

Photinia sorbifolia (Rosaceae), a new species from Hunan Province, China

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Photinia sorbifolia W.B. Liao & W. Guo *sp. nova* (Rosaceae) from Hunan Province, China, is described and illustrated. Its relationships with two morphologically close species *P. schneideriana* and *P. villosa* are discussed. The persistent, densely tomentose leaves with eight to fourteen pairs of secondary veins of *P. sorbifolia* distinguish it from *P. schneideriana*, which has sparsely tomentose leaves, and from *P. villosa*, with initially villous, then glabrous leaves; in the latter two species, the leaves have ten to fifteen and five to seven pairs of secondary veins, respectively. Both *P. sorbifolia* and *P. schneideriana* have compound inflorescences, while *P. villosa* has a simple corymb inflorescence.

Key words: angiosperms, morphology, new species, taxonomy

The genus *Photinia* (including *Pourthiaea*, *Stranvaesia* and *Aronia*), distributed primarily in Central and North America and East Asia, comprises about 65 species of which more than 40 are native to China (Robertson *et al.* 1991, Lu *et al.* 2003). There has been considerable controversy regarding delimitation of the genus, and many botanists have attempted to subdivide it into natural units (De Candolle 1825, Decaisne 1874, Rehder 1940, Kalkman 1973, Yü 1974, Robertson *et al.* 1991). Nonetheless, most botanists accept Decaisne's subgeneric concept, with the evergreen species classified in the section *Photinia* and the deciduous species in the section *Pourthiaea*.

During 2007–2008, we examined approximately 600 specimens, in practice nearly all the specimens of *Photinia* from the four main

herbaria in China (PE, IBSC, KM, SYS). In addition, we collected about 30 species from the field. In the course of these studies, two peculiar herbarium specimens with fruits and flowers were found in IBSC. In 2008, more specimens with flowers and fruits were collected from the locality of the peculiar specimens. After examination and comparison with the other *Photinia* species, we concluded that these specimens exhibited clear differences, and they should be treated as representing a new species.

***Photinia sorbifolia* W.B. Liao & W. Guo, *sp. nova* (Fig. 1)**

Species similis Photiniae schneiderianae, sed

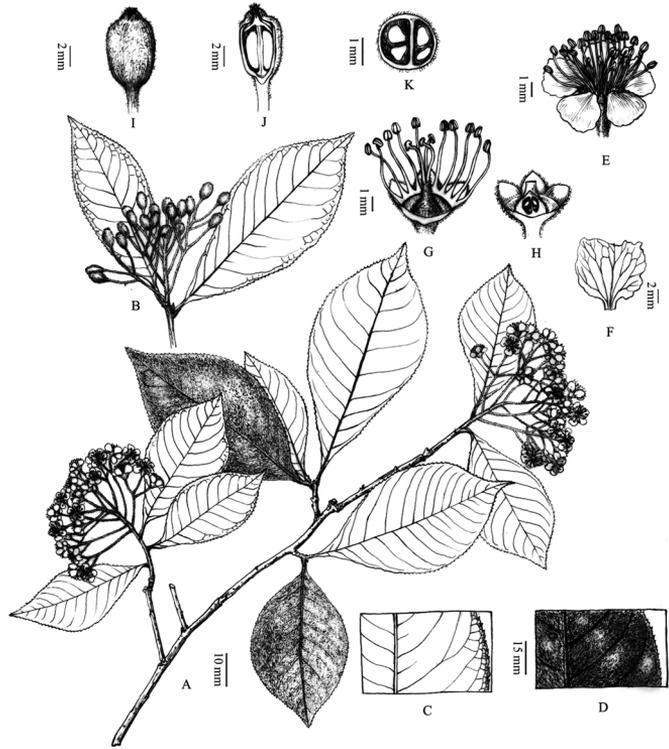


Fig. 1. *Photinia sorbifolia* (from the holotype, drawn by Yun-Xiao Liu). — **A:** Flowering branch. — **B:** Fruiting branch. — **C:** Adaxial leaf surface. — **D:** Abaxial leaf surface. — **E:** Flower. — **F:** Petal. — **G:** Detail of ovary with corolla removed. — **H:** Ovary in vertical section. — **I:** Fruit. — **J:** Fruit, vertical section. — **K:** Fruit, transverse section.

foliis subtus, cum petiolis dense tomentosis persistentibus, nervis lateralibus parallelis rectis prope margines anastomosantibus, pedicellis tomentosis, fructibus tomentosis paulatim delapsis, sepalis tomentosis persistentibus bene differt.

TYPE: China. Hunan Province, Huaihua County, Tianlei-shan Farm, in forest edges, alt. 760 m, 10.V.2008 *Guo Wei 840* (holotype SYS; isotype IBSC). — **PARATYPES:** China. Hunan Province, Huaihua County, Zhijiang Baishui Dong, alt. 780 m, *Pei-Xiang Tan 60949* (IBSC); Huaihua County, Tianlei-shan Shiyang Dong, alt. 900 m, 17.VII.1988 *Wuling Expedition Team 909* (IBSC); Tianlei-shan Farm, alt. 760 m, 10.V.2008 *Guo wei 841* (SYS, IBSC).

Shrubs or small trees, deciduous, 4–5 m tall. Branchlets grayish black at maturity, villous when young and near glabrous when old, with a few lenticels, buds ovoid, 2–4 mm long, apex acute, scales brown, villous. Leaf blade oblong or oblong-elliptic to oblong-lanceolate, 4–12 mm long, 1.5–4 mm wide, apex acuminate, base cuneate, veins 8–14 pairs, nearly parallel and slightly curved, anastomosing toward margin, impressed adaxially and raised abaxially, margin serrulate, abaxially dense grayish-white tomen-

tose, also both midvein and lateral veins tomentose, adaxially initially sparsely villous, glabrescent; petiole 5–10 mm, densely grayish-white tomentose. Compound corymbs terminal, 4–7 cm diam, with 20–85 flowers, rachis and pedicels villous; flowers 5–7 mm in diam., pedicel 4–5 mm, hypogynous, abaxially villous. Petals white, obovate or suborbicular, 3–4 mm, adaxially pilose, apex obtuse. Stamens ca. 20. Styles 3, connate at base, villous. Fruit reddish brown, obovoid or obovoid-ellipsoid, 4–5 mm in diam., initially pilose, glabrescent, pedicels 1–1.5 cm, with few brownish lenticels, 3-loculed, sepals persistent, pilose. Seeds brown, ovoid or ovoid-ellipsoid. Flowering April–May, fruiting July–September.

HABITAT: *Photinia sorbifolia* mainly occurs in the edges of dense forests, at altitudes of 600–900 m.

Photinia sorbifolia was first identified as a species of *Sorbus* based on the appearance of its leaves, which are abaxially densely grayish-white-tomentose. Its secondary veins are almost parallel, which is similar to the craspedodromous venation of some species in *Sorbus*, but its venation is slightly curved toward the margin. How-

Table 1. Morphological comparison of *Photinia sorbifolia*, *P. schneideriana* and *P. villosa*.

| Characters | <i>P. sorbifolia</i> | <i>P. schneideriana</i> | <i>P. villosa</i> |
|-----------------|--|---|---|
| Branchlet | initially villous, glabrescent | initially sparsely villous, glabrescent | initially villous, glabrescent |
| Leaf size | 4–12 × 1.5–4 cm | 6–11 × 2–5.5 cm | 3.8 × 2.4 cm |
| Leaf indumentum | densely tomentose | sparsely tomentose | initially villous glabrescent |
| Secondary veins | 8–14 pairs with densely tomentose, subtus prominently raised | 10–15 pairs with sparsely tomentose, subtus slightly raised | 5–7 pairs, glabrous, subtus slightly raised |
| Petiole | 5–10 mm, densely tomentose | 6–10 mm, initially villous, glabrescent | 2–6 mm, initially villous, glabrescent |
| Style | 3, in base connate | 2 or 3, in base connate | 3, in base connate, |
| Inflorescence | compound inflorescence | compound inflorescence | corymb inflorescence |
| Pedicele | villous | glabrous or sparsely villous, glabrescent | villous |
| Fruit | pubescent, 4–5 mm in diam. | glabrous, 5–6 mm in diam. | slightly pubescent, 6–8 in diam. |

ever, its ovary in fruit is free to 1/3 its length and there are no lenticels on the fruits. Ovaries in the simple-leaved section *Aria* in *Sorbus* are always free only apically, while in the section *Micromelles* they are wholly fused with the hypanthium. Furthermore, many lenticels exist on fruits in both of these simple-leaved sections of *Sorbus*. Because the species of *Photinia* have ovaries free apically or to 1/3 length and lack lenticels on the fruits, we place the new species with these characters in *Photinia*.

The most similar species to *P. sorbifolia* are *P. schneideriana* and *P. villosa*. Details of the differences between *P. sorbifolia* and the other two species are presented in Table 1.

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