

A FLORISTIC STUDY OF  
REPUBLIC COUNTY KANSAS

by

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## INTRODUCTION

The purposes of this study were to obtain a list of the plants presently growing in the county, to discover their associations, and to record seasonal aspects of various representative areas.

Hitchcock (1899) listed 251 taxa as occurring in Republic County. Gates (1940) listed 274 taxa for the county. The small difference indicates that most of the collections for the county were made prior to 1900. This study brings the knowledge of the Republic County flora more up to date.

## Location

Republic County is in the northern tier of counties in Kansas and is about 145 miles west of the Missouri River. It is a rectangle 30 miles east to west and 24 miles north to south. The northern border is at latitude 40 degrees north and the longitudinal meridian 97 degrees 45 minutes passes through the western half of the county. It is bounded on the north by Nebraska, on the east by Washington County, on the south by Cloud County, and on the west by Jewell County.

## Climate

Data for the years 1898-1942, Climate in Kansas (1948), give this information. The average yearly rainfall for the county is 26.52 inches, of which 20.17 inches fall in the seven months between April 1 and September 30. From readings taken at 12:30 PM the average relative humidity is about 53 percent, ranging from a July average of 43.5 percent to an average of 65.6 percent for January.

The mean annual temperature is 53.3 degrees. The temperature reaches over 90 degrees F. an average of 61 days per year and goes to 32 degrees F., or below, an average of 132 days per year. The highest temperature recorded is 115 degrees F. reached at Belleville on July 13, 1934. The lowest July temperature was 45 degrees F. recorded on July 25, 1911. The highest January temperature ever recorded was 70 degrees on January 26, 1914, (also at later times). The lowest temperature ever recorded was -31 degrees F. on February 13, 1905.

## Topography

The county has three basic types of topography 1. the loess covered plain in the northern part, 2. numerous alluvial valleys, 3. deeply dissected uplands.

The loess covered plain covers most of the area included in township one south, ranges two - five west and also much of the area in township two south, ranges two and three west. The base of this area was formed from the ancestral Republican River channel and valley which entered about five miles south of the northwest corner of the county, flowed eastward crossing the present channel at Republic City, and re-entered Nebraska about half way across the county. This valley was partially filled during the early Pleistocene with coarse sand and gravel. This deposit is the lower portion of the Belleville formation which underlies the loess plains. The river was then forced southward by a glacier but later returned to its original channel and subsequently filled in the upper part of the Belleville formation. The glacier again forced the channel south where it is presently. After a time a reddish brown silt and clay loess was deposited, and upon this a thin layer of the present soil was deposited. (The reader is referred to Fishel (1948) pages 29-33 for a more complete discussion.)

Most of the alluvial deposits are along the present river valley, with lesser amounts along the small streams, and sizeable deposits in the southwest corner in the Jamestown Salt Marsh area and in the Tuthill Salt Marsh area south of Talmo and Wayne.

The deeply dissected uplands cover most of the area in the eastern one-fourth and southern half of the county. These consist of rough rolling hills with broad to narrow bands or fingers covered with windblown loess between the streams. The relief on the upland bands is often less than 25 feet per mile while the relief in land sloping to the stream valleys is as great as 200 feet per mile and rarely reaches an extreme of 100 feet in one-eighth of a mile. Along the cuts made by the streams one can observe the underlying rock formations which (except for the southeast corner) are (beginning with the upper layer) Carlile shale, Greenhorn limestone, and Graneros shale. The lower Dakota formation of sandstone, sandy shales, and clay underlies the whole county and is exposed in the southeastern quarter of the county where it is the parent material for the soil.

The Republican River enters at the northwest corner and exits about eight miles east of the southwest corner. It drains all of the county except the northeast fourth which is drained by Rose Creek and Mill Creek. The streams in the western two-fifths of the county flow southeast if on the west side of the river and flow southwest if on the east side of the river. The streams in the central and southeastern parts drain generally southward, turning a little southeast in Cloud County before emptying into the Republican River as it flows eastward along northern Cloud county. Rose Creek drains the northwestern half of the northeastern fourth of the county but flows to the northeast, emptying into the Little Blue River in Nebraska. Mill

Creek drains the southeastern half of the northeast fourth and flows east into Washington County where it also empties into the Little Blue River.

One sees from the drainage pattern that the county slopes generally from the northwest to the southeast; the highest area being near the Nebraska line with a maximum elevation of 1640 feet above sea level and the lowest point being about two and one-half miles west of the southeast corner with an elevation of about 1320 feet.

### History

From materials the author has read the county was basically rolling high prairie interrupted by belts of woodland along the streams and by two large salt marshes, the Jamestown Marsh in the southwest corner and the Tuthill Marsh south of Talmo and Wayne..

The oldest reference to the vegetation of the county, the author found, was a series of articles derived from the journal of Augustus Ford Harvey, one of a surveying party which began working in Republic County in October, 1858. These were published as weekly installments in the Belleville Telescope June 30 through August 18, 1960. The original notes are on file in the Marshall County court house, Marysville, Kansas. In the July 7th article he described one prairie plant as having a beautiful pink, round flower about three fourths inch in diameter. The leaves closed when touched, and the plant looked to him like a locust, but his companions called it "sensitive

rose". This was very likely Schrankia nuttallii (D.C.) Standl. In the July 21 article he described one area somewhere along the Republican River as having tangled willow thickets and thick, head high grass. In the July 28 article he mentions very deep and tangled grass one to three feet above their heads as occurring in township 4 south, range 4 west. The party probably was in lowland prairie near the Republican River. Harvey, in the August 11 issue, reports the Jamestown Salt Marsh covered 30,000 acres. Perhaps there was an error somewhere, since the original land plats in 1859 show an estimated 3,000 to 4,000 acres.

The original land survey notes, 1858-59, reveal more information about the early history of the county. The writer of these describes the land as rolling prairie and mentions the following as occurring along streams: hackberry (Celtis occidentalis L.), black walnut (Juglans nigra L.), burr oak (Quercus macrocarpa Mich.), willows (Salix amygdaloides Anderss. and Salix interior Rowlee), cottonwood (Populus deltoides Marsh and Populus sargentii Dode), elm (Ulmus americana L. and Ulmus rubra Muhl.), ash (Fraxinus pennsylvanica Marsh), mulberry (Morus rubra L. and Morus alba L.), box elder (Acer negundo L.), honey locust (Gleditsia tricanthos L.), prickly ash (Xanthoxylum americanum Mill.), and swamp dogwood (Cornus drummondii C. A. Meyer). He also mentions briars and vines in the underbrush. The author is inclined to believe that the "briars" were either Ribes missouriense Nutt. and, or Smilax tamnoides L. var.



hispida (Muhl.) Fern. and that the vines referred to Vitis riparia Mich., Sicyos angulatus L., or Parthenocissus quinquefolia (L.) Planch.

I. O. Savage (1901) in writing of the early history of Republic County estimated that ten percent of the land was river and creek bottoms and ninety percent was high prairie. He estimated that along the streams there were ten to eighty rods of timber composed of ash, black walnut, hackberry, red and white elm, box elder, cottonwood, and oak. Black walnut, ash, elm, and maple (Acer saccharinum L. ?) were also being planted in groves by the settlers.

#### Agriculture and Cultivation

The basic agriculture of the county is corn, wheat, milo, hay, cattle, and hogs. In 1941 about 61 per cent of the total acreage was in cultivation; pastures and "prairies" occupied about 25 per cent; woodlands occupied about 3.5 per cent, with the rest in miscellaneous non-agricultural uses. Nearly two-thirds of the cultivated land showed moderate to extreme erosion. (Eroded pastures were in addition to this). One can see from this that the upland vegetation is much changed from its original high prairie situation. True original prairies are non-existent, but there are some prairie hay fields scattered throughout which are mostly untillable hills or slopes. A few of these sometimes go a year or two without being mowed.

## Aspects of Areas

The aspects of the various areas are based mostly upon the author's collections and observations. These aspects are considered by the author to be fairly complete; however, it is believed that further studies would modify these descriptions slightly.

Grazed prairie pastures in the northwestern three-fourths of the County are basically composed of Buchloe dactyloides with lesser amounts of Poa pratense, Bouteloua hirsuta, Bouteloua curtipendula, with Andropogon scoparius in some.

The spring aspect is characterized by the following: Bromus tectorum and Bromus japonicus are very numerous and widespread, while Poa pratense appears in numerous scattered clumps and Festuca octoflora and Sphenophilus obtusata are only sparsely scattered. Androsace occidentalis is quite numerous and widespread although not very evident. Carex brevior is fairly numerous and extensive on the more level areas while Plantago purshii, Plantago virginica, and Antennaria campestris each appear as scattered colonies although often numerous within the colony. Callirhoe alcaeoides, Lithospermum incisum and Agoseris cuspidata occur sparsely scattered but are fairly evident. Astragalus missouriensis and Senecio plattensis are common on limestone outcrop slopes or hills; Lomatium foeniculatum is less common, while Allium drummondii and Townsendia exscape are sparsely scattered on limestone areas.

Present, but less consistent and characteristic, are

Allium perdulce, Anemone caroliniana, Carex gravida, Carex gravida var. lunelliana, Silene antirrhina, Viola bicolor, Draba reptans, Astragalus plattensis, Astragalus caryocarpus, Plantago rhodosperma, Taraxacum officinale, Taraxacum erythro-spermum, and Sisyrinchium campestre var. kansanum.

The early summer aspect of a grazed prairie pasture is characterized by the following species imposed on the basic structure: Bromus japonicus is numerous, scattered and wide-spread, while Poa pratense occurs in numerous scattered clumps; Buchloe dactyloides extends over large patches; and Agropyron smithii, Bromus squarrosus, Psoralea argophylla, and Plantago purshii are present as scattered colonies. Hordeum pusillum and Juncus interior are common and scattered, while Sphenophilus obtusata, Cyperus filiculmis, Festuca octoflora, Polygala verticillata, and Achillea lanulosa are sparsely scattered more or less throughout. Verbena stricta, Erigeron strigosus, Linum sulcatum, Linum rigidum, and Hymenopappus tenuifolius occur somewhat numerous and scattered. Echinacea augustifolia is very common on limestone hills, while Penstemon Cobaea, Oenothera serrulata, Ratibida columnifera, and Polygala alba occur commonly on limestone hills but not so numerous as E. augustifolia. Oenothera missouriense appears evident but occurs scattered on these stony places.

Others present but less characteristic are Carex gravida, Carex gravida var. lunelliana, Carex brevior, Specularia perfoliata, Specularia leptocarpa, Silene antirrhina, Hedyotus

nigricans, Plantago rhodosperma, Plantago virginica,  
Schedonnardus paniculatus, Delphinium virescens, Callirhoe  
alcaeoides, Callirhoe involucrata, Euphorbia dictyosperma,  
Spermolepis inermis, Opuntia humifusa, Psoralea esculenta,  
Cirsium undulatum, Cirsium vulgare, Haplopappus spinulosus  
var. glaberrima, Hymenopappus filifolius, Tragopogon dubius,  
Thelesperma megapotamicum, Hedeoma hispida, Verbena bipin-  
natifida, Psoralea tenuiflora, Schrankia nuttallii, Taraxacum  
officinale, and Taraxacum erythrospermum.

The late summer aspect of this grazed prairie pasture is characterized as follows: The most evident species are Verbena stricta and Euphorbia marginata which are common and scattered over much of the pasture while Vernonia baldwinii var. interior is the most evident on the lower levels of the pasture. Closer examination reveals Bouteloua hirsuta and Bouteloua curtispindula, to be quite common with Bouteloua gracilis, Sporobolus cryptandrus, Ambrosia psilostachya var. coronopifolia, and Artemisia ludoviciana var. gnaphalodes to be common but less so than the other two. The limestone outcrop slopes and hills also have scattered Polygala alba and Stenosiphon linifolius.

Present in some of the pastures but not as characteristic are Andropogon scoparius, Gerardia aspera, Grindellia squarrosa, Haplopappus spinulosus var. glaberrima, Cirsium vulgare, Erigeron strigosus, Erigeron canadensis, Lactuca scariola, Linum rigidum, Linum sulcatum, Polygala verticillata,

Mollugo verticillata, Euphorbia glyptosperma, Solanum carolinense forma albiflorum, Psoralea tenuiflora, Petalostemum purpureum, Petalostemum candidum, Lactuca scariola, Lotus americanus, Verbascum thaspus, Taraxacum officinale and Taraxacum erythrospermum.

The fall aspect of the grazed prairie pasture is characterized as follows: Bouteloua hirsuta and Bouteloua curtipendula are the most common grasses with Bouteloua gracilis, Eragrostis spectabilis, and Sporobolus cryptandrus common but less so than the first two.. On the more level areas Euphorbia marginata is evident and common but is scattered throughout. On the limestone hills or outcrop areas Solidago rigida is numerous and present along with it are some Liatris punctata and Liatris aspera.

Also present but less characteristic are Andropogon scoparius, Grindellia squarrosa, Kuhnia eupatorioides var. corymbulosa, Eupatorium altissimus, Solidago canadensis var. scabra, and Verbena stricta.

A representative prairie in the northwestern three-fourths of the county is generally on a thin soiled hill or slope and mowed almost every year. The basic grasses present are Andropogon gerardi and Andropogon scoparius along with lesser amounts of Sorghastrum nutans, Panicum virgatum, Bouteloua hirsuta, Bouteloua curtipendula, and Poa pratense. The following give the appearances of the area at the designated times.

The spring aspect of the prairie is characterized as follows: Bromus japonicus and Poa pratense are numerous,

widespread, and evident; while Sphenophilus obtusata appears in scattered clumps and Koeleria cristata in yet fewer and smaller scattered clumps. Sisyrinchium campestre var. kansanum is common and widespread. Allium drummondii is commonly scattered within large colonies while Draba reptans is common but not evident. Agoseris cuspidata and Lomatium foeniculatum are scattered but evident. Near the end of the spring aspect Penstemon Cobaea becomes common.

The early summer aspect is characterized as follows: Poa pratense, Bromus japonicus, and Sphenophilus obtusata are still present but are being replaced by other species. Panicum scribnerianum is fairly numerous and extensive as also is Hedyotus nigricans. Echinacea augustifolia is quite evident and fairly numerous with Penstemon Cobaea, Oenothera serrulata, Delphinium virescens, Polygala alba, Petalostemum purpureum, and Thelesperma megapotamicum being less numerous, but still evident. Oenothera missouriense is evident but not very numerous and Amorpha canescens is present in colonies.

Others found but less characteristic are Erigeron strigosus, Festuca octoflora, Koeleria cristata, Tragopogon dubius, Achillea lanulosa, Schrankia nuttallii, Haplopappus spinulosus var. glaberrima, Ratibida columnifera, Elymus canadensis var. brachystachys, Petalostemum candidum, Lotus americanus, Buchloe dactyloides, and Psoralea tenuiflora..

The late summer aspect of the prairie is characterized as follows: Petalostemum purpureum, Dalea aurea, Dalea enneandra, Stenosiphon linifolius, and Salvia azurea var.

grandiflora are all evident but not actually very numerous. There is some Andropogon gerardi, Andropogon scoparius, Panicum virgatum, Aster oblongifolius, Liatris punctata var. nebraskana, and Liatris aspera in early flower. Bouteloua hirsuta and Bouteloua curtipendula are fairly numerous and widespread.

Other species present but less characteristic are: Thelesperma megapotaemicum, Oenothera serrulata, Petalostemum candidum, Psoralea tenuiflora, Lotus americanus, Solidago missouriense var. fasciculata, Silphium speciosum, and Aster sericeus.

The fall aspect of the prairie is characterized as follows: Andropogon gerardi and Andropogon scoparius are numerous, evident, and extensive with some Sorghastrum nutans and Panicum virgatum scattered among them. Aster oblongifolius is somewhat common along with Liatris punctata var. nebraskana, and Liatris aspera. There are also scattered Helianthus maximiliani and a few small groups of Silphium speciosum. Bouteloua hirsuta and Bouteloua curtipendula are about gone by and are definitely obscured. Found but less characteristic are: Solidago missouriensis var. fasciculata, Helianthus laetiflorus var. rigidus, and Aster sericeus.

The grazed prairie pasture in the Dakota sandstone area of the county is overlaid by thin sandy loam with outcroppings of sandstone in places. The basic structure of the pasture is Andropogon scoparius, with considerable Poa pratense, and some

*Bouteloua hirsuta*, and *Bouteloua curtipendula*.

The spring aspect is characterized as follows: *Bromus japonicus*, *Poa pratense*, and *Panicum scribnerianum* are numerous widespread and evident. *Carex brevior* and *Tradescantia occidentalis* are common but scattered on the more level areas. *Agrostis hiemalis* is scattered in clumps. *Cerastium brachypodium* and *Androsace occidentalis* are numerous and scattered but not very evident. *Hymenopappus tenuifolius* is coming into flower in large colonies. *Tradescantia tharpilii* is common and scattered on the sandstone outcrop areas.

Also present but not as characteristic are: *Linum sulcatum*, *Linum rigidum*, *Panicum huachucae*, *Carex gravida*, *Carex gravida* var. *lunelliana*, *Astragalus plattensis*, *Oenothera serrulata* (early), *Asclepias nuttalliana*, *Silene antirrhina*, *Haplopappus spinulosus* var. *glaberrima*, *Festuca octoflora* and *Asclepias viridis*.

The early summer aspect of this Dakota area grazed prairie pasture is characterized as follows: *Panicum scribnerianum* and *Bromus japonicus* are numerous and widespread. *Erigeron strigosus* and *Hymenopappus tenuifolius* are numerous with large colonies. *Carex brevior* and *Tradescantia occidentalis* are scattered on the more level areas while *Agrostis hiemalis* is scattered in clumps throughout.

Others found but less characteristic are: *Linum sulcatum*, *Linum rigidum*, *Carex gravida*, *Carex gravida* var. *lunelliana*, *Panicum huachucae*, *Oenothera serrulata*, *Opuntia humifusa*,



Festuca octoflora, Argemone intermedia, Psoralea argophylla,  
Achillea lanulosa, Agropyron smithii, Tragopogon dubius,  
Haplopappus spinulosus var. glaberrima, Astragalus plattensis  
(in fruit), Juncus interior, Cirsium undulatum, Verbena stricta  
and Polygala verticillata.

The late summer aspect of the grazed prairie pasture in the Dakota area is characterized as follows: No one species appears to be very numerous or evident. Cirsium undulatum, Verbena stricta, Achillea lanulosa, Linum sulcatum, Linum rigidum, Vernonia baldwinii var. interior, Polygala verticillata, and Lotus americanus in the forepart of late summer each have a few scattered which are in flower. In the latter part of the late summer aspect Verbena stricta, Vernonia baldwini var. interior, Polygala verticillata, and Lotus americanus are still in flower. Scattered Euphorbia marginata, Heterotheca latifolia var. McGregoris, Panicum virgatum, Muhlenbergia asperifolia, Solidago missouriensis var. fasciculata, Bouteloua hirsuta, Bouteloua curtipendula and Grindellia squarrosa appear at this time. Numerous and scattered in the pasture but just beginning to come out are Andropogon scoparius, Ambrosia psilostachya var. coronopifolia and Artemisia ludoviciana var. gnaphalodes, Artemisia ludoviciana var. ludoviciana is present but very sparse, and Panicum scribnerianum is still present but is obscured.

The fall aspect for the grazed prairie pasture in the Dakota area has not been well collected but the following is

a sketch based on a few collections and observations. The most prevalent and evident species is Andropogon scoparius; however Ambrosia psilostachya var. coronopifolia and Artemisia ludoviciana var. gnaphalodes are very common and widespread.. There are a few scattered Liatris punctata var. nebraskana, Grindellia squarrosa, Heterotheca latifolia var. McGregoris, Euphorbia marginata, Leptoloma cognatum, Eragrostis spectabilis, Artemisia ludoviciana var. ludoviciana, Verbena stricta, Muhlenbergia asperifolia and Solidago missouriensis var. fasciculata. Gerardia tenuifolia var. macrophylla occurs in a few dense colonies.

The woodlands in the county almost all occur along the river and along the streams. Present in the woodlands one finds these trees: Acer negundo var. violaceum, Juglans nigra, Fraxinus pennsylvanica var. subintegerrima, Fraxinus pennsylvanica var. austini (rare), Ulmus americana, Ulmus rubra, Celtis occidentalis var. pumila, Celtis occidentalis var. occidentalis, Quercus macrocarpa, Gleditsia trichanthos, Morus rubra, and Morus alba. Also present but not very numerous are Gymnocladus dioica and Catalpa speciosa.. These may not all be found at one time but occur in varying numbers in different localities with few set patterns.

Salix amygdaloides, Salix interior, Populus deltoides, and Populus sargentii make up most of the border along the river along with an occasional Salix nigra.

The spring aspect of woodlands is characterized as follows:

Parthenocissus quinquefolia is present either numerous and growing on the floor or as a few vines climbing the trees. Ribes missouriense is common and flowering, with Vitis riparia present as a few climbing vines. Smilacina stellata (not very often), Polygonatum canaliculatum, and Viola papilionacea occur as groups or singly. Galium aparine, Sanicula canadensis, and Ellisia nyctelia are often present, but are not numerous.

The early summer aspect of woodlands is characterized by: Geum canadense var. camporum, Sanicula canadense, and Oxalis stricta are fairly common and scattered; Parietaria pennsylvanica and Elymus virginicus var. jejunis are present as large colonies of each; covering much of the floor of the woods in some areas. Ribes missouriense is common and in fruit. Smilacina stellata and Polygonatum canaliculatum are in fruit.

The late summer herbaceous aspect of woodlands is often characterized by: Parietaria pennsylvanica and Elymus virginicus var. jejunis covering considerable floor area while Urtica dioica var. procera is in dense extensive colonies. Sicyos angulatus has vined considerably and is in flower and early fruit. Sanicula canadense, Geum canadense var. camporum and Oxalis stricta are in late flower and fruit; and Smilacina stellata and Polygonatum canaliculatum are in late fruit. Solanum americanum, Chenopodium boschianum, Hackelia virginiana, and Teucrium canadense var. virginicum are scattered.

Menispermum canadense occurs occasionally, and Polygonum punctatum occurs in a few colonies.

The woody vines, Vitis riparia and Smilax tamnoides var. hispida occur as scattered climbing vines and have ripening fruit, while Rhus radicans occurs both as a prostrate and climbing vine - also in fruit.

The fall aspect of the woodlands is characterized basically by the maturation and final fruiting of the late summer species with the addition of Solidago gigantea scattered in the river woodlands.

The early summer aspect of open woodlands and woodland borders is characterized as follows: Verbena urticifolia and Oxalis stricta are the most common and characteristic. Cornus drummondii, Hackelia virginiana, Sambucus canadensis and Physalis heterophylla occur fairly commonly in groups or scattered.

Others which occur but are not as characteristic are: Conium maculatum, Plantago rugellii, Plantago major, Rubus occidentalis, Rumex crispus, Rumex altissimus, Lappula echinata, X Verbena Engelmannii, X Verbena Rydbergii, X Verbena illicita, (these three Verbena hybrids occur together in a semi-wooded pasture along a stream), Ruellia humilis, Xanthoxylum americanum (in fruit), Thalictrum dasycarpum (in fruit), Teucrium canadense var. virginicum, Phryma leptostachya, Mentha arvensis var. villosa forma glabrata, Lycopus americanus, Carex granularis, and Ellisia nyctelia.

During late summer in open woods and along the borders of woods the following may be found: Urtica dioica var. procera, Cannabis sativa, Actinomeris alternifolia and Verbena urticifolia, each of which occurs in patches of itself fairly commonly. Oxalis stricta occurs commonly scattered as does Hackelia virginiana (Hackelia a little less numerous). Those which occur less commonly or even singly are: Symphoricarpos orbiculatus, Arctium minus, Acalypha rhomboidea, Lobelia splendens (by streams), Xanthoxylum americanum (fruit), Penthorum sedoides (by stream), Sida spinosa, Alisma triviale (edge of stream), Mentha arvensis var. villosa formaglabrata, Mimulus ringens (moist alluvium) Lycopus americanus, Solidago gigantea, Verbena hybrids, Lactuca canadense var. filifolius, Monarda fistulosa var. mollis, and Cornus drummondii (fruit).

The fall aspect of the woodland edges and open woods basically is the maturation of the late summer species along with the addition of some scattered Muhlenbergia frondosa, Bidens vulgata and Bidens frondosa.

In many of the draws and ravines in the hills and occasionally elsewhere there are springs or seepage areas. Some of these are very small; while others are large enough to keep a large area in marshy condition; and occasionally one is large enough to provide water for a household. Sometimes these springs are dammed up, making a pond generally used for watering cattle and for fishing. The only woody perennials which regularly grow on these areas are Salix interior, and Salix amygdaloides, which occur more often on the larger marshy area.

The early summer aspect of these marshy areas in general is characterized as follows: Scirpus americanus and Typha latifolia occur in large and small groups which are quite exclusive of other species. Eleocharis palustris commonly occurs in very shallow water or along the border of the marsh; often growing between or under the larger sized species. Scirpus atrovirens, Scirpus validus, Carex lasiocarpa var. latifolia, Juncus torreyi, and Verbena hastata occur common to scarce but are scattered. Carex vulpinoidea is common in clumps around the edges of the marsh. One may also at times find: Phalaris arundinacea, Rumex crispus, Rumex altissimus, Rorippa sessiliflora, Rorippa sinuata, Equisetum laevigatum, Equisetum kansanum, Ranunculus scleratus, Potentilla paradoxa, Berula pusilla, Hordeum jubatum, Acorus calamus, Sphenophylus obtusata, Carex normalis, Trifolium repens, Agrostis alba, Cicuta maculata, Polygonum persicaria var. ruderales, Mentha arvensis var. villosa forma glabrata, Lycopus americanus, Teucrium canadense, Sparganium eurycarpum, Lemna minor, Lemna perpusilla, and Spirodella polyrrhiza. Species which are found only in the Dakota sandstone areas are: Glyceria striata; somewhat common and scattered; Carex scoparia and Carex hystri-cina in scattered clumps in one area; Juncus tenuis, found scattered at the edge of one location with Juncus marginatus common in the seepage areas.

The late summer aspect of the generalized seepage areas is characterized as follows: Echinochloa crusgalli, Polygonum

lapathifolium, Polygonum pennsylvanicum var. pennsylvanicum, Cyperus strigosus, and Juncus torreyi are common and are often in separate groups. Not too numerous but evident are Verbena hastata (numerous in the sandstone areas), Asclepias incarnata, and Bidens glaucescens. Sagittaria latifolia var. latifolia and Sagittaria brevirostra occur commonly in the shallow water.

Also present at times are: Polygonum punctatum var. leptostachyum, Polygonum hydropiperoides, Eclipta alba, Setaria glauca, Scutellaria laterifolia, Ranunculus scleratus, Potentilla paradoxa, Berula pusilla, Sagittaria Engelmanniana, Sagittaria laterifolia var. obtusa, Epilobium coloratum, Lemna minor, and Spirodella polyrhiza.

Occuring only in sandstone seepage areas (at least according to present collections) are: Lobelia siphilitica, Hypericum mutilum, and Pilea pumila (a few of each), and numerous scattered Agrimonia parviflora.

The fall aspect of the seepage areas is basically a maturation of the late summer species along with the addition of numerous Iva annua, Ambrosia trifida, and Leersia oryzoides and some Aster simplex and Aster praealtus.

There are several ponds in the County which have been made by placing a small earthen dam across a draw or small ravine. These may be filled by run-off water or by a combination of run-off water and spring water. In these one sometimes finds Potamogeton foliosus common, Potamogeton nodosus common in two ponds, Potamogeton pectinatus, some found in one pond,

and Ceratophyllum demersum, common in one pond. The following found in or around ponds flower in early summer: Bacopa rotundifolia, numerous in shallow water of one pond and Heteranthera limosa, numerous around the edge of one pond. Rorippa sessiliflora and Eleocharis palustris are common in very shallow water along the edges.

In the late summer and fall one sometimes finds in addition to the above: Ammania coccinea, Echinodorus rostratus, Cyperus erythrorhizus, and Heteranthera limosa (not flowering). Each has been found in only one location but was common along the edges of the pond where it was found. Sagittaria latifolia var. latifolia is common in shallow water along the edge of at least two ponds and Sagittaria graminea (not found in flower or fruit) is scattered in the fairly shallow water of one pond. A group of Polygonum coccineum var. rigidulum is present in one pond.

Very little blooms on the sand bars and river banks in the spring besides Salix interior, Salix amygdaloides, Salix nigra (scattered), Populus deltoides, and Populus sargentii. In early summer one also finds Scirpus validus, a little Juncus torreyi, some Rorippa sessiliflora, Rorippa islandica, Rumex alluvius, Rumex maritimus and Apocynum cannabinum, plus a few Lindernia anagallidea. By late summer the Rorippa species are gone by, and Rumex alluvius is almost all brown. Occasionally present, then, are Mimulus ringens, Scutellaria laterifolia, and Penthorum sedoides. Numerous in places are Iva annua and Apocynum cannabinum (fruit). Xanthium pennsylvanicum is blooming at this time.



## Annotated List

The following list of 581 taxa includes those collected in Republic County by the author in 1960-61. Included in addition to these are a few species collected by Dr. W. H. Horr of Kansas University in 1953, and one species collected in 1960 by Donald Guyer of Belleville. Also included are the names of taxa listed by Weaver and Albertson (1943), Gates (1940), and Schaffner (1898), which were not found by this author. Each of this group of 66 taxa is indicated by placing the particular author's name and the publication date after the name of the taxon. A number of taxa which the author did not collect were listed by Gates (1940) for one or more of the neighboring Kansas counties; Jewell, Mitchell, Cloud, Clay, and Washington; but these taxa are not included in this list.

About 67 of the taxa included in this list were not reported by the above named authors as being present in the six county area. One species, *Juncus Bufonius* L., has not been previously reported for Kansas.

The families are listed alphabetically as are the genera and the species within a family.

The nomenclature follows the eighth edition of Gray's Manual for most of the families. The nomenclature in the Compositae, Cyperaceae, Juncaceae, Umbelliferae, Polygonaceae, and Equisetaceae follows the third edition of Britton and

Brown (An Illustrated Flora of the Northeastern United States and Adjacent Canada, 1952). The nomenclature in the Oxalidaceae follows George Eiten of the New York Botanical Garden, in the genus *Allium* follows Marion Ownbey (*Allium Canadense and Its Allies in North America*), in the genus *Physalis* follows U. T. Waterfall (*Monograph of the Genus Physalis*) and in the genus *Asclepias* follows Woodson (*North American Species of Asclepias*). For some of the species not covered by the above publications the nomenclature follows Rydberg (*Flora of the Prairies and Plains of Central North America*, 1932). Some of the species listed by Gates (1940) are not covered by other authors and are here on his authority.

Acanthaceae

*Ruellia humilis* Nutt. var. *frondosa* Fern.--sparse woodlands along creek

Aceraceae

*Acer negundo* L. var. *violaceum* (Kirsch) Jacq.--woodlands along streams

*Acer saccharinum* L.--group found on wooded farm lot

Aizoaceae

*Mollugo verticillata* L.--sandy waste or disturbed areas

Alismaceae

*Alisma triviale* Pursh.--partially shaded edges of small streams

*Echinodorus rostratus* (Nutt.) Engelm.--shores of ponds

*Sagittaria latifolia* Willd. var. *latifolia*--edges of slow streams and ponds, marshes

*Sagittaria latifolia* Willd. var. *obtusata* (Muhl.) Wieg. marshy area

*Sagittaria brevirostrata* Mack. and Bush.--same as preceding

*Sagittaria graminea* Michx.--seepage pond

Amaranthaceae

*Amaranthus albus* L.--sandy roadside

*Amaranthus arenicola* Johnst.--waste areas

*Amaranthus blitoides* S.Wats.--sandy waste area, pasture draw

*Amaranthus retroflexus* (Gray) Benth.--roadsides, fields, waste places

*Amaranthus tamariscina* Nutt.--waste areas and in salt  
marshes

*Amaranthus chlorostachys* Willd.--Schaffner, 1898

*Froelichia gracilis* (Hook.) Moq.--sandy waste area  
near R.R. station

#### Amaryllidaceae

*Sisyrinchium campestre* Bickn. var. *kansanum* Bickn.--  
grazed pastures and prairies

#### Anacardiaceae

*Rhus glabra* L.--overgrazed pastures, roadsides, R.R.  
right-of-ways, draws

*Rhus radicans* L.--woods, roadsides, draws

#### Apocynaceae

*Apocynum androsaemifolium* L.--Weaver and Albertson, 1943

*Apocynum cannabinum* L.--roadsides, waste places

*Apocynum sibiricum* Jacq.--same

#### Araceae

*Acorus calamus* L.--wet seepage areas

#### Asclepiadaceae

*Asclepias amplexicaulis* Smith--Weaver and Albertson,  
1943

*Asclepias asperula* (Decne) Woodson ssp. *capricornu*  
(Woodson) Woodson--Weaver and Albertson, 1943

*Asclepias incarnata* L. var. *incarnata*--wet seepage areas

*Asclepias latifolia* (Torr.) Raf.--Weaver and Albertson  
(1943)

- Asclepias nuttalliana* Torr.--few on sandstone pasture
- Asclepias pumila* (A.Gray) Vail--Gates 1940
- Asclepias speciosa* Torr.--sandy roadsides, R.R. right-of-way, salt marsh prairie
- Asclepias stenophylla* A.Gray--roadside
- Asclepias sullivantii* Engelm.--roadsides in sandstone area, salt marsh prairie
- Asclepias syriaca* L.--roadsides, waste places, cultivated fields
- Asclepias verticillata* L.--salt marsh prairie, also on roadsides
- Asclepias viridiflora* Raf.--prairies, pastures, and roadsides
- Asclepias viridis* Walt.--grazed pastures, roadsides

#### Bignoniaceae

- Catalpa speciosa* Warder.--Woodlands and cultivated as ornamentals and shade

#### Boraginaceae

- Hackelia virginiana* (L.) Johnst.--woods
- Lappula echinata* Gilig.--edge of woods
- Lappula occidentalis* (S.Wats.) Greene-R.R. right-of-way
- Lithospermum incisum* Lehm.--grazed pasture
- Onosmodium occidentale* Mack.--grazed pasture limestone outcrop

## Cactaceae

*Neomammillaria missouriensis* (Sweet) Britt. and Rose--  
in Gates 1940

*Opuntia humifusa* Raf.--grazed pastures

## Campanulaceae

*Specularia leptocarpa* (Nutt.) Gray--grazed pastures

*Specularia perfoliata* (L.) A.D.C.--waste places and  
grazed pastures

## Capparidaceae

*Cleome serrulata* Pursh--Gates 1940

*Cristatella jamesii* T. & G.--Gates 1940

*Polanisia trachysperma* T. & G.--Gates 1940

## Caprifoliaceae

*Sambucus canadensis* L.--edge of woods and roadsides

*Symphoricarpos occidentalis* Hook.--slopes of river  
bluffs pasture

*Symphoricarpos orbiculatus* Moench.--draw slopes and  
edge of woods

## Caryophyllaceae

*Cerastium brachypodum* (Engelm.) Robins--grazed sand-  
stone pastures

*Paronychia jamesii* T. & G.--high limestone hills pasture

*Saponaria officinalis* L.--escaped and escaping along  
roadsides

*Silene antirrhina* L.--grazed pastures

*Stellaria media* (L.) Cyrilla--lawns

Celastraceae

*Celastrus scandens* L.--edge of woods and in thickets

Ceratophyllaceae

*Ceratophyllum demersum* L.--deep spring fed pond

Chenopodiaceae

*Atriplex argentea* Nutt.--edge of salt marsh flats

*Atriplex patula* L. var. *hastata* (L.) Gray--same

*Bassia hyssopifolia* (Pall.) Ktze.--waste areas, cultivated fields, roadsides, etc.

*Chenopodium album* L.--waste areas and roadsides

*Chenopodium berlanderi* Moq.--dry soil--Gates 1940

*Chenopodium boscianum* Moq.--woods

*Chenopodium hybridum* L. var. *gigantospermum* (Aellen)

Rouleau--woods and waste places

*Chenopodium incanum* (S.Wats.) Heller--dry ground--Gates 1940

*Chenopodium leptophyllum* Nutt.--roadsides and waste areas

*Cycloloma atriplicifolium* (Spreng) Cout.--roadside along river bottom land-sand

*Kochia scoparia* (L.) Schrad.--waste places, fields, and roadsides--Gates 1940

*Monolepis nuttalliana* (Schultze) Greene--waste areas

*Salsola Kali* L.--mainly on slopes of river bluff ravines

*Suaeda depressa* (Pursh) S.Wats.--salt marsh flats

#### Commelinaceae

*Commelina communis* L. var *ludens* (Miquel) C.B. Clarke--  
somewhat shaded unmowed areas of yards and edge of  
one woodland

*Tradescantia bracteata* Small--pastures and roadsides

*Tradescantia occidentalis* Britt. & Smyth--sandy road-  
sides and sandstone pasture

*Tradescantia tharpia* Anders. & Woodson--grazed sand-  
stone pastures

*Tradescantia virginiana* L.--sandy roadside

#### Compositae

*Achillea lanulosa* Nutt.--prairies, grazed pastures,  
roadsides

*Achillea occidentalis* Raf.--Weaver and Albertson, 1943

*Actinomeris alternifolia* (L.) D.C.--edge of woods, in  
open woods

*Agoseris cuspidata* (Pursh) Raf.--limestone hills in  
grazed pastures and prairies

*Ambrosia artemisiifolia* L. var. *elatior* (L.) Descoutils)  
--grazed pasture and roadsides

*Ambrosia psilostachya* D.C. var. *coronopifolia* (T. & G.)  
Farw.--roadsides, fields, waste places, yards, grazed  
pastures

*Ambrosia trifida* L.--marshy areas, edge salt marsh flats



*Antennaria campestris* Rydb.--grazed pastures  
*Arctium minus* (Hill) Bernh.--open woods and edge of  
woods  
*Artemisia campestris caudata* (Michx.) Hall & Clements--  
Gates, 1940  
*Artemisia ludoviciana* Nutt. var. *gnaphalodes* (Nutt.)  
T. & G.--pastures  
*Artemisia ludoviciana* Nutt. var. *ludoviciana*--roadsides  
and pastures  
*Aster ericoides* L.--grazed pastures roadsides, and  
waste places  
*Aster ericoides* L. forma *caeruleus* (Benke) Blake--road-  
side bank  
*Aster oblongifolius* Nutt.--prairies and roadsides  
*Aster praealtus* Poir.--edges of moist woods  
*Aster sericeus* Vent.--prairies, sandstone pasture  
*Aster simplex* Willd. var. *ramosissimus* (T. & G.) Cronq.  
--edge of salt marsh flats  
*Aster sagittifolius* Wedemeyer var. *Drummondii* (Lindl.)  
Shinners--one found in alley  
*Bidens bipinnata* L.--unmowed areas of yards  
*Bidens frondosa* L.--seepage areas, shaded stream bank  
*Bidens glaucescens* Greene--seepage or low wet places,  
moist woods  
*Bidens vulgata* Greene--seepage areas, low wet places,  
moist woods

*Chrysopsis ballardi* Rydb.--river bluffs pasture (sandy)  
*Chrysopsis hirsutissima* Greene--river bluffs pasture  
*Cirsium altissimum* (L.) Spreng.--waste places, grazed  
 pastures, and roadsides  
*Cirsium flodmanii* (Rydb.) Arthur--Gates, 1940  
*Cirsium ochrocentrum* A. Gray--Gates, 1940  
*Cirsium undulatum* (Nutt.) Spreng var. *megacephalum*  
 (Gray) Fern.--grazed pastures  
*Cirsium undulatum* var. *undulatum* (Nutt.) Spreng--grazed  
 pastures  
*Cirsium vulgare* (Savi.) Tenore--thick in shallow draws  
 of pastures and fields, becoming a real pest.  
*Coreopsis tinctora* Nutt.--wheat stubble  
*Dyssodia papposa* (Vent.) Hitchc.--bottom and sides of  
 river bluff ravines  
*Echinacea angustifolia* D.C.--limestone outcrops in  
 prairies, pastures, etc.  
*Eclipta alba* (L.) H.S.S.K.--edge of pond and on gravel  
 edge of a spillway stream  
*Erigeron annuus* (L.) Pers.--pastures  
*Erigeron canadensis* (L.)--roadsides, waste places,  
 fields  
*Erigeron divaricatus* Michx.--edge of dry lawn  
*Erigeron strigosus* Muhl.--roadsides, grazed pastures,  
 prairies  
*Eupatorium altissimum* L.--roadsides, pasture

*Eupatorium rugosum* Geutt.--woodlands  
*Euthamia gymnospermoides* Greene--Gates 1940  
*Gaillardia pulchella* Foug.--Gates 1940  
*Gnaphalium obtusifolium* L.--salt marsh prairie  
*Grindellia squarrosa* (Pursh) Dunal--dry grazed pastures  
*Haplopappus spinulosus* (Pursh) D.C. var. *glaberrima*  
(Rydb.) Blake--grazed pastures and prairie  
*Helianthus annuus* L.--roadsides, fields, waste places  
*Helianthus grosseserratus* Martens--Gates 1940  
*Helianthus hirsutus*--few along roadside  
*Helianthus laetiflorus* Pers. var. *rigidus* (Cass) Fern.--  
limestone outcrop prairie  
*Helianthus maximiliani* Schrader--prairies and river  
bluffs pasture, R.R. right-of-way, roadsides  
*Helianthus petiolaris* Nutt.--sandy roadsides or waste  
areas  
*Helianthus tuberosus* L. var. *tuberosus*--limestone out-  
crop prairie, roadsides, edge of woods  
*Helianthus tuberosus* L. var. *subcanescens* Gray--same  
*Heliopsis scabra* Duval--shaded edges of roads and wood-  
land edges  
*Heterotheca latifolia* Buckley var. *McGregoris* Wagen.--  
sandy or sandstone pastures and roadsides  
*Hieracium longipilum* Torr.--grassland  
*Hymenopappus filifolius* Nook.--few found on high lime-  
stone grazed pasture

*Hymenopappus tenuifolius* Nutt.--numerous on grazed  
 pastures

*Iva annua* L.--edge salt marsh flats, pastures waterholes,  
 fresh water marsh

*Iva xanthifolia* Nutt.--roadsides, waste areas, edge of  
 woods

*Kuhnia eupatorioides* L. var. *corymbulosa* T. & G.--  
 pastures

*Lactuca canadensis* L. var. *longifolia* (Michx.) Farw.--  
 edge of and in moist woods

*Lactuca ludoviciana* (Nutt.) D.C.--roadsides

*Lactuca pulchella* (Pursh) D.C.--waste places, edges of  
 woods

*Lactuca scariola* L.--roadsides, waste places, fields

*Liatris aspera* Michx.--limestone hills in prairies and  
 grazed pastures

*Liatris punctata* Hook. var. *nebraskana* Gaiser--limestone  
 hills in prairies and grazed pastures

*Lygodesmia juncea* (Pursh) Dunal--steep roadsides

*Lygodesmia rostrata* A. Gray--Gates, 1940

*Pyrrhopappus grandiflorus* Nutt.--few on limestone out-  
 crop

*Ratibida columnifera* (Nutt.) Wooton & Standl.--ubiquitous,  
 except very wet areas, especially found on limestone  
 outcrops of overgrazed pastures

*Rudbeckia hirta* L.--few on newly planted pasture  
*Rudbeckia triloba* L. var. *triloba*--planted in yards  
 and apparently escaping in town  
*Senecio plattensis* Nutt.--limestone outcrops of grazed  
 pastures  
*Silphium speciosum* Nutt.--prairie  
*Solidago angustata* T.&G.--Weaver & Albertson, 1943  
*Solidago canadensis* L. var. *scrabra* (Muhl.) T.&G.--  
 pasture  
*Solidago gigantea* Ait.--roadside, river bank, drainage  
 canal  
*Solidago missouriensis* Nutt. var. *fasciculata* Holz.--  
 prairies, roadsides, and grazed pastures  
*Solidago mollis* Bartl.--roadsides  
*Solidago petiolaris* Ait.--sides of river bluff ravine  
*Solidago rigida* L.--limestone outcrop on pastures  
*Sonchus asper* (L.) Hill--roadsides and waste places  
*Taraxacum erythrospermum* Andrz.--grazed pastures, road-  
 sides  
*Taraxacum officinale* Weber--grazed pastures, roadsides,  
 waste places, lawns  
*Thelesperma megapotamicum* (Spreng.) Kuntze--grazed  
 pastures and prairies  
*Townsendia exscapa* (Richards) Porter--limestone out-  
 crops in grazed pastures

*Tragopogon dubius* Scop.--numerous on roadsides, waste places, some on grazed pastures

*Tragopogon porrifolius* L.--Gates, 1940

*Vernonia baldwini* Torr. var. *interior* (Small)Schub.--grazed pastures

*Xanthium pennsylvanicum* Wallr.--cultivated fields, waste areas, river bank

*Xanthium strumarium* L.--Schaffner (1898)

#### Convolvulaceae

*Convolvulus arvensis* L.--fields, roadsides, waste places

*Convolvulus interior* House--Gates, 1940

*Convolvulus sepium* L.--roadsides, edges of fields

*Cuscuta Coryli* Engelm.--waste places

*Cuscuta cuspidata* Engelm.--waste places

*Cuscuta glomerata* Choisy var. *neuropetala* Hitchc.--found on *Salix* on river bank

*Ipomea hederacea* (L.) Jacq.--thickets

*Ipomea purpurea* (L.) Roth--roadside, creek edge, garden

#### Cornaceae

*Cornus drummondii* C.A. Meyer--roadsides, thickets, and edge of woods

#### Cruciferae

*Arabis hirsuta* (L.) Scop. var. *pycnocarpa* (Hopkins)

Rollins--few at edge of wooded slope

*Brassica kaber* L.--fields and roadsides  
*Camelina microcarpa* Andr.--roadsides and waste places  
*Capsella bursa-pastoris* (L.) Medic.--roadsides, waste  
 places, lawns  
*Descurania pinnata* (Walt.) Britt.--roadsides, waste  
 areas, grazed pastures  
*Descurania sophia* (L.) Webb--waste area, pasture, road-  
 sides  
*Draba reptans* (Lam.) Fern.--grazed pastures and prairies  
*Erysimum repandum* L.--roadsides, waste places, over  
 grazed pastures  
*Hesperis matronalis* L.--roadsides and occasional in  
 open woods  
*Lepidium densiflorum* Schrader--ubiquitous  
*Rorippa islandica* (Oeder) Borbas--sand bars, border of  
 semi-shaded small stream  
*Rorippa sessiliflora* (Nutt.) Hitchc.--edge of ponds and  
 on sand bars  
*Rorippa sinuata* (Nutt.) Hitchc.--low wet places and at  
 edge of ponds  
*Sisymbrium altissimum* L.--Gates, 1940  
*Thlaspi arvense* L.--roadsides and waste places

Cucurbitaceae

*Cucurbita foetidissima* H.B.K.--R.R. right-of-ways,  
 waste places

*Sicyos angulatus* L.--woods

Cupressaceae

*Juniperus virginiana* L.--prairie or pasture hillsides

Cyperaceae

*Carex annectans* (Bickn.) Bickn. var. *xanthocarpa*

(Bickn.) Wieg--saltmarsh prairie

*Carex brevior* (Dewey) Mack.--pastures and level places  
of prairie

*Carex bushii* Mack.--salt marsh prairie, sandstone  
pastures (in moist areas sometimes)

*Carex cephalophora* Muhl. var. *mesochorea* (Mack.) Gl.--  
grazed pasture

*Carex eleocharis* Bailey--river bluffs pasture

*Carex granularis* Muhl.--shaded stream bank

*Carex gravida* Bailey--pastures and low prairies

*Carex gravida* Bailey var. *lunelliana* (Mack.) Herm.--  
same

*Carex grisea* Wohl.--shaded stream bank

*Carex heliophila* Mack.--one plant found in grazed  
pasture

*Carex hystricina* Muhl.--sandstone pasture seepage areas

*Carex lasiocarpa* Ehrh. var. *latifolia* (Bock) Gl.--  
very wet seepage areas

*Carex normalis* Mack.--seepage areas

*Carex scoparia* Schk.--sandstone pasture seepage areas



*Carex stipata* Muhl. var. *stipata*--sandstone pasture  
 seepage area

*Carex vulpinoidea* Michx.--edge of ponds, low wet, and  
 seepage areas

*Carex sparganioides* Muhl. var. *aggregata* (Mack.) Gl.--  
 salt marsh prairie

*Cyperus erythrorhizus* Muhl.--shore of pond

*Cyperus ferruginescens* Boeckl.--Gates, 1940

*Cyperus filiculmis* Vahl.--grazed pastures

*Cyperus inflexus* Muhl.--Gates, 1940

*Cyperus schweinitzii* Torr.--low moist soil

*Cyperus strigosus* L.--low moist areas and also along  
 roadsides

*Eleocharis palustris* L.) R.&S.--low wet areas in salt  
 marsh, seepage areas, and edge of ponds

*Eleocharis wolfii* A. Gray--Gates, 1940

*Scirpus acutus* Muhl.--salt marsh

*Scirpus americanus* Pers.--fairly large seepage areas  
 and salt marsh

*Scirpus atrovirens* (Torr.) Gray--seepage and marshy  
 areas

*Scirpus fluviatilis* (Torr.) Gray--salt marsh and edge  
 of salt marsh lake

*Scirpus lineatus* Michx.--seepage areas and salt marsh

*Scirpus paludosis* Nels.--salt marsh

*Scirpus validus* Vahl.--large seepage areas and salt marsh

Eleagnaceae

*Eleagnus angustifolia* L.--few escapes into pastures

Equisetaceae

*Equisetum hyemale* L. var. *affine* Engelm.--near pond  
overflow

*Equisetum kansanum* Schaeffer--sandy hillside, draws,  
low pasture

*Equisetum laevigatum* A. Brown--low wet areas but some-  
times on drier slopes

Euphorbiaceae

*Acalypha rhomboidea* Raf.--in draw, along shaded stream  
bank

*Croton capitatus* Michx.--in pasture near seepage area

*Croton monanthogynus* Michx.--semi-wooded grazed low  
pasture

*Croton texensis* (Klotzsch) Muell, Arg--sandy pastures

*Euphorbia dentata* Michx.--disturbed areas and roadsides

*Euphorbia dictyosperma* Fisch. & Meyer--grazed pasture  
and lowland prairie

*Euphorbia glyptosperma* Engelm.--disturbed areas, grazed  
pasture

*Euphorbia heterophylla* L.--semi-open wooded slope

*Euphorbia hexagona* Nutt.--roadsides in sandy river  
valley

*Euphorbia humistrata* Engelm.--waste areas, bare spots  
in pasture

*Euphorbia maculata* L.--river bluffs, draws

*Euphorbia marginata* Pursh.--grazed pastures and waste  
areas

*Euphorbia obtusata* Pursh.--Gates, 1940

*Euphorbia presslii* Guss.--Gates, 1940

*Euphorbia serpens* H.B.K.--disturbed areas

*Euphorbia supina* Raf.--disturbed areas, bare areas in  
small marsh prairie

#### Fagaceae

*Quercus macrocarpa* Michx.--river and creek valleys  
especially in NE quarter

#### Fumariaceae

*Corydalis campestris* (Britt.) Bushhols & Palmer--damp  
draws, wet roadside

#### Gramineae

*Aegilops cylindrica* Host--roadsides

*Agropyron desertorum* (Fisch.) Schult.--river valley  
roadside

*Agropyron smithii* Rydb.--roadsides, pastures, occasionally  
in prairies

*Agrostis alba* L.--high places in fresh water marsh, low  
pasture

*Agrostis hyemalis* (Walt.) B.S.P.--thick in sandstone  
pasture

*Alopecurus carolinianus* Walt.--Gates, 1940

*Andropogon Gerardi* Vitman--roadsides, prairies  
*Andropogon scoparius* Michx.--roadsides, prairies  
*Andropogon saccharoides* Swartz--roadside of old U.S. 81  
*Aristida oligantha* Michx.--overgrazed dry pasture and  
roadsides  
*Bouteloua curtipendula* (Michx.) Torr.--pastures and  
prairies  
*Bouteloua gracilis* (H.B.K.) Lag.--pastures  
*Bouteloua hirsuta* Lag.--pastures and prairies  
*Bromus inermis* Leyss.--roadsides  
*Bromus japonicus* Thunb.--pastures, prairies, roadsides  
*Bromus secalinus* L.--Gates, 1940  
*Bromus squarrosus* L.--pastures, prairies  
*Bromus tectorum* L.--pastures and roadsides  
*Buchloe dactyloides* (Nutt.) Engelm.--pastures and occa-  
sionally on prairies  
*Calamovilfa longifolia* (Hook.) Scribn.--river bluffs  
pasture and sandy river valley roadside  
*Cenchrus longispinus* (Hackel) Fern.--waste places, river  
bluffs pasture, roadsides  
*Chloris verticillata* Nutt.--lawns, gardens, waste places  
*Digitaria sanguinalis* (L.) Scop.--lawns, gardens, fields,  
waste places  
*Distichlis stricta* (Torr.) Rydb.--salt marsh area  
*Echinochloa crusgalli* L. var. *muricata* (Michx.) Farw.--  
low wet areas

*Ech. crus.* L. var. *microstachya* (Wieg.) Shinners--same  
*Eleusine indica* L.--waste area  
*Elymus canadensis* L. var. *brachystachys* (Scribn. & Ball)  
Farwell--roadsides, salt marsh prairie, waste areas  
*Elymus canadensis* L. var. *robustus* (Scribn. & Smith)  
Mack. & Bush--roadsides, waste areas  
*Elymus virginicus* L. var. *virginicus*--edge draw in low  
pasture  
*Elymus virginicus* L. var. *jejunis* (Ramaley) Bush--floor  
of woods, salt marsh pasture  
*Eragrostis cilianensis* (All.) Lutati--roadsides and  
wasteplaces  
*Eragrostis hypnoides* (Lam.) B.S.P.--Gates, 1940  
*Eragrostis pectinacea* (Michx.) Nees--waste areas and  
roadsides  
*Eragrostis pilosa* (L.) Beauv.--Gates, 1940  
*Eragrostis pilifera* Scheele--river valley roadside  
*Eragrostis spectabilis* (Pursh) Steud.--pastures, road-  
sides, waste places  
*Eragrostis trichodes* (Nutt.) Wood--Gates, 1940  
*Eriochloa contracta* Hitchc.--wheat stubble  
*Festuca obtusa* Bieler--one clump on semi-open wooded  
slope  
*Festuca octoflora* Walt.--scattered in pastures and  
prairies  
*Glyceria striata* (Lam.) Hitchc.--seepage areas

*Hordeum jubatum* L.--edge of large seepage areas and on  
 salt marsh  
*Hordeum pusillum* Nutt.--grazed pastures  
*Koeleria cristata* (L.) Pers.--scattered on prairies  
*Leersia oryzoides* (L.) Sartz--seepage or low wet areas  
*Leersia virginica* Willd.--salt marsh drainage canal  
*Leptoloma cognatum* (Schult) Chase--sandstone pasture  
*Muhlenbergia asperifolia* (Nees & Mey.) Parod.--sand-  
 stone pasture  
*Muhlenbergia cuspidata* (Torr.) Rydb.--dry rocky prairie  
*Muhlenbergia frondosa* (Poir.) Fern.--edge salt marsh  
 flats and along small stream and salt marsh drainage  
 canal  
*Muhlenbergia mexicana* (L.) Trin.--Gates, 1940  
*Muhlenbergia racemosa* (Michx.) B.S.P.--roadsides  
*Panicum capillare* L.--roadsides, waste places, pastures  
*Panicum dichotomiflorum* Michx.--waste areas  
*Panicum huachucae* Ashe.--scattered on sandstone pasture  
*Panicum scribnerianum* Nash.--numerous on sandstone  
 pastures, some on other pastures and prairies, and  
 roadsides  
*Panicum virgatum* L.--salt marsh prairie, river bluffs  
 pasture, prairie  
*Paspalum ciliatifolium* Michx.--sandy pastures and road-  
 sides  
*Phleum pratense* L.--Gates, 1940

*Phalaris arundinacea* L.--fresh water marsh  
*Poa pratensis* L.--pastures and prairies  
*Schedonnardus paniculatis* (Nutt.) Trel.--grazed pasture  
*Setaria glauca* (L.) Beauv.--waste areas, gardens, lawns,  
 pastures, roadsides  
*Setaria viridis* (L.) Beauv.--waste areas, gardens, road-  
 sides  
*Sitanion hystrix* (Nutt.) J. G. Smith & Gates, 1940  
*Sorghastrum nutans* (L.) Nash--prairies, roadsides  
*Sorghum halepense* (L.) Pers.--roadsides  
*Spartina pectinata* Link.--salt marsh, low wet roadsides  
 and pasture  
*Sphenopholis obtusata* (Michx.) Scribn.--grazed pasture,  
 prairie, open flats in river woods  
*Sporobolus asper* (Michx.) Kunth--roadsides, river bluffs  
 pasture  
*Sporobolus cryptandrus* (Torr.) A. Gray--pastures and  
 roadsides  
*Sporobolus heterolepis* Gray--Schaffner 1898  
*Sporobolus neglectus* Nash.--roadsides, farm yards  
*Sporobolus texanus* Vasey--Schaffner 1898  
*Tridens flavus* (L.) Hitchc. forma *cuprea* Fosberg--road-  
 side ditches

#### Hippocastanaceae

*Aesculus glabra* Willd.--few along driveway in wooded  
 area of county

Hydrophyllaceae

*Ellisia nyctelea* L.--moist woodlands or low places

Hypericaceae

*Hypericum mutilum* L.--seepage areas in sandstone  
pasture

Juglandaceae

*Juglans nigra* L.--woodlands along creeks and river

Juncaceae

*Juncus bufonius* L. var. *bufonius*--sandy shore of spring  
fed pond in river valley

*Juncus interior* Wieg.--prairies, pastures, roadsides

*Juncus marginatus* Rostk.--seepage area in sandstone  
pasture

*Juncus tenuis* Willd.--edge of seepage area in sandstone  
pasture

*Juncus torreyi* Cov.--seepage areas, sand bars

Labiatae

*Agastache nepetoides* (L.) Ktze.--Gates, 1940

*Hedeoma hispidum* Pursh.--salt marsh prairie and grazed  
pastures

*Lycopus americanus* Muhl.--open woodlands, moist or wet  
areas

*Marrubium vulgare* L.--waste places in yards and road-  
sides

*Mentha arvensis* L. var. *villosa* (Benth) S.R. Steward  
forma *glabrata* (Genth) S. R. Steward--low marshy areas  
and along streams



*Monarda fistulosa* L. var. *mollis* (L.) Benth.--edge of woods

*Nepeta cataria* L.--waste places in yards and roadsides

*Prunella vulgaris* L.--in shade of tree in grazed pasture

*Salvia azurea* Lam. var. *grandiflora* Benth.--roadsides, prairies, and pastures

*Salvia reflexa* Hornem.--waste places

*Scutellaria lateriflora* L.--seepage area and river bank

*Scutellaria parvula* Michx. var. *leonardi* (Epling) Fern.  
--low areas in prairies or along seepage areas in pastures

*Teucrium canadense* L. var. *virginicum* (L.) Eaton--edge of woods, salt marsh prairie edge, and edge of seepage areas

#### Leguminosae

*Desmanthus illinoensis* (Michx.) MacM.--pastures (especially river bluffs) and salt marsh prairie

*Schrankia nutallii* D. C. Standl--prairies and pastures

*Cassia marilandica* L.--few plants in one woods

*Cassia fasciculata* Michx.--roadsides

*Gleditsia tricanthos* L.--woodlands along creeks and river

*Gymnocladus dioica* (L.) K. Koch--few in woodlands along creeks and river

*Amorpha canescens* Pursh.--prairies

*Amorpha fruticosa* L. var. *angustifolia* Pursh--edge of  
 salt marsh, pasture draws  
*Astragalus canadensis* L.--edge of dry stream bed  
*Astragalus caryocarpus* Kerr.--limestone outcrop in  
 grazed pasture  
*Astragalus lotiflorus* Hook.--river bluffs  
*Astragalus missouriensis* Nutt.--limestone hills of  
 grazed pasture  
*Astragalus plattensis* Nutt.--gentle slopes in grazed  
 pasture  
*Astragalus racemosus* Pursh.--sides of river bluff ravines  
 (shale)  
*Crotalaria sagittalis* L.--Gates, 1940  
*Dalea alopecuroides* Willd.--Gates, 1940  
*Dalea aurea* Nutt.--prairies, pastures, and roadsides  
*Dalea enneandra* Nutt.--prairies, and river bluffs  
 pasture  
*Desmodium illinoense* Gray--roadsides  
*Glycyrrhiza lepidota* (Nutt.) Pursh--pastures  
*Lespedeza capitata* Michx.--sandstone or sandy pastures  
 and roadsides  
*Lotus americanus* ((Nutt.) Bush--prairies, pastures  
*Medicago lupulina* L.--lawns and in some grazed pastures  
*Medicago sativa* L.--roadsides (cultivated and escaped)  
 and waste areas

*Melilotus alba* L.--roadsides, high ground in marshes  
*Melilotus officinalis* (L.) Lam.--roadsides, waste areas,  
high ground in marshes  
*Oxytropis lambertii* Pursh.--river bluffs pasture, and  
occasional in prairie  
*Petalostemum candidum* (Willd.) Michx.--prairies, pastures  
and roadsides  
*Petalostemum purpureum* (Vent.) Rydb.--prairies and road-  
sides  
*Psoralea argophylla* Pursh.--prairies and pastures  
*Psoralea esculenta* Pursh.--few scattered in prairies and  
pastures  
*Psoralea lanceolata* Pursh.--Gates, 1940  
*Psoralea micrantha* A. Gray--sandy river valley roadsides  
*Psoralea tenuiflora* Pursh.--on some prairies and road-  
sides  
*Robinia pseudo-acacia* L.--few in pasture, some on road-  
side escaping cultivation  
*Strophostyles leiosperma* (T. & G.) Piper--roadsides and  
grazed pastures  
*Trifolium reflexum* L. var. *glabrum* Lojoncona--Gates,  
1940  
*Trifolium repens* L.--marshes, low areas in pastures  
*Vicia americana* Muhl. var. *angustifolia* Nees.--R.R.  
right-of-way and pastures

*Vicia oregana* Nutt.--Gates, 1940

#### Lemnaceae

*Lemna minor* L.--edges of spring fed ponds and in shallow water of marshes

*Lemna perpusilla* Torr.--shallow water of marsh

*Spirodedia polyrhiza* (L.) Schleiden--edges of spring fed ponds and shallow water

#### Liliaceae

*Allium canadense* Michx. var. *Fraseri* Ownbey--roadside on limestone hills

*Allium Drummondii* Regel--prairies and grazed limestone pastures

*Allium perdulce* S. V. Fraser--pastures

*Allium sativum* L.--one group along roadside

*Asparagus officinalis* L.--few escaped along roadsides and in woods

*Polygonatum canaliculatum* (Muhl.) Pursh.--woods

*Smilacina stellata* (L.) Desf.--woods

*Smilax tamnoides* L. var. *hispida* (Muhl.) Fern.--woods

*Yucca glauca* Nutt.--river bluffs pasture

#### Linaceae

*Linum rigidum* Pursh.--pastures and salt marsh prairie

*Linum sulcatum* Riddell--pastures and prairies

*Linum usitatissimum* L.--some scattered in alfalfa field

#### Loasaceae

*Mentzelia decapetala* (Pursh.) Urban & Gilg.--river bluff ravines and sandstone roadsides

Lobeliaceae

*Lobelia siphilitica* L.--seepage area in sandstone  
pasture

*Lobelia splendens* L.--shaded stream banks

Lythraceae

*Ammannia coccinea* Rottb.--edge of salt marsh flats and  
edge of pond

Malvaceae

*Abutilon theophrasti* Medic.--feed lots, waste areas,  
semi-wooded pasture and roadsides

*Callirhoe alcaeoides* (Michx.) Gray--pastures and  
prairies

*Callirhoe involucrata* (T. & G.) Gray--pastures (prefers  
sandy ones) and salt marsh prairie

*Hibiscus trionum* L.--roadsides, cultivated fields

*Malva neglecta* Wallr.--waste places and back yards

*Sida spinosa* L.--semi-open woods

*Sphaeralcea coccinea* (Pursh.) Rydb.--grazed pasture and  
roadside

Marsileaceae

*Marsilea mucronata* A.Br.--Gates, 1940

Martyniaceae

*Proboscidea louisianica* (Mill) Thell--low overgrazed  
pasture

Menispermaceae

*Menispermum canadense* L.--semi-open woods

Moraceae

*Cannabis sativa* L.--low pasture around creeks and in  
waste areas

*Maclura pomifera* (Raf.) C.K. Schneid--widely planted in  
hedges and escaping

*Morus alba* L.--woods along river valley

*Morus rubra* L.--mostly in river valley woods; occasion-  
ally in creek woods

Najadaceae

*Potamogeton foliosus* Raf.--spring fed marshes or ponds

*Potamogeton nodosus* Poir.--spring fed ponds

*Potamogeton pectinatus* L.--spring fed pond

*Zanichellia palustris* L. var. *major* (Boen.) W.D.J. Koch  
--overflow of spring fed river valley pond

Nyctaginaceae

*Mirabilis linearis* (Pursh.) Heimerl--pastures and road-  
sides

*Mirabilis nyctaginea* (Michx.) MacM.--waste places, road-  
sides

Oleaceae

*Fraxinus pennsylvanica* Marsh var. *Austini* Fern.--river  
valley woods

*Fraxinus pennsylvanica* Marsh var. *subintegerrima* (Vahl.)  
Fern.--woodlands

Onagraceae

*Epilobium coloratum* Biehler--seepage areas

*Gaura biennis* L.--roadsides

*Gaura coccinea* Pursh.--waste places, sandy pastures,  
roadsides

*Gaura parviflora* Douglas--roadsides, river bluffs, salt  
marsh prairie

*Oenothera biennis* L.--Gates, 1940

*Oenothera biennis* L. var. *hirsutissima* Gray--roadsides  
and waste places

*Oenothera laciniata* Hill--sandy pastures, waste places

*Oenothera missouriensis* Sims--limestone hills of grazed  
pasture, prairie, and roadsides

*Oenothera missouriensis* Sims var. *incana* Torr.--Gates,  
1940

*Oenothera serrulata* Nutt.--pastures, prairies, and  
roadsides

*Oenothera rhombipetala* Nutt.--low R.R. right-of-way

*Oenothera speciosa* Nutt.--roadsides

*Stenosiphon linifolius* (Nutt.) Britt.--prairies, road-  
sides

#### Orchidaceae

*Habenaria leucophaea* (Nutt.) Gray

#### Oxalidaceae

*Oxalis stricta* L.--open woods, also denser woods

*Oxalis Dillenii* Jacq. ssp. *Dillenii*--pastures, waste  
places

*Oxalis violacea* L.--prairies, pastures

Papaveraceae

*Argemone intermedia* Sweet--roadsides and pastures

Phrymaceae

*Phryma leptostachya* L.--edge of woods

Polygalaceae

*Polygala alba* Nutt.--prairies and pastures

*Polygala verticillata* L.--grazed pastures

Polygonaceae

*Polygonum aviculare* L. var. *aviculare*--roadsides, edge  
cultivated fields

*Polygonum aviculare* L. var. *vegatum* Ledeb.--damp draw

*Polygonum aviculare* L. var. *littorale* (Link) W. D. Kock  
--water holes in pasture

*Polygonum coccineum* Muhl. var. *pratincola* (Greene)  
Stanford--roadsides and damp draws

*Polygonum coccineum* Muhl. var. *rigidulum* (Sheld) Stanford  
--shallow water of pond

*Polygonum convolvulus* L.--waste places

*Polygonum hydropiperoides* Michx. var. *strigosum* (Small)  
Stanford--seepage areas

*Polygonum lapathifolium* L.--salt and fresh water marshes  
and roadside ditches and river bank

*Polygonum pennsylvanicum* L. var. *pennsylvanicum*--road-  
sides, waste places, salt marsh

*Polygonum pennsylvanicum* L. var. *laevigatum* Fern. forma  
*albineum* Farw.--waste places and roadsides



*Polygonum pennsylvanicum* L. var. *laevigatum* forma  
*laevigatum*--salt marsh flats

*Polygonum persicaria* L. var. *ruderales* Salisb.--seepage  
areas and sand bars

*Polygonum punctatum* Ell. var. *punctatum*--in salt marsh  
by water hole and along drainage canal

*Polygonum punctatum* Ell. var. *leptostachyum* (Meisn.)  
Small--moist waste area

*Polygonum ramosissimum* Michx.--salt marsh flats

*Polygonum scandens* L.--roadsides and thickets

*Polygonum tenue* Michx.--draws and ravine

*Rumex altissimus* Wood--roadsides, pond edges, salt and  
fresh water marshes, river banks

*Rumex alluvius* Gates and McGregor--river banks

*Rumex crispus* L.--same as *R. altissimus*

*Rumex maritimus* L.--mud bar at edge river

#### Polypodiaceae

*Woodsia obtusa* (Spreng) Torr.--sandstone outcrops  
(protected)

#### Pontederiaceae

*Heteranthera limosa* (S.W.) Willd.--edge of small pond

#### Portulacaceae

*Portulaca oleracea* L.--sidewalk cracks, cultivated areas

#### Primulaceae

*Androsace occidentalis* Pursh.--grazed pastures

## Ranunculaceae

*Anemone caroliniana* L. forma *caroliniana*--grazed  
pastures

*Anemone caroliniana* L. forma *violacea* Clute--grazed  
pastures

*Delphinium ajacis* L.--few escapes along roadside

*Delphinium virescens* Nutt.--prairies, pastures, road-  
sides

*Ranunculus scleratus* L.--shallow water from seepage  
and at edge of ponds

*Thalictrum dasycarpum* Fisch. & Lall.--at edge of river  
valley woods

## Rhamnaceae

*Ceanothus ovatus* Desf.--roadsides of high limestone  
hills

*Ceanothus ovatus* Desf. var. *pubescens*--Gates, 1940

*Rhamnus lanceolata* Pursh.--Gates, 1940

## Rosaceae

*Agrimonia parviflora* Ait.--seepage areas in sandstone  
pastures

*Geum canadense* Rydb. var. *camporum* (Rydb.) Fern. &  
Weath--woodlands

*Potentilla paradoxa* Nutt.--fresh water marsh areas

*Prunus americana* Marsh--edge of woods and along road-  
sides

*Prunus besseyi* Bailey--one group on limestone hilltop  
roadside

*Prunus lanata* Mack. and Bush--Gates, 1940

*Prunus virginiana* L.--roadsides as thickets

*Prunus virginiana* L. var. *melanocarpa* (A. Nels.) Sarg.--  
Gates, 1940

*Rosa arkansana* Porter var. *suffulta* (Greene) Cockerell--  
roadsides and waste areas

*Rubus occidentalis* L.--edge of woods and on one east  
facing road cut

#### Rubiaceae

*Cephalanthus occidentalis* L.--one plant in prairie  
bordering salt marsh lake

*Galium aparine* L.--woods or in shaded areas

*Galium circaezans* Michx. var. *hypomalacum* Fern.--in a  
wooded sloping draw (one patch)

*Hedyotus nigricans* (Lam.) Fern.--pastures and prairies

#### Rutaceae

*Zanthoxylum americanum* Mill.--edge of woods and in  
river bluff ravines

#### Salicaceae

*Salix amygdaloides* Anderss.--along river, streams, and  
large seepage areas

*Salix interior* Rowlee--river banks, sandbars

*Salix eriocephala* Michx.--Gates, 1940

*Salix nigra* Marsh.--river banks

Santalaceae

*Commandra umbellata* (L.) Nutt.--Weaver and Albertson,  
1943

Sapindaceae

*Cardiospermum halicacabum* L.--Gates, 1940

Saxifragaceae

*Ribes missouriense* Nutt.--woodlands and thickets

*Ribes odoratum* Wendland--roadsides

*Penthorum sedoides* L.--shaded stream bank

Scrophulariaceae

*Gerardia aspera* Dougl.--grazed pasture

*Gerardia tenuifolia* Vahl. var. *macrophylla* Benth.--  
grazed pastures

*Lindernia anagallidea* (Michx.) Pennell--river sandbar

*Lindernia dubia* (L.) Pennell--Gates, 1940

*Bacopa rotundifolia* (Michx.) Wettst.--shallow water of  
pond

*Mimulus ringens* L.--low wet shaded area near stream

*Penstemon Cobaea* Nutt.--limestone prairies and pastures

*Penstemon digitalis* Nutt.--old milo field. (adventive?)

*Verbascum blattaria* L.--roadside

*Verbascum thaspus* L.--roadsides, pastures, waste places

*Veronica peregrina* L. var. *xalapensis* (H.B.K.) St. John  
and Warren--low wet areas, edge of small stream, and  
waste places

## Solenaceae

- Datura stramonium* L.--edge of cultivated fields, few  
on salt marsh
- Lycium halimifolium* Mill.--cultivated and is escaping  
along roadside
- Physalis angulata* L.--semi-wooded pasture area
- Physalis hederifolia* Gray var. *comata* Rydb.--river  
bluffs pasture
- Physalis hederifolia* Gray var. *hederifolia*--river  
bluffs pasture, edge of field in shade
- Physalis heterophylla* Nees--edge of woods or shaded  
areas, and river bluffs
- Physalis virginiana* Miller. var. *sonorae* (Torr.)  
Waterfall--roadsides, waste places
- Solanum americanum* Mill.--woodlands or shaded banks
- Solanum carolinense* L. var. *albiflorum* Benke--pastures,  
waste places
- Solanum carolinense* L. var. *carolinense*--pastures and  
waste places
- Solanum eleagnifolium* Cav.--roadside in sandstone sec-  
tion
- Solanum interius* Rydb.--river valley roadside ditch and  
in shade in sandstone pasture
- Solanum rostratum* Dunal.--disturbed areas, waste places
- Solanum triflorum* Nutt.--Gates, 1940

## Sparganiaceae

*Sparganium eurycarpum* Engelm.--low wet draw and edge  
small stream

## Tamaricaceae

*Tamarix pentandra* Pall.--some on salt marshes

*Populus alba* L.--escaping from plantings

*Populus deltoides* Marsh--along river banks, some along  
creeks, small ones on salt marsh

*Populus sargentii* Dode--along rivers and creeks

## Tiliaceae

*Tilia americana* L.--Gates, 1940

## Typhaceae

*Typha angustifolia* L.--colonies on salt marsh

*Typha latifolia* L.--fresh water and salt marshes

## Ulmaceae

*Celtis occidentalis* L. var. *occidentalis*--woodlands and  
ravines

*Celtis occidentalis* L. var. *pumila* (Pursh) Gray--wood-  
lands and ravines

*Ulmus americana* L.--along creeks and rivers

*Ulmus rubra* Muhl.--along draws, creeks, and rivers

## Umbelliferae

*Berula pusilla* (Nutt.) Fern--spring fed marshy areas

*Cicuta maculata* L.--fresh water marshes or low moist  
ground

*Conium maculatum* L.--edges of woods and thickets and on  
low moist areas

*Lomatium foeniculatum* (Nutt.) C. & R.--prairies and  
pastures

*Lomatium orientale* Coult & Rose--Weaver & Albertson, 1943

*Pastinaca sativa* L.--one found by railroad spur in town

*Sanicula canadensis* L.--woods

*Spermolepis inermis* (Nutt.) Nutt. & Const.--pastures  
and salt marsh prairie

#### Urticaceae

*Parietaria pennsylvanica* Muhl.--woodland floors

*Pilea pumila* (L.) Gray--seepage area in sandstone  
pasture

*Urtica dioica* L. var. *procera* Wedd.--woodland edges,  
woodlands, low areas

#### Verbenaceae

*Lippia cuneifolia* (Torr.) Steud.--Gates, 1940

*Verbena bipinnatifida* Nutt.--basically on roadsides and  
grazed limestone pastures

*Verbena bracteata* Lag. & Rodr.--lawns and waste places

*Verbena hastata* L.--draws and seepage areas

*Verbena simplex* Lehm.--Gates, 1940

*Verbena stricta* Vent.--grazed pastures and roadsides

*Verbena stricta* Vent. forma *roseiflora* Benke --grazed  
pasture

*Verbena stricta* Vent. forma alba Wadmond--grazed  
pasture

*Verbena urticifolia* L.--edge of woods

X *Verbena Rydbergii* Mold.--edge of seepage areas, along  
semi-wooded stream

X *Verbena Engelmannii* Mold.--along semi-wooded stream

X *Verbena illicita* Mold.--along semi-wooded stream

X *Verbena moechina* Mold.--one plant in sandstone pasture  
seepage area (compared with Britton and Brown)

#### Violaceae

*Viola papilionacea* Pursh.--woodlands and sometimes on  
north facing draw slopes

*Viola bicolor* Pursh.--grazed pasture slopes

#### Vitaceae

*Parthenocissus quinquefolia* (L.) Planch--woodlands and  
thickets

*Parthenocissus vitacea* (Kneer) Hitche.--Gates, 1940

*Vitis riparia* Michx.--woodlands or thickets, or on  
single trees

#### Zygophyllaceae

*Tribulus terrestris* L.--roadsides, fields, waste places,  
yards



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