
BOTANICAL NOTES FROM SOUTHEASTERN OKLAHOMA

ELBERT L. LITTLE, JR., United States Forest Service, Washington, D. C.

The following notes are based chiefly upon small collections, mostly of woody plants, made by the author in McCurtain and Le Flore Counties in southeastern Oklahoma in September, 1950. The main purpose of the field trip was to make additional studies of the vegetation of the Southeastern Oklahoma Protective Unit of the Oklahoma Division of Forestry (formerly Oklahoma Forest Service) following up field work done there in 1930 by Dr. Charles E. Olmsted and the author. Additions and corrections for the earlier list (7) of woody plants of the area are included here.

Financial assistance in 1950 was provided by a research grant from the American Association for the Advancement of Science awarded by the Oklahoma Academy of Science, for which appreciation is expressed. Personnel of the Oklahoma Division of Forestry assisted in field work. Dr. George J.

Goodman, of the University of Oklahoma, kindly has checked some specimens in the Bebb Herbarium and has lent for study several sheets from the 1930 collection. Ernest J. Palmer has called to the author's attention a few errors of the earlier list. Duplicates of the specimens collected in 1950 have been deposited in the Bebb Herbarium of the University of Oklahoma and the Herbarium of the United States Forest Service at Washington, D. C.

Rare plants of the two small herbaceous species listed below were collected on experimental plots in the cutover upland pine-oak forest near Carter Mountain Tower (Sec. 34, T. 3 S., R. 24 E.) in McCurtain County. They were not observed here in 1930 or 1936, when detailed lists of species were made before and after experiments in burning, nor in 1939, when the plots were visited last. The plots have remained unburned during the 10-year period since 1940 and perhaps have become more suitable for the invasion of these delicate herbs. A few plants of the blueberry or "huckleberry" *Vaccinium vacillans* Torr., which blossoms in spring, were seen in flower here on October 2, 1950 (*Little 13,921*).

Spiranthes grayi Ames (*S. beckii* auth., not Lindl.). This small orchid, little ladies-tresses, apparently has not been reported before from southeastern Oklahoma (*Little 13,859*). Dr. Donovan S. Correll (4), who summarized the nomenclature of this species, has checked the determination. There is one earlier Oklahoma record, however, a specimen in the Bebb Herbarium, from Ottawa County, in the northeastern corner, also examined by Dr. Correll.

Monotropa uniflora L. A single colony of pinkish indianpipe plants was found a few feet from a corner stake of a plot where it could not have escaped notice earlier (*Little 13,871*). Doubtless the increased accumulation of leaf mold following reduction in woods fires has favored growth of indianpipe and various saprophytic fungi, which were more common than in former years. There are two earlier Oklahoma records, from Mohawk Park near Tulsa and from the bank of Kiamichi River between Big Cedar and Octavia in Le Flore County, both by Barclay (1, 2). Indianpipe has a very broad distribution from Newfoundland to Alaska, south to California and Florida (also Asia), but is absent from parts of the interior.

It is fortunate that small areas of virgin forests containing large trees are under protection on State-owned lands in McCurtain County, now that nearly all the original forests of this area have been cut. In the flood plain forest along Mountain Fork at Beaver Bend State Park occur large individuals of various tree species, including several with greater diameters than the maximum observed for these species in 1930 (7). Examples, with diameters at breast height, are: *Carya aquatica* (Michx.) Nutt., water hickory, 18 inches; *Carpinus caroliniana* Walt., American hornbeam, 10 inches and 40 feet in height; *Asimina triloba* (L.) Dunal, pawpaw, 6 inches and 30 feet tall; *Robinia pseudoacacia* L., black locust, 7 inches and 50 feet tall; *Acer saccharum* Marsh., sugar maple, 28 inches; and *Fraxinus pennsylvanica* var. *subintegerrima* (Vahl) Fern. (var. *lanceolata* (Borkh.) Sarg.), green ash, 24 inches. Two usually shrubby sumacs here become small trees 15 feet tall with trunks 3 inches in diameter: *Rhus copallina* L., shining sumac, and *Rhus glabra* L., smooth sumac.

Likewise, several giant trees are preserved in McCurtain County State Game Refuge, also in the flood plain forest along Mountain Fork. Among these are: *Quercus alba* L., white oak, 43 inches; *Quercus nigra* L., water oak, 38 inches; *Liquidambar styraciflua* L., sweetgum, 45 inches; and *Tilia floridana* Small, Florida basswood, 23 inches. Large trees in the pine-oak forest here include *Pinus echinata* Mill., shortleaf pine, 35 inches, and *Quercus falcata* Michx., southern red oak, 28 inches.

Yucca arkansana Trel. This is the shrubby yucca of southeastern Oklahoma, according to the monograph by McKelvey (8). In the previous list (7) it was referred with doubt to *Y. glauca* Nutt.

Castanea ozarkensis Ashe. Ozark chinquapin. Doubtfully cited in the same list (7) as *C. pumila* Mill., a species which probably does not reach Oklahoma.

Quercus prinus L. (*Q. michauxii* Nutt.) Swamp chestnut oak has been reported from Oklahoma and is to be looked for in the southeastern corner. However, the sterile Oklahoma specimens from other parts of the State so labeled in the Bebb Herbarium probably belong to *Q. muehlenbergii* Engelm., chinquapin oak. A sterile specimen (*Little 13,872*) from a tree 1 foot in diameter and 40 feet tall on Mountain Fork at Beaver Bend State Park is tentatively referred to *Q. prinus*, though the leaves are deeply lobed for this species.

Quercus prinus L. (*Q. michauxii* Nutt.). Swamp chestnut oak has been reported from Oklahoma and is to be sought in the southeastern corner. However, the sterile Oklahoma specimens from other parts of the state so labeled in the Bebb Herbarium probably belong to *Q. muehlenbergii* Engelm., chinquapin oak. A sterile specimen (*Little 13,872*) from a tree 1 foot in diameter and 40 feet tall on Mountain Fork at Beaver Bend State Park is tentatively referred to *Q. prinus*, though the leaves are deeply lobed for this species.

Quercus stellata Wangenh. var. *margaretta* (Ashe) Sarg. This distinct variety of post oak was not separated in the earlier list though cited by Palmer (9) from Rich Mountain in southeastern LeFlore County and also distributed over eastern Oklahoma. It was collected in pine-oak forest at McCurtain County State Game Refuge (*Little 13,918*).

Two questioned hybrid specimens in *Quercus* have been reported by Little and Olmsted (7). These sterile specimens apparently are not hybrids but willow oak, *Quercus phellos* L. (*Little and Olmsted 650*), and northern red oak, *Q. borealis* Michx. f. (*Little and Olmsted 599*), respectively.

Ulmus serotina Sarg. September elm. In the previous study this species was not detected from American elm, *Ulmus americana* L. Easily recognized in September by the autumnal fruits, this elm was observed in flood plains forests of McCurtain County as a tree to 15 inches in diameter and 70 feet in height. It was collected along Mountain Fork at Beaver Bend State Park (*Little 13,876*) and was seen also along the same stream northward at McCurtain County State Game Refuge and along Yanube Creek 2½ miles north of Broken Bow. Sargent (11) recorded this species from Muskogee County, but no published records from southeastern Oklahoma were noted. The Bebb Herbarium has specimens from Sequoyah and Le Flore Counties and from a cultivated tree in McCurtain County.

Toxicodendron quercifolium (Michx.) Greene, poison-Oak, and *Toxicodendron radicans* (L.) Kuntze, common poison-ivy. These were cited in the previous list (7) as *Rhus toxicodendron* L. and var. *radicans* (L.) Torr. but now are generally regarded as distinct species (5). Specimens of both, collected in McCurtain County in 1930, were cited in the monograph by Barkley (3).

Ilex ambigua (Michx.) Torr. (*I. caroliniana* (Walt.) Trel., not Mill.) Carolina holly, recorded from Rich Mountain by Palmer (9), was found at a second Oklahoma locality as a rare shrub in the cut-over pine-oak forest at the ranger station at Battiest (Sec. 12, T. 2 S., R. 22 E.) in northwestern McCurtain County (*Little 13,857*).

Acer leucoderme Small. Chalk maple, locally known as "white maple," was collected in 1930 in McCurtain County (SW. part of T. 4 S., R. 25 E.) as a State record and westward range extension (6, 7). It is common at a second Oklahoma locality near Silver Creek at the ranger station at Battiest (Sec. 12, T. 2 S., R. 22 E.; *Little 13,851*). As this locality is less than 10 miles from the northwestern corner of McCurtain County, this southeastern maple is to be expected in both Le Flore and Pushmataha Counties.

Hypericum densiflorum Pursh var. *lobocarpum* (Gattinger) Svenson. *H. oklahomense* Palmer (9), originally described from Rich Mountain and col-

lected southeast of Broken Bow in McCurtain County (6,7), has been reduced to synonymy by Svenson (14). This shrubby St. Johnswort is scattered in the dwarf oak vegetation near the lookout tower on the summit of Kiamichi Mountain, Le Flore County (*Little 13,889*) and was collected also in cut-over forest 3 miles north of Octavia, Le Flore County. (*Little 13,890*). The Bebb Herbarium has a specimen from Latimer County.

Cornus purpusii Koehne. The common shrubby dogwood along streams in southeastern Oklahoma now is referred to this species, according to the monograph by Rickett (10), rather than to *C. amomum* Mill. of the previous list (7) or *C. obliqua* Raf. The report (6, 7) of *C. stolonifera* Michx. from Oklahoma should be deleted.

Symplocos tinctoria (L.) L'Her. Common sweetleaf, or "horse-sugar," was first collected in Oklahoma southeast of Broken Bow in 1933 by Frank J. Gibbs (7). It is rare northward at Beaver Bend State Park (*Little 13,875*). The Bebb Herbarium has three specimens from McCurtain County including an earlier one from this park.

Symplocos tinctoria (L.) L'Her. Common sweetleaf, or "horse sugar," was first collected in Oklahoma southeast of Broken Bow in 1933 by Frank J. Gibbs (7). It is rare northward at Beaver Bend State Park (*Little 13,875*). The Bebb Herbarium has three specimens from McCurtain County including an earlier one from this park.

Viburnum dentatum L. Arrowwood viburnum. A specimen from McCurtain County (*Little and Olmsted 466*) was reported (6, 7) as a State record under the name *V. affine* var. *hypomalacum* Blake [as "hypoleucum".] Waterfall (15) noting that this specimen does not seem to be the variety cited, referred his own collection from the same county to *V. dentatum* L. sensu Svenson (14) and Fernald (5). Another specimen has been collected by the author at McCurtain County State Game Refuge (*Little 13,903*). Though assigned to *V. dentatum* in the broad sense, the Oklahoma plants, which have flattened drupes, may be placed in a segregate species after more detailed studies and collections are made.

Sphagnum subsecundum Nees. A single species of sphagnum or peat moss was cited as a State record from McCurtain County by Sharp (12, 13). Some years ago sterile specimens of the same species were collected by the author in two additional counties: Along Kiamichi River east of Muse, Le Flore County (*Little, Dec. 22, 1929*); along small stream east of Fewell, Pushmataha County (*Little, June 8, 1930*). At the LeFlore County locality, duplicate specimens were collected by Dr. Clarence E. Taft.

LITERATURE CITED

1. BARCLAY, B. D. 1946. New stations in Oklahoma for *Hexalectris aphylla* (Nutt.) Raf. and *Monotropa uniflora* L. Proc. Oklahoma Acad. Sci. 26:26.
2. BARCLAY, B. D. 1948. The second state record on *Monotropa uniflora* L. Proc. Oklahoma Acad. Sci. 28: 39.
3. BARKLEY, FRED A. 1937. A monographic study of *Rhus* and its immediate allies in North and Central America, including the West Indies. Ann. Missouri Bot. Garden 24: 265-498.
4. CORRELL, DONOVAN S. 1947. Additions to the orchids of Texas. *Wrightia* 1: 166-182.
5. FERNALD, M. L. 1941. Another century of additions to the flora of Virginia. *Rhodora* 43: 485-553, 559-630, 635-657.
6. LITTLE, ELBERT L., JR., and CHARLES E. OLMSTED. 1935. New records of flowering plants from southeastern Oklahoma. Proc. Oklahoma Acad. Sci. 15: 44-49.
7. LITTLE, ELBERT L., JR., and CHARLES E. OLMSTED. 1936. Trees and shrubs

- of the Southeastern Oklahoma Protective Unit. Proc. Oklahoma Acad. Sci. 16: 52-61.
8. MCKELVEY SUSAN DELANO. 1947. Yuccas of the southwestern United States, Part 2. Jamaica Plain, Mass.: Arnold Arboretum of Harvard University.
 9. PALMER, ERNEST J. 1924. The ligneous flora of Rich Mountain, Arkansas and Oklahoma. J. Arnold Arboretum 5: 108-134.
 10. RICKETT, HAROLD WILLIAM. 1945. Order Cornales. No. Amer. Flora 28B: 297-316.
 11. SARGENT, CHARLES SPRAGUE. 1922. Manual of the trees of North America. Ed. 2. New York: Houghton Mifflin Company.
 12. SHARP, AARON J. 1929. Bryophytes of eastern Oklahoma. Proc. Oklahoma Acad. Sci. 9: 35-38.
 13. ————. 1930. Bryophytes of southeastern Oklahoma I. A preliminary list with notes. Bryologist 33: 45-55.
 14. SVENSON, H. K. 1940. Plants of southern United States. Rhodora 42: 1-19, illus.
 15. WATERFALL, U. T. 1950. Some results of a third summer's botanizing in Oklahoma. Rhodora 52: 165-175.
-