



## New combinations in the genus *Vanda* (Orchidaceae)

LAUREN MARIA GARDINER

Herbarium, Library, Art and Archives, Royal Botanic Gardens, Kew, Richmond, Surrey, TW9 3AE, United Kingdom;  
email: l.gardiner@kew.org

### Abstract

A number of new combinations of names in subtribe Aeridinae are needed to bring species nomenclature for *Vanda* into alignment with recent phylogenetic analyses and a treatment to be published in a forthcoming volume of *Genera orchidacearum*. I present 17 name transfers from *Ascocentrum*, *Ascocentropsis*, *Christensonia*, *Eparmatostigma*, and *Neofinetia* to *Vanda* or indicate where there are existing epithets combined previously in *Vanda*.

### Introduction

The taxonomic history of the genus *Vanda* is convoluted, and the genus has been described as a ‘taxonomic black hole’ requiring ‘a complete taxonomic revision’ (Christenson 1987). This taxonomic revision is in progress (Motes *et al.* unpubl.). *Vanda* Jones ex R.Br. (1820: 506) was first established in 1795 by William Jones, who based the concept on *Epidendrum tessellatum* Roxburgh (1795: 34), now known as *Vanda tessellata* (Roxb.) Hooker ex G.Don in J.C.Loudon (1830: 372), but the genus was not validly published until 1820 by Brown, using Jones’ concept. Lindley (1853) split the genus into five sections, and the basic concept of the genus remained broadly constant, with additional species being described in the genus during the 20<sup>th</sup> century. However, two of Lindley’s sections were removed from *Vanda* and erected as genera in their own right during this time, section *Fieldia* to *Vandopsis* Pfitzer in H.G.A.Engler & K.A.E.Prantl (1889: 210) and *Dimorphorchis* Rolfe (1919: 149), and section *Anota* to *Rhynchostylis* Blume (1825: 285). Since Lindley’s treatment of *Vanda*, opinion has differed on the position of several other small genera relative to *Vanda*, such as *Ascocentrum* Schlechter (1913: 975), *Euanthe* Schlechter (1914: 567), *Trudelia* Garay (1986: 73), and *Christensonia* Haager (1993: 40), and clarification of the generic status of *Vanda*, a number of the taxa within the genus and a more phylogenetically based classification of *Vanda* species have long been required.

While preparing treatments for genera in subtribe Aeridinae for volume VI of *Genera orchidacearum* (Pridgeon *et al.* in prep) and in light of recent phylogenetic analyses using DNA sequence data (Carlsward *et al.* 2006, Fan *et al.* 2009, Gardiner *et al.* in prep, Kocyan *et al.*, in prep, Kocyan *et al.* 2008, Padolina *et al.* 2005, Topik *et al.* 2005), it became apparent that new combinations would need to be made *Vanda*. Results of these analyses are compatible with inclusion of *Ascocentrum*, *Ascocentropsis* Senghas & Schildhauer (2000: 289), *Christensonia*, *Eparmatostigma* Garay (1972: 178), *Neofinetia* Hu (1925: 107) and *Trudelia* in *Vanda*; some are necessary to preserve monophyly of the (now enlarged) genus *Vanda* (e. g. *Ascocentrum*), whereas others are made on the basis of past treatments and ease of hybridisation with species of *Vanda* (e. g. *Neofinetia*).

*Ascocentrum* is a small genus of 13 species distributed from Nepal, China, through to Sulawesi and the Moluccas and was based on *Saccolabium miniatum* Lindley (1847: t26). The species are small multi-flowered taxa with a compact habit, and the flowers are bright orange, red, pink and purple, bearing short but narrow nectar-filled spurs. Monotypic *Euanthe* was based on *Esmeralda sanderiana* Reichenbach (1882: 588), which

had also been placed in the genus *Vanda* by Reichenbach (1882). The large flowers with their distinctive patterning on the rounded tepals and ‘bilobed’ labellum are extremely important in the breeding of vandaceous hybrids. *Neofinetia* comprises three East Asian species and was published as a new name for Schlechter’s *Finetia* (1918: 140), which was illegitimately published; *Finetia* Gagnepain (1916: 278) had already been validly published. Horticulturally important in Japanese orchid growing, the compact plants bear delicate white flowers with long spurs. Monotypic genus *Eparmatostigma* was based on another *Saccolabium* species, *S. dives* Reichenbach (1875: 130), and has been previously hypothesised by Schuiteman & Bonnet (2008) to be potentially more closely related to the *Vanda/Aerides/Rhynchostylis* group of genera (to which it appears more similar vegetatively) than to *Malleola* J.J.Smith & Schlechter (1914: 979) or *Cleisostoma* Blume (1825: 362) to which the flowers are more similar. *Trudelia* is a small genus of six species, most of which had been originally described in *Vanda*; it was based on *Vanda* section *Cristatae* Lindley (1853: year?) for which the type was *V. cristata* Wall. ex Lindl. (1833: 216). Opinion has differed over the position of *Trudelia* with respect to *Vanda*, with Senghas broadening Garay’s view of *Trudelia* (Senghas 1988) and later Christenson (1992) sinking the genus back into *Vanda*. Monotypic genus *Christensonia* was based on the Vietnamese species *C. vietnamica* Haager (1993: 40) (described as ‘a yellow *Aerides flabellata*’). It is worth noting that *Aerides flabellata* Rolfe ex Downie (1925: 387) was moved into *Vanda* as *V. flabellata* (Rolfe ex Downie) Christenson (1985: 156). Finally, monotypic *Ascocentropsis* was erected with the type species of *Ascocentropsis pusilla* (Aver.) Senghas & Schildhauer (2000: 290), based on *Ascocentrum pusillum* Averyanov (1988: 104), which was originally published in 1988 by Averyanov, placed in *Ascolabium* Ying (1977: 53) by Averyanov in 1994 and then in *Gunnaria* Z.J.Liu & L.J.Chen (2009: 602). Here I present transfers from *Ascocentrum*, *Ascocentropsis*, *Christensonia*, *Eparmatostigma*, and *Neofinetia* into *Vanda*.

## Taxonomic Treatment

### VANDA Jones ex R.Br.

- Vanda* Jones ex R.Br.. Type species: *Vanda tessellata* (Roxb.) Hook. ex G.Don in J.C.Loudon, *Ascocentrum* Schltr. Type species: *Ascocentrum miniatum* (Lindley) Schlechter (1913: 975).  
*Euanthe* Schltr. Type species: *Euanthe sanderiana* (Rchb.f.) Schlechter (1914: 568).  
*Finetia* Schlechter, *nom. illeg.* Type species: *Finetia falcata* (Thunb.) Schlechter (1918: 140).  
*Neofinetia* Hu. Type species: *Neofinetia falcata* (Thunb.) Hu (1925: 107).  
*Nipponorchis* Masamune (1934: 592), *nom. illeg.* Type species: *Nipponorchis falcata* (Thunb.) Masamune (1934: 592).  
*Eparmatostigma* Garay. Type species: *Eparmatostigma dives* (Rchb.f.) Garay.  
*Trudelia* Garay. Type species: *Trudelia cristata* (Wall. ex Lindl.) Senghas ex Roeth (2008: 707).  
*Christensonia* Haager. Type species: *Christensonia vietnamica* Haager (1993: 40).  
*Ascocentropsis* Senghas & Schildh. Type species: *Ascocentropsis pusilla* (Aver.) Senghas & Schildhauer (2000: 290).  
*Gunnaria* Z.J.Liu & L.J.Chen. Type species: *Gunnaria pusilla* (Aver.) Z.J.Liu & L.J.Chen (2009: 602).

### *Vanda ampullacea* (Roxb.) L.M.Gardiner, *comb. nov.*

Basionym: *Aerides ampullacea* Roxburgh (1832: 476).

Homotypic synonyms:

*Saccolabium ampullaceum* (Roxb.) Lindley (1838: t17).

*Oeceoclades ampullacea* (Roxb.) Lindley (1845: 630).

*Gastrochilus ampullaceus* (Roxb.) Kuntze (1891b: 661).

*Ascocentrum ampullaceum* (Roxb.) Schlechter (1913: 975).

Heterotypic synonyms:

*Ascocentrum ampullaceum* var. *aurantiacum* Pradhan (1979: 561).

**Distribution:**—Nepal, Assam, Bangladesh, eastern Himalayas, China (southern Yunnan), Andaman Islands, Laos, Myanmar, Thailand, Vietnam.

***Vanda aurantiaca*** (Schltr.) L.M.Gardiner, *comb. nov.*

Basionym: *Saccolabium aurantiacum* Schlechter (1911: 200).

Homotypic synonyms:

*Ascocentrum aurantiacum* (Schltr.) Schlechter (1913: 975).

***Vanda aurantiaca* subsp. *aurantiaca*.**

**Distribution:**—Sulawesi, Lesser Sunda Islands.

***Vanda aurantiaca* subsp. *philippinensis*** (Christenson) L.M.Gardiner, *comb. nov.*

Basionym: *Ascocentrum aurantiacum* subsp. *philippinense* Christenson (1992: 88).

Heterotypic synonyms:

*Saccolabium miniatum* var. *crinitum* Reichenbach fil. (1884: 542).

**Distribution:**—Philippines.

***Vanda aurea*** (J.J.Smith) L.M.Gardiner, *comb. nov.*

Basionym: *Ascocentrum aureum* J.J.Smith (1917: 95).

**Distribution:**—Maluku (Sula).

***Vanda christensoniana*** (Haager) L.M.Gardiner, *comb. nov.*

Basionym: *Ascocentrum christensonianum* Haager (1993: 39).

**Distribution:**—Vietnam.

***Vanda curvifolia*** (Lindl.) L.M.Gardiner, *comb. nov.*

Basionym: *Saccolabium curvifolium* Lindley (1833: 222).

Homotypic synonyms:

*Gastrochilus curvifolius* (Lindl.) Kuntze (1891b: 661).

*Ascocentrum curvifolium* (Lindl.) Schlechter (1913: 975).

Heterotypic synonyms:

*Saccolabium miniatum* Hook. (1862: t5326), *nom. illeg.*

*Saccolabium curvifolium* var. *luteum* B.S.Williams (1871: 258).

*Ascocentrum curvifolium* f. *luteum* (B.S.Williams) Christenson (2005: 15).

**Distribution:**—Myanmar, Thailand.

**Notes:**—*Vanda curvifolia* is listed as being distributed in the eastern Himalayas (including Assam), Laos, Myanmar, Thailand, and Vietnam on the *World checklist of selected plant families* (WCSP 2012), but Motes (pers. comm.) and Seidenfaden (1988) considered the species to have a more restricted distribution, Myanmar and Thailand only.

***Vanda dives*** (Rchb.f.) L.M.Gardiner, *comb. nov.*

Basionym: *Saccolabium dives* Reichenbach fil. (1875: 130).

Homotypic synonyms:

*Eparmatostigma dives* (Rchb.f.) Garay (1972: 179).

Heterotypic synonyms:

*Saccolabium chrysoplectrum* Guillaumin (1930: 333).

*Saccolabium chrysoplectrum* var. *albiflorum* Guillaumin (1964: 538).

**Distribution:**—Laos, Vietnam.

***Vanda falcata*** (Thunb.) Beer (1854: 317).

Basionym: *Orchis falcata* Thunberg (1784: 811).

Homotypic synonyms:

*Limodorum falcatum* (Thunb.) Thunberg (1794: 326).

*Angraecum falcatum* (Thunb.) Lindley (1821: t15).

*Oeceoclades falcata* (Thunb.) Lindley (1833: 237).

*Aerides thunbergii* Miquel (1866: 205).

*Angorchis falcata* (Thunb.) Kuntze (1891a: 651).

*Angraecopsis falcata* (Thunb.) Schlechter (1914: 601).

*Finetia falcata* (Thunb.) Schlechter (1918: 140).

*Neofinetia falcata* (Thunb.) Hu (1925: 107).

*Nipponorchis falcata* (Thunb.) Masamune (1934: 592).

*Holcoglossum falcatum* (Thunb.) Garay & H.R.Sweet (1972: 182).

Heterotypic synonyms:

*Oeceoclades lindleyi* von Regel (1866: 70).

**Distribution:**—China, Japan, Korea, Nansei-Shoto (Ryukyu) Islands.

**Notes:**—*Vanda falcata* was proposed in 1854 by Beer in *Prakt. Stud. Orchid.* before being placed in *Neofinetia* in 1925.

***Vanda garayi*** (Christenson) L.M.Gardiner, **comb. nov.**

Basionym: *Ascocentrum garayi* Christenson (1992: 89).

Homotypic synonyms:

*Ascocentrum miniatum* var. *garayi* (Christenson) M.Wolff & O.Gruss (2007: 40).

**Distribution:**—Thailand, Laos, possibly Sumatra.

**Notes:**—Although listed as being from Thailand and Vietnam only on the *World checklist of selected plant families* (2012), Motes (pers.comm.) considers this species to be distributed in Thailand, Laos (where it was recorded by Schuiteman *et al.*, 2008, and Seidenfaden, 1992, as *Ascocentrum miniatum*) and Sumatra.

***Vanda himalaica*** (Deb, Sengupta & Malick) L.M.Gardiner, **comb. nov.**

Basionym: *Saccolabium himalaicum* Deb, Sengupta & Malick (1968: 213)

Homotypic synonyms:

*Ascocentrum himalaicum* (Deb, Sengupta & Malick) Christenson (1987: 256).

*Holcoglossum himalaicum* (Deb, Sengupta & Malick) Averyanov (1988b: 432).

Heterotypic synonyms:

*Holcoglossum junceum* Z.H.Tsi (1982: 442).

*Ascocentrum himalaicum* var. *roseolum* H.Jiang (2006: 259).

**Distribution:**—Assam, eastern Himalaya, Myanmar, China (western & southwestern Yunnan).

***Vanda insularum*** (Christenson) L.M.Gardiner, **comb. nov.**

Basionym: *Ascocentrum insularum* Christenson (1992: 89).

**Distribution:**—Borneo.

***Vanda miniata*** (Lindley) L.M.Gardiner, **comb. nov.**

Basionym: *Saccolabium miniatum* Lindley (1847: t26).

Homotypic synonyms:

*Gastrochilus miniatum* (Lindl.) Kuntze (1891b: 661).

*Ascocentrum miniatum* (Lindl.) Schlechter (1913: 975).

**Distribution:**—Java, possibly Sumatra.

**Notes:**—*Vanda miniata* has been described as being distributed widely in South East Asia, from Assam, Cambodia, Laos, Thailand, Vietnam, Malaysia, Philippines, Sumatra and Java (WCSP 2012), but Christenson (1992) and Motes (pers. comm.) consider this species to be restricted to Java (and possibly Sumatra) only. Seidenfaden (1988) considered the distribution to include Thailand, Laos, Vietnam, Malaysia, Java, and possibly into the Philippines, although he thought it likely that at least some of these specimens could be attributed to *V. aurantiaca*. Specimens of *V. garayi* and *V. aurantiaca* are frequently misidentified as *V. miniata* in herbarium and living collections, and their distributions have as a result been inadvertently incorporated into that of true *V. miniata* (Christenson 1992).

***Vanda nana* L.M.Gardiner, *nom. nov.***

Replaced synonym: *Ascocentrum pusillum* Averyanov (1988: 104).

Homotypic synonyms:

*Ascolabium pusillum* (Aver.) Averyanov (1994: 397).

*Ascocentropsis pusilla* (Aver.) Senghas & Schildhauer (2000: 290).

*Gunnaria pussila* (Aver.) Z.J.Liu & L.J.Chen (2009: 602).

**Distribution:**—Vietnam.

**Notes:**—The name *Vanda pusilla* cannot be used for the combination of *Ascocentrum pusillum* Aver. in *Vanda*, and so a new name for this taxon is required. *Vanda pusilla* Teijsmann & Binnendijk (1853: 493) is now considered to be a synonym of *Trichoglottis pusilla* (Teijsm. & Binn.) Reichenbach fil. (1856: 325). The new epithet *nana* is selected here, in reference to the diminutive size of the plant and flowers.

***Vanda richardsiana* (Christenson) L.M.Gardiner, *comb. nov.***

Basionym: *Neofinetia richardsiana* Christenson (1996: 220).

**Distribution:**—China (Chongqing).

***Vanda rubra* (Lindl.) L.M.Gardiner, *comb. nov.***

Basionym: *Saccolabium rubrum* Lindley (1833: 222).

Homotypic synonyms:

*Ascocentrum rubrum* (Lindl.) Seidenfaden (1988: 312).

**Distribution:**—Myanmar.

***Vanda semiteretifolia* (Seidenfaden) L.M.Gardiner, *comb. nov.***

Basionym: *Ascocentrum semiteretifolium* Seidenfaden (1970: 358).

**Distribution:**—Arunachal Pradesh, Thailand.

***Vanda vietnamica* (Haager) L.M.Gardiner, *comb. nov.***

Basionym: *Christensonia vietnamica* Haager (1993: 40).

**Distribution:**—Vietnam.

***Vanda xichangensis* (Z.J.Liu & S.C.Chen) L.M.Gardiner, *comb. nov.***

Basionym: *Neofinetia xichangensis* Z.J.Liu & S.C.Chen (2004: 300).

**Distribution:**—China (southwestern Sichuan).

## Acknowledgements

This work is based on molecular systematics studies that were supported by a Natural Environment Research Council PhD studentship awarded to L. M. Gardiner and carried out at the University of East Anglia, under the supervision of Brent C. Emerson and David L. Roberts, who are acknowledged for their considerable input into this work. The author is extremely grateful to Martin Motes and Andre Schuiteman for their invaluable contributions to and comments on this manuscript. Alex Kocyan, Mark Chase, Phillip Cribb, Finn Rasmussen, Jeffrey Wood, Bill Baker, and many others in the orchid community are thanked for their useful discussion of the phylogenetic studies and nomenclatural changes needed in *Vanda sensu lato*, and an anonymous reviewer is thanked for their comments on this manuscript.

## References

- Averyanov, L.V. (1988a) New species and nomenclatural changes in the Orchidaceae family of Vietnamese flora. *Botanicheskii Zhurnal Moscow & Leningrad* 73: 100–107.
- Averyanov, L.V. (1988b) New taxa and nomenclature changes in the Orchidaceae family of Vietnamese flora. *Botanicheskii Zhurnal Moscow & Leningrad* 73: 423–432.
- Averyanov, L.V. (1994) *Identification guide to Vietnamese orchids (Orchidaceae Juss.)*. Russian Academy of Sciences, Komarov Institute, St Petersburg, 432 pp.
- Beer, J.G. (1854) *Praktische Studien an der Familie der Orchideen, nebst Kulturweisungen und Beschreibung aller schönblühenden tropischen Orchideen*. Gerold & Son, Wien, 322 pp.
- von Blume, K.L. (1825) *Bijdragen tot de flora van Nederlandsch Indië*. Ter Lands Drukkerij, Batavia, 434 pp.
- Brown, R. (1820) *Vanda roxburghii*, chequer-flowered *Vanda*. *Botanical Register* 6: 506.
- Carlswald, B.S., Whitten, W.M., Williams, N.H. and Bytebier, B. (2006) Molecular phylogenetics of Vandaeae (Orchidaceae) and the evolution of leaflessness. *American Journal of Botany* 93: 770–786.
- Christenson, E.A. (1985) Nomenclatural changes in the Orchidaceae subtribe Sarcanthinae ['Sarcanthinae']. *Indian Orchid Journal* 1: 156.
- Christenson, E.A. (1987) An infrageneric classification of *Holcoglossum* Schltr. with a key to the genera of the *Aerides-Vanda* alliance. *Notes from the Royal Botanic Garden, Edinburgh*. 44: 249–256.
- Christenson, E.A. (1992) Notes on Asiatic Orchids. *Lindleyana* 7: 88–94.
- Christenson, E.A. (1996) A new species of *Neofinetia* from China and northern Korea (Aeridinae). *Lindleyana* 11: 220–221.
- Christenson, E.A. (2005) The yellow *Ascocentrum curvifolium*. *Australian Orchid Review* 70: 15.
- Deb, D.B., Sengupta, G. & Malick, K.C. (1968) Contribution to the flora of Bhutan. *Bulletin of the Botanical Society of Bengal* 22: 213.
- Downie, D.G. (1925) Contributions to the flora of Siam, additamentum XVI. *Kew Bulletin of Miscellaneous Information* 1925: 367–394.
- Engler, H.G.A. & Prantl, K.A.E. (1889) Orchidaceae von E. Pfitzer. *Die Natürlichen Pflanzenfamilien nebst ihren Gattungen und wichtigeren Arten, insbesondere den Nutzpflanzen* 2(6): 52–220.
- Fan, J., Qin, H.N., Li, D.Z. & Jin, X.H. (2009) Molecular phylogeny and biogeography of *Holcoglossum* (Orchidaceae: Aeridinae) based on nuclear ITS, and chloroplast *trnL-F* and *matK*. *Taxon* 59: 849–861.
- Gagnepain, F. (1916) *Finetia* gen. n. *Notulae Systematicae, Herbarium du Muséum de Paris*. 3: 278.
- Garay, L.A. (1986) *Trudelia*, a new name for *Vanda alpina*. *Orchid Digest* 50: 73–77.
- Garay, L.A. & Sweet, H.R. (1972) On the systematics of the monopodial orchids I. *Botanical Museum Leaflets, Harvard University* 23: 149–212.
- Guillaumin, A. (1930) Espèces et localités nouvelles d'Orchidées-Vandées d'Indo-Chine. *Bulletin de la Société Botanique de France* 77: 326–340.
- Guillaumin, A. (1964) Plantes nouvelles, rares ou critiques des serres du museum (Notules sur quelques Orchidées d'Indochine XXXVI). *Bulletin du Muséum National d'Histoire Naturelle, series II*, 36: 537–539.
- Haager, J.R. (1993) Some new taxa of orchids from southern Vietnam. *Orchid Digest* 57: 39–44.
- Hayata, B. (1906) Supplements to the *Enumeratio Plantarum Formosanarum*. *Botanical Magazine (Tokyo)* 20: 77–78.
- Hooker, J.D. (1894) Orchideae to Cyperaceae. *The Flora of British India* 6: 1–748.
- Hooker, W.J. (1862) *Saccolabium miniatum*. *Botanical Magazine* 88: t. 5326.
- Hu, H.H. (1925) Nomenclatural changes for some Chinese orchids. *Rhodora* 27: 105–107.
- Jiang, H. (2006) A new variety of *Ascocentrum* from Yunnan, China. *Acta Botanica Yunnanica* 28: 259–260.

- Kocyan, A., de Vogel, E.F., Conti, E. & Gravendeel, B. (2008) Molecular phylogeny of *Aerides* (Orchidaceae) based on one nuclear and two plastid markers: a step forward in understanding the evolution of the Aeridinae. *Molecular Phylogenetics and Evolution* 48: 422–443.
- Kuntze, C.E.O. (1891a) *Angraecum & Angorchis. Revisio generum plantarum vascularium omnium atque cellularium multarum secundum leges nomenclaturae internationales cum enumeratione plantarum exoticarum in itinere mundi collectarum*, part 2: 650–652.
- Kuntze, C.E.O. (1891b) *Gastrochilus. Revisio generum plantarum vascularium omnium atque cellularium multarum secundum leges nomenclaturae internationales cum enumeratione plantarum exoticarum in itinere mundi collectarum*, part 2: 660–661.
- Lindley, J. (1821) *Collectanea Botanica*: t. 15. Richard and Arthur Taylor, London, 106 pp.
- Lindley, J. (1833) *Genera and species of orchidaceous plants*. Ridgeway, London, 553 pp.
- Lindley, J. (1838) *Saccolabium ampullaceum. Sertum orchidaceum*, part 4, t. 17.
- Lindley, J. (1845) *Hortus suburbanus Calcuttensis*. Bishop's College Press, Calcutta, 854 pp.
- Lindley, J. (1847) *Saccolabium miniatum. Edwards's Botanical Register* 33: t. 26.
- Lindley, J. (1853) 22: *Vanda. Folia orchidacea, an enumeration of the known species of orchids*. 4: 1–11.
- Liu Z.J. & Chen, S.C. (2004) *Neofinetia xichangensis*, a new species of Orchidaceae from Sichuan. *Acta Botanica Yunnanica* 26: 299–300.
- Liu, Z.J. & Chen, L.J. (2009) *Singchia* and *Gunnaria*, two new genera of Orchidaceae. *Journal of Systematics and Evolution* 47: 599–604.
- Loudon, J.C. (1830) *Loudon's Hortus Britannicus: a catalogue of all the plants indigenous, cultivated in, or introduced to Britain*, 598 pp.
- Masamune, G. (1934) Floristic and geobotanical studies on the island of Yakusima, province Osumi. *Memoirs of the Faculty of Science and Agriculture, Taihoku Imperial University* 11: 1–637.
- Miquel, F.A.W. (1866) *Aerides. Annales Musei Botanici Lugduno-Batavi* 2: 205–206.
- Padolina, J., Linder, C.R. & Simpson, B.B. (2005) Phylogeny of *Phalaenopsis* using multiple chloroplast markers. *Selbyana* 26: 155–158.
- Pradhan, U.C. (1979) *Indian orchids: guide to their identification and cultivation*, volume 2. Pradhan, Kalimpong, India, 481 pp.
- Reichenbach, H.G. (1856) 49: *Trichoglottis pusilla. Bonplandia* 4: 325.
- Reichenbach, H.G. (1875) New garden plants: *Saccolabium dives. Gardeners' Chronicle*, new series, 4: 130.
- Reichenbach, H.G. (1882) New garden plants: *Vanda sandariana. Gardeners' Chronicle*, new series, 17: 588.
- Reichenbach, H.G. (1884) New garden plants: *Saccolabium miniatum citrinum. Gardeners' Chronicle*, new series, 21: 542.
- Reichenbach, H.G. (1886) Orchideae describuntur. *Flora oder Allgemeine Botanische Zeitung* 69: 547–562.
- von Regel, E.A. (1866) Besprechung einiger neuer Pflanzen. *Gartenflora* 15: 67–71.
- Roberts, D.L., Gardiner, L.M. & Motes, M. (2007) *Vanda flavobrunnea*, a new name for *V. pumila*, and two other enigmatic species of *Vanda*. *The Orchid Review* 115: 316–319.
- Roeth, J. (2008) *Trudelia cristata* (Wall. ex Lindl.) Sengh. *Die Orchidee* 58: 707.
- Rolfe, R.A. (1919) *Dimorphorchis lowii. The Orchid Review* 27: 149–150.
- Roxburgh, W. (1795) *Plants of the coast of Coromandel*, volume 1. Bulmer, London, 100 pp.
- Roxburgh, W. (1832) *Flora Indica or description of Indian plants*, volume 3. Thacker, Calcutta, 875 pp.
- Schlechter, F.R.R. (1911) Zur Kenntnis der Orchidaceen von Celebes III. *Feddes Repertorium* 10: 177–212.
- Schlechter, F.R.R. (1913) Die Orchidaceen von Deutsch-Neu-Guinea. *Feddes Repertorium Beihefte* 1: 961–1039.
- Schlechter, F.R.R. (1914) Gruppe 65: Sarcanthinae, Untergruppe 2: Vandae. *Die Orchideen, III*: 555–611.
- Schlechter, F.R.R. (1918) Versuch einer naturlichen Neuordnung der afrikanischen angraekoiden Orchidaceen. *Beihefte zum Botanischen Centralblatt* 36: 62–181.
- Schlechter, F.R.R. (1919) Orchideologiae Sino-Japonicae Prodrromus (Part III, Revision der bis jetzt bekannt gewordenen japanisch-chinesischen Orchideen, *Vanda-Taeniophyllum*, Nachtrag, Index). *Feddes Repertorium Beihefte* 4: 282–319.
- Schuiteman, A. & Bonnet, P. (2008) *Eparmatostigma dives* (Orchidaceae), a new generic record for Laos. *Blumea* 53: 341–344.
- Schuiteman, A., Bonnet, P., Svengsuksa, B. & Barthélémy, D. (2008) An annotated checklist of the Orchidaceae of Laos. *Nordic Journal of Botany* 26: 257–314.
- Seidenfaden, G. (1970) Contributions to the orchid flora of Thailand II. *Botanisk Tidsskrift* 65: 313–370.
- Seidenfaden, G. (1988) Orchid genera in Thailand XIV: fifty-nine vandoid genera. *Opera Botanica* 95: 1–398.
- Seidenfaden, G. (1992) The orchids of Indochina. *Opera Botanica* 114: 1–502.
- Senghas, K. (1988). *Trudelia* Garay. *Die Orchideen* 1: 1211.
- Senghas, K. & Schildhauer, H. (2000) *Ascocentropsis*, eine neue suedostasiatische Vandeeengattung. *Journal für den Orchideenfreund* 7: 287–291.

- Smith, J.J. (1917) Orchidaceae novae Malayenses VIII. *Bulletin du Jardin Botanique de Buitenzorg*, series II, 25: 1–103.
- Smith, J.J. & Schlechter, F.R.R. (1914) Die Orchidaceen von Deutsch-Neu-Guinea. *Repertorium Specierum Novarum Regni Vegetabilis*, Beihefte 1: 11079.
- Teijsmann, J.E. & Binnendijk, S. (1853) 18: *Vanda pusilla*. *Natuurkundig Tijdschrift voor Nederlandsch-Indië*, Jakarta 5: 493.
- Thunberg, C.P. (1784) *Flora Japonica sistens plantas insularum Japonicarum, secundum systema sexuale emendatum redactas ad XX classes, ordines, genera et species eum, differentiis specificis, synonymis paucis, descriptionibus concinnis et XXXIX iconibus adiectis*. Müller, Leipzig, 434 pp.
- Thunberg, C.P. (1794) Botanical observations on the flora Japonica. *Transactions of the Linnean Society of London* 2: 326–342.
- Topik, H., Yukawa, T. & Ito, M. (2005) Molecular phylogenetics of subtribe Aeridinae (Orchidaceae): insights from plastid *matK* and nuclear ribosomal ITS sequences. *Journal of Plant Research* 118: 271–284.
- Tsi, Z.H. (1982) A study of the genus *Holcoglossum* of Orchidaceae. *Acta Phytotaxonomica Sinica* 20: 439–444.
- WCSP (2012) *World checklist of selected plant families*. Royal Botanic Gardens, Kew, UK. Available from: <http://apps.kew.org/wcsp/> (accessed 18 June 2012).
- Williams, B.S. (1871) *Orchid-growers manual*, edition 4. Victoria and Paradise Nursery, Holloway, London, 108 pp.
- Wolff, M. & Gruss, O. (2007) *Orchideen atlas*. Eugen Ulmer, Stuttgart, 480 pp.
- Ying, S.S. (1977) *Ascolabium*. *Coloured illustrations of indigenous orchids of Taiwan* 1: 53–54.