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## A New Combination in Chinese *Aesculus* (Hippocastanaceae)

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**ABSTRACT.** In the context of the present authors' revision of the Hippocastanaceae for the forthcoming *Flora of China*, Volume 12, two Chinese endemic taxa, *Aesculus chinensis* Bunge and *A. wilsonii* Rehder, are treated as conspecific. The latter taxon, represented by wild plants, is here recombined as *A. chinensis* var. *wilsonii* (Rehder) Turland & N. H. Xia, comb. et stat. nov. *Aesculus chinensis* var. *chinensis*, with *A. chekiangensis* Hu & W. P. Fang (*A. chinensis* var. *chekiangensis* (Hu & W. P. Fang) W. P. Fang) in synonymy, is represented by cultivated plants and is unknown with certainty in a wild state.

**Key words:** *Aesculus*, China, Hippocastanaceae.

The genus *Aesculus* L. (Hippocastanaceae) comprises ca. 12 species of deciduous trees with palmate leaves, showy flowers borne in thyrses, and large seeds (buckeyes or horsechestnuts). They are disjunctly distributed in North America (including Baja California), southeastern Europe, and Asia from the Himalayas to Japan.

In the context of the present authors' revision of the Hippocastanaceae for the forthcoming *Flora of China*, Volume 12, four species are here recognized as occurring in China. One is endemic: *Aesculus chinensis* Bunge, under discussion here; one is rather widely distributed from Sikkim to northern Vietnam and southern China: *A. assamica* Griffith; and two are introduced: *A. hippocastanum* L., from the Balkan peninsula in Europe, and *A. turbinata* Blume, from Japan.

*Aesculus chinensis* (Bunge, 1833: 10) was originally described from cultivated material from the Beijing area. It is characterized by having petioles 0.5–2.5(–3) cm long, leaflet blades 8–25(–30) cm long; thyrses cylindric, 15–35 cm long; petals white with yellow spots, subequal, oblong-obovate to oblong-oblancoelate, 8–14 × 3–5 mm; anthers 1–1.5 mm long; and capsules dotted but smooth.

Cultivated plants from southern Jiangsu and

northern Zhejiang provinces were described as *Aesculus chekiangensis* Hu & W. P. Fang (Fang, 1962: 86; repeated by Fang & Hu, 1965: 218), which was later reduced to varietal rank (Fang, 1981: 277), as *A. chinensis* var. *chekiangensis* (Hu & W. P. Fang) W. P. Fang. However, they are scarcely distinguishable from plants in the Beijing region and in fact have some features that were thought to distinguish *A. wilsonii* Rehder (see below), namely a thinner pericarp and a smaller hilum (Rehder, 1913: 499; Hardin, 1960: 35).

*Aesculus wilsonii* (Rehder, 1913: 498) was described from wild plants in Chongqing, western Hubei, and Sichuan provinces, and in its typical form differs from *A. chinensis* in the above-mentioned features and in having leaf blades abaxially pubescent (vs. more or less glabrous) with a more rounded base (vs. cuneate). Within the range of *A. wilsonii* occur numerous intermediates with *A. chinensis*, as was noted by Hardin (1960: 34), who hypothesized that the latter species might only be a cultivated form of the former. The comment by Fang (1981: 276, in Chinese) about native plants of *A. chinensis* existing in the Qin Ling mountain range (southern Shaanxi province) was possibly based on a comment by Rehder (1913: 500), which was questioned by Hardin (1960: 34), who noted “the specimens which I examined from Shensi [i.e., Shaanxi] represent a form of *A. wilsonii*.” Indeed, among the intermediates mentioned above are the same gathering seen by Hardin (*F. N. Meyer 1725*, A, MO) and another from Mianxian County in southwestern Shaanxi (*K. J. Fu 5630*, MO).

While the extreme forms can easily be assigned to either *Aesculus chinensis* or *A. wilsonii*, the existence of so many intermediates makes it impossible to delimit species and difficult even to justify infraspecific taxa. We have therefore decided to recognize one variable species, *A. chinensis*, but nevertheless to retain a separate status for the wild plants, as *A. chinensis* var. *wilsonii* (Rehder) Tur-

land & N. H. Xia. Such a treatment would not be at odds with two recent analyses. Forest et al. (2001) published a cladistic analysis of *Aesculus* based on morphology only. The two most parsimonious trees obtained showed no resolution between *A. chinensis* and *A. wilsonii*, or for that matter between those two taxa and the only other native Chinese species: *A. assamica*. Xiang et al. (1998) published a molecular phylogenetic analysis in which the single most parsimonious tree based on internal transcribed spacer (ITS) sequences showed *A. chinensis* and *A. wilsonii* as sister taxa, the former supported by eight nucleotide changes and the latter by six. *Aesculus assamica* (therein as "*A. wangii*") was shown as sister to the *A. chinensis*-*A. wilsonii* clade, supported by 30 nucleotide changes. "*Aesculus wangii* Hu" was not validly published by either Fang (1962: 99) or Fang and Hu (1965: 227, as "*wangi*") because in both cases two gatherings were indicated as types (*Sino-Ross. Exped. 580*, PE, and *K. M. Feng 12943*, PE), both of which are clearly referable to *A. assamica*. The analysis of Xiang et al. (1998) did not include other accessions of *A. assamica* in addition to that given as "*A. wangii*."

The two varieties of *Aesculus chinensis* may be summarized as follows. The provincial distributions are based on the herbarium specimens examined by the present authors (A, GH, IBSC, MO, PE) and the data given by Rehder (1913), Hardin (1960), and Fang (1962, 1981).

*Aesculus chinensis* var. *chinensis* (including *A. chekiangensis*) has leaflet blades abaxially glabrous, or grayish tomentose on the veins when young, and the leaflet blade base cuneate to broadly so. It is cultivated, especially in temple grounds and by houses, at elevations below 800 m, and is not known with certainty in a wild state. It has been recorded from the following provinces in China: Hebei, northern Henan, southern Jiangsu, southern Shaanxi, southern Shanxi, and northern Zhejiang.

*Aesculus chinensis* var. *wilsonii* has leaflet blades abaxially more or less uniformly grayish tomentose or villous, or grayish tomentose on the veins (sometimes only when young), and the leaflet blade base cuneate to rounded or slightly cordate. It grows in broad-leaved forests, near streams in tall shady for-

ests, woods, thickets, mountain and hill slopes, ravines, and roadsides, at elevations of 600–2000(–2300) m, and is also sometimes cultivated. It has been recorded from the following provinces in China: Chongqing, southern Gansu (Kangxian: *Y. S. Lian 96405*, MO), northern Guangdong, Guizhou, southwestern Henan, western Hubei, Hunan, western Jiangxi, southern Shaanxi, Sichuan, and north-eastern Yunnan.

***Aesculus chinensis* Bunge var. *wilsonii* (Rehder)**

Turland & N. H. Xia, comb. et stat. nov. Basionym: *Aesculus wilsonii* Rehder, in Sargent, *Pl. Wilson*. 1: 498. 1913. TYPE: China. Sichuan: Wenchuan County, "Hsin Wên Ping, 3400 ft.," 1 June 1908 (fl), *E. H. Wilson 200* (lectotype, designated by Hardin (1960: 35), A, sheet no. 50582).

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