

Flora of Singapore precursors 40: Notes on Ericaceae in Singapore

D.J. Middleton

Singapore Botanic Gardens, National Parks Board,
1 Cluny Road, Singapore 259569, Singapore
davidmiddletonsing@gmail.com

ABSTRACT. The nomenclature and typification of the species of Ericaceae in Singapore are discussed. A neotype is designated for *Leucopogon malayanus* Jack. Lectotypes are designated for *Rhododendron longiflorum* Lindl., *R. javanicum* (Blume) Benn. var. *tubiflorum* Hook.f., *Vaccinium bracteatum* Thunb. and, in a second step, *V. malaccense* Wight.

Keywords. Lectotype, neotype, *Rhododendron*, *Styphelia*, *Vaccinium*

Introduction

Five species of Ericaceae are native to Singapore, *Rhododendron longiflorum* Lindl., *Styphelia malayana* (Jack) J.J.Sm., *Vaccinium bracteatum* Thunb., *Vaccinium leptanthum* Miq. and *Vaccinium littoreum* Miq. (Lindsay et al., 2022). All five species are currently listed as Nationally extinct by Lindsay et al. (2022). The nomenclature and typification of several names that apply to these species are discussed below in preparation for publication of the *Flora of Singapore* account.

The names are here presented under the accepted name of each taxon. For each name, only the protologue and its citation in Lindsay et al. (2022), where relevant, are presented. Further details on each name's publication history can be found in Lindsay et al. (2022). Herbarium codes follow Thiers (continuously updated).

Nomenclatural synopsis

1. ***Rhododendron longiflorum*** Lindl., J. Hort. Soc. London 3: 88 (1848); Lindsay et al., Gard. Bull. Singapore 74(suppl. 1): 313 (2022). – TYPE: Borneo [Malaysia, Sarawak], *Low s.n.* (lectotype CGE [CGE00006540], designated here).

Rhododendron javanicum (Blume) Benn. var. *tubiflorum* Hook.f., Bot. Mag. t. 6850 (1885). – TYPE: Material originally introduced from Sumatra, Dator and Salok by Curtis, cultivated by Veitch and vouchered on 6 June 1885, *Veitch s.n.* (lectotype K [K001419204], designated here).

Notes. Lindley (1848) discussed four new species of *Rhododendron* based on material collected in Sarawak that he received from Hugh Low. Three of the four species were given names by Low and then validated by Lindley. The fourth species, *Rhododendron longiflorum* Lindl., was given the name *Rhododendron tubiflorum* by Low but, as Lindley noted, this name was preoccupied by *R. tubiflorum* Blume and was therefore renamed by Lindley.

Lindley noted that Low ‘...was so obliging as to place in my hands some drawings and dried plant specimens of certain species of *Rhododendron*...*growing upon trees*’ [italics as in Lindley, 1848]. Although an epiphytic habit is quite usual for the *Vireya* *Rhododendrons* of Southeast Asia (Argent, 2006), at that time when very few species were known, this habit was found to be most unusual and was highlighted and discussed at some length in the paper.

As Lindley (1848) was not specific about the number of specimens and deposition of original material on which he described his new species there are no holotypes. Argent (2006: 240) cited the type of *Rhododendron longiflorum* as ‘Type: J. Hort. Soc. London 1848. 3: f.89’ but as he did not include a ‘designated here’ or equivalent statement as required under Art. 7.11, no effective lectotypification has been made (Turland et al., 2018). In addition, under the terms of Art. 9.12, cited specimens have priority over illustrations in lectotype designation. There is a specimen in CGE that matches the protologue details in being a Low specimen from Sarawak and with an appended drawing. This is certainly original material and is designated as the lectotype here.

Rhododendron javanicum (Blume) Benn. var. *tubiflorum* Hook.f. was described from cultivated material grown by Veitch & Sons from material collected in Sumatra by Curtis. The specimen K001419204 explicitly states it is the plant depicted in the figure in the protologue but as wild material from Curtis is also mentioned in the protologue, a lectotype is here designated.

2. *Styphelia malayana* (Jack) J.J.Sm., *Nova Guinea* 8: 797 (1912); Lindsay et al., *Gard. Bull. Singapore* 74(suppl. 1): 313 (2022). – *Leucopogon malayanus* Jack, *Malayan Misc.* 1(5): 20 (1820), as ‘*malayanum*’. – TYPE: Singapore, 1822, *Unknown collector s.n.* (Herb. Finlayson) [EIC 3720] (neotype K-W [K001119890], designated here).

Leucopogon ophirensis Griff., *Account Bot. Coll. Cantor* 19 (1844/1845). – TYPE: [Peninsular Malaysia], Malacca, Mt Ophir, *W. Griffith s.n.* (lectotype K [K001096815], designated by Turner (2015: 417)).

Notes. *Leucopogon malayanus* Jack was described by Jack (1820) as ‘Found abundantly at Singapore’ but is now treated as Nationally Extinct (Lindsay et al., 2022). None of Jack’s original material has been traced. Although some of Jack’s material has been incorporated into the East India Company Herbarium (EIC), frequently referred to as the Wallich Herbarium, none of the EIC specimens of this species are labelled as being his and the dates of collections given postdate the publication of the protologue. The name is here neotypified with a Wallich specimen collected from Singapore.

3. *Vaccinium bracteatum* Thunb., Fl. Jap. 156 (1784); Lindsay et al., Gard. Bull. Singapore 74(suppl. 1): 314 (2022). – TYPE: Japan, *Thunberg s.n.* (lectotype S [acc. no. S-G-6267], designated here; isolectotype S [acc. no. S08-4988]).

Vaccinium malaccense Wight, Calcutta J. Nat. Hist. 8: 172 (1847). – TYPE: [Malaysia], Malacca, *Griffith s.n.* (lectotype K [K000675022], first step designated by Sleumer (1961: 44), second step designated here; isolectotype K [K000675021]).

Notes. Although treated as Nationally Extinct in Singapore (Lindsay et al., 2022), *Vaccinium bracteatum* Thunb. is otherwise a common and very widespread species found from northern Myanmar and southern China to Korea and Japan and south through continental Southeast Asia and western Malesia. In Singapore it has been referred to under the names *Vaccinium bracteatum* and *V. malaccense* Wight (see Lindsay et al., 2022). There are two specimens of Thunberg’s own collection of *Vaccinium bracteatum* from his personal herbarium in the Stockholm Herbarium (S). I have not found a lectotypification of the name so designate one of these two specimens here as the lectotype. In the protologue of *Vaccinium malaccense*, Wight (1847) referred to ‘specimens’ in the plural and also cited a plate that would later be published in Wight (1848) as plate 1186. Sleumer (1961) effectively lectotypified the name on Griffith material in Kew. There are, however, two duplicates and the specimen K000675022 is selected here as the lectotype in a second step.

4. *Vaccinium leptanthum* Miq., Ann. Mus. Bot. Lugduno-Batavi 1: 37 (1863). – *Rigiolepis leptantha* (Miq.) J.J.Sm., Blumea 1: 338 (1935). – TYPE: [Indonesia], Java, Preanger, Papandayan, *Korthals s.n.* (lectotype L [L.4404143], designated by Sleumer (1961: 21)).

4.1. *Vaccinium leptanthum* f. *malayanum* Sleumer, Blumea 11: 21 (1961). – TYPE: [Malaysia], Pahang, Sungai Sat, Ulu Tembeling, 12 August 1929, *Henderson SFN 21953* (holotype K n.v.; isotypes BM [BM000996433], BO n.v., BRI n.v., KEP [KEP79358], L [L0008093], SING [SING0052196]).

Vaccinium acuminatissimum auct. non Miq.: Lindsay et al., Gard. Bull. Singapore 74(suppl. 1): 314 (2022).

Notes. Following Sleumer (1961), this taxon has mainly been referred to under the name *Vaccinium acuminatissimum* Miq. in Singapore (see Lindsay et al., 2022). However, this is a misapplication and the taxon in Singapore is *Vaccinium leptanthum* Miq. f. *malayanum* Sleumer. Indeed, Hans Sleumer himself annotated the material in SING as *Vaccinium leptanthum* f. *malayanum*, an identification later also confirmed by George Argent. Argent (2019) recognised this species in the genus *Rigiolepis* Hook.f. which he resurrected to accommodate the Malesian species that Sleumer (1941, 1967) had placed in *Vaccinium* sect. *Rigiolepis* (Hook.f.) Sleumer. Argent provided a table of characters to distinguish *Rigiolepis* from *Vaccinium* but these are also the

characters that would distinguish *Vaccinium* sect. *Rigiolepis* without the necessity to recognise it at the rank of genus. Ongoing molecular phylogenetic work (Peter Fritsch, pers. comm.) is currently inconclusive as to the rank at which *Rigiolepis* should be recognised and as the sole affected species in Singapore has hitherto been recognised in *Vaccinium*, I shall continue to do so pending further clarity in the ongoing studies.

The holotype of *Vaccinium leptanthum* f. *malayanum* in Kew could not be found. I refrain from designating a new lectotype for *Vaccinium leptanthum* f. *malayanum* as the holotype may have been misfiled. I have seen several isotypes and the identification of the type material is not in doubt.

5. *Vaccinium littoreum* Miq., Fl. Ned. Ind., Eerste Bijv. 3: 587 (1861); Lindsay et al., Gard. Bull. Singapore 74(suppl. 1): 314 (2022). – TYPE: [Indonesia], Sumatra, near Siboga, *Teysmann H.B. 782* (lectotype U [U0001758], designated by Sleumer (1961: 85)).

Vaccinium hasseltii Miq., Ann. Mus. Bot. Lugduno-Batavi 1 (1863) 40. – TYPE: [Indonesia], Java, *Van Hasselt s.n.* (lectotype L [L0008100], designated by Sleumer (1961: 85)).

Notes. This species was first reported for Singapore under the name *Vaccinium bancanum* Miq. (Ridley, 1900), a species found in Peninsular Malaysia, Sumatra and Borneo but not in Singapore (Sleumer, 1967). Ridley (1923) called it *Vaccinium hasseltii* Miq. but this was later synonymised under *Vaccinium littoreum* Miq. (Sleumer, 1961). Sleumer (1961) lectotypified both names in his specimen list.

ACKNOWLEDGEMENTS. I thank Amber Horning of Cambridge University Herbarium (CGE) for finding and imaging the type material of *Rhododendron longiflorum* Lindl., Marie Briggs (K) for her assistance with specimens in Kew, and Ian Turner (K, SING) for his comments and assistance with specimens in Kew. I also thank Peter Fritsch (BRIT) for his comments on the status of *Rigiolepis*.

References

- Argent, G.C.G. (2006). *Rhododendrons of subgenus Vireya*. London: Royal Horticultural Society & Royal Botanic Gardens Edinburgh.
- Argent, G.C.G. (2019). *Rigiolepis* and *Vaccinium* (Ericaceae) in Borneo. *Edinburgh J. Bot.* 76: 55–172.
- Jack, W. (1820). Descriptions of Malayan plants, no. 2. *Malayan Misc.* 1(5): 1–49.
- Lindley, J. (1848). A notice of some species of *Rhododendron* inhabiting Borneo. *J. Hort. Soc. London* 3: 81–91.
- Lindsay, S., Middleton, D.J., Ho, B.C., Chong, K.Y., Turner, I.M., Ali Ibrahim, Alonso-García, M., Ang, W.F., Ashton, P.S., Athen, P. et al. (2022). Flora of Singapore: Checklist and bibliography. *Gard. Bull. Singapore* 74(Suppl. 1): 3–860.

- Ridley, H.N. (1900). The Flora of Singapore. *J. Straits Branch Roy. Asiat. Soc.* 33: 27–196.
- Ridley, H.N. (1923). *Flora of the Malay Peninsula*, vol. 2. London: L. Reeve & Co.
- Sleumer, H.O. (1941). Vaccinioideen studien. *Bot. Jahrb. Syst.* 71: 375–510.
- Sleumer, H.O. (1961). Florae Malesianae Precursores XXVIII. The genus *Vaccinium* in Malaysia. *Blumea* 11: 9–112.
- Sleumer, H.O. (1967). *Vaccinium*. In: Van Steenis, C.G.G.J. (ed.) *Flora Malesiana*, ser. I, Seed Plants, vol. 6(5), pp. 746–878. Groningen: Wolters-Noordhoff.
- Thiers, B. (continuously updated). *Index Herbariorum: A global directory of public herbaria and associated staff*. New York Botanical Garden's Virtual Herbarium. <http://sweetgum.nybg.org/ih/>. Accessed 4 May 2023.
- Turland, N.J., Wiersema, J.H., Barrie, F.R., Greuter, W., Hawksworth, D.L., Herendeen, P.S., Knapp, S., Kusber, W.-H., Li, D.-Z., Marhold, K. et al. (ed.) (2018). *International Code of Nomenclature for Algae, Fungi, and Plants (Shenzhen Code) adopted by the Nineteenth International Botanical Congress Shenzhen, China, July 2017*. Regnum Vegetabile 159. Glashütten: Koeltz Botanical Books.
- Turner, I.M. (2015). Plant species described by William Griffith in 'Some account of the botanical collection brought from the Eastward by Dr. Cantor'. *Edinburgh J. Bot.* 72: 413–421.
- Wight, R. (1847). Notes on Indian Botany. *Calcutta J. Nat. Hist.* 8: 163–179.
- Wight, R. (1848). *Icones Plantarum*, vol. 4(1). Madras: Franck and Co.

