a basal rosette, spreading to erect or arching, linear to lanceolate or oblanceolate, acute to acuminate or apiculate, concolourous or variously spotted with brown or maroon, glabrous, margins entire, flat to strongly undulate. Inflorescence an erect raceme, lax to dense, frequently subsecund, glabrous; cauline leaves reduced to narrowly lanceolate sheaths, unspotted or variously spotted with brown or maroon. Bracts cordate to lanceolate, acute to acuminate, shorter than or subequal to the ovaries, gradually decreasing in size along the rachis. Flowers numerous, resupinate, white, pink or lilac to mauve, often spotted with a darker shade of pink or purple. Sepals free or basally united to the column, subequal, ovate to narrowly ovate or elliptic, acute to obtuse; dorsal concave; laterals oblique to falcate, margins entire. Petals shorter than sepals, ovate, oblique, acute, folded forward to enclose the column, margins slightly lacerate. Labellum spurred or unspurred, patent, oblong to broadly obovate or cuneate in outline, often puberulous near the base, trilobed; side lobes entire or with variable additional fimbriation. Column short, ca. 2 mm; anther erect, with auricles slender to clavate, smooth or tuberculate; pollinia 2, caudicles short, viscidia round; stigmatic arms free, straight or curved; rostellum trilobed. Ovary ribbed, cylindrical; mature capsules elliptic or oblong.

Key to the *Stenoglottis* taxa

1. Labellum with a spur 2
– Labellum without a spur 4
2. Labellum side lobes broad and entire, rounded or truncate, midlobe apex acute to rounded; spur tapering or sub-saccate, with or without nectar; bracts sheathing ovaries; leaves never spotted 3
– Labellum side lobes incised to deeply divided, midlobe narrow, attenuate; spur saccate, without nectar; bracts sheathing or recurved; leaves unspotted or sparsely spotted ..... *S. inandensis*
3. Spur to 0.4–1.5 mm long, sub-saccate, straight, without nectar; labellum midlobe acute to obtuse; flowering from December ..... *S. woodii*

– Spur 2.0–3.0 mm long, tapering, straight or recurved, nectar-producing; labellum midlobe rounded; flowering from late October ..... *S. macloughlinii*

4. Labellum side lobes usually acute and entire, occasionally fringed or bifurcating; floral bracts usually sheathing ovaries entirely, occasionally recurved at the apex; auricles slender, approximately uniform in width or slightly wider at the apex, adnate to sides of the anther; self-pollinating 5

– Labellum side lobes usually with 2–5 fimbriae of variable length, sometimes ligulate and entire or shallowly incised; floral bracts recurved, not sheathing ovaries; auricles clavate with markedly swollen apex, projecting forward beyond the anther; never self-pollinating ..... *S. longifolia*

5. Leaves variously spotted or not, margins undulate; labellum side lobes variable, acute to truncate, margins entire to shallowly incised or bifurcating; labellum base flat, spurless; life span of individual flowers variable (± two weeks) ..... *S. fimbriata* var. *fimbriata*

– Leaves never spotted, margins entire; labellum side lobes without additional fimbriation; minute vestigial spur at base of labellum; individual flowers short-lived (± two days) ..... *S. fimbriata* var. *modesta*

1. *Stenoglottis fimbriata* Lindley (1837: 210). (Figs 1–5)

Type:—SOUTH AFRICA. Eastern Cape**:** between Mzimvubu and Msikaba rivers [inter Omsamwubo et Omsamcaba], *Drège 4574* (holotype: K, 001208157, photo!; isotype: P, 00339739, photo!).

Lithophytic, occasionally epiphytic or terrestrial. Leaves 6–20, linear to lanceolate or oblanceolate, concolourous to heavily spotted with brown or maroon, margins flat and entire to strongly undulate, up to 20 × 4 cm. Inflorescence up to 57 cm tall, 5–90 flowers; sheaths spotted or unspotted. Bracts lanceolate, acute to acuminate, spotted or unspotted, usually sheathing the ovary entirely, occasionally recurved at the apex, usually shorter than or equal to ovaries except for the lower bracts that are sometimes slightly longer than ovaries, 6.0–15.0 × 2.0–5.5 mm. Flowers white, pink or lilac, often spotted with a darker shade of pink or purple on all parts or labellum only; self-pollinating. Sepals ovate to narrowly ovate or elliptic, acute to obtuse, dorsal concave, laterals oblique to falcate, 3.5–7.0 × 1.5–4.0 mm, laterals slightly longer. Petals ovate, oblique, acute, 3.5–6.3 × 2.0–4.5 mm. Labellum unspurred, oblong to obovate in outline, 6.0–12.0 × 2.0–6.5 mm, highly variable; side lobes entire to incised or bifurcating; midlobe acute, longer than or subequal to side lobes. Column up to 2.5 mm long; stigmatic arms erect or suberect in mature flowers, straight or curving outward; auricles slender or widening slightly at the apex, up to 0.6 mm × 0.4 mm at the apex, adnate to the sides of the anther. Ovary 8.5–15.0 mm long.

1.1. *Stenoglottis fimbriata* Lindl. var. ***fimbriata*** (Figs 1–3)

Heterotypic synonyms: *Stenoglottis fimbriata* subsp. *saxicola* (Schltr. ex Kraenzl.) McDonald (2008: 11). *Stenoglottis fimbriata* var. *saxicola* Schlechter ex Kraenzlin (1898: 567). Type:—SOUTH AFRICA. KwaZulu-Natal: Mount West, 1585 m, 20 Feb 1895, *Schlechter 6820* (holotype: B, destroyed; lectotype: BOL, 96151!, here designated; isolectotypes: GRA, 0005004!, NH, 0013312-0!, NY, 00468316 photo!, P, 00339731 photo!, PRE, 0036838-0!, PRE, 0856961-0!).

Stenoglottis zambesiaca Rolfe (1897: 190). Type:—MALAWI. Shire Highlands, 1891, *Buchanan 385* (holotype: K, 000415557!; isotype: BM, 000034610!).

Diagnostic characters:—Varieties of *S. fimbriata* can be distinguished by a combination of their leaf and labellum morphology. The leaves of *S. fimbriata* var. *fimbriata* are undulate and variably spotted (from completely unspotted to heavily spotted with brown or maroon; Fig. 1O–P), whereas in *S. fimbriata* var. *modesta* they are always entire, never spotted and somewhat broader and fleshier than those of the nominal variety. In *S. fimbriata* var. *fimbriata*, the side lobes of the labellum are also highly variable (in width and degree of fimbriation; Fig. 1A–H, J, L–M), but in *S. fimbriata* var. *modesta* they are always narrow and entire. Flowers of *S. fimbriata* var. *fimbriata* are completely spurless, the base of the labellum being consistently flat and smooth (Fig. 1I, K), whereas in *S. fimbriata* var. *modesta* the tissue at the base of the labellum is slightly protruding, forming what appears to be a minute vestigial spur. Finally, the lifespan of individual flowers of *S. fimbriata* var. *fimbriata* is variable (usually 2–3 days, but up to two weeks), whereas in *S. fimbriata* var. *modesta* the flowers seldom remain open for more than two days.

Stenoglottis fimbriata var. *fimbriata* is easily distinguished from *S. inandensis*, *S. woodii*, and *S. macloughlinii* by its spurless labellum and undulate leaves. It is most likely to be confused with *S. longifolia* but differs in the orientation of its floral bracts and various characteristics of the column. For a detailed diagnosis of *S. fimbriata* (both varieties) and *S. longifolia*, see ‘diagnostic characters’ under *S. longifolia*.

FIGURE 1. Selected specimens of *Stenoglottis fimbriata* var. *fimbriata*. A, inflorescence, Ngome Forest Reserve (KZN). B–C, inflorescence and flower ventral view, Umtamvuna Nature Reserve (KZN). D, flower ventral view, Msikaba (EC). E, flower ventral view, Ingomankulu (KZN). F, flower ventral view, Highflats (KZN). G, flower ventral view, Lekgalameetse Nature Reserve (LIM). H, flowers, Mount West (KZN). I–J, flower lateral view (showing spurless labellum and sheathing bract) and flower ventral view, Kaapschehoop (MP). K–L, flower lateral and ventral view, Winston Park (KZN). M, flowers, Signal Hill, Grahamstown (EC). N, habitat, Royal Natal National Park (KZN). O, leaf rosette (*in situ*), Kei Mouth (EC). P, leaf rosette (*in situ*), God's Window (MP). Scale bars = 5 mm. N–P reproduced with the permission of Herbert Stärker.

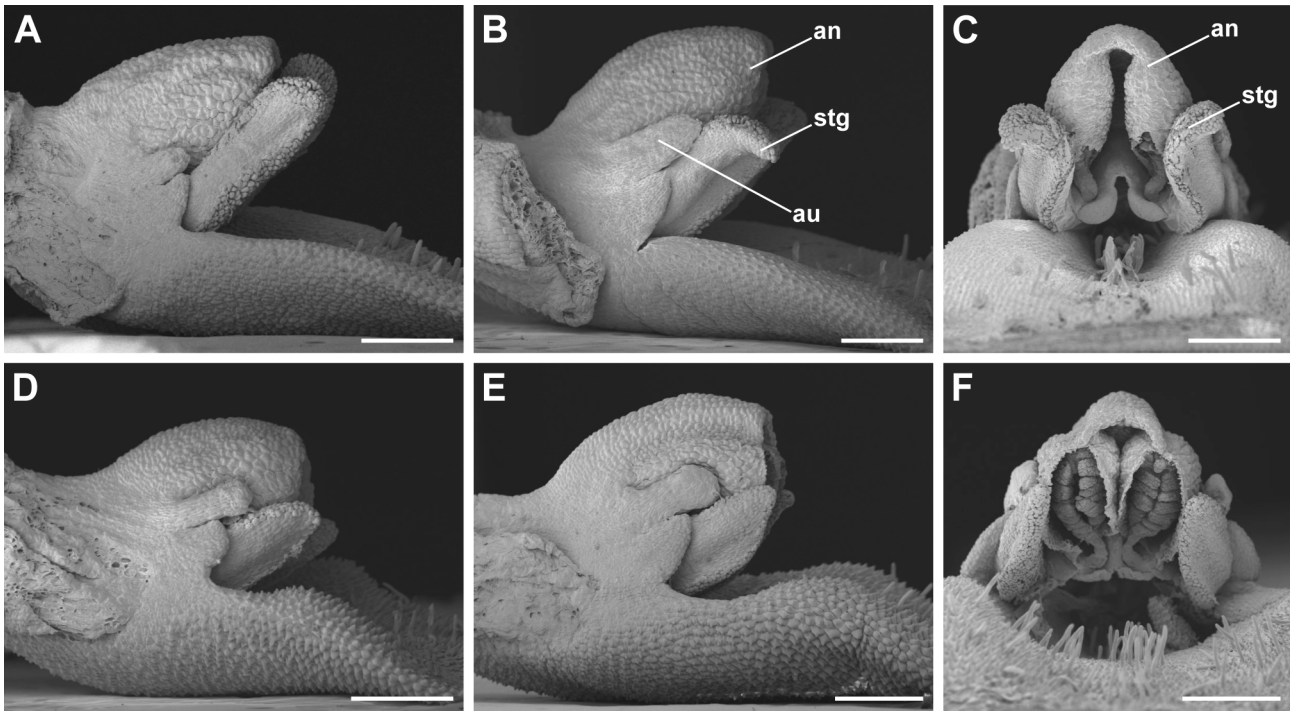

FIGURE 2. Selected specimens of *Stenoglottis fimbriata* var. *fimbriata*. A, column lateral view, Oribi Gorge Nature Reserve (KZN). B–C, column lateral and ventral view, Msikaba (EC). D, column lateral view, Nkandla Forest Reserve (KZN). E–F, column lateral and ventral view, Kaapschehoop (MP). Scale bars = 0.5 mm. Abbreviations: au = auricle, an = anther, stg = stigmatic arm.

Notes:—*Stenoglottis fimbriata* is a widespread and morphologically variable taxon, and previous attempts to subdivide it are largely unsupported by morphological or phylogenetic evidence. *Stenoglottis fimbriata* var. *saxicola* was not recognised by Stewart (1989) but was by McDonald (2008), who transferred it to the rank of subspecies. This taxon (as both variety and subspecies) was regarded as a diminutive, highland form. Plants collected from higher elevations are indeed often smaller than lowland plants, and this size difference is to some extent maintained in cultivation and therefore mostly genetic (Stewart 1989, this study). However, changes in overall plant size with elevation are gradual, and consequently their separation on this basis is arbitrary. In addition to plant size, McDonald (2008) attributed several other morphological differences to *S. fimbriata* subsp. *saxicola*: colony-forming habit, stigmas are shorter than the anthers, narrower median sepals and more falcate petals. However, these characters too have been shown to be variable and inconsistent as diagnostic characters. Multivariate morphometric analyses did not resolve the subspecies of *S. fimbriata* as discrete morphological clusters, and, likewise, there is no phylogenetic basis to support their distinction (Phillips & Bytebier 2020). *Stenoglottis fimbriata* subsp. *saxicola* is therefore not recognized here.

The distinction of *S. zambesiaca* from *S. fimbriata* is also problematic for several reasons. Its original description by Rolfe (1897) vaguely stated that it differs from *S. fimbriata* "in the shape of the leaves, and in various other details". It was later synonymized with *S. fimbriata* by Summerhayes (1968) and then resurrected by Stewart (1989), who expanded on Rolfe's diagnosis, distinguishing it from *S. fimbriata* on the basis of its smaller flowers with fewer, larger spots, a dorsal sepal that is much narrower than the laterals, labellum side lobes that are ligulate and round or truncate apically and auricles that are tuberculate at the club-shaped apex (as opposed to the slender auricles of *S. fimbriata)*. Later, McDonald (1995, 2006, 2008) attributed to *S. zambesiaca* the additional characteristics of having markedly falcate petals, a labellum with a narrow claw, and non self-pollinating flowers due to the presence of auricles (sometimes referred to instead as staminodes), which he claimed to be completely absent in *S. fimbriata*. However, the holotype of *S. zambesiaca* (*Buchanan 385*) clearly does not exhibit all qualities that were later ascribed to it. Specifically, the side lobes of its labellum are not particularly round or truncate, and the specimen exhibits a high proportion of seed-set (i.e. many large, swollen capsules) and was therefore almost certainly self-pollinating. The latter was noted by McDonald (1995, 2008), who remarked that even if the plants currently referred to *S. zambesiaca* do in fact represent a taxonomic entity distinct from *S. fimbriata*, the name itself is still misapplied.

In a published study, *S. zambesiaca* could neither be distinguished phylogenetically from subspecies of *S. fimbriata* nor resolved as a discrete group in the morphometric analyses (Phillips & Bytebier 2020). The supposed differences in

floral macro-morphology described by Stewart (1989) and McDonald (1995, 2006, 2008) all fall within the range of variation observed for *S. fimbriata*. Regarding the auricles, ~300 flowers from specimens of the *S. fimbriata* complex (i.e. *S. modesta*, *S. zambesiaca* and both subspecies of *S. fimbriata*, as designated in Phillips & Bytebier 2020) were dissected and examined. The auricles were found to be rarely absent in individual flowers (and occasionally on one side of the column only) and never completely absent within a population. In these plants, the auricles are usually approximately uniform in width or widen slightly toward the apex but are never as obviously swollen at the apex as they are in the rest of the genus. They also clasp the sides of the anther and therefore do not obstruct the stigmatic arms, which rise up to touch the pollinia. As a result, these flowers are self-pollinating, including those identified as *S. zambesiaca* (as defined by Stewart and McDonald, e.g. *Phillips 29* from Ngome Forest), although the process does seem to be much delayed in some specimens and the proportion of self-pollinating flowers is variable. Presently, there is little published research on pollination in *Stenoglottis* (Schelpe 1970, 1985), and this aspect of its biology warrants further study. However, it does not appear that *S. fimbriata* could be reasonably subdivided on this basis. Given that the type specimen of *S. zambesiaca* falls within the range of morphological variation of *S. fimbriata* and that there is no phylogenetic basis for their distinction, *S. zambesiaca* is also considered here a synonym of *S. fimbriata* var. *fimbriata*.

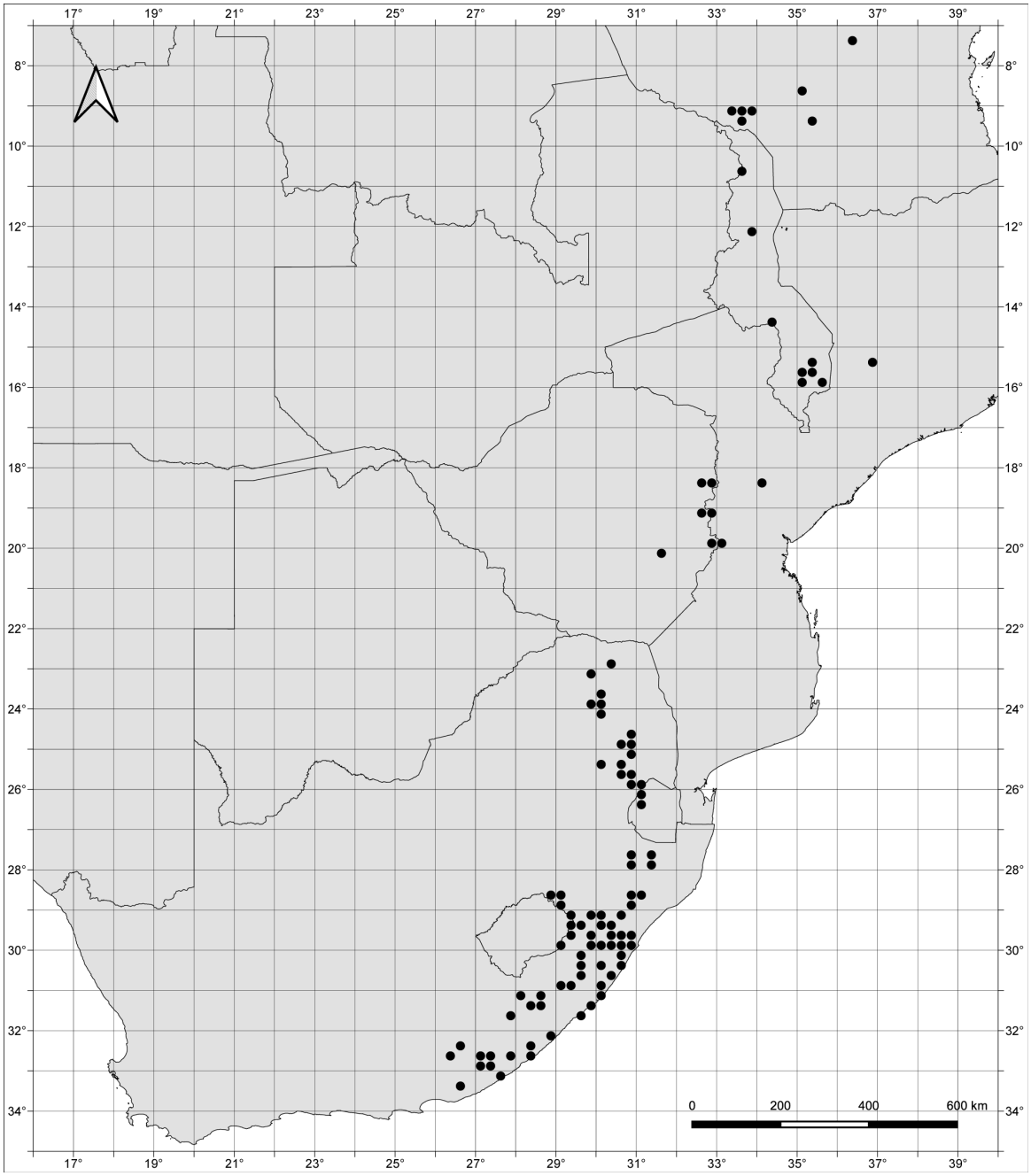

FIGURE 3. Distribution of *Stenoglottis fimbriata* var. *fimbriata*.

Distribution and ecology:—*Stenoglottis fimbriata* var. *fimbriata* is widespread throughout southern and east Africa, occurring in South Africa, Eswatini (Swaziland), Zimbabwe, Mozambique, Malawi and the southern highlands of Tanzania (Fig. 3) at elevations of 20–2200 m. In South Africa, it occurs in the Eastern Cape (EC), KwaZulu-Natal (KZN), Limpopo (LIM), and Mpumalanga (MP) provinces. There has also been an outlier population recorded from Gabon (not mapped). It occurs in forest or on forest margins in deep or partial shade, most commonly as a lithophyte on mossy boulders or on ledges and crevices along south-facing cliff faces; occasionally it is an epiphyte on tree trunks or terrestrial in shallow soil. It flowers January–April and exhibits a high rate of self-pollination.

Specimens:—ESWATINI. Hhohho Region: 2631 (Mbabane): Forbes Reef, 1524 m (–AA), 7 Apr 1965, *Compton 32331* (NBG0082066-0!); Black Mbuluzi Valley, The Caves, 1219 m (–AC), 17 Mar 1956, *Compton 25800* (NBG0057172-0!, NH0111186-0!); Hill NE of Mbabane, 1524 m (–AC), 2 Mar 1959, *Compton 28549* (K001208125!, NH0111185-0!); Hill NW of Mbabane, 1371 m (–AC), 17 Feb 1961, *Dlamini s.n.* (NBG0049288-0!); Kampaula Valley (–AC), Apr 1917, *Edwards 14319* (BOL50007!). GABON. Ngounié Province: Mont Iboundji, on summit, ± 10 km on track to Moughoungoulou Falls, 850 m, 16 Feb 1988, *Louis 2805* (MO3853478!). MALAWI. Central Region: Dedza District, Dedza Mountain, 2140 m, 20 Mar 1955, *Exell et al. 1077* (BM000034601!); Dedza District, Dedza Mountain, near radio relay station, 2000 m, 3 Mar 1977, *Grosvenor & Renz 1005* (BOL49890!, K001208141!); Dedza District, Dedza Mountain, near summit, 2050 m, 5 Apr 1978, *Pawek 14281a* (MA, MO!). Northern Region: Mzimba District, Vipyha Plateau, Kawandama, 3 Apr 1981, *Sallibeni 2961* (MO!); Rumphi District, Nyika Plateau, Kasyaula Forest, 2000 m, 22 Feb 1982, *Dowsett-Lemaire 354* (K001208146!). Southern Region: Blantyre District, Ndirande, 3 Mar 1961, *Morris 113* (K001208138!); Chiradzulu District, Chiradzulu Mountain, above Lisao Forest, 1400 m, 13 Mar 1977, *Brummitt et al. 14849* (K001208140!); Chiradzulu District, Chiradzulu Mountain, 1450 m, 6 Apr 1985, *La Croix et al. 690* (K001208147!); Mulanje District, Mount Mulanje [Mlanje], 1897, *Adamson 433* (K001208143!, P00339730 photo!); Mulanje District, Tuchila Plateau, May 1901, *Purves 5* (K001208142!); Zomba District, Malosa Crater, 762 m, *Morris 93* (K001208139!); Zomba District, Zomba Mountain, 1550 m, 31 Mar 1978, *Pawek 14170* (K, MA, MO!, SRGH, UC); Zomba District, Zomba Mountain, 26 Feb 1981, *Welsh 669* (K001208145!); Zomba District, Zomba Mountain, *Westwood 620* (K001208144!). Without precise locality: Southern Region, Shire Highlands, 1881 *Buchanan s.n.* (K000415558!). MOZAMBIQUE. Sofala Province: 1834 (Vila Paiva de Andrada): Gorongosa District, Mount Gorongosa, SE slopes, 1400 m (–AC) 23 Jul 1970, *Müller & Gordon 1428* (K001208154!); Gorongosa District, Mount Gorongosa, 1768 m (–AC), *Schelpe s.n.* (BOL49906!). Zambezia Province: 1536 (Gurué), Gurué District, Serra de Gurué, 1280 m (–BD), 24 Jul 1979, *De Koning 7430* (BM000034602!, BR000002181789 photo!, MO!, WAG1140769 photo!). SOUTH AFRICA. Eastern Cape: 3029 (Kokstad): Mount Ayliff, Insizwa Forest (–CC), 22 Feb 1972, *Strey 10717* (PRE0111899-0!); Mount Ayliff, Insizwa Mountain (–CD), 17 Feb 1971, *Hilliard & Burtt 6570* (E, K, MO!, NU0010087!). 3127 (Lady Frere): Engcobo, 1275 m (–DB), 15 Feb 1912, *McLoughlin 47b* (BOL49893!). 3128 (Umtata): Maclear, Rockwater Farm, NE mountain slope, 1550 m (–AA), 23 Feb 1993, *Bester 164* (PRE0804517-0!); Maclear, Farm 164, ± 17 km north of Ugie, 1420 m (–AA), 23 Feb 1994, *Bester 2323* (NH0118861-0!); Maclear, Farm 164, ± 17 km north of Ugie, 1420 m (–AA), 23 Feb 1994, *Bester 2324* (PRU!); Mnyolo, on road between Mnyolo and Ugie, 993 m (–AD), 15 Jan 2017 (ex hort. Feb 2018), *Phillips 51* (NU0088388!); Maclear, between Tsolo and Maclear (–BA), 2 Mar 1979, *Linder 2103* (BOL49921!); Mhlahlane Forest Station, Rubuxa Mountain, NW of Umtata, 1600 m (–BC), 27 Feb 1997, *Dold & Cocks 2806* (GRA0005019!). 3129 (Port St Johns): Msikaba, on bank of Msikaba River near mouth, 21 m (–BD), 16 Dec 2016 (ex hort. Apr 2018), *Phillips & Kiepiel 46* (BNRH!, NU0088383!); Port St Johns (–DA), May 1911, *Mason s.n.* (K001208137!); Port St Johns (–DA), 1900, *Pegler 542* (PRE0036835-0!); Port St Johns (–DA), 9 Mar 1950, *Prance NBG339/38* (NBG0057173-0!); Port St Johns (–DA), 8 Apr 1938, *Prance s.n.* (NBG0057176-0!); Port St Johns, near township (–DA), Dec 1943, *Schelpe 315* (NU0010067!). 3130 (Port Edward): Mtentu River gorge, north bank (–AA), Jun 2006, *Edwards 3271* (NU0016759!). 3226 (Fort Beaufort): Katberg (–BC), Mar 1885, *Baur 1105* (K001208135!); Katberg (–BC), date unknown, *Hutton s.n.* (K001208136!); Fort Fordyce, 920 m (–CB), 7 Apr 2015, *Bodeux 21* (GRA0005026!); Fort Fordyce, 1157 m (–CB), 21 Mar 2014, *Martin 5* (GRA0005025!); Fort Fordyce Nature Reserve, 1041 m (–CB), 14 Jan 2017 (ex hort. Mar 2018), *Phillips 49* (NU0088386!); Fort Fordyce, 914 m (–CB), 12 Mar 1947, *Story 2111* (PRE0036834-0!). 3227 (Stutterheim): Hogsback, Boma Pass (–CA), 3 Apr 1943, *Acocks 9744* (PRE0036828-0!); Hogsback, Swallowtail Falls, 1219 m (–CA), 10 Mar 1968, *Ashton 194* (GRA0005014!); Hogsback, Katberg Pass, 1371 m (–CA), 3 Apr 1965, *Bokelmann s.n.* (BOL49904!); Stutterheim, Leopard Falls, 1009 m (–CB), 19 Jan 2002, *Bytebier et al. 2198* (NBG0196828-0!); King William's Town, Pirie Forest (–CC), Mar 1910, *Godfrey 72* (GRA0005001!); King William's Town, Pirie Forest (–CC), Feb 1944, *R.U.C. Biol. Exped. RUH528* (GRA0005009!); King William's Town, Pirie Forest (–CC), 9 Mar 1950, *Werner NBG100/49* (NBG0057174-0!); King William's Town, Pirie Forest (–CC), 14 Feb 1944, *Widdicombe 8* (BOL49900!); Yellowwood Falls, 365 m (–CD), 1893, *Sim 799* (NU0010058!); Komga, 609 m (–DB), Mar 1891, *Flanagan 644* (GRA0005003!,

PRE0036832-0!, SAM0020465!); Komga, 182 m (–DB), Mar 1894, *Flanagan 2313* (PRE0036827-0!). 3228 (Butterworth): Elliotdale, The Haven (–BB), 4 Apr 1966, *Gordon-Gray 206* (NU0010085!); Elliotdale, The Haven (–BB), 5 Apr 1966, *Gordon-Gray 242* (NU0010081!); Kentani, 457 m (–CB), Apr 1902, *Pegler 275a* (BOL96150!, PRE0111898-0!,); Kentani, 365 m (–CB), Apr 1902, *Pegler 275b* (PRE0036829-0!); Kentani (–CB), Mar 1902, *Pegler s.n.* (BOL!). 3326 (Grahamstown): Rabbits Wood, 10 miles from Grahamstown on East London road, 609 m (–BC), 12 Mar 1968, *Ashton 193* (GRA0005016!); Grahamstown, Mountain Drive, 736 m (–BC), 19 Mar 1994, *Dold 925* (GRA0005018!); Grahamstown, Signal Hill (–BC), Apr 1896, *Farquhar s.n.* (GRA0005005!); Grahamstown, Signal Hill, 731 m (–BC), 1888, *Galpin 56* (BOL50015!); Grahamstown, 670 m (–BC), *MacOwan 515* (NY04170350 photo!, SAM0020464-1!, SAM0020464-2!); Grahamstown, Signal Hill, 710 m (–BC), 10 Jan 2017 (ex hort. Mar 2018), *Phillips 48* (BNRH!, NU0088385!); Grahamstown, Featherstone Kloof, 600 m (–BC), Feb 1984, *Weeks 134* (GRA0005017!); Grahamstown (–BC), 13 Apr 1944, *Widdicombe 9* (BOL49899!); Alexandria Forest (–CB), May 1956, *Collett s.n.* (GRA0005012!). 3327 (Peddie): East London (–BB), *Pearson 1549* (SAM0001105-0!). KwaZulu-Natal: 2730 (Vryheid): Pongola Bush Nature Reserve, 1700 m (–DB), Feb 1993, *Scott-Shaw & Wallace 5187* (CPF0021094!); Vryheid Hill Nature Reserve, 1302 m (–DD), 17 Mar 2016 (ex hort. Mar 2018), *Phillips 28b* (NU0088334!). 2731 (Louwsberg): Ngoje Plateau, summit area (–CB), 20 Feb 1991, *Scott-Shaw s.n.* (CPF0021103!); Ngome, above forest near Police Post, 1295 m (–CD), 3 Apr 1977, *Hilliard & Burtt 9999* (NU0010086!); Ngome Forest Reserve, 1134 m (–CD), 17 Mar 2016 (ex hort. Mar 2018), *Phillips 29* (NU0088335!); Ngome Forest Reserve [Ngome State Forest] (–CD), 17 Apr 2005, *Styles 2612* (NU0016078!). 2828 (Bethlehem): Mont-Aux-Sources, Pastures Bush, 1829 m (–DB), 16 Feb 1926, *Bayer & McClean 116* (PRE0036847-0!); Mont-Aux-Sources, Tugela Valley (–DB), Apr 1934, *Humbert 14847* (P00339724 photo!, P00339725 photo!); Royal Natal National Park, about 1 km north of the Mahai Campsite and Caravan Park, Gudu Bush, 1700 m (–DB), 23 Feb 1992, *Kurzweil 1621* (NBG0150820-0!); Mont-Aux-Sources, forest patch upstream from hotel (–DB), 22 Feb 1979, *Linder 2079* (BOL49922!); Royal Natal National Park, Tugela Gorge Trail, 1757 m (–DB), 21 Feb 2016 (ex hort. Mar 2018), *Phillips 20* (NU0088327!); Royal Natal National Park, Tugela Gorge Trail, 1757 m (–DB), 21 Feb 2016 (ex hort. Mar 2018), *Phillips 21* (NU0088328!); Royal Natal National Park, Tendele Forest (–DB), 21 Feb 1976, *Physick 16* (NU0010088!); Mont-Aux-Sources, Royal Natal National Park (–DB), Feb 1964, *Trauseld NU20* (NU0010083!). 2829 (Harrismith): Oliviershoek, 1524 m (–CA), Feb 1891, *Thode 8160* (NH0106447-0!); Cathedral Peak Hotel, 1570 m (–CC), 9 Feb 1982, *Bamps 7217* (BR0000021817830 photo!); Cathedral area (–CC), Jan 1941, *Burchell 50* (NU0010066!); Cathedral Peak area, Nkohlonhla Valley, 1524 m (–CC), Jan 1944, *Bursell s.n.* (NU0010063!); Cathedral Peak, 3 km down Mike's Pass, NW facing slope near Ndumeni River bank (–CC), 11 Feb 1984, *Buthelezi 359* (NH0083444-0!); Cathedral Peak area, 1524 m (–CC), 6 Feb 1946, *Cross 62* (NU0010060!); Cathedral Peak, Mazonjwana River Valley, 1722 m (–CC), 6 Feb 1951, *Killick 1394* (CPF0021097!); Cathedral Peak, 1480 m (–CC), 10 Feb 1982, *Lambinon & Reekmans 82/456* (BR0000021817854 photo!, PRE0618335-0!); Cathedral Peak area, Nkohlonhla River, 1493 m (–CC), Feb 1943, *Schelpe 191* (NU0010070!); Cathedral Peak, Ndumeni Forest [Indumeni], 1829 m (–CC), 6 Feb 1957, *Schelpe 6348* (BOL49918!); Cathedral Peak, Ndumeni Forest [Indumeni] (–CC) 27 Jan 1963, *Vermeulen s.n.* (L1526715 photo!). 2830 (Dundee): Qudeni Forest Reserve (–DB), Feb 1940, *Fisher & Schweickerdt 103* (NU0010061!); Qudeni, Ekombe Forest, 1524 m (–DB), 12 Feb 1945, *Fisher 785* (NU0010064!); Qudeni, Ekombe Forest, 1524 m (–DB), 15 Feb 1945, *Fisher 822* (NU0010065!); Kranskop, 42 km south of Silutshana on road to Kranskop, 1430 m (–DD), 23 Feb 1974, *Davidse 6902* (MO2413230!). 2831 (Nkandla): Nkandla Forest Reserve, 1197 m (–CA), 8 Apr 2016 (ex hort. Mar 2018), *Phillips & Potgieter 34* (NU0088343!). 2929 (Underberg): Cathkin Park, 1219 m (–AB), Jan 1953, *Bates 21* (NU0010077!); Cathkin Park, Ndema Forest, 1310 m (–AB), 3 Mar 1932, *Galpin 11826* (PRE0036841-0!); Cathkin Park, Ndema Forest, 1310 m (–AB), 3 Mar 1932, *Galpin s.n.* (BOL50008!); Mpendle, Loteni River Valley, 1798 m (–AD), 13 Jan 1982, *Hilliard & Burtt 15083* (NU0010092!); Giants Castle Game Reserve, Forest Walk, (–BC), 4 Feb 1985, *Reid 974* (NH0085048-0!, PRE0676789-0!); Kamberg Game Pass Farm (–BC), 11 Jan 1990, *Williams 711* (NH0113530-0!); Gxalingenwa Valley, Sani Pass road, 1630 m (–CB), 19 Feb 2015, *Braby 46* (NU0044015!); Gxalingenwa Valley, Sani Pass road, 1627 m (–CB), 19 Feb 2015, *Braby 76* (NU0044054!); Polela, Bamboo Mountain, 2134 m (–CB), Apr 1909, *Doidge 5572* (K001208129!); Bulwer, Enkelabantwana Forest (–CB), Mar 2000, *Edwards 2053* (NU0010103!); Cobham Forest Reserve, Emerald Vale, 1951 m (–CB), 4 Mar 1985, *Hilliard & Burtt 18303* (E, K001208127!, NU0010094-0!); Cobham Forest Reserve, Sipongweni south side, 1890 m (–CB), 5 Mar 1983, *Hilliard & Burtt 16761* (E, K001208128!, NU0010093!); Garden Castle (–CC), date unknown, *Duckworth 168* (CPF0021099!); Mpendle, Everglades, 1524 m (–DB), 15 Oct 1964, *Moll 1265* (NU0010084!); Creighton, Lynn Avis Farm (–DD), Nov 1966, *Crewe 73* (NU0010082!); Creighton, Donnybrook, 1300 m (–DD), 4 Jun 2016 (ex hort. Mar 2018), *Phillips 36* (NU0088346!). 2930 (Pietermaritzburg): Mount West, 1672 m (–AA), 15 Apr 2017, *Phillips 57* (NU0088392!); Howick Falls (–AC), 4 Feb 1943, *Allsopp 69* (NU0010068!); Howick, Shafton (–AC), Mar 1900, *Hutton 7*

(GRA0005000!); Howick, Umgeni Valley Nature Reserve, 973 m (–AC), 9 Mar 2016 (ex hort. Mar 2018), *Phillips 23* (NU0088330!); Twin Falls, ± 25 km NNE of Howick, 365 m (–AD), 12 Feb 1988, *Grove 236* (NU0010100!); Karkloof, Caravan Bush Camp (–AD), 31 Jan 2012, *Martos 771* (NU0049957!); Karkloof, Bushwillow Park, 1356 m (–AD), 25 Aug 2016 (ex hort. Feb 2018), *Phillips & Kiepiel 37* (NU0088347!); Karkloof, 914 m (–AD), Apr 1972, *Ripley 72* (NU0010072!); Karkloof (–AD), 20 Feb 1988, *Wirminghaus 555* (NU0010096!); Greytown (–BA), 4 Feb 1942, *Van der Merwe 2498* (PRE0036812-0!); Pietermaritzburg, Town Bush, 1006 m (–CB), Mar 1947, *Demont 34* (NU0010074!); Pietermaritzburg (–CB), Mar 1941, *Killick 13* (NU0010071!); Pietermaritzburg, Ferncliffe Nature Reserve, 762 m (–CB), 10 Feb 1979, *Nicholas 549* (NU0010091!); Pietermaritzburg, Ferncliffe Nature Reserve, 762 m (–CB), 10 Feb 1979, *Nicholas 550* (NU0010089!); Richmond, top of Hela Hela Pass (–CC), 25 Feb 1956, *Bell 14* (BOL49898!); Richmond, Enon Forest, 7 miles from Richmond to Byrne and Bulwer (–CC), 25 Feb 1956, *Bell 15* (BOL49897!); Richmond, Byrne, 1524 m (–CC), 31 Mar 1932, *Galpin 11993* (K001208130!); Richmond, Tala Farm, 914 m (–CD), 7 Mar 1966, *Moll 3056* (NU0010080!); Richmond (–CD), 11 Apr 1905, *Wylie s.n.* (NU0010059!); Ingomankulu, ± 5 km SW of Camperdown, 973 m (–CD), 11 Jan 2016 (ex hort. Apr 2018), *Young & Phillips 2473* (BNRH!, NU0088296!, NU0088297!); Inchanga, 914 m (–DA), Apr 1953, *Bates 20* (NU0010078!); Table Mountain (–DA), date unknown, *Killick 391* (NU0010076!); Monteseel (–DA), 31 Mar 1957, *Lawson 488* (NH0047072-0!); Inchanga, 609 m (–DA), 31 Mar 1957, *Loubser 46b* (NU0088548!); Monteseel (–DA), 15 Mar 1964, *Strey 5204* (NH0052546-0!); Drummond (–DA), 6 Mar 1966, *Strey 6483* (PRE0036825-0!); Durban, Mgwahumbe Valley, 500 m (–DC), 11 Apr 1992, *Scott-Shaw 4653* (CPF0021096!); Krantzkloof Nature Reserve, 471 m (–DD), 13 Feb 2016 (ex hort. Mar 2018), *Phillips & Garnier 14* (NU0088528!); Pinetown, Winston Park, 563 m (–DD), 15 Feb 2016 (ex hort. Mar 2018), *Phillips 18* (NU0088325!). 3029 (Kokstad): Umzimkulu, Ntsikeni Plateau, above Ntsikeni Plantation, 1775 m (–BA), 23 Jan 2002, *Bytebier et al. 2230* (BR0000009353022 photo!, GRA0005021!, NBG); Kokstad, Zuurberg, 1067 m (–BC), Feb 1884, *Tyson 1683* (BOL50011!); Harding, Ingeli Forest, 977 m (–DA), 25 Jan 2016 (ex hort. Feb 2018), *Grieve et al. 2003* (NU0088294!); Harding, Ingeli Forest, 983 m (–DA), 25 Jan 2016 (ex hort. Feb 2018), *Grieve et al. 2004* (NU0088295!). 3030 (Port Shepstone): Ixopo, Highflats, 887 m (–AC), 14 Jan 2016 (ex hort. Apr 2018), *Young & Phillips 2504* (BNRH!, NU0088302!); Adams Mission, Nongwaan Falls, 152 m (–BA), 3 Apr 1945, *Adams 209* (NU0010069!); Umbumbulu, bottom of Nongwaan Falls (–BA), Apr 1945, *Lindahl 89* (NU0010062!); Umzinto, Vernon Crookes Nature Reserve, Hidden Valley, 420 m (–BC), 21 Nov 1984, *Balkwill & Cadman 2236* (NU0010095!); Dumisa, Ifafa, 500 m (–BC), 26 Mar 1908, *Rudatis 336a* (NH0106443-0!, P00339733 photo!); Dumisa, Ifafa, 500 m (–BC), 5 Apr 1911, *Rudatis 1368* (L1526648 photo!, P00339732 photo!, K001208131!, WAG1140774 photo!); Oribi Gorge Nature Reserve, Baboon Spruit (–CB), Feb 1973, *Davidson 2644* (MO!); Izotsha Falls, view site, 457 m (–CB), 23 Feb 1964, *Hilliard s.n.* (BOL49909!); Oribi Gorge Nature Reserve, 279 m (–CB), 6 Dec 2016 (ex hort. Mar 2018), *Phillips & Kiepiel 39* (NU0088349!); Oribi Gorge Nature Reserve, 224 m (–CB), 6 Dec 2016 (ex hort. Mar 2018), *Phillips & Kiepiel 40* (NU0088378!); Oribi Gorge (–CB), date unknown (ex hort. Feb 1966), *Schelpe s.n.* (BOL49903!); Umtamvuna Nature Reserve, Outeniqua Trail, 392 m (–CC), 11 Feb 2006, *Abbott 8371* (PRU); Umtamvuna Nature Reserve, Klipspringer, 384 m (–CC), 7 Jan 2016 (ex hort. Mar 2018), *Grieve et al. 1977* (BNRH!, NU0088290!). 3130 (Port Edward): Umtamvuma Nature Reserve, Clearwater Trails, 165 m (–AA), 20 Apr 2017, *Phillips 58* (NU!). Without precise locality: Umkomaas River, 1865, *Gerrard 1536* (BM000034620!, K001208132!); Natal, 1880, *Wood 858* (BOL50014!); Zululand, 1865, *Gerrard 1539* (BM000034619!, BR0000021817847 photo!, P00339736 photo!); Natal Highlands, Apr 1895, *Schlechter s.n.* (K001208134!). Limpopo: 2230 (Messina): Venda, 1 km from Dzamba en route to Rambuda (–CD), 12 Apr 1980, *Van Wyk 4101* (PRU!). 2329 (Pietersburg): Louis Trichardt, Hanglip (–BB), 25 Jan 1931, *Bremekamp & Schweickerdt 459* (PRU!); Louis Trichardt, Hanglip Forest Reserve, 1462 m (–BB), 15 Mar 2017 (ex hort. Mar 2018), *Phillips 54* (BNRH!, NU0088390!); Louis Trichardt, Zoutpansberg Mountains, about 5 miles above Louis Trichardt (–BB), 8 Mar 1948, *Rodin 4009* (MO!); Houtboschberg, in jungle (–DD), Aug 1880, *Nelson 377* (K001208122!). 2330 (Tzaneen): Duiwelskloof, Fairy Glen (–CA), 11 Mar 1958, *Scheepers 155* (PRU!); Magoebaskloof, forest below Magoebaskloof Hotel, 1342 m (–CC), 12 Mar 2017, *Phillips 52* (NU!); Magoebaskloof, Debengeni Falls, 1164 m (–CC), 17 Mar 2017, *Phillips 55* (NU!); Woodbush [Houtbosh, Transvaal] (–CC), 1880, *Rehmann 5856* (BOL50017!, K001208121!); Letaba, Mtataspruit, just above provincial road-bridge, 945 m (–CC), 11 Mar 1958, *Scheepers 155* (K001208126!); Woodbush, near forester's office, west slope (–CC), 4 Feb 1981, *Van Jaarsveld 6100* (NBG0129535-0!); Letaba (–CC), 27 Mar 1974, *Van der Walt s.n.* (BOL49902!). 2430 (Pilgrim's Rest): Wolkberg, Lekgalameetse Nature Reserve, 1117 m (–AA), 13 Mar 2017 (ex hort. Mar 2018), *Phillips 53* (NU0088389!). Mpumalanga: 2430 (Pilgrim's Rest): Bourke's Luck Mine, on summit of Three Sisters mountain (–DB), 25 Feb 1937, *Galpin 14280* (K001208123!); Bourke's Luck Mine, on summit of Three Sisters mountain, 1676 m (–DB), 25 Feb 1937, *Galpin s.n.* (BOL49913!); Pilgrim's Rest, Morgenzon S.F. (–DC), 8 Mar 1989, *Matthews 431* (PRU!, NMB, ASU); Graskop, God's Window (–DD), 11 Feb 1998, *Goldblatt 10877* (MO04928213!); Graskop, Fairylands, next to

Graskop Municipal Caravan Park, 1600 m (–DD), 29 Feb 1992, *Kurzweil 1657* (NBG0150829-0!); Graskop, God's Window, 1680 m (–DD), 1 Feb 2016 (ex hort. Feb 2018), *Phillips & Bytebier 6* (NU0088315!); Graskop, God's Window, 1704 m (–DD), 1 Feb 2016 (ex hort. Feb 2018), *Phillips & Bytebier 7* (NU0088316!); Graskop, God's Window, 1659 m (–DD), 1 Feb 2016 (ex hort. Feb 2018), *Phillips & Bytebier 8* (BNRH!, NU0088317!); Graskop, The Bonnet, 1636 m (–DD), 1 Feb 2016 (ex hort. Mar 2018), *Phillips & Bytebier 9* (NU0088318!); Graskop (–DD), 11 Feb 1964, *Vorster & Coetzee 6* (PRU!). 2530 (Lydenburg): Dullstroom, Go Country Estate, 1755 m (–AC), 31 Jan 2016 (ex hort. Mar 2018), *Phillips et al. 5* (BNRH!, NU0088314!); Sabie, Mac Mac Falls, 1249 m (–BB), 1 Feb 2016 (ex hort. Mar 2018), *Phillips & Bytebier 10* (BNRH!, NU0088319!); Lydenberg, Spitskop (–BB), Apr 1887, *Wilms 1384* (BM000034618!, K001208124!); Buffelskloof Nature Reserve, 1750 m (–BC), 18 Feb 2012, *Martos 796* (NU0049955!); Buffelskloof Nature Reserve, 1750 m (–BC), 4 Feb 2016 (ex hort. Mar 2018), *Phillips et al. 13* (NU0088322!); Lydenberg, Elandshoogte, 1900 m (–DA), 2 Mar 1978, *Richardson 106* (NU0010090!); Kaapschehoop Hiking Trail, 1675 m (–DB), 2 Feb 2016 (ex hort. Mar 2018), *Phillips & Bytebier 11* (NU0088320!); Kaapschehoop, roadside between Kaapschehoop and Nelspruit, 1229 m (–DB), 2 Feb 2016 (ex hort. Mar 2018), *Phillips & Bytebier 12* (NU0088321!); Nelsberg [E. Transvaal] (–DD), 26 Feb 1936, *Taylor 1856* (NY04157312 photo!); Nelsberg [E. Transvaal] (–DD), 26 Feb 1936, *Taylor 1857* (BOL49925!). 2531 (Komatipoort): Barberton Mountains, near Havelock Mine, 1402 m (–CC), 13 Mar 1965, *Bayliss 2741* (NBG0079970-0!); Barberton (–CC), 22 Feb 1890, *Culver 23* (BOL50009!); Barberton Mountains, near Havelock Mine, 1500 m (–CC), 19 Feb 1979, *Linder 2050* (BOL49923!). TANZANIA. T7. Iringa Region: Mufindi District, Nyalawa R., 1981 m, 13 Apr 1971, *Paget-Wilkes 874* (MO!); Udzungwa Mountains National Park, Mount Luhombero, 2040 m, 30 Sep 2000, *Luke et al. 6815* (EA, K001208156!). Mbeya Region: Mbeya District, Poroto Ridge Forest Reserve, west of Lake Ngozi, 2103 m, 7 Mar 1970, *Wingfield 942* (K000513090!); Rungwe District, Rungwe Forest Reserve, south side, 1800 m, 28 Feb 1986, *Bidgood et al. 98* (MO3440565!); Rungwe District, Mwakaleli, vicinity of Mwatesi River, 9 May 1975, *Hepper & Field 5461* (K000513093!); Rungwe District, lava flow west of Kiejo Crater, 1800 m, 26 Mar 1958, *Pettersson et al. 388* (EA, LIS, K000513091!, NHT, UPS); Rungwe District, Nyassa Highlands [Hochland], Station Kyimbila, 1912, *Stolz 1973* (L1526717 photo!, L1526716 photo!, U1475174 photo!, WAG1140772 photo!, WAG1140773 photo!). Njombe Region: Lupembe area, upper Ruhudji River basin, north of the river, May 1931, *Schlieben 814* (BR0000021817816 photo!, K001208155!, P00339723 photo!). ZIMBABWE. Manicaland Province: 1832 (Umtali): Nyanga District, Placefell, 1829 m (–BC), 26 Mar 1949, *Chase 4124* (BM000034607!); Nyanga District, Romneydale, 1829 m (–BC), 22 Mar 1949, *Chase 4125* (BM000034608!); Nyanga District, forest ca. 5 km SE of Pungwe View, 1700 m (–BD), 9 Mar 1981, *Philcox et al. 8940* (K001208150!). Without precise locality: Mutare [Umtali], 1585 m, 18 Feb 1926, *Eyles 4468* (BOL49916!). 1932 (Melsetter): Vumba Mountains, Cloudlands, mountain slope east of Cripps Grid (–BA), 27 Feb 1949, *Chase 1375* (BM000034605!); Vumba Mountains, Castle Beacon, 1910 m (–BA), 18 Mar 1956, *Chase 6018* (BM000034609!); Vumba Mountains, Castle Beacon, 1830 m (–BA), 12 Mar 1981, *Philcox 8976* (K001208149!); Vumba Mountains Road, 10 miles from Mutare [Umtali] (–BB), 12 Feb 1968, *Ashton 151* (GRA0005013!); Vumba, Norseland, 1524 m (–BB), Mar 1949, *Wild 2802* (BR0000021817823 photo!); Summit of Mount Peni, 1700 m (–DD), 16 Mar 1981, *Philcox et al. 8988* (K001208148!). Without precise locality: Vumba Mountains, Mar 1931, *Woodburn NBG30/29* (BOL49884!). 1933 (Vila Pery): Chimanimani Mountains, Stonehenge, 1829 m (–CC), 10 Feb 1958, *Hall 418* (BOL49892!); Chimanimani Mountains, south of Mount Peza, 1646 m (–CC), 2 Feb 1958, *Hall 297* (BOL96148!, K001208153!); Chimanimani Mountains, forest behind mountain hut, 1737 m (–CC), 6 Apr 1969, *Simon & Kelly 1852* (BOL49924!, K001208152!). Masvingo Province: 2031 (Bikita): Bikita District, south face of Mount Horzi, 1180 m (–BA), 11 May 1969, *Biegel 3136* (BOL49920!, K001208151!).

1.2. *Stenoglottis fimbriata* var. ***modesta*** (Truter & Joliffe) D.P.Phillips & Bytebier, *stat. nov.* (Figs 4–5)

Basionym: *Stenoglottis modesta* Truter & Joliffe (2011: 12), as *S. modestus*.

Type:—SOUTH AFRICA. KwaZulu-Natal: Vryheid, Lancaster Hill, 3 Jan 2009, *Gibbon s.n.* (holotype: PRU, 115533!).

Diagnostic characters:—*Stenoglottis fimbriata* var. *modesta* is distinguished from the nominal variety by its leaves that are consistently entire and unspotted (Fig. 4C), minute vestigial spur (Fig. 4E), and distinctly trilobed labellum lacking additional fimbriation (Fig. 4A–B, D). For a detailed diagnosis of the varieties, see diagnostic characters under *S. fimbriata* var. *fimbriata*. In addition to the traits already discussed, in *S. fimbriata* var. *modesta* the inflorescence is often more notably sub-secund than in other *Stenoglottis* taxa, and the flowers may remain semi-closed even at anthesis. However, neither of the latter two characteristics was found to be consistent across all sampled populations. *Stenoglottis fimbriata* var. *modesta* is not likely to be mistaken for any of the other *Stenoglottis* species, but can

nevertheless be distinguished by its acute side lobes, which in the remaining taxa are either broad and rounded (*S. woodii* and *S. macloughlinii*) or ligulate to broad and variously divided (*S. longifolia* and *S. inandensis*). It differs from all these species also in that its flowers are consistently self-pollinating and short-lived (usually beginning to close within ± 2 days of opening) and its stigmatic arms that are always erect in mature flowers (Fig. 4F–G), rather than forward-facing (i.e. approximately parallel to the labellum). Finally, despite its vestigial spur, it is not likely to be confused with any of the truly spurred species except perhaps, when not in flower, with *S. woodii*, which has essentially identical foliage.

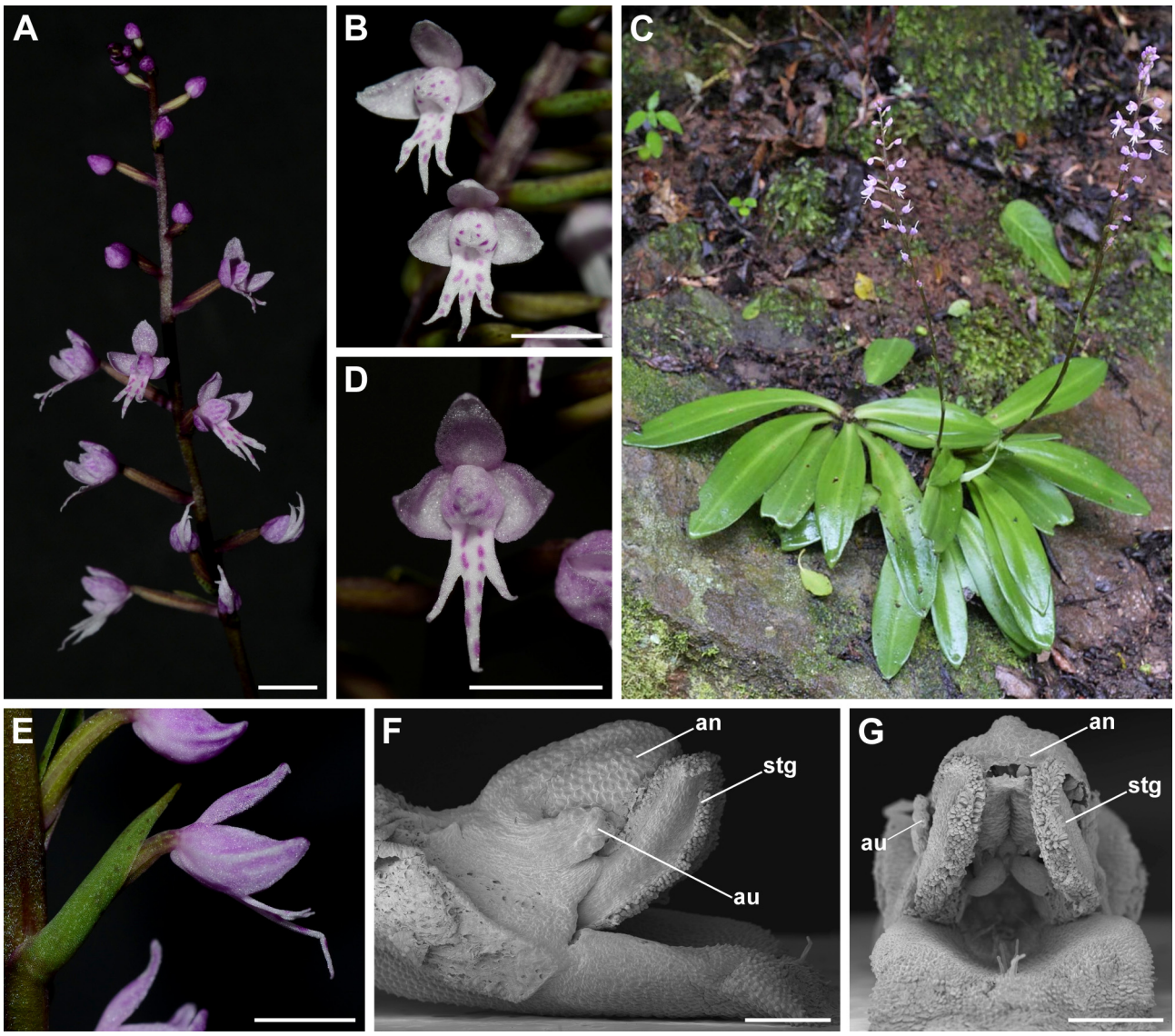

FIGURE 4. Selected specimens of *Stenoglottis fimbriata* var. *modesta*. A, inflorescence, Fawn Leas (KZN). B, flowers ventral view, Mnyolo (EC). C, habit (*in situ*), Vryheid Hill Nature Reserve (KZN). D–E, flowers ventral and lateral view (showing vestigial spur and sheathing bract), Vryheid Hill Nature Reserve (KZN). F–G, column ventral and lateral view, Ixopo (KZN). Scale bars = 5 mm (A–B, D–E), 0.5 mm (F–G). Abbreviations: au = auricle, an = anther, stg = stigmatic arm. C reproduced with the permission of Herbert Stärker.

Notes:—Most diagnostic characters described by Truter & Jollife (2011) for *S. modesta* are consistent throughout its geographic range. However, phylogenetic analyses (Phillips & Bytebier 2020) has shown it to be indistinguishable from *S. fimbriata* (as circumscribed in this paper, including both subspecies and *S. zambesiaca*) with which, in spite of its reliable diagnosis, it clearly shares overall morphological similarity. It seems that *S. modesta* recently diverged from *S. fimbriata*, and in view of the fact that it is sympatric (often in mixed populations) with *S. fimbriata,* it is better treated as an infraspecific taxon of that species. It is therefore reduced in rank here to *S. fimbriata* var. *modesta*.

Distribution and ecology:—*Stenoglottis fimbriata* var. *modesta* is known from several disjunct localities in the Eastern Cape and KwaZulu-Natal, South Africa (Fig. 5), at elevations of 600–1300 m. It occurs in forests or forest margins, in deep or partial shade, most commonly as a lithophyte on mossy boulders, or on ledges and crevices along south-facing cliff faces, occasionally as a terrestrial in shallow soil. At several localities it has been found to co-occur with the nominal variety, with which it overlaps in flowering period but maintains its distinct form. It flowers February–April and is consistently self-pollinating.

Specimens:—SOUTH AFRICA. Eastern Cape: 3127 (Lady Frere): Engcobo, 1250 m (–DB), 15 Feb 1912, *McLoughlin 47a* (BOL96149!, BOL49893!). 3128 (Umtata): Mnyolo, on road between Mnyolo and Ugie, 993 m (–AD), 15 Jan 2017 (ex hort. Mar 2018), *Phillips 50* (BNRH!, NU0088387!); Mnyolo, on Engcobo–Maclear road, Mnyolo Drift, 1113 m (–CB), 27 Feb 1997, *Dold 2896* (GRA0005020!). 3225 (Somerset East): Somerset East, Stockenstroom, 609 m (–DD), Mar 1887, *Scully 690* (BM000034617!, BOL49891!). 3228 (Butterworth): Willowvale (–AD), 25 Feb 1960, *Van Breda 883* (PRE0036813-0!). KwaZulu-Natal: 2730 (Vryheid): Vryheid Hill Nature Reserve, 1302 m (–DD), 17 Mar 2016 (ex hort. Mar 2018), *Phillips 28a* (NU0088333!); Vryheid Nature Reserve (–DD), 16 Mar 1988, *Youthed 219* (CPF0021093!). 2929 (Underberg): Estcourt, Moor Park Nature Reserve (–BB), 19 Feb 1999, *Scott-Shaw 9441* (CPF0021100-1!); Estcourt, Moor Park Nature Reserve (–BB), 19 Feb 1999, *Scott-Shaw 9446* (CPF0021100!). 2930 (Pietermaritzburg): Howick, Umgeni Valley Nature Reserve, 951 m (–AC), 9 Mar 2016, *Phillips 24* (NU!); New Hanover, Fawn Leas, 931 m (–BD), 10 Mar 2016, *Phillips 25* (NU!); Pietermaritzburg (–CB), Mar 1932, *Carnegie NBG356/31* (BOL49914!); Cumberland Nature Reserve, in forested gorge next to path leading to top of big waterfall, 614 m (–DA), 13 Jan 2016, *Phillips 1* (NU!); Cumberland Nature Reserve, in forested gorge next to path leading to top of big waterfall, 608 m (–DA), 13 Jan 2016 (ex hort. Mar 2018), *Phillips 2* (NU0088308!); Inanda (–DB), 1880 *Wood 854* (BOL50012!); Ismont, 609 m (–DC), Apr 1883, *Wood 24* (PRE0036824-0!, SAM0020466!). 3030 (Port Shepstone): Ixopo, Langefontein Farm, 748 m (–AA), 14 Jan 2016 (ex hort. Mar 2018), *Young & Phillips 2477* (BNRH!, NU0088301!).

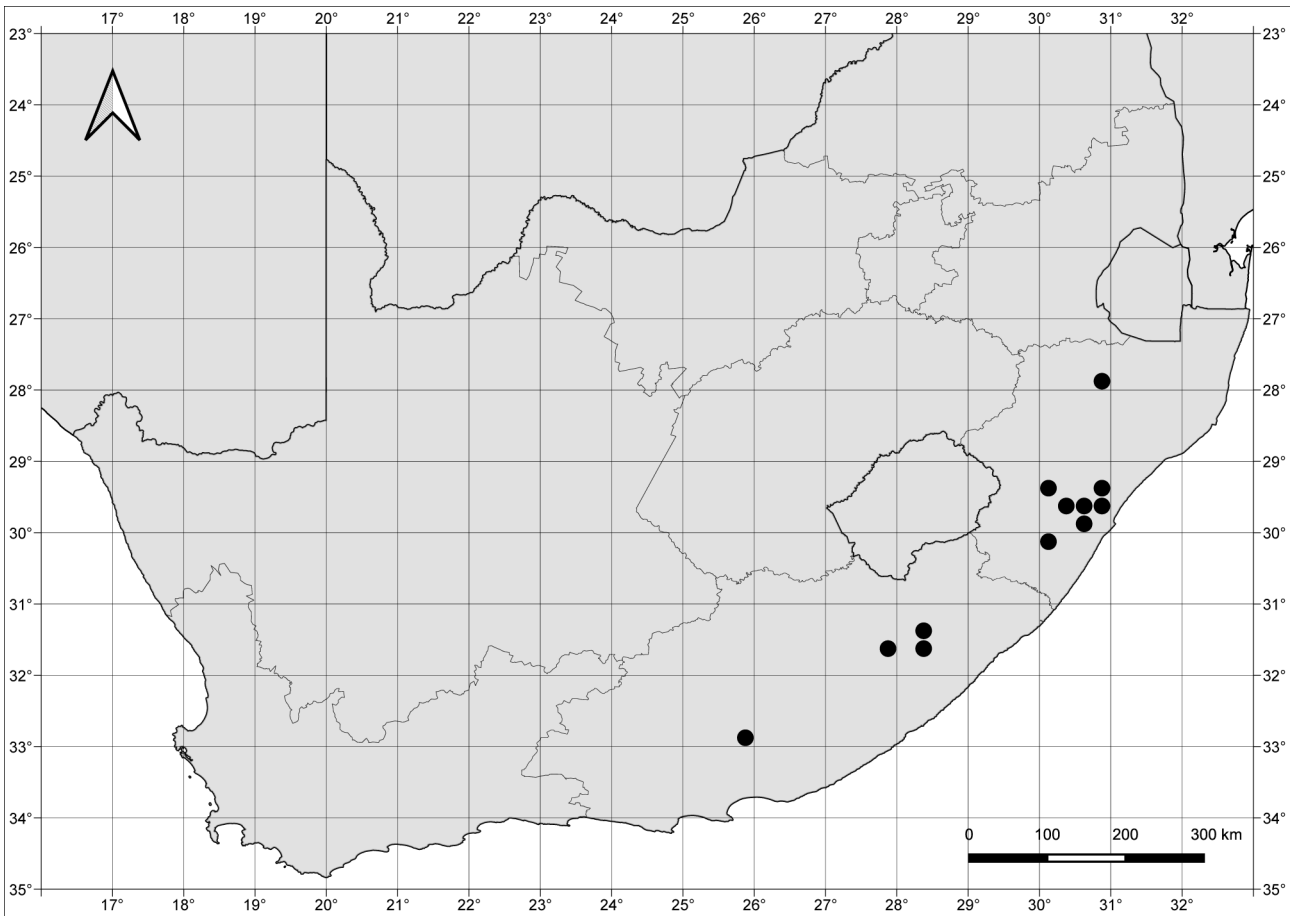

FIGURE 5. Distribution of *Stenoglottis fimbriata* var. *modesta*.

2. *Stenoglottis longifolia* Hooker (1891: t.7186). (Figs 6–7)

Type:—SOUTH AFRICA. KwaZulu-Natal: Ngoye Forest, date unknown (ex hort. 24 Sep 1889), *Wood s.n.* (holotype: K, 000415559!).

Heterotypic synonyms: *Stenoglottis molweniensis* G.McDonald ex Shaw (2007: 24). Type:—SOUTH AFRICA. KwaZulu-Natal: unknown locality inland from Durban, date unknown (prior to May 1982), *Stewart 2275* (holotype: WSY, 0100905, photo!).

Stenoglottis molweniensis McDonald (2008: 12), *nom. illeg*. Type:—SOUTH AFRICA. KwaZulu-Natal: Durban, Krantzkloof Nature Reserve, close to Interpretive Centre, 420 m, 24 Feb 2002, *Styles 657* (holotype: NU, 0015948!).

Lithophytic or terrestrial. Leaves 7–15, lanceolate to linear, usually concolourous green or sparsely spotted, sometimes heavily spotted with brown or maroon, margins flat to weakly undulate, up to 21 × 3 cm. Inflorescence up to 80 cm tall, 20–120 flowers; sheaths spotted or unspotted. Bracts cordate to lanceolate, acute to acuminate, spotted or unspotted, recurved, always shorter than the ovaries, 7.0–17.0 × 2.5–4.5 mm. Flowers white, pink or lilac to mauve, often spotted with a darker shade of pink or purple on all parts; not self-pollinating. Sepals ovate, acute to obtuse, dorsal concave, laterals oblique, 4.5–7.6 × 2.8–5.4 mm, subequal. Petals ovate, oblique, acute, 3.5–6.3 × 2.5–4.6 mm. Labellum unspurred, oblong to obovate, 7.9–15.0 × 3.5–8.6 mm; side lobes usually with 2–5 fimbriae of variable length, sometimes ligulate and entire or shallowly incised; midlobe acute to attenuate, longer than or subequal to side lobes. Column up to 2 mm long; stigmatic arms suberect or parallel to labellum in mature flowers, curving outward; auricles large, clavate, up to 0.8 mm × 0.6 mm at the apex, projecting beyond the anther between the pollinia and stigmas. Ovary 8–22 mm long.

Diagnostic characters:—*Stenoglottis longifolia* is most likely to be mistaken for *S. fimbriata*. Both species exhibit a high degree of morphological variation, particularly in those characters that have historically been used to diagnose them, including overall plant size and degree of fimbriation of the labellum. Whereas specimens of *S. longifolia* are generally more robust (i.e. having long leaves and tall, many-flowered inflorescences) and usually have relatively large individual flowers with deeply divided side lobes, these traits are inconsistent and vary considerably within and between populations of both taxa. Instead, *S. longifolia* and *S. fimbriata* are most reliably distinguished by differences in their floral bracts, column morphology and pollination mode. The bracts of *S. longifolia* flowers are markedly recurved (Fig. 6I, L), whereas those of *S. fimbriata* are sheathing. The auricles of *S. longifolia* are clavate with narrow stalks and swollen apices and project beyond the anther, such that they lie between the stigmatic arms and pollinia (Fig. 6N–O). In contrast, the auricles of *S. fimbriata* are usually slender or wider only slightly at the apex and are adnate to the sides of the anther and therefore do not obstruct the stigmatic arms (Figs 2, 4F–G). Consequently, the flowers of *S. fimbriata* (both varieties) exhibit a high incidence of spontaneous self-pollination, whereas those of *S. longifolia* do not.

The floral morphology of *S. longifolia* is similar in most respects to *S. inandensis*, but they can be easily distinguished by the spurred labellum of the latter. Likewise, *S. longifolia* is not likely to be confused with either *S. woodii* or *S. macloughlinii* due to their spurred labella.

Notes:—*Stenoglottis molweniensis* was first used informally by McDonald (2006), who proposed it in reference to plants observed in the Molweni River Valley and Noodsberg areas of KwaZulu-Natal; he described them as resembling *S. woodii* but lacking a spur. The name was formalised by Shaw (2007), who designated a specimen prepared from material cultivated at the Royal Horticultural Society Garden at Wisley, UK, as the holotype. This specimen, *Stewart 2275*, was "collected by a student of Joyce Stewart's from an unknown locality inland from Durban, KwaZulu-Natal, South Africa, prior to May 1982". This is almost certainly the plant referred to by Stewart (1989), under the 'hybrids' section of her review of *Stenoglottis*, as having been given to her by a student "who could not recall its provenance exactly". She described this plant, together with specimens observed in the Noodsberg area, as "intermediate in character between those of *S. longifolia* and *S. woodii*", having foliage similar to that of *S. woodii* but with "broad side lobes of the lip [that] are finely fringed, though the fimbriae are not as long as those of *S. longifolia*, and the lip has no spur".

The validation of *S. molweniensis* by Shaw (2007) was done apparently without the knowledge of McDonald, who a year later attempted to formalise his earlier proposed name, designating a specimen (*Styles 657*) collected from the Krantzkloof Nature Reserve in the Molweni River Valley as the holotype (McDonald 2008). Specimens collected from both the Noodsberg area (*Phillips 26* and *Phillips 56*) and Molweni River Valley (*Phillips 16* and *Phillips 38*) were included in the phylogenetic analysis of Phillips & Bytebier (2020). These populations were not resolved as a clade; instead, the Noodsberg specimens (referred therein as *S.* cf. *longifolia*) were found to have ITS and ETS sequences identical to those of *S. longifolia* from the Kranskop area of KwaZulu-Natal (*Phillips 27*), with which they were collectively resolved as sister to *S. longifolia* from Eshowe and Ngoye Forest, the latter being the type

locality of *S. longifolia*. Based on the remarks of Stewart (1989) and Shaw (2007), as well as comparison of the type material with specimens personally collected during this study, it is almost certain that the holotype of *S. molweniensis* G.McDonald ex J.M.H.Shaw originated from the Noodsberg area rather than the Molweni River valley, in which case *S. molweniensis* G.McDonald ex J.M.H.Shaw is nested within *S. longifolia*.

Regardless of any issues surrounding its nomenclature and typification, the concept of *S. molweniensis* cannot in any case be reliably distinguished from *S. longifolia* based on the information provided by Shaw's description, which diagnoses it on the basis of its leaves (being entire and non-undulating) and side lobes (having fimbriae shorter than those of *S. longifolia*). Likewise, the characters provided in the morphological key accompanying McDonald's concept (number and density of flowers, robustness of the plants and colouration of sepals and petals) are not adequate for distinguishing these taxa. Recent morphological investigations, including a multivariate morphometric analysis of specimens sampled from across the range of localities in South Africa also do not discriminate between *S. longifolia* and *S. molweniensis* or reveal additional qualitative characters for separating them (Phillips & Bytebier 2020). In contrast, several shared characteristics (spurless labella, recurved bracts, clavate auricles and flowers that never self-pollinate) collectively distinguish these populations from the remaining *Stenoglottis* taxa. Furthermore, there is no indication from nuclear DNA data, or incongruence of nuclear and plastid markers, that the specimens previously referred to as *S. molweniensis* are of hybrid origin. Consequently, *S. molweniensis* is synonymised here with *S. longifolia*.

Distribution and ecology:—*Stenoglottis longifolia* occurs in KwaZulu-Natal, South Africa, and the Lebombo Mountains of Eswatini and southern Mozambique (Fig. 7) at elevations of 230–1200 m. It has also previously been reported to occur in the Eastern Cape by Linder & Kurzweil (1999). However, the specimen they referred to (*Pegler 1902*, cited here as *Pegler s.n.* collected March 1902) is confirmed as *S. fimbriata* var. *fimbriata*. No other herbarium specimens from the Eastern Cape or plants found during fieldwork in the province were identified as *S. longifolia*. *Stenoglottis longifolia* occurs in forests or forest margins in deep or partial shade, most commonly as a lithophyte on boulders, frequently along streams or on south-facing cliff faces; occasionally it occurs as a terrestrial on banks or the forest floor. It flowers February–July and is not self-pollinating.

Specimens:—ESWATINI. Lubombo Region: 2631 (Mbabane): Siteki [Stegi] (–BD), unknown collector *NBG191/62* (BOL49915!). MOZAMBIQUE. Maputo Province: 2531 (Komatipoort): Namaacha District, Lebombo Mountains [Libombos], Mount M'ponduine [Mpondium], 800 m (–DD), 22 Feb 1955, *Exell et al. 514* (BM000034604!); Namaacha District, Mount M'ponduine [Monte Ponduine], 800 m (–DD), 17 Mar 1969, *Correia & Marques 617* (WAG1140770 photo!); Namaacha District, Mount M'ponduine [Monte Ponduine], 800 m (–DD), 31 Mar 1975, *Marques 2679* (WAG1140771 photo!). SOUTH AFRICA. KwaZulu-Natal: 2731 (Louwsberg): Ithala Nature Reserve (–CA), Mar 1990, *Scott-Shaw 3266* (CPF0021092!). 2830 (Dundee): Kranskop, 10 miles north of Tugela River on Kranskop–Nkandla Road (–DD), Mar 1956, *Bell 27* (BOL49895!); Kranskop, The Kop (–DD), Feb 1949, *Gibbs 48* (NU0010073!); Kranskop, 1158 m (–DD), 9 Mar 1962, *Mauve 4204* (PRE0036821-0!); Kranskop, on rocks next to road through Kranskop Forest, 825 m (–DD), 15 Mar 2016 (ex hort. Mar 2018), *Phillips 27* (BNRH!, NU0088332!); Kranskop, Untunjambili Forest (–DD), 1 Apr 1943, *West 1984* (NH0034084-0!). 2831 (Nkandla): Hlabisa, Hluhluwe Game Reserve, 609 m (–BB), 28 Mar 1954, *Ward 2261* (CPF0021098!, NH0042082-0!, NH0042226-0!, PRE0036853-0!); Nkandla, 20 miles from Nkandla village to Eshowe (–CA), date unknown, *Bell 43* (BOL49894!); Nkandla Forest, 1158 m (–CA), 29 Feb 1952, *Codd 6975* (BR0000021817861 photo!, K001208119!, MO, NH0041245-0!, NU0010098!, P00339728 photo!, PRE0036816-0!, UC, US); Nkandla, upper edge of Nkandla Forest, 1219 m (–CA), 15 Feb 1961, *Edwards 2483* (NU0010099!); Nkandla, Dolwane Store (–CA), Mar 1964, *Hilliard s.n.* (BOL49907!); Nkandla Forest (–CA), date unknown, *Moberley s.n.* (NU0010097!); Nkandla Forest Reserve, 1196 m (–CA), 8 Apr 2016 (ex hort. Mar 2018), *Phillips & Potgieter 35* (BNRH!, NU0088344!, NU0088345!); Eshowe, Mlalazi River north of Eshowe, 420 m (–CD), 31 Mar 2016 (ex hort. Apr 2018), *Phillips & Potgieter 33* (BNRH!, NU0088341!, NU0088342!); Eshowe (–CD), 25 Jul 1892, *Saunders 2* (K001208120!); Eshowe, on stones in river bed near Eshowe (–CD), Apr 1944, *Schelpe s.n.* (NU0010105!); Ngoye Forest Reserve, The Dome, 450 m (–DC), 16 Jun 1982, *Balkwill 304* (NU0010107!); Ngoye Forest Reserve, The Dome, 480 m (–DC), 30 Mar 1984, *Balkwill et al. 1330* (NU0010106!); Ngoye Forest (–DC), Apr 1999, *Edwards & Potgieter 1645* (NU0010104!); Ngoye Forest Reserve, 487 m (–DC), 8 Feb 1963, *Huntley 262* (MO!); Ngoye Forest Reserve, 230 m (–DC), 12 Mar 1993, *Hutchings 3216* (NH0116221-0!); Ngoye Forest Reserve, path leading off old woodcutter's road to junction of streams (–DC), 8 Mar 1993, *Hutchings 3217* (NH0116198-0!); Ngoye Forest Reserve, 300 m (–DC), 5 May 1993, *Hutchings 3230* (NH0116207-0!, PRE0789692-0!); Ngoye Forest Reserve, 300 m (–DC), 5 May 1993, *Hutchings 3231* (PRE0789691-0!); Ngoye Forest Reserve, near Birder's Camp, 286 m (–DC), 31 Mar 2016 (ex hort. Apr 2018), *Phillips & Potgieter 31* (BNRH!, NU0088337!, NU0088338!); Ngoye Forest Reserve, north of Birder's Camp, 351 m (–DC), 31 Mar 2016 (ex hort. Apr 2018), *Phillips & Potgieter 32* (BNRH!, NU0088339!, NU0088340!); Ngoye Forest (–DC), Jun 1960, *Schelpe s.n.* (BOL49910!);

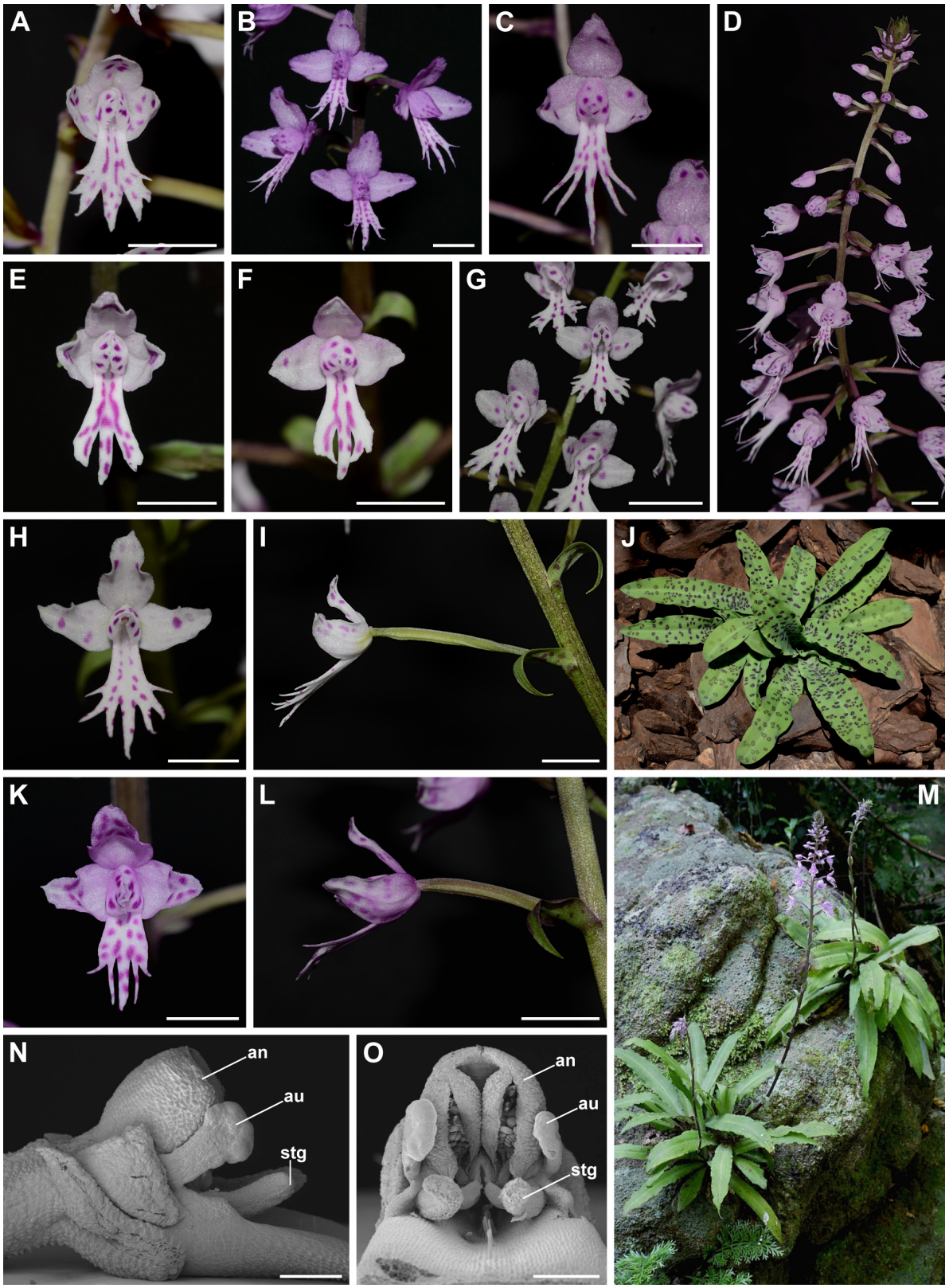

FIGURE 6. Selected specimens of *Stenoglottis longifolia*. A, flower ventral view, Nkandla Forest Reserve (KZN). B, flowers, Ngoye Forest Reserve (KZN). C–D, flower ventral view and inflorescence, Eshowe (KZN). E, flower ventral view, Krantzkloof Nature Reserve (KZN). F, flower ventral view, Shongweni (KZN). G, flowers, Noodsberg (KZN). H–J, flower ventral view, lateral view (showing spurless labellum and recurved bract) and leaf rosette (cultivated), Kranskop (KZN). K–L, flower ventral and lateral view, Ngoye Forest Reserve (KZN). M, habit (*in situ*), Eshowe (KZN). N–O, column lateral and ventral view, Ngoye Forest Reserve (KZN). Scale bars = 5 mm (A–L), 0.5 mm (N–O). Abbreviations: au = auricle, an = anther, stg = stigmatic arm. M reproduced with the permission of Herbert Stärker.

Ngoye Forest Reserve, 240 m (–DC), 23 Apr 1987, *Ward 2033* (NH0101107-0!); Ngoye Forest (–DC), 21 Feb 1961, *Wells & Edwards 114* (NU0010101!); Ngoye Forest [Ngoya], 609 m (–DC), 1 Apr 1899, *Wood 7502* (MO!); Ngoye Forest [Ungoya], 304 m (–DC), May 1887, *Wood 1024* (BOL50016!, P00339735 photo!); Ngoye Forest [Ungoya], (–DC), 16 Apr 1895, *Wood 5650* (BOL49917!, NH0007116-1!, PRE0036850!); Ngoye Forest [Ungoya], 304 m (–DC), 10 May 1887, *Wood s.n.* (BM001172120!). 2930 (Pietermaritzburg): Noodsberg, Marchmont Farm, 825 m (–BD), 10 Mar 2016 (ex hort. Mar 2018), *Phillips 26* (BNRH!, NU0088331!); Noodsberg, Marchmont Farm, 861 m (–BD), 3 Apr 2017, *Phillips 56* (NU0088391!); Inanda Heights (–DB), 25 Mar 1940, *Schweickerdt 1430* (NH0031898-0!); Inanda (–DB), May 1880, *Wood 548* (BM001172054!, K001208133!); Shongweni, 538 m (–DC), 26 Nov 2016 (ex hort. Mar 2018), *Phillips 38* (BNRH!, NU0088348!); Kloof, Forest Hills, 609 m (–DD), 5 Apr 1964, *Hilliard 2821* (NU0010079!); Krantzkloof Nature Reserve, 472 m (–DD), 13 Feb 2016 (ex hort. Apr 2018), *Phillips & Garnier 16* (BNRH!, NU0088323!). Without precise locality: Zululand, Apr 1902, *Wylie s.n.* (P00339727 photo!); Zululand, Mar 1903, *Wylie s.n.* (L1526645 photo!).

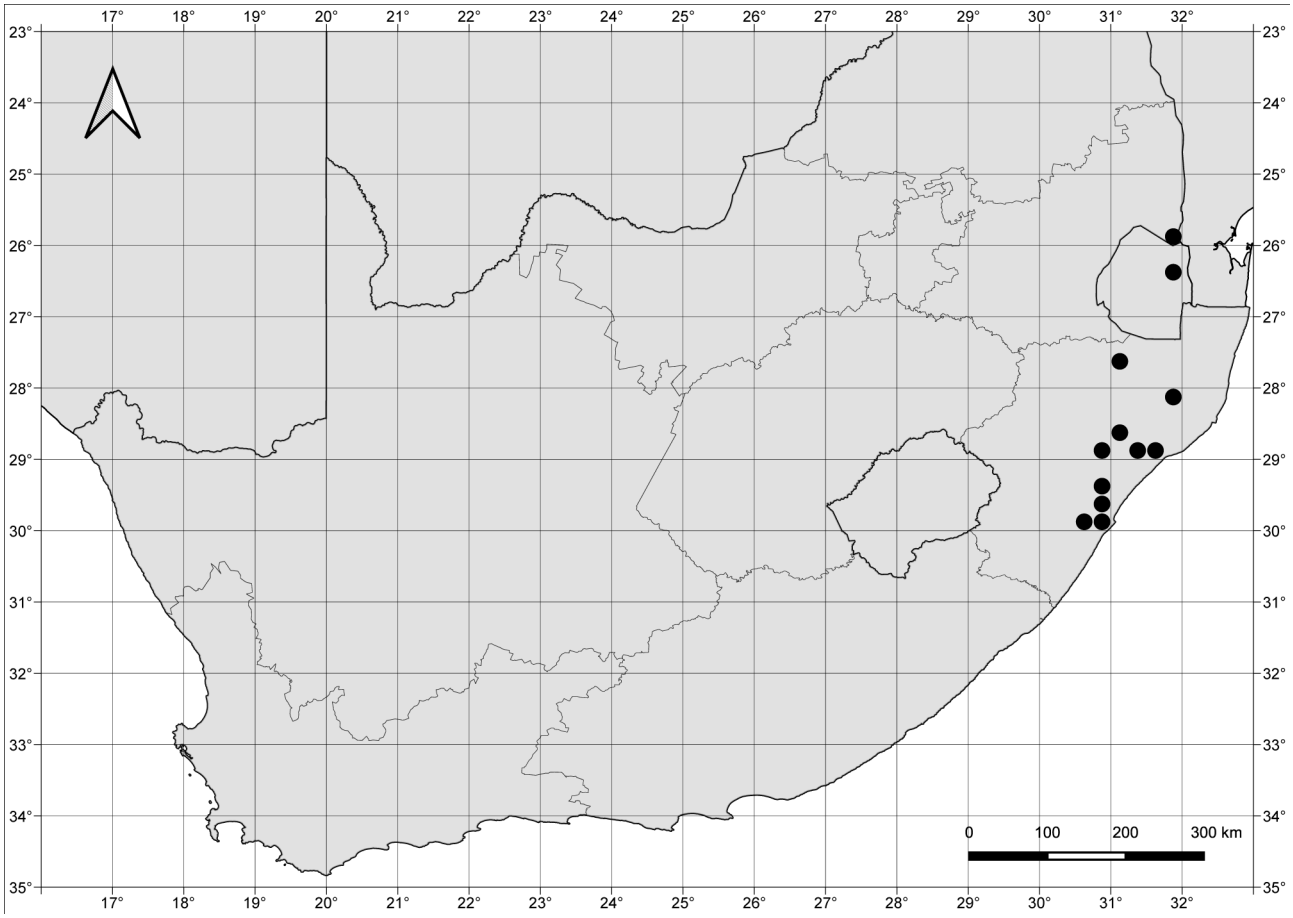

FIGURE 7. Distribution of *Stenoglottis longifolia*.

3. *Stenoglottis inandensis* G.McDonald & D.Styles in McDonald (2008: 10). (Figs 8–9)

Type:—SOUTH AFRICA. KwaZulu-Natal: Inanda Mountain, inland of Durban, overlooking Inanda Dam, 23 Apr 2005, *Styles & McDonald 2613* (holotype: NU, 0016075!).

Lithophytic or terrestrial. Leaves 6–10, lanceolate to linear, concolourous green or sparsely spotted with brown or maroon, margins flat, entire, up to 12.0 × 1.8 cm. Inflorescence up to 48 cm tall, with 15–30 flowers; sheaths unspotted. Bracts cordate, acute to acuminate, unspotted, sheathing or recurved, always shorter than the ovaries, 6.0–8.0 × 2.3–5.0 mm. Flowers white to pale pink, often spotted with a darker shade of pink or purple on all parts or labellum only; not self-pollinating. Sepals ovate, acute to obtuse, dorsal concave, laterals oblique, 5.0–7.5 × 2.7–5.5 mm, subequal. Petals ovate, oblique, acute, 4.2–6.5 × 3–4.5 mm. Labellum spurred; oblong to obovate in outline, 8.6–18 × 4.2–7.4 mm; side lobes shallowly incised to deeply divided; midlobe attenuate, longer than or subequal to side lobes; spur saccate, 1.4–3.2 mm × 0.8–1.4 mm at the apex, without nectar. Column up to 2.5 mm long; stigmatic arms suberect or parallel

to labellum in mature flowers, curving outward; auricles clavate, up to 0.8 mm × 0.6 mm at the apex, projecting beyond the anther between the pollinia and stigmas. Ovary 12–22 mm long.

Diagnostic characters:—*Stenoglottis inandensis* is easily distinguished from *S. fimbriata* and *S. longifolia* by its spur (Fig. 8D, F–G). It does not overlap geographically with *S. macloughlinii*, but in any case could be easily distinguished by differences in their spurs: saccate and without nectar in *S. inandensis* versus tapered and nectar-producing in *S. macloughlinii*. *Stenoglottis inandensis* is most likely to be mistaken for *S. woodii*, with which it overlaps in both geographic distribution and flowering period. They can be distinguished by differences in their spur, labellum and leaf morphology. The spurs of *S. inandensis* are generally longer (1.4–3.2 mm) than those of *S. woodii* (0.4–1.5 mm), as well as being more notably saccate in shape (i.e. bulging at the apex). Only one population of *S. woodii*, from Fields Hill, Pinetown, was found to have spurs as long as those of *S. inandensis*. The side lobes of *S. inandensis* always exhibit some degree of additional fimbriation, although the fimbriae vary considerably in length (Fig. 8A, C, E), whereas the side lobes of *S. woodii* are broad, rounded to truncate and almost always entire. The labellum midlobe in *S. inandensis* is slender with a sharply pointed tip, whereas in *S. woodii* it tends to be broader with a more obtuse apex. Finally, the bracts of *S. inandensis* may be sheathing or recurved (Fig. 8G) and leaves unspotted to sparsely spotted with brown or maroon (Fig. 8H), whereas in *S. woodii* the bracts are always sheathing and leaves are never spotted.

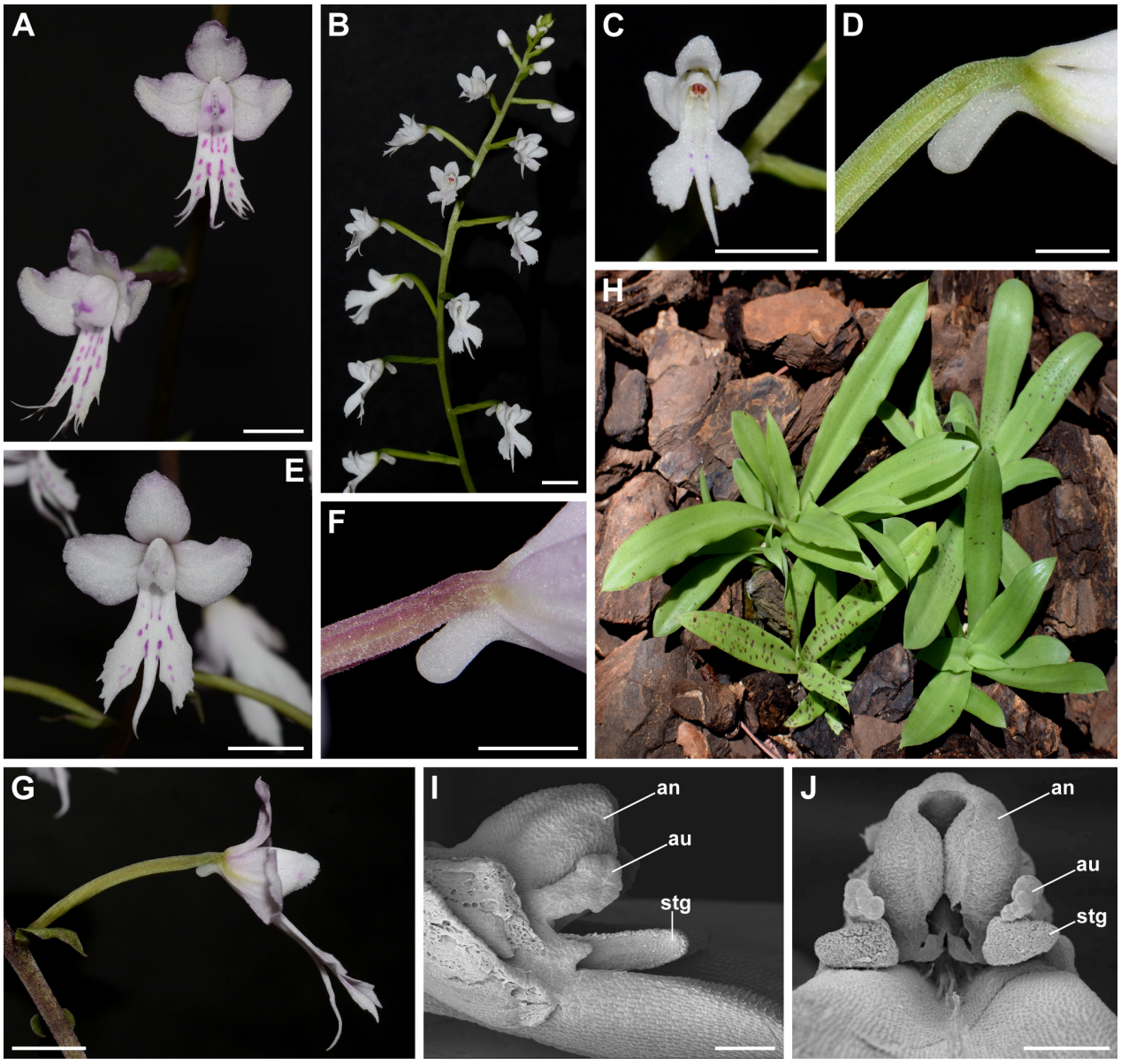

FIGURE 8. Selected specimens of *Stenoglottis inandensis*. A, flowers, Inanda Mountain (KZN). B–D, inflorescence, flower ventral view and spur close-up, Table Mountain (KZN). E–H, flower ventral view, spur close-up, flower lateral view (showing spurred labellum and recurved bract) and leaf rosettes (cultivated), Inanda Mountain (KZN). I–J, column lateral and ventral view, Inanda Mountain (KZN). Scale bars = 5 mm (A–C, E, G), 2 mm (D, F), 0.5 mm (I–J). Abbreviations: au = auricle, an = anther, stg = stigmatic arm.

Notes:—*Stenoglottis inandensis* is morphologically and phylogenetically distinct from the other spurred taxa. It is a rare and locally restricted species that was previously known (from herbarium records) only from the type locality at Inanda Mountain; the population at Table Mountain (~25 km northwest of Inanda Mountain and ~15 km east of Pietermaritzburg, KwaZulu-Natal) was previously regarded as *S. woodii*. However, a specimen from this locality (*Phillips 22*) included in the phylogenetic analysis of Phillips & Bytebier (2020) was sister to *S. inandensis* accessions from Inanda Mountain (*Young 2510* and *Young 2512*). Collectively, the phylogenetic position of these populations is closer to the spurless *S. fimbriata* and *S. longifolia* than to the clade containing *S. woodii* and *S. macloughlinii*. The plants from the Table Mountain population also share several morphological characteristics (see 'diagnostic characters') with the Inanda Mountain plants that collectively distinguish them from the other spurred species. Consequently, the circumscription of *S. inandensis* has been expanded here to encompass this population.

Distribution and ecology:—*Stenoglottis inandensis* is restricted to KwaZulu-Natal, South Africa, where it is known from several scattered colonies on Inanda Mountain and Table Mountain (Fig. 9) at elevations of 600–900 m. It occurs in forests or forest margins in deep or partial shade, most commonly as a lithophyte on boulders or on ledges and crevices along south-facing cliff faces, occasionally as a terrestrial in shallow soil. It flowers January–April and is not self-pollinating.

Specimens:—SOUTH AFRICA. KwaZulu-Natal: 2930 (Pietermaritzburg): Table Mountain, 823 m (–DA), 13 Jan 1949, *Killick 244* (NU0010115!); Table Mountain, 897 m (–DA), 1 Mar 2016 (ex hort. Mar 2018), *Phillips 22* (NU0088329!); Inanda Mountain, inland of Durban, 650 m (–DB), 17 Feb 2016, *Styles 5268* (NH0141061-0!); Inanda Mountain, overlooking Inanda Dam, 636 m (–DB), 19 Jan 2016 (ex hort. Mar 2018), *Young et al. 2510* (NU0088303!); Inanda Mountain, overlooking Inanda Dam, 636 m (–DB), 19 Jan 2016 (ex hort. Mar 2018), *Young et al. 2511* (NU!); Inanda Mountain, overlooking Inanda Dam, 635 m (–DB), 19 Jan 2016 (ex hort. Mar 2018), *Young et al. 2512* (BNRH!, NU0088304!, NU0088305!).

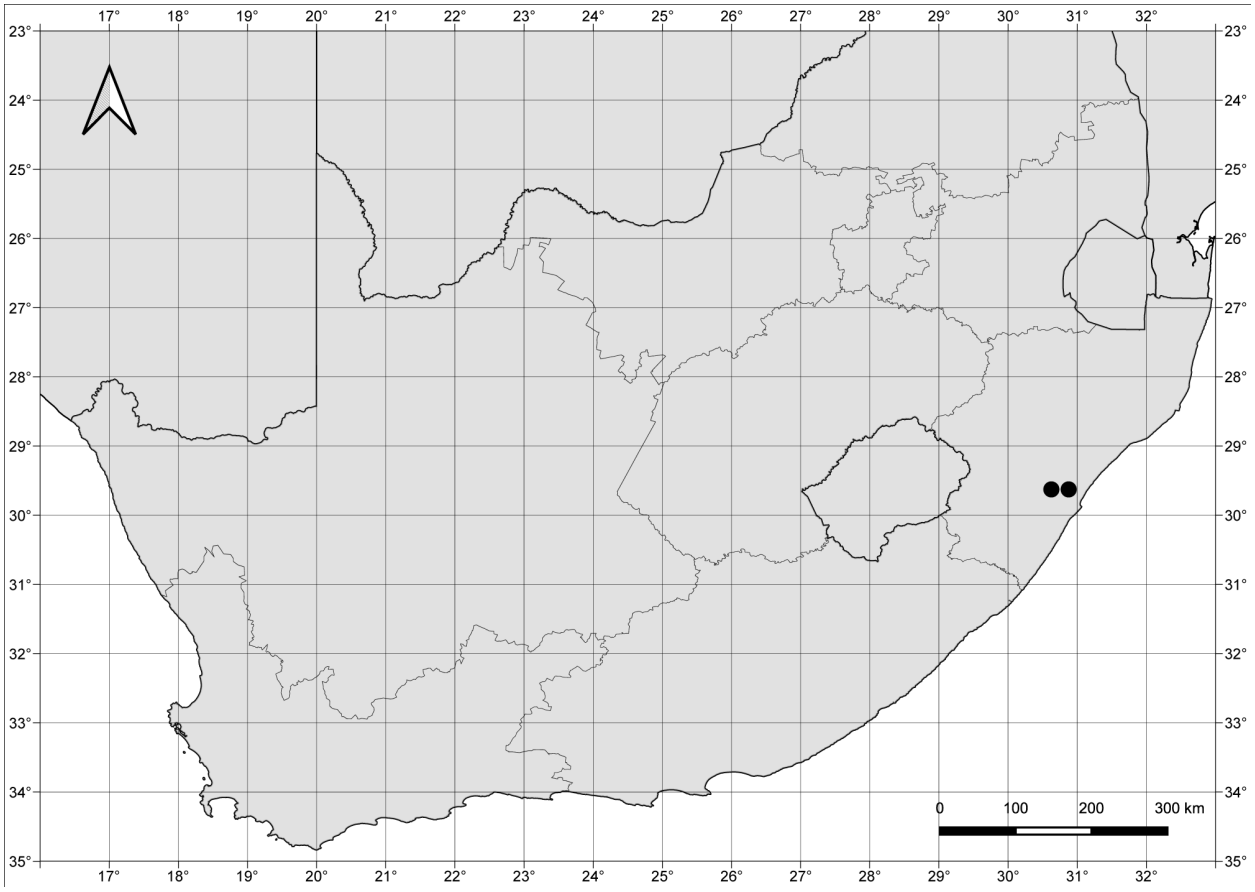

FIGURE 9. Distribution of *Stenoglottis inandensis*.

5. *Stenoglottis woodii* Schlechter (1924: 242). (Figs 10–11)

Type:—SOUTH AFRICA. KwaZulu-Natal: Botha's Hill, 762 m, 9 Feb 1898, *Wood 6697* (holotype: B, destroyed; isotype: NH).

Lithophytic or terrestrial. Leaves 6–12, broadly lanceolate to oblanceolate, unspotted, concolourous green, margins flat, entire, up to 14.5 × 3.5 cm. Inflorescence up to 50 cm tall with 15–65 flowers; sheaths unspotted. Bracts lanceolate, acute to acuminate, unspotted, sheathing, always shorter than the ovaries, 6.0–15.0 × 2.5–5.0 mm. Flowers white to pale pink, often spotted with a darker shade of pink or purple on the labellum only; not self-pollinating. Sepals ovate to narrowly ovate or elliptic, acute to obtuse, dorsal concave, laterals oblique 3.7–6.2 × 2.0–3.6 mm, laterals slightly longer. Petals ovate, oblique, acute, 3.2–4.8 × 2.3–3.4 mm. Labellum spurred, broadly obovate to cuneate in outline, 7–12 × 4.8–8.4 mm; side lobes broad, truncate or rounded, margins usually entire, rarely shallowly incised; midlobe narrower than side lobes, obtuse to acute, subequal or slightly longer than side lobes; spur short and straight, sub-saccate, 0.4–1.5 mm × 0.4–0.7 mm at the apex, without nectar. Column up to 2.0 mm long; stigmatic arms parallel to labellum in mature flowers, curving outward; auricles large, clavate, up to 0.8 mm × 0.5 mm at the apex, projecting beyond the anther between the pollinia and stigmas. Ovary 10.5–18.5 mm long.

Diagnostic characters:—*Stenoglottis woodii* is not likely to be confused with *S. fimbriata* or *S. longifolia* due to its spurred labellum (Fig. 10B, I), broad side lobes (Fig. 10A, C–H) and entire, unspotted leaves (Fig. 10J). It may be mistaken for *S. inandensis*, for which a detailed diagnosis is provided in the notes for that species. *Stenoglottis woodii* is most closely related and morphologically similar to *S. macloughlinii*. They are, however, easily distinguished by differences in their floral spurs: *S. woodii* has short (0.4–1.5 mm), straight, sub-saccate, nectar-less spurs, whereas those of *S. macloughlinii* are longer (2.0–3.0 mm), usually curved, tapering and nectar-producing. The side lobes of *S. woodii* are rounded to truncate, and the apex of the midlobe is acute to obtuse; in *S. macloughlinii* all lobes tend to be wider and rounder than those of *S. woodii*. *Stenoglottis woodii* also flowers later than *S. macloughlinii* and has a more northeastern distribution (Fig. 11).

Notes:—Some populations that have historically been regarded as *S. woodii* have been excluded from the revised circumscription presented here. These are discussed either with *S. inandensis* or under putative hybrids at the end of the taxonomic treatment. With these removed, the morphological boundary between *S. woodii* and *S. macloughlinii* becomes distinct. Nevertheless, these species are clearly closely related; accessions included in the phylogenetic analysis of nuclear DNA markers (Phillips & Bytebier 2020) were resolved as a polytomy of intermixed specimens with essentially identical ITS and ETS sequences and can only be phylogenetically distinguished by their plastid DNA. This incongruence suggests that *S. woodii* may have originated by introgressive hybridisation of *S. macloughlinii* and one of the spurless species (or recent ancestors of these taxa).

Distribution and ecology:—*Stenoglottis woodii* is restricted to KwaZulu-Natal, where it occurs in the Highflats area near Ixopo and at several localities near Durban and Pietermaritzburg (Fig. 11) at elevations of 600–1000 m. It tends to prefer somewhat drier and more exposed conditions than *S. fimbriata*, *S. longifolia* and *S. inandensis*. It occurs most commonly in partial shade on forest margins along the tops of south-facing cliffs, occasionally in grassland in full sun on rocky outcrops adjacent to forest patches or forested gorges as a lithophyte or terrestrial in shallow soil. These habitat preferences are not obligate, however, because the plants also occur less frequently in deep shade on boulders in forests. It flowers December–March and is not self-pollinating.

Specimens examined:—SOUTH AFRICA. KwaZulu-Natal: 2930 (Pietermaritzburg): New Hanover, Little Noodsberg, 1067 m (–BD), 12 Feb 1982, *Hilliard & Burtt 15495* (E, NU0010111!); Ingomankulu, ± 5 km SW of Camperdown, 970 m (–CD), 11 Jan 2016 (ex hort. Jan 2018), *Young & Phillips 2474* (NU0088298!); Ingomankulu, ± 5 km SW of Camperdown, 976 m (–CD), 11 Jan 2016, *Young & Phillips 2475* (NU0088299!); Ingomankulu, ± 5 km SW of Camperdown, 975 m (–CD), 11 Jan 2016 (ex hort. Jan 2018), *Young & Phillips 2476* (NU0088300!); Inchanga, Drummond Mountain, 823 m (–DA), 22 Mar 1952, *Cooke s.n.* (BOL49911!); Inchanga, 609 m, (–DA), 31 Mar 1957, *Loubser 46a* (NU0010075!); Cumberland Nature Reserve, in forested gorge near base of small waterfall, 612 m (–DA), 17 Feb 2016 (ex hort. Mar 2018), *Phillips 19* (NU0088326!); Monteseel, 739 m (–DA), 24 Mar 2016 (ex hort. Mar 2018), *Phillips 30* (BNRH!, NU0088336!); Inanda (–DB), 25 Sep 1963, *Strey 5572* (NH0052666-0!); Ndwedwe, Nhlangakazi Mountain, 800 m, (–DB) 7 Feb 2016, *Styles 5269* (NH0141063-0!); Inanda Mountain, 690 m (–DB), 19 Jan 2016 (ex hort. Jan 2018), *Young et al. 2513* (BNRH!, NU0088306!, NU0088307!); Botha's Hill, Kearsney College (–DC), 15 Mar 1964, *Hilliard 2808* (NU0010114!); Botha's Hill, Kearsney College (–DC), 15 Mar 1964, *Hilliard s.n.* (BOL49908!); Durban, Key Ridge (–DC), 10 Feb 2002, *Styles D.G.A. 500* (NU0015949!); Botha's Hill (–DC), 15 Mar 1901, *Wood 8224* (P00339734 photo!); Pinetown, Fields Hill (–DD), Apr 1983, *Edwards 52* (NU0010110!); Pinetown, Fields Hill, 484 m (–DD), 30 Jan 2019, *Phillips 91* (NU0088393!). 3030 (Port Shepstone): Ixopo, Highflats

(–AC), Jan 1928, *Grant s.n.* (BR0000021817885 photo!); Ixopo, Highflats (–AC), Jan 1928, *Grant s.n.* (MO!); Ixopo, Highflats, 870 m (–AC), 22 Jan 2016 (ex hort. Jan 2018), *Phillips & Doarsamy 3* (BNRH!, NU0088309!, NU0088310!, NU0088311!); Ixopo, Highflats, 870 m (–AC), 22 Jan 2016 (ex hort. Jan 2018), *Phillips & Doarsamy 4* (BNRH!, NU0088312!, NU0088313!).

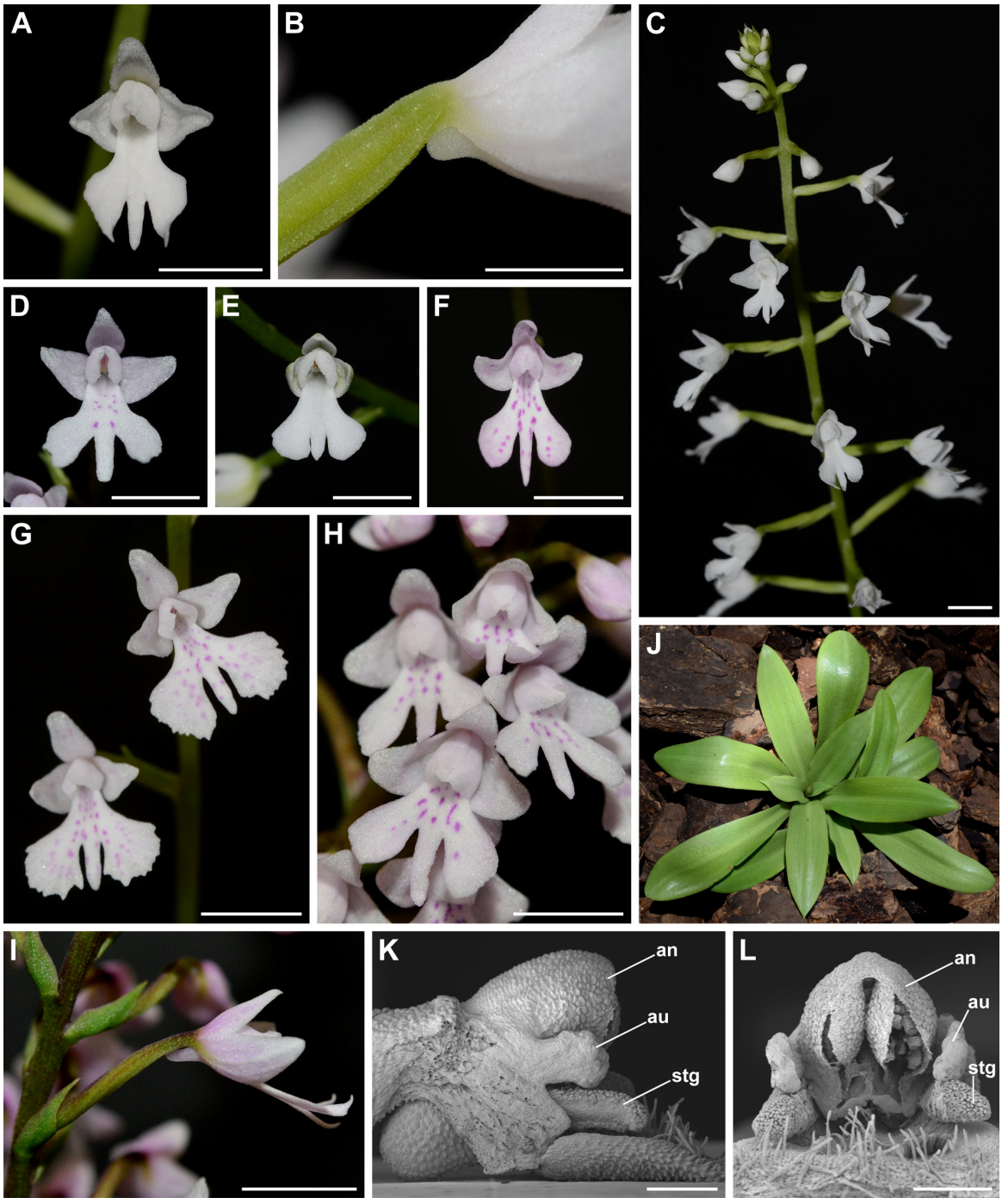

FIGURE 10. Selected specimens of *Stenoglottis woodii*. A–C, flower ventral view, spur clos-up and inflorescence, Monteseel (KZN). D, flower ventral view, Ingomankulu (KZN). E–G, flower ventral views (showing morphological variation in population), Highflats (KZN). H–I, flower ventral and lateral view (showing spurred labellum and sheathing bract), Fields Hill (KZN). J, leaf rosette (cultivated), Ingomankulu (KZN). K–L, column lateral and ventral view, Highflats (KZN). Scale bars = 5 mm (A, C–I), 2 mm (B); 0.5 mm (K–L). Abbreviations: au = auricle, an = anther, stg = stigmatic arm.

6. *Stenoglottis macloughlinii* (L.Bolus) G.McDonald ex Shaw (2003: 79). (Figs 11–12)

Basionym: *Cynorkis* [*Cynorchis*] *macloughlinii* Bolus (1928: 139).

Type:—SOUTH AFRICA. Eastern Cape: East Griqualand, Lusikisiki, date unknown (ex hort. Nov 1923), *Fraser NBG 164/23* (lectotype, designated by Linder & Kurzweil, 1999: BOL, 150445!).

Heterotypic synonym:—*Stenoglottis woodii* f. *galantha* Shaw (2007: 24). Type:—SOUTH AFRICA. KwaZulu-Natal: about 1.5 miles from Port Edward on Izingolweni Road, the farm Beacon Hill, 21 Oct 1976, *Stewart 1810* (holotype: WSY, 0100906, photo!).

Lithophytic or terrestrial. Leaves 5–15, broadly lanceolate to oblanceolate, unspotted, concolourous green or purple below, margins flat, entire, up to 12.5 × 2.2 cm. Inflorescence up to 35 cm tall with 10–40 flowers; sheaths unspotted. Bracts lanceolate, acute to acuminate, unspotted, sheathing, always shorter than ovaries, 5.0–8.0 × 2.0–3.3 mm. Flowers white or pink, often spotted with a darker shade of pink or purple on the labellum only; not self-pollinating. Sepals ovate to narrowly ovate or elliptic, acute to obtuse, dorsal concave, laterals oblique, 3.3–5.3 × 1.6–2.9 mm, laterals slightly longer. Petals ovate, oblique, acute, 2.7–4.4 × 1.7–2.6 mm. Labellum spurred, broadly obovate to cuneate in outline, 5.9–9.5 × 5.2–8.3 mm; side lobes broad, truncate or rounded, margins entire; midlobe rounded or obtuse, subequal or slightly shorter than side lobes; spur tapering, straight or recurved, 2–3 mm × 0.3–0.4 mm at the apex, nectar-producing. Column up to 2.0 mm long; stigmatic arms parallel to labellum in mature flowers, curving outward; auricles large, clavate, up to 0.65 mm × 0.45 mm at the apex, projecting beyond the anther between the pollinia and stigmas. Ovary 7.5–12.5 mm long.

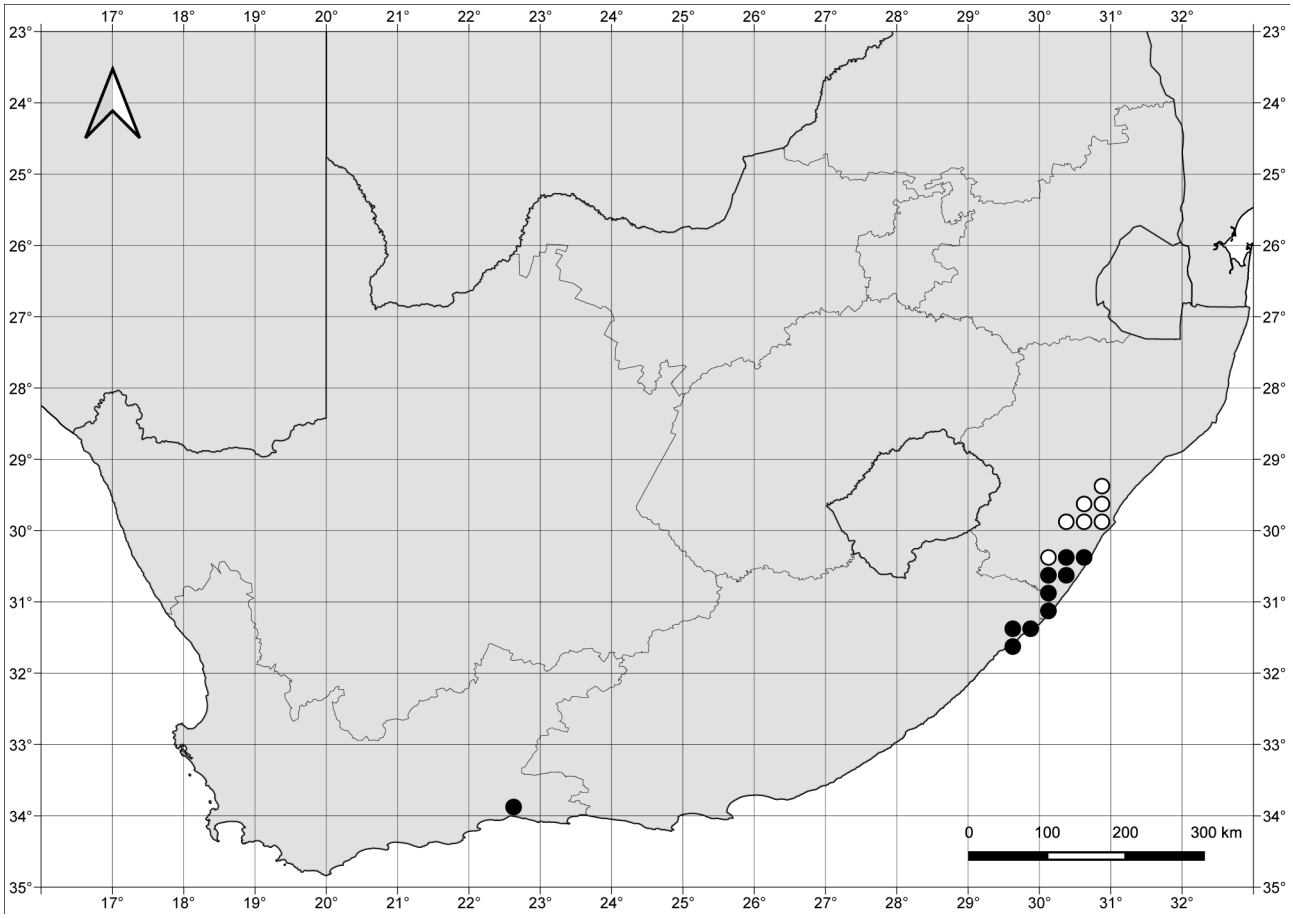

FIGURE 11. Distribution of *Stenoglottis woodii* (white) and *S. macloughlinii* (black).

Diagnostic characters:—The most notable feature of *S. macloughlinii* is its spur, which is relatively long (2.0–3.0 mm) and markedly tapered (i.e. having a broad spur entrance and narrowing gradually toward the apex; Fig. 12B–C). Of the described *Stenoglottis* taxa, it appears to be the only one that is nectar-producing (see notes under putative hybrids for an exception). It is also the first species to begin producing new leaves after winter dormancy and the earliest to flower, starting in late October to early November and peaking in December. *Stenoglottis macloughlinii* is only likely to be mistaken for *S. woodii* (see that species for a detailed diagnosis).

Notes:—This species was originally described in *Cynorkis* and was synonymised with *S. woodii* by Stewart (1989), although she did not make a combination in *Stenoglottis*. Its reinstatement as a distinct species (McDonald 1995, Shaw 2003) is well supported by morphological evidence; multivariate morphometric analyses resolved *S. woodii* and *S. macloughlinii* as discrete morphological clusters, and their distinction is further supported by differences in their plastid DNA (Phillips & Bytebier 2020).

Distribution and ecology:—*Stenoglottis macloughlinii* occurs in the Eastern Cape and KwaZulu-Natal, South Africa, mostly within the Pondoland centre of endemism (Fig. 11), at elevations of 10–700 m. A single specimen (*Morze s.n.*) has also been recorded in the Western Cape from the Saasveld between George and Knysna. It occurs most commonly as a lithophyte, occasionally as a terrestrial in shallow soil, and has similar habitat preferences to that of *S. woodii*, forests or forest margins usually in partial shade along the tops of south-facing cliffs, occasionally in full sun on rocky outcrops in grassland. It has also been recorded in deep shade on boulders in forests, where it occasionally co-occurs with *S. fimbriata* var. *fimbriata*. It flowers late October–February and is not self-pollinating.

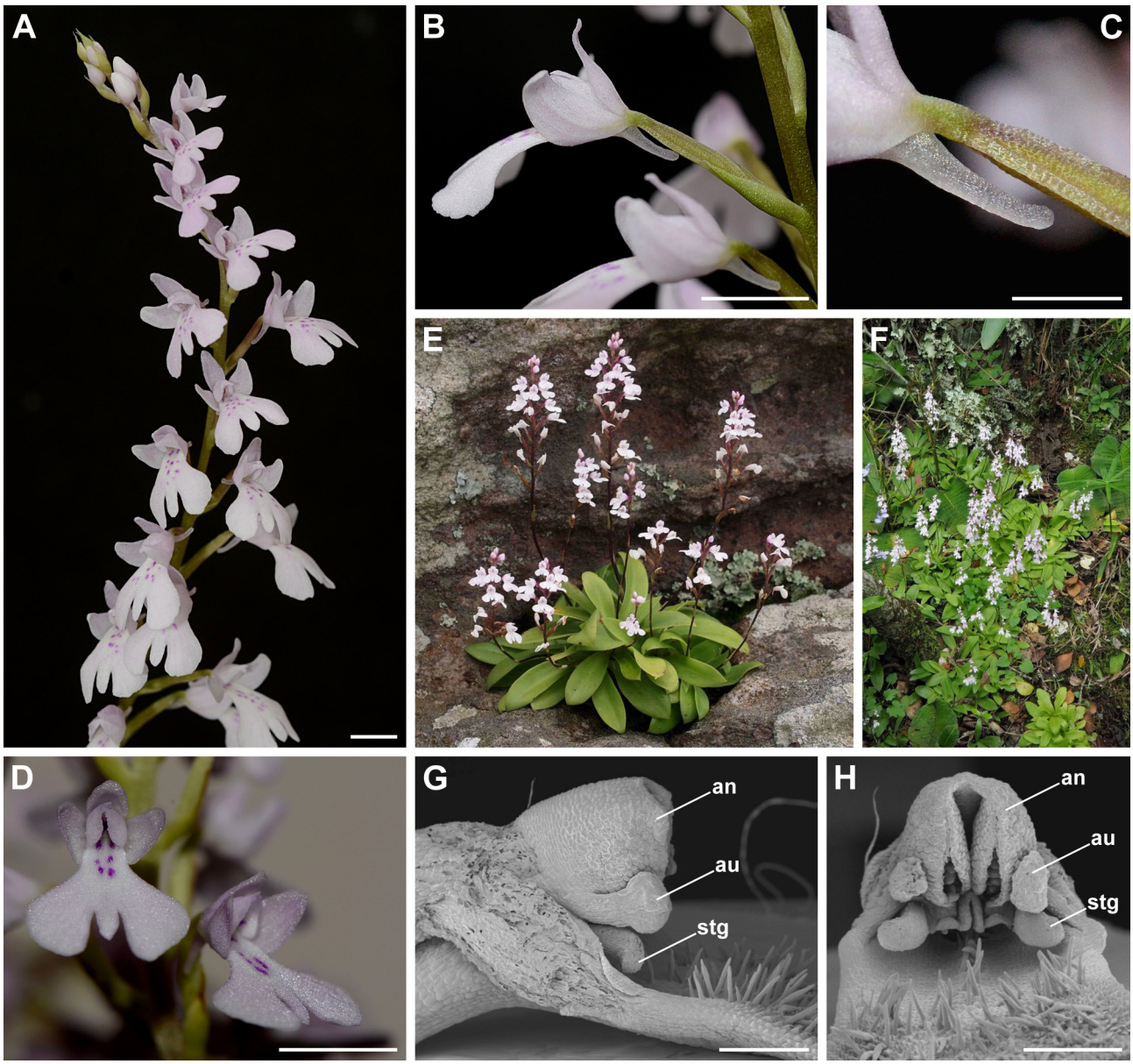

FIGURE 12. Selected specimens of *Stenoglottis macloughlinii.* A–C, inflorescence, flower lateral view (showing spurred labellum and sheathing bract) and spur close-up, Umtamvuna Nature Reserve (KZN). D, flowers, Msikaba (EC). E, habit (*in situ*), Elim Mission, Paddock (KZN). F, habitat, Lake Eland Game Reserve (KZN). G–H, column lateral and ventral view, Msikaba (EC). Scale bars = 5 mm (A–B, D), 2 mm (C), 0.5 mm (G–H). Abbreviations: au = auricle, an = anther, stg = stigmatic arm. E–F reproduced with the permission of Herbert Stärker.

Specimens examined:—SOUTH AFRICA. KwaZulu-Natal: 3030 **(**Port Shepstone): Umzinto, Friedenau farm, 457 m (–AD), 18 Dec 1966, *Hilliard 4077* (E, NH, NU0010113!); Dumisa, Jolivet, B of Ellesmere 6949, ca. 1.5 km SE of Fairfield homestead, 620 m (–AD), 9 Dec 1992, *Ngwenya 1076* (NH0120475-0!); Dumisa, Fairfield farm, 700 m (–AD), 26 Dec 1908, *Rudatis 569* (BM001172121!, K001208117!); Dumisa, Moyeni, 700 m (–AD), 21 Dec 1910, *Rudatis 1272* (WAG1140775 photo!); Mgayi [Umgai], forested gorge running into the Mtwalume, 420 m (–AD), 9 Dec 1992, *Scott-Shaw 5046* (CPF0021095!); Mgayi [Umgai] (–AD), 22 Feb 1965, *Strey 6211* (K001208118!); Ixopo, Mtwalume Mission Reserve, NW boundary on Highflats road (–BC), 22 Dec 1965, *Burtt & Hilliard 3398* (BOL96152!, E, NU0036102!); Dumisa, Ifafa, 500 m (–BC), 26 Mar 1908, *Rudatis 336b* (NH0106443-0!); Mgayi, on ledges of south facing cliff, 396 m (–BC), 27 Jan 1968, *Ward 6341* (NH0064244-0!, NU0010112!); Oribi Gorge Nature Reserve, Hell's Gates, under power lines, 630m (–CA), 19 Jan 1994, *Scott-Shaw & Meter 5940* (CPF0021101!); Oribi Gorge Nature Reserve, Hell's Gates, under power lines, 630 m (–CA), 19 Jan 1994, *Scott-Shaw & Meter 5949* (CPF0021102!); Oribi Gorge (–CB), 3 Jan 1948, *Dodds 94* (NU0010102!); Izotsha Falls, view site (–CB), 6 Jan 1965, *Hilliard 3027* (E, NU0036101!); Oribi Gorge (–CB), date unknown (ex hort. 23 Dec 1964), *Hilliard s.n.* (BOL49905!); Oribi Gorge Nature Reserve, 452 m (–CB), 6 Dec 2016 (ex hort. Jan 2018), *Phillips & Kiepiel 41* (BNRH!, NU0088379!); Paddock, Excelsior farm (–CB), 8 Dec 1970, *Strey 10333* (NH0068482-0!); Alfred, escarpment above Otterburn, 609 m (–CC), 2 Jan 1965, *Burtt 2999* (PRU!); Umtamvuna Nature Reserve, Klipspringer, 382 m (–CC) 7 Jan 2016 (ex hort. Jan 2018), *Grieve et al. 1978* (BNRH!, NU0088291!); Umtamvuna Nature Reserve, Cubica Heights, 386 m (–CC), 7 Jan 2016, *Grieve et al. 1979* (NU0088292!); Umtamvuna Nature Reserve, Cubica Heights, 386 m (–CC), 7 Jan 2016, *Grieve et al. 1980* (NU0088293!). Eastern Cape: 3129 (Port St Johns): Lusikisiki, Isicezula Forest, bordering Mazizi Tea Estate (–BC), 8 Dec 1986, *Van Wyk & Mathews 7861* (PRU!); Lusikisiki, Lupatana, cliff faces above river, 15 m (–BD), 30 Dec 1991, *Cloete 1663* (NH0114392-0!); Lusikisiki, Lambasi area, Tezana [Thezane] (–BD), 29 Nov 2002, *Nombekela 365* (NH0141897-0!); Mkambati Nature Reserve, sandstone outcrops above Msikaba River behind the Reserve Office and Lodge, 104 m (–BD), 22 Nov 2000, *Peter 316* (NU0010118!); Msikaba, road to Msikaba Drifter's Camp, 158 m (–BD), 13 Dec 2016 (ex hort. Jan 2018), *Phillips & Kiepiel 42* (BNRH!, NU0088380!, NU0088381!); Mateku Falls, 435 m (–BD), 14 Dec 2016, *Phillips & Kiepiel 43* (NU0088382!); Lusikisiki, Lupatana, 115 m (–BD), 15 Dec 2016, *Phillips & Kiepiel 44* (NU!); Msikaba, on bank of Msikaba River near mouth, 24 m (–BD), 16 Dec 2016, *Phillips & Kiepiel 45* (NU!); Msikaba, on bank of Msikaba River near mouth, 21 m (–BD), 16 Dec 2016, *Phillips & Kiepiel 47* (NU0088384!); Mateku, Tezana River, adjacent to Lambasi Lodge (–BD), 29 Nov 2002, *Poorun 108* (NH0132458-0!); Mateku Falls, 460 m (–BD), 27 Nov 2002, *Singh 810* (NH0141866-0!); Mateku Falls (–BD), 4 Dec 1969, *Strey 8499a* (BOL49919!); Lusikisiki, Mkweni River, 1.5 km upstream from mouth (–BD), 9 Dec 1986, *Van Wyk & Mathews 7876* (PRU!); Lupatana [Impatana, Transkei], 25 Oct 1997, *Weeks 429* (GRA0005160!); Mboyti, Fraser Falls, 442 m (–DA), 18 Dec 1962, *Hilliard 1086* (NU0010116!). 3130 (Port Edward): Umtamvuna Nature Reserve, Razor Back (–AA), 29 Dec 1984, *Abbott 2325* (NH0082427-0!, PRU!); Umtamvuna Nature Reserve, Beacon Hill, 352 m (–AA), 24 Dec 2015, *Grieve 1911* (NU0088289!); Port Edward, Izingolweni Road, 91 m (–AA), Jan 1951, *Huntley 746* (NU0036103!); Umtamvuna Nature Reserve (–AA), 2 Dec 1982, *Schrire 1373* (NH0076049-0!); Mnyameni coast [Umyameni] (–AA), Jan 1941, *Thompson s.n.* (NU0010108!); Port Edward, Sea View, 335 m (–AA), Dec 1949, *Ward 1118* (NU0036104!). Western Cape: 3322 (Oudtshoorn): Saasveld, on old road between George and Knysna (–DC), 16 Nov 1971, *Morze s.n.* (NBG0093740-0!).

7. Putative hybrids:—Several specimens previously assumed to be *S. woodii* have been found to be inconsistent with that species in several respects. These include, firstly, plants from the Giba Gorge (Winston Park) area between Hillcrest and Pinetown (KwaZulu-Natal). These plants occur within the geographic range and have a flowering period consistent with *S. woodii*, and are morphologically most similar to that species in all respects except for their floral spurs, which appear to be intermediate between those of *S. woodii* and *S. macloughlinii*—nectar-producing like those of *S. macloughlinii*, longer than is typical of *S. woodii*, but not as long or as markedly tapered as those of *S. macloughlinii*. On a purely morphological basis these plants appear to be intermediates of *S. woodii* and *S. macloughlinii*. However, a specimen (*Phillips 17*) included in preliminary phylogenetic analyses (unpublished) was found to have several nucleotide ambiguities in its nuclear DNA markers that are suggestive of hybridisation between *S. longifolia* and either *S. woodii* or *S. macloughlinii* (which have identical ITS and ETS sequences). Given the relatively long, nectar-producing spurs of these putative hybrids, *S. macloughlinii* × *longifolia* seems more likely, despite the fact that their present geographical ranges do not overlap.

Another specimen (*Woodburn NBG30b/29*) from the Vumba Mountains in Zimbabwe has also been regarded as *S. woodii* (Stewart 1989), representing an extreme outlier population of this species that is otherwise restricted to KwaZulu-Natal. However, this plant bears a greater similarity to the putative hybrid described above than it does to

S. woodii (or any of the other described *Stenoglottis* species), with spurs intermediate in length and shape between those of *S. woodii* and *S. macloughlinii*. Without live plants and DNA evidence, however, the identity of this specimen cannot be confirmed. Both these populations have been removed from the revised circumscription of *S. woodii*, and are treated here as putative hybrids.

Specimens examined:—SOUTH AFRICA. KwaZulu-Natal: 2930 (Pietermaritzburg): Pinetown, Everton, Eskotene, 609 m (–DD), 7 Jan 1963, *Hilliard 1137* (BOL49926!, NU0010117!); Pinetown, Gillitts, 609 m (–DD), 8 Feb 1948, *MacGregor 58* (NU0010109!); Pinetown, Winston Park, 550 m (–DD), 21 Jan 1988, *Ngwenya 483* (NH0103168-0!); Pinetown, Winston Park, 580 m (–DD), 15 Feb 2016 (ex hort. Jan 2018), *Phillips 17* (NU0088324!). ZIMBABWE. Manicaland: 1932 (Melsetter): Vumba Mountains, Jan 1932, *Woodburn NBG30b/29* (BOL 49883!).

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