

## **"A Very Valuable Shrub": *Xanthorhiza simplicissima***

*Jill Nooney*

**Little has been written about it and it does not appear in most nursery catalogs, but yellowroot, as it's commonly known, possesses a long list of winning attributes.**

It was one of the botanizing Bartrams of eighteenth-century Philadelphia, the plant-explorer William, who first described *Xanthorhiza simplicissima*. He wrote in his journal of late June or early July, 1773, from Buffalo Lick, Georgia, "This evening I discovered a very curious Little Shrub, growing on the bottoms of these Hills & on the steep banks of the Creek. The Foliage & form of groath a little resembled the Aralia, but what was the most remarkable in it, the root affording strong Yellow Tincture, near as fine as that of Gum boge, It has long slender branching Roots which run & spread about just under the surface of the earth, filling a large patch of ground with a numerous offspring[.] The shrub rises about 2 feet high sending up slender bending knotty stalk covered with a white smooth bark which on being rubed off discovers a perfectly lucid Yellow wood, which dies as well as the Root, it is my Opinion a very valuable Shrub, on this account, where a fine Yellow dye is wanted."<sup>1</sup>

It was in fact as a dyewood that the plant was initially valued, but while it was found to give a handsome yellow to silk, on cotton and linen that yellow turned to olive when exposed to the sun. For a time it was also valued for its medicinal qualities. The roots of

*Xanthorhiza* contain the yellow crystalline alkaloid known as berberine, and for much of the nineteenth century the plant was included in the American *Materia Medica* as being "preferable to all our native bitters."<sup>2</sup> *Xanthorhiza's* qualities as dyewood and medicine have been largely discounted, but as a landscape plant it is more valuable than ever.

*Xanthorhiza simplicissima* (a monotype of the Ranunculaceae, or buttercup family) is a deciduous shrub that attains from one to three feet in height. Its yellow roots (the source of the generic as well as the common name) are fibrous and suckering. The stout, yellowish-brown, brittle stems do not branch, thus the specific name *simplicissima*. The alternate pinnate leaves usually bear five sharply lobed and toothed leaflets that sometimes divide again pinnately. The leaf scar is narrow and nearly encircles the twig, giving it the segmented appearance William Bartram described in his diary. The leaves themselves, which cluster at the shoot tip, emerge as a bronze-purple color, changing to a bright green as they grow. They attain a length of four to ten inches at maturity. Autumn color is initially a clear yellow, then changes to red or purple and, as winter approaches, to tan. The foliage holds as late as December in the Boston area.





*This planting of Xanthorhiza simplicissima along Meadow Road at the base of the legume collection is more than a century old. Charles S. Sargent, founding director of the Arnold Arboretum, used American shrubs as borders along many of the roadways (Karen Madsen).*

The flowers, which are plum-colored shading into chocolate brown, emerge erect, then droop in panicles of two to six inches long that crowd together at the ends of the stem. As individuals they are interesting rather than showy; in mass, they create a purplish haze in March and April, before and just after the leaves emerge.

A native of damp woodlands from New York to Florida and as far west as Texas, *Xanthorhiza* is extremely adaptable in cultivation. It tolerates climates from Zone 3 to 9 and has survived laboratory tests to minus 55 degrees Fahrenheit. As might be expected given its natural habitat, it prefers shaded moist areas but will grow in full sun and in loose

sandy soil, both of which are said to curb its vigorousness. Firsthand experience indicates that it will thrive even after being submerged in water for two to three weeks in spring. Nor did it show signs of distress in full sun with no irrigation during a droughty summer. A soil with high pH has been reported to cause some chlorosis.<sup>3</sup>

*Xanthorhiza* has no serious insect or fungal problems. Its suckering roots choke out most weeds. Indeed, the plant can become a weed itself if it is not carefully sited. Despite reports that its suckering is limited to three to six feet, experience in New England indicates that the roots will slowly spread until they are held by concrete, steel edging, or other impenetrable



barrier. Typical of its adaptability, *Xanthorhiza* tolerates soil compaction as well as drought.

Spring or fall is the best time to plant *Xanthorhiza*. Stagger the roots in rows eigh-

teen to twenty-four inches apart and mulch well to keep weeds down. Once established, the plants need little care. A relatively minor hazard occurs with ice and piled-up snow, which can break the brittle stems. If the plants



The flowers of *Xanthorhiza simplicissima* emerge erect at the end of the shoot and open before or with the unfolding of the leaves (Rácz & Debreczy).





Year-old plantings of *Xanthorhiza simplicissima* form part of the new landscape in front of the Arboretum's renovated Hunnewell Building (Karen Madsen).

become raggedy or overgrown, cut them down in spring and they will quickly renew themselves with fresh growth. The plant is easily propagated by division and from fresh seed sown in autumn.

With its fibrous, suckering roots and tolerance of flooding, *Xanthorhiza* is a good water-side plant to hold banks in place and prevent erosion. The root structure as well as the plant's fairly fast growth rate also qualify it for wetland reclamation. The plant is attractive to wildlife as well as humans; upland game birds, songbirds, and small animals feed on the fruit. Because it grows in fairly deep shade, the plant can provide understory habitat and food where few other plants can survive.

Once established *Xanthorhiza* lives a long life. Plantings at the Arnold Arboretum have maintained their clean, neat foliage and remarkably uniform height for more than a century. E. H. Wilson considered it the finest deciduous-leaved groundcover at the Arboretum, where it was "very freely employed in border planting."<sup>4</sup> As a tall, large-scale groundcover it possesses enough character to be featured alone whether in full sun or partial shade and, in fact, it makes an excellent transition from sun to shade as well as from dry to wet soils. In full sun, its habit is regular and very dense, whereas in shade it is more open and loose. It forms an excellent base for interplantings of taller trees and shrubs and



can be especially effective under older plantings that have grown leggy. Its woodland look suits it to naturalistic plantings, but it is also attractive in more highly cultivated settings, where it is wise to contain its vigor within restricted areas. Its shallow, fibrous root system and extreme cold hardiness also qualify it for roof gardens.

In 1929 Nathaniel Lord Britton, former director of the New York Botanical Garden, wrote, "This low shrub has long been of great interest to botanists, pharmacists, and horticulturists."<sup>5</sup> If so, in recent years the interest has been invisible and inaudible. Handsome, tough, infinitely adaptable, it's surprising that *Xanthorhiza simplicissima* has not captured the imagination of a great many horticulturists. As a landscape plant, its combination of virtues is hard to match.

#### Endnotes

- <sup>1</sup> William Bartram. 1943. Travels in Georgia and Florida, 1773–1774. A Report to Dr. John Fothergill.

Annotated by Francis Harper. *Transactions of the American Philosophical Society* 30 (New Series, Pt II): 140.

- <sup>2</sup> James Woodhouse. 1808. Account of a New, Pleasant, and Strong Bitter, and Yellow Dye, prepared from the Stem and Root of the *Xanthorhiza tinctoria*, or Shrub Yellow Root; with a chemical analysis of this Vegetable. *American Journal of Pharmacy* 58: 161–162.
- <sup>3</sup> Michael Dirr. 1990. *A Manual of Woody Landscape Plants*, 4th ed. Champaign, IL: Stipes Publishing Company, 930.
- <sup>4</sup> E. H. Wilson. 1925. *America's Greatest Garden, The Arnold Arboretum*. Boston: The Stratford Company, 95.
- <sup>5</sup> N. L. Britton. 1929. The Shrub Yellow-Root. *Journal of The New York Botanical Garden* 30 (359): 265.

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Nooney, Jill. 1994. "'A Very Valuable Shrub': *Xanthorhiza simplicissima*." *Arnoldia* 54(2), 31–35.

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