

***Cotinus obovatus* Raf. (Smoke-tree) in Oklahoma**
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Cotinus obovatus is a shrub or small tree, up to 6.5 m (20 feet) tall. The twigs are orange to brown, glabrous (without hairs), and aromatic when crushed (Figure 1). The sap is resinous and strong-smelling. The wood is yellow to orange in color with creamy colored sapwood. The leaves are alternate, simple, elliptical to obovate, 5-13 cm (2-5 inches) long, and 4-7.5 cm (1.6-3 inches) wide. They are pointed at the base, but rounded to weakly pointed at the apex and margins are entire. Leaves turn orange to scarlet in the fall (Figure 2). Flowers bloom in early spring, are very small, and have five petals and five sepals that are greenish in color, with five stamens and one pistil. Separate male and female flowers are present on the same plant. The wispy panicles measure 15 cm (6 inches) or more in length and are the root of the common name smoke-tree (Figure 3). However, there are few flowers in the panicle and many of them are sterile. Fruits are small drupes about 5 mm (0.2 in) in diameter. Some flowers are sterile and their stalks are long and covered with purplish or brownish hairs. The tree sprouts readily from the roots (Elias 1987, Hightshoe 1988, Kurz 1997, Little 1996, Sargent 1905).

Cotinus species are members of the Anacardiaceae (cashew) family. Other members of this family occurring in Oklahoma include *Rhus aromatica* (skunkbrush), *Rhus copallinum* (winged sumac), *R. glabra* (shining sumac), and *Toxicodendron radicans* (poison ivy). *Cotinus* is the classic name for wild olive and *obovatus* refers to the leaf shape (Vines 1960). There are only two species in the genus *Cotinus*; *C. coggygria* (European smoke tree) and *C. obovatus* (North American smoke tree). *Cotinus coggygria* is widely planted in the United States as an ornamental tree, but its native range extends from Europe east to the Himalayas (Elias). *Cotinus obovatus* occurs in seven states in the southeastern United States (Little 1943) and six counties in Oklahoma (Figure 4; Johnson and Hoagland 2004). *Cotinus obovatus* grows on calcareous bluffs and ravines where limestone predominates. Associated trees and shrubs often include *Fraxinus quadrangulata* (blue ash), *Philadelphus pubescens* (mock orange), *Staphylea trifolia* (bladdernut), *Quercus muehlenbergii* (chinkapin oak), and *Ulmus rubra* (red elm). Fort Gibson dam in Wagoner County and Chandler Park in Tulsa are excellent locations for viewing *C. obovatus*.

Cotinus obovatus was first discovered in Oklahoma in 1919 by Thomas Nuttall. He encountered this tree on limestone cliffs along the Grand River 30 miles north of its confluence with

the Arkansas River. This plant was in fruit and greatly resembled the European species, which was referred to as *Rhus cotinus* in the early 19th century. In this vein, he named the plant *Rhus cotinoides*. The name *Cotinus obovatus* was described by Constantine Rafinesque in 1840. The second discovery of *C. obovatus* in Oklahoma was made by Ernest Palmer on 14 April 1928, 109 years after Nuttall's visit, at a site near Page in LeFlore County (Little 1943).

The wood of *C. obovatus* has no economic value to the timber industry, due to its small size, but it is rot resistant and has been used for fence posts in some regions of the United States. During the Civil War, a yellow dye was extracted from the wood (Elias 1987). Currently *C. coggygria* is sold and planted as an ornamental plant in greater quantity than *C. obovatus*. However, its beautiful panicles of flowers in the spring and brilliant autumn colors make it a worthy addition to any home garden as well.

LITERATURE CITED

- Elias, T.S. 1987. Trees of North America: a field guide and natural history. Gramercy Pub. Co., New York.
- Hightshoe, G.L. 1988. Native trees, shrubs, and vines for urban and rural America: a planting design manual for environmental designers. Van Nostrand Reinhold, New York.
- Johnson, F.L. and B.W. Hoagland. 2004. Catalog of the Woody Plants of Oklahoma [online]. Available: www.biosurvey.ou.edu. (Accessed on 1 June 2004).
- Kurz, D. 1997. Shrubs and woody vines of Missouri. Missouri Department of Conservation, Jefferson City.
- Little, E.L. 1943. American smoketree (*Cotinus obovatus* Raf.), one of Oklahoma's rarest tree species. Proceedings of the Oklahoma Academy of Science 23: 21-23.
- Little, E.L., Jr., 1977, Atlas of United States trees, volume 4, minor Eastern hardwoods: U.S. Department of Agriculture Miscellaneous Publication 1342.
- Little, E. L. 1996. Forest trees of Oklahoma, 14th. Oklahoma Department of Agriculture, Forestry Services.
- Sargent, C.S. 1905. Manual of the trees of North America. Houghton Mifflin, New York.
- Vines, R.A. 1960. Trees, shrubs, and woody vines of the southwest: a guide for the states of Arkansas, Louisiana, New Mexico, Oklahoma, and Texas. University of Texas Press, Austin.

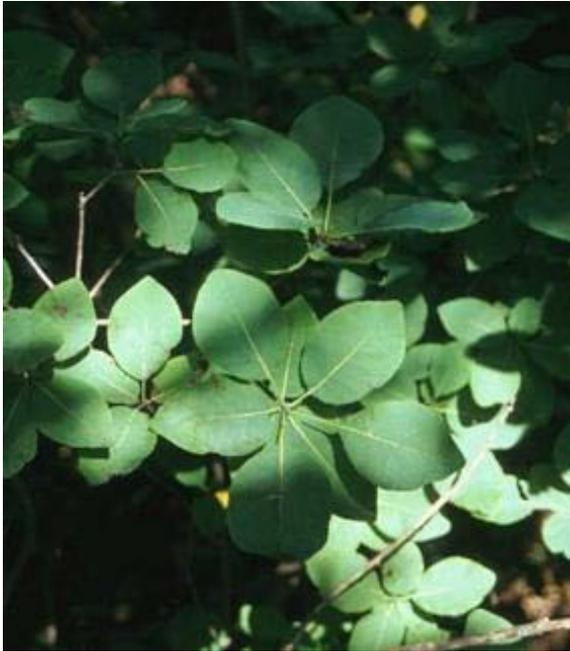


Figure 1 Leaves of *Cotinus obovatus*, Fort Gibson Dam, Wagoner County, Oklahoma.



Figure 3 Inflorescence of *Cotinus obovatus*, Fort Gibson Dam, Wagoner County, Oklahoma.

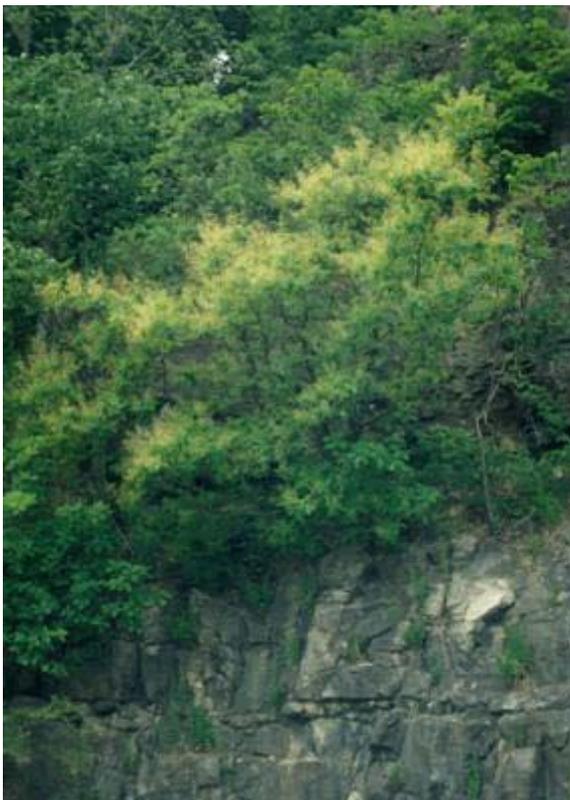


Figure 2 Habitat photo of *Cotinus obovatus*, Fort Gibson Dam, Wagoner County, Oklahoma.

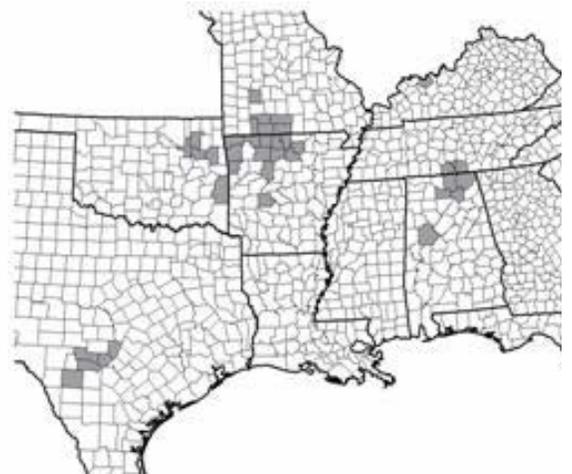


Figure 4 Distribution of *Cotinus obovatus* in North America (Adapted from Little 1977).