

A STUDY OF THE ANGIOSPERMS, EXCLUSIVE OF THE
GRAMINEAE, CYPERACEAE, AND JUNCACEAE,
NATIVE TO, OR NATURALIZED IN,
PAYNE COUNTY, OKLAHOMA

By

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PREFACE

A taxonomic study of Payne County was chosen as a thesis subject by the writer as the direct result of two courses in taxonomy in the spring of 1950. It was felt that a floristic problem would be of more benefit to a beginning taxonomist than one of a monographic nature, as it would serve to familiarize one with a larger number of species and with the taxonomic problems and critical procedures pertaining thereto as well as aiding in the formulation of a species concept.

Collections were made in the spring, summer and fall of 1950, 1951 and a few in the spring of 1952. In accordance with accepted taxonomic procedures, only plants that were in either the flowering or fruiting stage were collected. A total of 615 plants was collected from stations scattered about the county, the collection being placed in the Herbarium of the Oklahoma Agricultural and Mechanical College. The author's list of species has been supplemented by a study of previous collections from the county deposited in the herbarium.

A previous study, made in 1933 by G. E. McCollom, attempted to cover the entire group of flowering plants, including grasses, sedges and rushes, and many cultivated plants. It is felt that the present study is of scientific value since it covers a smaller field more thoroughly, in addition to making extensive use of monographic treatments and other critical studies.

In accordance with the latest revision of the International Rules of Botanical Nomenclature,¹ the typical variety is designated by a repetition of the specific epithet without author citation in instances where more than one variety of a species is listed.

The writer wishes to express her appreciation to Professor U. T. Waterfall, under whose supervision the study was made. His constant encouragement and guidance have been of invaluable assistance not only in carrying out investigations, but also in the preparation of this paper.

¹H. W. Rickett. Some changes in the international rules of botanical nomenclature made in Stockholm in 1950. Bull. Torr. Bot. Cl. 78:5.

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CHAPTER I

HISTORY

Discussions of the region of Oklahoma that is now Payne County have seldom entered into the journals of early explorers and expeditions that crossed the state in their exploration of newly acquired American territory, and in trade with the Spanish cities of the Southwest.

One of the earliest travelers whose travels can be traced into Payne County was Washington Irving. In Tour of the Prairies¹ Irving related his observations and experiences on the central prairies of Oklahoma in the fall of 1832. On October 19th of that year, Irving and his party entered Payne County at the eastern edge, camping that night near the present town of Yale.² His journal for that day describes the landscape as fine open country, with stately groves and clumps of gigantic oaks, some of which stood singly as if planted for ornament and shade in the midst of rich meadows. Ellsworth,³ who accompanied Irving, said that the prairies were not so extensive as some supposed. He wrote "It is true that the majority of the land is prairie,

¹Washington Irving, A Tour of the Prairies. (Oklahoma City, 1926), Repr. Harlow Publishing Co.

²Ibid., 238.

³Henry Leavitt Ellsworth, Irving on the Prairies. (New York, 1937), American Book Co.

but rarely are you out of sight of timber."⁴

The expedition's march of October 20th took them over a prairie covered with buffalo grass instead of tall flowering plants and "... again to the Red Fork [Cimarron] and then the Cross Timbers".⁵ Foreman⁶ describes the Cross Timbers as a band of timber about seventy miles wide that entered the state from Texas and extended in straggling patches into southern Kansas.

Camp for the night of October 20th was located at the edge of the Cross Timbers four or five miles northeast of the present village of Ripley. The following day a deep stream running along the bottom of a thickly wooded ravine (Stillwater Creek) was crossed near presentday Mehan.⁷ Ellsworth related that the frequent and meandering streams presented a vigorous growth of stately trees on each side and that the soil was a deep red with red sandstone being abundant in many locations.⁸

Josiah Gregg⁹ mentioned that none of the prairie streams were navigable for any length. He also found the width of rivers varying from fifty yards to five hundred yards, with low banks and remarkably shallow channels. The Cimarron he described as one that appeared to "ebb and flow" periodically because the

⁴Ibid., 60.

⁵Irving, 239.

⁶Carolyn Thomas Foreman, The Cross Timbers. (Muskogee, Okla., 1947), The Star Printery, Inc., 5,6.

⁷Irving, 239.

⁸Ellsworth, 59-61.

⁹Josiah Gregg, Commerce of the Prairies. (New York, 1845), J. & H. G. Langley, 2:197.

water disappeared and reappeared so frequently above the sand.

Irving's party continued across the southern portion of the county, camping on October 21st on the banks of Wildhorse Creek, 3 miles north and 1 mile east of the site of Goodnight.¹⁰ On October 22nd the Cimarron River was crossed at a ford of the Osage Indians just north of Goodnight and the expedition continued on towards central Oklahoma.

Gregg described the timber between the Arkansas frontier and the Cross Timbers as mostly post oak and blackjack oak combinations. The blackjack having a blackened scrubby appearance with harsh rugged branches, partly on account of being so often scorched and crisped by prairie fires.¹¹ Along the streams he found elm, hackberry, pecan, ash, walnut, mulberry, persimmon, cottonwood, sycamore, hickory and dogwood.¹² He also made special note of the bois d'arc¹³ (*Maclura pomifera*) encountered along streams and the dwarf shin oak¹⁴ (*Quercus prinoides*).

One of the first persons to do any actual taxonomic work in the county was E. E. Bogue, Professor of Botany and Entomology at Oklahoma A. and M. College from 1899 to 1901. In 1900, he published a list of 750 species of Oklahoma plants as An Annotated Catalog of the Ferns and Flowering Plants of Oklahoma.¹⁵

¹⁰Irving, 240.

¹¹Gregg, 198.

¹²Ibid., 199.

¹³Ibid., 199.

¹⁴Ibid., 200.

¹⁵H. I. Featherly, Cavalcade of Botanists in Oklahoma. (1943), Proc. Okla. Acad. Sci., 23:12.

In 1912 C. C. Learn became a member of the faculty of Oklahoma A. and M. College. Evidence of his botanical work in the form of plant specimens is found in the College Herbarium.¹⁶

Other collections from this county available for study at the Herbarium are those made by Professor Robert S. Stratton and Dr. H. I. Featherly, as well as collections made by students in taxonomy classes.

¹⁶Ibid., 13.

CHAPTER II
PHYSICAL FEATURES

The region that is now Payne County was originally part of the Creek Nation and the Cherokee Outlet. The first permanent settlement was made in 1889 when the district was opened to homesteaders.¹ Stillwater, Cushing and Yale are the largest population centers, and the smaller communities are Perkins, Ripley, Glencoe, Mehan, Ingalls, Quay, Norfolk, Cartoco, Gano, and Vinco.² In 1950, the total population of the county was 46,430.³

Location and size of area

Payne County is in north-central Oklahoma, bounded on the north by Noble and Pawnee counties, on the east by Creek county, by Lincoln and Logan counties on the south and by Logan county on the west.

At its greatest length, the county is 42 miles from east to west, the north to south width is 21 miles, and the total area is 695 square miles.⁴

¹W. B. Cobb and H. W. Hawkes. Soil Survey of Payne County. U. S. D. A. Dept. of Soils, (Washington, 1918), Gov't. Printing Office, 6.

²Highway Map of Payne County, Oklahoma. Okla. Dept. of Highways, 1950.

³U. S. Dept. of Commerce. Bureau of the Census. United States Census of Population, 1950. 1 (36):9.

⁴Cobb and Hawkes, 5.

Physiographic regions and topography

The county is situated in the transition zone that lies between the plains and prairies, but the soils and vegetation are primarily like that of the prairies in nature. The greater part of the area is treeless, but the more broken areas of sandy soil are forested and there is usually a forested belt along streams.

The uplands are generally undulating, with a large area of rolling land in the west and extreme east. The smaller nearly level areas are found in the central region. In the rolling land areas, streams have deep valleys and steep slopes, in other places the bank slopes are more gradual.

The flood-plain along the Cimarron River is from one-quarter mile to two miles in width. Flood-plains along some of the larger streams may be up to one-half mile wide.

The elevation of the county varies from 800 to 1,150 feet above sea level, with the average elevation in the east being less than that of the west. The western third of the county slopes southeast to the Cimarron River, except for a small portion which slopes northeast to Stillwater Creek.⁵

Drainage

The county as a whole is well-drained, with every section being crossed by a water course or else drained by a perceptible slope to a small stream. The drainage of the flat central area, however, is not always good when the rainfall is particularly

⁵Ibid., 6.

heavy.

Almost the entire county is drained through the Cimarron River,⁶ which flows along the southern boundary for many miles. The principal tributary is Stillwater Creek, which drains the north and north-central regions and joins the Cimarron near Ripley. With the exception of the Cimarron River, Stillwater, Council and Euchee creeks, all streams in the county are practically dry the greater part of the year. Streams seldom overflow their banks, even during the wet season.

Soils

The rolling hilly portion of the county lies in the Hanceville-Conway group of the Red and Yellow Podzolic soils,⁷ having as their parent materials sandstone and shales.⁸ The soil is shallow and supports at best a scrubby vegetation.

The undulating to rolling prairie regions are classified in the Zaneis-Renfrow (very fine sandy loam and silt loam) association of the Reddish Prairie soils.⁹ Parent materials are in the Red Beds formation. The soils are generally of red calcareous clay or sandy clay containing in places strata of gypsum, limestone and sandstone. They are generally deep soils, and usually fairly productive.¹⁰

⁶Ibid., 6.

⁷U. S. D. A. Yearbook of Agriculture. Soils and Men. (Washington, 1938), U. S. Gov't. Printing Office, Soil Associations Map of the United States.

⁸Ibid., 1065.

⁹Ibid., Soil Associations Map of the United States.

¹⁰Ibid., 1057.

CHAPTER III

CLIMATE

The climate of Payne County approaches very closely to the average climatological conditions for the state having relatively few of the extremes that some sections of the state may experience.

The average temperature (from weather records over a period of forty years) for January is 36.6° F. and for July is 80.7° F. The maximum temperature recorded for the county is 115° F. and the minimum is -18° F.¹ The high summer temperatures almost invariably occur with clear skies and usually dry moderate winds from south to west. Occasionally hot winds may accompany the high temperatures and cause rapid evaporation of moisture. When such conditions are prolonged, severe droughts may often follow. Summer nights are usually comparatively cool, and the winters are generally mild and of short duration.

The length of the growing season averages 213 days, the last killing frost in the spring being about March 31, and the first killing frost in the fall about October 30.²

Prevailing wind direction is southerly except during December, January and February when it is predominantly northerly. The average annual number of clear days is 185, partly cloudy

¹U. S. D. A. Yearbook of Agriculture. Climate and Man. (Washington, D.C., 1941), U. S. Gov't. Printing Office, 1067.

²Ibid., 1067.

90, and cloudy 80, with sunshine averaging 60% of the possible amount.³

About 75% of the annual precipitation occurs during the growing season. Precipitation is usually more abundant in the spring and early summer, although frequent in September and October. The average precipitation is 33.31 inches, varying from 36 inches on the eastern edge of the county to about 32 inches in the western area. January precipitation is usually the annual low, averaging 1.04 inches and May the annual high with 4.66 inches.⁴ During the two years (1950-51) in which the writer's collections were made, rainfall during the summer and fall months was higher than average, in 1951 being almost 5 inches greater.⁵ The temperatures were, at the same time, somewhat lower, giving rise to the occasional reappearance of a spring flowering species in the early fall.

³Ibid., 1074.

⁴Ibid., 1067.

⁵U. S. Dept. of Commerce. Weather Bureau. Climatological Data. (1951), 60:(6) 105, (7) 133, (8) 153, (9) 171.

CHAPTER IV

ECOLOGY

Payne County lies in the transition area between the forests of the east and the prairies of the west. In the eastern and southern portions of the county the vegetation is of the oak-hickory (Quercus-Carya) savannah type,¹ while the western and northern portions are in the Andropogon faciation of the Stipa-Koeleria association as delineated by Bruner.²

The savannah is not a true oak-hickory savannah, rather it is a post oak-blackjack post-climax associes. The black-jack oak (Quercus marilandica) occupies the drier, more sandy regions, and in tighter soils the post oak (Quercus stellata) becomes more noticeable. Carya is infrequent except in the eastern part of the county. In sheltered low areas along the Cimarron River near Ripley a few species are found that remain as relicts of the eastern deciduous forest. Of these Quercus velutina and Platanus occidentalis (which reaches its western limits in Payne County) are perhaps the most prominent. Juni-perus virginiana may be found in many parts of the county, interspersed in the oak forest.

¹W. E. Bruner, The Vegetation of Oklahoma. Ecological Monographs, (April, 1931), 1:99-188.

²Ibid., 108.

Along the Cimarron River and the larger creeks, a flood plain forest a quarter of a mile to two miles in width has developed. Pioneer species on the sandbars are Tamarix gallica, Salix interior and occasionally Populus deltoides. Cephalanthus occidentalis is found frequently along the shores. As the forest develops Ulmus americanus, Juglans nigra, Sapindus Drummondii, Fraxinus pennsylvanica, var. subintegerrima and Diospyros virginiana begin to appear. On the shores of some of the larger creeks that do not have a true flood plain, Ulmus and Celtis are the dominant species while Populus appears less frequently.

In certain localities a chaparral belt of shrubs may lie between the forest and the prairies. It is usually composed of Rhus glabra, Rhus copallina, var. latifolia, Ceanothus ovatus, Symphoricarpos orbiculatus, and Quercus prinoides.

Probably the single dominant species of the prairies is Andropogon scoparius. Other species that characterize the prairies of this region are Andropogon Gerardi, Sorghastrum nutans, Bouteloua gracilis, Bouteloua hirsuta, Bouteloua curtipendula, Buchloe dactyloides, Panicum virgatum and Triodia flava.

Species of the prevernal societies in the woodland areas are rather scarce. With the exception of Acer Negundo, Ulmus rubra, Celtis tenuifolia, Cercis canadensis, Prunus Reverchonii, and Viola missouriensis, all of which may be found along stream banks, there is little else in evidence. Early flowering species of the prairies which appear before the grasses begin to grow

are more numerous, with Nothoscordum bivalve, Claytonia virginica, Viola Kitaibeliana, var. Rafinesquii, Draba reptans, Draba brachycarpa, Houstonia minima, Erythronium albidum, var. mesochoreum, Anemone caroliniana, Androsace occidentalis, Lomatium daucifolium and Lithospermum incisum appearing quite early.

Late in the winter, a few warm days usually brings out in disturbed areas the following species: Lamium purpureum, Capsella bursa-pastoris, Veronica polita and Taraxacum officinale. These usually persist for some length of time.

The vernal societies in the post oak-blackjack post-climax are characterized by Scutellaria parvula, Sanicula canadensis, Galium Aparine, Veronica peregrina and Erigeron philadelphicus. On the prairies are found vernal societies of Senecio plattensis, Prunus angustifolia, Sisyrinchium campestre, Baptisia leucophaea, Baptisia australis, var. minor, Penstemon oklahomensis, Myosotis verna, Valerianella radiata, Erigeron strigosus, Oxytropis Lambertii, Delphinium virescens, Yucca glauca, Plantago virginica, Verbena canadensis and Allium canadense.

Estival societies in the post oak-blackjack woods are represented by Acalypha gracilens, Acalypha virginica, Geum canadense, Rubus spp., Mollugo verticillata and Elephantopus carolinianus in shaded damp places, and Stylosanthes biflora, Talinum parviflorum, Chrysopsis pilosa, Portulaca pilosa, Gnaphalium purpureum, Buchnera americana, Croton glandulosa, var. septentrionalis in the drier exposed openings. On the prairies, the estival aspect is marked by the appearance of Dalea candida, Dalea purpurea,

Sabbatia campestris, Schrankia Nuttallii, Neptunea lutea, Psoralea tenuiflora, Asclepias tuberosa, A. auriculata, A. viridiflora, Polygala incarnata, Monarda fistulosa, Oenothera serrulata, Linum sulcatum, Specularia biflora, S. Holzingeri and Daucus pusillus.

Serotinal species are moderate in number in the post oak-blackjack area. In well shaded spots may be found Lespedeza repens, L. procumbens, L. Stuevei and Verbena urticifolia. More open spaces are characterized by Aster patens, Actinomeris alternifolia, Solidago ulmifolia, Vernonia Baldwinii, Diodia teres, Lechea villosa and L. tenuifolia, while Eupatorium coelestinum and Iresine rhizomatosa are found in moist shaded areas.

The appearance of fall flowering species on the prairies depends to a large extent upon the rainfall. In years of normal to high rainfall they begin to appear in the latter part of August, while in dry years they put in a belated appearance in the middle of September. The striking societies of the autumnal prairies are best represented by Solidago missouriensis, var. fasciculata, S. petiolaris, S. speciosa, var. angustata, S. altissima, Liatris punctata, L. aspera, L. squarrosa, Aster eriocoides, A. praealtus, A. sagittifolius, var. Drummondii, Oenothera biennis, Oenothera rhombipetala, Cirsium altissimum, Lespedeza striata, L. virginica, Polygonum ramosissimum, Desmodium sessilifolium, Portulaca mundula, Spiranthes cernua, Helianthus mollis, Haplopappus ciliatus, Ambrosia psilostachya, Gerardia heterophylla and G. fasciculata.

CHAPTER V
LIST OF SPECIES

TYPHACEAE

Typha latifolia L.

NAJADACEAE

Najas guadalupensis (Spreng.) Morong

Potamogeton foliosus Raf.

Potamogeton illinoensis Morong

Potamogeton nodosus Poir.

Potamogeton pectinatus L.

ALISMATACEAE

Alisma subcordatum Raf.

Echinodorus cordifolius (L.) Griseb.

Echinodorus rostratus (Nutt.) Engelm.

Lophotocarpus calycinus (Engelm.) J. G. Smith

Sagittaria ambigua J. G. Smith

Sagittaria latifolia Willd., var. latifolia forma gracilis

(Pursh) Robins.

Sagittaria latifolia Willd., var. latifolia forma hastata

(Pursh) Robins.

ARACEAE

Arisaema Draconitum (L.) Schott

LEMNACEAE

Lemna minor L.

COMMELINACEAE

Commelina erecta L., var. erecta

Commelina erecta L., var. angustifolia (Michx.) Fern.

Commelina erecta L., var. angustifolia (Michx.) Fern.

forma crispa (Wootton) Fern.

Tradescantia occidentalis (Britt.) Smyth

Tradescantia ohioensis Raf.

PONTEDERIACEAE

Heteranthera limosa (Sw.) Willd.

LILIACEAE

Allium canadense L., var. canadense

Allium canadense L., var. Fraseri Owenby

Allium canadense L., var. hyacinthoides (Bush) Owenby

Allium Drummondii Regel

Allium mutabile Michx.

Allium vineale L.

Androstaphium caeruleum (Schoele) Greene

Asparagus officinalis L.

Erythronium albidum Nutt., var. mesochoreum (Kners.) Rickett

Smilax Bona-Nox L.

Smilax glauca Walt., var. leuophylla Blake

Smilax rotundifolia L.

Yucca glauca Nutt.

AMARYLLIDACEAE

Agave virginica (L.) Salisb.

Cooperia Drummondii Herb.

IRIDACEAE

Wenastylis geminiflora Nutt.

Sisyrinchium angustifolium Mill.

Sisyrinchium Bushii Bicknell

Sisyrinchium campestre Bicknell, var. campestre

Sisyrinchium campestre Bicknell, var. campestre, forma
kansanum (Bicknell) Steyererm.

ORCHIDACEAE

Spiranthes cernua (L.) Richard

Spiranthes gracilis (Begel.) Beck

Spiranthes vernalis Engelm. & Gray

SALICACEAE

Populus deltoides Marsh.

Salix interior Rowlee, var. interior

Salix interior Rowlee, var. pedicellata (And.) Ball

Salix nigra Marsh., var. nigra

Salix nigra Marsh., var. Lindheimeri Schn.

JUGLANDACEAE

Carya illinoensis (Wang.) K. Koch

Carya texana Buckl.

Juglans nigra L.

FAGACEAE

Quercus macrocarpa Michx.

Quercus marilandica Muench.

Quercus Michauxii Nutt.

Quercus Muehlenbergii Engelm.

Quercus prinoides Willd.

Quercus stellata Wang.

Quercus velutina Lam.

ULMACEAE

Celtis occidentalis L.

Celtis tenuifolia Nutt., var. georgiana (Small) Fern. & Schub.

Ulmus americana L.

Ulmus parvifolia Jacq.

Ulmus pumila L.

Ulmus rubra Muhl.

MORACEAE

Maclura pomifera (Raf.) Schneid.

Morus alba L.

Morus nigra L.

Morus rubra L.

URTICACEAE

Parietaria pennsylvanica Muhl.

POLYGONACEAE

Eriogonum annuum Nutt.

Eriogonum longifolium Nutt.

Polygonum aviculare L., var. aviculare

Polygonum aviculare L., var. littorale (Link.) W.D.J. Koch

Polygonum aviculare L., var. vegetum Ledeb.

Polygonum coccineum Muhl., var. coccineum

Polygonum coccineum Muhl., var. pratincola (Greene) Stanford

Polygonum Convolvulus L.

Polygonum cristatum Engelm. & Gray

Polygonum Hydropiper L.

- Polygonum hydropiperoides Michx.
Polygonum lapathifolium L.
Polygonum longistylum Small
Polygonum opelousanum Riddell
Polygonum pennsylvanicum L., var. laevigatum Fern.
Polygonum prolificum (Small) Robins.
Polygonum punctatum Ell.
Polygonum ramosissimum Michx.
Polygonum scandens L.
Rumex altissimus Wood
Rumex crispus L.
Rumex hastatulus Baldw.
Rumex venosus Pursh

CHENOPODIACEAE

- Chenopodium ambrosioides L.
Chenopodium Boscianum Moq.
Chenopodium hybridum L.
Chenopodium leptophyllum Nutt.
Chenopodium pallescens Standl.
Corispermum hyssopifolium L.
Cycloloma atriplicifolium (Spreng.) Coult.
Monolepis Nuttalliana (R. & S.) Wats.
Salsola Kali L., var. tenuifolia Tausch

AMARANTHACEAE

- Aenida tamariscina (Nutt.) Wood
Amaranthus albus L., var. pubescens (Uline & Bray) Fern.
Amaranthus graecizans L.

Amaranthus hybridus L.

Amaranthus Palmeri S. Wats.

Amaranthus spinosus L.

Froelichia floridana (Nutt.) Moq., var. campestris (Small)

Fern.

Froelichia gracilis (Hook.) Moq.

Gossipianthus lanuginosus (Poir.) Moq.

Iresine rhizomatosa Standl.

NYCTAGINACEAE

Mirabilis albida (Walt.) Heimerl

Mirabilis linearis (Pursh) Heimerl

Mirabilis nyctaginea (Michx.) MacM.

PHYTOLACCACEAE

Phytolacca decandra L.

AIZOACEAE

Mollugo verticillata L.

PORTULACACEAE

Claytonia virginica L.

Portulaca mundula Johnston

Portulaca oleraceae L.

Talinum calycinum Engelm.

Talinum parviflorum Nutt.

CARYOPHYLLACEAE

Agrostemma Githago L.

Arenaria patula Michx., var. patula forma Fitcheri

(Nutt.) Steyerl.

Cerastium brachypodum (Engelm.) Robins.

Loeflingia texana Hook.

Paronychia fastigiata (Raf.) Fern., var. paleaceae Fern.

Saponaria officinalis L.

CERATOPHYLLACEAE

Ceratophyllum demersum L.

NYMPHACEAE

Nelumbo lutea (Willd.) Pers.

Nymphaea odorata Ait.

RANUNCULACEAE

Anemone caroliniana Nutt.

Clematis Pitcheri T. & G.

Delphinium virescens Nutt., ssp. Penardii (Huth.) Ewan

Myosurus minimus L.

Ranunculus abortivus L.

Thalictrum dasycarpum Fisch. & Lall., var. hypoglaucum
(Rydb.) Boivin

MENISPERMACEAE

Cocculus carolinus (L.) DC.

Menispermum canadense L.

PAPAVERACEAE

Argemone intermedia Sweet.

Corydalis micrantha (Engelm.) Gray, ssp. australis
(Chapm.) Owenby

CRUCIFERAE

Brassica nigra (L.) Koch

Brassica Rapa L.

Camelina microcarpa Andrz.

Capsella bursa-pastoris (L.) Medic.
Conringia orientalis (L.) Dumort.
Descurainia pinnata (Walt.) Britt.
Draba brachycarpa Nutt.
Draba cunefolia Nutt.
Draba reptans (Lam.) Fern.
Erysimum repandum L.
Lepidium densiflorum Schrad.
Lepidium Draba L.
Lepidium oblongum Small
Lepidium perfoliatum L.
Lepidium virginicum L.
Lesquerella auriculata (Engelm. & Gray) Wats.
Rorippa islandica (Oeder) Borbas, var. Fernaldiana
 Butt. & Abbe
Rorippa obtusa (Nutt.) Hitch.
Rorippa sessiliflora (Nutt.) Hitch.
Rorippa sinuata (Nutt.) Hitch.
Sibara virginica (L.) Rollins
Sisymbrium altissimum L.

CAPPARIDACEAE

Cleomella angustifolia Torr.
Polanisia trachysperma T. & G.

SAXIFRAGACEAE

Ribes odoratum Wendl.

PLATANACEAE

Platanus occidentalis L.

ROSACEAE

- Crataegus viridis L.
Geum canadense Jacq., var. camporum (Rydb.) Fern. & Weath.
Potentilla arguta Pursh
Prunus angustifolia Marsh.
Prunus gracilis Engelm. & Gray
Prunus mexicana S. Wats.
Prunus Munsoniana Wight & Hedrick
Prunus Reverchonii Sarg.
Pyrus ioensis (Wood) Bailey
Rosa foliosa Nutt.
Rosa setigera Michx., var. tomentosa T. & G.
Rubus aboriginum Rydb.
Rubus flagellaris Willd.
Rubus frondosus Bigel.

LEGUMINOSAE

- Acacia angustissima (Mill) Ktze., var. hirta (Nutt.)
 Robins.
Amorpha canescens Pursh
Amorpha fruticosa L., var. angustifolia Pursh
Amphicarpa bracteata (L.) Fern.
Astragalus canadensis L.
Astragalus caryocarpus Ker
Astragalus mexicanus A. DC., var. trichocalyx
 (Nutt.) Fern.
Astragalus plattensis Nutt.
Baptisia australis (L.) BR., var. minor (Lehm.) Fern.

- Baptisia leucophaea Nutt.
Cassia fasciculata Michx., var. robusta (Pollard) Macbr.
Cassia nictitans L.
Cercis canadensis L., var. canadensis
Cercis canadensis L., var. canadensis, forma glabrifolia
 Fern.
Clitoria mariana L.
Dalea aurea Nutt.
Dalea candida Willd.
Dalea lanata Spreng.
Dalea laxiflora Pursh
Dalea multiflora (Nutt.) Shimmers
Dalea purpurea Vent.
Desmanthus illinoensis (Michx.) MacM.
Desmodium canescens (L.) DC.
Desmodium ciliare (Muhl.) DC.
Desmodium glabellum (Michx.) DC.
Desmodium glutinosum (Muhl.) Wood
Desmodium illinoense Gray
Desmodium paniculatum (L.) DC.
Desmodium perplexum Schub.
Desmodium sessilifolium (Torr.) T. & G.
Galactia volubilis (L.) Britt., var. mississippiensis Vail
Gleditsia triacanthos L.
Glycyrrhiza lepidota (Nutt.) Pursh
Gymnocladus dioica (L.) K. Koch

- Indigophera leptosepala Nutt.
- Krameria secundiflora DC.
- Lathyrus pusillus Ell.
- Lathyrus stipulaceus (Pursh) Butters & St. John
- Lespedeza capitata Michx.
- Lespedeza intermedia (S. Wats.) Britt., var. intermedia
- Lespedeza intermedia (S. Wats.) Britt., var. intermedia,
forma Hahnii (Blake) Hopkins
- Lespedeza procumbens Michx.
- Lespedeza repens (L.) Bart.
- Lespedeza stipulaceae Maxim.
- Lespedeza striata (Thumb.) H. & A.
- Lespedeza Stuevei Nutt., var. Stuevei
- Lespedeza Stuevei Nutt., var. angustifolia Britt.
- Lespedeza virginica (L.) Britt.
- Lotus americana (Nutt.) Bisch.
- Medicago arabica (L.) Huds.
- Medicago minima (L.) Desr.
- Medicago lupulina L.
- Melilotus alba Desr.
- Melilotus officinalis (L.) Lam.
- Neptunea lutea (Leavenw.) Benth.
- Oxytropis Lambertii Pursh
- Prosopis juliflora (Schwartz) DC., var. Torreyana Benson
- Psoralea digitatum (Nutt.) Rydb.
- Psoralea esculenta Pursh

Psoralea tenuiflora Pursh, var. tenuiflora

Psoralea tenuiflora Pursh, var. tenuiflora, forma
alba Steyerl.

Robinia Pseudo-Acacia L.

Schrankia microphylla (Dryander) Macbr.

Schrankia Nuttallii (DC.) Standl.

Strophostyles helvola (L.) Ell.

Strophostyles leiosperma (T. & G.) Piper

Strophostyles umbellata (Muhl.) Britt.

Stylosanthes biflora (L.) B. S. P., var. hispidissima
(Michx.) Pollard & Ball

Trifolium dubium Sibth.

Trifolium hybridum L.

Trifolium incarnatum L.

Trifolium pratense L., var. pratense

Trifolium procumbens L.

Trifolium repens L.

Tephrosia virginiana (L.) Pers.

Vicia americana Muhl., var. angustifolia Nees

Vicia dasycarpa Ten.

Vicia sativa L.

Vicia villosa Roth.

GERANIACEAE

Erodium cicutarium (L.) L'Her.

Geranium carolinianum L.

OXALIDACEAE

Oxalis corniculata L.

Oxalis filipes Small

Oxalis stricta L.

Oxalis violaceae L.

LINACEAE

Linum Lewisii Pursh, var. pratense Norton

Linum sulcatum Riddell

ZYGOPHYLLACEAE

Kallstroemia hirsutissima Vail

Kallstroemia intermedia Rydb.

Tribulus terrestris L.

RUTACEAE

Ptelea trifoliata L., var. mollis T. & G.

Xanthoxylum americanum Mill.

POLYGALACEAE

Polygala incarnata L.

Polygala verticillata L., var. sphenostachya Pennell

EUPHORBIACEAE

Acalypha gracilens Gray

Acalypha ostryaefolia Riddell

Acalypha rhomboidea Raf.

Acalypha virginica L.

Cnidoscolus texanus (Muell. Arg.) Small

Croton capitatus Michx.

Croton glandulosus L., var. septentrionalis Muell. Arg.

Croton Lindheimerianus Scheele

Croton monanthogynus Michx.

Croton texensis (Klotzsch) Muell. Arg.

Crotonopsis elliptica Willd.

Euphorbia Chamaesyce L.

Euphorbia corollata L.

Euphorbia dentata Michx.

Euphorbia dictyosperma Fisch. & Mey.

Euphorbia heterophylla L., var. heterophylla

Euphorbia heterophylla L., var. graminifolia

(Michx.) Engelm.

Euphorbia hexagona Nutt.

Euphorbia maculata L.

Euphorbia marginata Pursh

Euphorbia missurica Raf., var. intermedia (Engelm.)

L. C. Wheeler

Euphorbia serpens H. B. K.

Euphorbia supina Raf.

Stillingia sylvatica L.

Tragia urticifolia Michx.

ANACARDIACEAE

Rhus aromatica Ait., var. serotina (Greene) Rehd.

Rhus copallina L., var. latifolia Engler

Rhus glabra L.

Rhus radicans L., var. vulgaris (Michx.) DC.

CELASTRACEAE

Celastrus scandens L.

Euonymus atropurpureus Jacq.

ACERACEAE

Acer Negundo L., var. Negundo

Acer Negundo L., var. texanum Pax

SAPINDACEAE

Sapindus Drummondi H. & A.

RHAMNACEAE

Ceanothus americanus L.

Ceanothus ovatus Desf.

VITACEAE

Ampelopsis cordata Michx.

Cissus incisa (Nutt.) Des Moulins

Parthenocissus inserta (Kerner) K. Fritsch

Parthenocissus quinquefolia (L.) Planch.

Vitis cinera Engelm.

Vitis cordifolia Michx.

Vitis ripara Michx.

Vitis vulpina L.

MALVACEAE

Abutilon Theophrasti Medic.

Callirhoe alcaeoides (Michx.) Gray

Callirhoe involucrata (T. & G.) Gray

Hibiscus Trionum L.

Malva rotundifolia L.

Sida spinosa L.

HYPERICACEAE

Asecyrum hypericoides L.

Hypericum Drummondii (Grev. & Hook.) T. & G.

Hypericum punctatum Lam., var. pseudomaculatum

(Bush) Fern.

TAMARICACEAE

Tamarix gallica L.

CISTACEAE

Lechea tenuifolia Michx.Lechea villosa Ell.

VIOLACEAE

Viola affinis LeConteViola Kitaibeliana R. & S., var. Rafinesquii (Greene)

Fern.

Viola missouriensis Greene

PASSIFLORACEAE

Passiflora incarnata L.Passiflora lutea L.

LOACEAE

Mentzelia oligosperma Nutt.

CACTACEAE

Neobessya missouriensis (Sweet) Britt. & RoseOpuntia humifusa Raf.

LYTHRACEAE

Ammania auriculata Willd.Ammania coccinea Rothb.Lythrum lanceolatum Ell.

ONAGRACEAE

Gaura biennis L., var. Pitcheri Pickering ex. T. & G.Gaura filiformis Small, var. filiformisGaura parviflora Dougl.Gaura sinuata Nutt.

- Gaura villosa Torr.
Jussiaea leptocarpa Nutt.
Jussiaea Michauxiana Fern.
Jussiaea repens L., var. glabrescens Ktze.
Ludwigia glandulosa Walt.
Oenothera biennis L., var. canescens T. & G.
Oenothera biennis L., var. hirsutissima Gray
Oenothera laciniata Hill
Oenothera linifolia Nutt.
Oenothera missouriensis Sims, var. oklahomensis
(Norton) Munz
Oenothera rhombipetala Nutt.
Oenothera triloba Nutt.
Stenosiphon linifolius Nutt.

HALORAGACEAE

- Myriophyllum pinnatum (Walt.) B. S. P.

UMBELLIFERAE

- Chaerophyllum procumbens (L.) Crantz.
Chaerophyllum texanum Coult. & Rose
Cicuta maculata L.
Conium maculatum L.
Daucus pusillus Michx.
Eryngium Leavenworthii T. & G.
Limnoscium pinnatum (DC.) Math. & Const.
Lomatium daucifolium (Nutt.) Coult. & Rose
Polytaenia Nuttallii DC.
Ptilimnium Nuttallii (DC.) Britt.

Sanicula canadensis L.

Spermolepis echinata (Nutt.) Heller

Spermolepis inermis (Nutt.) Math. & Const.

Torilis japonica (Houtt.) DC.

CORNACEAE

Cornus Drummondii Meyer

PRIMULACEAE

Androsace occidentalis Pursh

Centunculus minimus L.

Samolus parviflorus Raf.

SAPOTACEAE

Bumelia lanuginosa (Michx.) Pers., var. oblongifolia
(Nutt.) R. B. Clark

EBENACEAE

Diospyros virginiana L.

OLEACEAE

Fraxinus pennsylvanica Marsh, var. subintegerrima
(Vahl.) Fern.

GENTIANACEAE

Eustoma Russellianum (L.) Griseb.

Sabbatia campestris Nutt., var. campestris

Sabbatia campestris Nutt., var. campestris, forma
albiflora D. W. Moore

APOCYNACEAE

Apocynum cannabinum L., var. cannabinum

Apocynum cannabinum L., var. pubescens (Mitchell) A. DC.

Apocynum sibiricum Jacq.

ASCLEPIADACEAE

- Ampelamus albidus (Nutt.) Britt.
Asclepiadora viridis (Walt.) Gray
Asclepias amplexicaulis Sm.
Asclepias arnaria Torr.
Asclepias auriculata (Engelm.) Holz.
Asclepias speciosa Torr.
Asclepias stenophylla Gray
Asclepias tuberosa L.
Asclepias verticillata L.
Asclepias viridiflora Raf., var. viridiflora
Asclepias viridiflora Raf., var. lanceolata (Ives) Torr.

CONVOLVULACEAE

- Breweria Pickeringii (Torr.) Gray, var. Pattersonii
 Fern. & Schub.
Convolvulus arvensis L.
Convolvulus sepium L., var. repens (L.) Gray
Cuscuta campestris Yuncker
Cuscuta compacta Juss.
Cuscuta cuspidata Engelm.
Ipomoea coccinea L.
Ipomoea hederacea (L.) Jacq.
Ipomoea leptophylla Torr.
Ipomoea longifolia Benth.
Ipomoea purpurea (L.) Lam.

POLEMONIACEAE

- Gilia rubra (L.) Heller

Phlox pilosa L., var. ozarkana Wherry

HYDROPHYLLACEAE

Ellisia nyctelea L.

Phacelia strictiflora (Engelm. & Gray) Gray,

var. Robbinsii Const.

BORAGINACEAE

Heliotropium curassavicum L.

Heliotropium tenellum (Nutt.) Torr.

Lithospermum incisum Lehm.

Lithospermum carolinense (Walt.) MacM.

Myosotis verna Nutt.

Onosmodium occidentale Mackenz.

VERBENACEAE

Phyla incisa Small

Phyla lanceolata (Michx.) Greene

Verbena bracteata Lag. & Rodr.

Verbena canadensis (L.) Britt.

Verbena pumila Rydb.

Verbena stricta Vent.

Verbena urticifolia L.

LABIATAE

Glechoma hederacea L.

Hedeoma hispida Pursh

Lamium amplexicaule L.

Lamium purpureum L.

Lycopus americanus Muhl., var. americanus

Lycopus americanus Muhl., var. scabrifolius Fern.

Marrubium vulgare L.

Mentha spicata L.

Monarda clinopodioides Gray

Monarda fistulosa L., var. mollis (L.) Benth.

Perilla frutescens (L.) Britt.

Salvia azurea Lam., var. grandiflora Benth.

Scutellaria parvula Michx., var. australis Fassett

Teucrium canadense L., var. canadense

Teucrium canadense L., var. virginicum (L.) Eat.

SOLANACEAE

Datura meteloides DC.

Datura Stramonium L.

Physalis angulata L.

Physalis heterophylla Nees

Physalis lobata Torr.

Physalis longifolia Nutt.

Physalis macrophysa Rydb.

Physalis missouriensis Mack. & Bush

Physalis mollis Nutt.

Physalis pendula Rydb.

Physalis pubescens L.

Physalis pumila Nutt.

Physalis subglabrata Mack. & Bush

Solanum elaeagnifolium Cav.

Solanum nigrum L.

Solanum rostratum Dunal

Solanum Torreyi Gray

SCROPHULARIACEAE

- Bacopa rotundifolia (Michx.) Wetts
- Buchnera americana L.
- Conoclea multifida (Michx.) Benth.
- Gerardia aspera Douglas
- Gerardia densiflora Benth.
- Gerardia fasciculata Ell.
- Gerardia heterophylla Nutt.
- Lindernia anagallidea (Michx.) Pennell
- Lindernia dubia L.
- Linaria canadensis (L.) Dumont, var. texana
(Scherle) Pennell
- Penstemon Cobaea Nutt.
- Penstemon oklahomensis Pennell
- Scrophularia marilandica L., var. marilandica, forma
neglecta (Rydb.) Penn.
- Veronica arvensis L.
- Veronica peregrina L.
- Veronica polita Fries
- Verbascum thaspus L.

BIGNONIACEAE

- Catalpa bignonioides Walt.
- Tecoma radicans (L.) Juss.

MARTYNIACEAE

- Martynia louisiana Mill.

OROBANCHACEAE

- Orobanche uniflora L.

ACANTHACEAE

Dicliptera brachiata (Pursh) Kuntz.

Justicia americana (L.) Vahl, var. subcoriacea Fern.

Ruellia humilis Nutt., var. longiflora (Gray) Fern.

Ruellia strepens L.

PHYRMACEAE

Phryma Leptostachya L.

PLANTAGINACEAE

Plantago aristata Michx.

Plantago Purshii R. & S.

Plantago pusilla Nutt.

Plantago Rugelii Dcne.

Plantago virginica L.

RUBIACEAE

Cephalanthus occidentalis L.

Diodia teres Walt., var. setifera Fern. & Griseb.

Galium Aparine L.

Galium pilosum Ait.

Houstonia minima Beck

Houstonia nigricans (Lam.) Fern.

CAPRIFOLIACEAE

Sambucus canadensis L.

Symphoricarpus orbiculatus Moench.

Viburnum rufidulum Raf.

VALERIANACEAE

Valerianella radiata (L.) Dufur., var. radiata

Valerianella radiata (L.) Dufur., var. missouriensis Dyal

Valerianella stenocarpa (Engelm.) Krok., var.
parviflora Dyal

CUCURBITACEAE

Cucurbita foetidissima H. B. K.

Melothria pendula L.

CAMPANULACEAE

Lobelia Cardinalis L.

Specularia biflora (R. & S.) Fisch. & Mey.

Specularia Holzingeri (McVaugh) Fern.

Specularia leptocarpa (Nutt.) Gray

Specularia perfoliata (L.) A. DC.

COMPOSITAE

Achillea lanulosa Nutt., var. lanulosa

Achillea lanulosa Nutt., var. lanulosa, forma
rubicunda Farwell

Actinomeris alternifolia (L.) DC.

Agoseris cuspidata D. Dietr.

Ambrosia artemisifolia L., var. elatior (L.) Des Courtils

Ambrosia psilostachya DC., var. coronopifolia (T. & G.)
Fern.

Ambrosia psilostachya DC., var. Lindheimeriana
(Scheele) Blakenship

Ambrosia trifida L., var. trifida

Ambrosia trifida L., var. texana Scheele

Antennaria campestris Rydb.

Antennaria fallax Greene

Antennaria plantaginifolia (L.) Hook.

- Antennaria neglecta Greene
Anthemis Cotula L.
Aphanostephus skirrobasis (DC.) Trel.
Arctium tomentosum Mill.
Artemisia caudata Michx.
Artemisia ludoviciana Nutt., var. ludoviciana
Artemisia ludoviciana Nutt., var. mexicana (Willd.) Fern.
Aster anomalous Engelm.
Aster azureus Lindl., var. poaceus (Lindl.) Fern.
Aster eriocoides L.
Aster exilis Ell.
Aster patens Ait., var. patens
Aster patens Ait., var. patens, forma rosea Svenson
Aster patens Ait., var. gracilis Hook.
Aster praealtus Poir.
Aster sagittifolius Wedemeyer, var. Drummondii
(Lindl.) Shinnars
Astranthium integrifolium (Michx.) Nutt.
Baccharis salicina T. & G.
Berlandiera texana DC., var. texana
Bidens bipinnata L.
Bidens frondosa L.
Boltonia latisquama Gray
Cacalia tuberosa Nutt.
Chaetopappa asteroides DC.
Chrysopsis pilosa Nutt.
Cirsium altissimum (L.) Spreng.

- Cirsium ochrocentrum (Gray) Cockerell
- Cirsium undulatum (Nutt.) Spreng., var. megacephalum
(Gray) Fern.
- Conyza canadensis (L.) Cronq., var. glabrata (Gray) Cronq.
- Conyza ramosissima Cronq.
- Coreopsis grandiflora Hogg
- Coreopsis tinctoria Nutt.
- Echinacea angustifolia DC.
- Elephantopus carolinianus Willd.
- Erigeron philadelphicus L.
- Erigeron strigosus Muhl., var. strigosus
- Erigeron strigosus Muhl., var. Beyrichii (Fisch. & Mey.)
T. & G.
- Eupatorium altissimum L.
- Eupatorium coelestinum L.
- Eupatorium rugosum Houtt., var. rugosum, forma
villicaule Fern.
- Eupatorium serotinum Michx.
- Euthamia gymnospermoides Greene
- Evax prolifera Nutt.
- Gaillardia lanceolata Michx.
- Gaillardia pulchella Foug.
- Gaillardia suavis (Gray & Engelm.) B. & R.
- Gnaphalium obtusifolium L.
- Gnaphalium purpureum L.
- Gutierrezia dracunculoides (DC.) Blake
- Haplopappus ciliata (Nutt.) DC.

- Haplopappus divaricatus (Nutt.) Gray
- Helenium tenuifolium Nutt.
- Helianthus annuus L.
- Helianthus hirsutus Raf., var. stenophyllus T. & G.
- Helianthus laetiflorus Pers.
- Helianthus Maximiliani Schrad.
- Helianthus microcephalus T. & G.
- Helianthus mollis Lam.
- Helianthus petiolaris Nutt.
- Helianthus tuberosus L.
- Heliopsis helianthoides (L.) Sweet, var. scabra
(Dunal) Fern.
- Heterotheca subaxillaris (Lam.) Britt. & Rusby
- Hieracium Gronovii L.
- Hieracium longipilum Torr.
- Hymenopappus scabiosaeus L'Her
- Hymenopappus tenuifolius Pursh
- Hymenoxys odorata DC.
- Krigia occidentalis Nutt.
- Kuhnia eupatorioides (L.) Scheele, var. texana Shinnars
- Lactuca canadensis L.
- Lactuca scariola L.
- Liatris aspera Michx., var. aspera
- Liatris aspera Michx., var. intermedia (Lunell) Gaiser
- Liatris punctata Hook., var. punctata
- Liatris punctata Hook., var. punctata, forma alba
Horr. & McGregor

Liatris squarrosa (L.) Michx., var. glabrata (Rydb.)

Gaiser

Machaeranthera phyllocephala (DC.) Shinnars, var. annua

(Rydb.) Shinnars

Parthenium hysterophorus L.

Pluchea camphorata (L.) DC.

Pyrrophappus carolinianus (Walt.) DC.

Pyrrophappus grandiflorus Nutt.

Pyrrophappus scaposus DC.

Ratibida columnifera (Nutt.) Wooton & Standl.

Rudbeckia amplexicaulis Vahl

Rudbeckia bicolor Nutt. sensu Fern.

Senecio glabellus Poir.

Senecio imparipinnatus Klatt

Senecio obovatus Muhl., var. rotundus Britt.

Senecio plattensis Nutt.

Serinia oppositifolia (Raf.) Kuntze

Silphium asperrimum Hook.

Silphium laciniatum L.

Solidago altissima L.

Solidago canadensis L., var. gilvocanescens Rydb.

Solidago gigantea Ait., var. leiophylla Fern.

Solidago Lindheimeriana Scheele

Solidago missouriensis Nutt., var. fasciculata Holz.

Solidago mollis Bartl.

Solidago nemoralis Ait., var. nemoralis

Solidago nemoralis Ait., var. decemflora (DC.) Fern.

- Solidago petiolaris Ait., var. petiolaris
Solidago petiolaris Ait., var. Wardii (Britt.) Fern.
Solidago rigida L.
Solidago speciosa Nutt., var. angustata T. & G.
Solidago ulmifolia Muhl.
Sonchus aspera (L.) Hill
Sonchus oleraceus L.
Taraxacum erythrospermum Andrz.
Taraxacum officinale Weber
Thelesperma intermedium Rydb.
Thelesperma trifidum (Poir.) Britt.
Verbesina encelioides (Cav.) B. & H., var. exauriculata
Robins. & Greenm.
Verbesina helianthoides Michx.
Verbesina virginica L.
Vernonia Baldwini Torr.
Xanthisma texanum DC.
Xanthium chinense Mill.
Xanthium pennsylvanicum Wallr.
Xanthium speciosum Kearney

CHAPTER VI
TABULAR VIEW OF FAMILIES

Families	Genera	Species	Varieties, Forms
Typhaceae	1	1	
Najadaceae	2	5	
Alismataceae	4	6	2
Araceae	1	1	
Lemnaceae	1	1	
Commelinaceae	2	3	3
Pontederiaceae	1	1	
Liliaceae	6	11	5
Amaryllidaceae	2	2	
Iridaceae	2	4	2
Orchidaceae	1	3	
Salicaceae	2	3	4
Fagaceae	1	7	
Ulmaceae	2	6	1
Moraceae	2	4	
Urticaceae	1	1	
Polygonaceae	3	20	6
Chenopodiaceae	5	9	1
Amaranthaceae	5	10	2
Nyctaginaceae	1	3	

Phytolaccaceae	1	1	
Aizoaceae	1	1	
Portulacaceae	3	5	
Caryophyllaceae	6	6	2
Ceratophyllaceae	1	1	
Nymphaeaceae	2	2	
Ranunculaceae	6	6	2
Menispermaceae	2	2	
Papaveraceae	2	2	1
Cruciferae	12	22	1
Capparidaceae	2	2	
Saxifragaceae	1	1	
Platanaceae	1	1	
Rosaceae	8	15	2
Leguminosae	53	74	18
Geraniaceae	2	2	
Oxalidaceae	1	4	
Linaceae	1	2	1
Zygophyllaceae	2	3	
Rutaceae	2	2	1
Polygalaceae	1	2	1
Euphorbiaceae	7	24	4
Anacardiaceae	1	4	3
Celastraceae	2	2	
Aceraceae	1	1	2
Sapindaceae	1	1	
Rhamnaceae	1	2	

Vitaceae	4	8	
Malvaceae	5	6	
Hypericaceae	2	3	1
Tamaricaceae	1	1	
Cistaceae	2	2	
Violaceae	1	3	1
Passifloraceae	1	2	
Loaceae	1	1	
Cactaceae	2	2	
Lythraceae	2	3	
Onagraceae	5	16	6
Haloragaceae	1	1	
Umbelliferae	12	14	
Cornaceae	1	1	
Primulaceae	3	3	
Sapotaceae	1	1	1
Ebenaceae	1	1	
Oleaceae	1	1	1
Gentianaceae	2	2	2
Apocynaceae	1	2	2
Asclepiadaceae	3	10	2
Convolvulaceae	4	11	2
Polemoniaceae	2	2	
Hydrophyllaceae	2	2	1
Boraginaceae	4	6	
Verbenaceae	2	7	
Labiatae	11	13	7

Solanaceae	3	16	
Scrophulariaceae	10	17	2
Bignoniaceae	2	2	
Martyniaceae	1	1	
Orobanchaceae	1	1	
Acanthaceae	3	4	2
Phrymaceae	1	1	
Plantaginaceae	1	5	
Rubiaceae	4	6	1
Caprifoliaceae	3	3	
Valerianaceae	1	2	3
Cucurbitaceae	2	2	
Campanulaceae	2	5	
Compositae	59	121	38
<hr/>			
<u>TOTALS:</u>			
<hr/>			
<u>FAMILIES</u>	<u>GENERA</u>	<u>SPECIES</u>	<u>VARIETIES, FORMS</u>
88	315	811	135
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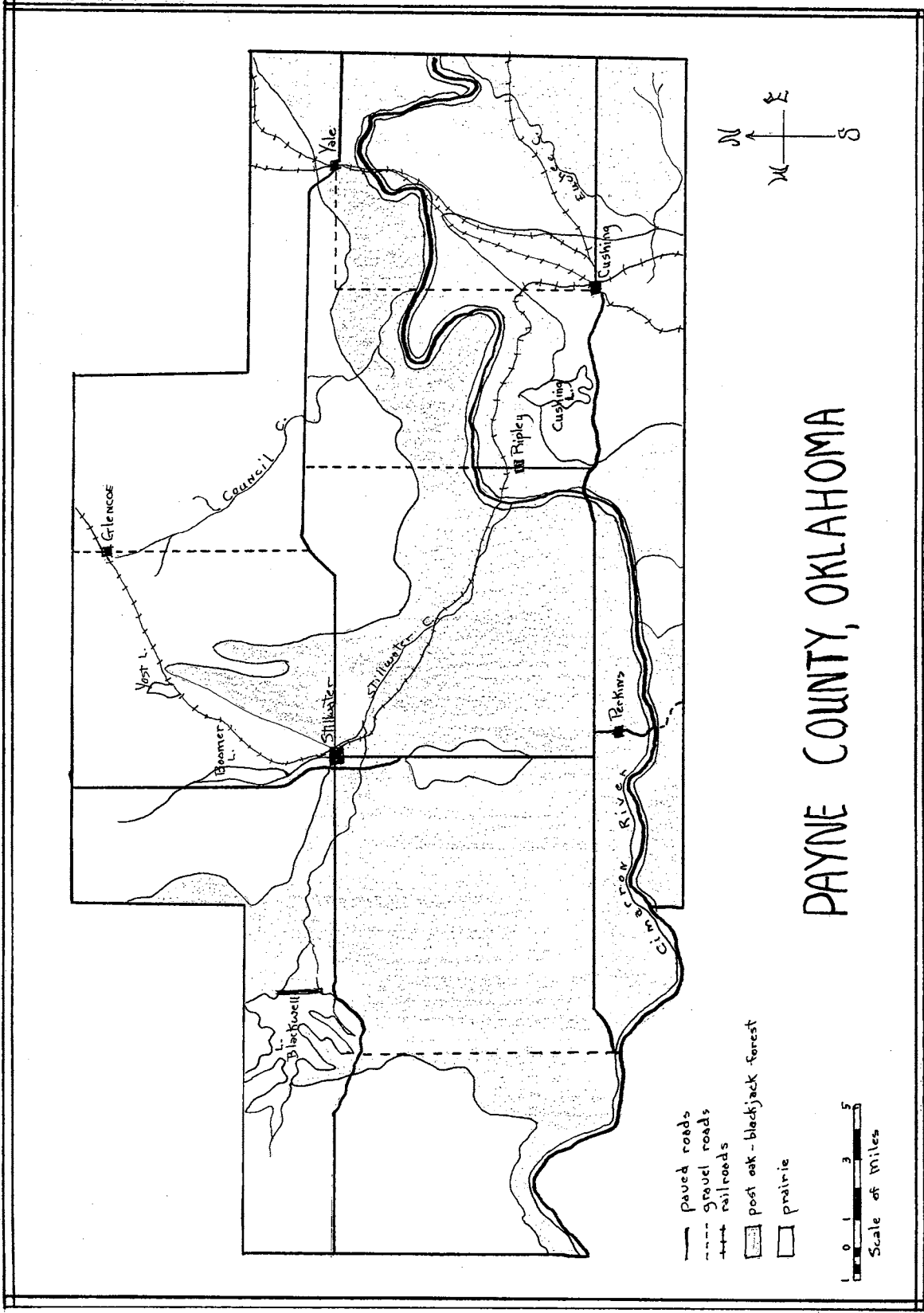
CHAPTER VII

SUMMARY

The problem of collecting and identifying the flowering plants (exclusive of the grasses, sedges and rushes) of Payne County was chosen in order that the writer might become familiar with a large number of plants and with the problems of taxonomy and the critical procedures pertaining thereto. During the course of the investigations, which were carried on during 1950, 1951 and the spring of 1952, collections were made in all parts of the county. Although in most cases preliminary identifications were made at the time of collection, final identification, making use of available monographs and other critical studies, was made in 1952.

Specimens from previous collections in the county available in the college herbarium were studied by the author in order to present as complete a list as possible.

A total of 88 families, represented by 315 genera, 811 species and 135 varieties, subspecies and forms, native or naturalized in Payne County, was accounted for in this study. The largest families in number of species were: Compositae with 121 species, Leguminosae 74 species, Euphorbiaceae 24 species and Cruciferae 22 species.



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