

AN ANNOTATED LIST OF THE LESS COMMON PHAENOGAMOUS
HERBS AND SHRUBS OF PULASKI COUNTY, ARKANSAS,
WITH A KEY TO THEIR IDENTIFICATION

by

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INTRODUCTION

Although Arkansas with its temperate climate, its abundant rainfall and its diversified soil types, abounds in plant life of a wide and varied description, little has been done in making the information concerning its flora available to its people. Pulaski County, which lies approximately in the center of the state, possesses physiographic and soil characteristics which are quite typical of those of the state as a whole. As a result of this varied physiography, the flora of Pulaski County is unusually representative of the state. There has been no listing of the various plant species, nor has the flora of the county been adequately described; consequently, it was thought that a taxonomic study of the flora in the county surrounding the city of Little Rock, would not only provide information of local interest but it might also be used to advantage in other parts of the state as well.

The following study is divided into three parts—namely, a description of the physical features of the

county; a survey of the flora of the county, in which the various species are listed in their respective orders and families; a key to the identification of the various species.

PHYSICAL FEATURES OF PULASKI COUNTY

Pulaski County lies in two major physiographic divisions of the southern United States, and is approximately in the center of the state of Arkansas. The county is more or less triangular shaped and is divided diagonally from the northwest to the southeast by the Arkansas River. Those sections of the state which lie south, southwest and east of the Arkansas River lie in the lowland area of the Gulf Coastal Plain; those parts north and west of the river lie in the mountainous area or Eastern Plain.

The county comprises an area of 779 square miles or 498,500 acres. It is made up of three principal topographic divisions: the alluvial lowlands along the Arkansas River and the southeastern part of the county; the undulating uplands lying mainly to the east; and the rest of the county consisting of isolated hills and long

narrow ridges with rolling uplands between.

The lowlands are flat, containing many ox-bow lakes, swamps, sloughs, bayous and numerous ridges. The elevation of this south-sloping plain varies from 100 to 300 feet above sea level.

The uplands range some 100 feet above the lowlands in elevation. The remaining portions of the county may be described as rough with intervening rolling or level areas of from less than a mile to about five miles in width. That part lying north and east of the Arkansas River is in the Ouachita Mountain region.

The range in elevation of the entire county is about 830 feet. The lowest point, 225 feet above sea level, is on the Arkansas River where it leaves the southern boundary of the county, and the highest point, Mt. Shinall, has an elevation of 1055 feet.

There is a considerable area of gently sloping land in the valleys and on the tops of some of the broader ridges. A series of cone shaped mountains or pinnacles, the Maumelle Pinnacles, extends in an east and west direction.

All of the streams of Pulaski County drain toward the Arkansas River, flowing in an eastward direction to the river from the mountains. While the county is fairly well

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drained, poor drainage occurs in some of the larger creek bottoms and low areas, and on the flat coastal plains, and on second bottoms and low areas in the river bottoms.

The climate is mild; no monthly mean temperature has been below 40° F. The mean annual temperature has been 61.5° F., and the absolute range over the past 45 years for which records are available is from -12° F. to 106° F.

The average date of the last killing frost in the spring is March 18, and of the first in the fall is November 13, making an average growing season of 240 days. The latest spring killing frost on record occurred on April 26, and the earliest fall frost on October 22.

The mean annual precipitation of 49.98 inches is fairly well distributed throughout the growing season. The precipitation in the driest year on record, (1896), was 32.38 inches and in the wettest (1932), was 75.54 inches.

The mineral constituent of the soil of Arkansas has been derived from sedimentary rocks which occurred originally in the forms of sandstone, shales, chalks, limestones and dolomites. There are about 14 square miles of intrusive volcanic rocks scattered in small patches throughout the county. The blue and grey "granites" of Pulaski County make up the principal body of these

volcanic rocks.

The Arkansas River bottom soils are characterized by their distinct purplish-red color and their high percentage of calcium carbonate. The soils of the county are in general characteristic of those developed under a humid climate in the warm temperate zones.

The total forest land comprises 69% of the county or 345,990 acres; farm forest land, 72,538 acres; farm land, 250,550 acres; farm forests, pastured, 28,772 acres; and not pastured, 43,776 acres. During the past century the forest area of Arkansas has been reduced by land clearing from 32 million to 22 million acres. Some 20 million acres of the present woodland area have been cut over, mostly in the last 30 to 40 years, so that scarcely two million acres of virgin or old-growth timber remains.

GENERAL KEY TO THE ORDERS

Class 1. Monocotyledoneae

Seeds with one cotyledon; stems without distinction into pith, wood and bark; parts of the flower usually in 3's or 6's; leaves mostly parallel-veined.

- 1. Ovary superior.
 - 2. Flowers borne in the axils of chaffy scales, (i.e., perianth glumaceous) and arranged in spikelets.
 - 1. POALES.
 - 2. Perianth conspicuous, not glumaceous. 2. LILIALES. 11
- 1. Ovary inferior.
 - 2. Flowers regular. 3. IRIDALES. 15
 - 2. Flowers irregular. 4. ORCHIDALES. 16

POALES (Graminales)

- A. Leaves 3-ranked, with closed sheaths; stems usually solid; fruit an achene. 1. Cyperaceae.
- A. Leaves 2-ranked, with open sheaths; stems usually hollow; fruit a caryopsis. 2. Poaceae.

1. CYPERACEAE (Sedges)

Cyperus

- A. Scales falling away from the persistent rachis of the flattened spikelets.
 - B. Wings of the rachis distinct.
 - C. Scales tightly appressed. C. rotundus.
 - C. Tips of the scales free. C. Hallii.
 - B. Wings of the rachis none or narrow. C. pseudovegetus
- A. Spikelets falling away from the axis of the spikes, the lower pair of scales commonly persistent.

- B. Achene oblong or obovoid, about twice as long as thick.
 C. rachis wingless or narrowly winged.
 C. Rachis-wings membranous, broad. C. filiculmis.
 B. Achene narrowly linear-oblong, 3-4 times as long as thick. C. globulosus.
C. strigosus.

Cyperus rotundus L. Round-grass. Nut-grass.
 In fields. July-Sept.

Cyperus Hallii Britton. Hall's Cyperus.
 In moist fields. Aug.-Oct.

Cyperus pseudovegetus Steud. July-Sept.
 In marshes. July-Sept.

Cyperus filiculmis Vahl. Thread-stemmed or Slender
 Cyperus. In Marshes. June-Aug.

Cyperus globulosus Aubl. Spherical or Baldwin's Cyperus.
 In dry soil. July-Aug.

Cyperus strigosus L. Straw-colored Cyperus.
 In moist meadows, swamps or along streams. Aug.-Oct.

POACEAE (Gramineae)

True Grasses

Key to the tribes

- A. Spikelets or clusters of spikelets in two rows in spikes; sessile.
 B. Flowering scales not hardened; empty scales keeled.
 1. Chlorideae.
 B. Flowering scales hardened; spikelets flattened dorsally; empty scales not keeled.
 2. Paniceae.
 A. Spikelets not in two rows; pedicel in panicles, spike-like panicles or racemes.

- B. Spikelets 2-many flowered; lowest flower always perfect. 3. Festuceae.
 B. Spikelets 1-2-flowered, when 2-flowered the lower staminate or rudimentary.
 C. Spikelets alike, all with a perfect flower. 4. Agrostideae.
 C. Spikelets of two kinds, some perfect and sessile, accompanied by 1-2-pediceled, staminate or rudimentary spikelets. 5. Andropogoneae.

Tribe 1. CHLORIDEAE

- A. Spikelets with several flowers. Eleusine.
 A. Spikelets with one perfect flower. Spartina.

Eleusine

Eleusine indica (L.) Gaertn. India Wire-grass. Crab-grass.
 In fields. June-Sept.

Spartina

Spartina cynosuroides (L.) Willd. Slough-grass.
 In wet places. Aug.-Oct.

Tribe 2. PANICEAE

Syntherisma

- A. Pedicels terete, glabrous; 1st scale wanting. S. ischaemum.
 A. Pedicels sharply 3-angled; angles hispidulous; 1st scale minute. S. sanguinale.

Syntherisma ischaemum (Schreb.) Nash. Small Crab-grass.
 In cultivated fields and waste places. July-Sept.

Syntherisma sanguinale (L.) Dulac. Large Crab-grass.
 In cultivated fields or waste places. July-Aug.

- A. Stigmas barbellate; spikelets in clusters of 3 or 6 in axils of spinescent leaves. Munroa.
- A. Stigmas plumose; spikelets not in the axils of leaves; inflorescence various.
 - B. Flowering scales 1-3-nerved.
 - C. Lateral nerves of the flowering scales pilose. Triplasis.
 - D. Internodes of rachilla long. Triplasis.
 - D. Internodes of rachilla short. Tridens.
 - C. Lateral nerves of the flowering scales glabrous. Eragrostis.
 - B. Flowering scales 5-many nerved.
 - C. Empty scales shorter than uppermost. Poa.
 - C. Uppermost scales often smaller and empty. Uniola.

Munroa

Munroa squarrosa (Nutt.) Torr. Square or False Buffalo-grass. On dry plains. Aug.-Oct.

Triplasis

Triplasis purpurea (Walt.) Chapm. Purple or Sand-grass. In sandy soil. Aug.-Sept.

Tridens

Tridens flavus (L.) Hitchc. Tall Red-top. In fields. July-Sept.

Eragrostis

- A. Annuals; spikelets 3-many flowers.
 - B. Flowering scales thin; spikelets 1 mm. wide. E. pilosa.
 - B. Flowering scales firm; spikelets over 1 mm. wide. E. major.
- A. Perennials; spikelets not clustered. E. pectinacea.

Eragrostis pilosa (L.) Beauv. Small Tufted Love-grass. Waste places or cultivated soil. Aug.-Sept.

Eragrostis major Host. Strong-scented Love-grass.
In waste places. Aug.-Sept.

Eragrostis pectinaceae (Michx.) Steud. Purple Love-grass.
In dry soil. Aug.-Sept.

Poa

- A. Sheaths longer than internodes; flowering scales webbed.
P. pratensis.
- A. Sheaths shorter than internodes; flowering scales not webbed.
P. autumnalis.

Poa pratensis L. Meadow or Kentucky Blue-grass.
In meadows, fields and woods. June-Aug.

Poa autumnalis Muhl. Flexus Spear-grass.
In woods. March-May.

Uniola

Uniola latifolia Michx. Broad-leaved Spike-grass.
In moist places. Aug.-Sept.

Tribe 4. AGAVALI

- A. Flowering scales awnless and not hairy at the base.
Sporobolus
- A. Flowering scales with a permanent awn. Pistida.

Sporobolus asperifolius (Nees & Meyen.) Hubbard. Rough-leaved Dropseed. In dry soil. Aug.-Sept.

Aristida

- A. Central awn not over 3 cm. long.
B. Lateral awns much shorter than the central one.
A. dichotoma.
- B. Lateral awns nearly as long as the central one.
A. purpurascens.
- A. Central awn 3-4 cm. long or more.
A. oligantha.

Aristida dichotoma Michx. Poverty-grass.
In dry sandy soil. Aug.-Sept.

Aristida purpurascens Vahl. Low-er-grass. Wood-sedge.
In dry soil. Aug.-Sept.

Aristida oligantha Vahl. Low-flowered Aristida.
In dry soil. Aug.-Sept.

Tribe 8. ANDROPOGONACEAE

1. Spikelets all perfect, terned. Eriarthrus.
2. Spikelets sessile; perfect; whorled. Andropogon.

Eriarthrus

Eriarthrus divaricatus (L.) Hitchc. Flax-grass.
In damp soil; swamps. Sept.

Andropogon

1. Stems 1; racemes included in the sheaths; rachis
internodes slender.
2. Sheaths at the upper part of the culm not enlarged.
3. Sheaths at the summit of the stem enlarged.
4. Andropogon glomeratus.
5. Andropogon Elliottii.
6. Stems 2; racemes exserted beyond the sheaths;
rachis internodes stout. 1. Andropogon ternarius.

Andropogon glomeratus (L.) B.S.P. Bushy Wood-grass.
In damp soil. Sept.-Oct.

Andropogon Elliottii Chapm. Elliott's Wood-grass.
In moist places. Aug.-Sept.

Andropogon ternarius Michx. Silvery Wood-grass.
In dry sandy soil. Sept.

LILIACEAE

1. Fruit a capsule.
2. Leaves shorted and ovules numerous.
3. Capsule septicid-1; plants not bulbous.
4. Liliaceae.
5. Capsule loculicid-1; plants bulbous. Liliaceae.

- B. Leaves not whorled; ovules two in each cell.
3. Commelinaceae.
4. Convallariaceae.
5. Trilliaceae.
6. Fruit a berry.
7. Leaves basal or alternate.
8. Leaves verticillate.

BE-LASTO-CENT (Lunch-flower Family)

Chrosperma

Chrosperma muscetoxicum (alt.) Kunze. Fly-poison.
In dry sandy woods. May-July.

ILLIACEAE

1. Flowers in umbels.
- B. Odor characteristically onion-like. Allium.
- B. Odor not onion-like. Nothoscordium.
2. Flowers in racemes.
- B. Perianth 6-parted.
- C. Perianth blue. Quamoclit.
- C. Perianth greenish-white. Urniflorum.
- B. Perianth globose. Muscari.

Allium

3. Perianth-segments equal or shorter than stamens.
- A. stellatum.
4. Perianth-segments longer than stamens. A. mutabile.

Allium stellatum Ker. Prairie Wild Onion.
On rocky hillsides. May-June.

Allium mutabile Michx. Wild Onion.
In moist soil. May-June.

Nothoscordium

Nothoscordium bivalve (L.) Britton. False Yellow Garlic.
In dry soil; woods and roadsides. March-July.

Quamoclit

Quamoclit hyacinthina (L.) Britton. Wild Hyacinth.
In meadows and along streams. April-May.

Ornithogalum

Ornithogalum umbellatum L. Star-of-Bethlehem.
In fields and meadows. May-June.

Muscari

Muscari botryoides (L.) Mill. Grape-Hyacinth.
In meadows and thickets. April-June.

COMMELINACEAE (Spiderwort Family)

- A. Petals unequal; perfect; stamens 3-2. Commelina.
A. Petals equal; perfect; stamens 6-5. Tradescantia.

Commelina

Commelina nudiflora L. Creeping Day-flower.
Along streams and in waste places. July-Oct.

Tradescantia

- A. Leaves linear, 12-20 times longer than broad.
B. Stems 1'-4' long; bracts longer than leaves. T. brevicaulis.
B. Stems elongated, 4'-5' long; bracts shorter than leaves.
A. Leaves lanceolate; 4-10 times longer than broad.
B. Pedicels and sepals non-glandular.
B. Pedicels and sepals glandular. T. virginiana
T. pilosa.

Tradescantia brevicaulis Raf. Short-stemmed Spiderwort.
In dry soil. April-May.

Tradescantia virginiana L. Spiderwort. Trinity.
In rich soil. May-Aug.

Tradescantia pilosa Lehm. Zigzag Spiderwort.
In woods and dry soil. June-August.

CONVALLARIA (Lily-of-the-valley)

- a. Leaves alternate.
 - B. Perianth-segments separate.
 - C. Flowers racemed or paniced. Vagnera.
 - C. Flowers solitary or two together; axillary. Streptopus.
 - B. Perianth cylindric, 6-toothed. Polygonatum.
- a. Leaves nearly basal; flowers racemed; perianth 6-toothed. Convallaria.

Vagnera

Vagnera stellata (L.) Borong. Star-flowered Solomon's Seal.
In moist soil. May-June.

Streptopus

- A. Leaves glaucous beneath, clasping; flowers greenish-white. S. aplexifolius.
- A. Leaves green on both sides, sessile; flowers purple. S. roseus.

Streptopus aplexifolius (L.) DC. Clasping-leaved Twisted-stalk. In moist woods. May-July.

Streptopus roseus Michx. Sessile-leaved Twisted-stalk.
In moist woods. May-July.

Polygonatum

- A. Leaves pubescent; filaments filiform, rough. P. biflorum.
- A. Plant glabrous; filaments smooth, flat. P. commutatum.

Polygonatum biflorum (Malt.) Ell. Hairy Solomon's Seal.
In woods and thickets. April-May.

Polygonatum commutatum (L. & S.) Dietr. Solomon's Seal.
In moist woods and along streams. May-July.

Convallaria

Convallaria majalis L. Lily-of-the-valley.
On mountain sides. May-June.

TRILLIACEAE (Wake-robin Family)

Trillium

1. Flowers purple; petals lanceolate. T. sessile.
 2. Flowers green; petals linear. T. viride.

Trillium sessile L. Sessile-flowered Wake-robin.
 In moist woods and thickets. April-May.

Trillium viride Beck. Green Wake-Robin.
 In woods and lowlands. Spring.

IRIDACEAE

1. Stamens 6. Asperyllidaceae.
 2. Stamens 3. Iridaceae.

ASPERYLLIDACEAE (Asperyllis Family)

1. Perianth with membranous crown connecting lower parts
 of filaments. Hymenocallis.
 2. Perianth adnate to entire ovary. Hypoxis.

Hymenocallis

Hymenocallis occidentalis (Le Conte.) Kunth. Western
 Spider Flower. In moist soil. June-Sept.

Hypoxis

Hypoxis missuta (L.) Coville. Yellow Star-grass.
 In dry soil. May-Oct.

IRIDACEAE (Iris Family)

1. Leaves 3/4 inch wide, equitant, erect. Iris.
 2. Leaves less than 1/2 inch wide. Sisyrinchium.

Iris

1. Flowers reddish-brown. I. fulva.
 2. Flowers yellow. I. verna.

Iris fulva Ker. Red-brown Flag.
In swamps. May-June.

Iris verna L. Dwarf or Spring Iris.
Shady hillsides and in woods. April-May.

Sisyrinchium

A. Leaves half the height of stem. S. angustifolia.
A. Leaves equal to or shorter than stem. S. graminoides.

Sisyrinchium angustifolia Will. Pointed Blue-eyed Grass.
Common along roadsides. April-May.

Sisyrinchium graminoides Michx. Stout Blue-eyed Grass.
Meadow and sunny slopes. May-June.

ORCHIDACEAE (Orchid Family)

Galeorchis

Galeorchis spectabilis (L.) Rydb. Snowy Orchis.
In rich woods. April-May.

Class 2. Dicotyledoneae

Stems formed of bark, wood and pith; fibrovascular bundles of the stem forming a ring around a central core of pith; parts of the flower usually in 4's or 5's; leaves net-veined; seeds with two cotyledons.

1. Ovary superior. P.
2. Corolla present.
3. Petals distinct.
4. Carpels solitary, or several and distinct, or attached only at the base.
5. Stamens hypogynous, (i.e., attached to the base of the receptacle.)
6. Stamens perigynous, borne on margin of hypanthium.
4. Carpels several and united.
5. Stamens hypogynous.
6. Stamens numerous, more than twice as many as the petals.
7. Stamens distinct.
7. Stamens with united filaments.
6. Stamens few, (i.e., not more than twice the number of petals.)
7. Stamens usually 6, rarely 2; petals 4.
7. Stamens as many as the petals or twice as many.
8. Ovary one celled.
9. Placentae basal or free central.
9. Placentae pericarpal.
8. Ovary several celled.
9. Filaments partly united.
9. Filaments distinct.
5. Stamens perigynous, borne on margin of hypanthium.
8. Ovary one celled. 20
6. ROSALES. 21
7. STYGNALES. 27
8. GASTRALIS. 28
7. STYGNALES. 27
9. GASTRALIS. 28
10. STYGNALES. 29
11. STYGNALES. 30
12. STYGNALES. 30
13. GASTRALIS. 31 (Rhamnales).

3. Petals more or less united. P.
4. Stamens not borne on corolla.
5. Gynoecium a simple pistil, (i.e., of one carpel only).
C. OMBELLES. 21
(Fabaceae).
5. Gynoecium a compound pistil of 2-several united carpels.
6. Filaments united, diadelphous, some of the sepals spurred. (Papaveraceae).
6. Filaments distinct or sepals not spurred.
7. HIBISCODALES. 27
7. Green leafed herbs. 11. GASTRALLES. 30
7. Shrubs or s prophytic herbs.
12. ERICALES. 30
4. Stamens on corolla or partially adnate to corolla.
5. Stamens as many as or more than the lobes of the corolla, in the former opposite them; ovary one celled.
14. PINKALES. 31
5. Stamens as many as or fewer than the lobes of the corolla; in the former alternate with them.
6. Flowers regular or stamens 5 in number.
7. Ovary 1-celled; central placentae; carpels distinct or nearly so.
11. GASTRALLES. 32
7. Ovary usually 2-3-celled.
10. POLEMONIALES. 33
6. Flowers irregular or fertile stamens only 4 or 2, except in Verbascum.
7. Fruit 1-4-seeded, usually separating into 1-seeded nutlets.
17. LAMIALES. 35
(Polemoniales).
7. Fruit a 0-many seeded capsule.
18. SCOPHULARIALES. 36
(Polemoniales).
2. Corolla absent.
3. Flowers, at least the staminate, in aments.
19. SPINDALS. 38
3. Flowers, at least the staminate, not in aments.
4. Gynoecium of one or of several distinct carpels, each with a single style.
5. Carpels several.
6. Stamens hypogynous. 5. MARNALES. 20
6. Stamens perigynous. 6. ROSALES. 21
5. Carpels solitary. 8. MALVALES. 28

4. Gynoecium of two or more united carpels; if one celled, styles and stigmas more than one. p.
3. Flowers perfect; stamens several. 9. C. YOPYLLALES. 28
5. Flowers monoecious or dioecious or with only one stamen. 8. S. LV. IES. 28
1. Ovary inferior.
2. Aquatics with whorled leaves. 20. VENTRALS. 29
2. Terrestrial plants.
3. Petals distinct.
4. Fruit a pyxis, (i.e., a capsule with a circumscissile dehiscence. Portulacaceae.
4. Fruit not a pyxis.
5. Ovules two or more in each cavity.
6. Vines with tendrils. 21. LOASALES.. 40
6. Vines without tendrils. 21. RUBI IES. 40
7. Fruit a berry. 8. ROSALES. 21
7. Fruit a capsule. 20. GERANIALES. 39
6. Ovules solitary in each cell. 23. UMBELLALES. 39
3. Petals more or less united.
4. Filaments free from the corolla. 24. CAMPANULALES. 42
4. Filaments arising from the corolla.
3. Ovary with two or more ovules. 22. RUBI IES. 40
5. Ovary with a single ovule. 24. CAMPANULALES. 42

RUBIACEAE

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|--------------------------------|---------------------------|
| A. Land or marsh plants. | 1. <u>Rubiacaceae</u> . |
| B. Carpels several to many. | 2. <u>Berberidaceae</u> . |
| C. Carpels single; 2-5-ovuled. | 3. <u>Symplocaceae</u> . |
| 4. Aquatic herbs. | |

1. RUBIACEAE (Crowfoot Family)

- | | |
|--|------------------------|
| A. Carpels one ovuled; fruit an achene. | 1. <u>Synedra</u> . |
| B. Petals usually present; herbs. | 2. <u>Ranunculus</u> . |
| C. Flowers subtended by involucre. | 3. <u>Viorna</u> . |
| D. Flowers not subtended by involucre. | 4. <u>Helphinium</u> . |
| E. Petals wanting; vines. | |
| A. Carpels with several ovules; fruit a follicle or berry. | |

1. Synedra

Synedra thalictrifolia (L.) Hoffm. Rue-Rose.
Abundant in woods. March-May.

2. Ranunculus

- | | |
|---------------------------------|----------------------|
| A. Basal leaves merely crenate. | 1. <u>Harveyi</u> . |
| B. All leaves lobed or divided. | 2. <u>Hispidus</u> . |

Ranunculus Harveyi (A. Gray) Britton. Harvey's Buttercup.
Hillsides and roadsides. April-May.

Ranunculus Hispidus Michx. Hispid Buttercup.
In waste places. March-May.

3. Viorna

Viorna crispata (L.) Small. Curled or Curled Leather-flower.
In swamps and swamps. May-June.

4. Helphinium

- | | |
|---------------------------------------|-----------------------|
| A. Annual; pistil 1; plant pubescent. | 1. <u>lucidum</u> . |
| B. Perennials; pistils 3. | 2. <u>Wilsoni</u> . |
| C. Follicles erect or nearly so. | 3. <u>tricornis</u> . |
| D. Follicles widely divergent. | |

Delphinium ajacis L. Rocket Helleborus.
Fields, meadows and waste places. June-August.

Delphinium Nelsoni Greene. Nelson's Helleborus.
Mountain sides, rocky soil.

Delphinium bicorne Michx. Three-wood Delphinium.
Hill sides. April-June.

2. BARBERY (Barberry Family)

1. Podophyllum

Podophyllum peltatum L. May-pple. Wild Tandrake.
Lowlands; moist soil. May.

3. WATER-LILY (Water-lily Family)

1. Najas

Najas odorata (Legend.) Woodv. & Wood. Pond-lily.
In ponds and lagoons. May-Sept.

ROSIERS

- 1. Flowers regular.
 - A. Pistils many; herbs. 1. Saxifragaceae.
 - C. Shrubs or trees; fruit an achene. 2. Rosaceae.
 - C. Trees; fruit a pome. 3. Salicaceae.
- 2. Pistil only one.
 - C. Fruit a drupe; leaves simple. 4. Myrsinaceae.
 - C. Fruit a legume; leaves 2-3-pinnate. 5. Fabaceae.
- 3. Flowers irregular; fruit a legume. 6. Fabaceae.

1. Saxifragaceae (Saxifrage Family)

Meibomia

Meibomia pubescens Pursh. Downy Meibomia.
In rich woods. May-June.

2. ROSE CASE (Rose Family)

- A. Pistil 1-3-ovuled; carpels opposite sepals.
 1. Porteranthus.
- B. Style lateral; ovule and seed ascending.
 C. Pistil and achenes not enclosed by receptacle.
 D. Calyx with whorl of 5 bracts.
 1. Receptacle not pulpy; flowers yellow.
 2. Duchesnea.
- E. Receptacle pulpy; flowers white.
 3. Fragaria.
- D. Calyx without bracts.
 4. Rubus.
- C. Pistil and achenes enclosed by receptacle.
 5. Rosa.
- B. Style terminal; ovule and seed pendulous.
 C. Potentilla.
- A. Pistil with many ovules, 2-4-seeded dehiscent.
 7. Opulster.

1. Porteranthus

Porteranthus stipulatus (Wuhl.) Britton. American Ipococ.
 In rich woodlands. May-July.

2. Duchesnea

Duchesnea indica (Andr.) Focke. Indian Strawberry.
 In waste places. April-May.

3. Fragaria

Fragaria Grayana Vilmorin. Gray's Strawberry.
 Dry soil. April-May.

4. Rubus

- A. Leaves 3-7-foliolate; flowers terminal. R. procumbens.
 A. Leaves 3-foliolate; flowers terminal and axillary.
R. trivialis.

Rubus procumbens Muhl. Low Running Blackberry. Dew Berry.
 In dry soil. May-June.

Rubus trivialis Michx. Low Bush Blackberry.
 In sandy soil. May-June.

Rosa

- A. Leaflets mostly 3. R. setigera.
- A. Leaflets mostly 5-11. R. woodsii.
- B. Infrestipular spines commonly present; stems prickly. R. virginiana.
- B. Infrestipular spines slender; stems with scattered prickles or naked.

Rosa setigera Michx. Prairie Rose. Climbing Rose.
In open thickets and prairies. June-July.

Rosa woodsii Lindl. Wood's Rose.
Prairies. June-July.

Rosa virginiana Mill. Low or Pasture Rose.
Dry or rocky soil. May-July.

C. Potentilla

Potentilla canadensis L. Five-finger. Common Cinquefoil
In dry soil. April-June.

7. Opulaster

Opulaster opulifolius (L.) Kuntze. Ninebark.
Stream-banks and rocky places. May-June.

8. MALICACEAE (Apple Family)

Crataegus

- A. Leaves not deeply cut. C. punctata.
- B. Leaves dull gray-green; narrow. C. viridis.
- B. Leaves dark green, shining; ovate. C. Marshallii.
- A. Leaves deeply cut.

Crataegus punctata Jacq. Large-fruited or White Haw.
Lowlands. May.

Crataegus viridis L. Southern Thorn.
Alluvial soil along streams and swamps. March-April.

Crataegus Marshallii Eggl. Parsley Haw.
Rich soils. March-April.

4. PRUNELLA (Rose Family)Prunus

Prunus virginiana (L.) Mill. Wild black Cherry.
In woods and open spaces. May.

5. ERIGONIA (Rosace Family)Erorgia

- A. Leaflets elliptic, strongly veined. 1. uncinata.
B. Leaflets linear, scarcely veined. 2. microphylla.

Erorgia uncinata (Willd.) Britton. sensitive-brier.
In dry soil. May-June.

Erorgia microphylla (Wright) Britton. Small-leaved Brier.
In dry soil. June-August.

6. FABACEAE (Pea Family)

A. Herbs and shrubs.

B. Leaves without tendrils.

1. Leaves digitate; pod inflated. 1. Lupinus.
2. Flowers spiced. 2. Medicago.
3. Flowers recessed. 3. Psoralea.
C. Leaves 3-foliate; pod straight. 4. Trifolium.

B. Leaves with tendrils.

- C. Leaves pinnate; pod flat. 5. Crocea.
D. Stems 8-10.
6. Psoralea.
E. Corolla of one petal. 7. Isorhiza.
F. Corolla of 2 petals. 8. Petalostemon.
G. Stems only 3. 9. Scorpiurus.
D. Leaves odd-pinnate; pod fleshy. 10. Vicia.

A. Vines; leaves pinnate with tendrils. 10. Vicia.1. Lupinus

A. Flowers yellow.

B. Racemes numerous, terminal; plants glabrous.

C. Racemes few-lateral; plant pubescent. 1. Lupinus.

A. Flowers white.

B. Stems pubescent, dark green in drying. 2. Lupinus.
C. Stems glabrous, blackening in drying. 3. Lupinus.

Baptisia villosa (Walt.) Nutt. Hairy Wild Indigo.
In dry soil. May-June.

Baptisia bracteata Ell. Large-bracted Wild Indigo.
Prairies and sunny slopes. May-June.

Baptisia leucantha T. & G. Large White Wild Indigo.
Rich soil; wooded mountain slopes. May-June.

2. Medicago

Medicago lupulina L. Black or Hop Medic. Hop Clover.
Fields and waste places. March-Nov.

3. Melilotus

A. Flowers white.

M. alba.

A. Flowers yellow.

M. officinalis.

Melilotus alba Desv. White Sweet-clover.
Waste places; roadsides. May-Sept.

Melilotus officinalis (L.) Lam. Yellow Sweet-clover.
Waste places. May-Sept.

4. Trifolium

A. Stem and calyx hairy.

T. reflexum.

A. Stem and calyx glabrous or nearly so.

T. stoloniferum.

Trifolium reflexum L. Buffalo Clover.
Dry woods. April-June.

Trifolium stoloniferum Wuhl. Running Buffalo Clover.
Dry woods. April-June.

5. Gracca

Gracca virginiana L. Cat-gut. Goat's Rue. Wild Sweet-pea.
Dry sandy soil. June-July.

6. Amorpha

A. Tall shrub, 5-20-feet high.

A. fruticosa.

A. Low bushy shrub, 1-3-feet high.

A. canescens.

Amorpha fruticosa L. False or Bastard Indigo.
Rich soil; open woods. May-July.

Amorpha canescens Pursh. Shoestrings. Lead-plant.
Prairies. June-August.

7. Psoralea

A. Leaves digitately 3-5-foliolate. P. digitata.
A. Leaves pinnately 3-foliolate. P. pedunculata.

Psoralea digitata Nutt. Digitate Psoralea.
Prairies and hills. June-July.

Psoralea pedunculata (Mill.) Vail. Samson's Snakeroot.
Dry soils. March-July.

8. Petalostemum

A. Flowers white; leaflets 3-9. P. compactum.
B. Leaflets oblong; spikes cylindric. P. multiflorum.
B. Leaflets linear; heads globose.
A. Flowers purple; leaflets 3-9. P. purpureum.

Petalostemum compactum (Spreng.) Swezey. Dense-flowered
Prairie-clover. Dry soil. July-August.

Petalostemum multiflorum Nutt. Round-headed Prairie-
clover. Prairies. Summer.

Petalostemum purpureum (Vent.) Rydb. Purple Prairie-clover.
Prairies. June-July.

9. Geoprumnon

Geoprumnon mexicanum (A. DC.) Rydb. Larger Ground Plum.
Prairies. May.

10. Vicia

A. Dense spike-like racemes. V. Cracca.
A. Loose racemes. V. hirsuta.

Vicia Cracca L. Tufted or Cow Vetch.
Dry soil. May-July.

Vicia hirsuta (L.) Koch. Hairy Vetch. Wild Tare.
Fields, waste places. May-August.

TRICHOCLITES (Papaverales)

- | | |
|----------------------------------|------------------|
| A. Sepals 2. | |
| B. Flowers regular, stamens 8. | 1. Papaveraceae. |
| B. Flowers irregular, stamens 6. | 2. Fumariaceae. |
| A. Sepals and petals 4-8. | 3. Cruciferae. |

1. PAPAVERACEAE (Poppy Family)

Argemone

Argemone alba Listib. White Prickly Poppy.
Sunny hillsides. May-August.

2. FUMARIACEAE (Fumewort Family)

Capnoides

Capnoides crystallinum (Engelm.) Kuntze. Vesicular
Corydalis. Roadsides. April-June.

3. CRUCIFERAE (Mustard Family)

- | | |
|---|-----------------------|
| A. Flowers white; pods flattened. | 1. <u>Lepidium</u> . |
| B. Pods 4-angled; flowers white. | 2. <u>Cheirinia</u> . |
| B. Pods beaked; flowers yellow. | 3. <u>Brassica</u> . |
| A. Flowers yellow; pods broad and flat. | 4. <u>Selinia</u> . |

1. Lepidium

- | | |
|---------------------------------|------------------------|
| A. Petals none; pods wingless. | L. <u>ruderales</u> . |
| A. Petals present; pods winged. | L. <u>virginicum</u> . |

Lepidium ruderales L. Roadside Pepper-grass.
Waste places. Summer.

Lepidium virginicum L. Wild Pepper-grass.
Dry soil. May-Oct.

2. Cheirinia

Cheirinia aspera (DC.) Britton. Orange Mustard.
Open spaces. May-July.

3. Brassica

Brassica nigra (L.) Koch. Black Mustard.
Dry soil; waste places. June-Oct.

4. Selinia

Selinia aurea Nutt. Selinia.
Open rocky places. March-April.

MALVACEAE

1. MALVACEAE (Mallow Family)

Callirhoe

Callirhoe involucrata (T. & G.) A. Gray. Purple Poppy-
Mallow. Dry sandy soil. May-August.

CARYOPHYLLALES

- | | |
|------------------------------------|---------------------|
| A. Sepals 2. | 1. Portulacaceae. |
| A. Sepals 4-5, distinct or united. | |
| B. Sepals distinct; ovary sessile. | 2. Alsiniaceae. |
| B. Sepals united; ovary stipitate. | 3. Caryophyllaceae. |

1. PORTULACACEAE (Purslane Family)

Clatonia

Clatonia virginica L. Spring Beauty.
Yards and moist woods. March-May.

2. ALSINACEAE (Chickweed Family)

Cerastium

Cerastium viscosum L. Mouse-ear Chickweed.
Waste places. April-July.

3. CARYOPHYLLACEAE (Pink Family)

- | | |
|-------------------------------------|----------------------|
| A. Flowers crimson. | 1. <u>Silene</u> . |
| A. Flowers purple or pinkish-white. | 2. <u>Dianthus</u> . |

1. Silene

Silene virginica L. Fire Pink. Catchfly.
Dry open woods. May-Sept.

2. Dianthus

Dianthus barbatus L. Sweet William.
Open woods. May-August.

HYPERICALES

- A. Herbs with black-dotted leaves. 1. Hypericaceae.
 A. Herbs with leaves not punctate. 2. Violaceae.

1. HYPERICACEAE (St. John's Wort Family)

Hypericum

- A. Flowers 1'-2' broad; plant herbaceous. H. Ascyron
 A. Flowers 3"-12" broad; plants woody. H. cistifolium.

Hypericum Ascyron L. Great St. John's Wort.
 Stream banks. June-August.

Hypericum cistifolium Lam. Round-podded St John's Wort.
 Rocky banks. June-Sept.

2. VIOLACEAE (Violet Family)

Viola

- A. Stemless leaves from root stock. V. pedata.
 B. Flowers ovoid on prostrate peduncles. V. palmata.
 C. Plants villous.
 C. Plants glabrous. V. papilionaceae.
 B. Flowers on erect peduncles. V. sagittata.
 A. Stems leafy; flowers axillary.
 B. Upper leaves entire. V. Rafflesquii.
 B. Upper leaves crenate. V. tricolor.

Viola pedata L. Bird's-foot or Crowfoot Violet.
 Dry fields; open woods. April-June.

Viola palmata L. Early Blue Violet.
 Wooded Hills. April-May.

Viola papilionaceae Pursh. Meadow or Common Blue Violet.
 Damp meadows. April-May.

Viola sagittata Ait. Arrow-leaved Violet.
 Moist banks and wet meadows. April-May.

Viola Rafflesquii Greene. Field Fanny.
 Fields and open woods. April-May.

Viola tricolor Var. Lineariloba DC. Velvets.
 Dry fields. April-June.

GERANIACEAE

- A. Flowers regular.
 B. Stamens 2-3-times as many as petals. 1. Oxalidaceae.
 B. Stamens as many as petals. 2. Linaceae.
 A. Flowers irregular. 3. Polygalaceae.

1. OXALIDACEAE (Wood-sorrel Family)

- A. Flowers rose-purple. O. violacea.
 A. Flowers yellow. O. stricta.

Oxalis violacea L. Violet Wood-sorrel. Sheep-sorrel.
 In woods and fields. May-June.

Oxalis stricta L. Upright Yellow Wood-sorrel.
 In fields and along roadsides. Summer.

2. LINACEAE (Flax Family)

Cathartolimum

Cathartolimum sulcatum (Riddell.) Small. Yellow Flax.
 Dry soil. Summer.

3. POLYGALACEAE (Milkwort Family)

Polygala

Polygala viridescens L. Field or Purple Milkwort.
 Dry fields and meadows. Summer.

ERICALES

- A. Ovary superior; fruit a capsule.
 B. Herbaceous saprophytes; no green leaves. 1. Monotropaceae.
 B. shrubs with normal, often evergreen leaves. 2. Ericaceae.
 A. Ovary inferior; fruit a berry. 3. Vacciniaceae.

1. MONOTROPACEAE (Indian-Pipe Family)

Monotropa

Monotropa uniflora L. Indian Pipe.
Rich woodlands. June-Sept.

2. ERICACEAE (Heath Family)

Azalea

Azalea canescens Michx. Mountain Azalea.
Roadsides; mountain sides. April-May.

3. VACCINIACEAE (Huckleberry Family)

A. Ovary 10-celled; fruit a berry-like drupe.

A. Ovary 4-5-celled; fruit a berry. 1. Gaylussacia.
2. Vaccinium.

1. Gaylussacia

Gaylussacia frondosa (L.) T. & G. Huckleberry.
In moist woods. May-June.

GELASTRALES

1. RHAMNACEAE (Buckthorn Family)

Ceanothus

Ceanothus ovatus Desf. Smaller Red-root.
Rocky soil and prairies. May-June.

PRIMULALES

1. PRIMULACEAE (Primrose Family)

A. Lobes of corolla convolute, axillary. 1. Steironema.
A. Lobes of corolla reflexed; unlobed. 2. Dodecatheon.

1. Steironema

Steironema lanceolatum (Walt.) A. Gray. Lance-leaved
Loosestrife. Moist soil. June-July.

2. Dodecatheon

Dodecatheon Meadia L. Shooting Star.
Moist cliffs and mountain tops. April-May.

GENTIANIACEAE

- A. Stigmas united; juice milky; ovaries 2.
 B. Styles united; stamens distinct; pollen of simple grains. 1. Apocynaceae.
 B. Styles distinct; stamens monadelphous; pollen grains a waxy mass. 2. Asclepiadaceae.
 A. Stigmas distinct; juice not milky. 3. Loganiaceae.

1. APOCYNACEAE (Dogbane Family)

- A. Leaves alternate; erect herbs. 1. Amsonia.
 A. Leaves opposite; erect or diffused herbs. 2. Apocynum.

1. Amsonia

Amsonia Amsonia (L.) Britton. Amsonia.
 In moist soil. April-June.

2. Apocynum

Apocynum sibiricum Jacq. Clasping-leaved Dogbane.
 Dry soil. April-July.

2. ASCLEPIADACEAE (Milkweed Family)

- A. Corona with an incurved horn within. 1. Asclepias.
 A. Corona without horns in the hood. 2. Acerates.

1. Asclepias

- A. Leaves alternate or opposite.
 B. Corolla and corona orange; leaves alternate. A. tuberosa.
 B. Corolla white; leaves opposite. A. variegata.
 A. Leaves opposite; corolla purple or red. B. Leaves ovate; corolla segments red. A. rubra.
 B. Leaves oblong; corolla purple. A. purpurascens.

Asclepias tuberosa L. Butterfly-weed.
 In dry fields. Summer.

Asclepias variegata L. White Milk-wood.
 In thickets and open woods. June-July.

Asclepias rubra L. Red Milk-wood.
 In moist soil; woods. June-July.

Asclepias purpurascens L. Purple Milk-wood.
In dry fields; roadsides. June-August.

2. Acerates

Acerates angustifolia (Butt.) Dec. Green Milk-wood.
In dry soil. June-August.

3. LOGANIACEAE (Logania Family)

A. Woody vine; flowers yellow. 1. Gelsemium.
A. Shrub; corolla yellow within, scarlet outside.

2. Spigelia.

1. Gelsemium

Gelsemium sempervirens (L.) Ait. Yellow Jessamine.
Woods. March-Oct.

2. Spigelia

Spigelia marylandica L. Indian or Carolina Pink.
Woods. May-July.

POLEMONIACEAE

- A. Ovary 2-5-celled.
B. Fruit various, neither a berry nor prickly capsule.
C. Twining vines. 1. Convolvulaceae.
C. Herbs not twining. 2. Polemoniaceae.
B. Fruit a berry or prickly capsule. 3. Solanaceae.
A. Ovary 1-celled. 4. Hydrophyllaceae.

1. CONVOLVULACEAE (Morning-Glory Family)

- A. Stigma capitate; leaves linear. 1. Ipomoea.
A. Stigmas 2; leaves never linear. 2. Convolvulus.

1. Ipomoea

Ipomoea trichocarpa Ell. Small-flowered Pink Morningglory.
Dry soil. Summer.

2. Convolvulus

- A. Bracts large, enclosing a calyx.
B. Stems glabrous, 6-10 feet long; leaves hastate.
C. sepium.
B. Stems pubescent, 1-3 feet long; leaves sagittate.
C. repens.

A. Bracts small, remote from calyx. G. arvensis.

Convolvulus sepium L. Hedge or Great Bindweed.
Hedge and fence rows. June-Sept.

Convolvulus repens L. Trailing Bindweed.
Cosmopolitan. May-Aug.

Convolvulus arvensis L. Small Bindweed.
Fields. May-Sept.

2. POLEMONIACEAE (Phlox Family)

A. Corolla salverform; leaves opposite, entire. 1. Phlox.
A. Corolla funnellform; leaves alternate, not entire. 2. Gilia.

1. Phlox

A. Stems erect; no prostrate shoots; leaves linear.

A. Stems erect; prostrate shoots; leaves oblong. P. pilosa.
P. divaricata.

Phlox pilosa L. Downy or Prairie Phlox.
Dry soil. April-June.

Phlox divaricata L. Wild Blue Phlox.
In moist woods. April-June.

2. Gilia

Gilia iberidifolia Benth. Round-headed Gilia.
In dry soil. May-June.

3. SOLANACEAE (Potato Family)

Solanum

A. Plants very prickly.
Calyx not enclosing fruit.
B. Calyx enclosing fruit.

A. Plants not prickly annuals.

S. carolinense.
S. rostratum.
S. nigrum.

Solanum carolinense L. Horse-Nettle.
Dry fields. May-Sept.

Solanum rostratum Dunal. Sand Bar. Buffalo Burr.
Prairies. May-Sept.

Solanum nigrum L. Black or Deadly Nightshade.
Waste places. July-Oct.

4. HYDROPHYLLACEAE (Borage Family)

Phacelia

Phacelia hirsuta Nutt. Hairy Phacelia.
Dry soil. April-June.

LAMIALES

- A. Style apical; flowers quite regular. 1. Verbenaceae.
A. Style arising between ovary lobes; flowers irregular. 2. Labiateae.

1. VERBENACEAE (Vervain Family)

Verbena

- A. Spikes slender; bracts shorter than flowers.
B. Plants glabrous or rough pubescent. V. hastata.
B. Plants soft-pubescent. V. stricta.
A. Spikes thick, dense; bracts longer than flowers. V. canadensis.

Verbena hastata L. Blue or False Vervain.
In moist fields. June-Sept.

Verbena stricta Vent. Hoary or Mullen-leaved Vervain.
Dry soil. June-Sept.

Verbena canadensis (L.) Britton. Large-flowered Verbena.

2. LABIATE (Mint Family)

- A. Anther bearing 4-stamens.
B. Calyx with protuberance on upper side. 1. Scutellaria.
C. Calyx tubular, not 2-lipped. 2. Nepeta.
C. Calyx distinctly 2-lipped. 3. Prunella.
B. Calyx tubular, campanulate. 4. Lamium.
A. Anther bearing 2-stamens.
B. Flowers in terminal spikes. 5. Salvia.
B. Flowers in dense bracted spikes. 6. Monarda.

1. Scutellaria

Scutellaria parvula Michx. Small Skull-cap.
In rocky soils. April-July.

2. Nepeta

Nepeta Cataria L. Catmint. Catnep.
Dry soil. July-Nov.

3. Prunella

Prunella vulgaris L. Self-heal.
Field soil. May-Oct.

4. Lamium

Lamium amplexicaule L. Henbit.
Dry soil; common. Feb.-Nov.

5. Salvia

Salvia lyrata L. Lyre-leaved Sage.
Dry rocky soil. May-July.

6. Monarda

A. Leaves pubescent beneath, bracts white or purple.

A. Leaves canescent beneath, bracts green. M. fistulosa.
M. mollis.

Monarda fistulosa L. Wild Bergamot.
Dry hillsides. June-Sept.

Monarda mollis L. Pale Wild Bergamot.
Dry prairies and plains. June-Aug.

SCROPHULARIALES

- A. Placentae axile. 1. Scrophulariaceae.
B. Flowers more or less irregular. 2. Menyanthes.
B. Flowers nearly regular. 3. Bignoniaceae.
A. Placentae parietal.

1. SCROPHULARIACEAE (Figwort Family)

- A. Fertile stamens 5; corolla regular. 1. Verbascum.
B. Leaves entire or 3-lobed. 2.
C. Corolla tubular, 2-lipped. lobes of lower lip flat. 2. Pentstemon.
C. Corolla 2-cleft; middle lobe of lower lip conduplicate. 3. Paulownia.

B. Leaves pinnately lobed or pinnatifid.

A. Fertile stamens 4 or 2.

4. Pedicularis.

5. Linaria.

1. Verbascum

Verbascum Blattaria L. Moth Mullen.

In fields and waste places. June-Nov.

2. Pentstemon

A. Calyx-lobes linear-subulate.

B. Stems 6'-18' high; leaves serrate. P. gracilis.

B. Stems 2-4 feet high; leaves entire. P. tubiflorus.

A. Calyx-lobes lanceolate.

P. Pentstemon.

Pentstemon gracilis Nutt. Slender Beard-tongue.

Moist prairies. May-July.

Pentstemon tubiflorus Nutt. Funnel-form Beard-tongue.

Moist soil. May-July.

Pentstemon Pentstemon (L.) Britton.

Woods and thickets. May-July.

3. Paulownia

Paulownia tomentosa (Thunb.) Paulownia. Empress Tree.

Open woods. May-July.

4. Pedicularis

Pedicularis canadensis L. Wood Betony. Lousewort.

Dry woods. April-July.

5. Linaria.

A. Flowers yellow.

L. linaria.

A. Flowers white or blue.

L. canadensis.

Linaria Linaria (L.) Karst. Butter-and-Eggs.

Fields; dry soil. June-Oct.

Linaria canadensis L. Blue or Wild Toad-Flax.

Dry soil. May-Sept.

2. ACANTHACEAE (Canthus Family)

Ruellia

- A. Flowers sessile or nearly so
 - B. Calyx-segments linear lanceolate, scarcely exceeding the capsule. R. strepens.
 - B. Calyx-segments filiform-linear, exceeding capsule. R. ciliosa.
- A. Flowers peduncled. R. pedunculata.

Ruellia strepens L. Smooth or Short-tube Ruellia.
In dry woods. May-July.

Ruellia ciliosa Pursh. Hairy Long-tube Ruellia.
In dry soil. June-Sept.

Ruellia pedunculata Torr. Stalked Ruellia.
In dry soil. June-Sept.

3. BIGNONIACEAE (Trumpet-Creeper Family)

- A. Leaves compound; stamens 4; vines.
 - B. Calyx-limb undulate; capsule flattened parallel with its partition wall. 1. Anisostichus.
 - B. Calyx 5-toothed; capsule compressed at right angles to its wall. 2. Bignonia.
- A. Leaves simple; stamens 2; trees. 3. Catalpa.

Anisostichus capreolata (L.) Bureau. Tendrilled Trumpet-Flower. In moist woods. April-June.

2. Bignonia

Bignonia radicans L. Trumpet-Flower.
In moist woods. Aug.-Sept.

3. Catalpa

SAPINDALES

7. AESCULACEAE (Hickeye Family)

- A. Flowers yellow or greenish-yellow.
 - B. A tree; leaflets pubescent. Ac. glabra.
 - B. A shrub; leaflets glabrate. Ac. arguta.
- A. Flowers red. Ac. Pavia.

Aesculus glabra Willd. Ohio Buckeye. Petid Buckeye.
Woods. April-May.

Aesculus arguta Buckl. Shrubby or Western Buckeye.
Woods. March-April.

Aesculus Pavia L. Red or Little Buckeye.
Along roadsides. April-May.

MYRTALES

1. ONAGRACEAE (Evening-Primrose Family)

- A. Stamens equal in length.
 B. Stigma deeply 4-cleft. 1. Oenothera.
 B. Stigma entire or slightly 4-toothed. 2. Meriolix.
 A. Stamens unequal in length. 3. Hartmannia.

1. Oenothera

- A. Flowers large, petals 6"-2' broad. O. biennis.
 A. Flowers small, 6"-2' broad. O. laciniata.

Oenothera biennis L. Common Evening-Primrose.
Dry soil. May-Oct.

Oenothera laciniata Hill. Cut-leaved Evening-Primrose.
Sandy dry soil. May-June.

2. Meriolix

Meriolix serrulata (Nutt.) Walp. Tooth-leaved Primrose.
In dry soil. May-July.

Mer 3. Hartmannia

Hartmannia speciosa (Nutt.) Small. Showy Primrose.
Prairies. Summer.

UMBELLALES

- A. Herbs; flowers umbellate. 1. Apiaceae.
 A. Shrubs, trees; flowers not umbellate. 2. Cornaceae.

1. Apiaceae

1. AMBIACEAE

- A. Petals yellow; leaves compound.
 A. Petals white; leaves simple.

1. Zizia.
 2. Spermolepis.

1. Zizia

Zizia Beddi (Coulst. & Rose.) Britton. Golden Meadow Parsnip
 Roadsides. May.

2. Spermolepis

Spermolepis divaricatus (Walt.) Britton. Rough-fruited
Spermolepis. Dry soil. April-May.

2. CORNACEAE (Dogwood Family)

- A. Flowers cymose, not involucrate.
 A. Flowers capitate, involucrate.

1. Cornus.
 2. Cynoxylon.

1. Cornus

Cornus asperifolia Michx. Rough-leaved Dogwood.
 Moist soil. April-June.

2. Cynoxylon

Cynoxylon floridum (L.) Raf. Flowering Dogwood.
 In woods. April-June.

LOASALES1. CUCURBITACEAE (Gourd Family)1. Cucurbita

Cucurbita foetidissima H.B.K. Fetid or Missouri Gourd.
 Dry plains. May-Sept.

RUBIALES

- A. Leaves stipulate, blackening in drying. 1. Rubiaceae.
 A. Leaves exstipulate, not blackening. 2. Caprifoliaceae.

1. RUBIACEAE (Madder Family)

- A. Leaves verticillate; ovule in each cavity.
 B. Corolla rotate. 1. Galium.
 B. Corolla funnelliform. 2. Sherardia.
 A. Leaves opposite; ovules numerous. 3. Houstonia.

1. Galium

Galium circaezans Michx. Cross-Cleavers.
 In dry woods. May-July.

2. Sherardia

Sherardia arvensis L. Blue Field Madder.
 In waste places. June-July.

3. Houstonia

- A. Plants 1'-7' high; peduncles 1-flowered.
 B. Peduncles filiform, 1'-3' long. H. coerulea.
 B. Peduncles 3"-18" long, stout.
 C. Calyx-lobes narrow. H. patens.
 C. Calyx-lobes broad. H. minima.
 A. Plants 4'-18' high; flowers cymose. H. tenuifolia.

Houstonia coerulea L. Bluets. Innocence.
 Open grassy places. April-July.

Houstonia patens Ell. Small Bluets.
 Dry soil. March-April.

Houstonia minima Beck. Least Bluets.
 In dry soil. March-April.

Houstonia tenuifolia Nutt. Slender-leaved Houstonia.
 In dry soil. May-July.

2. CAPRIFOLIACEAE (Honeysuckle Family)

- A. Corolla tubular.
 B. Fruit a berry. 1. Lonicera.
 B. Fruit a 2-celled capsule. 2. Diervilla.
 A. Corolla rotate; flowers in cymes. 3. Sambucus.

1. Lonicera

Lonicera sempervirens L. Trumpet or Coral Honeysuckle.
 In lowlands. April-Sept.

2. Diervilla

Diervilla Diervilla (L.) MacN. Bush-Honeysuckle.
Dry or rocky woodlands. May-June.

3. Sambucus

Sambucus canadensis L. Elder-berry.
In moist soil. May.

CAMPANULALES

- | | |
|--------------------------------------|-------------------|
| A. Flowers not in involucrate heads. | |
| B. Flowers regular. | 1. Campanulaceae. |
| B. Flowers irregular. | 2. Lobeliaceae. |
| A. Flowers in involucrate heads. | |
| B. All flowers ligulate. | 3. Cichoriaceae. |
| B. Only outer row ligulate. | 4. Compositae. |

1. CAMPANULACEAE.

1. Specularia

- A. Leaves sessile; capsule valves near top. S. biflora.
A. Leaves clasping; capsule valves near middle. S. perfoliata.

Specularia biflora (R. & P.) F. & M. Small Venus' Looking-glass. Dry soil. April-July.

Specularia perfoliata (L.) A. DC. Venus' Looking-glass.
Dry soil; yards. May-Sept.

2. LOBELIACEAE (Lobelia Family)

Lobelia

- A. Stem pubescent; single terminal spike. L. spicata.
A. Stem glabrous; spikes of several flowers. L. inflata.

Lobelia spicata Lam. Pale Spiked Lobelia.
In dry sandy soil. June-Aug.

Lobelia inflata L. Indian or Wild Tobacco.
In dry soil. June-Nov.

3. CICHORIACEAE (Chicory Family)

- | | |
|---|-----------------------|
| A. Flowers blue or white; pappus of scales. | 1. <u>Cichorium</u> . |
| A. Flowers yellow; pappus of bristles. | 2. <u>Sitilias</u> . |

1. Chichorium

Chichorium Intybus L. Blue Sailors. Wild Succory.
Roadsides. July-Oct.

2. Sitilias

Sitilias caroliniana (Walt.) Raf. Leafy-stemmed False
Dandelion. In dry fields. April-July.

4. COMPOSITAE (Thistle Family)

- A. Anthers tailed at base, unappendaged at tip; heads
small. Tribe 1. Inuleae.
B. Bracts of involucre well imbricated.
C. Style-branches of the perfect flowers flattened,
with terminal appendages. Tribe 2. Astereae.
C. Style-branches truncate. Tribe 3. Elenieae.
B. Bracts little imbricated, or not at all.
C. Bracts of involucre not scarious. Tribe 4. Heliantheae.
C. Bracts scarious. Tribe 5. Anthemideae.
A. Anthers long-tailed at base, with elongated appendages
at the tip; heads large. Tribe 6. Cynareae.

Tribe 1. Inuleae.

- A. Plants dioecious or polygamo-dioecious.
B. Pappus bristles thickened above. 1. Antennaria.
B. Pappus bristles not thickened. 2. Anaphalis.
A. Plants not dioecious; flowers fertile. 3. Gnaphalium.

1. Antennaria

Antennaria plantaginifolia (L.) Richards. Plantain-leaf
Everlasting. Dry soil. April-June.

2. Anaphalis

Anaphalis margaritacea (L.) Benth. & Hook. Pearly Everlast.
Dry soil. June-Sept.

3. Gnaphalium

- A. Pappus-bristles distinct.
 B. Tall, erect; inflorescence corymbose. G. obtusifolium.
 B. Low diffuse; inflorescence capitate. G. uliginosum.
 A. Pappus-bristles united at base. G. purpureum.

Gnaphalium obtusifolium L. Sweet Everlasting.
 Dry open places. Aug.-Sept.

Gnaphalium uliginosum L. Low Marsh Cudweed. House-ear.
 In damp soil. July-Sept.

Gnaphalium purpureum L. Purplish Cudweed.
 Dry sandy soil. May-Sept.

Tribe 2. Astereae

- A. Ray flowers yellow. 1. Chrysopsis.
 A. Ray flowers blue, white, pink, never yellow.
 B. Bracts of involucre in 2 to many series.
 B. Bracts of involucre in 1-2-series. 2. Aster.
 3. Erigeron.

1. Chrysopsis

Chrysopsis graminifolia (Michx.) Ell. Grass-leaved
 Golden Aster. In dry soil. Aug.-Sept.

2. Aster

- A. Leaves slender petioled.
 B. Stems densely and finely pubescent. A. Drummondii.
 C. Involucral bracts spreading. A. multiflorus.
 C. Involucral bracts appressed. A. paniculatus.
 B. Stems glabrous. A. cordifolius.
 A. Leaves with auricled clasping bases.
 B. Bracts viscid. A. novaeangliae.
 B. Bracts not viscid. A. novae-belgii.

Aster Drummondii Lindl. Drummond's Aster.
 In dry soil. Sept.-Oct.

Aster multiflorus Ait. Dense-flowered Aster.
 In dry open places. Aug.-Nov.

Aster paniculatus Lam. Panicked Aster.
 In moist soil. Aug.-Oct.

Aster cordiflorus L. Common Blue Wood Aster.
Woods and thickets. Sept.-Dec.

Aster novae-angliae L. New England Aster.
Along streams. Aug.-Oct.

Aster novae-belgii L. New York Aster.
In swamps. Aug.-Oct.

3. Erigeron

Erigeron Bellidistrum Nutt. Western Daisy Fleabane.
In moist soil. May-July.

Tribe 3. Helcnioae

A. Leaves pinnatifid, not punctate. 1. Hymenopappus.
A. Leaves entire, punctate. 2. Helenium.

1. Hymenopappus

Hymenopappus corymbosus T. & G. White Hymenopappus.
Yards and moist soil. Summer.

2. Helenium

Helenium tenuifolium Nutt. Fine-leaved Sneezeweed.
Yards. Aug.-Oct.

Tribe 4. Heliantheae

A. Bracts imbricated in 2-3-series; disk flowers perfect,
sterile. 1. Parthenium.
B. Receptacle conic or convex; pappus of small teeth
or none. 2. Rudbeckia.
B. Pappus of two large scales. 3. Helianthus.
A. Bracts in two distinct series, united at base; disk
flowers perfect, fertile. 4. Coreopsis.

1. Parthenium

Parthenium integrifolium L. American Fever-few.
Waste places. Summer.

2. Rudbeckia

1. Disk globose.
 B. Plants hispid.
 B. Plants pubescent.
 C. Chaff ciliate.
 C. Chaff canescent.
 A. Disk elongated.
- R. hirta.

R. speciosa.
R. grandiflora.
R. maxima.

Rudbeckia hirta L. Black-eyed Susan.
Prairies and plains. May-Sept.

Rudbeckia speciosa Wenderoth. Showy Cone-flower.
Dry prairies. Aug.-Oct.

Rudbeckia grandiflora Gmelin. Large-flowered Cone-flower.
In moist soil. June-Aug.

Rudbeckia maxima Nutt. Great Cone-flower.
In moist soil. June-Aug.

3. Helianthus

- A. Disk purple or purple-brown.
 B. Leaves hispid, thin.
 B. Leaves firm in texture.
 A. Disk yellow; leaves glabrous.
- H. atrorubens.
H. scaberrimus.
H. strumosus.

Helianthus atrorubens L. Purple-disk Sunflower.
In dry woods. Aug.-Oct.

Helianthus scaberrimus Ell. Stiff Sunflower.
Prairies. Aug.-Sept.

Helianthus strumosus L. Pale-leaved Wood Sunflower.
In dry woods. July-Sept.

4. Coreopsis

- A. Leaves simple or pinnately lobed.
 B. Leaves near stem base; heads long peduncled.
 C. lanceolata.
 B. Stems leafy; heads short peduncled. C. grandiflora.
 A. Leaves palmately 3-cleft. C. palmata.

Coreopsis lanceolata L. Lance-leaved Tickseed.
In dry soil. May-Aug.

Coreopsis grandiflora MOSE. Large-flowered Tickseed.
In moist soil. May-Aug.

Coreopsis palmata Nutt. Stiff Tickseed.
Dry prairies. June-July.

Tribe 5. Anthemideae

- A. Receptacle chaffy.
 B. Achenes flattened; heads small. 1. Achillea.
 B. Achenes terete; heads large. 2. Anthemis.
 A. Receptacle not chaffy. 3. Chrysanthemum.

1. Achillea

Achillea millefolium L. Yarrow. Milfoil.
Cosmopolitan. June-Nov.

2. Anthemis

Anthemis cotula L. Mayweed. Dog-fennel.
In dry soil. Summer.

3. Chrysanthemum

Chrysanthemum Leucanthemum L. Ox-eye Daisy.
In dry soil. Summer.

Tribe 6. Cynareae

- A. Achenes inserted, not oblique. 1. Cirsium.
 A. Achenes obliquely inserted. 2. Centaurea.
 1. Cirsium

Cirsium muticum Michx. Swamp Thistle.
In moist soil. July-Oct.

2. Centaurea

Centaurea americana Nutt. American Star Thistle.
Dry soil. May-Aug.

LOASALES	1	
Cucurbitaceae ---		1.
ROSELES	8	
Rubiaceae -----		6.
Caprifoliaceae --		2.
CAMPANULALES	37	
Campanulaceae ---		2.
Lobeliaceae -----		2.
Cichoriaceae -----		2.
Compositae -----		311.

SUMMARY

A taxonomic study was made of the flora of Pulaski County, which is located approximately in the center of the State of Arkansas. The location of the county, including those factors pertaining to the physiography, the geology, and the abundance of flora, are typically characteristic of the state as a whole.

Some 224 species of seed bearing plants were collected and identified by the use of various manuals and text-books, and their identity was verified by comparing them with typical specimens in the herbarium at Kansas State College. These were then listed phylogenetically and a dichotomous key was prepared to aid in their identification. The species of plants included members of 24 orders and 53 families. Of these, the orders Campanulales with 37 species, the Rosales with 36 species and the Poales with 27 species ranked the highest in numerical importance. The families Compositae, Fabaceae and Rosaceae contained the largest number of species.

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