

Nannyberry (*Viburnum lentago* L.; Caprifoliaceae) Excluded from the Kentucky Flora

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ABSTRACT

According to historic and current botanical literature *Viburnum lentago* L., nannyberry, is an element of the Kentucky flora. A request for all herbarium specimens of *Viburnum* taxa collected in Kentucky was sent to 28 herbaria across eastern United States; 1023 specimens were received in response. Of the 20 labeled as *V. lentago*, none was referable to that species. Extensive fieldwork across all physiographic regions of Kentucky was undertaken to try to locate occurrences of *V. lentago*; no populations were found. *Viburnum lentago* is rejected as an element in the Kentucky flora. Diagnostic characteristics are provided to differentiate *V. lentago* from closely allied species with which it is often confused.

INTRODUCTION

Viburnum lentago L., nannyberry, is a small tree or a large shrub distributed in north central and northeastern United States and adjacent Canada (Little 1976). Its habitat has been described as rocky hillsides, woodland edges, sedge meadows, stream banks, shrubby swamps, and swampy woods (Elias 1987; Voss 1996). Botanical literature from the early 1800s to the 1990s includes nannyberry as a component of the Kentucky flora (Browne and Athey 1992; Duncan and Duncan 1988; Garman 1913; Heineke 1987; KSNPC 1996; Linney 1882; McAtee 1956; M'Murtrie 1819; Short et al. 1833; Torrey and Gray 1841; Wharton and Barbour 1973). Several county or regional floras and generic treatments have also reported *V. lentago* as occurring in Kentucky (Greenwell 1935; Huffaker 1975; Kearney 1893; Rader 1976) and have cited herbarium specimens to document its occurrence. Conversely, *V. lentago* has been omitted or rejected for Kentucky during much of the same time period by other studies (Braun 1943; Elias 1987; Gunn 1968; Jones 1983; KSNPC 1997; Little 1976; Medley 1993). Thus the literature concerning presence or absence of *V. lentago* in the flora of Kentucky is ambiguous.

Early works by Short et al. (1833) and Torrey and Gray (1841) stated that *V. lentago* occurs in Kentucky. In the late 1800s Kearney (1893) also reported *V. lentago* as occurring in Kentucky and referred to vouchers of *V. lentago* collected in Harlan County. Additionally, Linney (1882) reported *V. lentago* in his survey results from five central and west central

Kentucky counties. In the early part of the 20th century Garman (1913) included *V. lentago* in his Kentucky woody plant list and ascribed it to Bath, Bell, and Fayette counties. Unfortunately, very few Garman collections survived the fire at the University of Kentucky in 1948 (Jones and Meadows 1948). In her flora of Nelson County, Greenwell (1935) also reported collecting *V. lentago* from a "limestone hillside, Cox Creek." In a statewide treatment, Braun (1943) reported nine species in the genus but omitted *V. lentago*. However, *V. lentago* was again included in the Kentucky flora by McAtee (1956). He reported the range of *V. lentago* as including the northeastern states and adjacent Canada with occasional populations in Ohio, Indiana, Illinois, and Kentucky (Ballard County). In the mid 1960s Gunn (1968) found no *V. lentago* plants in his survey of Jefferson, Bullitt, Hardin, Jefferson, Meade, Nelson, Oldham, Shelby, and Spencer counties. Gunn also rejected the claims of Greenwell and M'Murtrie because "no specimen was located to support the author's claim." Wharton and Barbour (1973) included *V. lentago* and noted that nannyberry is "often planted where a large shrub is desired, but in the wild it is rare in Kentucky." In a flora of a portion of Tygarts Creek in Carter County, Huffaker (1975) noted that *V. lentago* was "frequent." Rader (1976) conducting a biosystematic study of *V. rufidulum* Raf. and *V. prunifolium* L., reported collecting *V. lentago* in Franklin County, Kentucky. She also provided a range map showing *V. lentago* distributed across much of north central and eastern

Kentucky. In a nationwide treatment, Little (1976) mapped *V. lentago* as absent from Kentucky as did Jones (1983), who mapped *V. lentago* to the north and east of Kentucky at more northerly latitudes or, for populations east of Kentucky, at higher elevations. In the late 1980s, *V. lentago* was again mapped in Kentucky by Duncan and Duncan (1988). In the 1990s, *V. lentago* was also recorded as occurring in the Cumberland Plateau of Kentucky by Browne and Athey (1992). And as recently as 1996, nannyberry has been state listed as rare based on historical records (KSNPC 1996).

The goal of my study was to address the ambiguity in the literature regarding the occurrence of *V. lentago* in Kentucky. I reviewed all literature ascribing *V. lentago* to Kentucky, examined and annotated all obtainable herbarium vouchers collected in Kentucky and identified as *V. lentago*, and searched for populations of this species in likely habitats across the state.

MATERIALS AND METHODS

Literature reviews of botanical research in Kentucky were compiled by Davies (1953), Fuller (1979), Fuller et al. (1989), and Medley (1993). Sources within these compilations include primary research articles and floristic lists for the state that contain reference to *Viburnum* taxa, including *V. lentago*. A review of these sources was conducted to find references about *V. lentago* in previously published works. A review of the literature also revealed likely locations of specimens and was useful in directing loan requests.

Requests for loans of all *Viburnum* taxa collected in Kentucky were sent to 28 herbaria across eastern United States. I hoped to locate all *V. lentago* material as well as any *Viburnum* material mis-identified but referable to *V. lentago*. Herbaria nearby, or without lending policies, were visited in person. Habitat requirements of nannyberry were compiled from field guides and manuals (Deam 1932; Elias 1987; Gleason and Cronquist 1991; Voss 1996) to aid in my field search for *Viburnum* conducted from 1994 to 1998 across all physiographic regions of the state.

RESULTS AND DISCUSSION

Fifteen literature citations, including regional and county floras as well as state-wide plant

lists, were found to include *V. lentago* as part of the Kentucky flora. A lesser number of sources (seven), either did not mention or specifically rejected *V. lentago* from Kentucky. Only four of the sources cited collections, collection number, and herbarium of deposit of specimens labelled as *V. lentago* collected in Kentucky. Although most published sources indicated that *V. lentago* occurs in Kentucky, the number of these claims based on specimens were few. No previous reference was located that reviewed all specimens and literature sources to address the presence/absence ambiguity of nannyberry.

Loan requests and herbarium visits resulted in locating 1023 *Viburnum* specimens collected in Kentucky. Twenty vouchers labelled as *V. lentago* were received from 14 herbaria. Three purported *V. lentago* collections, cited in the literature and expected on loan, were not received. The *V. lentago* vouchers, collected in Kentucky between 1831 and 1988, represented material from the Bluegrass, Mississippian Plateau, Cumberland Plateau, and Coastal Plain physiographic regions of the state. All of these were referable to other species in *Viburnum* (Table 1), most commonly *V. prunifolium*.

Numerous problems were encountered when trying to assemble nannyberry vouchers for review. Many early Kentucky collections have been lost or exist only outside the state. In several cases, collections could not be located in herbaria. For example, although numbered specimens were cited in their publications, neither Rader's collection of *V. lentago* from Franklin County nor Greenwell's collection of *V. lentago* from Nelson County could be located. Additionally, Athey's collection of *V. lentago* from the Cumberland Plateau (cited in Browne and Athey 1992) could not be located at MEM or MUR. Additional efforts were taken to travel to the field sites specified by Greenwell and Rader and to relocate the *Viburnum* populations they may have sampled. The Nelson County search yielded collections of *V. prunifolium* (23 Apr 1995, Weckman and Weckman 1329 EKY) and *V. rufidulum* (23 Apr 1995, Weckman and Weckman 1328 EKY). The Franklin County search also produced collections of *V. rufidulum* (27 Sep 1998, Weckman and Weckman 4420 EKY) and *V. prunifolium* (27 Sep 1998, Weckman and

Table 1. Summary of Kentucky specimens misidentified as *Viburnum lentago* in various U.S. herbaria.

Collector and number	Year collected	Herbarium	Referable to:
H. H. Eaton 110	1831	PH	<i>Viburnum rufidulum</i>
J. S. Terrill s.n.	1892	KES	<i>V. prunifolium</i>
J. S. Terrill s.n.	1892	UK	<i>V. prunifolium</i>
H. Garman s.n.	1893	UK	<i>V. prunifolium</i>
T. H. Kearney 325	1893	A	<i>V. prunifolium</i>
T. H. Kearney 325	1893	GH	<i>V. prunifolium</i>
T. H. Kearney 325	1893	MO	<i>V. prunifolium</i>
T. H. Kearney 325	1893	NY	<i>V. prunifolium</i>
T. H. Kearney 325	1893	US	<i>V. prunifolium</i>
H. Garman s.n.	1900	UK	<i>V. prunifolium</i>
S. F. Price s.n.	1902	SIU	<i>V. rufidulum</i>
E. J. Palmer 16574	1919	A	<i>V. prunifolium</i>
E. J. Palmer 16574	1919	MO	<i>V. prunifolium</i>
E. J. Palmer 16574	1919	PH	<i>V. prunifolium</i>
R. A. Greenwell s.n.	1933	NA	could not be located
J. Grossman 615	1965	BEREA	<i>V. prunifolium</i>
C. W. Conn s.n.	1974	UK	<i>V. rufidulum</i>
W. Meijer et al. 1189	1974	MDKY	<i>V. prunifolium</i>
W. Huffaker et al. 805	1974	MDKY	<i>V. prunifolium</i>
W. Huffaker et al. 1155	1974	MDKY	<i>V. prunifolium</i>
L. L. Rader 1086	1975	TENN	could not be located
H. Bryan 2008	1988	EKY	<i>V. prunifolium</i>
R. Athey	?	MEM	could not be located

Weckman 4410 EKY). Habitats at both sites were unlike those described for nannyberry populations. Insufficient locality data were available to attempt relocation of the Athey Cumberland Plateau site. However, 102 of the 120 counties of Kentucky across all physiographic regions of the state were searched. These field efforts resulted in ca. 375 collections of *Viburnum* from 98 Kentucky counties, but no native or adventive *V. lentago* was located.

It should be noted that correctly determined *V. lentago* material was received in a loan from MDKY. These collections (Carr, 22 Jun 1936, MDKY accession #00720, 00721), although labeled as collected in Kentucky, are rejected as representing Kentucky material. Most likely, these vouchers represent collections made in New York and mislabeled in processing subsequent to the death of the collector (Cranfill 1980, p. 63; H. Setser, Morehead State University, pers. comm., 5 Dec 1996; A. Risk, Morehead State University, pers. comm., 14 Nov 1997).

Viburnum lentago is cultivated in the state according to Medley (1993) in Bernheim Forest, Bullitt County, and Cherokee Park, Jefferson County. It is also known from cultivation in Madison County (Berea College cam-

pus, 10 Sep 1993, Abbott 6274 BEREa; Berea College campus, 3 Jun 1997, Weckman 3505 EKY); in Powell County at Natural Bridge State Park (Hemlock Lodge, 7 May 1994, Weckman and Weckman 686 EKY; Hemlock Lodge, 6 Jul 1995, Weckman and Weckman 1723 EKY); and on the campus of Northern Kentucky University (J. W. Thieret, Northern Kentucky University, pers. comm., 31 Dec 1999). Because *V. lentago* is used in cultivation in Kentucky, it has the potential to naturalize at some point.

Viburnum lentago is most often confused with *V. prunifolium* and to a lesser degree with *V. rufidulum*. It may be differentiated from *V. rufidulum* by leaf and pubescence characteristics. Leaves in *V. rufidulum* are thick, elliptic in outline, rounded to retuse at the tip, and rusty-red tomentose on petioles, midrib, and buds. The leaves of *V. lentago*, in contrast, are thin, generally oblong in outline, long acuminate at the tip, and covered below with golden brown, peltate scales. Differences distinguishing *V. prunifolium* from *V. lentago* include acute leaf tips and lack of peltate scales on the lower leaf surface in *V. prunifolium*. Additionally, the calyx is stipitate on the fruit of *V. prunifolium*, but sessile in *V. lentago*.

Viburnum lentago is thus rejected as an in-

digenous element of the flora and is known only as a cultivated plant in Kentucky at this time. Managers of forest lands, preserves, and natural areas in Kentucky should be cognizant of the non-native status of this species in the state.

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