

## *Michelia multitepala* (Magnoliaceae), a new species from Yunnan, China

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*Michelia multitepala* R.Z. Zhou & S.G. Jian *sp. nova* (Magnoliaceae) from Yunnan, China is described and illustrated. It appears to be allied with *M. macclurei*, but differs mainly in having longer leaves, more tepals (11–12) in 4 (or 3–4) series, and in its longer, aggregate spicate (8–15 cm) fruit. Also *Michelia ingrata* resembles *M. multitepala*, but differs mainly by its longitudinally furrowed bark, bigger leaves that are glaucous beneath, fleshy and glabrous tepals, and by its unpleasant flower odor.

Key words: Magnoliaceae, *Michelia*, new species, taxonomy

There are approximately eleven genera and 160 species of Magnoliaceae found in China. The genus *Michelia* consists of about 80 species distributed throughout the tropical and sub-tropical regions of Asia. China has about 70 species, mainly found in the southwestern and eastern mountainous regions. The plants of *Michelia* prefer acidic soil, and a warm, humid climate. It is an important taxon in evergreen broad-leaved forest, and many species have ornamental value as garden plants (Law 1984, 1996, 2004).

In March 2003 and July 2004, we collected an interesting *Michelia* species in Fadou Mountain of Fadou Shan Natural Reserve, Xichou county, Yunnan province. It could not be placed in any of the previously described taxa and is thus here described as a new species.

***Michelia multitepala*** R.Z. Zhou & S.G. Jian, *sp. nova* (Fig. 1)

*Affinis M. macclurei, sed foliis longioribus, anguste ellipticis; tepalis plurioribus (11–12), oblongo-lanceolatis, in 4(3–4) series dispositis, syncarpis longioribus differt. Species M. ingratae affinis atque, quae differt cotice bruneo longitudinaliter fissili, foliis majoribus, subtus glaucis; flore ingrato-odoro; tepalis flavis, carnosulisque glabris.*

TYPE: China. Yunnan province, Xichou county, Fadou Mountain, in moist evergreen broad-leaved forest, alt. 1300–1500 m a.s.l., R. Z. Zhou 0401 (holotype IBSC).

Evergreen trees to 15 m tall and 30 cm in diam.; bark grayish-brown; buds, petioles



**Fig. 1.** *Michelia multitepala* (from holotype and paratype, drawn by Ying-Feng Deng). — **a:** Flowering twig. — **b:** Outer tepal. — **c:** The second series tepal. — **d:** The third series tepal. — **e:** Inner tepal. — **f:** Gynoecium. — **g:** Stamen. — **h:** Carpel. — **i:** Longitudinal section of carpel. — **j:** Fruit.

and peduncles rufous, appressed-tomentellous. Leaves leathery, elliptic, 14–18 cm long, 5.0–6.5 cm wide, apex acuminate or shortly acuminate, base broadly cuneate, green above, pale green beneath; midrib impressed above, raised beneath, lateral nerves 13–15 on each side of midrib; reticulation of veins prominent on both surfaces; petioles 1.5–3.0 cm long, canaliculate above, without stipule scars. Flowers white, fragrant; peduncles 1.6–1.8 cm long; tepals 11–12, in 4 (or 3–4) series, oblong-lanceolate, outer 3, 6.0–6.5 cm long, 1.5–1.7 cm wide, second series 3, 5.5–6.0 cm long, 1.2–1.5 cm wide, third series 3, 4.5–5.0 cm long, 1.0–1.2 cm wide; inner 2–3, 4.0–5.0 cm long, 0.8–1.0 cm wide; stamens numerous (55–60), lanceolate or linear,

1.4–1.6 cm long, anthers 1.0–1.2 cm long, laterally dehiscent, connectives produced into short appendages; gynoecium green, 2.0–2.5 cm long, styles purple, slightly curved; carpels numerous (60–70), with longitudinal ridges, ovules 5–6. Fruit aggregate long spicate, 8–15 cm long, follicles 10–15, ellipsoid, sparsely white lenticellate, 2-valved dehiscent along ventral and dorsal sutures. Flowering February to March, fruiting September to October.

*Michelia multitepala* closely resembles *M. macclurei*, but differs in having longer leaves, more tepals (11–12) in 4 (or 3–4) series, and in its longer, aggregate spicate (8–15 cm) fruit. *Michelia ingrata* (Chen & Yang 1988) also resembles *M. multitepala* in having 11–12 tepals

**Table 1.** Morphological differences between *Michelia multitepala*, *M. macclurei* and *M. ingrata*.

Characters	<i>M. multitepala</i>	<i>M. macclurei</i>	<i>M. ingrata</i>
Bark	grayish-brown, not fissured	grayish-white, smooth and not fissured	brown, longitudinally furrowed
Buds, petioles and peduncles	appressed tomentellous	densely appressed tomentellous	densely pale brown villose
Leaves	thin, leathery, elliptic, 14–18 cm long, 5.0–6.5 cm wide, pale green beneath	leathery, obovate, elliptic-obovate, rhombic or oblong-elliptic, 7–14 cm long, 5.0–7.0 cm wide, gray hairy and mixed with brown appressed tomentellous beneath	thick, leathery, obovate-elliptic, 19–24 cm long, 7.7–9.4 cm wide, glaucous beneath
Petioles	1.5–3.0 cm long	2.5–4.0 cm long	3.6–5.7 cm long
Smell of flower	fragrant	very fragrant	unpleasant
Tepals	11–12, in 4 (or 3–4) series, thinly oblanceolate, 4.0–6.5 cm long, 0.8–1.7 cm wide	9, in 3 series, white, spathulate-obovate or oblanceolate, 3.0–5.0 cm long, 1.5–2.0 cm wide	11–12, in 4 series, golden, fleshy, glabrous, obovate or narrowly elliptic, 4.0–6.0 cm long, 1.9–3.5 cm wide
Stamen	55–60, 1.4–1.6 cm long	50–55, 1–2 cm long	numerous, 1.7–2.2 cm long
Carpels	60–70	35–40	60–65
Aggregate fruit	8–15 cm long	3–7 cm long	6–10 cm long

in 4 series, but differs from the latter mainly by its longitudinally furrowed bark, bigger leaves that are glaucous beneath, and by its fleshy and glabrous tepals as well as unpleasant flower odor. More detailed morphological differences between *M. multitepala* and the other two species are given in Table 1.

*Michelia multitepala* is found on Fadou Mountain, Xichou county, Yunnan province, China. It occurs in evergreen broad-leaved forest, at an altitude of 1300–1500 m above sea level, on the south flank of the mountain range. It grows in moist, acidic, yellow soil in association with *Manglietia insignis*, *Cyclobalanopsis fadouensis*, *C. glaucoides*, *Machilus sichouensis*, *Exbucklandia populnea*, and *Borthrocarium controversum*.

ADDITIONAL SPECIMEN EXAMINED (paratype). **China.** Yunnan province, Xichou county, Fadou Mountain, evergreen broad-leaved forest, alt. 1300–1500 m a.s.l., R. Z. Zhou & S. G. Jian 20040701 (IBSC).

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