

ADDITIONS TO SYMPLOCACEAE OF THE OLD WORLD INCLUDING NEW CALEDONIA

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SUMMARY

Some name changes and new names are published belonging to a new revision of Symplocaceae of the Old World. Several species described after 1975 were reduced.

Key words: *Symplocos*, name changes, reinstated taxa, reduced taxa.

INTRODUCTION

The author published in 1975 'Revision of the Symplocaceae of the Old World, New Caledonia excepted'. Because of the many variable taxa the dichotomous keys appeared difficult to use. Therefore the author made all the descriptions again with the DELTA package for Windows. The database was used to make an interactive key to be used with INTKEY. New insights as well as the use of DELTA made it possible to reinstate some taxa. Some other taxa, published after 1975 by other authors, are accepted, others are reduced. The name changes en reductions are published here.

In the new treatment 237 taxa are recognised. The entire revision including the illustrated interactive key and a complete list of accepted taxa and synonyms is published on a CD-ROM which goes with this article, as well as on the website of the Nationaal Herbarium Nederland, Universiteit Leiden branch.

Most species are now relatively easy to identify (nearly all taxa are illustrated), with exception of many New Guinean taxa. The complicated geological and biological history of New Guinea is responsible for incomplete speciation in many groups in New Guinea, e.g. in *Symplocos*. A study of several years using DNA and morphology is needed to clarify the New Guinean taxa.

1. *Symplocos anomala* Brand var. *morrisonicola* (Hayata) S.S. Ying

Symplocos anomala Brand var. *morrisonicola* (Hayata) S.S. Ying (1987) 593. — *Symplocos morrisonicola* Hayata (1908) 190, pl. 27; R.F. Wu (1987) 15, pl. 46, photo 78, 79; Nagam. (1998) 119. — *Bobua morrisonicola* (Hayata) Kaneh. & Sasaki (1928) 331. — *Symplocos anomala* Brand (1901) 67, p.p.; Noot. (1975) 126, p.p.; R.F. Wu & Noot. (1996) 242, p.p. — Syntypes: *S. Nagasawa* 737, Suizan, Oct. 1905; *G. Nakahara*, Tozan, Oct. 1906; and *T. Kawakami* & *U. Mori* 1702, Mt Morrison, Oct. 1906, all in Taiwan (n.v.).

- Symplocos doii* Hayata (1915) 96, f. 25h. — *Bobua doi* (Hayata) Kaneh. & Sasaki (1928) 330. — *Symplocos cuspidata* Brand var. *doii* (Hayata) S.S. Ying (1975) 565. — Type: *T. Doi 1912* (n.v.), Rinpoho, Taiwan.
- Symplocos kiraishiensis* Hayata (1920) 68, pl. 4. — *Symplocos morrisonicola* Hayata var. *kiraishiensis* (Hayata) T. Mori (1934a) 195; (1934b) 240. — *Symplocos anomala* Brand var. *morrisonicola* (Hayata) S.S. Ying forma *kiraishiensis* (Hayata) S.S. Ying (1987) 595. — Type: *Y. Shimada*, Kiraishi, Taiwan, March 1918.
- Bobua morrisonicola* (Hayata) Kaneh. & Sasaki var. *matudai* Hatus. (1935) 211. — *Symplocos anomala* Brand var. *morrisonicola* (Hayata) S.S. Ying forma *matudai* (Hatus.) S.S. Ying (1987) 595. — *Symplocos morrisonicola* Hayata var. *matudai* (Hatus.) S.S. Ying (1975) 567. — Type: *H. Matuda* (n.v.), Mt Buisan, Taiwan, 31 Dec. 1918.

2. *Symplocos congesta* Benth.

- Symplocos congesta* Benth. (1861) 211; Nagam. (1998) 108. — *Symplocos glomerata* King ex Clarke var. *congesta* (Benth.) Noot. (1975) 202; Noot. & Vidal (1977) 40; R.F. Wu & Noot. (1996) 251. — Type: *Champion 413* (K), Hongkong.

3. *Symplocos cordifolia* Thwaites

- Symplocos cordifolia* Thwaites (1860) 187. — *Lodhra cordifolia* Miers (1879) 301. — *Symplocos macrophylla* Wall. ex DC. var. *cordifolia* (Thwaites) Noot. (1975) 233. — Type: *Thwaites CP 271* (K; iso BM, CGE, FI, LE, MEL, P), Ceylon.

4. *Symplocos doormannensis* Brand

- Symplocos doormannensis* Brand (1924) 188. — *Symplocos cochinchinensis* Brand var. *doormannensis* (Brand) Noot. (1975) 168. — Lectotype: *H.J. Lam 1985* (L; iso BO), Doormantop, New Guinea.

5. *Symplocos heishanensis* Hayata

- Symplocos heishanensis* Hayata (1915) 101, t. 28; T. Mori (1934b) 231; Kaneh. (1936) t. 545; Noot. (1975, sub *S. sumuntia* Buch.-Ham. ex D. Don); R.F. Wu & Noot. (1996) 245. — *Bobua heishanensis* Kaneh. & Sasaki (1928) 331. — Syntypes: *T. Ito & B. Hayata s.n.* (TOFO n.v.), Taiwan, and *R. Kanehira & I. Tanaka s.n.* (n.v.), Taiwan, Nimandaira, April 1914.
- Symplocos eriostroma* Hayata (1915) 99, f. 25c; T. Mori (1934b) 228; Kaneh. (1936) 585; Noot. (1975, sub *S. modesta* Brand); Nagam. (1998) 111. — Type: *S. Sasaki, no 2* (n.v.), Taiwan, Mt Arisan, Jan. 1911.
- Symplocos macrostroma* Hayata (1915) 107, t. 25, 5; T. Mori (1934b) 237; Noot. (1975) 295, sub dubious). — *Symplocos japonica* Hayata (1911) 188, non DC (1844). — *Palura macrostroma* (Hayata) Kaneh. & Sasaki (1928) 332. — *Bobua macrostroma* (Hayata) Kaneh. & Sasaki (1930) 409. — Type: *Mori 2658* (n.v.), Taiwan, Kappan-zan.
- Symplocos risekiensis* Hayata (1915) 112, t. 35; Noot. (1975, sub *S. oreades*). — *Bobua risekiensis* Kaneh. & Sasaki (1928) 332. — Type: *T. Kawakami & U. Mori 3551* (n.v.), Taiwan, Nanto, Risekisan.
- Symplocos oreades* Guillaumin (1932) 174, excl. syn. *S. poilanei*; (1933) 1032; Noot. (1975) 256. — Type: *Poilane 17046* (P; iso NY), Tonkin, Col de Lo qui ho, near Chapa.
- Symplocos pittosporifolia* Hand.-Mazz. (1943) 25; Noot. (1975, sub *S. oreades*). — Type: *Ching 7843* (W; iso NY).

6. *Symplocos obtusa* Wall. ex G. Don var. *cucullata* Thwaites

Symplocos obtusa Wall. ex G. Don var. *cucullata* Thwaites (1860) 185. — *Symplocos cucullata* Brand (1901) 56 (in: Noot. (1975) 243 under var. *obtusa*); Noot. (1981) 466. — Type: *Thwaites CP 2835* (K; iso BM, LE, P), Ceylon.

7. *Symplocos paniculata* (Thunb.) Miq.

Symplocos paniculata (Thunb.) Miq. (1865) 102, Noot. (1975) 258; R.F. Wu & Noot. (1996) 252. — Type: *Thunberg s.n.* (UPS n.v.), Japan.

Symplocos chinensis (Lour.) Druce (1917) 650; Nagam. (1998) 105. — Type: *Loureiro s.n.* (P).

Symplocos coreana (Lév.) Ohwi (1953) 83; Nagam. (1993) 195. — Type: *Taquet 1106* (E), Korea.

Symplocos sawafutagi Nagam. (1993) 199, pl. 53d. — Type: *Anonymous s.n.* (TI n.v.).

Symplocos tanakana Nakai (1918) 227; Nagam. (1993) 206, pl. 55b. — Lectotype (Nagamasu, 1993): *Nakai 6411* (TI), Quelpart, Korea.

Note — Nagamasu (1993: 195) recognises several species, forming together his section *Palura*. I failed, when trying to identify some collections, already in the first lead. The leaves are definitely not glaucous on the undersurface in what is identified by Nagamasu as *Symplocos tanakana*. That, and the bark being transversely fissured (a character I could not observe) are the only differences between *S. tanakana* and the rest of his species. The differences between his *S. coreana* and *S. sawafutagi* are, i.e.: Leaves ovate to obovate versus leaves obovate to elliptic. In my opinion the latter is part of the first. And: apex acuminate to caudate versus abruptly acuminate to acuminate. According to me this is a continuous variation. Part of the variability in *S. paniculata* probably is due to different ecology, therefore populations may differ from each other because they have a different ecology. So his *S. coreana* occurs often on ridges or on mountain slopes and *S. sawafutagi* is found in deciduous forest, usually on alluvium in shaded places along streamlets. The different habitat being responsible for the differences, they should be designated as ecotypes, not species.

8. *Symplocos pendula* Wight var. *hirtistylis* (Clarke) Noot.

Symplocos pendula Wight var. *hirtistylis* (Clarke) Noot. (1975) 42; Noot. & J.E. Vidal (1977) 15; R.F. Wu & Noot. (1996) 252. — Type: *Maingay 2580* (K), Malaya.

Symplocos sonoharai Koidz. (1928) 6; Nagam. (1993) 192; (1998) 123. — Lectotype (Nagamasu, 1993): *S. Sonohara 1* (KYO), Utchina Is., Ryukyu Isls.

Symplocos yanchunensis H.G. Ye & J. Xing (2003) 277. — Type: *H.G. Ye 6546* (IBSC), China, Guangdong, Yangchun, Hwei Mountain.

9. *Symplocos ramosissima* Wall. ex G. Don var. *xylopyrena* (C.Y. Wu ex Y.F. Wu) Noot, *comb. nov.*

Symplocos xylopyrena C.Y. Wu ex Y.F. Wu (1982) 91; R.F. Wu & Noot. (1996) 246. — Type: *Qinzhong Exped. 57-1814* (IBSC), Xizang, Mêdog xian.

10. *Symplocos sumuntia* Buch.-Ham. ex D. Don var. *modesta* (Brand) Noot., *var. nov. & stat nov.*

Symplocos modesta Brand (1901) 66; Noot. (1975) 239; R.F. Wu & Noot. (1996) 246; Nagam. (1998) 117. — Type: *S. Sasaki, no. 2* (n.v.), Formosa, Jan. 1911.

REFERENCES

- Benthams, G. 1861. *Flora Hongkongensis*: 211. Reeve, London.
- Brand, A. 1901. In: H.G.A. Engler, *Das Pflanzenreich* 6, IV. Engelmann, Berlin.
- Brand, A. 1924. *Symplocaceae*. *Nova Guinea* 14: 186–189.
- De Candolle, A.P. 1844. *Prodromus Systemati Naturalis Regni Vegetabilis* 8: 257. Treutel & Wurtz, Paris, London, Strasbourg.
- Druce, G.C. 1917. *Symplocaceae*. *Bot. Soc. Exch. Club Brit. Isles* 4: 650.
- Guillaumin, J.A. 1932. *Espèces et localités nouvelles de Symplocos*. *Bull. Soc. Bot. France* 79: 174.
- Guillaumin, J.A. 1933. In: P.H. Lecomte, *Fl. Indo-Chine* 3: 992–1034.
- Handel-Mazzetti, H. 1943. *Symplocaceae aus China*. *Beih. Bot. Centralbl.* 62-B: 25.
- Hatusima, S. 1935. *Contribuciones ad Dendrologiam Nipponiae Australis*. *Acta Phytotax. Geobot.* 4: 211.
- Hayata, B. 1908. *Flora Montana Formosana*. *J. Coll. Sci. Imp. Univ. Tokyo* 25: 190, pl. 27.
- Hayata, B. 1911. *Materials for a Flora of Formosa*. *J. Coll. Sci. Imp. Univ. Tokyo* 30: 188.
- Hayata, B. 1915. *Icones Plantarum Formosanarum* 5: 96, 101, 107, 112. Government of Formosa, Taihoku.
- Hayata, B. 1920. *Icones Plantarum Formosanarum* 9: 68, 96. Government of Formosa, Taihoku.
- Kanehira, R. 1936. *Formosan Trees*. Government of Formosa, Taihoku.
- Kanehira, R & S. Sasaki. 1928. *List of plants of Formosa*. Natural History Society of Formosa, Taihoku.
- Kanehira, R & S. Sasaki. 1930. *A catalogue of the Government Herbarium*. Department of Forestry, Taihoku.
- Koidzumi, G. 1928. *Plantae Novae Amami-Oshima*.
- Miers, J. 1879. *On the Symplocaceae*. *J. Linn. Soc., Bot.* 17: 301.
- Miquel, F.A.W. 1865. *Prolusio Florae Japonicae*. *Ann. Mus. Bot. Lugduno-Batavi* 3: 102.
- Mori, T. 1934a. *Materials to the Arboreal Flora of Formosa*. *Trans. Nat. Hist. Soc. Formosa* 24: 195.
- Mori, T. 1934b. *The Symplocaceae of Formosa*. *Sylvia* 5: 231, 237, 240.
- Nagamasu, H. 1993. *The Symplocaceae of Japan*. *Contr. Biol. Lab. Kyoto University*.
- Nagamasu, H. 1998. *Flora of Taiwan* 2nd ed., 4: 101–127. Taipei, Taiwan, ROC.
- Nakai, T. 1918. *Notulae ad Plantas Japonicae et Koreae* XVIII. *Bot. Mag. (Tokyo)* 32: 227.
- Nooteboom, H.P. 1975. *Revision of the Symplocaceae of the Old World*. *Universitaire Pers Leiden*.
- Nooteboom, H.P. 1981. *A revised handbook to the Flora of Ceylon* 3: 454–478. Amerind Publishing Co., New Delhi.
- Nooteboom, H.P. & J.E. Vidal. 1977. *Flore du Cambodge, de Laos et du Viêt Nam* 16. Muséum d'Histoire Naturelle, Laboratoire de Phanerogamie, Paris.
- Ohwi, J. 1953. *New names and new combinations adopted in my 'Flora of Japan'*. *Bull. Natl. Sci. Mus., Tokyo* 33: 83.
- Thwaites, G.H.K. 1860. *Enumeratio Plantarum Zeylanicae* 3: 185, 187. Dulau & Co., London.
- Wu, R.F. 1987. *Symplocaceae*. In: *Fl. Reipubl. Popularis Sin.* 60: 1–77.
- Wu, R.F. & H.P. Nooteboom. 1996. *Symplocaceae*. *Flora of China* 15: 235–252. Science Press (Beijing) & Missouri Botanical Garden (St. Louis).
- Wu, Y.F. 1982. *Symplocaceae novae e Flora Tibetica*. *Acta Phytotax. Sin.* 20: 91.
- Ye, H.G. & J. Xing. 2003. *A new species and a new synonym of Symplocos (Symplocaceae) from China*. *J. Trop. Subtrop. Bot.* 11: 277.
- Ying, S.S. 1975. *Symplocos*. *Bull. Exp. Forest Natl. Taiwan Univ.* 116: 565, 567.
- Ying, S.S. 1987. *Colour. Illustr. Fl. Taiwan* 2: 593.

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The numbers refer to the species numbers used. The accepted names are in roman type, new names in **bold** and synonyms in *italics*.

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