Phytotaxa 173 (2): 177–180
www.mapress.com/phytotaxa/

Correspondence

ISSN 1179-3155 (print edition)
PHYTOTAXA
ISSN 1179-3163 (online edition)

http://dx.doi.org/10.11646/phytotaxa.173.2.10

The identity of *Ailanthus guangxiensis* (Simaroubaceae) and lectotypification of *A. integrifolia* Lamarck

ZHUQIU SONG & DONGXIAN XU*
Natural History Museum of Guangxi, Nanning 530012, People's Republic of China.
**Author for correspondence: E-mail: xdx520@126.com*

The genus *Ailanthus* Desfontaines (1788: 265) of the family Simaroubaceae comprises 5–10 species distributed in South and Southeast Asia as well as northern Australia (Nooteboom 1962, Peng & Thomas 2008). The species can be classified into two groups, i.e., one with toothed leaflets and the other with entire-margined leaflets. The latter group currently includes five species, *A. triphysa* (Dennstedt 1818: 32) Alston (1931: 41), *A. vietnamensis* H.V.Sam & Nooteboom (2007: 555), *A. fordii* Nooteboom (1962: 220), *A. integrifolia* Lamarck (1792: 417), and *A. guangxiensis* S.L.Mo ex C.F.Liang & S.L.Mo (1982: 145). The last species was described based on two fruit collections from Longzhou County, Guangxi Province, China. In the protologue, the authors stated that it was clearly distinguished from its congeneric species by the large samaras. After that, *A. guangxiensis* is always considered as an endemic species of Guangxi (Peng & Thomas 2008, Qin & Liu 2010, Mo 2011). In 2010, it was listed as a key protected wild plant of Guangxi by the local government.

In *Ailanthus*, the samara morphology is placed a high value on distinguishing species, including both living and fossil species (Nooteboom 1962, Corbett & Manchester 2004). The examination of the cited collections of *A. guangxiensis*, including the holotype (Fig. 1), shows that the samara is 12.9–14.8 × 3.6–4.1 cm. Although it is much larger than that of any other Chinese species of *Ailanthus* (usually less than 8 cm long), it does not beyond the range of *A. integrifolia* (11–22 × 2.5–5 cm), which has geographic distribution extending from India, Vietnam, the Philippines, to northeastern Australia (Nooteboom 1962). In fact, because of the large samara, Prain (1902: 131) described a new species, *A. grandis* Prain, based on two fruit collections from Assam and Sikkim, India. The epithet *grandis* means the samara is large. The large samara is also the primary feature of *A. blancoi* Merrill (1918: 205), a species published based on the fruit and flower materials from the Philippines. In the *Flora Malesiana*, Nooteboom (1962) conducted a comprehensive and excellent revision on *Ailanthus* and he correctly treated *A. grandis* and *A. blancoi* as synonyms of *A. integrifolia*. Besides the size, two other characters of the samara are used to distinguish species from one another as well: the placement of the ventral vein towards the seed and the position of the stylar scar. In the samaras of *A. integrifolia* and *A. guangxiensis*, the ventral vein runs strictly along the margins and the stylar scar is beneath the seed. In contrast, in the samaras of the other species with entire leaflets, the ventral vein is obviously intramarginal and the stylar scar is above the seed (*A. fordii*) or at the same level as the middle of the seed (*A. triphysa* and *A. vietnamensis*) (Fig. 2).

Nooteboom (1962) found the presence versus absence and placement of glands to be also useful in distinguishing the species of the genus. Among the species with entire-margined leaflets, *A. integrifolia* is distinguished by a few large glands at the base of the lamina. Such glands are also present from foliage of *A. guangxiensis* (Fig. 1). In contrast, some small glands either scattered or in vein-forks may occur over the leaf surface of the other species. Additionally, the straight trunks of *A. guangxiensis* are up to 40 m high; the bark nearly smooth, gray or gray-brown; the leaves 4–8 pairs, even-pinnate, 25–50 cm long; leaflets entire, ovate to oblong-ovate, base oblique, apex acuminate, both surfaces glabrous, lateral veins 5–8 pairs, 7–20 × 4–8 cm; petiolues 1–2 cm long; infructescence paniculate, loose, 15–35 cm long; samaras compressed, oblong, reticulate, apex somewhat contorted (Liang & Mo 1982). Although the floral character is still unknown, these characters are also perfectly consistent with those of *A. integrifolia* (Nooteboom 1962).

Therefore, based on the analysis and comparison of the characters, we conclude that *A. guangxiensis* is conspecific with *A. integrifolia*, and it is here reduced to a synonym of the latter species.

Ailanthus integrifolia Lamarck (1792: 417).—Type: *Arbor coeli sive Caju langit* (Rumphius 1743: 205, t. 132, lectotype, here designated!).

= *Ailanthus guangxiensis* S.L.Mo ex C.F.Liang & S.L.Mo (1982: 145), *syn. nov.* Type:—CHINA. Guangxi: Longzhou County, Longgang Conservation Area, Longhu, 240 m, 25 September 1979, *Longgang Exped. 10696* (holotype IBK!; isotype SYS!).

Accepted by Libing Zhang: 28 May 2014; published: 25 Jun. 2014

References

Alston, A.H.G. (1931) *A Hand-book to the Flora of Ceylon 6* (supplement). Dulau, London, 350 pp.

Corbett, S.L. & Manchester, S.R. (2004) Phytogeography and fossil history of *Ailanthus* (Simaroubaceae). *International journal of plant sciences* 165(4): 671–690.
http://dx.doi.org/10.1086/386378

Dennstedt, A.W. (1818) *Schlüssel zum Hortus indicus malabaricus: oder dreifaches register zu diesem werke*. Landes-Industrie-Comptoir, Weimar, 40 pp.

Desfontaines, R.L. (1788) Mémoire sur un nouveau genre d'arbre, *Ailanthus glandulosa*. *Mémoire de mathématique et physique* 1786: 265–271.

Lamarck, J.B.A.P. (1792) *Encyclopedie Méthodique, Botanique* (vol. 3, part 2). Chez Panckoucke, Libraire, Hotel de Thou, rue des Poitevins, Paris, 753 pp.

Liang, C.F. & Mo, S.L. (1982) Materials for the flora of Longgang conservation area, Guangxi (II). *Guihaia* 2(3): 143–146.

Merrill, E.D. (1917) *An interpretation of Rumphius's Herbarium Amboinense*. Bureau of Printing, Manila, 595 pp.
http://dx.doi.org/10.5962/bhl.title.79163

Merrill, E.D. (1918) *Species Blancoanae, A critical revision of the Philippine species of plants described by Blanco and Llanos*. Bureau of Printing, Manila, 423 pp.
http://dx.doi.org/10.5962/bhl.title.2116

Mo, S.L. (2011) Simaroubacae. In: Li, S.G (ed.) *Flora of Guangxi* (vol. 3). Guangxi Science and Technology Publishing House, Nanning, pp. 321–328.

Nooteboom, H.P. (1962) *Ailanthus*. In: *Flora Malesiana* (Ser I, 6). Noordhoff International publishing, Leyden, pp. 215–220.

Peng, H. & Thomas, W.W. (2008) Simaroubaceae. In: Wu Z. Y. & Raven P. H. (eds.) *Flora of China* (vol. 11). Science Press, Beijing and Missouri Botanical Garden Press, St. Louis, pp. 100–104.

Prain, D. (1902) An undescribed *Ailanthus* from north-eastern India. *The Indian Forester* 28(4): 131–134.

Qin, H.N. & Liu, Y. (2010) *A Checklist of Vascular Plants of Guangxi*. Science Press, Beijing, 625 pp.

Rumphius, G.E. (1743) *Herbarium Amboinense* (vol. 3). Apud Fransicum Changuion, Amstelaedami, 218 pp.

Sam, H.V. & Nooteboom, H.P. (2007) *Ailanthus vietnamensis* (Simaroubaceae): a new species from Vietnam. *Blumea* 52(3): 555–558.
http://dx.doi.org/10.3767/000651907x608918

Stafleu F.A. & Cowan R.S. (1983) *Taxonomic literature: A selective guide to botanical publications with dates, commentaries and types* (vol. 4), 2nd edition. Bohn, Scheltema & Holkema, Utrecht, 1214 pp.