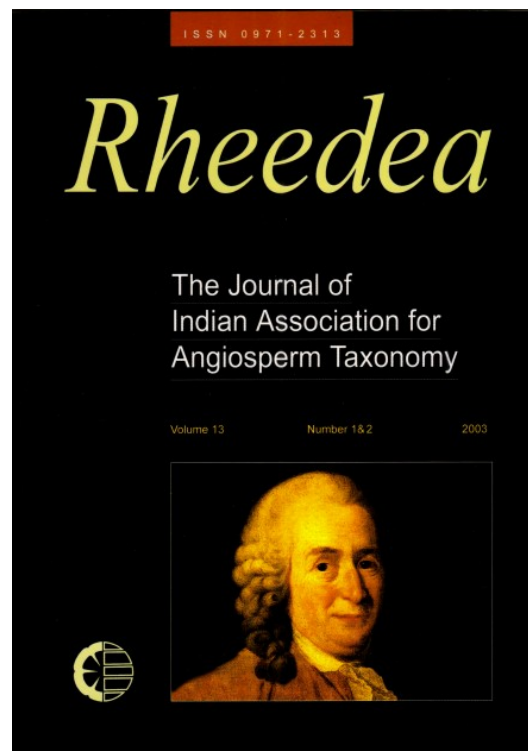




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# Orchidaceous Additions to the Flora of Burma (Myanmar)

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## Abstract

This paper, based on literature and herbarium studies, deals with three genera viz. *Acrochaene*, *Aorchis* and *Cryptochilus* and 26 species viz.: *Acrochaene punctata* Lindl., *Anoetochilus lylei* Rolfe ex Downie, *Aorchis spathulata* (Lindl.) Vermeulen, *Bletilla elegantula* (Kranzlin) Garay & Romero, *Calanthe brevicornu* Lindl., *C. densiflora* Lindl., *C. mannii* Hook. f., *C. sylvatica* (Thouars) Lindl., *C. triplicata* (Willem.) Ames, *C. trulliformis* King & Pantl., *Cheirostylis spathulata* J. J. Sm., *C. yunnanensis* Rolfe, *Cryptochilus lutea* Lindl., *C. sanguinea* Wallich, *Cymbidium devonianum* Lindl. & Paxton, *Dendrobium hancockii* Rolfe, *Epigeneium rotundatum* (Lindl.) Summerh., *Epipogium aphyllum* Sw., *Eria stricta* Lindl., *Eulophia sooi* W. Y. Chun & T. Tang ex S. C. Chen, *Geodorum pulchellum* Ridl., *G. siamense* Rolfe ex Downie, *Goodyera schlechtendaliana* Reichb. f., *Hemipilia cordifolia* Lindl., *Hetaeria finlaysoniana* Seidenf. and *Luisia magniflora* Tsi & S. C. Chen as new records for Burma. Type study enabled us to reduce six species (*Calanthe burmannica* Rolfe, *Dendrobium mouleminense* Parish ex Hook. f., *D. hexadesmia* Reichb. f., *D. tapingense* W. W. Sm., *Diplomeris boxallii* Rolfe ex Kranzlin and *Orchis subrotunda* King & Pantl.) to synonymy (of *Calanthe ceciliae* Reichb. f., *Dendrobium devonianum* Paxton, *D. parcum* Reichb. f., *Diplomeris pulchella* D. Don and *Hemipilia calophylla* Par. & Reichb. f. respectively) and exclude five species (*Aerides flabellata* Rolfe ex Downie, *Cypripedium elgans* Reichb. f., *Geodorum densiflorum* (Lam.) Schltr., *G. recurvum* (Roxb.) Alston and *Peristylus coeloceras* Finet) from the flora.

**Keywords:** Orchidaceae, Additions, Deletions, Synonymy, Burma

## Introduction

The orchid flora of Burma continues to remain as one of the most poorly known elements in Southeast Asia (see Fig. 1). Historically, European botanists and army officers were the first to have made the early collections of orchids in Burma. These resources were sent to different herbaria and subsequently studied by the leading orchidologists of the 19<sup>th</sup> century like Lindley, Reichenbach f. and J. D. Hooker. Rev. Charles Samuel Pollock Parish (1822-1897) who stayed in Burma for over 25 years as Chaplain to the forces made a systematic collection of orchids and prepared a set of illustrations based on his materials. Reichenbach f. had great respect for Parish and his 'beautiful collection of careful water-colour drawings with analytical sketches' were considered 'exceedingly trustworthy'. Reichenbach f. (1874) acknowledged this when he brought out an enumeration by crediting joint authorship to many new species or naming them after Parish, viz.:

*Cymbidium parishii*, *Phalaenopsis parishii*, *Peristylus parishii*, *Vanda parishii* (now *Hygrochilus parishii*), *Eria parishii*, *Dendrobium parishii*, *Cypripedium parishii* (now *Paphiopedilum parishii*) etc. Later, Parish (1883) published a detailed account of Burmese orchids and commented, 'my opportunities of observation were almost unrivalled. Fixed at one station for upwards of twenty years, and having some 150 species growing in my garden, fresh supplies being continually brought in, it was my daily delight to watch their growth, and hardly a day passed on which I did not either draw or examine microscopically some one orchid or another'. Here he enumerated 360 species of orchids. The actual contribution of Parish to Burmese Orchid Flora, however, is yet to be properly assessed and acknowledged.

J. D. Hooker (1817-1911) while working on the Orchids of British India had access to all the collections available at Kew and Calcutta, both he effectively

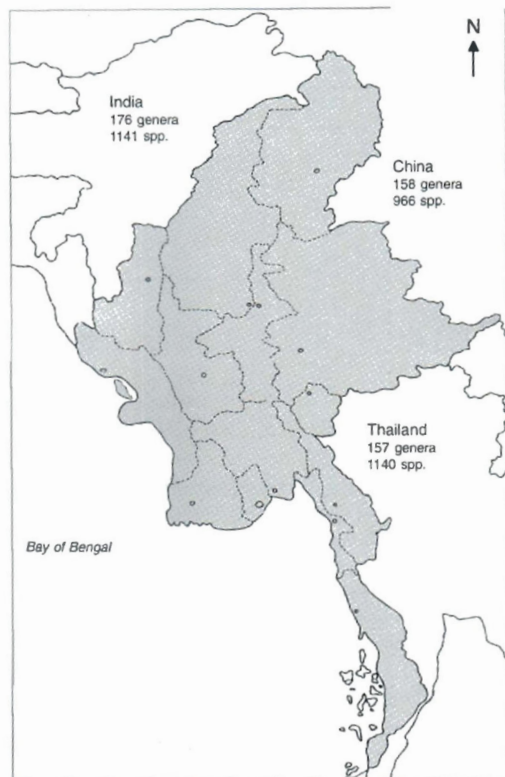


Figure 1. Map of Burma (Myanmar).

utilized for drawing up descriptions. George King (1840-1909) and Robert Pantling (1856-1910) who worked at Calcutta had access to a lot of Burmese collections brought home by the Garden's collectors like Abdul Khalil, Abdul Huk and Shaik Mokim. They made a systematic and careful study of these specimens which resulted in the publication of a paper (King & Pantling, 1897) wherein many Burmese novelties such as *Dendrobium sordidum*, *Bulbophyllum shanicum*, *Eria brandisii*, *E. shanensis*, *Saccolabium collettianum*, *Sarcanthus rolfeanus*, *Pogonia parishiana*, *P. foliosa*, *Cephalanthera chartacea*, *Orchis subrotunda*, *Habenaria massoniana*, *H. prazeri*, *H. linearis* and *H. hawkesiana* were included. The last comprehensive account on Burmese orchids was published 108 years ago by Bartle Grant (1895). Grant's account provided only 489 species (of which 10 were of Andaman origin) in 78 genera. Francis Kingdon-Ward (1885-1958), a British plant collector and explorer visited Burma several times between 1914 and 1856 and made impressive collections of orchids and other plants; one of the most noteworthy discoveries was *Paphiopedilum wardii* Summerh. from northern Burma in 1922. Since then there have been numerous additions to and

nomenclatural changes in Burmese orchids, that remained scattered in literature. With the junta administration in power since 1950, Burma has been cut off for any international collaboration in botanical studies.

We are trying to piece together here information scattered and un-collated in various herbaria and present a better picture on the Burmese orchids to help Burmese and Southeast Asian students.

Geographically (10°-28° North latitudes and 92°-102° East longitudes) wedged between India on the west and Thailand on the east, China in the north and Bay of Bengal and peninsular Thailand in the south Burma harbours a mixture of orchid flora occurring in these countries. An estimate of both published and unpublished data shows that there are 137 genera and 710 species of orchids in Burma. This stands a poor comparison with better-known orchid floras of neighboring Thailand (ca. 157 genera, 1140 species) and India (176 genera, 1141 species).

Some species listed below have already been mentioned in literature as occurring in Burma. Since no specimens were cited in such publications, their occurrence was not considered as authentic. The present study not only enabled us to confirm the occurrence of such species but also to delete a few. Specimens studied for this report are cited then and there with our comments. The first author studied most of the taxa recorded here at AMES, BM or K whilst the second author examined specimens at CAL.

## Enumeration of new records

This includes generic records of *Acrochaene*, *Aorchis* and *Cryptochilus* along with their species.

### 1. *Acrochaene punctata* Lindl., Fol. Orchid. *Acrochaene* 2: 1. no.1.1853.

Lindley described the genus *Acrochaene* based on Hooker's collections from Sikkim, India where it was believed endemic. Seidenfaden (1995) reported its occurrence in Thailand. The material cited consists of inflorescences only. This is new generic and species record for Burma.

*Altitude*: 1525-1830 m.

*Occurrence*: Nam Tamai Valley Kingdom-Ward 13507 (BM).

*Distribution*: Northeast India to Burma and Thailand.

### 2. *Anoectochilus lylei* Rolfe ex Downie, Kew Bull. 1925: 411. 1925.

This species was earlier known from Thailand (type) and Vietnam. One of the sheets at CAL has an annotation by Rolfe 'near *A. sikkimensis*'.

*Altitude:* 610 m.

*Occurrence:* Tankhu, 7-02-1953, *Kingdon-Ward 20499* (BM); without precise locality, *S. Toppin 4412* (CAL).

*Distribution:* Burma, Thailand and Vietnam.

**3. *Aorchis spathulata*** (Lindl.) Vermeulen in Jahresber. Naturwiss. Vereins Wuppertal 25: 33.1972. *Gymmadenia spathulata* Lindl., Gen. Sp. Orch. 280. 1835.

*Aorchis* is a small segregate genus from *Orchis* and centred on the Himalayan belt reaching up to China. It has only 2 species. This is the first report of the genus for Burma.

*Altitude:* 3660 m.

*Occurrence:* Adung Valley, 21-07-1931, *Kingdon-Ward 9835A* (BM).

*Distribution:* Northeast India, Bhutan, Burma and South West China.

**4. *Bletilla elegantula*** (Kranzlin) Garay & Romero, Harvard Pap. Bot. 3(1): 53. 1998. *Coelogyne elegantula* Kranzlin, Repert. Spec. Nov. Regni Veg. 17 (477-480): 111.1921.

*Type:* China-Yunnan, Pan y tien, *Ten 1186* (Holotype, C).

Abdul Khalil collected this species at Saikaw from Southern Shan States in 1896. Pantling who studied it in detail could not place it generically doubting '*Bletia*/new genus? *Coelogyne*?' and commented, 'Florally it is a true *Coelogyne*, i.e., having caducuous bracts, linear petals, lamellate lip, short dilated column and shape of anther. But the habit is altogether unlike that of *Coelogyne*'. Pantling did not know *Bletilla* and hence with King, he described two more species in two genera (*Cephalanthera chartacea*, *Pogonia foliosa*), both Tang & Wang (1951) transferred to *Bletilla*.

*Occurrence:* Southern Shan States, Saikaw, 1896, *Abdul Khalil s. n.* (CAL).

*Distribution:* South East China, Burma.

**5. *Calanthe brevicornu*** Lindl., Gen. Sp. Orch. 251. 1833.

Lindley described this species based on a Wallich collection from Nepal.

*Occurrence:* N. Triangle, Uring Bum, above Akhail, 2135 m., 13-05-1953, *Kingdon-Ward 20819* (BM); Range between Nachenorg Kha and Southern Irrawaddy, 26.6.1897, Long. 98° 40' E and Lat. 26° 11' N. s. coll. s. n. (CAL).

*Distribution:* North India, Nepal, Bhutan, Burma and South West China.

**6. *Calanthe densiflora*** Lindl., Gen. Sp. Orch. 250. 1833.

Lindley described this species after a Wallich collection from Sylhet in Bangladesh.

*Altitude:* 1065-1500 m.

*Occurrence:* N. Triangle, Hkinhum, 21-09-1953, *Kingdon-Ward 21351* (BM); Kachin Hills- Leumunk, 8.4.1897, *Lieut. E. Pottinger s. n.* (CAL); Upper Burma-Kumtat, *Capt. S. M. Toppin R. A. 4302* (CAL).

*Distribution:* North East India to South East Asia to Taiwan.

**7. *Calanthe mannii*** Hook. f., Fl. Brit. India 5(2): 850.1890.

J. D. Hooker described this species based on collections by Gustav Mann, C. B. Clarke and Duthie from Northeast and West Himalaya.

*Altitude:* 1525-1830 m.

*Occurrence:* N. Triangle, Hkinhum, 10-04-1953, *Kingdon-Ward 20645* (BM); Adung Valley, 7-05-1931, *Kingdon-Ward 9456* (BM).

*Distribution:* North East India, Burma to South West China and Vietnam.

**8. *Calanthe sylvatica*** (Thouars) Lindl., Gen. Sp. Orch. 250. 1833. *Centrosia sylvatica* Thouars, Orch. Iles. Aust. Afr. T. 35, 36.1822.

A widespread species in the Old World and Burmese record is no surprise.

*Altitude:* 455-1220 m.

*Occurrence:* N. Triangle, Arakhu to Hkinhum, 28-08-1953, *Kingdon-Ward 21292* (BM); N'Changyang, 11-07-1939, *Kaulback 263* (BM).

*Distribution:* Africa, Madagascar, India, Sri Lanka through South East Asia to Malesia (to New Guinea).

**9. *Calanthe triplicata*** (Willem.) Ames, Philipp. J. Sci. 2: 326. 1907. *Orchis triplicata* Willem., Usteri Ann. Bot. 18: 52. 1796.

This is a white flowered species occurring widely throughout Indo-Malesia.

*Altitude:* 1065-1295 m.

*Occurrence:* Maymyo Plateau, Peiniegan, 11-1934, *Mg Sein 13507* (K); Maymyo Plateau, Tha gut-Kainaing, 14-07-1925, *Forest Bot. Coll. 1554* (K); Shan States, imp. Low, 1896, cult. *Hildebrand s. n.* (K); Southern Shan States 8.8.1897, *H. H. Hildebrand s. n.* (CAL); Southern Shan State Taungyi: 1893 *Abdul Khalil s. n.* (CAL); N. Triangle, Hkinhum, 13-07-1953, *Kingdon-Ward 21144* (BM); Tavoy: Head Waters of the Side Chang, February 1920, *P. T. Russell 1839* (CAL).

*Distribution:* India, Burma, Sri Lanka to South East Asia to Malasia and Polynesia (to Tahiti).

10. *Calanthe trulliformis* King & Pantl., J. Asiat. Soc. Bengal 64(3): 337.1895.

King and Pantling (1895) described this species based on the latter's collection from Mahaldaram Peak (6000 ft) in Sikkim. It is allied to *C. puberula* Lindl. from which it differs in having sessile leaves and a lip without sidelobes. China is listed in the distribution on the basis of a photograph (upper right) misidentified as *C. arcuata* Rolfe in *Native Orchids of China in Colour* (Chen *et al.* 1999).

*Altitude:* 2135 m.

*Occurrence:* Valley of the Di Chu, 22-07-1926, *Kingdon-Ward* 7162 (K).

*Distribution:* North East India, Burma and South West China.

11. *Cheirostylis spatulata* J. J. Sm., Bull. Buitenz. 3. s. 9: 32. T.5. II. 1927.

J. J. Smith described this species after a collection by Dorgolo from Soerabaya, Java.

*Altitude:* 1200 m.

*Occurrence:* Burma – Mindat, 11-03-1956, *Kingdon-Ward* 21776 (BM).

*Distribution:* From Burma to South East Asia and Java to Borneo.

12. *Cheirostylis yunnanensis* Rolfe, Bull. Misc. Inform. Kew 1896: 201. 1896.

Rolfe described this species after a collection by Hancock from Mengtse, Yunnan.

*Altitude:* 215 m.

*Occurrence:* New road from Tamu to Chipwi, 25-03-1938, *Kermode* 16649 (AMES).

*Distribution:* North East India, Burma, Thailand, South China and Vietnam.

13. *Cryptochilus lutea* Lindl, J. Proc. Linn. Soc. Bot. 3: 21.1858.

*Cryptochilus* Wallich with its two species occurs mainly in the Himalayan belt extending further to Indo-China. This is the first report of the genus for Burma. Lindley (1858) described this species based on Griffith's collection from Darjeeling.

*Altitude:* 1830-1980 m.

*Occurrence:* N. Triangle, Tama Bum, 12-06-1953, *Kingdon-Ward* 20984 (BM).

*Distribution:* North India to Bhutan, Burma, South West China to Vietnam.

14. *Cryptochilus sanguinea* Wallich, Tent. Fl. Nepal. 2: 36. t. 26.1826.

Wallich described this species based on his own collection from Nepal.

*Altitude:* 1220-1525 m.

*Occurrence:* Hills east of the Mali Hka, 31-07-1937, *Kingdon-Ward* 12850 (BM).

*Distribution:* North East India, Nepal and Burma to Thailand.

15. *Cymbidium devonianum* Lindl. & Paxton in Paxton's Mag. Bot. 10: 97.1843.

Lindley & Paxton described this species based on Gibson's collection from Meghalaya.

*Altitude:* 1200 m.

*Occurrence:* N. Triangle, Hkinhum, 9-05-1953, *Kingdon - Ward* 20808 (BM).

*Distribution:* North India to Burma and Thailand.

16. *Dendrobium hancockii* Rolfe, J. Linn. Soc. Bot. 36: 11. 1903.

Rolfe described this species based on Hancock's collection (*Hancock* 586, K) from China. This is the first report of its occurrence in Burma.

*Occurrence:* N'Maileha-Salwin Divide, 06-1931, *Forrest* 29786 (BM).

*Distribution:* Burma and South West China.

17. *Epigeneium rotundatum* (Lindl.) Summerh., Kew Bull. 12: 264. 1957. *Sarcopodium rotundatum* Lindl., Fol. Orch. *Sarcopodium* 2: 2. no.3. 1853.

Lindley described this species based on Hooker's collection from Sikkim, India. This is the first report of its occurrence in Burma.

*Altitude:* 2440-2745 m.

*Occurrence:* Myitkyina, Zuklang to Hpare, 5-04-1938, *Kermode* 17164 (AMES).

*Distribution:* North East India, Nepal, Bhutan and Burma.

18. *Epipogium aphyllum* Sw., Summa Veg. Scand. 32.1814.

This is a widespread species occurring from Europe to East Asia and hence Burmese record is no surprise.

*Altitude:* 2440-2745 m.

*Occurrence:* Seingkhru Valley, 25-09-1926, *Kingdon-Ward* 7461 (K).

*Distribution:* Europe to E. Asia.

19. *Eria stricta* Lindl., Coll. Bot. 8: t.416. 1826.

Lindley described this species based on Wallich's collection from Nepal.

Altitude: 915-2500 m.

Occurrence: Burma - Bhamo area, Sinlun Reserve, Maung 4923 (K); upper part, 1525-1830 m, 3-12-1937, Kingdon-Ward 13234 (BM); hills east of the Mali Hka, 915-1220 m, 29-12-1930, Kingdon-Ward 9068 (BM); Kachin Hills: 1895, Shaik Mokim s. n. (CAL) and Myitkyina : 18-3-1897, Lieut. E. Pottinger R. A. s. n. (CAL); Upper Burma: Khampti Long Mission Collection 1911-1912, February 1912, 2500', Capt. S. M. Toppin R. A. 6360 (CAL).

Distribution: North East India, Nepal, Bhutan and Burma.

20. *Eulophia sooi* W. Y. Chun & T. Tang ex S. C. Chen, Fl. Reipubl. Popul. Sinic. 18: 412. fig. 32: 6-7. 1999.

This was described based on Soo's collection made on 28 June 1936 from Si Lin, in Tian Lin County, Guangxi, China. We found one specimen matching with this species among the unidentified *Eulophia* specimens housed at CAL. Two large erect plates at the base of lip are very characteristic of this species. This is a new record for Burma.

Occurrence: Fort Stedman, 1894, Khalil s. n. (CAL).

Distribution: Burma and China (West Guangxi).

21. *Geodorum pulchellum* Ridl., J. Straits Branch Roy. Asiatic Soc. 50: 138.1908. Fig. 2.

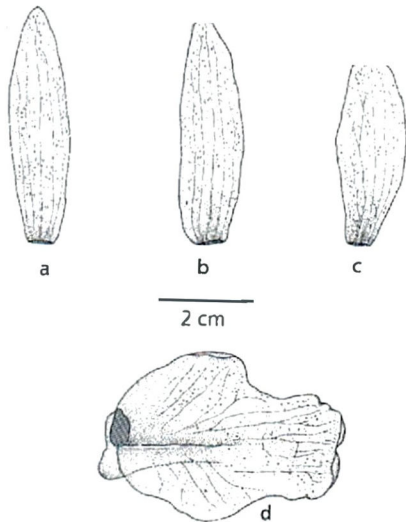


Figure 2. *Geodorum pulchellum* Ridl. - a. Dorsal sepal; b. Lateral sepal; c. Petal; d. Lip (after Mokim s.n.)

Ridley described this species based on two collections by Keith and Down from Thailand.

Occurrence: Maymyo, 21-09-1927, Swinhoe 116 (K); Wa States, Lwese Taung, 5-05-1937, Maung Po Khant 15343 (K); Kachin Hills, 04-1898, Mokim s. n. (CAL).

Distribution: North East India, Burma to South West China and Thailand.

22. *Geodorum siamense* Rolfe ex Downie, Kew Bull. 1925: 383. 1925.

Rolfe described this species based on Kerr's collection from Thailand.

Occurrence: Southern Shan States, Fort Stedman, 1894, Khalil s. n. (CAL).

Distribution: Burma, Thailand, Vietnam.

23. *Goodyera schlechtendaliana* Reichb. f., Linnaea 22: 861. 1849.

Reichenbach f. described this species based on Göring's collection from Japan. The specimens of this species at BM were on loan and thus could not be studied.

Occurrence: Southern Shan States, hills between Mong Kai and Mong Wa, 04-1929, Kingdon-Ward 8828 (AMES).

Distribution: North East India through South East Asia to West Malesia and to Taiwan and Japan.

24. *Hemipilia cordifolia* Lindl., Gen. Sp. Orch. 296.1835.

Lindley described this species based on collections made for Wallich from Nepal.

Altitude: 1980 m.

Occurrence: Chin Hills, near Haka, 18-08-1910, Venning 18 (K); Mt. Victoria, 1924, Cooper 6048 (E, fide Luo & Chen mss.).

Distribution: North India and Nepal to Burma.

25. *Hetaeria finlaysoniana* Seidenf., Contr. Orchid Fl. Thailand XIII: 10. 1997.

On account of an earlier homonym, Seidenfaden (1997) proposed this new name for what was called *Hetaeria elongata* (Lindl.) Trimen, originally described by Lindley based on Finlayson's type (Wall. 76384 K) from peninsular Thailand.

Occurrence: Amherst District, Between Kyondo and the Thai border, 8-03-1904, Burkill 24453 (K); same area, Burkill 24458 p. p. (K).

Distribution: Burma, Thailand, China?

26. *Luisia magniflora* Tsi & S. C. Chen, *Acta Phytotax. Sinica* 32(6): 558. 1994.

The Dickason collection was previously misidentified as *L. thailandica* Seidenf. (see Seidenfaden, Bot. Tidsskr. 27, 4:28 p. p., fig. 12, 1971) by Seidenfaden and a closer study proved it to be *L. magniflora* Tsi & S. C. Chen originally described from Menghla in Yunnan.

*Occurrence*: Pangwai, Dickason 9277 (AMES).

*Distribution*: Burma and South West China.

## New synonyms

1. *Calanthe ceciliae* Reichb. f., Gard. Chron. 21: 432 1883.

*Type*: Peninsular Malaysia - *s. loc.*, comm. *Lows n.* (Holotype W).

*Calanthe burmannica* Rolfe, Bull. Misc. Inform. Kew 1907: 129. 1907, *syn. nov.*

*Type*: Burma - Shan States, 09-1896, Hort. van Imschoot *s. n.* (Holotype, K).

Rolfe's *C. burmannica* after a detailed study at Kew proved to be not different from *C. ceciliae* Reichb. f.

*Occurrence*: Burma - see type cited; Southern Shan States, 08-1902, Hort. Kew *s. n.* (K).

*Distribution*: Burma, Thailand, West Malaysia, Sumatra and Java.

2. *Dendrobium devonianum* Paxton, Bot. Mag. 7: 169. 1840.

*Type*: NE India - Khasia Hills, Gibson *s. n.* (Holotype, lost). *Dendrobium devonianum* var. *rhodoneurum* Reichb. f., Gard. Chron. 28 : 682. 1868.

*Type*: Burma - Tenasserim, Parish 310 (Holotype, K).

*Dendrobium moulmeinense* Parish ex Hook. f. Fl. Brit. Ind. 5: 746, 1890. *syn. nov.*

*Callista moulmeinensis* (Hook. f.) Kuntze, Rev. Gen. 2: 655. 1891.

*Type*: Burma - Tenasserim, Parish 310 (Holotype, K).

Paxton described this species based on Gibson's collection from Meghalaya. *Dendrobium moulmeinense* is based on the same type material as that of *D. devonianum* var. *rhodoneurum*. It falls into the variations shown by *D. devonianum* and therefore it is treated as a synonym.

*Distribution*: North East India, Bhutan, Burma, South West China and Thailand.

3. *Dendrobium parcum* Reichb. f., Gard. Chron. 26: 1042. 1866.

*Type*: Burma - Tenasserim, Parish 81 (Holotype, K; isotype W.).

*Callista parca* (Reichb. f.) Kuntze, Rev. Gen. 2: 655. 1891.

*Dendrobium hexadesmia* Reichb. f., Gard. Chron. 29: 710. 1869, *syn. nov.*

*Type*: Origin unknown (Burma?), *s. coll. s.n.* (Holotype, W-R 41244).

*Dendrobium tapingense* W.W. Sm., Notes Roy. Bot. Gard. Edinburgh 13: 202. 1921, *syn. nov.*

*Type*: Upper Burma - Taping River bank, 610 m, 03-1914, Forrest 12608 (Holotype E).

We do not think *D. hexadesmia* and *D. tapingense* are different from *D. parcum* and accordingly reduce them to synonymy.

*Distribution*: Burma, Thailand and Vietnam.

4. *Diplomeris pulchella* D. Don, Prodr. Fl. Nepal. 26. 1825.

*Type*: "Nepal" (NE India-Sylhet Mts.) - Wallich *s. n.* (Holotype, BM).

*Diplomeris boxallii* Rolfe ex Kranzlin, Orch. Gen. & Sp. 1: 470. 1901, *syn. nov.*

*Type*: Lower Burma - Boxall *s. n.* (Holotype, K).

We agree with Udai Pradhan (in mss. at K) that *Diplomeris boxallii* is conspecific with *D. pulchella*.

*Altitude*: 915-1220 m.

*Occurrence*: Burma - see type cited; *s. data*, Kingdon-Ward 21270 (BM, C); Nam Tamai Valley, 12-09-1926, Kingdon-Ward 7043 (K); Ruby Mines Dvn.: Mogok, Rocky Bed near Irrawaddy 18.3.1911 A. Rodger 106 (CAL); Wama Uka: Dec. 1911, Lieut. Sidney Toppin R. A. 4226 (CAL).

*Distribution*: North East India to Burma, China and Vietnam

5. *Hemipilia calophylla* Parish & Reichb. f., J. Bot. 12: 197, 1874.

*Type*: Burma - Tenasserim, "Moulmein", Parish 348 (Holotype & isotype K).

*Hemipilia amethystina* Rolfe ex Hook. f., Bot. Mag. 123: t. 7521. 1897.

*Type*: Burma - Shan States, imp. & cult. Hort. Lewis *s. n.* (Holotype K).

*Orchis subrotunda* King & Pantl., J. Asiat. Soc. Bengal 66 (3): 600. 1897, *syn. nov.*

*Type*: Burma - Fort Stedman, Abdul Khalil *s. n.* (Holotype, CAL).

*Galearis subrotunda* (King & Pantl.) P. F. Hunt, Kew Bull. 26(1): 172. 1971.

In an unpublished revision of *Hemipilia* Lindl., Luo & Chen reduced *H. amethystina* to *H. calophylla*, with which we agree. We also find that *Orchis subrotunda* described by King and Pantling based on a Burmese collection is a synonym too.

*Occurrence*: No precise Locality, 26 August 1894, *s. coll. s. n.* (CAL!); Mandalay: 1927, *Swinhoe s. n.* (CAL).

*Distribution*: Burma to South West China and Thailand.

## Excluded species

1. *Aerides flabellata* Rolfe ex Downie, Kew Bull. 1925:387. 1925. Fig. 3.

The Burmese record in Seidenfaden (1988) is based on *Samuel 13523* (K) from Maymyo. This specimen closely resembles one of the larger flowered forms of *Vanda coerulescens* Griff. (Fig. 3) or possibly a natural hybrid with it. The material is not good and it is likely that the unusual flower colour ascribed to this specimen is linked to floral senescence. The flowers were, according to the collector "pale yellow dotted with lilac, with blue lip".

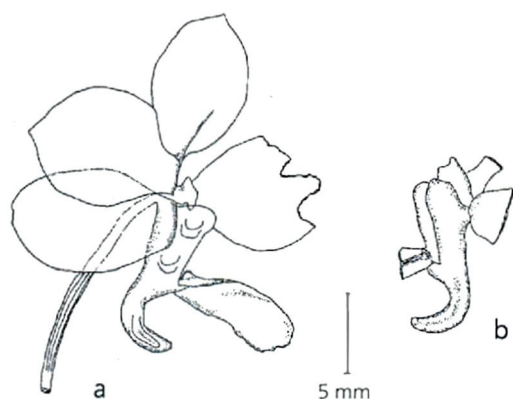


Figure 3. *Vanda coerulescens* Griff. – a. Flower; b. Lip, midlobe removed (after *Samuel 13523*).

2. *Cypripedium elegans* Reichb. f. *Flora* 69: 561. 1886.

Cribb (1997) recorded this species from Burma based on *Handel-Mazzetti 9513* (W). *Handel-Mazzetti's* (1936) collection locality was 'between the Salween and Irrawaddy Rivers at 27° 58' North in China'. This area is still in North West Yunnan, China.

3. *Geodorum densiflorum* (Lam.) Schltr.: *Jayaweera* in *Dassanayake & Fosberg* (Ed.) *Rev. Handb. Fl. Ceylon* 2:180. 1981. *p. p.*

4. *Geodorum recurvum* (Roxb.) Alston: *Seidenf., Op. Bot.* 72: 61. 1983.

The above two species were credited to the Burmese flora by Jayaweera and Seidenfaden respectively.

Examination of the cited specimens shows that these are misidentified and they belong to *G. pulchellum* Ridl.

5. *Peristylus coeloceras* Finet, *Rev. Gen. Bot.* 13: 519. T. 12. Figs. 11-12. 1901.

Seidenfaden (1977) recorded this species as occurring in Burma misunderstanding the notes of *Handel-Mazzetti* (1936). The localities given by *Handel-Mazzetti* are all Chinese.

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