

# The Checkered Career of *Ailanthus altissima*

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**The history of the tree-of-heaven since its introduction into cultivation is a convoluted one. Once highly praised and widely planted as an ornamental, the species has made itself at home as a weed along our roadsides and in our fields. *Ailanthus* is now viewed by many as a symbol of dereliction and abandonment, but its hardiness also makes it deserving of our admiration.**

The genus *Ailanthus*, part of the Simaroubaceae, includes five species distributed widely from eastern Asia to Australia. The species *A. altissima*, native to northern China, is the only one that has adapted to the temperate environment of Europe and North America (zones 4–8). Most species have traditionally been revered in the cultures where they grow. The ancient Chinese name for the plant is “God’s tree,” and in its native range it is planted near Buddhist temples. The name of the genus derives from its common East Indian name, *Aylanto*, meaning “heaven-tree” or “tree reaching for the sky.” The English name, “tree-of-heaven,” transposes the original meaning, which probably alludes to the East Indian mythic tree that reaches the heavens from the earth.<sup>1</sup>

During its days of respectability in the United States—the first half of the nineteenth century—tree-of-heaven was valued primarily for its ability to provide shade and to make an effect in the landscape within a relatively short time, growing up to five feet in a year. It happily grows in any soil condition and can be propagated in large numbers, both because of its tendency to sucker and because its distinctive winged seeds germinate easily without pretreatment. (In a moist medium, seedlings appear within two months.) It had the additional attraction of being a foreign plant that, as Andrew Jackson Downing so poetically put it, could “whisper tales to you in the evening of the ‘Flowery Country’ from whence you have borrowed it . . .”<sup>2</sup>

But these were some of the very attributes that contributed to its fall from grace during the middle of the nineteenth century.

*Ailanthus altissima* matures to almost sixty feet, with a spreading, light canopy and a grayish, slightly rough bark that stands out against darker backgrounds. Its leaves remain green without significant autumn color until the first frost, when they drop all at once. These alternate, pinnately compound leaves are distinguished by a characteristic gland that can be felt on the underside of the numerous leaflets near the base. (It was this gland that gave the tree its first species name, *Ailanthus glandulosa*, in use until 1919.) Its flowers are whitish to greenish-yellow, formed in clusters borne on long panicles at the ends of branches in June. The trees are usually dioecious, but occasionally both sexes exist on the same tree. The male flowers are notable for a unpleasant smell that lasts for a few weeks. Fertile flowers develop into showy clusters of seed pods that are green at first, gradually becoming tinged with a pink that darkens to red and finally to a reddish-brown by late summer.

## *Ailanthus altissima* in Europe

*Ailanthus altissima* was first grown in Europe in about 1751 from seed sent to England from Nankin (Nanjing) by a French Jesuit priest, Pierre Nicholas d’Incarville. Among the recipients was Peter Collinson, who grew from them “a stately tree.” The Royal Society in London

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*Ailanthus altissima* thrives on the banks of the Charles River near Boston.



*Tree-of-heaven seen just beneath Paulownia tomentosa (empress or princess tree) in the wild in northern China*

also received seeds, which it distributed to Philip Miller of the Chelsea Physic Garden and to an enthusiastic gardener in Surrey, a Mr. Webb, both of whom raised plants from the seeds.<sup>3</sup>

Tree-of-heaven was among the first plants to come from China, a country that was still difficult to penetrate during the eighteenth century but had nonetheless inspired a craze for *chinoiserie* in England and France. In 1755 a popular magazine, *Connoisseur*, described the

fad by saying "the chinese taste . . . has already taken possession of our gardens, our buildings and our furniture . . ." Literary descriptions of Chinese gardens had been filtering into England and *chinoise* architectural features had been introduced into gardens, but no Chinese plants were yet available. Curiosity about *Ailanthus* must therefore have been high.<sup>4</sup>

By 1756, however, Mr. Webb's garden superintendent, John Ellis, had already noticed that the tree emitted an offensive, even sickening odor, and that it suckered profusely. Eighty years later, in 1838, J. C. Loudon confirmed these impressions in his influential *Arboretum et Fruticetum Britannicum*, noting the suckering tendency of the tree as well as "the disagreeable odour" of its whitish flowers. Nevertheless, by the 1840s many mature specimens of *Ailanthus* were growing in Europe and it was being widely used as a shade tree for public promenades in Italy and France, valued particularly for its resistance to insect devastation.<sup>5</sup>

#### ***Ailanthus altissima* in the United States**

It was William Hamilton of Philadelphia, an avid plant collector and landscape improver, who in 1784 introduced *Ailanthus* into North America, together with

other Chinese trees including *Ginkgo biloba*, presumably sending the seeds from England himself. At that time many people (including Philip Miller in his *Gardener's Dictionary* of 1768 and probably Hamilton also) confused *Ailanthus* with the Chinese varnish tree, *Rhus verniciflua*, or thought it to be a new species of sumac. It did not receive its own generic status until 1786, when René Desfontaines described the tree and published a plate of its flowers and leaves.<sup>6</sup>

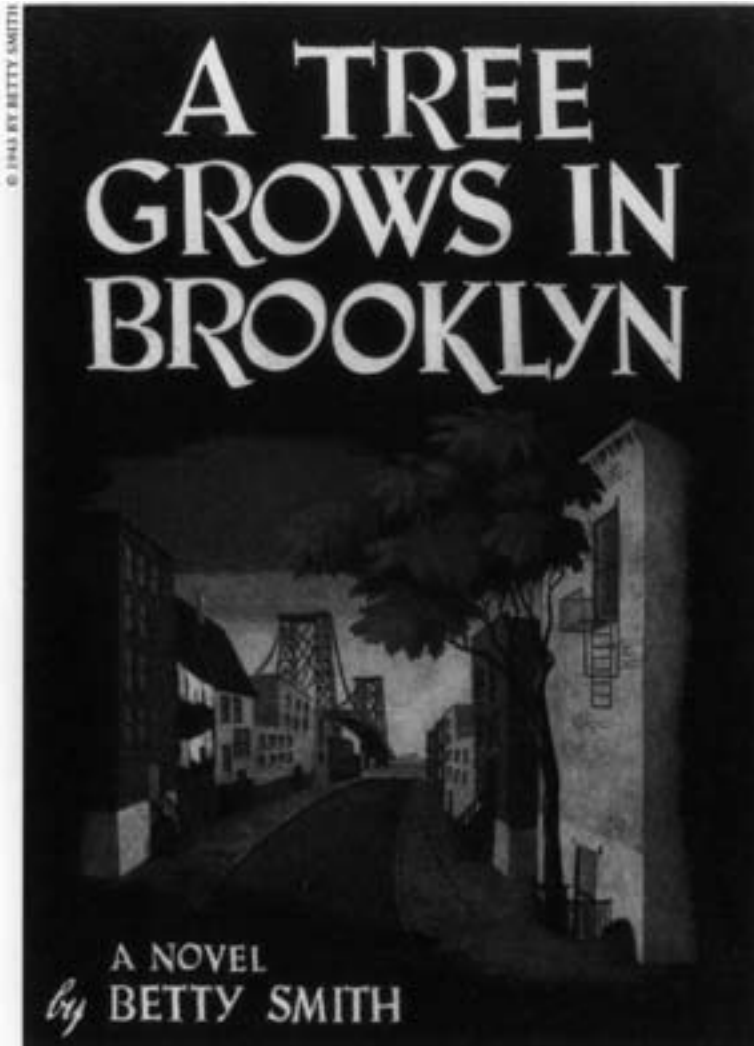
By the 1840s, the European practice of using *Ailanthus* for public walks was being emulated in cities like Philadelphia and New York, where it was known as “the celestial tree.” In March of 1847 Downing editorialized in his magazine, *The Horticulturist*, that

the variety of trees for cities—densely crowded cities—is but small; and this, chiefly, because the warm brick walls are such hiding places and

nurseries for insects, that many fine trees—fine for the country and for rural towns—become absolute pests in the cities. Thus, in Philadelphia, we have seen, with regret, whole rows of the European Linden cut down within the last ten years, because this tree, in cities, is so infested with odious worms, that it often becomes unendurable. On this account that foreign tree, the *Ailanthus*, the strong scented foliage of which no insect will attack, is every day becoming a greater metropolitan favorite.<sup>7</sup>

*Ailanthus* was well suited to meeting the growing demand for landscape trees that accompanied the unprecedented economic and social transformations of the 1840s, years that can be described as the clipper ship era. Between 1840 and the 1860s, the United States’ economy was invigorated by the China trade, resulting in the rapid growth of urban centers and suburban estates. By the 1850s, *Ailanthus* was being extensively used in urban plantings and was the only shade tree to be seen on many streets of New York. It was also grown in suburban gardens as boundary plantings.<sup>8</sup>

At the same time, it continued to be popular as a specimen tree on the pleasure grounds of country homes, in large part because of the aesthetic qualities described by Downing in 1841 in the first edition of his influential work, *A Treatise on the Theory and Practice of Landscape Gardening*, when *Ailanthus* was “one of the commonest trees sold in the nurseries.” For some reason Downing chose to ignore the “disagreeable odorous” flowers that Loudon had written about in 1838 and instead commented that “The male forms a finer ornamental tree, the female being low and spreading. . . . It is a picturesque tree, well adapted to produce a



“There’s a tree that grows in Brooklyn. Some people call it the Tree of Heaven. No matter where its seed falls, it makes a tree which struggles to reach the sky. It grows in boarded-up lots and out of neglected rubbish heaps. It grows up out of cellar gratings. It is the only tree that grows out of cement. It grows lushly . . . survives without sun, water, and seemingly earth. It would be considered beautiful except that there are too many of it.”

KAREN MAIDEN



Two trees grow up out of cellar gratings in Manhattan.

good effect on the lawn singly or grouped; as its fine long foliage catches the light well, and contrasts strikingly with that of the round-leaved trees." To counter its suckering habit, Downing suggested planting *Ailanthus* in "a heavy sward, where the surface of the ground is never stirred by cultivation." He noted that its "singularly naked look in winter [is] well calculated to fix the attention of the spectator at that dreary season."<sup>9</sup> Its suckering habit was of great advantage to nurseries, allowing them to meet increasing demand rapidly and profitably.

### The Slow Decline of *Ailanthus* in the United States

By July of 1852, when Downing was again editorializing about *Ailanthus* in *The Horticulturist*, his enthusiasm was waning. He admonished his readers for planting "odorous *Ailanthuses* and filthy poplars, to the neglect of graceful elms and salubrious maples." The following month, his disapproval of *Ailanthus* became more passionate. "Down with the *Ailanthus*!" he wrote. "[T]his 'tree of heaven,' (as the catalogues used alluringly to call it,) has penetrated all parts of the union, and begins to show its true character." He now viewed *Ailanthus* as

an usurper in rather bad *odor* at home, which has come over to this land of liberty, under the garb of utility to make foul the air, with its pestilent breath, and devour the soil, with its intermeddling roots—a tree that has the fair outside and the treacherous heart of the Asiatics, and that has played us so many tricks, that we find we have caught a Tartar which it requires something more than a Chinese wall to confine within limits!<sup>10</sup>

This outburst must be viewed within the context of the preceding decade's events. At the end of the Opium War in 1842, China had signed treaties with the United States and other foreign

powers allowing foreigners free access to the walled city of Canton as well as certain other privileges. But the tensions continued: conciliatory promises were continually made by the Chinese government, only to be repeatedly broken under the influence of antiforeign sentiment in China. Downing associated the negative attributes of *Ailanthus* with his perception of Chinese morality and viewed his distaste for the tree as "a patriotic objection"; it had "drawn away our attention from our own more noble native American trees."<sup>11</sup>



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*A tree-of-heaven escaped to Arizona*

This was Downing's "last and best essay," wrote Thomas Meehan, a prominent Philadelphia horticulturist, in 1853.<sup>12</sup> Many Americans must have shared the sentiment because large numbers of *Ailanthus altissima* were uprooted and discarded, primarily from country homes. Nevertheless, Meehan still considered it a useful tree for urban conditions where insect infestations and pollution made it difficult to keep any other tree healthy. For the same reason, perhaps, *Ailanthus* continued to be a favorite urban tree in Europe. After spending a year in France, William Robinson, author of many horticultural books including *The Parks, Promenades and Gardens of Paris*, was convinced that *Ailanthus* was indispensable for parks and avenues because of its ability to remain fresh even in the harshest city conditions.<sup>13</sup>

But in the United States, opinion about *Ailanthus* remained divided throughout the latter half of the nineteenth century. Its root bark was

reported to be efficacious against dysentery. An 1874 issue of *The Horticulturist* gave directions for preparing the medicinal concoction and the proper dosage. The medicinal value, however, was negated by reports of problems arising from the tree's pollen; many people developed allergic reactions, with hay fever symptoms lasting for a few weeks. However, it was believed that the *Ailanthus* flower was causing much more serious health problems. One report claimed that patients suffered from chronic sore throats, disturbed stomachs, and nausea, and finally, over time, tuberculosis. The District of Columbia and several states legislated a ban on *Ailanthus*. This movement may be an example of a social problem being blamed on a tree that was very common and therefore an easy scapegoat. In 1888 Charles Sprague Sargent attempted to redirect attention to other urban conditions that might have caused the illness. In response to a letter, he wrote,

What we believe to be an entirely unfounded belief in the injurious properties of the *Ailanthus* tree has taken possession of communities in this country at different times and different places. . . . it seems not improbable that the particular cases [of illness] to which our correspondent calls attention have been the result of malaria or improper drainage or impure drinking water—a belief sustained, in part at least, by the fact that the *Ailanthus* is one of the most commonly planted, and most highly esteemed trees in Paris and other European cities, while its bad reputation, so far as we can learn, is confined to

this country. As it is only the flowers of the male plant which are disagreeable, all risk, real or fancied, in planting this tree can be obviated by selecting the female plants only."<sup>14</sup>

Sargent was not alone in his point of view. *Ailanthus altissima* continued to be planted in parks and on streets, as, for instance, by Samuel Parsons, Jr., who had been greatly influenced by the parks of Paris and thought it was "in some respects the toughest and finest of trees." When he drew up plans for the extension of New York's East River Park in 1892, he specified *Ailanthus* for a significant percentage of the trees.<sup>15</sup>

Toward the end of the nineteenth century, both C. S. Sargent and his uncle H. H. Hunnewell commissioned tree nurseries to plant large acreages in *Ailanthus* to evaluate the tree as a timber crop and for other commercial uses such as furniture, fuel, and railroad ties.<sup>16</sup> These commercial efforts ultimately failed, however, and by the second decade of the twentieth century *Ailanthus* was no longer being used in the United States, even as an ornamental tree. Since then, it has essentially been neglected and allowed to spread on its own in disturbed sites, where often it shades and ornaments otherwise barren ground. With better treatment, *Ailanthus* could once again become a respected tree. If left to grow to its full stature instead of being repeatedly cut to the ground—a common practice that results in bushy, weedy plants that sucker profusely—it can actually enhance a landscape. We might stop associating *Ailanthus* with pollution, erosion, and general urban neglect, and instead see it as the valuable tree it can be, with the tenacity and perseverance to provide greenery in spaces that society neglects.



*A tree-of-heaven grows in Boston*

**Endnotes**

- <sup>1</sup> Osvald Siren, *Gardens of China* (New York: Ronald House, 1949), 38; D. J. Mabberley, *The Plant-Book* (Cambridge, UK: Cambridge University Press, 1989), 15; W. T. Swingle, The early European history and the botanical name of the tree of heaven, *Ailanthus altissima*, *Journal of the Washington Academy of Sciences* (1916) 6: 490–498
- <sup>2</sup> “Shade Trees in Cities,” *The Horticulturist* (1852) 7(8): 345–349.
- <sup>3</sup> L. W. Dillwyn, ed, *Hortus Collinsonianus* (Swansea, 1843), 2.
- <sup>4</sup> J. E. Vollmer, E. J. Keall, and E. Nagai-Berthrong, *Silk Roads, China Ships* (Toronto: Royal Ontario Museum, 1983), 127 William Chambers (*Dissertation on Oriental Gardening*, 1772) reported that the earliest descriptions of Chinese gardens came to Europe via a letter written by Denis Attiret, a French Jesuit priest at the imperial court in Beijing, and translated by Joseph Spence in 1752.
- <sup>5</sup> Swingle, 490–491; J. C. Loudon, *Arboretum et Fruticetum Britannicum*, Vol. I (London 1838), 490–492.
- <sup>6</sup> Swingle, 495
- <sup>7</sup> *The Horticulturist* (1847) I(9): 397
- <sup>8</sup> A. J. Downing, “Shade Trees in Cities,” 345–349, and *Treatise on the Theory and Practice of Landscape Gardening*, 1st ed. (NY, 1841), 202–204
- <sup>9</sup> Loudon, *op cit*; Downing, *Treatise*, 203–204. Subsequent editions of the *Treatise* continued to carry Downing’s original, favorable report of *Ailanthus*, despite his changed opinion In the 7th edition, 204, edited and supplemented by H. W. Sargent, a footnote acknowledges the changed opinion and suggests that tree-of-heaven can be replaced by the princess tree (*Paulownia tomentosa*), a newer introduction from Japan and one that would prove to create its own problems.
- <sup>10</sup> “How to Popularize the Taste for Planting,” *The Horticulturist* (July 1952) 7(7) 297–301, “Shade Trees,” 345–349.
- <sup>11</sup> “Shade Trees,” 346.
- <sup>12</sup> *American Handbook of Ornamental Trees* (Philadelphia. Lippincott, 1853), 69–70.
- <sup>13</sup> *Parks, Promenades* (London: John Murray, 1869), 171.
- <sup>14</sup> “Remedial Action of the Ailanthus,” *The Horticulturist* (1874) 29(340): 320; Correspondence: C. V. Tice, Ed. [C. S. Sargent], *Garden and Forest* (1888) I: 179–180.
- <sup>15</sup> *Samuel Parsons, Jr., and the Art of Landscape Architecture*, Wave Hill, NY, Exhibition, Charles Birnbaum, curator, 1994; Parsons, *The Art of Landscape Architecture* (NY: Putnam’s, 1915), 315.
- <sup>16</sup> H. Douglas, *Gardener’s Monthly* (1882) 24(280): 117; T. Meehan, *Gardener’s Monthly* (1885) 28(324): 369–370; C. S. Sargent, *Garden and Forest* (1888) I: 385–386.

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