ADDITIONAL NOTES ON THE ORCHID FLORA OF MYANMAR AND SOME OTHER ANCILLARY STUDIES

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Abstract. Additional names not accounted for in recent treatments of the orchids of Myanmar are noted, along with some other ancillary studies. Nine new combinations are proposed, *viz*. *Brachypeza uniflora, Eulophia citrina, E. pulchella, Holcosia pseudotaiwaniana, H. taiwaniana, Phreatia emarginata, P. minuscula, P. perpusilla,* and *Vanda hennisiana*. One new species is also proposed, *viz*. *Cylindrolobus karenensis*.

Keywords: Myanmar, Asia, orchids, new names, synonymy.

This paper adds to a recent attempt to catalogue the orchid flora of Myanmar (Ormerod, Kurzweil and Watthana, 2021). We also try to deal with some other ancillary issues that were found during the course of our research. The national orchid floras of southeast Asia are going through an exciting period of study boosted by local researchers and enthusiasts who have access to much more fresh material. It is to be hoped their studies will culminate in a much better picture of the southeast Asian flora. Our research efforts here deal mainly with nomenclatural problems, taxonomical confusion, and other historical issues (such as overlooked names).

Brachypeza Garay, Bot. Mus. Leafl. Harv. Uni. 23, 4: 163. 1972.
Type species: *Saccolabium archytas* Ridl.

A genus of Aeridinae with about twelve species distributed from Vietnam to Indonesian Papua. The original concept of the genus centered around short-stemmed plants with soft elliptic leaves, and inflorescences of sequential flowers that bore a relatively long column with a short basal foot. Later, Kocyan and Schuiteman (2014) transferred five species from *Pteroceras* Hassk. to the genus based on molecular analyses.

Brachypeza uniflora (Tixier ex Seidenf.) Ormerod & B.V. Truong, *comb. nov.*
Basionym: *Pteroceras uniflorum* Tixier ex Seidenf., Contr. Orch. Fl. Cambodia, Laos & Vietnam: 97. 1975.
TYPE: VIETNAM. Prenh, near Dalat, 17 October 1924, *F. Evrard 1453* (Holotype: P, image seen).
Homotypic synonyms: *Sarcochilus uniflorus* Gagn., in Lecomte, Fl. Gen. Indo-Chin. 6: 468. 1934 *nom. illeg.* (*non* Schltr. 1913).
Pteroceras semiteretifolium H.A. Pedersen, Nord. J. Bot. 12: 387. 1992 *nom. illeg.*
Brachypeza semiteretifolia (H.A. Pedersen) Kocyan & Schuit., Phytotaxa 161, 1: 64. 2014 *nom. illeg.*
Distribution: Vietnam.

Seidenfaden (1975) inadvertently validated the name *Pteroceras uniflorum* by giving full reference to its basionym, the homonym *Sarcochilus uniflorus* Gagn. The former is the first legitimate name for the species. The later *Pteroceras semiteretifolium* is a superfluous renaming of *P. uniflorum*.

Bulbophyllum Thouars, Hist. Part. Orch. Iles Austral. Afr.: Trois. Tabl. Esp., tt. 93–110. 1822 *nom. cons.*
Lectotype species: *Bulbophyllum nutans* Thouars

This is the second largest genus of Orchidaceae (after *Epidendrum* L., 2400 species) and contains about 2000 accepted species distributed throughout the world, mostly in forests of the warm tropics, but also occurring in mildly temperate forested regions such as parts of Japan. The plants are well-characterized by having one to two (rarely more) apically leaved pseudobulbs, basal inflorescences, and flowers bearing a hinged, usually motile labellum.

Bulbophyllum pumilio C.S.P. Parish & Rchb.f., Trans. Linn. Soc., Bot. 30: 153. 1874. TYPE: MYANMAR. Zingyik, August 1860, *C.S.P. Parish 220* (Lectotype [Seidenf. 1969: 137 as type specimen]: K, image seen; drawing W-R 2265, not seen); Moulmein, *C.S.P. Parish s.n.* (Syntype: W-R 49455, not seen); Kalama Tong, 1860, *C.S.P. Parish s.n.* (Syntype: K, image seen).
Homotypic synonyms: *Cirrhopetalum pumilio* (C.S.P. Parish & Rchb.f.) J.D. Hook., Fl. Brit. Ind. 5: 778. 1890.
Phyllorkis pumilio (C.S.P. Parish & Rchb.f.) O. Kuntze, Rev. Gen. Pl. 2: 677. 1891.
Distribution: Myanmar and Thailand.

In Ormerod et al. (2021) the type was cited as an unnumbered Parish collection in Wien, following without attribution Seidenfaden (1974). We also did not list the type material present in Kew. However, Seidenfaden (1969) effectively lectotypified this species by saying the type specimen (*Parish 220*) was in Kew.

The first author thanks herbarium and library staff at AMES, BM, C, and K for their help and hospitality during his visits. He is also indebted to the late Leslie A. Garay for sharing data on *Geodorum,* and the late Gunnar Seidenfaden for his hospitality in Denmark and for allowing access to material stored at that time at his home. Sathish Kumar kindly provided images of *Geodorum* specimens and drawings stored in CAL.

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Cleisostoma Blume, Bijdr. 8: 362. 1825.
Type species: *Cleisostoma sagittatum* Blume

A genus of monopodial orchids with about 100 species distributed from India and Sri Lanka to Fiji. The species are relatively small-flowered (sepals on average 5–7 mm long) but can have quite complicated floral parts such as the labellum (with both front wall and back wall calli, a septate spur) and pollinarium (with simple to intricate viscidium and stipes). Eighteen species have been recorded from Myanmar but one of these, *C. parishii* (W.J. Hook.) Garay, is now called *Sarcoglyphis parishii* (W.J. Hook.) A.N. Rao (see treatment under that genus).

Cleisostoma discolor Lindl., Edwards's Bot. Reg. 31: misc. 59. 1845. TYPE: "EAST INDIES". *Cult. Messrs. Loddiges s.n.* (Holotype: K-L, image seen).
Homotypic synonym: *Sarcanthus discolor* (Lindl.) J.J. Sm., Bull. Jard. Bot. Buitenz. s. 2, 9: 108. 1912.
Heterotypic synonyms: *Sarcanthus ornithorrhynchus* Rchb.f., Allgem. Gartenz. 24: 219. 1856 *syn. nov.* TYPE: ORIGIN UNKNOWN. *Cult. G. Blass s.n.* (Holotype: W-R 53532, image seen).
Cleisostoma ornithorrhynchum (Rchb.f.) Garay, Bot. Mus. Leafl. Harv. Uni. 23, 4: 173. 1972.

Distribution: India and Bhutan.

This species is characterized by having ligulate leaves with deeply bilobed, triangular tips, flowers with a narrowly conical, partly septate spur, auriculate hypochile sidelobes, a concave, obtuse, upturned labellum epichile, a column with a prominent, laterally twisted rostellum, and a pollinarium with simple oblanceolate stipes. Seidenfaden (1975) united *Sarcanthus termissus* Rchb.f. with *Cleisostoma discolor* but we dispute this synonymy and recognise *C. termissum* (Rchb.f.) Garay as a good species distributed in Vietnam, Cambodia, Thailand, Malaysia, and Indonesia. *Cleisostoma termissum* may be recognised by its often forward-pointing petals with a bold red stripe (vs. patent, unstriped or a very fine line of color), the prominently incurved free tips of the labellum sidelobes, and the curved over pink labellum epichile.

The best image available of the true *C. discolor* appears to be the photographs in Dalstrom et al. (2017). Most internet images called *C. discolor* are of *C. termissum*. Both *C. termissum* and *C. discolor* could be expected to occur in Myanmar.

Cleisostoma racemiferum (Lindl.) Garay, Bot. Mus. Leafl. Harv. Uni. 23, 4: 173. 1972.
Basionym: *Saccolabium racemiferum* Lindl., Gen. Sp. Orch. Pl.: 224. 1833. . TYPE: INDIA. Without locality, *icon N. Wallich 655* (Holotype: K, not seen).
Homotypic synonym: *Sarcanthus racemifer* (Lindl.) Rchb.f., Ann. Bot. Syst. 6: 891. 1863.
Heterotypic synonyms: *Sarcanthus striolatus* Rchb.f., Gard. Chron. n.s. 18: 168. 1882 *syn. nov.* TYPE: "PHILIPPINES". Without locality, June 1882, *Messrs. H. Low & Co. s.n.* (Holotype: W-R, not seen; copy of Reichenbach's sketch: AMES).
Cleisostoma striolatum (Rchb.f.) Garay, Bot. Mus. Leafl. Harv. Uni. 23, 4: 175. 1972.

Distribution: Nepal, India, Bhutan, Myanmar, China, Laos, Vietnam, and Thailand.

In 1882 Reichenbach f. described *Dendrobium ionopus* and *Liparis grossa,* both from material sent from Messrs. Low and said to be from Burma (now Myanmar). However we now know that these plants likely came from the Philippines and that these taxa have never been found in Myanmar. The opposite situation seems to occur in *Sarcanthus striolatus* which was said to be from the Philippines but has never been found there again. Study of the protologue and a copy of Reichenbach's sketches show that *Sarcanthus striolatus* matches all in characters with the earlier *Cleisostoma racemiferum,* therefore we treat them as conspecific. We have seen an image of a Philippine plant attributed to *C. striolatum,* but that belongs to a true Philippine endemic, *C. iloconense* Calaramo et al. The latter taxon may be recognised by its purple, shortly cuspidate (vs. white, ageing to yellow, acute to obtuse) labellum epichile.

Coelogyne Lindl., Coll. Bot. (Lindley): sub t.33. 1821.
Lectotype species: *Coelogyne cristata* Lindl.

This is a genus of about 180–200 species distributed from Sri Lanka and India to Samoa. A number of species make attractive horticultural subjects due to their showy flowers. The plants have one to three leaved pseudobulbs, with terminal inflorescences of small to large, often white, yellow, pinkish, or green flowers, with a slender, often narrowly winged column.

Coelogyne holochila P.F. Hunt & Summerh., Kew Bull. 20, 1: 52. 1966. TYPE: MYANMAR [as "Burma"]. Chin Hills, *leg. Mrs. Wheeler Cuffe,* fl. in cult. 16 June 1914, *cult. R.B.G. Glasnevin s.n.* (Holotype: K, image seen). Fig. 1A.
Usage synonym: *Coelogyne calcicola auct. non* A.F.G. Kerr, Nyan Tun, Wild Orch. Myanmar 114. 2014.

Distribution: India and Myanmar.

Additional specimen examined: MYANMAR. Chin Hills, Kaupetlet, 2285 m, April 1939, *F.G. Dickason 8611* (AMES).

From near the type locality in Myanmar (Mt. Victoria = Natmataung) of *C. holochila* we have only seen one collection that could be referred to it. In this specimen the midkeel is prominent in the lower third of the lip and dentate-lacerate, the outer two keels are thinly laminate and about twice the height of those found in *C. stricta* (D. Don) Schltr., the lip appears trilobed due to lateral inflexion points between the hypochile and epichile but when spread out appears entire. Another feature in this specimen seems to be the larger flowers (sepals to 26.5 mm long vs. 18–21 mm long in *C. stricta*). Hunt and Summerhayes (1966) note sepal measurements of 25–30 mm long in the protologue of *C. holochila*.

Two other problems bear mentioning, and these have contributed to the confusion between *C. holochila* and *C. stricta*. Hooker (1857) published a plate labelled *C. elata*

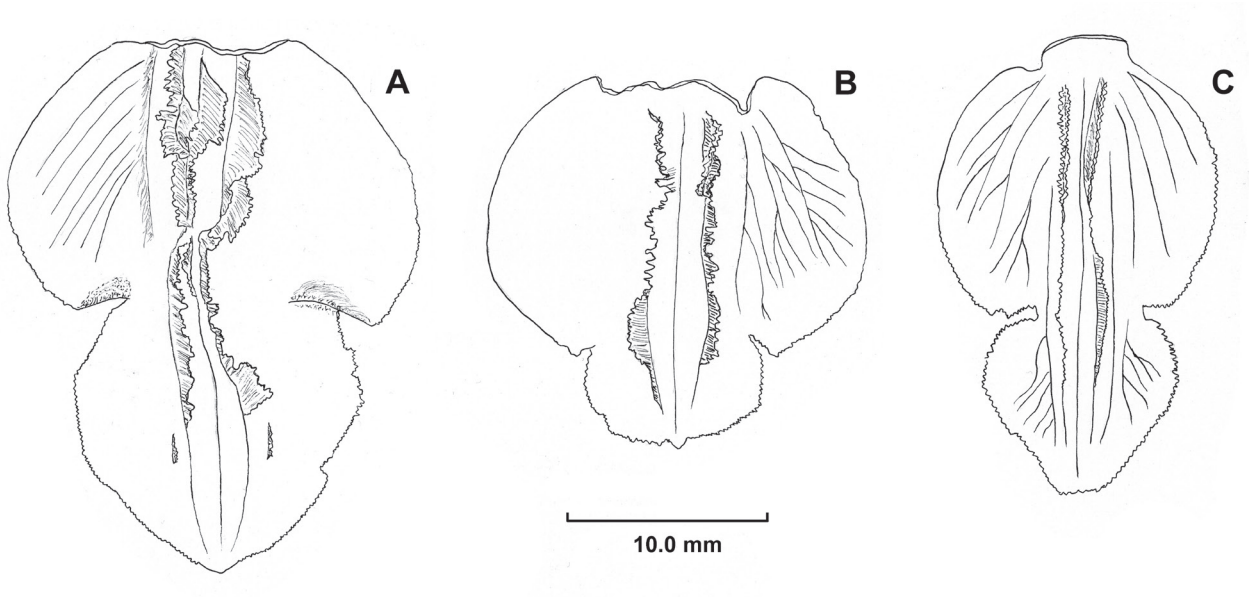

FIGURE 1. *Coelogyne holochila* P.F. Hunt & Summerh. **A**, labellum. *Coelogyne stricta* (D. Don) Schltr. **B–C**, labellum variation. A from *F. G. Dickason 8611* (AMES). B from *F. G. Dickason 7360* (AMES). C from *R. Pantling 123* (AMES).

Lindl. (= *C. stricta*), this was referred to *C. holochila* by Hunt and Summerhayes (1966) due to the entire lip. In this drawing the lip appears almost elliptic-obovate and bears a wishbone shaped orange-yellow colored area in its upper half. If the plate is accurate then it may depict an undescribed taxon.

Clayton (2002) and George (2011) depict as *C. holochila* an entity which seems to have the lip epichile broader than long (ca. 10 × 15 mm according to the drawing in Clayton [2002]) and bearing a broad transverse orange-yellow patch on the upper half of the lip. This also could be another taxon but further studies into the variability of *C. holochila* are needed.

Coelogyne stricta (D. Don) Schltr., Rep. Sp. Nov. Regni Veg., Beih. 4: 184. 1919.

Basionym: *Cymbidium strictum* D. Don, Prodr. Fl. Nepal.: 35. 1825. TYPE: NEPAL. *N. Wallich s.n.* (Holotype: BM, not seen). Fig. 1B–C.

Distribution: Nepal; India, Bhutan, Myanmar, China, Laos, and Vietnam.

Specimens examined: INDIA. Sikkim, without locality, 1525 m, May and June 1891, *R. Pantling 123* (AMES). BHUTAN. Gaylegphug District, Rang Khola, 4 km NE of Surey, 980 m, 29 March 1982, *A.J.C. Grierson & D.G. Long 4120* (AMES). MYANMAR. Pioneer (Haka), 1890 m, 2 April 1938, *F.G. Dickason 7360* (AMES); Taunggyi, May 1938, *F.G. Dickason 9360* (AMES).

The above two Myanmar collections were wrongly listed under *C. holochila* P.F. Hunt & Summerh. in Ormerod et al. (2021). The distinguishing characters of the latter species are said to be the entire lip, basally bearing three keels (the middle one entire), the outer two quite sinuous, and the lip margins entire or much less dentate. These characters appear rather weak since in material of *C. stricta* the lobing of the lip seems rather variable, the lip base can bear three keels but the middle one quite weak, the keels can be quite sinuous, and the depth of dentation of the lip margins varies. However, as noted above, we have accepted *C. holochila* as a distinct entity on account of its larger flowers, and twice as high keels on the labellum.

Cylindrolobus Blume, Fl. Jav. Praef.: 6. 1828.

Type species: *Ceratium compressum* Blume

This is a genus of about 80–85 species distributed from Sri Lanka and India to Papua New Guinea. It may generally be recognised by its caulescent habit (stems clavate to terete), glabrous leaves spread along the stem or gathered near its apex, axillary (rarely pseudoterminal), short (rarely elongated but then floral bracts relatively conspicuous) inflorescences of one to few flowers, and often spreading, coloured, relatively large floral bracts. The seven known Myanmar species were *C. biflorus* (Griff.) Rauschert, *C. clavicaulis* (Wall. ex Lindl.) Rauschert, *C. cristatus* (Rolfe) S.C. Chen & J.J. Wood, *C. foetidus* (Aver.) Schuit., Y.P. Ng & H.A. Pedersen, *C. glabriflorus* X.H. Jin & J.D. Ya, *C. marginatus* (Rolfe) S.C. Chen & J.J. Wood, and *C. truncatus* (Lindl.) Rauschert.

None of the recorded taxa are endemic, but we found a new endemic species amongst the collections of F.G. Dickason. Furthermore, our studies show that the recently described *C. glabriflorus* is a synonym of the Chinese *C. tenuicaulis*.

Cylindrolobus karenensis Ormerod & Kurzweil, *sp. nov.*

TYPE: MYANMAR. Karen State, Nataung, 1980 m, October 1939, *F.G. Dickason 9466* (Holotype: AMES). Fig. 2.

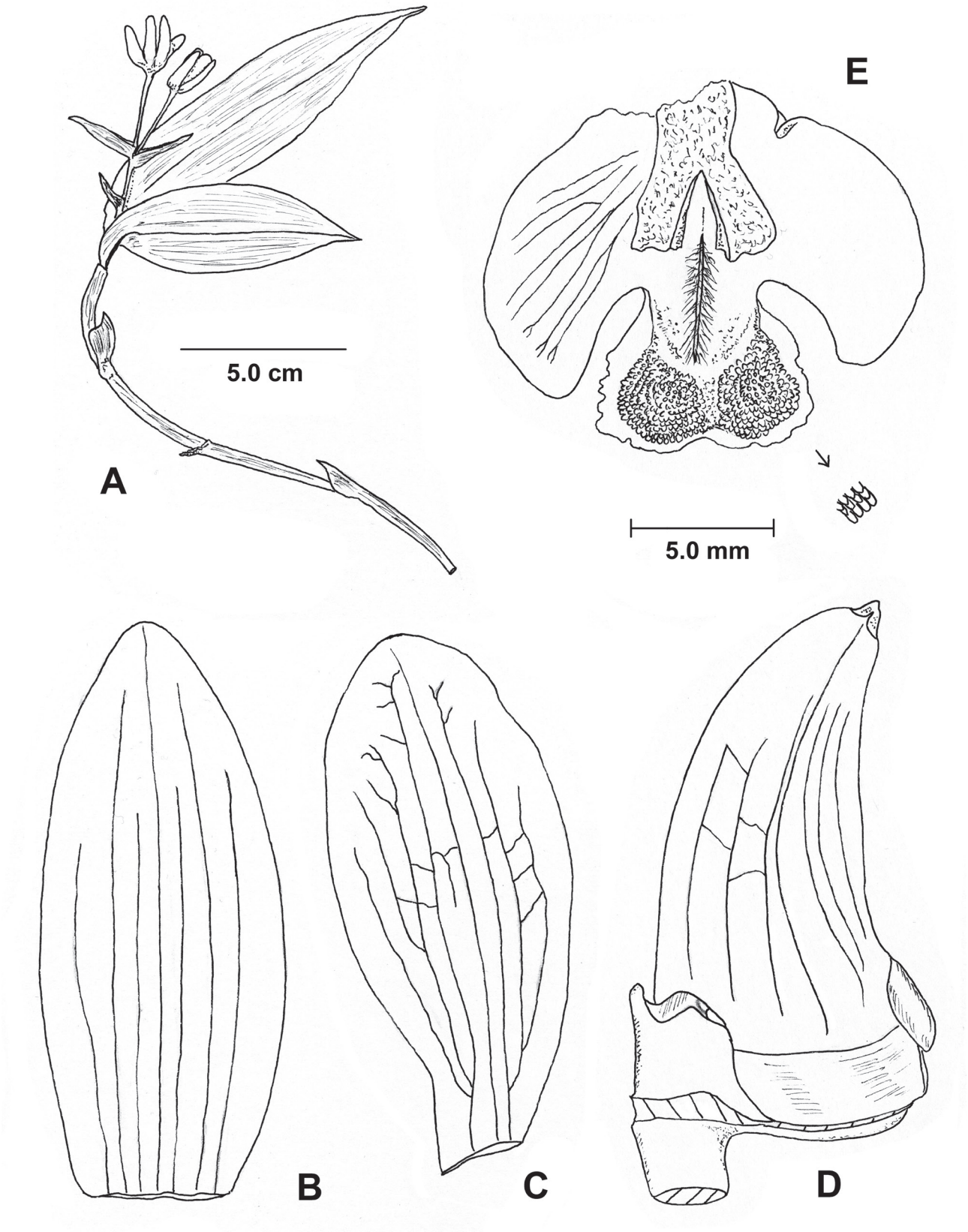

FIGURE 2. *Cylindrolobus karenensis* Ormerod & Kurzweil. **A**, plant; **B**, dorsal sepal; **C**, petal; **D**, lateral sepal and column; **E**, labellum. Drawn from holotype.

Usage synonym: *Cylindrolobus clavicaulis auct. non* (Wall. ex Lindl.) Rauschert, Ormerod, Kurzweil & Watthana, Phytotaxa 481, 1: 80–81. 2021 p.p. [*quoad F.G. Dickason 9466*].

Related to *C. clavicaulis* (Wall. ex Lindl.) Rauschert but the labellum with a basal, V-shaped (vs. oblong, terminating in two globose thickenings) callus, in front of which a linear, long-pubescent (vs. triangular in section, shortly farinaceous) keel, and the epichile covered with a thickened obcordate, papillose area (vs. having a median keel, flanked at each margin by another keel).

Epiphytic *herb*. *Roots* and *rhizome* not seen. *Stems* narrowly clavate, laxly 3-sheathed (these to 22 mm long), apex bifoliate, 155.0–175.0 × 2.5–6.0 mm. *Leaves* oblong-lanceolate, acute to subacuminate, 61.0–110.0 × 25.5–28.5 mm. *Inflorescences* subterminal, 23–28 mm long; peduncle 20–25 mm long; peduncular sheath one, broadly ovate, acute, 15 × 12 mm; rachis 2-flowered, 3 mm long; floral bracts oblong-lanceolate to ovate-lanceolate, acute, 22 × 8 mm. *Flowers* white, with yellow on the lip, glabrous. *Pedicel with ovary* narrowly clavate, 30 mm long. *Dorsal sepal* oblong-elliptic, obtuse, 7-veined, 17.5 × 8.0 mm. *Lateral sepals* obliquely oblong-lanceolate, subacute, 7-veined, 16 × 10 mm, forming with the column foot an obtuse mentum about 7.5 mm long. *Petals* narrowly elliptic-obovate, obtuse, 7-veined, 17 × 8 mm. *Labellum* trilobed, 11.2 × 14.2 mm; hypochile 6 mm long medially, each side with an obliquely subquadrate sidelobe, 5.0 × 5.2–5.3 mm; epichile obcordate, broadly covered by an obcordate, papillose thickening, 4.5–4.9 × 7.2 mm; callus on hypochile broadly V-shaped, scurfy pubescent, in front of which a narrow, long pubescent keel that ends in the basal half of the epichile. *Column* short, semiterete, 4 mm long; column foot at right angles to column, concave, 6 mm long.

Distribution: Myanmar.

Etymology: Named after Karen (now Kayin) State, the type locality.

This species shares with *C. clavicaulis* a similar habit, glabrous floral bracts and flowers. It however differs in details of the flowers (see diagnosis above). The flowers of *C. karenensis* have a labellum much more like *C. cristatus* and *C. marginatus,* that is each of these taxa have a pair raised rectangular pads on the hypochile, in front of which a long-pubescent keel, and then a broad papillose-pubescent area on the epichile. However both the latter taxa have pubescent (not glabrous) flowers.

Cylindrolobus tenuicaulis (S.C. Chen & Z.H. Tsi) S.C. Chen & J.J. Wood, Fl. China 25: 349. 2009.

Basionym: *Eria tenuicaulis* S.C. Chen & Z.H. Tsi, Guihaia 15: 109. 1995. TYPE: CHINA. Tibet, Medog County, Bei Ben District, between Xi-lan and De-yang, 1500–2200 m, 22 April 1983, *B.S. Li & S.Z. Cheng 04285* (Holotype: PE 00027168, image seen; Isotype: PE 00027169, image seen). Fig. 3.

Homotypic synonym: *Eria gracilicaulis* S.C. Chen & Z.H. Tsi, Bull. Bot. Res. (Harbin) 8, 1: 9. 1988 *nom. illeg.* (non Kraenzl. 1910).

Heterotypic synonyms: *Eria jengingensis* Hegde, J. Orch. Soc. India 7, 1–2: 13. 1993 *nom. inval., syn. nov.*

BASIS FOR NAME: INDIA. Arunachal Pradesh, East Siang District, Jengging, 700 m, 22 March 1993, *S.N. Hegde 27608-A* (OHT, lost; Naharlagun, lost).

Cylindrolobus glabriflorus X.H. Jin & J.D. Ya, PhytoKeys 130: 109. 2019 *syn. nov.* TYPE: MYANMAR. Kachin State, Putao, Hponkanrazi Wildlife Sanctuary, 2200 m, 12 April 2018, *X.H. Jin & J.D. Ya 18HT1618* (Holotype: KUN, image seen).

Epiphytic *herb*. *Rhizome* short. *Roots* terete, slender, pubescent, 0.3–0.5 mm thick. *Stems* caespitose, slender, terete, covered in close-fitting sheaths, apex 4–6-leaved, 205.0 × 2.0–2.5 mm. *Leaves* lanceolate, acute, 32.0–62.0 × 6.0–12.5 mm. *Inflorescences* axillary, emerging from between the leaves and from nodes along the upper half of the stem, 4.2 mm long; peduncle terete, glabrous, 1.2 mm long; peduncular sheaths two, ovate, acute, concave, 5–6 mm long; rachis 2-flowered, 3 mm long; floral bracts ovate-elliptic, acute, concave, 7-veined, to 6.0 × 4.4 mm. *Flowers* dingy flesh color, glabrous. *Pedicel with ovary* narrowly clavate, 5 mm long. *Dorsal sepal* oblong-lanceolate, obtuse, 3-veined, 5.00 × 1.95–2.20 mm. *Lateral sepals* obliquely ovate-triangular, obtuse, 3-veined, 5.0–5.3 × 3.4–3.9 mm, forming with the column foot an obtuse mentum about 2 mm long. *Petals* ovate-elliptic, obtuse, 3-veined, 4.00 × 1.95 mm. *Labellum* trilobed, 3.95 × 2.00 mm; hypochile broadly clawed, 2 mm long medially, with obliquely subquadrate sidelobes that are obliquely truncate apically, inside finely, minutely, and laxly pubescent; epichile trilobulate, broadly elliptic, obtuse, fleshy, each side with an raised wing or edge, finely, minutely, and laxly pubescent, 1.95 × 1.30 mm; calli on hypochile obliquely subquadrate, divergent; callus on epichile subglobose. *Column* subterete, with a flared stigmatic entrance, 1.8 mm long; column foot at right angles to column, 1.75 mm long.

Distribution: India (Arunachal Pradesh); China (Tibet), Myanmar.

Additional specimen examined: INDIA. Arunachal Pradesh, Mishmi Hills, above lake, 1525 m, 25 April 1949, *F. Kingdon Ward 18556* (AMES; BM, NY, images seen).

Ecology: Common epiphyte forming large clumps high up in trees along a ridge, 1525 m (*F. Kingdon Ward 18556*).

This taxon was first validly described under the homonymic name *Eria gracilicaulis,* which was renamed to *Eria tenuicaulis*. Judging from the description and drawings in the protologue, and images and drawings on the type sheet we believe that *Eria gracilicaulis* was described from immature flowers. The laterally compressed lamella on the lip epichile is only evident in immature flowers, we find that this callus becomes semiglobose in mature flowers based on observations of the above cited specimen. The earlier invalidly published *Eria jengingensis* (two herbaria cited for the holotype) was later wrongly included in the synonymy of *Eria hegdei* Agrawala & H.J. Chowdhery (Agrawala & Chowdhery 2008). *Cylindrolobus hegdei* (Agrawala & H.J. Chowdhery) A.N. Rao has pubescent (not glabrous) inflorescences and flowers, the lip with lamellate lateral keels (not two subquadrate lamellae), and a simple (not trilobulate) lip epichile.

Dendrobium Swartz, Nova Acta Regiae Soc. Sci. Upsal. ser. 2, 6: 82. 1799 *nom. cons.*

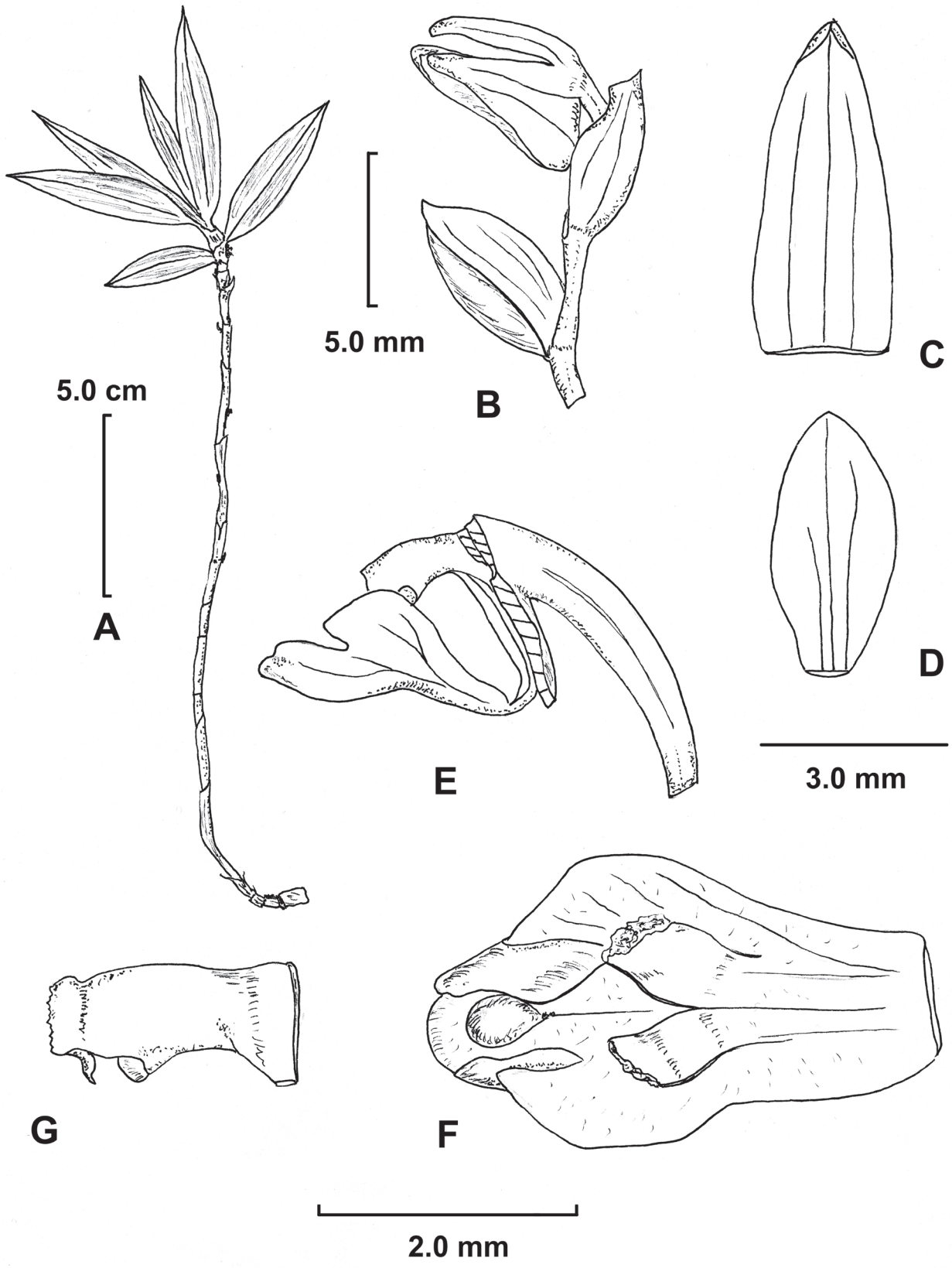

FIGURE 3. *Cylindrolobus tenuicaulis* (S.C. Chen & Z.H. Tsi) S.C. Chen & J.J. Wood. **A**, plant; **B**, inflorescence (less one flower); **C**, dorsal sepal; **D**, petal; **E**, flowers minus tepals; **F**, labellum; **G**, column. Drawn from *F. Kingdon Ward 18556* (AMES).

Type species: *Dendrobium moniliforme* (L.) Swartz *typ. cons.*

A genus of about 1520–1530 species distributed from Sri Lanka and India to Tahiti. Many of the southeast Asian species are popular in culture and they have been long collected for the horticultural trade.

Dendrobium aphyllum (Roxb.) C.E.C. Fischer, in J.S. Gamble, Fl. Madras 8: 1416. 1928.

Basionym: *Limodorum aphyllum* Roxb., Coromandel Pl. 1, 2: 34. 1795. TYPE: INDIA. Coromandel Coast, *W. Roxburgh s.n.* (Holotype: lost).

Heterotypic synonym: (?) *Dendrobium pierardii* Roxb. ex W.J. Hook. var. *brachybulbon* Schltr., Orchis 8: 83. 1914. TYPE: MYANMAR [as "Birma"]. Without locality, *cult. W. Hennis s.n.* (Holotype: lost).

Distribution: India, Nepal, Bhutan, China, Myanmar, Laos, Vietnam, Thailand, and Malaysia (Peninsula).

Ormerod et al. (2021) overlooked the above variety in our checklist. It was poorly described by Schlechter who said it differed from the typical species in the shorter stems, which were like those of *D. nobile* Lindl. in shape (clavate, not terete) and length (*c.* 25–30 cm, vs. to 100 cm long). We have seen no specimens like this, and such material should be looked for among Myanmar populations of *D. aphyllum*.

Dendrobium inversum Courtauld, Gard. Chron. s. 3, 17: 800. 29 June 1895; The Garden (1871–1927) 47: 465. 29 June 1895; Orch. Review 3, 32: 253. August 1895. TYPE: MYANMAR [as "Burmah"]. Exhibited at the R.H.S. 25 June 1895, *cult. Whiffen for J. Bradshaw s.n.* (Holotype: lost). Lectotype, here designated: Fig. 2, Gard. Chron. s. 3, 20: 7. 1896 (as *D. arachnites* Rchb.f.).

Heterotypic synonyms: *Dendrobium arachnites* Rchb.f., Gard. Chron. n.s. 2: 354. 1874 *nom. illeg. (non* Thouars 1822). TYPE: MYANMAR [as "Burmah"]. Without locality, *imp. S. Low ex W. Boxall 74* (Holotype: W-R 32355).

Callista arachnites O. Kuntze, Rev. Gen. Pl. 2: 654. 1891.

Dendrobium seidenfadenii Senghas & Bockemuhl, Orchidee (Hamb.) 29, 5, centre page pull out: 2. 1978.

Dendrobium dickasonii L.O. Williams, Bot. Mus. Leafl. Harv. Uni. 8: 107. 1940. TYPE: MYANMAR [as "Burma"]. Chin State, Falam, 1830 m, 28 April 1938, *F.G. Dickason 7779* (Holotype: AMES).

Distribution: India, Myanmar, and Thailand.

The name *D. inversum* was wrongly attributed to Hawkes (1963) in Ormerod et al. (2021 *sub D. dickasonii*), the former attributing it to Kraenzlin without any reference. Since then, we have discovered the original place of publication of *D. inversum* and find it is the earliest valid available name for this taxon which has been known in recent years as *D. seidenfadenii,* and later as *D. dickasonii*. We have chosen as lectotype of *D. inversum* a figure that shows Mr. Bradshaw's original plant. In the accompanying article by James O'Brien (1896) *D. inversum* is synonymized with *D. arachnites*.

Dendrobium lituiflorum Lindl., Gard. Chron.: 372. 1856. TYPE: WITHOUT ORIGIN. *Cult. R. Hanbury s.n.* (Syntype: K-L); *cult. J. Edwards s.n.* (Syntype: lost).

Heterotypic synonym: *Dendrobium lituiflorum* Rchb.f. var. *robustius* Rchb.f., Gard. Chron. n.s. 7: 781. 1877. TYPE: MYANMAR [as "Burmah"]. Without locality, *leg. W. Boxall, comm. Messrs. Low s.n.* (Holotype: W-R, not seen).

Distribution: India; Myanmar; China; Laos; Thailand.

Ormerod et al. (2021) overlooked the Myanmar variety *robustius* which differs in its thicker, erect stems. In our opinion this is part of the variation of the species and thus it is included in the synonymy.

Eulophia R. Br., Bot. Reg. 7: sub t. 573. 1821 *nom. et orth. cons.*

Type species: *Eulophia guineensis* Lindl. *typ. cons.*

A genus of about 240 species when treated in the broad sense of Chase et al. (2021) but it is likely authors working on the African and Madagascan floras will continue to recognise the subsumed genera *Acrolophia* Pfitz., *Cymbidiella* Rolfe, *Eulophiella* Rolfe, and *Oeceoclades* Lindl. However the genus *Geodorum* G. Jacks. is nested in core *Eulophia* (Bone et al., 2015) and unfortunately must be included in the latter despite it being easily recognisable by its nutant inflorescence. The taxonomy of the *Geodorum* group is extremely complex and it is difficult to resolve using herbarium material alone.

In Myanmar, 13 species of *Eulophia* have been recorded, to which can be added the seven species previously segregated in *Geodorum*. The correct names in *Eulophia* of the seven latter taxa are: *E. attenuata* (Griff.) M.W. Chase, P. Kumar & Schuit. (for *Geodorum attenuatum* Griff.), *E. citrina* (G. Jacks.) Ormerod & Kurzweil (for *Geodorum citrinum* G. Jacks.), *E. eulophioides* (Schltr.) M.W. Chase, P. Kumar & Schuit. (for *Geodorum eulophioides* Schltr.), *E. exigua* M.W. Chase, P. Kumar & Schuit. (for *Geodorum siamense* Rolfe ex Downie), *E. picta* (R. Br.) Ormerod (for *Geodorum densiflorum* (Lam.) Schltr.), and *E. recurva* (Roxb.) M.W. Chase, P. Kumar & Schuit. (for *Geodorum recurvum* (Roxb.) Alston, records from Myanmar and other SE Asian localities are misidentifications of taxa yet to be identified, see below).

Geodorum pulchellum Ridl. was not transferred to *Eulophia,* presumably because Watthana and Pedersen (in Pedersen et al., 2014) considered it a synonym of *Geodorum recurvum* (Roxb.) Alston. We find *G. pulchellum* to be a good species, quite distinct from *G. recurvum,* and accordingly transfer it to *Eulophia*.

Eulophia citrina (G. Jacks.) Ormerod & Kurzweil, *comb. nov.*

Basionym: *Geodorum citrinum* G. Jacks., in Andr., Bot. Repos. 10: t. 626. 1811.

TYPE: MALAYSIA. Penang Island, cult. at Stepney, *sine coll. s.n.* (Holotype: lost).

Heterotypic synonyms: *Geodorum citrinum* G. Jacks. var. *albidopurpureum* C.S.P. Parish & Rchb.f., Trans.

Linn. Soc., Bot. 30: 145. 1874. TYPE: MYANMAR. Moulmein, *C.S.P. Parish 180* (Lectotype, proposed by Clayton [2017: 77]: K; Iconotype: K).

Geodorum duperreanum Pierre ex Regnier, Rev. Hortic. (Paris) 54: 501. 1882 *syn. nov.* TYPE: VIETNAM AND CAMBODIA. Without locality, 1866, *cult. Bot. Gard. Saigon,* 1882, *cult. at Fontenay-sous-Bois, A. Regnier s.n.* (Neotype, here designated: W-R 16108, image seen; possible drawing W-R 25183, August 1887, image seen, on sheet with *"Geodorum godefroyi"*).

Eulophia duperreana (Pierre ex Regnier) M.W. Chase, P. Kumar & Schuit., Phytotaxa 491, 1: 52. 2021.

Geodorum augustii Hort., The Garden (1871–1927) 47: 455. 1897. TYPE: WITHOUT ORIGIN. Exhibited at the Royal Horticultural Society 15 June 1897, *cult. T. Lawrence s.n.* (Holotype: lost).

Geodorum citrinum G. Jacks. var. *augustii* (Hort.) Cogn., Dict. Icon. Orch. 55, 5: *Geodorum* t.1. 1901.

Distribution: Myanmar, Vietnam, Cambodia, Thailand, and Malaysia (Peninsula).

Seidenfaden (1992) treated *Geodorum duperreanum* as a synonym of *G. recurvum* (Roxb.) Alston but gave no reasons for doing so. *Geodorum duperreanum* was based on material sent by Pierre that was cultivated in the botanical garden of Saigon (now Ho Chi Minh City) to Godefroy at Fontenay-sous-Bois. Regnier worked at Godefroy's establishment. In September 1882 material of this collection was sent to Reichenbach who gave it the manuscript name *"Geodorum godeffroyi"* (W-R 25183, right hand sketch plus dissected flower). We have chosen as neotype a collection named *Geodorum duperreanum* that was sent to Reichenbach f. by Regnier, a possible sketch of this collection is dated August 1887. The protologue, along with the material in W leave no doubt *Geodorum duperreanum* is a synonym of *Eulophia citrina*. Also in W-R is a copy of a sketch from John Day's orchid albums (vol. 31: t. 27. 5 November 1882) named *"Geodorum duparreanum"*. The plant figured came from France and was sold at Steven's Salesrooms. It was said to be from Japan. The figure also represents *Eulophia citrina*. In Paris (P 00387277, image seen) there is one collection named *Geodorum duperreanum,* it is kept under the name *Geodorum recurvum* (Roxb.) Alston. This specimen was collected in Vietnam by Auguste Regnier (no. 361) and does not come from Fontenay-suis-Bois where the original *G. duperreanum* was cultivated. It is possible *Geodorum augustii* was derived from French sourced Vietnamese material or perhaps plants later collected in Vietnam by Auguste Regnier.

The name *Eulophia terrestris* (L.) M.W. Chase, P. Kumar & Schuit. has recently been used (Chase et al. 2021) as the earlier one for *Geodorum citrinum* (here transferred to *Eulophia*). This is in our view unacceptable, and it requires an expansive explanation which is detailed below.

Epidendrum terrestre L. (Syst. Nat. ed. 10: 1246. 1759) was proposed with the following diagnosis "fol. radicalibus lanceolatis nervosis membranaceis, scapo vaginato, petalis oblongis, nectario cymbiformi bifido. Rumph. amb. 6, t.52, f.1". Ormerod (1994) chose the cited figure as lectotype, aware that the protologue was based on a mixture of elements (certainly at least a *Phaius* and a *Spathoglottis)*. Garay (1997) argued that Ormerod had overlooked one of the elements Linnaeus had used in describing the species, namely an herbarium specimen in LINN (No. 1062.19). Garay further argued that the "Code of Botanical Nomenclature always gives preference to existing specimens over cited illustrations" and he thus lectotypified *Epidendrum terrestre* anew with the specimen in LINN. However since the choice of Ormerod is not in conflict with the protologue (even with an overlooked element), Garay's new choice of type is superfluous. Furthermore the International Code of Nomenclature does not give any preference to specimens over cited illustrations, except in the case of fossils (Art. 8.5, Turland et al., 2018).

Chase et al. (2021) also argued that the lectotypification of the name *Epidendrum terrestre* by Ormerod (1994) was in serious conflict with protologue. They pointed out that because Linnaeus used the term "nectario cymbiformi" in the protologue then only the *Geodorum* element in LINN was in agreement with the original diagnosis. They also noted that the Linnean diagnosis "… contrary to Ormerod's assertion does not contain elements referring to a *Spathoglottis"*. However the latter assertion was made by Smith (in Merrill, 1917) and for reasons elucidated below it is still a correct statement.

Linnaeus took the epithet *terrestre* from the pre-1753 taxon *Angraecum terrestre* Rumph. The latter entity is a broad concept containing at least two species. First there is *Angraecum terrestre primum purpureum* Rumph (not illustrated by Rumph) which is believed to be *Spathoglottis plicata* Blume. The second entity is *Angraecum terrestre alterum* Rumph (illustrated Herb. Amb. 6: t. 52, f. 1. 1750), the latter once well known as *Phaius amboinensis* Blume [= *Phaius terrestris* (L.) Ormerod].

Thus there seems little doubt that Smith (in Merrill, 1917) is correct when he considers the diagnosis of *Epidendrum terrestre* to contain elements from both *Angraecum terrestre primum purpureum* and *Angraecum terrestre alterum*. Furthermore it is also evident the *Geodorum* element in LINN has been used in the diagnosis in regard to the lip ("nectario cymbiformi" but not "bifido" since the lip is entire). Looking at the descriptions of the two Rumphian taxa it seems the term "bifido" is drawn from the floral diagnosis of *Epidendrum terrestre primum purpureum* where the bilobed callus of the lip is described. In *Angreaecum terrestre alterum* the lip does not seem to be described but then Rumphius mentions one of the floral segments is shaped like a boat (i.e. cymbiform). The latter observation could just as well influenced Linnaeus as the *Geodorum* specimen before him now in LINN.

As can be seen from the above the protologue of *Epidendrum terrestre* highly likely contains three elements. There is no overwhelming case to reject the first valid lectotypification by Ormerod (1994) merely because of a single word ("cymbiformi") which on the evidence presented is not particularly diagnostic.

Eulophia pulchella (Ridl.) Ormerod & Kurzweil, *comb. nov.*

Basionym: *Geodorum pulchellum* Ridl., J. Str. Br. Roy. As. Soc. 50: 138. 1908.

TYPE: THAILAND [as "Siam"]. Bangtaphan [= Bang Saphan], 13 May 1890, *A. Keith 359* (Lectotype, here designated: K); Bangtaphan, 25 May 1890, *A. Keith 446* (Syntype: SING); Singgora [= Songkhla], fl. in Singapore Bot. Gard. April 1908, *St. V. B. Down s.n.* (Syntype: SING).

Heterotypic synonym: *Eulophia regnieri* Gagnep., Bull. Mus. Natl. Hist. Nat. (Paris) s.2, 4: 712. 1932. TYPE: VIETNAM [as "Cochinchina"]. Cai-Cong, April 1883, *A. Regnier s.n.* (Lectotype, here designated: P 00152036; Isolectotypes: P 00152037, P 00152038).

Distribution: India, Myanmar, China, Thailand, and Vietnam.

Additional specimens examined: INDIA. Manipur, Naga Hills, Kachni, 1600 m, 3 June 1948, *S.K. Mukerjee 2949* (CAL, image seen). CHINA. Yunnan, between Likiang, Youngning, and Youngpei, en route to Mili (SW Szechuan), May/June 1922, *J.F. Rock 5067* (AMES).

Watthana and Pedersen (in Pedersen et al., 2014) considered this species a synonym of *Geodorum recurvum* but the latter taxon is a rare entity confined to peninsular India and Sri Lanka with less densely arranged flowers, larger flowers (sepals 16–24 mm vs 10–16 mm long), a differently colored labellum (white with a broad subapical transverse pink to purple band, inner part of lip broadly yellow vs. white with an apical yellow section, inner part with a central purple area) that is broadly elliptic without a narrowed upper part (vs. broadly elliptic in lower two thirds, with a narrower subquadrate upper part or "epichile").

Unfortunately, Seidenfaden (1983) applied the name *Geodorum recurvum* to a variety of southeast Asian *Geodorum* specimens that bear no resemblance to the original plant from south India. The only modern report of *G. recurvum* was made by Prasad and Prasad Rao (2010) from the Nallamalai Hills, an area northeast of Madras and not far from Roxburgh's type locality (the rather broad "Coromandel Coast").

Ormerod et al. (2021) listed *Geodorum pulchellum* from India, from where it has not been previously found. Our record is based on the above cited specimen that was discovered in CAL by Sathish Kumar. The Chinese specimen listed above is of interest because Joseph Rock says the flowers are pale pink (rather than with white tepals, with a white lip that is apically yellow, the inner part of which with a central purple area). Examination of the flowers revealed no differences in size or shape.

Holcosia J.M.H. Shaw, Orch. Review Suppl., 111, 1252: 59. 2003.

Holcosia is a hybrid genus originally proposed for artificial crosses between the genera *Holcoglossum* Schltr. and *Luisia* Gaud. It has not been reported to occur in nature, however two entities described from Taiwan that were previously assigned to the genera *Vanda* R. Br. and *Papilionanthe* Schltr. are here suggested to be the first naturally occurring members.

Holcosia pseudotaiwaniana (T.C. Hsu) Ormerod & Kurzweil, *comb. nov.*

Basionym: *Papilionanthe pseudotaiwaniana* T.C. Hsu, Illustr. Fl. Taiwan 2: 157. 2016.

TYPE: TAIWAN. Hengchun, 21 April 2010, *W.M. Lin s.n.* (Holotype: TAI, not seen).

Distribution: Taiwan.

This taxon is quite similar to *H. taiwaniana* but the epichile has a distinct cuneate claw and lanceolate, acute lobules. One parent appears to be *Holcoglossum quasipinifolium* (Hayata) Schltr., whilst the other is likely either *Luisia megasepala* Hayata or *L. teres* (Thunb. ex J.A. Murray) Blume.

Holcosia taiwaniana (S.S. Ying) Ormerod & Kurzweil, *comb. nov.*

Basionym: *Vanda taiwaniana* S.S. Ying, Mem. Coll. Agric. Natl. Taiwan Uni. 29, 2: 65. 1989.

TYPE: TAIWAN. Pingtung, Schetzouchi to Shihmen, near Hungchan, 26 December 1987, *S.S. Ying s.n.* (Holotype: NTUF, not seen).

Homotypic synonyms: *Papilionanthe taiwaniana* (S.S. Ying) Ormerod, Taiwania 47, 4: 242. 2002.

Papilisia taiwaniana (S.S. Ying) J.M.H. Shaw, Orch. Review Suppl., 112, 1257: 47. 2004.

Distribution: Taiwan.

This entity does deceptively resemble *Papilionanthe teres* (Roxb.) Schltr. but the floral features are just a coincidence caused by the hybridisation of *Holcoglossum quasipinifolium* and either *Luisia megasepala* or *L. teres*.

Mengzia W.C. Huang, Z.J. Liu & C. Hu, Molec. Phylogen. Evol. 167, 107362: 7. 2021.

Type species: *Pogonia foliosa* King & Pantl.

A genus of a single species belonging to subtribe Arethusinae, distinguished from *Bletilla* Rchb.f. (subtribe Coelogyninae) by its lateral (vs. terminal) inflorescence, and flowers with four (not eight) pollinia. Its validity was confirmed through molecular studies by Huang et al. (2021).

Mengzia foliosa (King & Pantl.) W.C. Huang, Z.J. Liu & C. Hu, Molec. Phylogen. Evol. 167, 107362: 7. 2021. TYPE: MYANMAR [as "Upper Burma"]. Shan State, Fort Stedman [= Nyaungshwe], 1893, *Abdul Khalil s.n.* (Holotype: CAL).

Basionym: *Pogonia foliosa* King & Pantl., J. Asiat. Soc. Bengal 2, 66: 598. 1897.

Homotypic synonym: *Bletilla foliosa* (King & Pantl.) T. Tang & F.T. Wang, Acta Phytotax. Sin. 1, 1: 68. 1951.

Distribution: China; Myanmar; Thailand.

Later described as *Arethusa sinensis* Rolfe from China (see e.g. Ormerod et al. 2021 for synonymy).

Phalaenopsis Blume, Bijdr.: 294. 1825.

Type species: *Epidendrum amabile* L.

A genus of Aeridinae with 65–70 species in the broad sense. It is very popular in horticulture and thus many of the species are under threat in the wild from collecting for culture and sale. Since our paper on the orchids of Myanmar was published (Ormerod et al., 2021) one new species has

been added to the flora, and it is also necessary to correct one of the names we used.

Phalaenopsis marriottiana (Rchb.f.) Kocyan & Schuit., Phytotaxa 161, 1: 67. 2014.

Basionym: *Vanda parishii* Rchb.f. var. *marriottiana* Rchb.f., Gard. Chron. n.s. 13: 743. 1880. TYPE: WITHOUT ORIGIN [later said to be Myanmar. Mandalay]. *leg. W. Boxall, imp. Messrs. Low, cult. W. Marriott s.n.* (Holotype: W-R 37132).

Heterotypic synonyms: *Vanda parishii* Rchb.f., Xenia Orch. 2: 138. 1868. TYPE: WITHOUT ORIGIN [from "*Herrn Parish*"]. MYANMAR. Tenasserim, Moulmein District, Ta-Ok [as Te-Ok], 1864, *C.S.P. Parish 178* (Lectotype, proposed by Clayton [2017: 86]: K; Isolectotype: W-R 26296).

Phalaenopsis hygrochila J.M.H. Shaw, Orch. Review 123, 1309 (Suppl.): 23. 2015.

Phalaenopsis marriottiana (Rchb.f.) Kocyan & Schuit. var. *parishii* (Rchb.f.) Kocyan & Schuit. ex Clayton, Charles Parish–Pl. Hunt. Bot. Art.: 86. 2017.

Not *Phalaenopsis parishii* Rchb.f. 1865.

Distribution: India; China; Myanmar; Thailand; Laos; Vietnam.

Ormerod et al. (2021, where full synonymy is given) when treating this entity in the broad sense wrongly used the later name *P. hygrochila* J.M.H. Shaw. We also overlooked that Clayton (2017) inadvertently validated the combination *P. marriottiana* var. *parishii*. The first correct available name in *Phalaenopsis* is *P. marriottiana*. On the type sheet of *Vanda parishii* there is a note by Parish that says the flowers smell like elecampane (= *Inula helenium* L.), a member of the daisy family.

Phalaenopsis putaoensis X.H. Jin & H.A. Mung, Phytotaxa 484, 2: 244. 2021.

TYPE: MYANMAR. Kachin State, Putao Township, 500 m, 7 June 2016, *X.H. Jin et al. PT-2020* (Holotype: PE, not seen).

Distribution: Myanmar.

This distinctive new species was compared in its protologue with *P. honghenensis* F.Y. Liu and *P. wilsonii* Rolfe, both members of section *Aphyllae* H.R. Sweet. However the broadly rhombic lip which has two high keels, and broadly laminate basal callus strongly indicates *P. putaoensis* belongs in section *Parishianae* H.R. Sweet. Its closest ally appears to be *P. lobbii* (Rchb.f.) H.R. Sweet which has a similar lip but with smaller, more basal keels.

Phreatia Lindl., Gen. Sp. Orch. Pl.: 63. 1830.

Type species: *Phreatia elegans* Lindl.

A genus of Thelasinae with about 212 species spread from Sri Lanka and India to Tahiti. The plants are mostly epiphytes, either with stems (very short to elongate) or pseudobulbs. The flowers are quite small (sepals usually less than 2.5 mm long) and often in shades of white, less commonly yellowish green. The three species treated below have been placed in *Octarrhena* Thwaites but do not belong in that genus because their flowers possess a distinct column foot and the lip is relatively larger and trilobulate (vs. smaller, cymbiform to elliptic). These three Vietnamese species belong to *Phreatia* section *Rhizophyllum* (Blume) J.J. Sm., a group characterized by having very short stems in which the leaf sheaths overlap each other.

Phreatia emarginata (Aver., B.V. Truong & V.C. Nguyen) Ormerod & B.V. Truong, *comb. nov.*

Basionym: *Octarrhena emarginata* Aver., B.V. Truong & V.C. Nguyen, Phytotaxa 459, 4: 273. 2020.

TYPE: VIETNAM. Lam Dong Prov., Lam Ha Distr., 1000 m, *leg. Ngo Quang Dang s.n.*, fl. in cult. 28 October 2019, *L.V. Averyanov, N.V. Canh & T.V. Maisak AL 1216* (Holotype: LE, image seen).

Distribution: Vietnam.

Phreatia minuscula (Aver. & N.V. Duy) Ormerod & B.V. Truong, *comb. nov.*

Basionym: *Octarrhena minuscula* Aver. & N.V. Duy, Wulfenia 22: 174. 2015.

TYPE: VIETNAM. Dak Nong Prov., Dak Song Distr., 5 December 2014, *N.V. Canh, Q.V. Hoi, L.V. Averyanov, N.V. Duy & N.T. Hiep CPC 7694* (Holotype: LE, image seen).

Distribution: Vietnam.

Phreatia perpusilla (Aver. & Eskov) Ormerod & B.V. Truong, *comb. nov.*

Basionym: *Octarrhena perpusilla* Aver. & Eskov, Phytotaxa 459, 4: 267. 2020.

TYPE: VIETNAM. Lam Dong Prov., Lac Duong Distr., Bidoup National Park, near Giang Ly Forest Station, 1544 m, 15 November 2018, *A.K. Eskov & N.G. Prilepsky AL 491* (Holotype: LE, image seen).

Distribution: Vietnam.

Sarcoglyphis Garay, Bot. Mus. Leafl. Harv. Uni. 23, 4: 200. 1972.

Type species: *Sarcanthus mirabilis* Rchb.f.

A genus of Aeridinae with about 14 species distributed from India to Java. Their flowers bear a strong structural resemblance to the allied genus *Cleisostoma* Blume but differ in details of the column, which has a rostellum that has a humped base, and a pollinarium with a tiny viscidium, linear stipes, and four ellipsoid pollinia.

Sarcoglyphis parishii (W.J. Hook.) A.N. Rao, Pleione 14, 2: 349. 2020.

Basionym: *Sarcanthus parishii* W.J. Hook., Curtis's Bot. Mag. 86: t. 5217. 1860. TYPE: MYANMAR [as "Burma"]. Tenasserim, Moulmein, *leg. C.S.P. Parish,* fl. in cult. August 1860, *cult. Messrs. H. Low s.n.* (Holotype: lost). Lectotype, here designated: t. 5217, in Curtis's Bot. Mag. 86. 1860. Fig. 4.

Homotypic synonym: *Cleisostoma parishii* (W.J. Hook.) Garay, Bot. Mus. Leafl. Harv. Uni. 23, 4: 173. 1972.

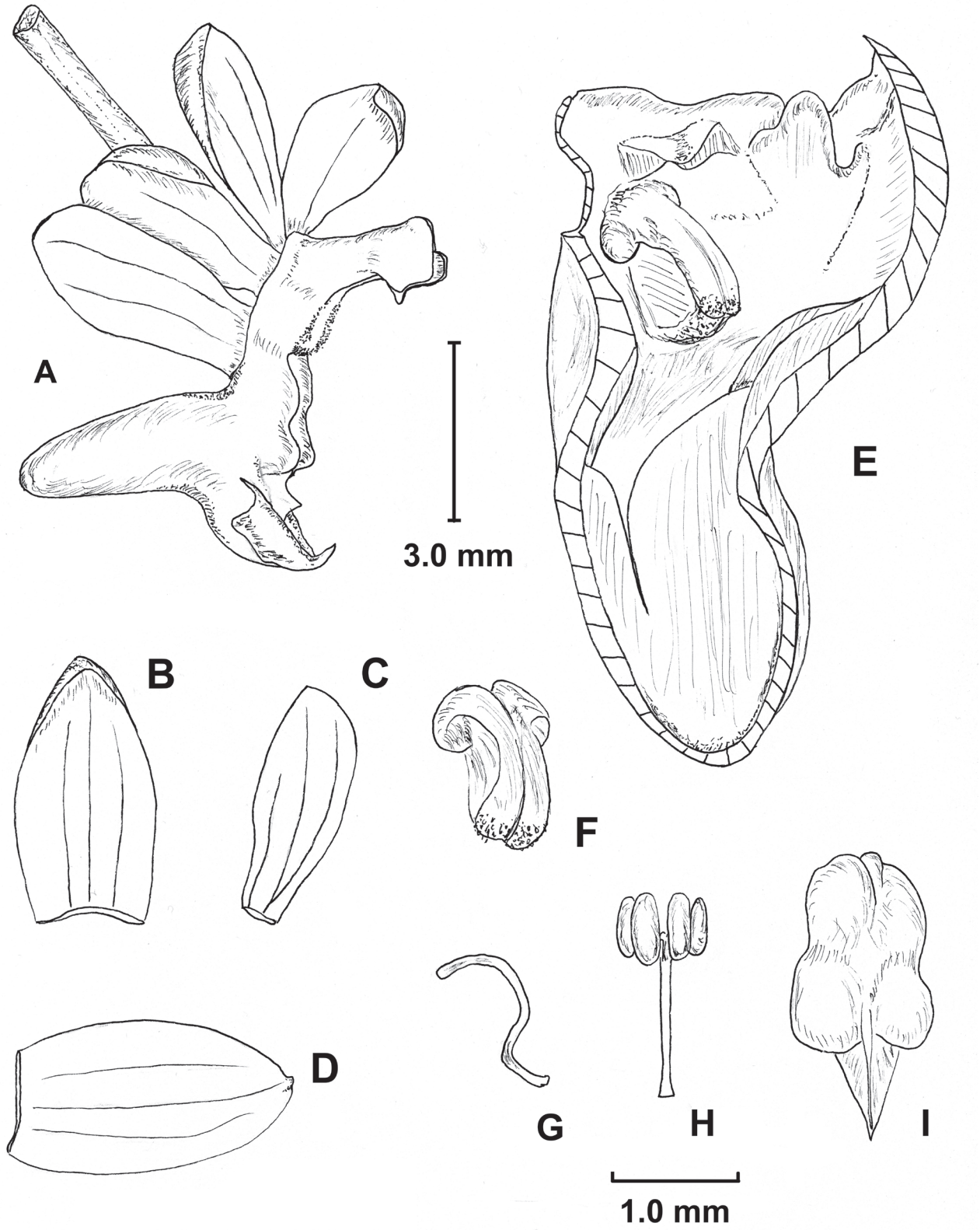

FIGURE 4. *Sarcoglyphis parishii* (W.J. Hook.) A.N. Rao. **A**, flower; **B**, dorsal sepal; **C**, petal; **D**, lateral sepal; **E**, labellum (longitudinal section); **F**, backwall callus of labellum; **G**, stipes of pollinarium (lateral view); **H**, pollinarium (no scale); **I**, anther cap. Drawn from *S. K. Lau 26693* (AMES).

Heterotypic synonyms: *Cleisostoma melanorachis* Aver. & Averyanova, Komarovia 4: 8. 2006 *syn. nov.* TYPE: VIETNAM. Cao Bang Prov., Tra Linh District, Quoc Toan Municipality, vicinity of Thang Heng and Lung Tao Villages near Thang Heng Lake, 500–650 m, 25–27 May 1997, *L.V. Averyanov & Nguyen Tien Hiep VH 4860* (Holotype: HN, not seen; Isotype: LE, image seen).

Sarcoglyphis manipurensis A.N. Rao, Vik. Kumar & H.B. Sharma, Nord. J. Bot. 34: 191. 2016. TYPE: INDIA. Manipur, Chandel District, Songpiyang Hills, 420 m, 25 May 2014, *H.B. Sharma 596* (Holotype: CAL, not seen; Isotype: COGCEHR, not seen).

Distribution: India; Myanmar; Laos; Vietnam; China.

Specimens examined: CHINA. Hainan, Bak Sa, 9 May 1936, *S.K. Lau 26693* (AMES); Tam District, N of Chung Kum, Hung Mo Mountain, 20 July 1929, *W.T. Tsang & Fung (532) 18066* (AMES).

Rao (2020) agreed his *Sarcoglyphis manipurensis* was conspecific with *Cleisostoma parishii* but pointed out the older taxon should therefore be transferred to *Sarcoglyphis,* which he did. While the Indian and Myanmarese plants have two reddish-brown stripes on the sepals and petals, those plants from China, Laos and Vietnam have pale whitish to pale purplish sepals and petals without stripes. *Cleisostoma melanorachis* would appear at first to differ in its long-peduncled inflorescence, and smaller anther cap, but later collections and photographs on the LE website show that the peduncle length varies from short to long, and that the anther cap was larger than first depicted. Furthermore, critical characters of the flowers such as midlobe shape and backwall callus shape and ornamentation do not differ either. We therefore have no hesitation in reducing *Cleisostoma melanorachis* to *Sarcoglyphis parishii*.

We (Ormerod et al., 2021) cited *Parish 27* as holotype of *Sarcanthus parishii* but this is not correct. The species was based on a collection sent by Parish, that was cultivated in England by Messrs. H. Low & Co. This collection does not appear to survive, so we have chosen the plate in Curtis's Botanical Magazine as lectotype. In June 1861 another collection flowered at Kew from presumably the same source (K 000942286, image seen). The latter was cited as holotype by Clayton (2017) but it postdates the protologue, so it cannot be the holotype.

Vanda W. Jones ex R. Br., Bot. Reg. 6: t. 506. 1820.
Type species: *Vanda roxburghii* R. Br.

A genus of Aeridinae with about 85 species in the broad sense, distributed from Sri Lanka and India to New Guinea and northeast Australia. It is quite popular in horticulture and many of the wild populations are under collecting pressure. In Ormerod et al. (2021) we treated *Vanda parviflora* var. *albiflora* in the synonymy of *V. testacea* (Lindl.) Rchb.f., but it correctly belongs in the synonymy of *V. lilacina* as Seidenfaden (1988) had it.

Recently Motes (2021) published a popular monograph of the genus in which he added two species to flora of Myanmar, namely *V. bicolor* Griff. and *V. coelestis* (Rchb.f.) Motes (formerly well known as *Rhynchostylis coelestis* (Rchb.f.) A.H. Kent). We have not seen vouchers for these records. He also extended the distribution of *V. longitepala* D.L. Roberts, L.M. Gardiner & Motes from Myanmar to India.

Vanda hennisiana Ormerod & Kurzweil, *nom. nov.*
Basionym: *Vanda petersiana* Schltr., Notizbl. Bot. Gart. Berlin-Dahlem 7: 280. 1918 *nom. illeg., non V. peetersiana* (Cogn.) Andre 1898.
TYPE: MYANMAR. Without locality, fl. in cult. June 1915, *W. Hennis s.n.* (Holotype: B, destroyed). Lectotype, here designated: Fig. 295, Taf. 74 in Schlechter (1934).
Usage synonym: *Vanda bensonii auct. non* Bateman, Nyan Tun, Wild Orch. Myanmar: 441, upper photo. 2014.

Distribution: Myanmar.

Etymology: Named after Wilhelm Hennis (1856–1943), German horticulturalist who first imported and flowered this taxon.

We have had to coin a new name for this entity due to the prior existence of the very similar binomial *Vanda peetersiana* (Cogn.) Andre (Andre, 1898). The latter name was based on *Vanda coerulea* Griff. ex Lindl. var. *peetersiana* Cogn. (Cogniaux 1897a), a supposed form of *V. coerulea* that was said to be imported from the Khasia Hills in India. It was illustrated in Cogniaux (1897b) and seems to be a natural hybrid involving *V. coerulea,* and perhaps *V. coerulescens*. Rolfe (1913) suspected its origin might be Myanmar and that *Vanda coerulea* var. *peetersiana* could be a backcrossed hybrid of the endemic Myanmar natural hybrid *V. charlesworthii* Rolfe (*V. bensonii* Bateman × *V. coerulea* Griff. ex Lindl.). However this origin seems unlikely since the pandurate, apically bilobed lip is not apparent. It is possible the unlocalised *V. coerulea* var. *sanderae* H.J. Veitch (Gard. Chron. s. 3, 48: 398. 1910) is a later synonym of *V. peetersiana* since it has the same coloring (white flowers with magenta edging and suffusion on the tepals and a deep magenta-pink lip). We (Ormerod et al. 2021) did not investigate the complicated issues surrounding a number of supposed varieties of *V. coerulea* that are likely of hybrid origin and that were usually published without the importation locality, illustrations, or any preserved material. Rolfe (1911) suggested that the Shan States area in Myanmar could be the source area for these hybrids due to the number of different *Vanda* species (some of which are now placed in *Holcoglossum* Schltr.) imported from there.

Vanda hennisiana is quite rare and seems to have been found only once later (see usage synonym above). Its floral characters seem to be intermediate between *V. bensonii* Bateman and *V. cristata* Lindl., whilst the plant and tall, lax inflorescence resemble *V. bensonii*. Also, it is worth repeating that the specimen in Munich (*Doring 5578,* image seen) treated by Seidenfaden (1988) as an isotype is a later collection of a different plant differing in details of the labellum (such as triangular sidelobes and broader ligulate epichile lobules vs. circular sidelobes and linear-lanceolate epichile lobules). For this reason, we have chosen the published drawing of Schlechter as lectotype.

Vanda lilacina Teijsm. & Binn., Nat. Tijdschr. Ned. Ind. 24: 325. 1862. TYPE: THAILAND. Near Ratburi, *J.E. Teijsmann s.n*. (Holotype: lost).

Heterotypic synonym: *Vanda testacea* (Lindl.) Rchb.f. var. *parviflora* J.D. Hook., Fl. Brit. Ind. 6: 50. 1890. TYPE: MYANMAR. Tenasserim, Moulmein, 29 January 1870, *icon C.S.P. Parish 22* (Lectotype, here designated: K, image seen).

Distribution: Myanmar; Thailand; Laos; Cambodia; Vietnam.

Seidenfaden (1988) correctly reduced *V. testacea* var. *albiflora* to *V. lilacina*. We have been unable to add any other records of the species to the flora of Myanmar. Parish's original drawing that was the basis of *Vanda testacea* var. *albiflora* is reproduced in Clayton (2017).

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