

## *Schefflera* (Araliaceae) in Thailand becomes *Heptapleurum*

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### ABSTRACT

Following recent studies showing that Asian *Schefflera* should be treated under the separate genus *Heptapleurum*, the names for the Thai species belonging to this genus are listed. Two new combinations are proposed for *S. bengalensis* and *S. poomae*. For two species of *Schefflera* recognized, *S. pueckleri* and *S. simulans*, different epithets must be used under *Heptapleurum*, namely *H. calyptratum* and *H. affine*.

KEYWORDS: Flora of Thailand, new combinations, phylogeny, re-arrangement.

Accepted for publication: 9 June 2021. Published online: 17 June 2021

### INTRODUCTION

*Schefflera* J.R.Forst. & G.Forst. has been considered as a pantropical genus with 600–1,000 species since the late 1960s. Prior to that, various separate genera with digitately compound leaves had been recognized, later synonymized under an enlarged *Schefflera s.l.* (these generic names relevant for Thailand are listed below). The concept of *Schefflera s.l.* was also used in the Flora of Thailand (Esser & Jebb, 2019), where 21 species were enumerated for the country. Nevertheless, it was also known that the genus, in this circumscription, was not monophyletic, but a revised classification had not been possible.

Only recently have molecular phylogenetic studies provided detailed insights, enabling a realignment of the generic level classification within *Schefflera s.l.* The name of *Schefflera*, with the type *S. digitata* J.R.Forst. & G.Forst., is now restricted to eight species from the Pacific Islands. Species of the former enlarged *Schefflera* are now classified in ten distinct genera. These are, in addition to *Schefflera s.s.*, *Astropanax* Seem. and *Neocussonia* (Harms) Hutch. in Africa, *Plerandra* A.Gray in Melanesia, *Cephalopanax* G.M.Plunkett, Lowry & D.A.Neill, *Crepinella* Marchal, *Didymopanax* Decne. & Planch., *Frodinia* Lowry & G.M.Plunkett and *Sciodaphyllum* P.Browne in the Neotropics, and *Heptapleurum* Gaertn. in Asia. Therefore, all Asian species are still classified under a single, monophyletic genus.

*Heptapleurum* is the largest one of the re-instated genera. Lowry & Plunkett (2020) provided a comprehensive synonymy for the generic names and listed 317 Asian species. These were formally transferred to the newly resurrected *Heptapleurum* by Lowry & Plunkett (2020; see also Plunkett *et al.*, 2020); for many of them they provided new combinations, with the taxonomy based on the World Checklist of Araliaceae (Frodin & Govaerts, 2004 [‘2003’]) and the Flora of China (Shang & Lowry, 2007).

As an update to the Flora of Thailand, the species names under the new genus are listed here following Lowry & Plunkett (2020). For two species, new combinations are still needed, which are provided here. The 21 species and 1 variety recognized by Esser & Jebb (2019) remain, but a different species epithet must be used under *Heptapleurum* for two species for nomenclatural reasons.

### TAXONOMY

**Heptapleurum** Gaertn., Fruct. Sem. Pl. 2: 472. 1791; Seem., J. Bot. 3: 75. 1865; Benth. in Benth. & Hook.f., Gen. Pl. 1: 942. 1867; Kurz, Forest Fl. Burma 1: 538. 1877; C.B.Clarke in Hook.f., Fl. Brit. India 2: 727. 1879; King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 67: 47. 1898; Lowry & G.M.Plunkett, Novon 28: 144. 2020. Type: *Heptapleurum stellatum* Gaertn.

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— *Aralia* L. sect. *Paratropia* Blume, Bijdr. Fl. Ned. Ind.: 873. 1826.— *Paratropia* (Blume) DC., Prodr. 4: 265. 1830. Lectotype (designated by Lowry & Plunkett, 2020): *Aralia rigida* Blume [= *Heptapleurum rigidum* (Blume) Hassk.].

— *Brassaia* Endl., Nov. Stirp. Dec. 1: 89. 1839.— *Schefflera* J.R.Forst. & G.Forst. sect. *Brassaia* (Endl.) C.J.Tseng & G.Hoo, Acta Phytotax. Sin., Addit. 1: 133. 1965. Type: *Brassaia actinophylla* Endl. [= *Heptapleurum actinophyllum* (Endl.) Lowry & G.M.Plunkett].

— *Tupidanthus* Hook.f. & Thomson, Bot. Mag. 82: t. 4908. 1856. Type: *Tupidanthus calyptratus* Hook.f. & Thomson [= *Heptapleurum calyptratum* (Hook.f. & Thomson) Y.F.Deng].

— *Scheffleropsis* Ridl., Fl. Malay Penins. 1: 888. 1922. Type: *Scheffleropsis polyandra* (Ridl.) Ridl. [= *Heptapleurum polyandrum* (Ridl.) G.M.Plunkett & Lowry].

— *Schefflera* auct. non J.R.Forst. & G.Forst.: Ridl., Fl. Malay Penins. 1: 873. 1922; Craib, Fl. Siam. 1: 796. 1931; Esser & Jebb, Thai Forest Bull. (Bot.) 38: 162. 2010; Fl. Thailand 14(2): 221. 2019.

**Heptapleurum actinophyllum** (Endl.) Lowry & G.M.Plunkett, Novon 28: 146. 2020.— *Brassaia actinophylla* Endl., Nov. Stirp. Dec. 1: 89. 1839.— *Schefflera actinophylla* (Endl.) Harms in Engl. & Prantl, Nat. Pflanzenfam. 3.8: 36. 1894; Esser & Jebb, Fl. Thailand 14(2): 224. 2019.

**Heptapleurum affine** King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 67: 54. 1898; Lowry & G.M.Plunkett, Novon 28: 146. 2020.— *Schefflera affinis* (King) R.Vig., Ann. Sci. Nat., Sér. 9, Bot. 9: 354. 1909, **nom. illeg.** [non *Schefflera affinis* Baill., Adansonia 12: 141. 1878].

— *Schefflera simulans* Craib, Bull. Misc. Inform. Kew 1930: 421. 1930; Fl. Siam. 1: 801. 1931; Esser & Jebb, Fl. Thailand 14(2): 241. 2019.

Note.— When treated under *Schefflera*, the oldest legitimate name is *S. simulans*, as used in the Flora of Thailand. *Heptapleurum affine* is however oldest and valid under this genus.

**Heptapleurum bengalense** (Gamble) Esser, **comb. nov.**— *Schefflera bengalensis* Gamble, Bull. Misc. Inform. Kew 1919: 229. 1919; Craib, Fl. Siam. 1: 796. 1931; Esser & Jebb, Fl. Thailand 14(2): 224. 2019.

— *Schefflera clarkeana* Craib, Fl. Siam. 1: 797. 1931, **pro parte quoad typus.**— *Heptapleurum clarkeanum* (Craib) Lowry & G.M.Plunkett, Novon 28: 150. 2020.

Note.— This species is part of a complex of several similar species. Lowry & Plunkett (2020) had implicitly considered *Schefflera bengalensis* as a synonym of *Heptapleurum ellipticum*, although they cited only selected synonyms. When treated as a separate species as in the Flora of Thailand, a new combination under *Heptapleurum* is required.

**Heptapleurum calyptratum** (Hook.f. & Thomson) Y.F.Deng, Med. Fl. China 7: 469. 2018; Lowry & G.M.Plunkett, Novon 28: 149. 2020.— *Tupidanthus calyptratus* Hook.f. & Thomson, Bot. Mag. 82: t. 4908. 1856 [non *Schefflera calyptrata* Merr., Philipp. J. Sc., Bot. 13: 101. 1918].

— *Tupidanthus pueckleri* K.Koch, Wochenschr. Gärtnerei Pflanzenk. 2: 348. 1859.— *Schefflera pueckleri* (K.Koch) Frodin in Whitmore, Tree Fl. Malaya 3: 31. 1978 (misapplied for *S. subintegra*); Esser & Jebb, Fl. Thailand 14(2): 239. 2019.

Note.— *Tupidanthus calyptratus* Hook.f. & Thomson is the oldest available name, but the combination under *Schefflera* was preoccupied by the name of a different species, so that then the second-oldest name, based on *T. pueckleri* K.Koch, had to be used, which was done for the Flora of Thailand.

**Heptapleurum cephalotes** C.B.Clarke in Hook.f., Fl. Brit. India 2: 731. 1879; Lowry & G.M.Plunkett, Novon 28: 149. 2020.— *Schefflera cephalotes* (C.B.Clarke) Harms in Engl. & Prantl, Nat. Pflanzenfam. 3.8: 36. 1894; Esser & Jebb, Fl. Thailand 14(2): 225. 2019.

**Heptapleurum cuneatum** (Craib) Lowry & G.M.Plunkett, Novon 28: 151. 2020.— *Schefflera cuneata* Craib, Bull. Misc. Inform. Kew 1930: 420. 1930; Fl. Siam. 1: 798. 1931; Esser & Jebb, Fl. Thailand 14(2): 226. 2019.

**Heptapleurum ellipticum** (Blume) Seem., J. Bot. 3: 78. 1865; Lowry & G.M.Plunkett, Novon 28: 150. 2020.— *Sciodaphyllum ellipticum* Blume, Bijdr. Fl. Ned. Ind.: 878. 1826.— *Schefflera elliptica* (Blume) Harms in Engl. & Prantl, Nat. Pflanzenfam. 3.8: 39. 1894; Esser & Jebb, Fl. Thailand 14(2): 224. 2019.— *Paratropia elliptica* (Blume) Miq., Bonplandia 4: 138. 01 May 1856; Fl. Ned. Ind. 1.1: 75. 10 July 1856.

**Heptapleurum heptaphyllum** (L.) Y.F.Deng, Med. Fl. China 7: 484. 2018; Lowry & G.M.Plunkett, Novon 28: 154. 2020.— *Vitis heptaphylla* L., Mant. Pl. 2: 212. 1771.— *Schefflera heptaphylla* (L.) Frodin, Bot. J. Linn. Soc. 104: 314, fig. 1. 1991 ('1990'); in Frodin & Govaerts, World Checkl. Bibliogr. Araliac.: 343. 2004 ('2003'); Esser & Jebb, Fl. Thailand 14(2): 228. 2019.

**Heptapleurum heterophyllum** (Wall. ex G.Don) Seem., J. Bot. 3: 77. 1865; Lowry & G.M.Plunkett, Novon 28: 154. 2020.— *Hedera heterophylla* Wall. (Numer. List: no. 4919. 1831–1832, *nom. nud.*) ex G.Don, Gen. Hist. 3: 394. 1834.— *Schefflera heterophylla* (Wall. ex G.Don) Harms in Engl. & Prantl, Nat. Pflanzenfam. 3.8: 38. 1894; Esser & Jebb, Fl. Thailand 14(2): 229. 2019.

— *Heptapleurum biternatum* C.B.Clarke in Hook.f., Fl. Brit. India 2: 731. 1879.— *Schefflera biternata* (C.B.Clarke) Harms in Engl. & Prantl, Nat. Pflanzenfam. 3.8: 38. 1894; Ridl., Fl. Malay Penins. 1: 881. 1922; Frodin in Whitmore, Tree Fl. Malaya 3: 28. 1978.— *S. heterophylla* var. *biternata* (C.B.Clarke) Frodin in Frodin & Govaerts, World Checkl. Bibliogr. Araliac.: 345. 2004 ('2003').— *Heptapleurum heterophyllum* var. *biternatum* (C.B.Clarke) Lowry & G.M.Plunkett, Novon 28: 154. 2020.

**Heptapleurum hulletii** King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 67: 54. 1898; Lowry & G.M.Plunkett, Novon 28: 155. 2020.— *Schefflera hullettii* (King) R.Vig., Ann. Sci. Nat., Sér. 9, Bot. 9: 353. 1909; Esser & Jebb, Fl. Thailand 14(2): 231. 2019.

**Heptapleurum hypoleucoides** (Harms) Lowry & G.M.Plunkett, Novon 28: 155. 2020.— *Schefflera hypoleucoides* Harms, Feddes Repert. Spec. Nov.

Regni Veg. 16: 246. 1919; Esser & Jebb, Fl. Thailand 14(2): 231, fig. 5. 2019.

**Heptapleurum lakhonense** (C.B.Shang) Lowry & G.M.Plunkett, Novon 28: 156. 2020.— *Schefflera lakhonensis* C.B.Shang, Candollea 39: 467, fig. 2 g–k. 1984; Esser & Jebb, Fl. Thailand 14(2): 232. 2019.

**Heptapleurum leucanthum** (R.Vig.) Y.F.Deng, Med. Fl. China 7: 472. 2018; Lowry & G.M.Plunkett, Novon 28: 157. 2020.— *Schefflera leucantha* R.Vig., Ann. Sci. Nat., Sér. 9, Bot. 9: 358. 1909; Esser & Jebb, Fl. Thailand 14(2): 234. 2019.

**Heptapleurum luridum** King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 67: 48. 1898; Lowry & G.M.Plunkett, Novon 28: 158. 2020.— *Schefflera lurida* (King) Ridl., Fl. Malay Penins. 1: 875. 1922; Esser & Jebb, Fl. Thailand 14(2): 235. 2019.

**Heptapleurum oxyphyllum** (Miq.) Seem., J. Bot. 3: 80. 1865; Lowry & G.M.Plunkett, Novon 28: 161. 2020.— *Paratropia oxyphylla* Miq., Fl. Ind. Bat. Suppl. 1: 338. 1861.— *Schefflera oxyphylla* (Miq.) R.Vig., Ann. Sci. Nat., Sér. 9, Bot. 9: 355. 1909; Esser & Jebb, Fl. Thailand 14(2): 235. 2019.

**Heptapleurum oxyphyllum** var. **siamense** (Craib) Lowry & G.M.Plunkett, Novon 28: 161. 2020.— *Schefflera coronae-sylvae* R.Vig. var. *siamensis* Craib, Fl. Siam. 1: 797. 1931.— *S. oxyphylla* (Miq.) R.Vig. var. *siamensis* (Craib) Frodin in Frodin & Govaerts, World Checkl. Bibliogr. Araliac.: 362. 2004 ('2003'); Esser & Jebb, Fl. Thailand 14(2): 235. 2019.

**Heptapleurum petelotii** (Merr.) Lowry & G.M.Plunkett, Novon 28: 162. 2020.— *Schefflera petelotii* Merr., Univ. Calif. Publ. Bot. 10(9): 428. 1924; Esser & Jebb, Fl. Thailand 14(2): 239. 2019.

**Heptapleurum poomae** (Esser & Jebb) Esser, **comb. nov.**— *Schefflera poomae* Esser & Jebb, Thai For. Bull. (Bot.) 38: 162, figs. 1, 2. 2010; Fl. Thailand 14(2): 237, fig. 6. 2019.

Note.— This name had been overlooked by Lowry & Plunkett (2020), not being included in the World Checklist of Araliaceae nor in the Flora of China.

**Heptapleurum schizophyllum** Hance, J. Bot. 15: 334. 1877; Lowry & G.M.Plunkett, Novon 28: 165. 2020.— *Schefflera schizophylla* (Hance) Frodin in Frodin & Govaerts, World Checkl. Bibliogr. Araliac.: 374. 2004 ('2003'); Esser & Jebb, Thai For. Bull., Bot. 38: 163. 2010; Fl. Thailand 14(2): 240. 2019.  
— *Schefflera oblonga* Craib, Bull. Misc. Inform. Kew 1930: 421. 1930; Fl. Siam 1: 800. 1931.— *Heptapleurum oblongum* (Craib) Lowry & G.M.Plunkett, Novon 28: 160. 2020.

Note.— As had been pointed out by Esser & Jebb (2010, 2019), this species is quite variable in the degree of leaflet incision, and *H. oblongum*, with less divided leaflets, should therefore be considered as a synonym.

**Heptapleurum siamense** (W.W.Sm. ex Craib) Lowry & G.M.Plunkett, Novon 28: 166. 2020.— *Schefflera siamensis* W.W.S. ex Craib, Bull. Misc. Inform. Kew 1918: 363. 1918; Esser & Jebb, Fl. Thailand 14(2): 240. 2019.

**Heptapleurum subintegrum** (Craib) Lowry & G.M.Plunkett, Novon 28: 167. 2020.— *Scheffleropsis subintegra* Craib, Bull. Misc. Inform. Kew 1930: 425. 1930; Fl. Siam. 1: 804. 1931; S.Gardner *et al.*, Forest Trees S. Thailand 1: 238, fig. 338. 2015.— *Schefflera subintegra* (Craib) C.B.Shang, Candollea 39: 470. 1984; Esser & Jebb, Fl. Thailand 14(2): 242. 2019.

**Heptapleurum wrayi** King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 67: 55. 1898; Lowry & G.M.Plunkett, Novon 28: 169. 2020.— *Schefflera wrayi* (King) R.Vig., Ann. Sci. Nat., Bot. sér. 9, 9: 333. 1909; Esser & Jebb, Fl. Thailand 14(2): 243. 2019.

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