

FLORA OKLAHOMA PROJECT

DESCRIBING OKLAHOMA'S BOTANICAL DIVERSITY--THE FLORA OF OKLAHOMA PROJECT: WRITING A FLORA BY COMMITTEE AND IN STAGES

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ABSTRACT

The vascular flora of Oklahoma comprises 173 families, 868 genera, and 2,540 species. It is a complex assemblage of plants representative of different phytoecogeographic regions. Species characteristic of eastern deciduous forest and central grasslands are the most common; however, taxa from many other regions are found in the state. The authors of this poster initiated an effort to write and publish a modern floristic treatment for Oklahoma. In order to provide a work to its users as quickly as possible, the editorial board decided to complete sequentially a key to families, descriptions of families, keys to the genera, keys to their species, and finally descriptions of the genera, and species. Each semester a new version of *Identification of Oklahoma Plants* is printed. Each revision incorporates additional keys prepared by the committee and changes made to previous versions. The time spent on the project has been worthwhile because the book is continuously edited and improved. Versions of the book are in widespread use around the state and the final document will be an asset for all individuals interested in plants of Oklahoma.

OVERVIEW OF OKLAHOMA'S PLANT DIVERSITY

THE FLORA OF OKLAHOMA

173 Families
868 Genera
2540 Species

LARGEST FAMILIES IN OKLAHOMA

Asteraceae/sunflowers 105/351
Poaceae/grasses 96/305
Fabaceae/legumes 40/154
Cyperaceae/sedges 14/155



INTRODUCTIONS FROM ELSEWHERE

14% OF FLORA

Albizia julibrissin
Lonicera japonica
Ligustrum sinense
Lespedeza cuneata
Bothriochloa ischaemum

Identification of Oklahoma Plants



RESOURCES AVAILABLE



State botanists decided to write the flora because available resources were inadequate. Treatments of Oklahoma's flora are outdated and incomplete, especially given the use of modern techniques to delineate species. Additionally, Oklahoma botanists now depend on manuals from other regions for descriptions of species.

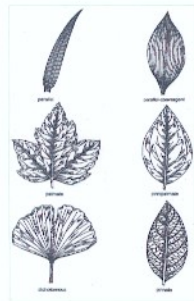
The editorial committee meets once a month at the Bebb Herbarium at the University of Oklahoma to review and write keys and descriptions to the vascular plants of Oklahoma. The group can avail itself of the resources of the herbarium.

ORIGINS AND HISTORY OF THE FLORA OKLAHOMA PROJECT



Established an editorial committee
Formed a non-profit corporation
Developed an editorial format
Solicited contributors

Initiation of research and writing
Key to families
Family descriptions
Keys to genera of each family
Descriptions of genera and species
Keys to species
Original illustrations and glossary



FLORA PREPARATION

PREPARATION OF A MANUAL

- Review taxonomic literature
- Acquire herbarium specimens
- Identify specimens
- Examine and measure specimens
- Prepare descriptions
- Compose keys for identification
- Submit for review
- Revise and resubmit
- Prepare illustrations
- Compile manuscripts
- Publication

USE OF DELTA

DELTA (Descriptive Language for Taxonomy) is a database and program that facilitates uniformity and parallelism in construction of keys and descriptions.

CRITERIA FOR DESCRIPTIONS

- Parallel
- Uniform terminology
- Complete

CRITERIA FOR KEY CONSTRUCTION

- All couplet leads absolutely parallel
- All couplet leads mutually exclusive
- Vegetative, floral, and fruit characters
- No dependent characters
- Uniform terminology
- Account for common misinterpretations
- User friendly



TREATMENTS OF THE FLORA OF OKLAHOMA

Stevens 1916
Stemen and Myers 1937
Goodman 1958
McCoy 1968
Waterfall 1969



RESULTS

PUBLICATIONS

Keys to the Vascular Plant Families of Oklahoma
1994

Key and Descriptions for the Vascular Plant Families of Oklahoma
1997

Keys and Descriptions for the Vascular Plants of Oklahoma
1998
Identification of Oklahoma Plants
2003

Tasks Completed

- keys to families
- descriptions of families
- glossary and illustrations
- keys to genera
- keys to species of almost all genera

Future Tasks Planned

- Complete keys to species
- Replace Waterfall's Keys
- Prepare descriptions of genera and species
- Prepare illustrations of genera and species
- Publish: *The Flora of Oklahoma*

SAMPLE KEYS AND DESCRIPTIONS

GROUP 1: PLANTS WITH OR BROAD LEAVES ALTERNATE SIMPLE, MAGNIFIED 10X OR MORE	
1. Venation palmate	ARACEAE
2. Leaves flat, parallel or opposite, with veins base sheathing, linear to lanceolate in outline, venation parallel or pinnate	
3. Flowers pedicel. Fruit pedicel in capsule or follicle as well as or above it	
4. Sepals absent. Stamens 1. Ovary inferior	GROSSULARIACEAE
5. Flower stem. Pedicel arising from middle of elongated bract. Fruit 1 per flower. Fruit follicle	TELICACEAE
6. Sepals absent. Pedicel arising from middle of elongated bract. Fruit 2 per flower. Fruit follicle	ROSIACEAE
7. Flower stalks. Fruit sessile. Stamens 2 or more or capitate. Fruit 1 per flower. Fruit capsule. Stamens 2 or more or capitate. Fruit covered by fruit stalks	MONOCOTYLEDONACEAE
8. Sepals absent. Fruit sessile. Stamens 2 or more or capitate. Fruit covered by fruit stalks	MONOCOTYLEDONACEAE
9. Sepals absent. Fruit sessile. Stamens 2 or more or capitate. Fruit covered by fruit stalks	MONOCOTYLEDONACEAE
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GROUP 2: PLANTS WITH OR BROAD LEAVES ALTERNATE SIMPLE, MAGNIFIED 10X OR MORE	
1. Leaves 5-11, ovate, pedicel 1/2-1/3, venation pinnate, base sheathing, linear to lanceolate in outline, venation parallel or pinnate	MONOCOTYLEDONACEAE
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