



## NEW RECORDS OF FLOWERING PLANTS FROM SOUTHEASTERN OKLAHOMA\*

Elbert L. Little, Jr., and Charles E. Olmsted

These new records of flowering plants from southeastern Oklahoma were noted by the writer in the summer of 1930 while employed by the Oklahoma Forest Service. The collections were made as a part of an ecological study of the Southeastern Oklahoma Protective Unit of 1,312,000 acres in northern McCurtain, southern Le Flore, and eastern Pushmataha counties.

This region has the highest rainfall in Oklahoma, about 45 inches annually, the lowest elevation in the state, 300 feet, at the southeastern corner, and the highest point in the state exclusive of the panhandle, 2,850 feet on Rich Mountain. The topography of the Unit thus varies from swamps and flood plains along Little River to the state's highest and most rugged mountains, the Ouachitas. With these environmental extremes the vegetation is diversified and unlike that of other sections of Oklahoma.

The vegetation of the Southeastern Oklahoma Protective Unit will be the subject of a more detailed article. Pine-oak forests occupy most of the mountainous areas but small areas of the white oak climax forest

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Figure 2. This photograph is a close up of the strata showing the four alternating dark and light colored deposits.

occur, chiefly on the north-facing slopes of the higher mountains and on uplands near streams. Along the streams are flood plain forests of such deciduous trees as sweet gum, black gum, and bald cypress.

Most of the previous records of the flora of southeastern Oklahoma are based upon the collection made by Stevens (6) in 1913. Palmer (5) has made a detailed study of the woody plants of Rich Mt., in Le Flore County. Small collections have been made in southeastern Oklahoma also by Ortenburger (4). Some of the species of this interesting region are northeastern, eastern, and southeastern plants probably not found in other parts of the state.

Since the writers' study was mainly ecological and as the time was limited, no attempt was made to obtain a representative plant collection. The collection of 823 numbers of vascular plants consisted principally of woody plants and grasses but a few other herbs, some of which were recognized as new to the state, were included.

Of the plants collected, one species of tree, eight shrubs, and thirteen herbs, totaling twenty-two species, have not been recorded before from Oklahoma according to Jeffs and Little (2), although it is possible that they may have been collected by others. These new records include seven genera and one family (Podostemaceae) previously unreported from the state. Three of the new herbs are introduced plants. Although most of these additional species have been included by Jeffs (1) and the new tree record by Mattoon, Phillips, and Gibbs (3), this paper cites the specimens upon which those records were based.

Determinations of the new records of woody plants were made by C. E. Kobuski, of the Arnold Arboretum, Harvard University. The grasses were determined by J. R. Swallen, of the United States Department of Agriculture, and the other herbs by C. V. Morton, of the United States National Herbarium. To these persons the authors are greatly indebted for the determinations.

Specimens of the 823 numbers collected have been deposited in the Herbarium of the University of Oklahoma. Duplicates of the state records and certain other specimens determined by specialists were sent to the Arnold Arboretum or to the United States National Herbarium.

The list of state records together with several other noteworthy plants follows. State records are designated by an asterisk (\*) and those which are new genera for Oklahoma by two asterisks. The specimens cited below were collected in McCurtain and Le Flore counties from June to August, 1930, and, with one exception, by Elbert L. Little, Jr., and Charles E. Olmsted:

## MONOCOTYLEDONEAE

### GRAMINEAE

\*\**Deschampsia flexuosa* (L.) Trin. (*Aira flexuosa* L.) Wavy Hair Grass. Oak-hickory forest near top of Rich Mt., SW. of Page, Le Flore Co., July 19, No. 622.

\**Panicum depauperatum* Muhl. Starved Panic-grass. Oak-hickory-sweet gum shrub stage following severe burn in summer 1928 just after pine-oak cut over. Hurricane Hill, Sec. 7 (?), T. 2 N., R. 25 E., Le Flore Co., July 15, No. 590.

### CYPERACEAE

\**Carex intumescens* Rudge. Bladder Sedge. Bottomland-pine-hardwood forest SE. of Eagletown, McCurtain Co., June 4, No. 1481.

### LILIACEAE

*Trillium viride* Beck "probably." Green Wakerobin or Trillium. Incomplete material was determined as probably this species, which is not on Jeffs

and Little's (2) list. Uncut unburned white oak-maple climax forest, SW. part of T. 4 S., R. 25 E., McCurtain Co., June 5, No. 1566.

#### IRIDACEAE

\*\**Belamcanda chinensis* (L.) DC. (*Gemmingia chinensis* (L.) Kuntze.) Blackberry Lily. Introduced; probably an escape from cultivation. One clump of 4 plants seen. cutover pine cut a long time ago, hillside, Trinity sand; abandoned house  $\frac{1}{4}$  mile away and closest house  $\frac{1}{2}$  mile away; Sec. 10, T. 6 S., R. 26 E., McCurtain Co., July 10, No. 562.

#### ORCHIDACEAE

\*\**Habenaria flava* (L.) Gray. (*Perularia flava* (L.) Farwell.) Tubercled Orchis. Moist soil, near streams and in climax forest. Moist soil, shade, near stream, Sec. 6, T. 3 S., R. 24 E., McCurtain Co., June 3, No. 1459. Uncut unburned white oak-maple climax forest, SW. part of T. 4, S., R. 25 E., McCurtain Co., June 5, No. 1531.

#### DICOTYLEDONEAE

##### MYRICACEAE

*Myrica cerifera* L. Wax Myrtle. Although this family was not listed by Jeffs and Little (2), the wax myrtle was first found in McCurtain County by members of the Oklahoma Forest Service (3) several years previously. Moist soil, cutover pine-oak SE. of Broken Bow, McCurtain Co., June 23, No. 325.

##### FAGACEAE

*Fagus grandifolia* Ehrh. var. *carolintana* (Loud.) Fern. & Rehd. American Beech. This species has been found in at least two localities in Oklahoma: along Big Creek, in southeastern Le Flore County by Palmer (5); and along Beach Creek in northeastern McCurtain County, where it is common enough to have given the name (misspelled) to the stream and to a nearby post office, Beachton. The authors made a special trip to the Beach Creek station and found a number of trees varying in size from 3 feet to about 70 feet in height and up to 3 feet in diameter. Along flood plain forest, Beach Creek, 2 miles E. of Beachton, Sec. 12, T. 1 S., R. 26 E., McCurtain Co., July 3, No. 511.

##### CARYOPHYLLACEAE

\**Silene noctiflora* L. Night-flowering Catchfly. Introduced. Along an abandoned road, uncut unburned white oak-maple climax forest, SW. part of T. 4 S., R. 25 E., McCurtain Co., June 5, No. 1540.

##### RANUNCULACEAE

\**Ranunculus parviflorus* L. Small-flowered Crowfoot. Introduced. Moist area near spring, Shannon Ranch Spring, Sec. 28, T. 3 S., R. 24 E., McCurtain Co., June 7, No. 91.

##### MAGNOLIACEAE

*Magnolia tripetala* L. Umbrella Tree or Cucumber Tree. This collection confirms doubtful records (see Palmer, 5) of this tree from Oklahoma. It is now known definitely from southern Le Flore County at Cucumber Springs, on Cucumber Creek (named for this tree), where it was collected for the writers by W. E. Ward and R. C. Duke, of the Oklahoma Forest Service. About six trees up to 6 inches in diameter were found. Cucumber

Springs, on Cucumber Creek, Sec. 10, T. 1 N., R. 25 E., Le Flore Co., June 27, No. 409.

**\*PODOSTEMACEAE.** River Weed Family.

**\*\**Podostemum ceratophyllum*** Michx. River Weed. "Rare!" according to C. V. Morton, who made the determination. Common on tuff boulders, submerged down to 6 to 18 inches deep, shallow bottom of Mt. Fork River on tuff outcrop, State Game Preserve, Sec. 9 (?), T. 3 S., R. 25 E., McCurtain Co., June 30, No. 453.

**ROSACEAE**

**\**Crataegus trianthophora*** Sarg. Red Haw. Material collected previously by the senior author in Muskogee county had been referred doubtfully to this species. Although only 3 feet high, this plant was fruiting. Oak-pine, cut over a number of years, unburned, Sec. 26-25, T. 4 S., R. 22 E., McCurtain Co., June 20, No. 318.

**\**Rubus argutus*** Link. Blackberry. Along small dry stream valley, about 5 miles E. of Broken Bow, McCurtain Co., June 24, No. 377.

**LEGUMINOSAE**

**\*\**Centrosema virginianum*** (L.) Benth. (*Bradburya virginiana* (L.) Kuntze.) Spurred Butterfly-Pea. Moist soil, cutover pine-sweet gum, near Highway 70 E. of Broken Bow, McCurtain Co., June 28, No. 432.

**CALLITRICHACEAE**

**\**Callitriche peploides*** Nutt. Water Starwort. Moist soil, flat area, shade of oak grove, cutover pine, Sec. 27, T. 5 S., R. 26 E., McCurtain Co., June 16, No. 662.

**AQUIFOLIACEAE**

***Ilex vomitoria*** Alt. Yaupon. This evergreen holly was first found in Oklahoma by Frank J. Gibbs, of the Oklahoma Forest Service, in 1928. In addition to its first known station near Cedar Creek, about 15 miles N. of Broken Bow, McCurtain County, a second locality was found by the writers. Flood plain forest, Mt. Fork River, State Game Preserve, Sec. 9 (?), T. 3 S., R. 25 E., McCurtain Co., June 30, No. 437.

**ACERACEAE**

**\**Acer leucoderme*** Small. Sugar Maple. This southeastern species of sugar maple is the only new tree for Oklahoma in the list. It was found in McCurtain County as probably its most western known station, which formerly was Baker Springs. Howard County, Arkansas, about 25 miles to the east. Uncut unburned white oak-maple climax forest, SW part of T 4 S., R. 25 E., McCurtain Co., June 5, No. 4.

**SAPINDACEAE**

***Aesculus discolor*** Pursh var. *mollis* Sarg. Red Buckeye. This name probably should be substituted for the synonym, *Aesculus austrina* Small, of Jeffs and Little's (2) list. Along stream in unburned cut pine-oak, 3 miles N. of Broken Bow, McCurtain Co., June 5, No. 70.

**HYPERICACEAE**

***Hypericum oklahomense*** Palmer. Oklahoma St. John's wort. Described by Palmer (5) from Rich Mt., southeastern Le Flore County, in 1924, this species was collected in McCurtain County by the authors for

probably its second Oklahoma record. Cutover pine-oak, SE. of Broken Bow, McCurtain Co., June 23, No. 324.

#### THYMELAEACEAE

*Dryca palustris* L. Leather-wood. This northern plant was found in Le Flore County by Palmer (5) and was reported by him from near Muskogee, in northeastern Oklahoma. George R. Phillips, state forester, found it in 1927 at a station in McCurtain County, where the writers collected it also. Flood plain forest, State Game Preserve, Sec. 9 (?), T. 3 S., R. 25 E., McCurtain Co., July 1, No. 497.

#### ONAGRACEAE

\**Ludwigia hirtella* Raf. Hairy Ludwigia. Moist soil, cutover pine-sweet gum, near Highway 70 E. of Broken Bow, McCurtain Co., June 28, No. 424.

#### UMBELLIFERAE

*Taenidia integerrima* (L.) Drude. Yellow Pimpernel. Previously found in Muskogee County by the senior author, this species was collected in southern Le Flore County for probably its second Oklahoma record. Dwarf oak forest, elevation 1800 feet, top of ridge, Winding Stair Mt., Le Flore Co., July 16, No. 598.

#### CORNACEAE

\**Cornus stolonifera* Michx. Red-osier Dogwood. Between Octavia and Ludlow, Le Flore Co., June 8, No. 134.

#### ERICACEAE

\**Vaccinium neglectum* (Small) Fern. Huckleberry. With the discovery of this and the next species in the state, Oklahoma now has 6 species of *Vaccinium*, all of which occur in southeastern Oklahoma. Virgin pine-oak forest, 1 mile N. of Shannon Ranch Spring, McCurtain Co., June 7, No. 99. Moist soil, cutover pine-sweet gum, near Highway 70 E. of Broken Bow, McCurtain Co., June 28, No. 427.

\**Vaccinium virgatum* Ait. Southern Black Huckleberry. Pine-oak. burned over spring 1930. Sec. 9, T. 5 S., R. 26 E., McCurtain Co., June 24, No. 388.

#### STYRACACEAE

\*\**Styrax americana* Lam. Smooth Storax. Moist soil, flood plain and climax forests. Bottomland pine-hardwood SE. of Eagletown, McCurtain Co., June 4, No. 1479. Flood plain forest of Mt. Fork River, State Game Preserve, Sec. 9 (?), T. 3 S., R. 25 E., McCurtain Co., June 30, No. 443.

#### POLEMONIACEAE

\**Phlox glaberrima* L. var. *melampyrifolia* (Salisb.) Wherry. Smooth Phlox. Common locally in moist soil. Moist soil, along road between Highway 70 and Old Clebit, McCurtain Co., June 19, No. 311. Determination by Dr. Edgar T. Wherry.

#### LABIATAE

\*\**Blephilia hirsuta* Benth. Wood Mint. Uncut unburned white oak-maple climax forest, SW part of T. 4 S., R. 25 E., McCurtain Co., June 5, No. 1555.

#### CAPRIFOLIACEAE

\**Lonicera prolifera* Rehd. Honeysuckle. Flood plain forest along Beach Creek, 2 miles E. of Beachton, Sec. 12, T. 1 S., R. 26 E., McCurtain Co., July 3, No. 507.

\**Viburnum affine* var. *hypoleucum* Blake. Arrow-wood or Black Haw. Common locally in flood plain forests in McCurtain County. It was observed also in the climax forest near the top of the north-facing slope of Rich Mt., east of Page, Le Flore County, although Palmer (5) did not list it. Gravel flood plain of intermittent stream, Sec. 3 or 10, T. 4 S., R. 24 E., McCurtain Co., June 30, No. 466.

#### SUMMARY

1. This paper adds 22 species of flowering plants, including 7 genera and 1 family (Podostemaceae), to the known flora of Oklahoma, as a result of collections by Elbert L. Little, Jr., and Charles E. Olmsted for the Oklahoma Forest Service in southeastern Oklahoma in the summer of 1930.
2. Notes on several other uncommon species are included.

#### LITERATURE CITED

1. Jeffs, R. E. 1931. A key to the ferns and seed plants of Oklahoma. (Mimeographed.) Norman, Okla.
2. Jeffs, R. E., 1930 and Elbert L. Little, Jr. A preliminary list of the ferns and seed plants of Oklahoma. Univ. Okla. Biol. Surv. Publ. 2: 39-101.
3. Mattoon, Wilbur R., 1932. George R. Phillips, and Frank J Gibbs. Forest trees of Oklahoma. Okla. Forest Service Publ. No. 1, Reprint No. 3.
4. Ortenburger, A. I. 1928. Plant collections representative of some typical communities of eastern Oklahoma. Okla. Acad. Sci. Proc. 8: 53-57.
5. Palmer, Ernest J. 1924. The ligneous flora of Rich Mountain, Arkansas and Oklahoma. Jour. Arnold Arboretum 5: 108-134.
6. Stevens, G. W., 1916. Flora of Oklahoma. Unpublished thesis, Harvard Univ.

