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Lectotypification of *Pterocarya serrata* C.K.Schneider, the name of a forgotten species of wingnuts

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1 **Lectotypification of *Pterocarya serrata* C.K.Schneider, the name of a forgotten species of**
2 **wingnuts**

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10 Abstract. The Juglandaceae species *Pterocarya serrata* C.K.Schneid. was first described in 1912,
11 but its assumed holotype, a flowering E. H. Wilson collection in the Vienna herbarium, was
12 destroyed during World War II. Schneider described *P. serrata* as ‘fruits unknown’ because he
13 thought that a fruiting specimen, collected under the same number, was a mixed collection. Pre-
14 1958, citation of a single collection does not automatically constitute a type, but we here accept
15 the Vienna material as a lost holotype and select the HUH duplicate with the most precise
16 location information as the lectotype, with isolectotypes in at least four other herbaria.

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18 Key words: E.H. Wilson, Camillo K. Schneider, Juglandaceae

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20 Based on a flowering collection from western Hubei, China, made in June 1900 by the British
21 collector E.H. Wilson (1876 – 1930), the German landscape architect and botanist C.K.
22 Schneider (1876 – 1951) described *Pterocarya serrata*, a wingnut species with relatively large
23 leaves. He compared it to *P. stenoptera* C.DC, one of the six then-known species of
24 wingnuts (*ptero* meaning wing). Despite the availability of multiple duplicates of the flowering
25 specimen *Wilson 901 June 1900* in European and North American herbaria (below) and despite
26 Schneider’s widely recognized taxonomic expertise --he published numerous taxa in diverse
27 families--, *P. serrata* fell into oblivion. A factor contributing to this may have been that
28 Schneider described it as ‘fruits unknown’ although he assumed that it had *Pterocarya*-like
29 winged fruits. This is clear from his statement in the protologue that “This species is deposited in
30 the Herbarium Hofmeister [in] Vienna as Wilson No. 901, IV 1900, W-Hupeh [Hubei] in flower
31 and mixed with a young infructescence that probably belongs to No. 546, *Pt. paliurus* [Batalin]”
32 (Schneider, 1912, translated from the German by SSR). We searched for *Wilson 546* in relevant
33 herbaria and in *Plantae Wilsonianae* volume 3 (Sargent, 2017), which contains a partial list of
34 the collections made by Wilson for the Veitch nursery company, but in vain.

35 While Schneider in 1912 only knew the *Wilson 901* herbarium material, which he probably
36 received from Veitch, Wilson himself seems to have been aware that the species has disk-like,
37 not pointy-winged fruits, and he considered his collections of this entity as representing *P.*
38 *paliurus*. This is apparent from the treatment in *Plantae Wilsonianae* (Sargent 1917, p. 182),
39 which states under *P. paliurus* “Western Hupeh: north and south of Ichang, woods, alt. 1000-
40 1600 m., June and October 1907 (No. 452; tree 13-20 m. tall, 1.5-2.5 m. girth); same locality,
41 June 1900 (Veitch Exped. No. 901; flowers); Kui-chou, August 1900 (Veitch Exped. No. 901;
42 fruit).” Wilson used different numbering systems while working for Veitch and after moving to
43 the Arnold Arboretum in late 1906 (Howard, 1980), and the locations given in Sargent (1917) for
44 the flowering and fruiting *901* collections are more precise than the label information on
45 specimens in E, HUH, P, and NY, which are mostly labeled as ‘W Hupeh’ or on the HUH

46 lectotype selected here (below) as ‘China, Chienshi.’ The latter precise location in Western
47 Hubei agrees with Wilson’s itinerary of June 1900 (Howard, 1980: p. 135 Chienshi Hsien).

48 A species described with ‘fruits unknown’ --but assumed to have *Pterocarya*-type pointy-
49 winged fruits—combined with the existence of duplicates of *Wilson 901* showing disk-winged
50 fruits that looked like those of *P. paliurus*, understandably resulted in *P. serrata* being
51 considered a synonym of *P. paliurus*, although we are unaware of a formal synonymization of
52 the name. Iljinskaja (1953) recognized *P. serrata*, but a taxonomic treatment of *Pterocarya* by
53 Manning (1975) does not mention the name and the English-language Juglandaceae treatment for
54 the *Flora of China* (Lu et al., 1999) does not either. Duplicates of Wilson’s flowering June 1900
55 and fruiting August 1900 collections in HUH and Paris were not annotated as *P. serrata* prior to
56 this study, and the NY and Paris duplicates were found among undetermined Juglandaceae.

57 Recent field work and genomic data reveal that Schneider’s *P. serrata* probably should
58 be considered a reproductively isolated (‘biological’) species that is close to *P. paliurus* but
59 differs in leaf and fruit size, chromosome number, and ecology (Song et al., in review). This
60 discovery led us to study Wilson’s material of *P. serrata* and to lectotypify the name. Given that
61 the name was published pre-1958, citation of a single collection in the protologue does not
62 automatically constitute a type (Turland et al., 2018). It seems likely, however, that the flowering
63 duplicate of *Wilson 901* collected in June 1900 and cited by Schneider (1912) can be considered
64 the sole basis for the description and thus the holotype, despite Schneider’s mention of the loose
65 infructescence that he considered to belong to *P. paliurus*. Unfortunately, most Juglandaceae
66 material, including Schneider’s *P. serrata*, was destroyed in a fire in July of 1945 (Rubinstein
67 and Dosmann, 2020; T. Schuster, pers. comm. to SSR on 23 April 2025).

68 Camillo Karl Schneider lived and worked in Berlin and Vienna. In 1913, supported by
69 the Austro-Hungarian Dendrological Society, he went to China to collect plants and seeds, and
70 on the way back, he visited the Arnold Arboretum in Boston, where he worked with Wilson,
71 Charles S. Sargent (1841- 1927) and Alfred Rehder (1963 – 1949). Together, these workers dealt
72 with the thousands of Chinese collections made by Wilson, resulting in the three-volume *Plantae*
73 *Wilsonianae: An Enumeration of the Woody Plants Collected in Western China for the Arnold*
74 *Arboretum of Harvard University During the Years 1907, 1908, and 1910* by E. H. Wilson
75 (Sargent 1913, 1916, 1917). The collaboration between Schneider and Wilson from 1913/1914 to
76 1919 may have influenced these workers’ understanding of *P. serrata*, but if so, this happened
77 after Schneider’s (1912) description of the species. A bit surprisingly, the name is not mentioned
78 in Rehder and Wilson’s treatment of the Juglandaceae in *Plantae Wilsonianae* (Sargent, 1917).

79 Enquiries about the presence of duplicates of *Wilson 901 June 1900* in the herbaria B,
80 BM, E, HUH, K, KYO, LE, NY, P, and W, showed that E, K [curator is still searching], HUH,
81 NY, and P harbor this collection. Since the first set of the Wilson material is at HUH, we here
82 select one of Harvard’s two sheets of *Wilson 901 June 1900* as the lectotype (Fig. 1), namely the
83 one labeled as from Chienshi [today Chien-shih-hsien, alternative name Chien-Shih]. Chien-
84 shih-hsien is located at 30°37'1" North and 109°37'58" East.

85
86 E. H. Wilson 901, Western Hubei: Chien-shih-hsien, flowering in June 1900 (HUH barcode
87 01109592), lectotype designated here. Isolectotypes: E barcode E00275520 (annotated as an
88 isotype by W. E. Manning in July 1963), HUH barcode 01109593), K barcode [awaited], NY
89 barcode NY00255120 (annotated as an isotype by W. E. Manning in March 1971), NY barcode
90 NY4358432, P barcode P06842578.

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 93 Annotation labels for the Wilson 901 collections from both June and from August 1900 have
 94 been sent to all these herbaria.

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 96 The disk-like fruits of *P. paliurus* led the Russian paleobotanist Irina Alekseevna
 97 Iljinskaya (1921 – 2011) to move this species into a separate genus, *Cyclocarya paliurus* (Batal.)
 98 Iljinsk. (Iljinskaya, 1953, 1990, 1994), an up-ranking not accepted by Manning (1975), but
 99 followed by Stone (1993), Manos et al. (2007), and Manchester et al. (2009). If the genus
 100 *Cyclocarya* is accepted, then the name *P. serrata* should be transferred to that genus.

101
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Figure 1: Wilson 901, collected at Chien-Shih (Chien-shih-hsien) in June 1900, the lectotype of *Pterocarya serrata* C.K.Schneid. Credit line: The Herbarium of the Arnold Arboretum of Harvard University.