
THE GENUS VITIS IN OKLAHOMA

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Vitis is a genus which has received considerable attention for its economic importance. The American species were of great interest to the early settlers because of their fruit, desirable both for wine making and for table use. In the last quarter of the nineteenth century T. V. Munson collected, grew and studied the native species in his vineyard at Denison, Texas. Many of these

he sent to the vineyardists of Europe. At least two of our species are now much used as phylloxera resistant stock on which to graft the wine grape. To Munson we are indebted for much of the information we have on the genus in Oklahoma. But in spite of his work there is still considerable confusion as regards the classification of our species. Dr. L. H. Bailey has called our native grapes a "fascinating riddle." Some of the reasons for this are as follows:

1. The extreme variation in leaf shape which occurs in several species. The leaves on young or ground shoots often differ widely from those on the mature vine, and there is also variation in mature leaves on the same or different vines.
2. The polygamodioecious habit of *Vitis*.
3. The large size of the plant which makes it difficult to obtain or prepare adequate specimens.
4. The necessity of having well developed fruit in addition to leaves, tendrils, and canes, for satisfactory identification. (The fruit ripens during the hottest period of the Oklahoma season when it seems few botanical collectors are abroad.)
5. The frequent occurrence of hybrids in the genus.
6. The well known variability which we might call the "Oklahoma factor," with which we have to contend in many groups of plants we study in this area of tension between eastern and western conditions.

The following key and notes are based on L. H. Bailey, (1) and on a study of the specimens in the Bebb Herbarium, University of Oklahoma, and those of The Herbarium, Oklahoma Agricultural and Mechanical College. Suggestions for the improvement of the key will be welcomed from any who use it. There are still some problems to be worked out, but it seems that sufficient information has been collected to warrant this rather tentative report.

KEY FOR THE IDENTIFICATION OF *Vitis* IN OKLAHOMA

- I. Bark shredding at maturity, without lenticels, pith interrupted at nodes by diaphragms, tendrils forked (the true grapes).
 - A. Leaves green beneath at maturity.
 - B. Vines bushy or trailing, tendrils few or slender; fruit clusters 1-7cm. long.
 - C. Leaves reniform or roundish, thin, with short, abruptly-pointed tip, often folded, tendrils and young stems slender and reddish, smooth.

V. rupestris. Gravel bar or Sand Grape. (2)
 - CC. Leaves cordate-ovate, usually shouldered or lobed, thickish; young branch tips white-cottony.

V. Longii. Longs or Bush Grape. (5)
 - BB. Vines high climbing, tendrils well developed; fruit clusters 6-15 cm. long.
 - C. Leaves usually 3-lobed or at least shouldered, sharply toothed.
 - D. Middle lobe attenuate into a prong-like tip, diaphragm 4-5 mm. thick.

V. palmata. Cat Grape. (1).
 - DD. Middle lobe less prolonged; diaphragm 1-2 mm. thick.

V. riparia. Riverbank Grape. (3).
 - CC. Leaves cordate-ovate, sometimes shouldered, deeply lobed only on ground shoots; diaphragm 3-4 mm. thick.

V. vulpina. Frost Grape. (4).

- AA. Leaves not green beneath, white, tawney or bluish, colored by cottony or cobwebby pubescence.
- B. Leaves gray or bluish beneath and showing more or less rusty or tawney floccose pubescence, upper surface glabrous at maturity.
V. Linsecumii var. *glauca*. Postoak Grape. (7).
- BB. Leaves not bluish beneath but with a more or less permanent white or grayish tomentum.
- C. Leaves thick, berries large, few in cluster.
- D. Leaves densely white-felted beneath; stout high climbing vine occurring in Texas.
V. candicans. Mustang Grape. (9).
- DD. Densely white cottony pubescence on young growth, some remaining on mature leaves, petioles and rachises; a bushy, trailing, sometimes climbing vine of south-western Oklahoma and the Texas Panhandle.
V. Doantiana. Doans or Panhandle Grape. (6).
- CC. Leaves thin with prominent triangular apex, usually square-shouldered; clusters large, berries small; common high-climbing vine of ravines, central and eastern Oklahoma.
V. cinerea. Grayback Grape. (8).
- II. Bark tight with conspicuous lenticels, not shredding; pith continuous; tendrils simple.
- V. rotundifolia*. Muscadine Grape. (10).
- V. palmata* Vahl, Cat Grape. This is a slender vine with very smooth, long, red growing tips and attenuately lobed leaves, known from moist situations in the southeastern corner of the state. Specimens so labeled from near Norman are probably a leaf form of *V. vulpina* L.
 - V. rupestris* Scheele, Gravel Bar or Sand Grape. Found, as its name implies, along gravelly stream banks and sand bars. We have good specimens from Pennington Creek and from streams in the Arbuckle and Wichita Mountains. The position of the leaf on the petiole seems to produce the characteristic folding. The berries are apparently seldom found but are said to be very sweet giving the common name of "Sugar Grape".
 - V. riparia* Engelm., Riverbank Grape. Widely distributed across the United States from the Atlantic coast to the Rocky Mountains. Common on roadsides, in ravines and on river banks across the north half of Oklahoma. (It has been erroneously called *V. vulpina* and occurs in several books under that name). The leaves of *V. Longii* and *V. Doantiana* are similar to those of *V. riparia* in their shape and sharply toothed margins but Riverbank Grape may be distinguished by its bright green, thinner leaves lacking floccose tomentum, heavy tendrils and high-climbing habit. It may be distinguished from forms of *V. vulpina* L. with lobed or shouldered leaves by the forward direction of the sharp points.
 - V. vulpina* L., Frost Grape. (Appears in several books as *V. cordifolia* under which name it has passed erroneously for several years.) One of our commonest grapes, frequently seen in ravines and on low ground in the eastern half of the state, very vigorous, stout and high-climbing. The well developed vines are easily recognized by the glossy canopy of rather uniformly cordate leaves with comparatively evenly toothed margins. However much variation will be found in leaves of ground shoots, many such leaves showing deeply lobed outlines, resembling those of *V. palmata*, *V. cinerea* or *V. riparia*. The glossy leaves and dull berries will separate it from *V. cinerea*. The thicker diaphragm will separate it from *V. riparia*.

5. *V. Longii* Prince, Longs or Bush Grape. Its range is "southwestern Kansas, Oklahoma, northern Texas, eastern New Mexico, southeastern Colorado". Occurs commonly in northwestern Oklahoma. It may be recognized by its low habit, growing over bushes, fences and rocks, and its light color. The growing tips are usually white-tomentose.
6. *V. Doaniana*, Doans or Panhandle Grape. Said to be common in the Texas Panhandle and occurring in southwestern Oklahoma. Not readily distinguished from No. 5 unless found in fruit. Doans grape has large berries, 12-15 mm. in diameter while those of Long's grape are 8-12 mm in diameter. The former retains a heavier tomentum and its leaves are said to have a bluish color in the field. Color notes made in the field and recorded on the label would help the taxonomist.
7. *V. Linsecumii* Buckley var. *glauca* Munson, Post-oak Grape. The "summer" grape of eastern and central Oklahoma with large leaves deeply lobed with rounded sinuses or only shouldered. It covers fences, shrubs, and stumps in the post-oak and pine lands. The young growing tips are often pink with a dense tomentum which remains as rusty or tawny shreds on the lower leaf-surfaces. Its bright orange-brown or bronzy veins are usually conspicuous against the bluish under side of leaves. This has been confused with the eastern "summer grape" (*V. aestivalis*). Further study is necessary to determine whether *V. aestivalis* and typical *V. Linsecumii* occur in Oklahoma.
8. *V. cinerea* Engelm., Grayback Grape. May be recognized by the characteristic leaves with prominent deltoid tip, combined with a margin showing small apiculate teeth. The leaves of our other grapes are usually coarsely toothed. Also the tips of the leaves in this are evenly produced although the lateral lobes or shoulders may be unequal. The under leaf surfaces retain a thin covering of grayish shreds of cobwebby tomentum. A common high-climbing vine of ravines in central and eastern Oklahoma.
9. *V. candicans* Engelm., Mustang Grape. This may be recognized by the small, thick leaves, densely felted on undersides, and the sharp, fiery flavor of the large berries. It is a stout, high-climbing vine common in eastern Texas. Bailey says "accredited - - - - to southern Oklahoma". We have no Oklahoma collections.
10. *V. rotundifolia* Michx., Muscadine Grape. A stout, high-climbing vine of bottom lands, stream banks and thickets occurring in eastern Oklahoma. Its leaves are uniformly small, roundish, more or less toothed, hard and glossy on both surfaces.

LITERATURE CITED

1. BAILEY, L. H. 1934. The species of grapes peculiar to North America. *Gentes Herbarum* 3:151-244.
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