
AMERICAN SMOKETREE (COTINUS OBOVATUS RAF.),
ONE OF OKLAHOMA'S RAREST TREE SPECIES

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Though the American Smoketree was discovered in Oklahoma by Thomas Nuttall in 1819, only one more collection of this rare tree species within the state has been reported. This article summarizes these records, adds a third Oklahoma locality, and calls attention to the older scientific name, *Cotinus obovatus* Raf., which should replace the one in use, *Cotinus americanus* Nutt.

Nuttall (1821), the first botanist to visit what is now Oklahoma, mentioned in his journal for July 18, 1819, the discovery, to his great surprise, of this new, large shrub, scarcely distinct from *Rhus cotinus* of Europe. He described the location as on limestone cliffs of the Grand (or Neosho) River near a bend called the Eagle's Nest more than thirty miles north of the confluence of the Grand and Arkansas Rivers. The place probably was along the east bank of the river in southeastern Mayes County, at the western edge of the Ozark Plateau in northeastern Oklahoma. It is hoped that Oklahoma botanists will revisit the type locality and also discover other stations.

This new species was not mentioned in Nuttall's (1837) unfinished publication on his collections of the flora of Arkansas Territory. Torrey and Gray (1838) included Nuttall's fruiting specimens doubtfully under the related European species, then known as *Rhus cotinus* L., with Nuttall's unpublished herbarium name, *Rhus cotinoides* Nutt., as a synonym. They predicted the plants would prove to be distinct when flowers were found. Thirty years after his discovery, Nuttall (1849), recognizing as distinct the genus *Cotinus*, published a description of this new species with colored illustration under the name *Cotinus americanus* Nutt.

In the meantime, Rafinesque (1840) gave to the species the name *Cotinus obovatus* Raf., which I accidentally discovered in this very rare publication. Though Rafinesque's Latin description was very brief, it clearly applied to the only species of *Cotinus* in the western hemisphere. Rafinesque's older name is adopted with reluctance, as it has not been used since it was published more than a hundred years ago. However, as Rafinesque's publication has been reprinted in 1942 and is no longer rare, it is difficult to ignore the name, as one would prefer to do.

This rare southeastern species, detected at the northwestern border of its range by Nuttall's close observation, was not collected again until 23 years later. Buckley (1881; see Sargent 1892), found specimens near Huntsville, northern Alabama, on April 6, 1842, and soon afterwards observed trees up to 38 feet high and 12 inches in diameter.

In articles on Nuttall's trip to Oklahoma and on this species, Palmer (1927 and 1928) noted that *Cotinus* has turned up in a number of isolated localities in the Ozark region of Missouri and Arkansas, as well as eastern Tennessee, northern Alabama, and western Texas. He reported that it is most abundant and of the largest size on the rocky bluffs along White River in the Ozark region, where it sometimes becomes a tree 33 feet or more in height and with a trunk diameter of more than one foot. A station on high alluvial banks of the Ohio River just below Owensboro, Daviess County, Kentucky, where Nuttall passed earlier on his journey but where this species may have been introduced, was reported by Palmer also.

On April 14, 1928, Palmer found several shrubby specimens of American Smoketree in a steep rocky ravine near the base of Rich Mountain near Page, Le Flore County, southeastern Oklahoma, for the second Oklahoma record. This station is about 100 miles southeast of the type locality. In a previous detailed study of the woody plants of Rich Mountain, Palmer (1924) did not mention it. Barkley mapped the distribution of this species in his taxonomic monograph and listed for Oklahoma only the two collections by Nuttall and Palmer. Dr. Milton Hopkins has informed me that the herbarium of the University of Oklahoma contains no specimens of this species from Oklahoma.

While collecting in the Cookson Hills, a part of the Ozark Plateau in Cherokee County, northeastern Oklahoma, on August 29, 1939, I found a third Oklahoma station for *Cotinus obovatus* Raf. about 35 miles southeast of the type locality and about 40 miles northwest of a station near Van Buren, Arkansas, mentioned by Palmer. Dr. Fred A. Barkley, of the

University of Montana, has kindly verified my determination of the specimens, which were without flowers or fruits. The exact location was the top of a limestone cliff on the west bank of Illinois River in Sec. 9, T. 14 N., R. 22 E., less than 1 mile west of Cookson, and on a county road about 14 miles directly south of Tahlequah. The cliff is about 200 feet above the river and more than 750 feet above sea level.

A few shrubs or small trees of this species up to 15 feet high and 3 inches d. b. h. were observed in the rocky loam soil and crevices at the top of the steep cliff, but a careful search for more was not made. They were associated with trees of *Juniperus virginiana*, but in places the cliff supported a forest of deciduous trees of the following species: *Quercus muhlenbergii*, *Acer saccharophorum*, *Fraxinus americana*, *Cercis canadensis*, *Ostrya virginiana*, and *Robinia pseudoacacia*. On the vertical limestone ledges were herbs of the species *Aquilegia canadensis* and *Cheilanthes alabamensis*.

The genus *Cotinus* of the family Anacardiaceae formerly was not separated from *Rhus* L. (Miller 1754). Though known geologically as far back as the Cretaceous period with the species *Cotinus cretacea* Hollick, *Cotinus* contains only about three living species of shrubs or small trees. *Cotinus coggryria* Scop., the Common Smoketree, is widely distributed in southern Europe and Asia, and is in cultivation as an ornamental. A third species, *Cotinus nana* W. W. Smith, is a low shrub of China. Its rarity, discontinuous distribution, lack of related species in the New World, and occurrence as a pioneer on rocky cliffs all suggest that *Cotinus obovatus* Raf. is an old species formerly of general distribution but now approaching extinction.

LITERATURE CITED

- Barkley, F. A. 1937. A monographic study of *Rhus* and its immediate allies in North and Central America, including the West Indies. *Ann. Missouri Bot. Gard.* 24(3): 265-498.
- Buckley, S. B. 1881. . . . *Proc. Philadelphia Acad. Nat. Sc.* 33:125.
- Miller, P. 1754. The abridgement of the gardner's dictionary. 4th ed.
- Nuttall, T. 1821. A journal of travels into the Arkansa Territory, during the year 1819. 296 p. Philadelphia: Thos. H. Palmer.
-1837. . . . *Trans. Am. Phil. Soc., n. s.* 5: 139-203.
-1849. *The North American silva.* 3: 1-148. Philadelphia: T. Dobson.
- Palmer, E. J. 1924. The ligneous flora of Rich Mountain, Arkansas and Oklahoma. *J. Arnold Arboretum* 5: 108-134.
-1927. On Nuttall's trail through Arkansas. *Ibid.* 8: 24-55.
-1938. Leaves from a collector's note book. *Ibid.* 9: 173-187.
- Rafinesque, C. S. 1840. *Autikon Botanikon.* 200 p. Philadelphia.
- Sargent, C. S. 1892. *Silva of North America.* 3. New York: Houghton, Mifflin and Co.
- Torrey, J., and A. Gray. 1838. *A flora of North America.* 1: 1-711. New York: Wiley and Putnam.