Twenty-six additional new combinations in the Magnolia (Magnoliaceae) of China and Vietnam

Christopher B. Callaghan¹, Siak K. Png¹

¹ Australian Bicentennial Arboretum, P.O. Box 88, Penshurst. NSW 2222. Australia

Corresponding author: Christopher Callaghan (callaghanaba@gmail.com)

Abstract

In accordance with the previous reduction of the remaining genera of subfamily Magnolioideae (Magnoliaceae) into the genus Magnolia, twenty-six new nomenclatural combinations are formally made by transferring to Magnolia some additional Chinese and Vietnamese taxa from the segregate genera of Manglietia, Michelia and Yulania. The following nine new combinations are created from Manglietia, namely Magnolia admirabilis, M. albistaminea, M. guangnanica, M. jinggangshanensis, M. maguanica, M. pubipe-dunculata, M. pubipetala, M. rufisyncarpa and M. sinoconifera. Also, twelve new combinations are created from Michelia, namely Magnolia caloptila, M. caudata, M. fallax, M. gelida, M. hunanensis, M. maudiae var. rubicunda, M. multitepala, M. platypetala, M. rubriflora, M. septipetala, M. sonlaensis, M. xinningia. Finally, five new combinations are created from Yulania, namely Magnolia baotaina, M. pendula, M. pilocarpa var. ellipticifolia, M. puberula and M. urceolata.

Keywords

Magnolioideae, Manglietia, Michelia, morphological features, synonyms, Yulania

Magnolia maguanica (formerly Manglietia maguanica (photo taken by SK Png at South China BG on 21.04.2017).
Introduction

Richard B. Figlar (2012), a past president and present scientific advisor of Magnolia Society International, provides a concise but thorough background to the complex generic history of subfamily Magnolioideae of family Magnoliaceae, starting with J.E. Dandy in the early part of the previous century. This pre-eminent British plant taxonomist, specialising in Magnoliaceae, recognised the family as consisting of 2 tribes, the Liriodendreae representing the single distinct genus *Liriodendron*, with the remainder of the family, about which Dandy (1927) acknowledges there had never been uniformity of opinion, forming the Magnolieae, comprising 9 genera, which he subsequently increased by 2.

Revisions were to follow Dandy’s death in late 1976, including the classification of the leading Chinese Magnoliaceae researcher, Liu Yu-hu (aka Law Yuh-wu). His proposed Taxonomic System of Magnoliaceae (Law 1984), republished in Magnolias of China in the year he died (Liu et al. 2004), basically added a further 4 genera to those of Dandy. Representatives of 10 of the 15 genera included in subfamily Magnolioideae in Liu’s classification occur in China.

H.P. Nooteboom, who was to succeed Dandy at the forefront of Magnoliaceae research in Europe, realised that his predecessor had been mistaken in his interpretation of certain morphological characters and thus commenced his reduction of Magnolioideae (Nooteboom 1985), to just 6 genera. Ultimately, with the advent of molecular DNA sequencing data (Azuma et al. 1999, 2000, 2001, Kim et al. 2001, Nie et al. 2008, Wang et al. 2006, Kim and Suh 2013), combined with comparative morphological research (Figlar 2000, Figlar and Nooteboom 2004), showing the remaining genera, including *Manglietia* Blume and *Michelia* Linnaeus, residing among the other sections of *Magnolia*, Figlar and Nooteboom proposed a new classification system in their 2004 paper. Their new system includes *Magnolia* at the head of a now monogenic Magnolioideae subfamily comprising subgenus *Magnolia* with 8 sections and 7 subsections, subgenus *Yulania* with 2 sections and 6 subsections, and subgenus *Gynopodium* with 2 sections.

This system was not followed in the Flora of China treatment of Magnoliaceae (Xia et al. 2008), where previously recognised genera such as *Manglietia* and *Michelia* were retained, two former sections of *Magnolia* were given generic status as *Houpoea* N.H. Xia & C.Y. Wu and *Oyama* (Nakai) N.H. Xia & C.Y. Wu, and former genera, such as *Lirianthe* Spach and *Yulania* Spach of 1839 were reinstated. Since then, authors describing new species from China have followed this classification, a few examples being *Manglietia pubipedunculata* Q.W. Zeng & X.M. Hu (Hu et al. 2019), *Michelia caudata* M.X. Wu, X.H. Wu & G.Y. Li (Wu et al. 2015) and *Yulania dabieshanensis* T.B. Zhao, Z.X. Chen & H.T. Dai (Dai et al. 2012).

However, Figlar and Nooteboom’s (2004) classification system is now widely accepted by the scientific community, with many authors following this broad view of *Magnolia*, such as Arroyo et al. (2013), Ninh et al. (2020), Pérez et al. (2016) and Zou et al. (2020).
Figlar (2012) advised against the alternative classification system now operating:

In a one genus system only Manglietia, Michelia and 3 minor genera require new names in Magnolia. In a 13 genera system, it would be necessary to dismantle the largest and most well-known genus, Magnolia, and rename the constituents into 10 new genera. That would be enormously destructive to the long-established Magnolia-centric nomenclature and literature, causing unnecessary and undesirable consequences to science, conservation and horticulture.

With this in mind, 26 new combinations are created here, representing nine species of Manglietia, eleven species and one variety of Michelia, plus four species and one variety of Yulania. Most of these taxa were named and described over the past decade, but include some older previously synonymised, now reinstated taxa, that are herein transferred to Magnolia, as will be numerous other taxa in a sequel to this paper (Callaghan and Png 2019a, 2020).

Materials and methods

The new combinations proposed in this paper are made in compliance with the rules and recommendations of the 2018 International Code of Nomenclature for algae, fungi and plants (ICN), known as The Shenzhen Code (Turland et al. 2018), in particular ICN Article 41 and Recommendation 41A in respect of new combinations.

Where available, digital images of type specimens of newly named taxa posted to the internet at the websites of various herbaria have been sighted and these are indicated in the text by ‘online image!’ appearing after the herbarium acronyms whose representative names are listed in the appendix following the references. Additional sighted specimens are indicated by ‘!’ after the herbarium acronym.

Consultation of the relevant literature was made to determine whether a number of taxa previously determined as synonyms of earlier named taxa were, in fact, genuine independent species or varieties as they had been originally described. Differences in numerous morphological features, natural distributions and/or elevations and where appropriate, the incompatible phenology of flowering and/or fruiting periods, are tabulated and referred to in the notes under the relevant taxa to fully substantiate their independent status.

Floras and other literature dealing with the Magnoliaceae of China that have been consulted during this study are cited in the text, with some of the more important sources of information including a number of papers by Dandy (1928 a–c, 1930), The Magnoliaceae of China (Chen and Nooteboom 1993), Magnoliaceae in Flora Reipublicae Popularis Sinicae (Law et al. 1996), Magnolias of China (Liu et al. 2004), Magnoliaceae in Flora of China Vol. 7 (Xia et al. 2008), A Taxonomic Revision of the Magnoliaceae from China (Sima 2011) and the recent Ex Situ Cultivated Flora of China : Magnoliaceae (Yang et al. 2016), which documents the diversity of Magnoliaceae plants in Chinese botanical gardens.
The Biodiversity Heritage Library website (https://www.biodiversitylibrary.org) proved indispensable in accessing a number of articles on earlier-named Magnoliaceae dating back to the early nineteenth century and beyond. A good proportion of the numerous relevant scientific and mainstream literature consulted during this research is internet accessible via the links included with the references. The links included in the 2019 unpublished version of this paper were rechecked to confirm their current accessibility.

Results

In accordance with the previous reduction of the remaining genera of subfamily Magnolioideae (Magnoliaceae) into the genus Magnolia, twenty-six new nomenclatural combinations are formally made by transferring to Magnolia some additional Chinese and Vietnamese taxa from the segregate genera of Manglietia, Michelia and Yulania that were described during the past decade and occasionally earlier, plus a few formerly synonymised, now reinstated taxa.

The following nine new combinations are created from Manglietia, namely Magnolia admirabilis (Y.H. Law & R.Z. Zhou ex L. Fu, Q.W. Zeng & X.M. Hu) C.B. Callaghan & S.K. Png, M. albistaminea (Y.W. Law, R.Z. Zhou & S.X. Qin) C.B. Callaghan & S.K. Png, M. guangnanica (D.X. Li & R.Z. Zhou ex X.M. Hu, Q.W. Zeng & L. Fu) C.B. Callaghan & S.K. Png, M. jinggangshanensis (R.L. Liu & Z.X. Zhang) C.B. Callaghan & S.K. Png, M. maguanica (H.T. Chang & B.L.Chen) C.B. Callaghan & S.K. Png, M. pubipedunculata (Q.W. Zeng & X.M. Hu) C.B. Callaghan & S.K. Png, M. pubipetala (Q.W. Zeng) C.B. Callaghan & S.K. Png, M. rufisyncarpa (Y.W. Law, R.Z. Zhou & F.G. Wang) C.B. Callaghan & S.K. Png and M. sinoconifera (F.N. Wei) C.B. Callaghan & S.K. Png.

Also, twelve new combinations are created from Michelia, namely Magnolia caloptila (Y.W. Law & Y.F. Wu) C.B. Callaghan & S.K. Png, M. caudata (M.X. Wu, X.H. Wu & G.Y. Li) C.B. Callaghan & S.K. Png, M. fallax (Dandy) C.B. Callaghan & S.K. Png, M. gelida (T.B. Zhao, Z.X. Chen & D.L. Fu) C.B. Callaghan & S.K. Png, M. hunanensis (C.L. Peng & L.H. Yan) C.B. Callaghan & S.K. Png, M. maudiae var. rubicunda (T.P. Yi & J.C. Fan) C.B. Callaghan & S.K. Png, M. multitepala (R.Z. Zhou & S.G. Jian) C.B. Callaghan & S.K. Png, M. platypetala (Hand-Mazz.) C.B. Callaghan & S.K. Png, M. puberula (D.L. Fu) C.B. Callaghan & S.K. Png, M. septipetala (Z.L. Nong) C.B. Callaghan & S.K. Png, M. sonlaensis (Q.N. Vu) C.B. Callaghan & S.K. Png and M. xinningia (Y.W. Law & R.Z. Zhou ex Q.X. Ma, Q.W. Zeng, R.Z. Zhou & F.W. Xing) C.B. Callaghan & S.K. Png.

Finally, five new combinations are created from Yulania, namely Magnolia baotaina (D.L. Fu, Q. Zhang & M. Xu) C.B. Callaghan & S.K. Png, M. pendula (D.L. Fu) C.B. Callaghan & S.K. Png, M. pilocarpa var. ellipticifolia (Z.Z. Zhao & Z.W. Xie) C.B. Callaghan & S.K. Png, M. puberula (D.L. Fu) C.B. Callaghan & S.K. Png and M. urceolata (D.L. Fu, B.H. Xiong & X. Chen) C.B. Callaghan & S.K. Png.
Discussion

The transfer of the above twenty-six taxa to Magnolia is necessary following the present near universal acceptance by the scientific community and horticultural industry that the Magnoliioideae is one of two monogeneric subfamilies within Magnoliaceae and the fact that the majority of resulting new combinations and names arising from the relegation of Manglietia and Michelia into Magnolia have previously been made by various authors such as Figlar (2000) for the majority of the Michelia species, with Sima (2001) transferring some additional Michelia species, Kumar (2006) transferring the majority of Manglietia species, Nooteboom transferring a number of species from both the previous genera plus Yulania in Flora of China Vol. 7 (Xia et al. 2008: 49–50) and most recently Callaghan and Png (2013) transferring species from these three genera that were mainly described and named subsequent to the publication of Flora of China.

Conclusions

To maintain these twenty-six predominantly recently described taxa in limbo in segregate genera will contribute to further instability and inevitable confusion in the scientific and popular literature, as well as within the botanical world and the horticultural industry, which has resulted from having two diverse systems operating simultaneously.

The authors would like to take this opportunity to suggest that to further substantiate their now reaffirmed species or varietal status, comparative DNA barcoding (Caddy-Retalic and Lowe 2012), should be undertaken of these and other taxa, often with small remnant populations and/or disjunct geographic distributions, that have been previously subsumed in synonymy under earlier-named species having much larger populations of widespread occurrence. As a result of becoming virtual non-entities, this can be detrimental to their conservation and ultimate survival in nature. Consequently their potential benefits to mankind, such as the medicinal properties that some Magnoliaceae species are known to possess, including present and prospective production of anti-cancer drugs and treatments (He et al. 2017, Huang et al. 2017, Lu et al. 2017, Ma et al. 2020, Prasad and Katiyar 2018, Zhang et al. 2020), are never assessed or realised.

Taxonomic section

Magnolia admirabilis (Y.H. Law & R.Z. Zhou ex L. Fu, Q.W. Zeng & X.M. Hu) C.B. Callaghan & S.K. Png, comb. nov.
urn:lsid:ipni.org:names:77209515-1

Basionym. Manglietia admirabilis Y.H. Law & R.Z. Zhou ex L. Fu, Q.W. Zeng & X.M. Hu, Novon 23(1): 37, fig. 1 (2014).
Chinese name. 奇异木莲 meaning “distinctive Manglietia”

Type. CHINA. Yunnan Province: Maguan County, Gulinqing, Chuntianping, ca. 1300 m, limestone montane evergreen broad-leaved forests, 12 May 1986, Zhou Renzhang 98 (holotype: IBSC n.v.). Guangdong Province: Guangzhou, Magnolia Garden of South China Botanical Garden, ca. 50 m, 3 May 2011, Lin Fu 20110503 (paratype: IBSC n.v.)

Note. There is no data or images held at IBSC for the holotype (Huang Xiangxu, pers. comm., July 2019).

Magnolia albistaminea (Y.W. Law, R.Z. Zhou & X.S. Qin) C.B. Callaghan & S.K. Png, comb. nov.
urn:lsid:ipni.org:names:77209516-1

Basionym. Manglietia albistaminea Y.W. Law, R.Z. Zhou & X.S. Qin. In: X.S. Qin et al., Novon 16: 260, fig. 1 (2006).

Chinese name. 白蕊木莲 meaning “white-stamened manglietia”

Type. CHINA. Guangdong Province: South China Botanical Garden, Guangzhou (collected from plant introduced in 1982 from Mt. Jianfengling, Ledong County, Hainan), 10 May 2001, R.Z. Zhou 130 (holotype: IBSC n.v.; isotype: MO n.v.). Same locality (collected from plant introduced as above) 23 April 1999, R.Z. Zhou 9916 and R.Z. Zhou 0136 (paratypes: IBSC n.v.).

Manglietia fordiana Oliv. var. hainanensis (Dandy) N.H. Xia. In: Xia et al. (2008: 58), p.p. quoad syn. Manglietia albistaminea Y.W. Law et al.

Manglietia fordiana Oliv. In: Sima and Lu (2009: 23) and Sima (2011: 88), both p.p. quoad syn. Manglietia albistaminea Y.W. Law et al.

Note. There are no data or images held at IBSC for the holotype (Huang Xiangxu, pers. comm., July 2019), nor could the isotype be located at MO (Jim Solomon, pers. comm., July 2019).

Magnolia baotaina (D.L. Fu, Q. Zhang & M. Xu) C.B. Callaghan & S.K. Png, comb. nov.
urn:lsid:ipni.org:names:77209518-1

Basionym. Yulania baotaina D.L. Fu, Q. Zhang & M. Xu. In: D.L. Fu et al., Amer. J. Agric. and Forest. 7(5): 231–232, fig. 1 (2019c).

Chinese name. 宝台山玉兰 meaning “Mount Baotai yulania”

Type. CHINA. Yunnan Province: Yongping County, Mount Baotai, 2600 m, 12 March 2017, D.L. Fu 2017031201 (holotype: CAF n.v.). Same locality, 9 September 2017, D.L. Fu 2017093001 (paratype: CAF n.v.).

Note. The type specimens of Yulania baotaina cannot be located at the Beijing herbarium of CAF (Wang Hongbin, pers. comm., March 2020).
New combinations in *Magnolia* (Magnoliaceae) of China and Vietnam

*Magnolia caloptila* (Y.W. Law & Y.F. Wu) C.B. Callaghan & S.K. Png, comb. nov.
urn:lsid:ipni.org:names:77209519-1

**Basionym.** *Michelia caloptila* Y.W. Law & Y.F. Wu. In: Bull. Bot. Res., Harbin 4(2): 152, 154: fig. *s.n.* (1984).

**Chinese name.** 美毛含笑 meaning “beautiful-haired michelia”

**Type.** CHINA. Jiangxi Province: Zixi County, Nangang, Matoushan, 450 m, in woods, 17 September 1980, *Jiangxi gong-da linxue-xi* (JXAU) 80069 (holotype: IBSC! + online image; isotypes: LBG online images).

Digital images of type specimens below accessed 19 March 2019: holotype [IBSC: 0003281]: http://www.docin.com/p-1050989203.html (Sima 2011: 316, photo 2-58).
isotype [LBG: 00004082]: http://www.cvh.ac.cn/spm/LBG/00004082
isotype [LBG: 00004123]: http://www.cvh.ac.cn/spm/LBG/00004123

*Michelia fujianensis* Q.F. Zheng. In: Xia and Deng (2002: 130) and Xia et al. (2008: 83), both p.p. quoad syn. *Michelia caloptila* Y.W. Law & Y.F. Wu.

*Michelia caloptila* Y.W. Law & Y.F. Wu. In: Sima (2011: 234), p.p. excl. syns. *Michelia concinna* H. Jiang & E.D. Liu and *Michelia septipetala* Z.L. Nong.

**Note 1.** *Michelia caloptila* Y.W. Law & Y.F. Wu was listed as a dubious species in Chen and Nooteboom (1993: 1088), in which it was noted that specimens had not been seen. It was subsequently reduced to a synonym of *Michelia fujianensis* as noted above. It is recognised as a genuine species by Law et al. (1996: 189), Liu et al. (2004: 228), Deng and Yang (2015: 167), Yang et al. (2016: 237) and Sima (2011: 234), wherein *M. caloptila* is in *Michelia* subsection *Micheliopsis*, series *Micheliopsis* and *M. fujianensis* is in *Michelia* subsection *Velutinae*. Differences between the abaxial indumentum of the 9–16 cm long leaves of *M. caloptila* and of the 6–11 cm long leaves of *M. fujianensis* are illustrated in Plate 3-2E (*M. caloptila*) and Plate 3-3E (*M. fujianensis*) of Sima (2011: 325; 326). Further substantiation of the specific status of *M. caloptila* is evident from a comparison of its morphological features with those of *M. fujianensis*, as shown in Table 1 on the following page.

**Note 2.** As a consequence of the above substantiation of the species status of *Michelia caloptila*, plus the past reduction to *Magnolia* of the remaining genera of subfamily Magnolioideae, *Michelia caloptila* is here transferred to *Magnolia.*

*Magnolia caudata* (M.X. Wu, X.H. Wu & G.Y. Li) C.B. Callaghan & S.K. Png, comb. nov.
urn:lsid:ipni.org:names:77209521-1

**Basionym.** *Michelia caudata* M.X. Wu, X.H. Wu & G.Y. Li. In: X.H. Wu et al., Acta Bot. Bor-Occid. Sin. 35(5): 1058, fig. 1 (2015).

**Chinese name.** 尾叶含笑 meaning “caudate-lobed michelia”, referring to shape of leaf apex.
Table 1. Differentiating features of the species *Michelia caloptila* and *Michelia fujianensis*.

| Plant feature                  | *Michelia caloptila* Y.W. Law & Y.F. Wu | *Michelia fujianensis* Q.F. Zheng |
|-------------------------------|----------------------------------------|----------------------------------|
| maximum dimensions            | to 15 m × 30 cm dbh†                  | to 16 m × 100 cm dbh§            |
| bark colour                   | grey                                   | greyish-brown (greyish-white¶)  |
| indumentum of branchlets      | brown tomentose                        | densely cinnamon tomentose       |
| indumentum of buds            | brown tomentose                        | densely cinnamon tomentose       |
| leaf shape                    | narrowly elliptic or elliptic          | oblong or narrowly obovate-elliptic |
| leaf dimensions               | 9–16 × 2.5–5 cm                        | 6–11 × 2.5–4 cm                  |
| leaf apex                     | acuminate or caudate-acuminate         | acute                            |
| leaf indumentum adaxially     | entirely glabrous                      | densely short-tomentose at midrib |
| leaf indumentum abaxially     | minutely brown tomentose               | densely ferrugineus or brownish-yellow appressed sericeous |
| secondary lateral leaf veins  | 7–12 pairs                             | 8–9 pairs (not 9–15§¶)           |
| petiole length and indumentum | 5–10 mm, brown tomentose               | 10–15 mm, densely cinnamon tomentose |
| tepal number                  | 6–9†                                   | 15–16 (12–17§)                   |
| gynophore in fruit            | ca. 20 mm long                         | 2–2.5 mm long                    |
| fruit aggregate length        | 4–10 cm                                | 2–3 cm                           |
| mature carpels                | broadly ovate or suborbicular, 1–1.8 cm long with 1–4 seeds | obovoid, 1.5–2 cm × ca. 1.2 cm with 1 seed |
| fruiting period               | September†                             | October–November§                |

The differentiating features of *Michelia caloptila* are cited from Law and Wu (1984) to whom the flower was unknown, Liu et al. (2004: 228) and Yang et al. (2016: 237), with those of *M. fujianensis* from Zheng (1981), supplemented by Law et al. (1996: 189)§ and Liu et al. (2004: 260)¶.

**Type.** CHINA. Zhejiang Province: Qingyuan County, Songyuan town, Jiaokeng village, Guanmenao Conservation Area, in evergreen broad-leaved forests, ravines, 460 m, 12 April 2010, Ye Qing-jiao & Wu Xia-hua 1096 (holotype: ZJFC n.v.). Zhejiang Province: Qingyuan County, Songyuan town, Jiaokeng village, 460 m, 26 September 2010, Ma Dan-dan, Li Gen-you, Wu Ming-xiang QY20100922 (paratype: ZJFC n.v.).

**Magnolia fallax** (Dandy) C.B. Callaghan & S.K. Png, comb. nov.

urn:lsid:ipni.org:names:77209522-1

**Basionym.** *Michelia fallax* Dandy. In: Notes, Roy. Bot. Gard. Edinburgh 16(77): 130 (1928c).

**Chinese names:** 灰绒含笑 meaning “grey-velvet michelia”, referring to the grey indumentum covering branchlets, buds, etc. Also: 大叶含笑 meaning “large-leaved michelia”

**Type.** CHINA. Hunan Province: near Wukang-chow (=Wugang), Yunshan, ca. 950 m, in lofty shady forests, 12 July 1918, Handel-Mazzetti 12281 p.p. quoad fruiting specimen (holotype: WU online image; isotypes: A online image, K online image).
New combinations in *Magnolia* (Magnoliaceae) of China and Vietnam

Digital images of holotype and isotype specimens below accessed 19 March 2019: holotype [WU: 0039581]: http://herbarium.univie.ac.at/database/detail.php?ID=70940 isotype [A: 00039058]: https://s3.amazonaws.com/huhwebimages/6C9726D2157D489/type/full/39058.jpg

*Michelia cavaleriei* Finet & Gagnep. In: Chen and Nooteboom (1993: 1058), Frodin and Govaerts (1996: 55), Wu and Chen (2006: 56), Sima and Lu (2009: 50), Sima (2011: 214), Deng and Yang (2015: 148), each p.p. quoad syn. *Michelia fallax* Dandy.

*Michelia cavaleriei* Finet & Gagnep. var. *cavaleriei*. In: Xia et al. (2008: 84), p.p. quoad syn. *Michelia fallax* Dandy.

**Note 1.** James E. Dandy (1928c: 130), provides background information concerning the division of the fruiting and flowering collections made under number 12281 by Handel-Mazzetti on 12 July 1918 and by his servant Wang Te-hui in April 1919 respectively. From his study of these collections, Dandy came to the realisation that they represented two distinct species, retaining Handel-Mazzetti’s name *Michelia platypetala* for Wang’s flowering material and publishing the name *Michelia fallax* for Handel-Mazzetti’s fruiting material.

**Note 2.** An undated identification label in the name of J.E. Dandy, affixed to the Kew Herbarium isotype specimen of *M. fallax*, indicates his subsequent determination of it as *M. cavaleriei* Finet & Gagnep. This specimen and the other above seen type specimens are all ca. 20 cm in length and 6 cm wide, roughly only about two-thirds of Dandy’s original description of the leaves of *M. fallax* being “usque ad ca. 30 cm longa et 8.5 cm lata” (up to about 30 cm long and 8.5 cm wide). Dandy’s dimensions are not a misprint, since there are a number of *M. fallax* specimens of different provenances (and provinces) posted to the Chinese Virtual Herbarium (CVH) website with leaves approaching this size, which is alluded to in one of this species two Chinese names translating as “large-leaved michelia”. The above noted dimensions must be presumed to be those of the other specimen noted in Dandy’s description, the undated specimen *Dalziel s.n.*, collected at about 900 m near Thai-yong, 97 km west of Swatow (Shantou) on Guangdong’s northeastern coast, sometime between 1895 and 1902 (this specimen was not located for the current research).

**Note 3.** Subsequent to Dandy, *M. fallax* has been listed as a synonym of *M. cavaleriei* and of *M. cavaleriei* var. *cavaleriei* by the authors cited in the section preceding Note 1. However, the present authors consider that while these two species are superficially similar in the shape of their leaves, that the known comparative features recorded in Table 2 below distinguish *Michelia fallax* as an independent species. Also, it does not key out with the original validating descriptions for *Michelia hunanensis* or *M. xinningia* with which it shares synonymy under *M. cavaleriei* var. *cavaleriei* in Flora of China. Therefore, consistent with the past reduction to *Magnolia* of the remaining segregate genera of subfamily Magnolioideae, *Michelia fallax* is here transferred to *Magnolia*. 
### Table 2. Differentiating features of the species *Michelia fallax* and *Michelia cavaleriei*.

| Plant feature                  | *Michelia fallax* Dandy                                                                 | *Michelia cavaleriei* Finet & Gagnep.                        |
|-------------------------------|----------------------------------------------------------------------------------------|-------------------------------------------------------------|
| indumentum of branchlets      | appressed grey tomentose, becoming tawny near apex                                     | silver-grey or rufous appressed pilose⁵                      |
| indumentum of buds            | appressed shiny grey tomentose                                                          | silver-grey or rufous appressed pilose⁵                      |
| leaf shape                    | elliptic-oblong, oblong or narrowly obleng                                             | narrowly oblanceolate-oblong or narrowly obleng⁶            |
| leaf apex                     | acuminate or subacuminate                                                              | acuminate or short-acute⁶                                    |
| leaf base                     | obtuse or sub-rounded                                                                  | cuneate or broadly cuneate⁶                                  |
| leaf dimensions               | up to ca. 30 × 8.5 cm (ca. 29 × 9 cm)                                                  | 10–20 × 3.5–6.5 cm⁵                                         |
| leaf indumentum abaxially     | short appressed grey pubescent                                                         | glaucous, silver-grey or rufous appressed pilose when young⁶|
| secondary lateral leaf veins   | ca. 14–16 pairs                                                                       | 11–15 pairs⁵                                               |
| petiole length and indumentum | ca. 2.5 cm, initially appressed grey or yellow-brown tomentose, later glabrescent     | 2 cm, puberulus (0.7–1.5 cm⁶ silver-grey or rufous appressed pilose⁶) |
| gynoecium indumentum          | appressed grey tomentellous                                                            | glabrous except for few bristly hairs towards apex of carpels⁷ |
| number of ovules              | ca. 10                                                                                 | 2                                                           |
| fruiting peduncle indumentum  | appressed glossy grey or yellowish-brown tomentose                                     | silver-grey or rufous appressed pilose⁶                    |
| fruit aggregate length        | 10–12 cm                                                                              | 5–10 cm⁵                                                   |
| mature carpels length         | up to ca. 2.5 cm                                                                       | 1.5–2 cm⁶                                                  |
| fruiting period               | July                                                                                   | September–October⁷                                        |

The differentiating features of *Michelia fallax*, whose flower is unknown, are cited from Dandy (1928c) and CVH (2017); those of *M. cavaleriei* from Finet & Gagnepain (1906), Law et al. (1996: 184)⁶, Liu et al. (2004: 229)⁶ and Yang et al. (2016: 239)⁹, plus Dandy (1928c: 130)"".

### Magnolia gelida (T.B. Zhao, Z.X. Chen & D.L. Fu) C.B. Callaghan & S.K. Png, comb. nov.

* urn:lsid:ipni.org:names:77209524-1

**Basionym.** *Michelia gelida* T.B. Zhao, Z.X. Chen & D.L. Fu. In: Y.F. Hu et al., Advances Orn. Hort. China 2013: 39–40, fig. 1 (2013).

**Chinese name.** 耐冬含笑 meaning “winter resisting michelia”

**Type.** CHINA. Henan Province: Jinling County, Changge city, cultivated (native to Zhejiang Province: Fuyang County), 24 March 2010, Zhao Tian-bang, Fu Da-li et al. 201003245 (holotype: HEAC, fol, fl. n.v.)

### Magnolia guangnanica (D.X. Li & R.Z. Zhou ex X.M. Hu, Q.W. Zeng & L. Fu) C.B. Callaghan & S.K. Png, comb. nov.

* urn:lsid:ipni.org:names:77209525-1

**Basionym.** *Manglietia guangnanica* D.X. Li & R.Z. Zhou ex X.M. Hu, Q.W. Zeng & L. Fu, Novon 23(2): 172, figs. 1, 2 (2014).
New combinations in *Magnolia* (Magnoliaceae) of China and Vietnam

**Chinese name.**  广南木莲 meaning “Guangnan manglietia”

**Type.**  CHINA. Yunnan Province: Guangnan County, Heizhiguo town and village, Mt. Gulu, in limestone montane evergreen broad-leaved forest, 1710 m, 17 October 1993, *Zhou Ren-zhang & Zeng Qing-wen* 93049 (holotype and isotype: IBSC n.v.). Same locality, 12 May 1992, *D.X. Li & Z.Q. Ouyang* 920512 (paratype: MO n.v.). Same locality 16 April 2003, *R.Z. Zhou* 03046 (paratype: IBSC n.v.). Yunnan Province: Guangnan County, Mount Houshan, near Zhujie village of Zhujie town, 1600 m, 4 October 1993, *R.Z. Zhou* 9304 (paratype: IBSC). Yunnan Province: Kunming Botanical Garden, cultivated, 1 May 2010, *X.M. Hu & Q.W. Zeng* 00166 (paratype: IBSC n.v.).

**Note.**  The holotype and isotype specimens of *Manglietia guangnanica* could not be found by herbarium staff at IBSC, nor could the paratype specimen at MO be located (Jim Solomon, pers. comm., July 2019). However, the paratype that was received from IBSC, *R.Z. Zhou* (*Zhou Ren-zhang*) 9304 collected at 1600 m, inexplicably has the locality and collection date as for the holotype / isotype above and not Mount Houshan on the 4 October 1993 as is noted in the 2014 paper for this paratype.

*Magnolia hunanensis* (C.L. Peng & L.H. Yan) C.B. Callaghan & S.K. Png, *comb. nov.*

urn:lsid:ipni.org:names:77209526-1

**Basionym.**  *Michelia hunanensis* C.L. Peng & L.H. Yan. In: C.L. Peng et al., J. Hunan Forest. Tech. Coll. 1995(1): 15 (1995).

**Chinese name.**  湖南含笑 meaning “Hunan michelia”

**Type.**  CHINA. Hunan Province: Xinning County, without elevation or collection date, *L.H. Yan & C.L. Peng* 93018 (holotype: HFBG n.v.; isotype: HFTC n.v.).

*Magnolia maudiae* (Dunn) Figlar var. *hunanensis* (C.L. Peng & L.H. Yan) Sima (2001: 33).

*Michelia cavaleriei* Finet & Gagnep. In: Xia & Deng (2002: 132) and Sima (2011: 214), both p.p. quoad syn. *Michelia hunanensis* C.L. Peng & L.H. Yan—Sima & Lu (2009: 50), p.p. quoad syns. *Michelia hunanensis* C.L. Peng & L.H. Yan and *Magnolia maudiae* (Dunn) Figlar var. *hunanensis* (C.L. Peng & L.H. Yan) Sima.

*Michelia cavaleriei* Finet & Gagnep. var. *cavaleriei*. In: Xia et al. (2008: 84), p.p. quoad syn. *Michelia hunanensis* C.L. Peng & L.H. Yan.

**Note 1.**  The holotype specimen was irretrievably damaged during repeated relocations of the HFBG herbarium (Yan Lihong, pers. comm.). Photographs were sent in its place.

**Note 2.**  The numerous known differentiating features compiled in Table 3 below confirm *Michelia hunanensis* as an independent species and not a variety of *Magnolia maudiae*, nor a synonym of *Michelia cavaleriei* var. *cavaleriei* as noted above.
Table 3. Differentiating features of *Michelia hunanensis*, *M. maudiae* and *M. cavaleriei*.

| Plant feature                      | *Michelia hunanensis* C.L. Peng & L.H. Yan | *Michelia maudiae* Dunn | *Michelia cavaleriei* Finet & Gagnep. |
|-----------------------------------|--------------------------------------------|-------------------------|---------------------------------------|
| maximum height                    | 20 m                                       | 31 m⁵                   | 10 m⁶                                 |
| indumentum of buds                | greyish-pilose                             | glabrous (covered with white powder⁷) | silver-grey or rufous appressed pilose⁹ |
| leaf shape                        | oblong or broadly oblong                   | oblong-elliptic or occasionally ovate-elliptic⁴ | narrowly oblanceolate-oblong or narrowly oblong⁵ |
| leaf dimensions                   | 13–33 × 6–9 cm                             | 7–18 × 3.5–8.5 cm⁴      | 10–20 × 3.5–6.5 cm⁴                  |
| leaf apex                         | cuspidate                                  | obtuse acuminate (occasionally long-acuminate³) | acuminate or short-acute⁸             |
| leaf base                         | rounded or obtuse                          | glabrous, as is the entire plant⁸, except for the silky grey pubescent stamens⁹ | glaucous and silver-grey or rufous appressed pilose when young⁴ |
| undersides of leaves              | greyish pubescent                         | glabrous, as is the entire plant⁸ | cuneate or broadly cuneate⁹           |
| lateral leaf veins                | 8–14 pairs                                 | 8–12 pairs              | 11–15 pairs⁵                         |
| petiole length and indumentum     | 2–3.5 cm, pilose                           | 2.5–3 cm, glabrous (1–3 cm⁴) | 2 cm, puberulus (0.7–1.5 cm⁶, silver-grey or rufous appressed pilose⁸ |
| tepal number                      | 9                                          | 9–11⁴                  | 10–12⁶                               |
| tepal shape and size (outer 3)    | obovate, 6–7 cm long (width not specified) | obovate, 5–7 × 3.5–4 cm⁴ | obovate-elliptic (2.5–4 cm long⁸)    |
| tepal shape and size (inner 3)    | obovate-lanceolate, 4–4.8 × 1.2–1.4 cm     | obovate, elliptic to broadly spathulate, 4.5–5 × 1.8–2.5 cm⁴ | obovate-elliptic, 2.5 × 1.5 cm        |
| length of stamens                 | ca. 1 cm                                   | 1.5–2.2 cm⁴            | 1.2–1.4 cm⁵                         |
| gynoecium length, shape and indumentum | 1 cm, cylindric, pubescent                 | 1.5–1.8 cm (1.0–1.3 cm, subcylindric⁶), glabrous  | 1 cm, narrowly ovate, with a few hairs only near the carpel apex |
| gynophore length                  | 5–8 mm                                     | ca. 10 mm               | ca. 4 mm⁵                           |
| fruit aggregate length            | 8–17 cm                                    | 10–12(–14) cm³         | 5–10 cm⁶                           |
| flowering period                  | March–April                                | January–March¹¹         | March¹⁵,²²                         |
| fruiting period                   | August–September                           | October–November¹¹      | September–October¹⁵,²²               |

The distinguishing features of *Michelia hunanensis* are cited from Peng et al. (1995). Those of *M. maudiae* are cited from Dunn (1908), supplemented by Chen and Nooteboom (1993:1072)⁵, Deng and Yang (2015: 157)⁶, Law et al. (1996: 179)⁴, Lee (1935: 487)⁴, Liu et al. (2004: 290)⁷ and Yang et al. (2016: 295)⁴, with those of *M. cavaleriei* from Finet and Gagnepain (1906), supplemented by Law et al. (1996: 184)⁵, Liu et al. (2004: 229)⁶ and Yang et al. (2016: 239)⁶.

**Magnolia jinggangshanensis** (R.L. Liu & Z.X. Zhang) C.B. Callaghan & S.K. Png, comb. nov.
urn:lsid:ipni.org:names:77209527-1

**Basionym.** Manglietia jinggangshanensis R.L. Liu & Z.X. Zhang. In: Fedd. Repert. 130(3): 289, 290 fig. 1, 291 fig. 2 (2019)

**Chinese name.** 井冈山木莲 meaning “Jinggangshan manglietia”

**Type.** CHINA. Jiangxi Province: Jinggangshan, in evergreen forest, 980 m, 8 May 2001 (fl.), *R.L. Liu 20010012* (holotype: BJFC; isotypes: PE n.v., K n.v.)
Note. The isotypes at PE and K could not be located (Xiaohua Jin, PE, Beijing, pers. comm., July 2019 and Clare Drinkell, assistant curator, Kew, pers. comm., July 2019).

*Magnolia maguanica* (Chang & B.L. Chen) C.B. Callaghan & S.K. Png, comb. nov. urn:lsid:ipni.org:names:77209528-1

**Basionym.** Manglietia maguanica Chang & B.L. Chen. In: B.L. Chen, Acta Sci. Nat. Univ. Sunyatseni 1988(1): 109 (1988).

**Chinese name.** 马关木莲 meaning “Maguan manglietia”

**Type.** CHINA. Yunnan Province: Maguan County, Bazhai, near Xiaoshan, in woods, ca. 1800 m, 7 October 1986, B.L. Chen & Y.H. Su 86s-053 (holotype: SYS! + online image; isotype: L online image).

Digital image of specimens below accessed 19 March 2019: holotype (SYS): http://www.docin.com/p-1050989203.html (Sima 2011: 312, photo 2-42). isotype [L: L0204985]: http://medialib.naturalis.nl/file/id/L0204985_MLN/format/large?fpi=1

*Manglietia insignis* (Wall.) Blume. In: Chen and Nooteboom (1993: 1044), Frodin and Govaerts (1996: 52), J. Li (1997: 132), Wu and Chen (2006: 10), and Xia et al. (2008: 56), each p.p. quoad syn. *Manglietia maguanica* Chang & B.L. Chen.

*Magnolia insignis* Wall. In: Khuraijam and Goel (2015: 109), p.p. quoad syn. *Manglietia maguanica* Chang & B.L. Chen.

**Note.** *Manglietia maguanica* is listed as a synonym of *M. insignis* in Chen & Nooteboom (1993) and subsequently by the authors noted above. However, both are recognised as independent species in the majority of the more recent Chinese publications, including Liu et al. (2004: 164, 156), Xing et al. (2009: 198, 196), Sima and Lu (2009), Sima (2011: 98, 102), Deng and Yang (2015: 48, 54) and Yang et al. (2016: 192, 181).

*Magnolia maudiae* Dunn (Figlar) var. *rubicunda* (T.P. Yi & J.C. Fan) C.B. Callaghan & S.K. Png, comb. nov. urn:lsid:ipni.org:names:77209530-1

**Basionym.** Michelia maudiae Dunn var. rubicunda T.P. Yi & J.C. Fan. In: J.C. Fan et al., J. Sichuan Forest. Sci. Tech. 30(4): 68, plate 1 (2009).

**Chinese name.** 红花深山含笑 meaning “red-flowered deep mountains michelia”

**Type.** CHINA. Sichuan Province: Dujiangyan, cultivated at the Arboretum of Sichuan Agricultural University, 22 February 2009, T.P. Yi 09001 (holotype: SAUT=SIFS, fl. n.v.). Other specimens recorded: same locality, 13 September 2008, T.P. Yi 08005 (SAUT=SIFS, fr. n.v.). Sichuan Province: Dujiangyan Juyuan Nursery, 20 August 2008, T.P. Yi 08004 (SAUT=SIFS, fr. n.v.). [Introduced from Tongdao County, Hunan Province].
**Magnolia multitepala** (R.Z. Zhou & S.G. Jian) C.B. Callaghan & S.K. Png, comb. nov. urn:lsid:ipni.org:names:77209531-1

**Basionym.** *Michelia multitepala* R.Z. Zhou & S.G. Jian. In: S.G. Jian et al., Ann. Bot. Fenn. 44: 65, fig. 1 (2007).

**Chinese name.** 多瓣含笑 meaning “multi-tepalled michelia”

**Type.** CHINA. Yunnan Province: Xichou County, Fadou Mountain, in moist evergreen broad-leaved forest, 1300–1500 m, March 2003, *R.Z. Zhou 0401* (holotype: IBSC n.v.). Same locality, July 2004, *R.Z. Zhou & S.G. Jian 20040701* (paratype: IBSC n.v.).

*M. macclurei* Dandy. In: Xia et al. (2008: 85), p.p. quoad syn. *Michelia multitepala* R.Z. Zhou & S.G. Jian.

*M. doltsopa* Buch.-Ham. ex DC. In: Sima and Lu (2009: 53) and Sima (2011: 196), both p.p. quoad syn. *Michelia multitepala* R.Z. Zhou & S.G. Jian.

**Note 1.** There is no data or images held at IBSC for the holotype (Huang Xiangxu, pers. comm., July 2019).

**Note 2.** The authors of *Michelia multitepala* noted that it closely resembles *M. ingrata* B.L. Chen & S.C. Yang and *M. macclurei* Dandy, but recorded in their comparative diagnosis sufficient morphological differences with these species to substantiate and name *Michelia multitepala* as a distinct new species. *M. multitepala* is recorded as a synonym of *M. doltsopa* Buch.-Ham. ex DC. by the above noted authors. However, in Liu’s classification system of Magnoliaceae (Liu et al. 2004: 381), both *M. macclurei* and *M. ingrata* are placed in *Michelia* section *Anisochlamys* Dandy while *M. doltsopa* is placed in *Michelia* section *Michelia*.

**Note 3.** *Michelia multitepala* is sufficiently distinct from *M. doltsopa* (Candolle 1818), to justify its species status, as shown by their known differentiating features compiled in Table 4 below. Additionally, *M. multitepala* is known only to occur at 1300–1500 m on Fadou Mountain in the southeast of Yunnan Province, whereas *M. doltsopa* occurs between 1500–2300 m throughout its widely dispersed geographical area from Yunnan to N Myanmar, NE India, Bhutan and SE Xiyang (Liu et al. 2004: 242), or 2100–2500 m from central Nepal and Burma (Myanmar) to Sichuan and Yunnan (Poulunin and Stainton 1999: 19). As a consequence of the substantiation of its specific status, *Michelia multitepala* is here transferred to *Magnolia* in accordance with the past reduction of the remaining genera of subfamily Magnolioideae to the genus *Magnolia*.

**Magnolia pendula** (D.L. Fu) C.B. Callaghan & S.K. Png, comb. nov. urn:lsid:ipni.org:names:77209533-1

**Basionym.** *Yulania pendula* D.L. Fu. In: D.L. Fu et al., Amer. J. Agric. and Forest. 7(5): 220–221, figs. 5 & 6 (2019c).

**Type.** CHINA. Sichuan Province: Beichuan County, Guixi town, Linfeng village, Yaowang Valley, secondary forest, 1200 m, 2 April 2012, *D. L. Fu 2012040201* (holo-
Table 4. Differentiating features of the species *Michelia multitepala* and *M. doltsopa*.

| Plant feature | *Michelia multitepala* R.Z. Zhou & S.G. Jian | *Michelia doltsopa* Buch.-Ham. ex DC. |
|---------------|---------------------------------------------|----------------------------------------|
| tree dimensions | 15 m tall, 30 cm diameter | 30 m tall\(^{15}\), 1 m diameter |
| indumentum of leaf buds | rufous appressed-tomentellous | rufous or greyish-white appressed pubescent\(^2\), orange-rusty hairs on pale green scales\(^4\) |
| leaf texture | leathery | thinly leathery\(^6\) |
| leaf shape and dimensions | elliptic, 14–18 × 5–6.5 cm | elliptic-oblong, 10–22 × 5–7 cm\(^9\) (10–18(–22) × 3.5–8 cm\(^{13}\)) |
| leaf apex | acuminate or short acuminate | short acute or long acute\(^3\) |
| leaf base | broadly cuneate | obtuse or broadly cuneate\(^3\) |
| leaf beneath | pale green | pale green and somewhat glaucous beneath\(^4\), glaucous with orange pubescent veins\(^4\) |
| lateral leaf veins | 13–15 pairs | 10–14 pairs\(^{3}\) |
| petiole length and indumentum | 1.5–3 cm, rufous appressed tomentellous | 1–2 cm\(^{12}\), slightly silky grey pubescent\(^5\), later glabrescent |
| stipular scars | none | to ca. 1/5 of petiole length\(^3\) |
| peduncle indumentum | rufous appressed-tomentellous | densely appressed-villos\(^3\) |
| tepal number, shape and size | 11–12, oblong-lanceolate, 4–6.5 × 0.8–1.7 cm | (8–)12–16, narrowly obovate spoon-shaped 3.6–7.5 × 1.4–3 cm\(^{11}\) |
| stamen length | 14–16 mm | 8–15 mm\(^{17}\) |
| gynoecium length | 2–2.5 cm | 1.5–2 cm\(^{7}\) |
| fruit aggregate length | 8–15 cm | 4–7 cm\(^{9}\) (6–10 cm\(^{13}\)) |
| shape of carpels | ellipsoid | globose\(^7\) |
| flowering period | February–March | March–April\(^3\) |

The differentiating features of *Michelia multitepala* are from Jian et al. (2007); those of *Michelia doltsopa* are from Candolle (1818), supplemented by Law et al. (1996: 159)\(^7\), Lee (1935: 483)\(^7\), Liu et al. (2004: 242)\(^8\), Mitchell and Coombes (1998: 181)\(^9\), Polunin and Stainton (1999)\(^9\), Spongberg (1998: 135)\(^{11}\) and Yang et al. (2016: 257)\(^{12}\).

type: CAF n.v.). Same locality, 13 September 2012, *D. L. Fu 2012091308* (paratype, CAF n.v.).

**Chinese name.** 垂枝玉兰 meaning “weeping yulan”

**Note.** The type specimens of *Yulania pendula* cannot be located at the Beijing herbarium of CAF (Wang Hongbin, pers. comm., March 2020).

*Magnolia pilocarpa* Z.Z. Zhao & Z.W. Xie var. *ellipticifolia* (D.L. Fu, T.B. Zhao & J. Zhao) C.B. Callaghan & S.K. Png, comb. nov.
urn:lsid:ipni.org:names:77209534-1

**Basionym.** *Yulania pilocarpa* (Z.Z. Zhao & Z.W. Xie) D.L. Fu var. *ellipticifolia* D.L. Fu, T.B. Zhao & J. Zhao. In: D.L. Fu et al., Bull. Bot. Res., Harbin 27(5): 526; figs. 1C–D (2007).

**Chinese name.** 椭圆叶罗田玉兰 meaning “elliptical-leaved Luotian yulan”

**Type.** CHINA. Henan Province: Xinzheng City, 23 March 2002, *T.B. Zhao et al. 200203231* (holotype: HEAC, flos. n.v.). Same locality, 21 September 2002, *T.B. Zhao et al. 200209211* (paratype: HEAC, folia, ramulus et peruli-alabastrum; n.v.).
Yulania pilocarpa (Z.Z. Zhao & Z.W. Xie) D.L. Fu. In: Xia et al. (2008: 76), p.p. quoad syn. Yulania pilocarpa var. ellipticifolia D.L. Fu et al.

Yulania denudata var. pilocarpa (Z.Z. Zhou & Z.W. Xie) Sima & S.G. Lu. In: Sima (2011: 163), p.p. quoad syn. Yulania pilocarpa var. ellipticifolia D.L. Fu et al.

**Note 1.** The genus *Yulania* Spach (Spach 1839) was resurrected in Flora of China (Xia et al. 2008), but there has not been universal acceptance of this in China, with *Yulania* again recognised as a subgenus under *Magnolia* (Ying et al. 2009, Yang et al. 2016).

**Note 2.** *Yulania pilocarpa* var. *ellipticifolia* is sufficiently distinguished from *Y. pilocarpa* to maintain its varietal status by the following features: indumentum of the branchlets (densely pubescent, later glabrous vs. glabrous [Law et al. 2004: 93]); the leaf shape (elliptical, rarely inverted-triangular vs. obovate to broadly obovate [Law et al. 2004]) and the shape and size of the inner 6 tepals (petaloid, 5–7 × 2–3.2 cm vs. nearly spatulate, 7–10 × 3–5 cm [Law et al. 2004]). Additionally, the two taxa are geographically isolated (central Henan Province vs. SE Hubei Province). The illustration of the leaves accompanying the original description of *Yulania pilocarpa* var. *ellipticifolia* (Fu et al. 2007: fig.1D) shows them to be in stark contrast to the leaves of *Magnolia pilocarpa* illustrated in Liu et al. (2004: 93).

**Magnolia platypetala** (Hand.-Mazz.) C.B. Callaghan & S.K. Png, comb. nov.

urn:lsid:ipni.org:names:77209535-1

**Basionym.** *Michelia platypetala* Hand.-Mazz. In: Handel-Mazzetti, Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 58(12): 89 (1921).

**Chinese name.** 阔瓣含笑 meaning “broad-petalled (tepalled) michelia”

**Type.** CHINA. Hunan Province: Yunshan, near Wukang-chow (= Wugang), ca. 950 m, lofty shady forests, April 1919, Wang Te-Hui (De-Hui Wang) 12281 (p.p. quoad flowering material only, in Handel-Mazzetti, 1921) (holotype: W (possibly destroyed in WWII); isotypes: A online image!, K online image!, SYS!, WU online image!).

Digital images of isotype specimens below accessed 19 March 2019:

isotype [A: 00039059]: http://kiki.huh.harvard.edu/databases/image.php?id=304833

isotype [K: K000681459]: http://apps.kew.org/herbcat/getImage.do?imageBarcode=K000681459

isotype [WU: 0039591]: http://herbarium.univie.ac.at/database/detail.php?ID=71255

*Michelia cavaleriei* Finet & Gagnep. In: Chen and Nooteboom (1993: 1058), Frodin and Govaerts (1996: 55), Wu and Chen (2006: 56), each p.p. quoad syn. *Michelia platypetala* Hand.-Mazz.

*Magnolia maudiae* var. *platypetala* (Hand.-Mazz.) Sima (2001: 33).

*Magnolia cavaleriei* var. *platypetala* (Hand.-Mazz.) Noot. In: Xia et al. (2008: 49).

*Michelia cavaleriei* var. *platypetala* (Hand.-Mazz.) N. H. Xia. In: Xia et al. (2008: 85).
New combinations in *Magnolia* (Magnoliaceae) of China and Vietnam

**Note 1.** Dandy (1928c: 130) provides relevant background information concerning the type collections of *Michelia platypetala* and *M. fallax* from the same general locality in Hunan Province in consecutive years and how they were both initially confused as the former species.

**Note 2.** As recorded in the synonymy section preceding Note 1, *Michelia platypetala* is noted as a synonym of *M. cavaleriei* and has been made a variety of both *Magnolia maudiae* and *Michelia cavaleriei*, the 2001 and 2008 publications with a noted elevational range of 1200–1500 m despite Handel-Mazzetti’s type collection being made at ca. 950 metres. However, *M. platypetala* retains its species status in Law et al. (1996: 177), Liu et al. (2004: 306), Sima (2011: 219), Deng and Yang (2015: 144) and Yang et al. (2016: 306).

**Note 3.** Grimshaw and Bayton (2009: 500) record a personal communication received from Richard Figlar in 2007 advising that “this taxon (*Magnolia maudiae* var. *platypetala*) probably ought to be recognised at the specific level, as *Magnolia platypetala*, as it differs considerably from *M. maudiae* both in its hairiness and its later bud-break”. Sima (2011: 327), illustrates the contrasting difference between the indumentum of the undersurfaces of the leaves of *M. platypetala* (Plate 3-4H) and that of the leaves of *M. maudiae* (Plate 3-4C). Additionally, in a study by Zhang and Xia (2007) on leaf architecture and its taxonomic significance in respect of subtribe Micheliinae of Magnoliaceae, the pronounced contrast in the leaves of *Michelia platypetala* and *M. cavaleriei* as revealed by stereoscopic magnified imaging (shown at figs. 36 and 37 in their paper), resulted in these authors concluding that these two taxa should be recognised as independent species”. It is apparent that there is now an almost unanimous consensus of the species status of *Michelia platypetala*, which is confirmed by the comparison of its morphological features with those of *M. cavaleriei* compiled in Table 5 below. In view of its distinctive characteristics and accepting the majority recognition by the above-mentioned Chinese authors of *Michelia platypetala* as a genuine species, it is here transferred to *Magnolia* as a consequence of the past reduction of the remaining genera of subfamily Magnolioideae to the genus *Magnolia*.

*Magnolia puberula* (D.L. Fu) C.B. Callaghan & S.K. Png, comb. nov.
urn:lsid:ipni.org:names:77209537-1

**Basionym.** *Yulania puberula* D.L. Fu. In: D.L. Fu et al., Amer. J. Agric. and Forest. 7(5): 208–209, fig. 3 (2019a).

**Chinese name.** 短毛玉兰 meaning “short-haired yulan”

**Type.** CHINA. Hubei Province, Wudang Mountain, ca. 970 m, 26 March 2018, D.L. Fu 2018032601 (holotype: CAF, fl. n.v.). Same locality, 8 October 2017, D.L. Fu 2017100801 (paratype: CAF, fr. n.v.).

**Note.** The type specimens of *Yulania puberula* cannot be located at the Beijing herbarium of CAF (Wang Hongbin, pers. comm., March 2020).
Table 5. Differentiating features of the species *Michelia platypetala* and *M. cavaleriei*.

| Plant feature                      | *Michelia platypetala* Hand-Mazz. | *Michelia cavaleriei* Finet & Gagnep. |
|------------------------------------|-----------------------------------|--------------------------------------|
| life form                          | medium-sized tree to 20 m         | small-sized tree 7–10 metres         |
| indumentum of branchlets           | rufous sericeous                  | silver-grey or rufous appressed pilose⁴|
| indumentum of buds                 | rufous sericeous                  | silver-grey or rufous appressed pilose⁴|
| leaf shape                         | oblong or elliptic-oblong         | narrowly oblong or narrowly oblanceolate-oblong⁴|
| leaf dimensions                    | 11–18(–20) × 4–6(–7) cm (12–17 × 4.5–6.5 cm³) | 10–20 × 3.5–6.5 cm⁴ (8–21 × 2.5–5 cm³) |
| leaf apex                          | acuminate or abruptly narrowed short-acuminate | acuminate or short-acute⁴|
| leaf base                          | broadly cuneate or obtuse         | cuneate or broadly cuneate⁴         |
| leaf indumentum abaxially          | greyish-white appressed puberulent or rufous appressed hairs | silver-grey or rufous pilose, appressed when young⁴|
| lateral leaf veins                 | 8–14 pairs                        | 11–15 pairs³                        |
| petiole length                     | 2–3 cm¹                          | 2 cm (0.7–1.5 cm³)                 |
| pedicel (peduncle) length          | 0.5–2 cm                          | 1.5–2.5 cm³                        |
| bract scar number                  | 2                                | 2–3                                |
| tepal number and shape             | 9 (9–11°), obovate-elliptic or elliptic | ca. 12 (10–12°): obovate-elliptic⁸|
| tepal length (outer 3)             | 5–7 cm                            | 2.5 cm (2.5–4 cm³)                 |
| stamen / anther length             | ca. 1 cm / ca. 6 mm               | 1.2–1.4 cm / ca. 8 mm³             |
| gynoecium shape, length and indumentum | cylindric, 6–8 mm, grey or golden puberulent | narrowly ovoid, ca.10 mm, glabrous except for few bristly hairs towards apex of the carpels¹|
| gynophore length                   | ca. 5 mm                          | ca. 4 mm⁸                          |
| number of ovules                   | ca. 8 in each immature carpel     | 2 in each immature carpel           |
| mature carpels shape and size      | ellipsoid, rarely globose or ovoid, 1.5–2(–2.5) × 1–1.5 cm | obovoid or ellipsoid, 1.5–2 cm long³|
| flowering period                   | March–April                       | March³                             |

The distinguishing features of *Michelia platypetala* are mainly cited from Law et al. (1996: 177), Liu et al. (2004: 306) and Yang et al. (2016: 306)¹, because the description of *M. platypetala* Hand.-Mazz. (1921) includes the composite description of 2 species, including for the fruit of the subsequently named *M. fal-lax*. The features of *M. cavaleriei* are from Finet and Gagnepain (1906), supplemented by Dandy (1928c: 130)², Law et al. (1996: 184)³, Liu et al. (2004: 229)⁴ and Yang et al. (2016: 239)⁵.

**Magnolia pubipedunculata** (Q.W. Zeng & X.M. Hu) C.B. Callaghan & S.K. Png, comb. nov.

urn:lsid:ipni.org:names:77209538-1

Basionym. **Manglietia pubipedunculata** Q.W. Zeng & X.M. Hu. In: X.M. Hu et al., PloS ONE l4 (3): 4–5, fig. 1 (e0210254: 2019). [13 March 2019 – epublished]

**Chinese name.** 柔毛花梗木莲 meaning “pubescent-peduncled manglietia”

**Type.** CHINA. Yunnan Province: Wenshan Prefecture, Maguan County, Miechang Town, Daxinzhai Village, Donggualin, Huashikeng, evergreen broad-leaved forests,
New combinations in *Magnolia* (Magnoliaceae) of China and Vietnam

1453 m, 104°05′21″E; 22°54′50″N, 14 May 2004, Q.W. Zeng 89 (holotype: IBSC n.v.). Same locality, 9 September 2003, Q.W. Zeng 80 (paratype: IBSC n.v.).

**Note.** There are no data or images held at IBSC for the holotype (Huang Xiangxu, pers. comm., July 2019).

*Magnolia pubipetala* (Q.W. Zeng) C.B. Callaghan & S.K. Png, comb. nov.

urn:lsid:ipni.org:names:77209539-1

**Basionym.** *Manglietia pubipetala* Q.W. Zeng. In: Q.W. Zeng et al., Pakistan J. Bot. (6): 1917, 1919 + 1918, fig. 1 (2007).

**Chinese name.** 毛瓣木莲 meaning “hairy-tepals manglietia” (this Chinese name is often erroneously applied to *Manglietia rufibarbata* which has glabrous tepals)

**Type.** CHINA. Yunnan Province: Maguan County, Bazhai, evergreen broad-leaved forests, ca. 1500 m, 14 May 2002, Ren-zhang Zhou 0256 (holotype: IBSC online image!). Yunnan Province: Xichou County, Fadu, Hemawan, evergreen broad-leaved forests, ca. 1600 m, 2 May 1979, Gao Ting-xiang & Zhu Dai-qing 05 (paratype: IBSC n.v.). Yunnan Province: Kunming Botanical Garden, introduced 1987 from Yunnan Province’s Malipo County, Jingchang, evergreen broad-leaved forests, 1400 m, 3 May 2003, Zheng Qing-wen 67 (paratype: IBSC).

holotype (IBSC): http://www.docin.com/p-1050989203.html (Sima 2011: 313, photo 2-48).

*Manglietia rufibarbata* Dandy. In: Xia et al. (2008: 60), Sima and Lu (2009: 30) and Sima (2011: 68), each p.p. quoad syn. *Manglietia pubipetala* Q.W. Zeng.

**Note.** *Manglietia pubipetala* Q.W. Zeng is considered as conspecific with *M. rufibarbata* Dandy by the above authors. However, *M. pubipetala* can be sufficiently differentiated from *M. rufibarbata* Dandy to justify its species status, as shown by the comparative morphological features included in Table 6 on the following page (adapted from Table 1, Zeng et al. 2007). *M. pubipetala* is therefore transferred to *Magnolia* consistent with the past reduction of the remaining genera of subfamily Magnolioideae to the genus *Magnolia*.

*Magnolia rubriflora* (Y.W. Law & R.Z. Zhou ex F.G. Wang, Q.W. Zeng, R.Z. Zhou & F.W. Xing) C.B. Callaghan & S.K. Png, comb. nov.

urn:lsid:ipni.org:names:77209540-1

**Basionym.** *Michelia rubriflora* Y.W. Law & R.Z. Zhou ex F.G. Wang et al., Pakistan J. Bot. 37(3): 559, fig. 1 (2005).

**Chinese name.** 红花含笑 meaning “red-flowered michelia”

**Type.** CHINA. Hainan: Mount Jianfengling, 500–600 m, 31 October 2001, Zhou Ren-zhang 0265 (holotype: IBSC n.v.). Guangdong Province: Guangzhou, Magnolia
Table 6. Differentiating features of species *Manglietia pubipetala* and *M. rufibarbata*.

| Plant feature                      | *Manglietia pubipetala* Q.W. Zeng | *Manglietia rufibarbata* Dandy |
|------------------------------------|-----------------------------------|---------------------------------|
| indumentum of branchlets           | brown villose                     | densely rufous villose          |
| leaf shape                         | narrowly obovate-elliptic          | oblanceolate or oblanceolate-oblong or obvate-oblong |
| leaf apex                          | caudate-acuminata                 | acuminate or subacuminata       |
| leaf base                          | cuneate                           | cuneate or obtuse or occasionally rounded |
| leaf dimensions                    | 13–17.5 × 4.5–6 cm                | 10–25 × 4–9 cm†                 |
| leaf indumentum abaxially          | glaucous, densely brown villose    | rufous pubescent, especially near midrib |
| leaf texture                        | papery                            | thinly leathery                 |
| secondary lateral leaf veins        | ca. 10–12 pairs                   | ca. 12–18 pairs                 |
| petiole length / indumentum        | 1.2–1.5 cm, brown villose         | up to 3 cm, rufous villose or tomentose |
| stipules                           | brown villose, adnate to petiole   | stipules externally densely rufous villose, adnate to petiole only lower 1/3 |
| tepal number                       | 9                                 | 11 (9–12)†                      |
| tepal size (outer 3) and indumentum| 3.8–4.0 × 2.5–2.7 cm, pale brown pubescent | ca. 3 × 2 cm†, glabrous‡        |
| stamen scars length                | 6–7 mm                            | ca. 10–12 mm                    |
| gynoecium shape                    | narrowly obovoid-ellipsoid         | ovoid-oblong                    |

The differentiating features of *Manglietia pubipetala* are from Zeng et al. (2007) and those of *M. rufibarbata* are from Dandy (1928), supplemented by Liu et al. (2004: 190)†, Zeng et al. (2007)‡.

Garden of Guangdong Forest Research Institute, 8 October 2001, *Zhou Ren-zhang 0265b* (paratypes: IBSC!; P online image!).

Digital image of paratype specimen below accessed 19 March 2019:
paratype [P: P00852399]: http://mediaphoto.mnhn.fr/media/1445779250360OrFu tLDauT0PI7UU

*Michelia mediocris* Dandy. In: Xia et al. (2008: 85), p.p. quoad syn. *Michelia rubriflora* Y.W. Law & R.Z. Zhou.

**Note.** While *Michelia rubriflora* is noted as a synonym of *M. mediocris* in Flora of China (Xia et al. 2008), the present authors agree with Wang and co-authors that *Michelia rubriflora* can be more than sufficiently differentiated from *M. mediocris* by the diagnostic features of these two species included in Table 1 of their paper (Wang et al. 2005), to substantiate its species status. A more comprehensive analysis of their differentiating features is compiled in Table 7 below. *Michelia rubriflora* also does not key out with the original validating description for *M. subulifera* (Dandy 1930:212), with which it shares synonymy under *M. mediocris* in Flora of China. Evidently an independent species, *Michelia rubriflora* is transferred in the present paper to the genus *Magnolia* by reason of the past reduction of the remaining genera of subfamily Magnolioideae to that genus.
Table 7. Differentiating features of the species *Michelia rubriflora* and *M. mediocris*.

| Plant feature                  | *Michelia rubriflora* Y.W. Law & R.Z. Zhou                          | *Michelia mediocris* Dandy                        |
|--------------------------------|---------------------------------------------------------------------|-------------------------------------------------|
| tree dimensions                | to 15 m x 25 cm dbh                                                  | 35 m x 90 cm dbh\(^1\) (30 m x 190 cm dbh)\(^2\) |
| indumentum of buds             | greyish-white or pale brown appressed pilose                        | rufous appressed puberulent\(^4\)                |
| indumentum of branchlets       | greyish-white or pale brown appressed pilose                        | appressed grey or yellowish-brown tomentose      |
| leaf shape                     | ovate-elliptic                                                      | elliptic or elliptic-oblong                      |
| leaf dimensions                | 5–9 x 2.5–3.5 cm                                                    | 6–13 x 3–5 cm\(^3\)                             |
| leaf indumentum abaxially      | greyish-white or pale brown appressed pilose                        | initially appressed greyish pubescent (greyish-white appressed puberulent)\(^7\) |
| leaf texture                   | leathery                                                            | thinly leathery\(^9\)                            |
| lateral leaf veins             | 9–11 either side of midrib                                          | 12–15 either side of midrib                      |
| stipular scars                 | 1–2 mm long                                                         | none\(^4\)                                      |
| petiole length and indumentum  | 1–2.5 cm, greyish-white or pale brown appressed pilose              | 1.5–3 cm\(^4\), initially appressed grey tomentellous, then glabrescent |
| tepal number /colour           | 9, red                                                              | 9–10\(^6\), white\(^4\)                         |
| tepal size and shape           | 2.5–3.5 x 1.0–1.2 cm, lanceolate                                    | 1.8–2.2 x 0.5–0.8 cm, spathulate\(^5\)           |
| stamen length /colour          | 1.5–1.7 cm, red                                                     | 1.0–1.5 cm\(^2\), yellowish-green               |
| gynophore                      | not exserted above androecium                                       | extended well above androecium (illustration)\(^8\) |
| flowering period               | October–November                                                   | December–January\(^9\) [China]                   |
| fruiting period                | October–November of the next year                                   | September–October\(^9\) [Vietnam]                |

The differentiating features of *Michelia rubriflora* are from F.G. Wang et al. (2005) and those of *M. mediocris* are from Dandy (1928a), supplemented by Chen and Nooteboom (1993: 1073)\(^1\), Deng and Yang (2015: 142)\(^3\), Law et al. (1996: 180)\(^6\), Liu et al. (2004: 292)\(^7\), Sam et al. (2004)\(^8\).

**Magnolia rufisyncarpa** (Y.W. Law, R.Z. Zhou & F.G. Wang) C.B. Callaghan & S.K. Png, comb. nov.

urn:lsid:ipni.org:names:77209541-1

**Basionym.** *Manglietia rufisyncarpa* Y.W. Law, R.Z. Zhou & F.G. Wang. In: F.G. Wang et al., Nordic J. Bot. 24(5): 519, fig. 1 (2004).

**Chinese name.** 红雌蕊木莲 meaning “red gynoecium manglietia”

**Type.** CHINA. Yunnan Province: Wenshan, Mount Laojun, 1600 m, 12 May 2001, Zhou Ren-zhang 008 (holotype IBSC!; isotype: IBSC n.v.). Same locality, 1800 m, 26 April 2001, Zhou Ren-zhang 0134 (paratype: IBSC n.v.). Guangdong Province: South China Botanical Garden, 30 April 1997, Zhou Ren-zhang 134 (paratypes: IBSC n.v.; P online image!). Digital image of paratype specimen below accessed 15 March 2020:

paratype [P: P00634914]: [http://mediaphoto.mnhn.fr/media/1443127138308WwtO3rNrsfBvSzZP](http://mediaphoto.mnhn.fr/media/1443127138308WwtO3rNrsfBvSzZP)

*Manglietia insignis* (Wall.) Blume. In: Xia et al. (2008: 56), Sima and Lu (2009: 26) and Sima (2011: 102), each p.p. quoad syn. *Manglietia rufisyncarpa* Y.W. Law et al.
Magnolia insignis Wall. In: Khuraijam and Goel (2015: 109), p.p. quoad syn. Manglietia rufisyncarpa Y.W. Law, R.Z. Zhou & F.G. Wang.

Note. Manglietia rufisyncarpa is listed as a synonym of M. insignis in Flora of China (Xia et al. 2008), by Sima and Lu (2009) and by Sima (2011). However, the present authors agree with Wang and co-authors that M. rufisyncarpa can be more than sufficiently differentiated from M. insignis (Wall.) Bl. by the diagnostic characters of these two species compiled by Wang et al. (2004: Table 1), to substantiate its independent species status. Additionally, M. rufisyncarpa flowers from April–May whereas M. insignis flowers from May–June (Liu et al. 2004: 156). Also, among the many Manglietia photos in Magnolias of China, the bright red gynoecium of this species, alluded to in its Chinese name, is particularly noticeable as one of only a few exhibiting this colour, with M. insignis displaying a green gynoecium. Manglietia rufisyncarpa also does not key out with the original validating descriptions for M. maguanica Chang & B.L. Chen, M. yunnanensis Hu or Magnolia shangpaensis Hu, with which it shares synonymy under Manglietia insignis in Flora of China. In view of the above, M. rufisyncarpa is transferred in the present paper to Magnolia, consistent with the past reduction of the remaining genera of subfamily Magnolioideae to the genus Magnolia.

Magnolia septipetala (Z.L. Nong) C.B. Callaghan & S.K. Png, comb. nov.
urn:lsid:ipni.org:names:77209542-1

Basionym. Michelia septipetala Z.L. Nong. In: Guihaia 13(3): 220–221, fig. 1 (1993).

Chinese name. 七瓣含笑 meaning “seven-petals (tepals) michelia” (the tepals in fact are recorded as 7–9)

Type. CHINA. Jiangxi Province: Xinfeng County, Jinpen Shan, in woods, 21 May 1986, Nong Zhi-lin 086067 (holotype: IBK, fl. white n.v.). Other specimens recorded:
Same locality? Nong Z.L. 086167. Jiangxi Province: Shangyou County, Wuzhifeng, Guangu Shan, 670 m, 23 November 1976, Nong Z.L. 760347 (JXAU online images).
Digital images of specimen 760347 with collector noted as Shi Xinghua, accessed 19 March 2019:
[JXAU: 0001182]: http://www.cvh.ac.cn/spm/JXAU/JXAU0001182
[JXAU: 0001183]: http://www.cvh.ac.cn/spm/JXAU/JXAU0001183
[JXAU: 0001184]: http://www.cvh.ac.cn/spm/JXAU/JXAU0001184

Michelia fujianensis Q.F. Zheng. In: Xia and Deng (2002: 130) and Xia et al. (2008: 83), both p.p. quoad syn. Michelia septipetala Z.L. Nong.

Michelia caloptila Y.W. Law & Y.F. Wu. In: Sima (2011: 234), p.p. quoad syn. Michelia septipetala Z.L. Nong.

Note. The holotype specimen of Michelia septipetala cannot be found at IBK (Xu Wei-bin, pers. comm., July 2019). However, M. septipetala can be easily differentiated from both M. fujianensis and M. caloptila, the 2 species under which it is noted in synonymy above, by the comparison of their morphological and phenological characteristics summarised in Table 8 below.
Table 8. Differentiating features of *Michelia septipetala*, *M. fujianensis* and *M. caloptila*.

| Plant feature | *Michelia septipetala* Z.L. Nong | *Michelia fujianensis* Q.F. Zheng | *Michelia caloptila* Y.W. Law & Y.F. Wu |
|---------------|---------------------------------|---------------------------------|----------------------------------------|
| maximum height | 28 m (30 m†)                    | to 16 m§                        | ca. 15 m¶                              |
| bark colour    | greyish-white                   | greyish-brown                   | grey                                   |
| indumentum of buds | densely ferrugineus-tomentose | densely cinnamon-coloured tomentose | brown tomentose                          |
| indumentum of branchlets | densely ferrugineus-tomentose | densely cinnamon-coloured tomentose | brown tomentose                          |
| leaf shape     | oblong-elliptic                 | oblong or narrowly obovate-elliptic | narrowly elliptic or elliptic           |
| leaf dimensions | 8–16 × 2.8–5.5 cm              | 6–11 × 2.5–4 cm                 | 9–16 × 2.5–5 cm                        |
| leaf apex / base | short acuminate               | acute / rounded               | acuminate or caudate-acuminate / cuneate |
| leaf indumentum axially | almost glabrous           | densely short-tomentose at midrib | glabrous                               |
| leaf indumentum abaxially | ferrugineus-pubescent, denser at midrib | densely ferrugineus or brownish-yellow appressed sericeous | minutely brown tomentose                |
| lateral leaf veins | 11–13 pairs                   | 8–9 pairs                     | 7–12 pairs                             |
| petiole length / indumentum | 5–7 mm, densely ferrugineus pubescent | 10–15 mm, densely cinnamon tomentose | 5–10 mm, brown tomentose               |
| peduncle indumentum | densely ferrugineus-tomentose | densely cinnamon-coloured tomentose | not known                              |
| tepal number and shape | 7–9: external 3 tepals obovate, internal tepals narrowly obovate | 15–16: spathulate-oblong (12–17, outer 3 tepals narrowly obovate, inner tepals obovate, or narrowly ovate§) | 6–9: obovate-oblong§                     |
| stamen number and length | ca. 20, 10–15 mm              | number not known, 4–5.5 mm     | ca. 35 (photo§), length not known       |
| filament length | 4–5 mm                         | 1–1.5 mm                      | not known                              |
| gynoecium length | narrowly cylindric, ca. 20 mm   | cylindric, ca. 5 mm            | not known                              |
| gynophore length | ca. 8 mm                       | ca. 1 mm                      | not known                              |
| immature carpels | ca. 20, densely yellow-brown sericeous, with 2–3 ovules each carpel | pubescent, most aborted | not known                              |
| gynophore in fruit | yellow-brown tomentose, 18–25 mm long | pilose, 2–2.5 mm long | ca. 20 mm long                         |
| fruit aggregates | 7–13 cm long                   | 2–3 cm                        | 4–10 cm long                           |
| mature carpels | sessile, oblong or rounded, 1–1.8 × 0.9–1.3 cm with 1–3 seeds | obovoid, 1.5–2 cm × ca. 1.2 cm with 1 seed | broadly ovate or suborbicular, 1–1.8 cm long with 1–4 seeds. |
| flowering period | May (–June?)                   | January–February§              | not known                              |
| fruiting period | November                        | October–November§              | September§                             |

The differentiating features of *Michelia septipetala* are cited from Nong (1993) and Liao and Guo (2010)†; those of *Michelia fujianensis* from Zheng (1981)‡, supplemented by Liu et al. (2004: 260)§, with those of *Michelia caloptila* from Law and Wu (1984) and Liu et al. (2004: 228)¶, who each note the flowers as then unknown, plus Yang et al. (2016: 237)#. 
Magnolia sinoconifera (F.N. Wei) C.B. Callaghan & S.K. Png, comb. nov.
urn:lsid:ipni.org:names:77209543-1

Basionym. Manglietia sinoconifera F.N. Wei. In: Guihaia 13(1): 5, fig. s.n. (1993).
Chinese name. 那坡木莲 meaning “Napo manglietia”
Type. CHINA. Guangxi Zhuang Autonomous Region: Guilin Botanical Garden (cultivated; introduced from Napo County, W Guangxi), 3 June 1991, Wei Fa-nan 1910 (holotype: IBK n.v.).
Manglietia dandyi (Gagnep.) Dandy. In: Xia et al. (2008: 54), p.p. quoad syn. ?Manglietia sinoconifera F.N. Wei.

Note 1. The holotype specimen of Manglietia sinoconifera cannot be found at IBK (Xu Wei-bin, pers. comm., July 2019).

Note 2. Some of the features distinguishing Manglietia sinoconifera from M. dandyi, under which it is questionably placed as conspecific in Flora of China due to uncertainty over its status (because the holotype could not be sighted), are listed in Table 9 below. M. sinoconifera (to 10 m) also does not key out with the description for the large-leaved M. megaphylla Hu & W.C. Cheng (1951), a tree to 40m (Liu et al 2004), with which it shares synonymy under M. dandyi in Flora of China. Manglietia sinoconifera is recognised as a genuine species in Yang et al. (2016: 213–214), wherein its introduction to Guilin Botanical Garden from Napo County is recorded as 1973 (18 years earlier than stated in the protologue).

Table 9. Differentiating features of the species Manglietia sinoconifera and M. dandyi.

| Plant feature                      | Manglietia sinoconifera F.N. Wei | Manglietia dandyi (Gagnep.) Dandy |
|-----------------------------------|----------------------------------|-----------------------------------|
| life form                         | ca. 10 m                         | to 15 m²                          |
| indumentum of branchlets          | densely light reddish-brown       | initially soft red pilose, finally ash-grey and almost glabrous |
| leaf shape                        | oblanceolate                     | ovate or broadly lanceolate       |
| leaf dimensions                   | 15–24 × 5.5–8 cm                 | 16–17 × 7–8 cm (16–24 × 5–8.5 cm²) |
| leaf apex                         | cuspidate                        | short acuminate                   |
| leaf base                         | cuneate                          | obtuse                            |
| leaf indumentum abaxially         | appressed brown pubescent        | red pilose                        |
| petiole length and indumentum     | 2.2–3 cm, appressed brown pubescent | 3 cm (1.2–2.3 cm²), red pilose |
| lateral leaf vein pairs           | 14–19                            | 8–13²                            |
| tepal number and shape            | 11: outer 3 oblong, inner 8 generally obovate and spathulate | 9–11: outer 3 obovate-oblong³, intermediate obovate, innermost obovate oblanceolate |
| tepal dimensions and indumentum (outer 3) | 6.5 × 3.5 cm, glabrous | 2–2.2 × 1.5–1.7 cm, pubescent externally at base³ |
| stamen length                     | 10–13 mm                         | 5.5–7 mm³                         |
| gynoecium length                  | ca. 25 mm                        | 10–13 mm³                         |
| ovules in each carpel             | 12                               | 2–10⁴                            |
| flowering period                  | May¹                             | April⁵                           |

The distinguishing features of Manglietia sinoconifera are cited from Wei (1993) supplemented by Yang et al. (2016: 214)¹ and those of M. dandyi from Gagnepain (1939 as Magnolia dandyi) supplemented by Chen and Nooteboom (1993: 1037)².
**Magnolia sonlaensis** (Q.N. Vu) C.B. Callaghan & S.K. Png, comb. nov.

*urn:lsid:ipni.org:names:77209544-1*

**Basionym.** *Michelia sonlaensis* Q.N. Vu. In: Q.N. Vu et al., Nordic J. Bot. 37(9): 2–3, figs. 1, 2 (2019).

**Vietnamese name:** Giổ sọn la, meaning “Son La michelia”

**Type.** VIETNAM. Son La Province: Yen Chau District, Muong Lum Municipality, Lum village, degraded secondary vegetation, 2270 m, 104°28’44.25”E, 21°00’56.53”N, 1 May 2018, *Nam 152018.2* (holotype: VNF!). Same locality, 2275 m, 104°29’30”E, 21°00’47”N, 2 March 2001, *D.K. Harder et al.* 7092 (para-types: HN!, MO n.v.). Same locality, 2270 m, 104°28’44”E, 21°00’56”N, 19 May 2017, *Nam 1952017* (paratype: VNF n.v.). Same locality, 2272 m, 104°28’44.30”E, 21°00’60”N, 13 April 2019, *Nam 142019* (paratype: VNF n.v.). Same region, 915 m, 104°28’?”E, 21°00’59”N, 29 December 2010, *Nam 291210.5; Nam 291210.6; Nam 291210.7* (paratypes: VNF n.v.).

**Magnolia urceolata** (D.L. Fu, B.H. Xiong & X. Chen) C.B. Callaghan & S.K. Png, comb. nov.

*urn:lsid:ipni.org:names:77209546-1*

**Basionym.** *Yulania urceolata* D.L. Fu, B.H. Xiong & X. Chen. In: D.L. Fu et al., Amer. J. Agric. and Forest. 7(5): 219–220, fig. 4 (2019b).

**Chinese name.** 宽瓣玉兰 meaning “wide-capsuled yulan”

**Type.** CHINA. Lectotype: Liu Yuhu in Zheng W. J. (Ed) Flora of Trees of China 1: 459; fig. 139 (1983). Guizhou Province: Weining County, 2300 m, 30 September 2017, *D.L. Fu 2017093001* (paratype: CAF, fr. n.v.). Henan Province: Zhengzhou City (cultivated), *D.L. Fu 2012032001* (paratype: CAF, fl. n.v.).

**Note.** The type specimens of *Yulania urceolata* cannot be located at the Beijing herbarium of CAF (Wang Hongbin, pers. comm., March 2020).

**Magnolia xinningia** (Y.W. Law & R.Z. Zhou ex Q.X. Ma, Q.W. Zeng, R.Z. Zhou & F.W. Xing) C.B. Callaghan & S.K. Png, comb. nov.

*urn:lsid:ipni.org:names:77209547-1*

**Basionym.** *Michelia xinningia* Y.W. Law & R.Z. Zhou ex Q.X. Ma et al., Pakistan J. Bot. 37(1): 37, fig. 1 (2005).

**Chinese name.** 新宁含笑 meaning “Xinning michelia”

**Type.** CHINA. Hunan Province: Xinning County, Ziyunshan, in evergreen broad-leaved forests, 1500 m, 20 September 1992, *R.Z. Zhou 197* (holotype: IBSC n.v.; isotype: IBSC n.v.).
Michelia cavaleriei Finet & Gagnep. var. cavaleriei. In: Xia et al. (2008: 84), p.p. quoad syn. Michelia xinningia Y.W. Law & R.Z. Zhou.

Michelia foveolata Merr. ex Dandy. In: Sima & Lu (2009: 55) and Sima (2011: 216), both p.p. quoad syn. Michelia xinningia Y.W. Law & R.Z. Zhou.

**Note 1.** Digital images of R.Z. Zhou 197 and 0197 were received from IBSC in 2019, but with the collection dates in April 1988 and April 1996 (Ziyunshan, 800 m) respectively, so probably represent paratypes not mentioned in the 2005 protologue.

**Note 2.** In Flora of China (Xia et al. 2008), the 9-tepalled *Michelia xinningia* from Hunan, with a published height by the naming authors of 20 m, appears incongruously as a synonym of the ca. 12-tepalled *M. cavaleriei* var. *cavaleriei* with a height to 10 m (Liu et al. 2004: 229; Xia et al. 2008: 8; Deng and Yang 2015: 148). This would indicate that this remains about the maximum height of *M. cavaleriei* since being described as a small tree of 4–7 metres more than a century earlier (Finet and Gagnepain 1906: 573), based on a collection from Guizhou ca. 400 km distance from the type locality of *Michelia xinningia* in Hunan. This discrepancy in their heights indicates that *M. xinningia* was evidently meant to appear in Flora of China as a synonym of the

**Table 10.** Differentiating features of the species *Michelia xinningia* and *M. foveolata*.

| Plant feature | Michelia xinningia Y.W. Law & R.Z. Zhou | Michelia foveolata Merr. ex Dandy |
|---------------|----------------------------------------|----------------------------------|
| maximum height | 20 m                                   | 30+ m                            |
| bark colour | greyish-brown                          | pale grey or dark grey<sup>5</sup> |
| indumentum of buds | golden villose                         | densely rufous tomentellous<sup>4</sup> |
| indumentum of branchlets | golden villose                         | densely rufous tomentellous<sup>4</sup> |
| leaf shape | narrowly elliptic                      | oblong-elliptic, elliptic ovate or broadly lanceolate<sup>4</sup> |
| leaf dimensions | 12–18 × 4.5–5.5 cm                   | 17–23 × 6–11 cm<sup>1</sup> |
| leaf texture | Leathery                              | thickly leathery<sup>6</sup>     |
| lateral leaf veins | 8–9 pairs                              | 16–20 pairs (16–26 pairs<sup>3</sup>) |
| leaf abaxially | golden villose with brown pilose midrib | densely coppery-red tomentellous<sup>4</sup> |
| petiole length and indumentum | 1–1.5 cm (1.5–2 cm<sup>1</sup>), golden villose | 1.5–4 cm<sup>11</sup>, silky brown pubescent<sup>4</sup> |
| tepal number, colour, with shape and size of outer 3 | 9, white, obovate, 4–5 × ca. 2 cm (7–9 tepals in photo Xing et al. 2009: 213) | 9–12, pale yellow with purplish base, broadly ovate, 6–7 cm long<sup>8</sup> |
| staminal complex length | ca. 15 mm                              | ca. 22–25 mm<sup>2</sup> |
| stamen number | 30–35                                  | ca. 50<sup>3</sup> |
| filament colour | Red                                    | dark purple<sup>2</sup> |
| anther length | ca. 0.8 cm                            | 1.5–2 cm<sup>3</sup> |
| gynoecium length | ca. 1.6 cm                            | 2–3 cm<sup>1</sup> |
| gynophore length | 15–20 mm                              | 12–15 mm<sup>1</sup> |
| flowering period | April–May                            | March–May<sup>2</sup> |
| elevation and distribution | 900–1500 m, Xinning, Hunan<sup>2</sup> | 500–1800 m, Guangdong, S Guangxi, SE Guizhou, W Hubei, S Hunan, Jiangxi, SE Yunnan<sup>4</sup> |

Footnote: The distinguishing features of *Michelia xinningia* are cited from Ma et al. (2005) and Yang et al. (2016)<sup>1</sup>, with those of *M. foveolata* from Dandy (1928b), supplemented by Chen and Nooteboom (1993: 1066)<sup>2</sup>, Law et al. (1996: 181)<sup>3</sup>, Lee (1935: 485)<sup>4</sup>, Liu et al. (2004: 256)<sup>5</sup> and Yang et al. (2016: 272)<sup>6</sup>.
then new combination *M. cavaleriei* var. *platypetala* (Hand.-Mazz.) N.H. Xia of the same height. However, the present authors agree with the abstract and Latin diagnosis of the authors of *M. xinningia* which indicate it to be sufficiently distinguished from *M. cavaleriei* var. *platypetala* (Ma et al. 2005: Table 1), to warrant species status, as has been recognised in Xing et al. (2009: 212) and Yang et al. (2016: 331). Also, *Michelia xinningia* can easily be differentiated from *M. foveolata*, under which it is made a synonym by Sima and Lu (2009) and included as such in Sima (2011: 216), by the comparative features compiled in Table 10.

**Note 3.** Bearing in mind the above discussion and comparative features, *Michelia xinningia* is an obviously distinct species. Therefore it is here transferred to *Magnolia* due to the past reduction of the previous segregate genera of subfamily Magnolioideae to the genus *Magnolia*.

**Note 4.** A search of the literature has found that *Michelia xinningia* is in cultivation at 4 Chinese botanical gardens, each in which *M. platypetala* and *M. foveolata* are also cultivated (Callaghan and Png 2019b).

**Acknowledgements**

The authors gratefully acknowledge the assistance received from Miguel Garcia, Research Librarian at the Royal Botanic Gardens, Sydney, Australia. Also from William Hastie, Research Librarian at the CSIRO Black Mountain Library, Canberra, Australia and Dr Kang Wang at Beijing Botanical Gardens during our search for relevant literature.

Thanks are expressed to the following herbaria curators or research staff who sent the authors requested type specimens: Prof. Zhang Zhixiang and Dr Wang Ao at BJFC, Dr Chen Zhihui and Dr Huang Xiangxu at IBSC, Dr Fan Qiang and Mrs. Luo at SYS, all in China plus Dr Do Van Hai at HN and Assoc. Prof. Vu Quang Nam at VNF, both in Vietnam.

Also our thanks to Dr Yan Lihong at HFBG in China who sent photos when the requested specimen of *Michelia hunanensis* was no longer available. We are grateful to Waiyin Wee in Sydney, Australia, for translating a perplexing Chinese name of one of the *Magnlietia* species

We would like to express our gratitude to Assoc. Prof. Priscilla Muriel (Ecuador) and an anonymous reviewer for their reviews of the final version of the manuscript. Also to the 2 anonymous reviewers of the original manuscript when submitted to another journal in 2019 and subsequently rejected by the editor because “it does not fit within the scope or focus” of the journal.

**References**

Arroyo F, Pérez AJ, Vázquez-García JA (2013) Six new threatened tree species of *Magnolia* (Magnoliaceae) from Ecuador and Peru. In: Pérez ES, Alvarez EH, Vázquez-García JA,
Garica TE, Echavarria ND (Eds) Forest Resources of Western Mexico, Series Fronteras de Biodiversidad Tomo 2, Edition: 1ra. University of Guadlajara, Mexico, 497–508.

Azuma H, Thien LB, Kawano S (1999) Molecular phylogeny of Magnolia (Magnoliaceae) inferred from cpDNA sequences and evolutionary divergence of floral scents. Journal of Plant Research 112: 291–306. https://doi.org/10.1007/PL00013885

Azuma H, Thien LB, Kawano S (2000) Molecular phylogeny of Magnolia based on chloroplast DNA sequence data and floral scent chemistry. In: Liu YH, Fan HM, Chen ZY, Wu QG, Zeng QW (Eds) Proceedings of the International Symposium on the Family Magnoliaceae, Hangzhou, China, May 1998. Science Press, Beijing, 219–227.

Azuma H, Garcia-Franco JG, Rico-Gray V, Thien LB (2001) Molecular phylogeny of the Magnoliaceae: The biogeography of tropical and temperate disjunctions. American Journal of Botany 88(12): 2275–2285. https://doi.org/10.2307/3558389

Caddy-Retalic S, Lowe A (2012) DNA barcoding: a better way to discover species. The Conversation 4 March 2012. http://theconversation.com/dna-barcoding-a-better-way-to-discover-species-4933 [accessed: 9.03.2020]

Callaghan C, Png SK (2013) A new name and seventeen new combinations in the Magnolia (Magnoliaceae) of China and Vietnam. Botanical Studies 54: 53, 1–5. https://doi.org/10.1186/1999-3110-54-53

Callaghan CB, Png SK (2019a) An in-depth analysis of heterotypic synonyms contributes to 16 new names and 30 new combinations in the Magnolia (Magnoliaceae) of China, India, Myanmar, Thailand and Vietnam. [manuscript submitted for publication]

Callaghan CB, Png SK (2019b) The status of the in situ and ex situ conservation of some recently reinstated Chinese Magnolia (Magnoliaceae) species (ined).

Callaghan CB, Png SK (2020) An in-depth analysis of heterotypic synonyms contributes to 16 new names and 30 new combinations in the Magnolia (Magnoliaceae) of China, India, Myanmar, Thailand and Vietnam. [revised manuscript submitted for publication]

Candolle AP de (1818; not 1817 as often noted) Regni Vegetabilis Systema Naturale, sive Ordines, Genera et Species Plantarum Secundum Methodi Naturalis Normus Digestarum et Descriptarum Vol. 1. Treuttel and Würtz, Paris, 1–564. [In French with Latin descriptions] [Michelia doltsopa Buch.-Ham. ex DC., p. 448] http://www.biodiversitylibrary.org/page/41046623 [accessed: 9.03.2020]

Chen BL (1988) New taxa of Magnoliaceae from Yunnan. Acta Scientiarum Naturalium Universitatis Sunyatseni 1988(1): 107–112. [In Chinese]

Chen BL, Nooteboom HP (1993) Notes on Magnoliaceae III: The Magnoliaceae of China. Annals of Missouri Botanical Garden 80(4): 999–1104. https://doi.org/10.2307/2399942

CVH [Chinese Virtual Herbarium] (2017) Michelia fallax Beijing herbarium specimen collected 1958. http://www.cvh.ac.cn/spm/PE/00103835 [accessed: 9.03.2020]

Dai HT, Zhao DW, Li J, Zhao TB, Chen ZX (2012) Two new species of Yulania Spach from Henan Province. Journal of Xinyang Normal University (Natural Science Edition) 25 No 108(3): 333–335. [In Chinese]

Dandy JE (1927) The Genera of Magnoliaceae. Bulletin of Miscellaneous Information, Royal Botanic Gardens, Kew 1927(7): 257–264. https://doi.org/10.2307/4107601
Dandy JE (1928a) Three new Magnolieae. The Journal of Botany: British and Foreign 66(2): 46–48.
Dandy JE (1928b) Two new Michelias from Kwangtung. The Journal of Botany: British and Foreign 66(12): 359–361.
Dandy JE (1928c) New or noteworthy Chinese Magnolieae. Notes from the Royal Botanic Garden, Edinburgh 16(77): 123–133.
Dandy JE (1930) New Magnolieae from China and Indo-China. The Journal of Botany: British and Foreign 68(7): 204–214.
Deng LX, Yang XY (2015) Guizhou Magnoliaceae Plants. Guizhou Science and Technology Publishing House, Guiyang, 360 pp. [In Chinese with Latin plant names]
Dunn ST (1908) A botanical expedition to central Fokien. Journal of the Linnean Society of London (Botany) 38(267): 350–373. [Michelia maudiae, p.353] http://www.biodiversitylibrary.org/page/174316 [accessed: 9.03.2020]
Fan JC, Yi TP, Luo ZZ (2009) A new variety of Michelia Linn. (Magnoliaceae) in China. Journal of Sichuan Forestry Science and Technology 30(4): 68. [In Chinese, English subtitle/abstract] http://www.cqvip.com/read/read.aspx?id=31406960 [accessed: 20.02.2019: article photos only]
Figlar RB (2000) Proleptic branch initiation in Michelia and Magnolia subgenus Yulania provides basis for combinations in subfamily Magnolioideae. In: Liu YH, Fan HM, Chen ZY, Wu QG, Zeng QW (Eds) Proceedings of the International Symposium on the Family Magnoliaceae, Guangzhou, China, 18–22 May 1998. Science Press, Beijing, 14–25.
Figlar RB (2012) A Brief Taxonomic History of Magnolia. Magnolia Society International. https://www.magnoliасociety.org/ClassificationArticle
Figlar RB, Nooteboom HP (2004) Notes on Magnoliaceae IV. Blumea 49(1): 87–100. https://doi.org/10.3767/000651904X486214
Finet AE, Gagnepain F (1906) Espèces nouvelles de l’Asie orientale. Bulletin de la Société Botanique de France 53: 573–576. [In Latin and French] [Michelia cavaleriei, p. 573] https://biodiversitylibrary.org/page/332992 [accessed: 9.03.2020]
Frodin DG, Govaerts R (1996) World Checklist and Bibliography of Magnoliaceae. Information Services Department, Royal Botanic Gardens, Kew, 72 pp.
Fu DL, Fu H, Qin Y, Zhou DS, Duan RM (2019a) Analyses of chloroplast genomic and morphological evolutionomy of Yulania Subsect. Cylindricae (Magnoliaceae). American Journal of Agriculture and Forestry 7(5): 200–211. https://doi.org/10.11648/j.ajaf.20190705.16 [accessed 9.03.2020]
Fu DL, Xiong BH, Chen X, Tian WX, Du L (2019b) Analyses of chloroplast genomic and morphological evolutionomy of Yulania sprengeri and two new confusable species (Magnoliaceae). American Journal of Agriculture and Forestry 7(5): 212–223. https://doi.org/10.11648/j.ajaf.20190705.17 [accessed 9.03.2020]
Fu DL, Zhang Q, Xu M, Zhou DS, Qin Y, Li YM (2019c) Two particularly evolutionary loci of trn-L-ndb-J of cp-DNA of Yulania baotaina, a new species (Magnoliaceae) from China. American Journal of Agriculture and Forestry 7(5): 229–233. https://doi.org/10.11648/j.ajaf.20190705.19 [accessed 9.03.2020]
Fu DL, Zhao TB, Zhao J, Zhao DW (2007) Two new varieties of *Yulania* Spach from Henan. Bulletin of Botanical Research 27(5): 525–526. [In Chinese, English subtitle] http://bbr.nefu.edu.cn/CN/article/downloadArticleFile.do?attachType=PDF&id=412

Fu L, Zeng QW, Hu XM (2014) *Manglietia admirabilis* (Magnoliaceae), a new species from Yunnan, China. Novon 23(1): 37–41. https://doi.org/10.3417/2010099 [accessed 9.03.2020]

Gagnepain F (1939) Magnoliacées nouvelles ou litigieuses. Notulae Systematicae 8: 63–66. https://biodiversitylibrary.org/page/6525404 [accessed 18.03.2020]

Grimshaw J, Bayton R (2009) New Trees—Recent Introductions to Cultivation. International Dendrology Society/Kew Publishing, Royal Botanic Gardens, Kew, 976 pp.

Handel-Mazzetti H (1921) Plantae novae sinenses, diagnosibus brevibus descriptae a Dre. Heinn. Handel-Mazzetti. Anzeiger der Akademie der Wissenschaften in Wien. Mathematische-Naturwissenschaftliche Klasse 58(12): 88–95. [In German and Latin] https://biodiversitylibrary.org/page/27808730 [accessed 16.03.2020]

He XS, Zhang P, Saqib M, Hou XF, Wang SC (2017) Screening active anti-breast cancer compounds from the cortex of *Magnolia officinalis* by MCF-7 cell membrane chromatography coupled with UHPLC-ESI-MS/MS. Analytical Methods 9(33): 4828–4836 https://doi.org/10.1039/C7AY01213F

Hu HH, Cheng WC (1951) New species of Magnoliaceae of Yunnan. Acta Phytotaxonomica Sinica 1(2): 157–160. [Species descriptions in Chinese and Latin with diagnoses in Chinese and English] http://www.plant-systematics.com/CN/article/downloadArticleFile.do?attachType=PDF&id=380 [accessed 16.03.2020]

Hu XM, Zeng QW, Fu L (2014) *Manglietia guangnanica* (Magnoliaceae), a new species from Yunnan, China. Novon 23(2): 171–175. https://doi.org/10.3417/2010100

Hu XM, Zeng QW, Liu YS, Fu L, Xi RC, Chen HF, Deng XM (2019) *Manglietia pubipedunculata* (Magnoliaceae), a new species from Yunnan, China. PLoS ONE 14(3): e0210254. https://doi.org/10.1371/journal.pone.0210254

Hu YF, Mu B, Lei YK, Tian GH, He SL, Zhao TB (2013) A new species of *Michelia* Linn. from China. In: Zhang QX (Ed.) Advances in Ornamental Horticulture of China. A compilation of papers presented at the conference “Developing Ornamental Horticulture, Building a Beautiful China”, the annual academic meeting of the Ornamental Horticulture Committee of the Chinese Horticultural Society, Zhengzhou, Henan, China, 13–15 August, 2013. China Forestry Publishing House, Beijing, 39–42. [In Chinese with English abstract]

Huang YQ, Zou XY, Zhang XW, Wang F, Zhu WD, Zhang GY, Xiao J, Chen M (2017) Magnolin inhibits prostate cancer cell growth *in vitro* and *in vivo*. Biomedicine & Pharmacotherapy 87: 714–720. https://doi.org/10.1016/j.biopha.2017.01.010 [acc: 25.04.2020]

Jian SG, Zhou RZ, Chen HF (2007) *Michelia multitepala* (Magnoliaceae), a new species from Yunnan, China. Annales Botanici Fennici 44: 65–67. http://www.sekj.org/PDF/anbf44/anbf44-065.pdf [accessed 9.03.2020]

Khuraijam JS, Goel AK (2015) Enumeration of the genus *Magnolia* L. in India with its conservation status. Phytotaxonomy 15: 107–113.

Kim ST, Park CW, Kim YD, Suh YB (2001) Phylogenetic relationships in family Magnoliaceae inferred from *ndhF* sequences. American Journal of Botany 88: 717–728. https://doi.org/10.2307/2657073
Kim ST, Suh YB (2013) Phylogeny of Magnoliaceae based on ten chloroplast DNA regions. Journal of Plant Biology 56: 290–305. https://doi.org/10.1007/s12374-013-0111-9
Kumar VS (2006) New combinations and new names in Asian Magnoliaceae. Kew Bulletin 61(2): 183–186.
Law YW (1984) A preliminary study on the taxonomy of the family Magnoliaceae. Acta Phytotaxonomica Sinica 22(2): 89–109. [In Chinese, English endtitle/abstract] http://www.jse.ac.cn/EN/Y1984/V22/I2/89 [accessed 9.03.2020]
Law YW, Lo HS, Wu YF; Chang BN [Eds] (1996) Magnoliaceae. In: Flora Reipublicae Populares Sinicae Tomus 30(1) Angiospermae, Dicotyledoneae: Menispermaceae, Magnoliaceae. Science Press, Beijing, 82–273. http://frps.iplant.cn/ [accessed 9.03.2020]
Law YW, Wu YF (1984) A new species of *Michelia* from China. Bulletin of Botanical Research (Harbin) 4(2): 152–154. [In Chinese, English subtitle] http://bbr.nefu.edu.cn/EN/volumn/volumn_1219.shtml [article No. 152, accessed: 9.03.2020]
Lee SC (1935) Forest Botany of China. Commercial Press Ltd., Shanghai, 991 pp. [with 272 figs] Li J (1997) Some notes on Magnoliaceae from China. Acta Botanica Yunnanica 19(2): 131–138. [In Chinese, English subtitle/abstract] http://ir.kib.ac.cn/bitstream/151853/9955/1/20120506010.pdf [accessed 9.03.2020]
Liao Jf, Guo TX (2010) Seven-petals Michelia found in Dayu distributed over more than a thousand hectares. China Green Times. [9 March 2010 newspaper report in Chinese]
Liu RL, Zhang ZX (2019) A new species of *Manglietia* (Magnoliaceae) from Jiangxi, China. Feddes Repertorium 130(3): 289–293. https://doi.org/10.1002/fedr.201800014
Liu YH (Law YW) (1983) Magnoliaceae. pp. 455–466. In: Zheng WJ (Ed.) Flora of Trees of China Vol. 1. Science Press, Beijing.
Liu YH (Law YW), Zeng QW, Zhou RZ, Xing FW [Eds] (2004) Magnolias of China. Baitong Group, Beijing Science & Technology Press, Beijing, 392 pp. [In Chinese and English]
Lu CH, Chen SH, Chang YS, Liu YW, Wu JY, Lim YR, Yu HI, Lee YR (2017) Honokiol, a potential therapeutic agent, induces cell cycle arrest and program cell death in vitro and in vivo in human thyroid cancer cells. Pharmacological Research 115: 288–298. https://doi.org/10.1016/j.phrs.2016.11.038 [acc: 25.04.2020]
Ma H, Bai XJ, Sun XL, Li BH, Zhu ML, Dai YQ, Huo Q, Li HM, Wu CZ (2020) Anti-cancer effects of methanol-ethyl acetate partitioned fraction from *Magnolia grandiflora* in human non-small cell lung cancer H1975 cells. Journal of Bioenergetics and Biomembranes 15 April 2020. https://doi.org/10.1007/s10863-020-09828-6 [Epub ahead of print]
Ma QX, Zeng QW, Zhou RZ, Xing FW (2005) *Michelia xinningia* (Magnoliaceae)—a new species from China. Pakistan Journal of Botany 37(1): 37–39. http://www.pakbs.org/pjbot/PDFs/37(1/PJB37(1)037.pdf [accessed 9.03.2020]
Mitchell A, Coombes A. (1998) The Garden Tree. An Illustrated Guide to Choosing, Planting and Caring for 500 Garden Trees. George Weidenfeld and Nicolson Ltd., Orion Publishing Group, London, 287 pp.
Nie ZL, Wen J, Azuma H, Qiu YL, Sun H, Meng Y, Sun WB, Zimmer EA (2008) Phylogenetic and biogeographic complexity of Magnoliaceae in the Northern Hemisphere inferred from three nuclear data sets. Molecular Phylogenetics and Evolution 48: 1027–1040. https://doi.org/10.1016/j.ympev.2008.06.004
Ninh PT, Hoai LTT, Ha CTT, Thai TH, Hang PD, Loc TV, Thao TTP (2020) Study on the chemical constituents of *Magnolia insignis* collected in Tuyen Quang province, Vietnam. Vietnam Journal of Chemistry 58(1): 133–137. https://doi.org/10.1002/vjch.2019000191

Nooteboom HP (1985) Notes on Magnoliaceae with a revision of *Pachylarnax* and *Elmerrillia* and the Malesian species of *Manglietia* and *Michelia*. Blumea 31: 65–121. http://www.repository.naturalis.nl/document/565414 [accessed 9.03.2020]

Nong ZL (1993) A new species of *Michelia* Linn from Jiangxi. Guihaia 13(3): 220–222. [In Chinese with Latin description, English subtitle] http://www.guixia-journal.com/ch/reader/create_pdf.aspx?file_no=199303004 [accessed 9.03.2020]

Peng CL, Yan LH, Liao FL (1995) New taxa of Magnoliaceae from Hunan Province. Journal of Hunan Forestry Technical College 1995(1): 14–17. [In Chinese with Latin descriptions, English endtitle/abstract] http://www.docin.com/p-73416235.html [accessed 9.03.2020]

Pérez AJ, Arroyo F, Neill DA, Vázquez-García JA (2016) *Magnolia chiguila* and *M. mashpi* (Magnoliaceae): two new species and a new subsection (Chocotalauma, sect. Talauma) from the Chocó biogeographic region of Colombia and Ecuador. Phytotaxa 286(4): 267–276. https://doi.org/10.11646/phytotaxa.286.4.5

Polunin O, Stainton S (1999) Flowers of the Himalaya. Oxford University Press, Delhi, 580 pp. [128 pp. of colour plates] [Third Oxford India impression] [*Michelia doltsopa* p. 19, plate 10, No. 74]

Prasad R, Katiyar S (2018) Honokiol, a bioactive component from Magnolia plant, promotes DNA demethylation and reactives silenced tumor suppressors in pancreatic cancer cells through TET-dependent mechanism. In: Proceedings of the American Association for Cancer Research Annual Meeting, April 14-18, 2018, Chicago, Illinois, USA. Cancer Research 78(13 Suppl.): Abstract nr 1390. https://doi.org/10.1158/1538-7445.AM2018-1390

Qin XS, Zhou RZ, Xing FW (2006) A new species of *Manglietia* (Magnoliaceae) from China. Novon 16: 260–262. https://www.biodiversitylibrary.org/page/11159890 [accessed 9.03.2020]

Sam HV, Nanthavong K, Kessler PVA (2004) Trees of Laos and Vietnam: A field guide to 100 economically or ecologically important species. Blumea 201–349. https://doi.org/10.3767/000651904X484298 [accessed 9.03.2020]

Sima YK (2001) Some notes on *Magnolia* subgenus *Michelia* from China. Yunnan Forestry Science and Technology 2001(2): 29–35, 40. [In Chinese, English endtitle/abstract] http://www.doc88.com/p-4833472412295.html

Sima YK (2011) A Taxonomic Revision of the Magnoliaceae from China. PhD Thesis, Yunnan University, Kunming, 365 pp. [In Chinese, English subtitle/abstract] http://www.docin.com/p-1050989203.html [accessed 9.03.2020]

Sima YK, Lu SG (2009) Magnoliaceae. In: Shui YM, Sima YK, Wen J, Chen WH (Eds) Voucherced Flora of Southeast Yunnan, Vol. 1. Yunnan Science & Technology Press, Kunming, 16–79. http://www.doc88.com/p-9455111883790.html [accessed 9.03.2020]

Spach É (1839) Histoire Naturelle des Végétaux. Phanérogames VII. Dicotylédones. Librairie Encyclopédique de Roret, Paris, 1–538. [In French] https://biodiversitylibrary.org/
New combinations in *Magnolia* (Magnoliaceae) of China and Vietnam

**Yulania** pp. 462–467 [accessed 9.03.2020]

**Lirianthe** pp. 485–486 [accessed 9.03.2020]

Spongberg SA (1998) Magnoliaceae Hardy in Cooler Temperate Climates. In: Hunt D (Ed.) Magnolias and their Allies. Proceedings of an International Symposium, Royal Holloway, University of London, Egham, Surrey, U.K., 12–13 April, 1996. International Dendrology Society and The Magnolia Society. David Hunt, Milborne Port, 81–144.

Turland NJ, Wiersema JH, Barrie FR, Greuter W, Hawkesworth DL, Herendeen PS, Knapp S, Kusber W-H, Li DZ, Marhold K, May TW, McNeill J, Munro AM, Prado J, Price MJ, Smith G [Editorial Committee] (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. Koeltz Botanical Books, Glashütten, 254 pp. [https://doi.org/10.12705/Code.2018](https://doi.org/10.12705/Code.2018)

Vu QN, Xia HH, Bui VT, Dang VH (2019) *Michelia sonlaensis* QN Vu sp. nov. (Magnoliaceae) from northern Vietnam. Nordic Journal of Botany 37(9): 1–5. [https://doi.org/10.1111/njb.02452](https://doi.org/10.1111/njb.02452)

Wang FG, Zeng QW, Zhou RZ, Xing FW (2005) *Michelia rubriflora*, a new species of Magnoliaceae from Hainan Island, China. Pakistan Journal of Botany 37(3): 559–562. [http://www.pakbs.org/pjbot/PDFs/37(3)/PJB37(3)559.pdf](http://www.pakbs.org/pjbot/PDFs/37(3)/PJB37(3)559.pdf) [accessed 9.03.2020]

Wang FG, Zhou RZ, Xing FW, Chen HF (2004) *Manglietia rufisyncarpa*, a new species of Magnoliaceae from Yunnan, China. Nordic Journal of Botany 24(5): 519–522. [https://doi.org/10.1111/j.1756-1051.2004.tb01633.x](https://doi.org/10.1111/j.1756-1051.2004.tb01633.x)

Wang YL, Li Y, Zhang SZ, Yu ZS (2006) The utility of *matK* gene in the phylogenetic analysis of the genus *Magnolia*. Acta Phytotaxonomica Sinica 44(2): 135–147. [https://doi.org/10.1360/aps040013](https://doi.org/10.1360/aps040013)

Wei FN (1993) A new species of *Manglietia* Bl. from Guangxi. Guihaia 13(1): 5–6. [In Chinese, English subtitle] [http://www.guinhaia-journal.com/ch/reader/create_pdf.aspx?file_no=199301003](http://www.guinhaia-journal.com/ch/reader/create_pdf.aspx?file_no=199301003) [accessed 9.03.2020]

Wu XH, Wu MX, Ye QJ, Ma DD, Li GY (2015) A new species of *Michelia* (Magnoliaceae) from Zhejiang. Acta Botanica Boreali-Occidentalia Sinica 35(5): 1057–1061. [In Chinese, English subtitle/abstract] [https://www.doc88.com/p-2542372551612.html](https://www.doc88.com/p-2542372551612.html) [accessed 9.03.2020]

Wu ZY (Ed-in-Chief), Chen SK (Vice Ed-in-Chief), (2006) Flora Yunnanica. Tomus 6 (Spermatophyta). Science Press, Beijing, 1–889. [In Chinese] [Magnoliaceae: pp. 1–62] [https://www.biodiversitylibrary.org/page/36697291](https://www.biodiversitylibrary.org/page/36697291) [accessed 9.03.2020]

Xia NH, Deng YF (2002) Notes on Magnoliaceae. Journal of Tropical and Subtropical Botany 10(2): 128–132. [In Chinese, English subtitle/abstract] [http://jtsb.scib.ac.cn/jtsb_cn/ch/reader/create_pdf.aspx?file_no=200202005](http://jtsb.scib.ac.cn/jtsb_cn/ch/reader/create_pdf.aspx?file_no=200202005) [accessed 9.03.2020]

Xia NH, Liu YH [Law YW], Nooteboom HP (2008) Magnoliaceae. In: Wu ZY, Raven PH, Hong DY (Eds) Flora of China, Text Vol. 7 (Menispermaceae through Capparaceae). Science Press, Beijing and Missouri Botanical Garden Press, St. Louis, 48–91. [http://flora.huh.harvard.edu/china/mss/volume07/Magnoliaceae.pdf](http://flora.huh.harvard.edu/china/mss/volume07/Magnoliaceae.pdf) [accessed 9.03.2020]

Xing FW, Zeng QW, Chen HF, Wang FG [Eds] (2009) Landscape Plants of China. Vol. 1. Huazhong University of Science and Technology Press, Wuhan, 911 pp. [In Chinese] [Magnoliaceae: pp. 177–217]
Yang KM, Chen XL, Gong X, Wang YL [Eds] (2016) Ex Situ Cultivated Flora of China: Magnoliaceae. Science Press, Beijing, 403 pp. [In Chinese, English subtitle]

Zhang Q, Cheng G, Pan J, Zielonka J, Xiong DH, Myers CR, Feng L, Shin SS, Kim YH, Bui D, Hu M, Bennett B, Schmailanda K, Wang Y, Kalyanaraman B, You M (2020) Magnolia extract is effective for the chemoprevention of oral cancer through its ability to inhibit mitochondrial respiration at complex I. Cell Communication and Signaling 18(58): 1–14. https://doi.org/10.1186/s12964-020-0524-2

Zhang XH, Xia NH (2007) Leaf architecture of subtribe Micheliinae (Magnoliaceae) and its taxonomic significance. Acta Phytotaxonomica Sinica 45(2): 167–190. [In English, Chinese endtitle/abstract] http://www.plantsystematics.com/CN/article/downloadArticleFile.do?attachType=PDF&id=225 [accessed 9.03.2020]

Zeng QW, Fu L, Xing FW (2007) Manglietia pubipetala (Magnoliaceae), a new species from Yunnan. Pakistan Journal of Botany 39(6): 1917–1920. http://www.pakbs.org/pjbot/PDFs/39(6)/PJB39(6)1917.pdf [accessed 9.03.2020]

Zheng QF (1981) A new species of Michelia from Fujian. Bulletin of Botanical Research 1(3): 92–94. [In Chinese and Latin, English subtitle] http://bbr.nefu.edu.cn/EN/volumn/volum_1212.shtml# [No. 92: accessed 9.03.2020]

Zou YW, Wang HX, Zhu ZX, Wang HF (2020). Complete plastome sequence of Magnolia fordiana var. hainanensis (Dandy) Noot. (Magnoliaceae), an endemic and ornamental tree in South China. Mitochondrial DNA Part B: Resources 5(1): 206–207. https://doi.org/10.1080/23802359.2019.1699456

Appendix 1

List of the acronyms of institutional herbaria appearing in this paper.

A Arnold Arboretum Herbarium (of Harvard University Herbaria), Cambridge, Massachusetts, USA
BJFC Forestry Herbarium, Beijing Forestry University, Xiaoazhuang, Beijing, China
CAF Dendrological Herbarium, Chinese Academy of Forestry, Haidian, Beijing, China
HEAC Henan Agricultural University Herbarium, Zhengzhou, Henan, China
HFBG Herbarium, Forestry Botanical Garden of Heilongjiang, Dongliqu, Harbin, Heilongjiang, China
HFTC Herbarium, Hunan Forestry Technical College, Hengyang, Hunan, China
HN Herbarium, Vietnam Academy of Science and Technology, Hanoi, Vietnam
IBK Herbarium, Guangxi Institute of Botany, Yanshan, Guilin, Guangxi, China
IBSC Department of Taxonomy Herbarium, South China Institute of Botany, (SCBI) Chinese Academy of Sciences, Wushan, Guangzhou, Guangdong, China
JXAU Dendrological Herbarium, Department of Forestry, Jiangxi Agricultural University, Meiling, Nanchang, Jiangxi, China
K Royal Botanic Gardens Herbarium, Kew, Surrey, London, UK
New combinations in *Magnolia* (Magnoliaceae) of China and Vietnam

| Acronym | Institution |
|---------|-------------|
| L       | Leiden University Branch (Rijksherbarium), National Herbarium of the Netherlands, Leiden, the Netherlands |
| LBG     | Herbarium, Lushan Botanical Garden, Lushan, Jiangxi, China |
| MO      | Herbarium, Missouri Botanical Garden, St. Louis, Missouri, USA |
| P       | Herbarium National de Paris, Muséum National d’Histoire Naturelle, Paris, France |
| PE      | Laboratory of Systematic and Evolutionary Botany Herbarium, Institute of Botany, Chinese Academy of Sciences, Xiang Shan, Beijing, China |
| SIF     | Dendrological Herbarium, Forestry School of Sichuan, Dujiangyan, Sichuan, China |
| SYS     | Biology Department, Botanical Division Herbarium, Zhongshan University (Sun Yat-sen University), Guangzhou, Guangdong, China |
| VNF     | Vietnam Forestry Herbarium, Hanoi, Vietnam |
| W       | Herbarium, Natural History Museum, Wien, Austria |
| WU      | Herbarium, Institute of Botany, University of Vienna, Austria |
| ZJFC    | Dendrological Herbarium, Department of Forestry, Zhejiang Forestry University, Linan, Zhejiang, China |

**Herbaria references**

The above herbarium acronyms and their institutes were located in the following publications:

Chen SC, Li JL, Zhu XY, Zhang ZY (1990) Bibliography of Chinese Systematic Botany (1949–1990). Guangdong Science & Technology Press, Guangzhou. iv + 810 pp. [In Chinese and English] [Chinese Herbaria, pp. 667–684; Herbarium Abbreviations, pp. 685–698]

Fu LK, Zhang XC, Qin HN, Ma JS (Eds) (1993) Index Herbariorum Sinicum. China Science and Technology Press, Beijing. vii + 458 pp. [In Chinese and English]

Holmgren PK, Holmgren NH, Barnett LC (Eds) (1990) Index Herbariorum. Part 1. The Herbaria of the World. Eighth Edition. Regnum Vegetabile Vol. 120, New York Botanical Garden (on behalf of the International Association for Plant Taxonomy), The Bronx, New York, x + 693 pp.

Herbaria acronyms may now be searched at: http://sweetgum.nybg.org/science/ih/ [acc: 27.04.2020]

Jin SY, Chen YL (1994) A Catalogue of Type Specimens (Cormophyta) in the Herbaria of China. Science Press, Beijing. xi + 716 pp. [In Chinese] [Magnoliaceae: pp. 453–457; Herbaria acronyms: pp.696–708]