FLORA OF KANSAS
By Frank C. Gates
Annotated List of the Plants of Kansas:
Ferns and Flowering Plants

With maps showing distribution of species

BY
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1. Contribution No. 301 from the Department of Botany, Kansas State College.
Annotated List of the Plants of Kansas: Ferns and Flowering Plants

FRANK C. GATES

INTRODUCTION

The purpose of this publication is to enumerate the ferns and flowering plants that occur in Kansas. This is especially desirable as no list has been available for many years; the most recent is a series of maps showing distribution of Kansas specimens in the Kansas State Herbarium, published by Prof. A. S. Hitchcock some 40 odd years ago. Some years later B. B. Smyth projected a complete list, but lived to assemble but a third of it.

HISTORY

Early History. Perusal of the journals of some of the early travelers and surveyors discloses incidental mention of a number of plants, largely without definite information as to localities. With definite settlement and the establishment of schools, more attention was given to the state flora. Most Kansas plant collections were distributed to eastern herbaria, and a few plants collected by F. H. Snow were the nucleus of a herbarium at Kansas University. These and other collections and various lists were the basis of a list of some 1,082 plants of the Kansas flora by J. A. Carruth (Centennial Catalogue of the Plants of Kansas, in Transactions of the Kansas Academy of Science 5:48-59, 1877). About this time small collections by M. A. Carleton and W. A. Kellerman established the state herbarium at Manhattan. The fine Rooks county collection by Elam Bartholomew was made in this period.

The results of some of these collections were expressed in lists published in the Transactions of the Kansas Academy of Science. They reflect the considerable nomenclatorial difficulties of the period.

Hitchcock Period. During the 1890's, the years in which A. S. Hitchcock was head of the Botany Department at Kansas State Agricultural College, very active collecting was carried on throughout the state with the ultimate goal of a complete collection from every county. A really remarkable volume of collecting was done by Hitchcock and his associates. These included, particularly, G. L. Clothier, H. N. Whitford and J. B. Norton. An important collection of Wyandotte county plants was made by K. K. Mackenzie, of Kansas City, Mo. These collections served as the basis of the set of maps of Kansas plants mentioned previously: Flora of Kansas, by A. S. Hitchcock, Manhattan, Kansas, 1899. (A series of maps illustrating the distribution of flowering plants by counties. Determinations by the author and various specialists. Maps prepared by J. B. Norton and J. M. Westgate.)

Smyth Period. Following the transfer of Professor Hitchcock to the National Herbarium at Washington, D. C., further work towards a flora of Kansas

1. Contribution No. 991, from the Department of Botany, Kansas State College. Assisted by a grant from the Kansas Academy of Science.
was carried on by B. B. Smyth, curator of the State Museum of Natural History in Topeka. He had published lists of Kansas plants, the fourth, entitled “Plants and Flowers of Kansas,” published in 1900, by Crane & Co., of Topeka. With his wife, Lumina C. Riddle Smyth, he had in prospect a fifth and more complete catalogue of Kansas plants, but lived to complete only about a third of the task. This was published in the Transactions of the Kansas Academy of Science, 24:273-295, 1911, and 25:63-128, 1912.

Smyth’s own herbarium contained in addition to about 4,000 sheets of mounted Kansas plants, many bundles of plants without labels. This herbarium was donated to Kansas State College by gift of his widow (Lumina C. R. Smyth) in 1926. Unfortunately, specimen evidence for many of the plants included in his lists was not forthcoming.

Gates Period. With the coming of the author to Kansas State in 1919, an active state flora program was set up. During the past twenty years more than 15,000 Kansas specimens have been added to the state herbarium. Comprehensive collections were made in Ellsworth, Clay and Sheridan counties by Clement Weber, in Saline county by John Hancin, Cloud county by S. V. Fraser, Wabaunsee county by Pearl Maus, Sedgwick county by Sister Aquinas, and Geary county by the author. Less complete collections were made in Washington county by T. C. Dodd, Jr., Linn county by B. F. Bush, Cherokee county by Anna and Nellie Jacobs, and Cheyenne county by Anna Jacobs Steller, besides miscellaneous collections by Ben Osborn, E. J. Palmer, H. C. Henke, Bennington Ross, Mrs. H. H. Brownlee, Mrs. Oscar Olson, P. A. Rydberg, P. R. Edwards, W. Wahl, T. E. Brooks, Dale Good, Mrs. Fred Muck, and Ralph H. Imler, together with many others who have occasionally sent in a few plants. To all of these we are greatly indebted for their interest in furthering a knowledge of the state flora.

LOCATION AND AREA

Kansas lies in the center of the United States. The general shape of the state is rectangular. The north and south boundaries are the parallels of 40° N. and 37° N., respectively, the western boundary is 102° 1' W., and the eastern boundary is the Missouri river and 94° 38' W. This area, about 210 miles north-south and 410 miles east-west, encloses an area of about 82,000 square miles, of which about 380 are water surface.

PHYSIOGRAPHIC REGIONS (Map 1)

The following table, containing the pertinent items from “Physiographic Divisions of the United States,” by Nevim M. Fenneman,2 shows that Kansas is largely within two of the great physiographic provinces and contains an almost insignificant part of a third province. It is of great interest to note here that from a vegetational standpoint, the insignificant six odd square miles of Oaark Plateaus contain more species of plants which occur nowhere else in the state, than any other area considerably larger.


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<thead>
<tr>
<th>Major Division</th>
<th>Province</th>
<th>Section</th>
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<tr>
<td>13c. Plains Border</td>
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These sections are characterized by Fenneman as follows:

12b. Subhumid to maturely eroded till plains.
13f. Old scarped plains bounded faintly inclined strata.
13d. Broad interwell remnants of smooth fluvial plains.
13c. Maturely dissected plateau.
14a. Substrate to mature plateaus.

The entire state is essentially an undulating plain, gently sloping from west to east with an average drop of about seven feet per mile. There is a secondary slope in the eastern part of the state from north to south, which the course of the rivers south of the Kansas river makes quite evident. The greatest elevation is 4,135 feet in Wallace county adjoining the Colorado state line. The lowest point is about 700 feet in the southeast, where the Verdigris river crosses the Oklahoma boundary from Montgomery county.

DRAINAGE

In the north half of the state the Republican-Smokey Hill-Kansas river system flows the full length of the state, west to east. In the south half of the state the Cimarron and Arkansas rivers flow eastward and southward, in the southeast sixth the shorter Verdigris and Neosho rivers drain southward, while the Osage river drains eastward. These are perennial streams, but irregular in amount of flow and are subject to overflow in times of heavy rainfall.

TOPOGRAPHIC DIVISIONS

As shown by map 2, there are several natural topographic regions, distinguished by peculiarities which are largely explainable by the surface rock. The east third has been called the Osage Plains. They are distinguished by the many east-facing escarpments, which trend irregularly from north to south across the state. They vary in height from less than 50 feet to more than 400 feet. The most prominent are known as the Flint Hills, particularly well seen southeast of Manhattan to Cottonwood Falls and west of Eureka. Edges of hard limestones make the escarpments, while between them the gently rolling plains have been made from softer rocks.

The Smoky Hills Upland, in the north central part of the state, owes its origin to the exposure of the moderately hard, thick, brown Dakota sandstone. It also forms an east-facing escarpment, less regular than limestone escarpments and with numerous outlying hills.

The Blue Hills Upland, a short distance farther west, is produced by hard limestone in the Cretaceous. Many spurs eastward form divides between the east-flowing streams.
South of the Blue and Smoky Hill uplands is a large, flat area known as the Great Bend Prairie, lying largely in the great bend of the Arkansas river, but reaching northeastward to McPherson. Parts of this region are sand dunes or are covered by small hummocky hills that were once sand dunes.

South of the Great Bend Prairie are the Cimarron Breaks, in which the higher country to the north and west is suddenly interrupted by a prominent escarpment carved by steep southward-flowing streams, most of which are tributaries of the Cimarron and Medicine Lodge rivers. Much of the rock of this area is red shale or fine, red sandstone, giving rise to red soils and exposures.

The remaining, or western third of the state, is called the High Plains. The land surface rises gradually westward to the flanks of the Rockies in central Colorado. In northwestern Kansas the High Plains have been carved by east and northeast flowing streams so as to form long uplands between the streams with many rounded hills formed by the tributary drainage. In central western and in southwestern Kansas, on the other hand, the country is almost undissected. Low bluffs border the Arkansas river on the north and in part on the south. East of Lakin there is a belt of prominent sand hills on the south side of the Arkansas river.

The soil of the upland prairies is generally a deep, rich loam of dark color. The bottom lands near the streams are brown to grayish brown sandy loams, while the portions of the valleys most distant from the streams are rich, deep, dark-brown loams with but little sand. These soils are easily cultivated, free of stones and are productive. Exceptional spots are of a stiffer clay less easily worked. The extreme southwest section is predominantly sandy.

CLIMATE

The climate of Kansas is, as one would expect from its midcontinental position, one of great extremes and sudden changes in temperature, precipitation and wind. Temperature extremes vary from 121° to -34° F., and the averages are relatively moderate. The average precipitation varies from about 40 inches a year in the southeast to about 15 inches a year in the extreme west. The rainfall at any point may vary widely from year to year, the extremes in western Kansas being from less than 10 inches to more than 30 inches and in eastern Kansas from less than 20 inches to more than 55 inches. In addition, its distribution is often unsatisfactory to vegetation. Rain often comes in torrential storms between which are long periods of drought. In general, however, the time of greatest average rainfall is the late spring and early summer months when it is most needed by the prevailing grass type of vegetation. A second but smaller peak is expected in the autumn. Blizzards with snow or sleet and tornadoes with their funnel clouds are not unknown. Occasionally ice storms may severely damage trees. Snow is seldom experienced in generous amounts nor does it usually remain long on the ground, however, it may afford considerable protection against cold and drought.

In a period of 52 years the annual means of precipitation in the west part of the state have varied from 11.93 to 29.21 inches (average 19.21), in the central part from 18.68 to 34.30 (average 26.68), in the east from 26.00 to 45.71 (average 34.75); while the mean for the state ranges from 20.12 to 35.30 (average 27.12).
Over a period of 52 years the January mean temperatures in the west part of the state have varied from 37.8°F in 1914 to 17.9°F in 1930 (average 29.6°F); in the central part from 39.7°F in 1930 to 18.0°F in 1930 (average 29.8°F); in the eastern part from 41.5°F in 1923 to 17.7°F in 1930 (average 30.2°F); while the July mean temperatures in the western part of the state have varied from 85.6°F in 1934 to 72.5°F in 1906 and 1915 (average 78.2°F); in the central part from 88.5°F in 1934 to 73.8°F in 1891 and 1906 (average 80.0°F); and in the eastern part from 87.5°F in 1934 to 73.8°F in 1891 (average 79.1°F). The annual mean for the state ranges from 87.2°F in July, 1934 to 17.9°F in January, 1930 (average 54.9°F).

While averages are used in expressing meteorological features of climate, it is the extremes that usually play the most important rôle in affecting plants. This fact has been effectively demonstrated by the recent severe droughts, which not only set back the forest vegetation in the eastern part of the state, but also the grass which was killed back or even completely killed out over large areas in the Flint Hills and elsewhere, such as had never before happened during white man’s occupation of the region.

Complete meteorological data for the state are to be found in publications of the U.S. Weather Bureau. The data used above were kindly furnished by S. D. Flora, Meteorologist, U. S. Weather Bureau, Topeka, Kan.)

GEOLOGY

The rock formations of Kansas which crop out, or which are merely concealed by a covering of soil, consist chiefly of shale, limestone and sandstone. These are consolidated rocks, but in central and western Kansas there are large areas of unconsolidated or only partially solidified sediments. Most of the rock layers were originally deposited in sea water, which at several periods during geological history covered this part of the continent. Some formations, including especially the unconsolidated materials, are deposits made by streams or by the wind. In northeastern Kansas there are deposits made by glaciers.

The oldest rocks known in the Kansas region are granites and similar crystallin rocks, encountered in deep borings. They are known as pre-Cambrian. A feature of special importance is the “buried mountains” which the crystallin rocks make from near Arkansas City to Seneca and beyond. In northern Kansas the top of the granite rises to within about 500 feet of the surface. The slight arching of the strata above this ridge has controlled accumulation of oil and gas in some of the largest pools of the state, notably in the El Dorado district. Similar but less prominent ridges with like trend have been discovered in exploration for oil in other parts of the state.

The granite rocks of pre-Cambrian age are overlain by Cambrian and Ordovician marine strata consisting mainly of limestone and some sandstone. These rocks are known only from wells. The Ordovician is one of the most important oil-bearing zones in central Kansas.

The next younger group of rocks, also marine limestones, is known as Silurian. It has been penetrated by many wells in north central Kansas and is probably present in northeastern Kansas, but is not known elsewhere. Devonian rocks, which normally occur above the Silurian, may be present locally, but have not been definitely identified.

3. Largely from a summary by R. C. Moore, State Geologist.

The Mississippian rocks consist mainly of limestone, but have at the base a persistent shale. These strata underlie most of eastern and central Kansas and are exposed at the surface in the extreme southeast corner of the state. They contain lead and zinc ore which is mined in Cherokee county, and in places underground there is much oil and gas.

The Pennsylvania rocks, sometimes called the Coal Measures, because of their great deposits of coal, overlie the Mississippian and compose the surface of the eastern fourth of Kansas. They consist of alternating layers of shale, limestone, sandstone and coal, in part marine and in part nonmarine. These rocks are divided into seven groups, the oldest (Cherokee) being exposed in the east. Proceeding westward we come successively to the Marmaton, the Kansas City, the Lansing, the Douglas, the Shawnee, ending in the youngest (Wabanssee) farthest west. Hard rock layers form prominent escarpments which trend northeast and southwest across the state. In this region the strata slope gently downward toward the northwest at an average rate of about 25 feet per mile.

The Permian rocks occupy a belt that crosses east central Kansas and the southeast central part of the state. The lower part of this system consists of alternating shale and limestone beds and in places underground there are immense deposits of rock salt. The higher part consists largely of red sandstone and shale. Locally there are important beds of gypsum.

After deposition of the Permian rocks there was an interval of some millions of years during which there is no record of deposition of rock sediments in Kansas. Eventually, however, a great series of strata was formed which covers all of western Kansas and which now shows at the surface in a large part of north central Kansas and in stream valleys in the western part of the state. These rocks are called the Cretaceous. At the base of the Cretaceous is the prominent brownish sandstone called Dakota, which forms the Smoky Hill uplands. Next higher are marine shales, limestones and chalk beds which form the Blue Hills upland.

During Tertiary time western Kansas, at least, was covered by sand, clay and gravel deposited by streams flowing eastward from the Rocky Mountains. This deposit now occupies all of the divides between the streams and constitutes the so-called High Plains, a pasture and wheat-growing country.

Deposits younger than the Tertiary consist of alluvium along the larger stream valleys and of loose sand that in places is shifted by wind to form dunes. Northeastern Kansas contains deposits of glacial till and boulders.

Flora of Kansas: General

Although in ancient geological periods the area included in Kansas was under the ocean at times and at others was covered with forests in which spruce was represented, at the present time the state is located nearly completely within the prairie vegetational province. The central or deciduous hardwood forest province is meagerly represented on uplands along the eastern edge of the state in parts of the counties along the Missouri boundary. This province extends a little farther westward in the counties north of the Kansas river. From the main area, however, fingers or tongues extend up all the principal streams and many of the branches much farther west, but hardly across the state. A small representation of the Ozarkan element is present.
in the approximately six square miles at the extreme southeastern corner of the state.

In the western, particularly the southwestern part of Kansas, there is a scanty representation of Sonoran Province elements.

The plant population is not static, as the following considerations will bring out. By far the greatest change that has taken place in the ecological botany of Kansas has been the transfer of immense tracts of land from native prairie and plains to cultivation—a cultivation of grasses, however, for the most part. Also there has been a marked change in native grass pastures and meadows caused by intensive grazing and persistent mowing. The native flora has thus been forced to out-of-the-way places, as railroad rights of way, rocky hillside, erodible land, waste land, areas subject to many floods, stream banks, etc. Even in such conditions grazing has been a disturbing factor.

The forest situation recently has been ameliorated, however, with the passing of the days of great prairie fires. Investigation has shown that the obvious westward movement of eastern forest species in at least the eastern third of Kansas has been back to land that, in the absence of prairie fires, should have been covered with forest—in other words, a reoccupation rather than a migration. Present-day attention to soil conservation and the checking of erosion on certain types of land will greatly enhance this reoccupation and may even further actual invasion of prairie land. Actual invasion of prairie land by forest from Manhattan westward is an exceedingly slow process. What little progress had been made in the vicinity of Manhattan in the past fifty years was more than wiped out by the recent series of severe drought years, particularly 1932-1936.

There is no evidence to indicate a tendency of the Rocky Mountain coniferous forest to proceed eastward into Kansas, unless the plants of Cercocarpus montanus, which have sprung up in places in the Republican river drainage system following the great floods of 1933, are accepted as exceedingly meager evidence. A few northern grasses enter the northwestern county (Cheyenne) and recently (1938) a northern variety, Festuca octoflora hirtella has been found in Ellis county.

The pushing northward of southwestern elements is quite obvious, on the other hand. This lends support to the present tendency toward a warmer and drier climate, although actual measurements of amount are hardly possible. By breaking up the land it may also be true that a chance to enter grassland is made possible and such invasion and eosis is now more frequent. The mitigation of prairie fires has assisted such establishment. In spite of the many strong winds to blow seeds in from the southwest, one must remain impressed, however, with the slowness of such migrations.

Movement from the south (Oklahoma and Texas) is shown in a few cases, particularly by Prosopis glandulosa, but is not proceeding any faster than that from the southwest.

The introduction of new plants from various parts of the world goes on continually. Many such plants cannot persist except under cultivation. Ulmus pumila, a Chinese elm, which has been planted in great numbers, is, however, an example of one such introduction that is showing signs of ability to persist after escape.

New weeds put in appearance with alarming frequency. Seldom can the

exact occasion be put on record. Introductions in packing material, or in seeds to plant, or by wind, or by water are the commonest means. The failure to recognize the importance of control of weeds either at the time of first appearance or subsequently is commonplace.

Among recent more serious weeds may be enumerated: puncture vine (Tribulus terrestris) and summer cypress or burning bush (Koehne scoparia and trichophylla) both of which have had a phenomenal spread nearly throughout the state. The first is quite annoying and the latter is in some degree a poisonous plant. Less abundant, but more disastrous, are the white weed (Lepidium draba), and Russian knapweed (Centaurea picris) with root systems against which no adequate attack has been organized. They vie with the field bindweed (Convolvulus arvensis) introduced many years ago, as serious pests. Among others is shepherd’s purse (Capsella bursa-pastoris) and penny cress (Thlaspi arvense), whose abundance in the last few drought springs has led to tainted milk in several dairy herds.

ECOLOGICAL CLASSIFICATION

In the following table is given a brief and incomplete outline of the major ecological groupings of plants found more commonly in Kansas.

DECIDUOUS HARDWOOD FOREST PROVINCE

Xeric-

Acer saccharum association
Quercus-Carya associations
Sapindus association
Oxazik Quercus-Carya association
Thicket associations

Hydric

Ulmus-Acer saccharinum association
Populus-Salix association
Margin associations
Submerged-Polamogoton association

PRAIRIE PROVINCE

Xeric-

Prairie Andropogon furcatus-Stipa association
Andropogon scoparius association
Sand prairie-Eragrostis trichodes association
 Panicum virgatum association
Sand dune associations
Plains Buchloe-Bouteloua association

Hydric

Marsh associations
Paspalum floridanum glabratum association
Spartina pectinata association
Salt marsh associations
Distichlis association
Alkali flat associations
River bank associations
NATIVE HABITATS

In the extreme eastern part of Kansas wooded uplands are found on a comparatively small scale. Lowlands, stream sides and rocky banks generally are wooded unless the trees have been removed by man. The Ozarkian plateau in the extreme southeast corner of the state, with largely acid upland soil, is also wooded. Nonwooded habitats include a few marshes, streams, lakes and tall-grass prairies.

In central Kansas the prevailing habitats are the prairie, with transition from the tall-grass prairie at the east to the short-grass prairie farther west. The total effect is that of transition although the actual occurrence is in irregular patches. Along the larger streams are forests—the tongues or fingers extending westward from the forest body east of Kansas. Salt marshes are present in south central Kansas with some sandhill and crooked canyons in Meade and adjoining counties.

In the western third of the state the prevailing habitat is the short-grass plains, relieved in locally wetter spots by patches of taller grass prairie; sandhills in the part south of the Arkansas river and some alkali flats. Along the larger streams of the northeastern part of the western third, the tongues of forest land are still present, but farther west the streams flow through grassland.

ARTIFICIAL OR ANTHROPOIC HABITATS

The operation of the anthropic or human factor upon the native habitats has resulted in part in the modification, often great, of the native habitats and the development of some more or less new habitats such as railroad ballast, rights of way of roads and railroads, wasteland, marginal land of towns and cities, parkings, cultivated land, coal-mine strip land (in the southeast where overburden is piled to one side to permit the removal of coal), parks, recreational centers, artificial lakes, and stock watering ponds.

GROWTH FORMS

At the end of the statement regarding each plant the growth form is given according to the Raunkiaer system. This system is based on the position of the overwintering buds with reference to the ground. This includes five principal classes: phanerophytes, chamaephytes, hemichamphophytes, cryopyhets, and therophytes. The phanerophytes are divided into megaphanerophytes, higher than 30 meters, mesophanerophytes from 7.5 to 30 meters, microphanerophytes 2.5-2.5 meters, and nanophanerophytes 0.25-2.5 meters. The chamaephytes are those with buds visible throughout the winter from the ground up to 0.25 meter. The hemichamphophytes have their buds located just below the surface of the ground, either at the base of the current year’s stem, or on offshoots which angle toward the surface of the ground.

Cryptophytes include those whose overwintering buds are distinctly below the surface of the ground. They are subdivided into geophytes and helophytes. In the latter case, the buds are beneath the ground, beneath water. If the plants project above the water during the growing season they are known as helophytes and if they remain below the surface of the water, as hydrophytes. The last group is the therophytes, which are annual plants overwintering as seeds. In this group are also included winter annuals and biennials, principally because of their short life, although, properly speaking, they are usually hemichamphophytes during their only winter.

LIST OF KANSAS PLANTS

With the appearance in 1932 of Rydberg’s “Flora of the Prairies and Plains of Central North America” it was possible to begin active work in assembling this list.

An endeavor has been made to bring the nomenclature up to date in accord with the international rules. In this the catalogue of Missouri plants published for E. J. Palmer and J. A. Steyermark by the Missouri Botanical Garden (Annals of the Missouri Botanical Garden 22:775-794, 1935, and 25:775-794, 1938) has been of great aid.

No attempt is made to go into the synonymy of the various plants. It will be sufficient to indicate the names in Rydberg’s “Flora of the Prairies and Plains” (R), the second edition of Britton and Brown’s “Illustrated Flora” (B&B), or in the seventh edition of Gray’s “Manual” (G)—the books mostly used in naming plants in Kansas at the present time—when they differ from those used in this list.

Popular names given are those largely in actual use, insofar as the author is acquainted with them. Encouragement is made in using the name of the genus for popular name when no regular English name is in actual use.

The sources of information upon which this list has been made are primarily the collection of plants in the Herbarium of Kansas State College, a collection in which each of the 105 counties in the state is represented by more than 100 species. With but perhaps two or three exceptions, it is estimated that at least 35 percent of the flora of each county is now represented in the state herbarium and in several counties the representation is well above 95 percent. These extensive collections have been supplemented by those at the State University in Lawrence, the Fort Hays Kansas State College at Hays, which is particularly rich in Ellis county plants, Kansas State Teachers College at Emporia, particularly rich in Lyon county plants, and that of the Sacred Heart Academy of Wichita, rich in Sedgwick county plants. A few private collections were examined, including that of Mr. Clyde W. Miller, of Mahaska, Washington county; that of Mr. T. C. Dodd, Jr., of near Linn, Washington county, and that of Mr. Bennington Ross, of Crawford county.

In as far as available, citations of Kansas plants in recently appearing monographs were taken into account.

Efforts to locate specimens of several plants definitely credited to Kansas in various manuals, but which are not in the Kansas State Herbarium, were on the whole unsuccessful. Entry for such plants is provisional in the list.

LIST OF PLANTS WITHOUT SPECIMEN EVIDENCE

The following list includes those plants, species of which have not been seen by the author and have not been located in any of the larger herbaria of the United States, but which have been definitely credited to Kansas in the most recent systematic works, particularly Rydberg’s “Flora of the Prairies and Plains of Central North America,” 1932. A list of those plants is included so that if specimens do exist they may come to light.
Astragalus mexicanus trichoalyx (Nutt.) Fernald.

Desmodium multiflorum (L.) DC.

Desmodium paniculatum (Nutt.) DC.

Lathyrus venosus Muell.

Lupinus platensis S. Watts.

Petalostemon pulcherrimum A. Heller.

Petalostemon texolus (Coop.) A. Heller.

Thermopsis rhombifolia (Nutt.) Richards.

Trifolium aureum Pall.

Viola virginiana L.

Viola ludoviciana Nutt.

Lythraceae

Decodon verticillatus (L.) Ell.

Lythrum salicaria L.

Oenotheraceae

Epilobium strigatum Muell.

Gaia michauxii Sprecht.

Gaia sinuata Nutt.

Oenothera perennis L.

Oenothera spachiana A. & G.

Cactaceae

Echinocereus cespitosus Engelm. & Gray.

Pedioecus simpsonii (Engelm.) Britton & Rose.

Rhamnaceae

Rhamnus carolinianus L.

Earlier lists of plants contain numerous names which are not repeated in the present list. These names were based on misidentifications, unavoidable when the study of taxonomy in Kansas was new. When specimens of these early collections were preserved, reidentification has made it possible to include them under the proper name.

Plotting the ranges of many plants as given in current manuals would infer presence in Kansas. While such plants might in time be found in Kansas, or even may have been found, in the absence of specimens, they are not included in this list.

ACKNOWLEDGMENTS

For special favors in looking up specimens and furnishing special information, thanks are extended especially to the late A. S. Hitchcock, Mrs. Agnes Chase, Wm. R. Maxon, S. F. Blake, C. V. Morton, and J. R. Swallen of the National Herbarium; to H. A. Gleason and Wm. H. Camp of the New York Botanical Garden; to C. A. Weatherby and M. L. Fernald of the Gray Herbarium; to Paul Standley and J. A. Steyermark of the Field Museum; to H. K. Svenson of the Brooklyn Botanic Garden; to J. M. Greenman of the Missouri Botanical Garden; to Carl Epling of the University of California, Los Angeles; to F. J. Herrmann of the University of Michigan; to the late B. F. Bush; to W. H. Horst of Kansas University; to F. U. G. Agrellus of Kansas State Teachers College of Emporia; to F. W. Albertson of Fort Hays Kansas State College; to Nellie B. Jacobs for the many hours of stenographic work; to Laura Herr, an NYA student, for the making of the maps of distribution; and to Prof. L. E. Mecheris for his interest and support of the work.
The author realizes that such a piece of work is actually the joint product of many persons, known and unknown, to whom grateful acknowledgment should be made.

The author also realizes that where so many points are under consideration, lack of knowledge may bring about errors. He hopes that they are few, but knows that subsequent study and changes of ideas of species limitation and names will come. If this work be a milestone towards more complete knowledge—a foundation upon which others may build—the author will feel he has done his part.

To continue to increase our knowledge of the flora of Kansas, continuation of cooperation is necessary. To that end additional specimens are welcome, especially when they represent additions to those now in the state herbarium from counties where they have not been collected. Specimens should be collected in duplicate, numbered alike and one of the pair sent in for identification. In due time a list of identifications will be returned. Packages should be addressed to the Department of Botany and Plant Pathology, Kansas State College, Manhattan, Kan.

STATISTICS OF THE KANSAS FLORA

In the following table is given the number of genera and species by families and orders of the native and introduced plants. Wherever a species is present as a single-named trinomial, it is counted under the species column. If, however, there are additional trinomials for a given species, the additional varieties, forms, or hybrids are added in parentheses after the number of species. Species which are present only in cultivation are not counted in the tabulation and species for which no specimens have been seen are not counted unless they are known to occur on at least three sides of the state. If a genus has both native and introduced species, the genus is entered only under the native column.

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PHYLUM PTERIDOPHYTA

Ophioglossaceae  2  2
Lycopodiaceae    1  1
Osmundaceae     1  1
Polypodiaceae   12  17(+1)
Marchantiaceae  1  1

PHYLUM CLAMATOPHYTA

Equisetaceae     1  4

PHYLUM CYCADOPHYTA

Gingkoaceae     1  1
Ephedraceae     1  1

PHYLUM STROBILOPHYTA

Pinaeae          1  1  1  3

PHYLUM ANTHOPHYTA

CLASS MONOCOTYLEDONEAE

Order Alismatales

Alismataceae    4  12
Typhaceae       1  2
Sisyrinchieae   1  1
Potamogetonaceae 3  9

THE FLORA OF KANSAS

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<th>Species</th>
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Order Alismatales

Alismataceae    4  12
Typhaceae       1  2
Sisyrinchieae   1  1
Potamogetonaceae 3  9

Order Liliales

Liliaceae       8  12  3  26(2)
Pseudophryneae  2  1  4  1
Coomelaceae     2  7(+1) 1
Juncaceae       2  16(+2)
Nasturtium      1  1

Order Aroales

Antheraceae     2  3
Lentibulariaceae 3  6

Order Poales

Cyperaceae      11  11  92(+7)
Poeaceae        57  57  173(+26) 59(+2)

Order Hydrades

Hydrocharitaceae 1  1

Order Iridales

Amaryllidaceae  2  2
Iridaceae       3  1  6  2
Dioscoreaceae   1  1

Order Orchidales

Orchidaceae     6  6  9(+1)

CLASS DICOTYLEDONEAE

Subclass Dicotyledoneae—Axiflorae

Order Ranales

Magnoliaceae     1  1
Calyculaceae     1  1
Amaryllidaceae   1  1
Bromeliaceae     10  10  25(+4) 4
Hemerocallidaceae 1  1  1  2
Menispermaceae   2  2
Laureaceae       2  2
Nymphaeaceae    2  2
Ceratophyllum    1  1

Order Malvales

Malvaceae        6  4  9  7
Tiliaceae        2  2
Ulmaceae         2  2  8(+1) 3
Moraceae         2  2  2  4
Urticaceae       5  5  5(+1)

Order Geranales

Geraniaceae      1  1  2  2  1(+1)
Oxalisaceae      1  1  2  2
Balanitaceae     1  1  2  2
Linaceae         2  2  6  2
Xygalactidaceae  1  1  2  2
Rutaceae         2  2  2(+1) 1
Simarubaceae     1  1  4  1
Polygonaceae     8  8  3  3
Euphorbiaceae    1  1
Calandrinaceae   1  1

2-1646
### Order Hypericales

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<td>4</td>
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<td>4(+)</td>
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<td>Aselepiadaceae</td>
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### Order Serphuliflorales

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### Subclass Dicotyledoneae—Caryophyllae

### Order Rosales

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<td>Oenotheraceae</td>
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### Order Losiales

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### Order Celastrales

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The Flora of Kansas

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Order Campanulales

| Campanulaceae | 2     | 10(+1) |

Order Asterales

| Helianthaceae | 29    | 63(+5) |
| Ambrosiaceae  | 4     | 16(+3) |
| Heliantheae  | 22    | 1     |
| Inuleae      | 4     | 9     |
| Asteraceae   | 21    | 85(+10) |
| Vernonieae   | 2     | 6(+8) |
| Eupatoriaceae| 4     | 16(+5) |
| Anthemidaceae| 2     | 7(+6) |
| Senecioneae  | 4     | 9(+1) |
| Carduoae     | 6     | 4     |
| Lactuceae    | 10    | 4     |

**SUMMARY**

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**MOST IMPORTANT REFERENCES**


———. Flora of Kansas maps. 1899.


Petersen, N. F. Flora of Nebraska. 3d ed. 1923.


Many articles in the Transactions of the Kansas Academy of Science.

**RECENT COUNTY LISTS**


Scharf, Helen I. The plants of Lyon county. (Unpublished.)


**MAPS OF DISTRIBUTION**

In the following maps a solid dot (●) indicates the presence of a specimen in the Kansas State Herbarium at Manhattan, Kansas, a ring (○) indicates absence at another herbarium, an (×) indicates a recent authoritative record, and a (C) indicates that the specimen is in cultivation. The families represented on each plate are given below each plate. The numbers are inclusive for the whole family, although often spread over two or more plates.

**EXPLANATION OF PLATES**

The numbers following each family indicate the maps of species in that family.
Plate 3. Potamogetonaceae (43-51), Liliaceae (51n-82).

Plate 4. Liliaceae (51n-82), Pontederiaceae (82-86), Commelinaceae (87-93).
Plate 5. Compositae (87-95), Junaceae (96-111), Naiadaceae (112), Araceae (113-115), Liliaceae (116-121).

Plate 6. Lemnaceae (116-121), Cyperaceae (122-218).


Plate 20. Iridaceae (448-454), Dioscoreaceae (455), Orchidaceae (456-453), Annonaceae (464), Styracaceae (465), Rhamnaceae (466-469).

Plates 22. Berberidaceae (405), Menispermaceae (409-412), Lauraceae (416-506), Nelumbonaceae (211), Nymphaeaceae (507-509), Ceratophyllaceae (604), Malvaceae (560-517).
Plate 25. Zygophyllaceae (558-561), Rutaceae (562-563a), Simaroubaceae (564), Polygalaceae (564-569), Euphorbiaceae (569-609).

PLATE 27. Euphorbiaceae (609-608), Callitrichaceae (609), Cistaceae (610-612), Hypericaceae (613-619), Violaceae (620-622). (Map 614 should read Hypericum sphaerocarpum.)


PLATE 30. Brassicaceae (649-705). (Map 687a should read Lepidium obtusum.)

Plate 32. Caryophyllaceae (726-733), Elatineaceae (724-727), Portulacaceae (728-733), Aizoaceae (734-735), Tamaricaceae (736), Salicaceae (737-751).
PLATE 33. Salicaceae (737-751), Phytolaccaceae (752), Amaranthaceae (753-761), Chenopodiaceae (763-795).

PLATE 34. Chenopodiaceae (765-795).
PLATE 25. Chenopodiaceae (705-709), Polygonaceae (798-810).

PLATE 35. Polygonaceae (798-810).
Plate 37. Polygonaceae (793-819), Nyctaginaceae (841-849), Primulaceae (850-863), Plantaginaceae (864-886).

Plate 38. Plantaginaceae (866-868), Ericaceae (887-899), Sapotaceae (870), Ebenaceae (871), Poaceae (872-883), Convolvulaceae (584-908).
Plate 39. Convulvales (881-903), Hydrophyllaceae (904-908), Boraginaceae (909-929).

Plate 40. Boraginaceae (909-929), Solanaceae (930-959).
PLATE 43. Asclepiadaceae (978-1003), Scrophulariaceae (1004-1054).

PLATE 44. Scrophulariaceae (1005-1054).
Plate 51. Malacace (1160-1181), Prunaceae (1184-1190).

Plate 52. Prunaceae (1194-1195), Mimoscaceae (1196-1196), Cassiaceae (1201-1210), Kramerianaceae (1211), Fabaceae (1215-1219).
Plate 59. Comanche (1838-1873), Haloragidaceae (1874-1877), Aristolochiaceae (1878-1881).

Plate 60. Aristolochiaceae (1878-1881), Cactaceae (1882-1897), Loasaceae (1898-1896), Conurbitaceae (1897-1900), Rhamnaceae (1901-1904).
Plate 61. Hippuridaceae (1401-1404), Vitaceae (1405-1415), Celastaceae (1416-1417), Illiciaceae (1418), Shaphyleaceae (1419), Elagraceae (1420-1421), Santalaceae (1422-1423), Loranthaceae (1424).

Plate 62. Sapindaceae (1425-1427), Anacardiaceae (1428-1429), Arraceae (1430-1431), Annonaceae (1432-1433), Juglandaceae (1448-1451).
PLATE 62. Juglandaceae (1455-1453), Rutaceae (1452-1455), Fabaceae (1456-1469a), Araliaceae (1469), Annonaceae (1469b-1469c).

PLATE 63. Annonaceae (1469d-1495).
Plate 69. Compositae: Helianthecae (1646-1672).

Plate 70. Compositae: Helianthecae (1646-1672), Ambrosioceae (1613-1628), Helencincae (1629-1660).
PLATE 71. Compositae: Heliantheae (1629-1650), Inuleae (1651-1659).

PLATE 72. Compositae: Inuleae (1651-1659), Asteraceae (1660-1752).
Plate 77. Compositae: Eupatorieae (1761-1778), Anthemidaceae (1779-1799).

Plate 78. Compositae: Senecionidaceae (1800-1809), Carduaceae (1810-1823).
ADDENDA TO MAPS

The following plants, collected in 1939 or earlier, were received after the maps had been made by the engraver. Solid dots should be added to the maps as indicated. This will bring the record of the Kansas State Herbarium up to December 31, 1939.

Plate 79. Compositae: Carducinae (1810-1823), Lactucinae (1824-1858).

Map
No.
County.
52. Allium nanum
Harvey, Crawford counties
60. Asparagus officinalis
Crawford county
63. Erythronium albidum var. mexicanum
Crawford county
89. Campanula erosa
Crawford county
91. Campanula erosa crispa
Cheyenne county
94. Tradescantia occidentalis
Harvey county
131. Carex boa
Saline county
137. Carex divisii
Saline county
143. Carex gravisana
Marshall county
171. Carex supina
Morris county
— Andropogon ishikamum
Elk county
287. Cynodon dactylon
Lyon county
287. Echinocloa crus-galli
Morris, Montgomery counties
287. Hordeum pusillum
Marshall county
287. Leptochloa filiformis
Montgomery county

Map
No.
County.
358. Passiflora amoenopera
Wilson county
367. Paspalum pubiflorum glabrum
Montgomery county
388. Paspalum repens
Montgomery county
416. Sorghum halepense
Gray county
447. Hypochaeris diversa
Crawford county
451. Neomarica acuta
Crawford county
453. Sierama interessecta
Crawford county
467. Anaphalis nemorosa
Crawford county
482. Rhamnus abortivus
Crawford county
505. Abutilon theophrasti
Harvey county
508. Callicarpa involucrata
Marshall, Morris counties
531. Maschera ponifera
Crawford county
532. Menispermum alba
Crawford county
531. Boehmeria cylindrica
Crawford county
531a. Boehmeria cylindrica scabra
Crawford, Pottawatomie counties

Plate 79. Compositae: Lactucinae (1824-1858).
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The Arnold Arboretum has 562, Ptelea trifoliata from Wilson county; 1427, Simplicias dracunculoides from Cherokee county, and 1467, Quercus stellata from Douglas and Wilson counties.
Annotated List

PHYLUM PTERIDOPHYTA

FAMILY OPHIOGLOSSACEAE (Addertung Family)
Botrychium virgininum (L.) Sw. Grape Fern.
Woods. East half (map 1).

Ophioglossum vulgatum L. Adder's tongue.
Meadow. Douglas county, a single station (K.U.) (map 2).

FAMILY ISOTETARACEAE (Quillwort Family)

Isoetes butleri Engl. Quillwort.
Moist hillside. Extreme southeast (Cherokee county) (map 3).

FAMILY OSMUNDACEAE (Royal Fern Family)

Osmunda regalis L. Royal Fern.
Moist places. Woodson county (K.U.) (map 4).

FAMILY POLYPODIACEAE (Fern Family)

Adiantum pedatum L. Maidenhair Fern.
Damp woods or shaded moist ground in thickets. East fourth (map 5).

Asplenium platyneuron (L.) Oakes. Spleenwort.
Among rocks. Southeast (Woodson, Labette and Cherokee counties) (map 6).
Asplenium resiliens Kunze.
Limestone rocks. Southeast ninth (map 7).

Asplenium trichomanes L.
Limestone rocks. Wilson county (map 8).

Athyrium acrostichoides (Sw.) Diels. Lady Fern.

Athyrium "filix femina."
Woods. Osage county (map 8a).

Athyrium pycnocarpon (Spreng.) Tidestrom.
Moist woods. Leavenworth and Wyandotte counties (map 9).

Camptosorus rhizophyllus (L.) Link. Walking Fern.
Shaded calcareous rocks. East third (map 10).

Cheilanthes feei Moore. Lip Fern.
On or among rocks. Uncommon (map 11).

Cheilanthes lanosa (Michx.) Watt. Lip Fern.

Cystopteris fragilis (L.) Bernh.

Filix fragilis (R).
Rocky ravines. East third, but mostly its north half (map 12).

Dryopteris goldiana (Hook.) A. Gray. Goldie's Shield Fern.

Dryopteris marginalis (L.) A. Gray.
Rocky places. Saline, Wilson and Leavenworth counties (map 14).

Dryopteris thelypteris (L.) A. Gray. Marsh Shield Fern.
Marshes. Northeast fourth (map 15).

PHYLUM CYCADOPHYTA

FAMILY GINKGOACEAE

Ginkgo biloba L. Ginkgo.
Tree, only and rarely in cultivation. Mesophanerophyte.

FAMILY EPHEMEREACEAE

Ephedra sp. (probably E. sinica Stapf.)
Low, branched shrub, only in cultivation in experimental plots at Manhattan, but apparently promising in soil-erosion work. Chemical analyses show a relatively high percentage of ephedrin from these Kansas-grown specimens.

Phylum STROBILOPHYTA
Family Pinaceae. (Pine Family)

Juniperus virginiana L. Red Cedar.
Sabinia virginiana (R).
Woods, banks, ravines and also freely in cultivation. Throughout except the southwest (map 27). Mesophanophyte.

Pinus echinata Mill. Southern Yellow Pine.
Old records credit this pine to extreme southeastern Kansas, but neither authenticating herbarium specimens nor trees have been found within the past seventy years. Mesophanophyte.

Of the several conifers planted, especially in eastern Kansas, occasional local escapes have been found of Pinus banksiana Lamb., Jackpine, Pinus nigra Arnold, Austrian pine (Saline, Riley and Geary counties), and Pinus sylvestris L. Scotch pine. Escapes of Pinus ponderosa, western yellow pine, are now to be expected as the many trees planted are coming into bearing. For the first time in recorded Kansas history, Pinus sylvestris was severely injured by drought in the great droughts of 1934-35.

Many other conifers are planted, especially in eastern Kansas, but have shown no tendency to escape.

Phylum ANTHOPHYTA
Class Monocotyledonae
Family Alismataceae. (Water Plantain Family)

Aloisia subcordatum Raf. Water Plantain.

Echinodorus cordifolius (L.) Griseb. Burhead.
Swamps and muddy shores. Scattered mostly along streams in the east three-fourths (map 29). Helophyte.

Echinodorus radicans (Nutt.) Engelm. Creeping Burhead.
Bordering ponds. Southeast sixth (map 30). Helophyte.


Sagittaria angustifolia J. G. Smith. Lance-leaved Arrowhead.
Shallow water and muddy shores. Scattered in east half (map 32). Helophyte. The type specimen from McPherson county (Kansas State Herbarium).

Sagittaria brevirostra Mack. and Bush. Short-beaked Arrowhead.
Shallow water and muddy shores. Scattered, mostly in east half; Sherman county (map 33). Helophyte.

Sagittaria cuneata Sheldon. Arrowhead.
Mud and shallow water. Scattered in the west three-fourths (map 34). Helophyte.

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Sagittaria esculenta Howell. Arrowhead.
Shallow water. Scattered in east two-thirds (map 35). Helophyte.

Sagittaria graminea Michx. Grass-leaved Arrowhead.
Shallow ponds and marshes. Extreme southeast (Cherokee county) (map 36). Helophyte.

Sagittaria latifolia Willd. Arrowhead.
Shallow water. Throughout (map 37). Helophyte.

Sagittaria longiloba Engelm. Arrowhead.
Shallow ponds. Scattered in west two-thirds (map 38). Helophyte.


Sagittaria rigida Pursh. Arrowhead.

Family Typhaceae (Cattail Family)

Typha angustifolia L. Narrow-leaved Cattail.
Marshes, especially saline. South central (map 40). Helophyte.

Typha latifolia L. Cattail.
Marshes and muddy shores of lakes and streams. At least east five-sixths (map 41). Helophyte.

Family Sparganiaceae (Burrweed Family)

Sparganium eurycarpum Engelm. Burrweed.
Swamps, shallow lakes and along streams. Scattered, at least east five-sixths (map 42). Helophyte.

Family Potamogetonaceae (Pondweed Family)

Potamogeton americanus Cham. and Schlecht. Long-leaved Pondweed.
Ponds and streams. Scattered throughout (map 43). Hydrophyte.

Potamogeton diversifolius Raf. Pondweed.
Including Potamogeton dimorphus Raf.
Ponds and streams. Scattered in east half (map 44). Hydrophyte.

Potamogeton foliosus Raf. Pondweed.
Ponds and streams. Scattered, mostly central (map 45). Hydrophyte.

Potamogeton lucens L. Shining Pondweed.
Ponds. Comanche county (map 46). Hydrophyte.

Still water. Sheridan and Riley counties (map 47). Hydrophyte.

Potamogeton pectinatus L. Fennel-leaved Pondweed.
Fresh, salt, or alkali water. Scattered (map 48). Hydrophyte.

Potamogeton pusillus L. Pondweed.
Ponds and slow streams. Saline county. (Sheridan county?) (map 49). Hydrophyte.

Ruppia maritima restring Agardh. (Rh. 16:125. 1914.) Ditchgrass.
Salt or brackish water. Scattered in west half (map 50). Hydrophyte.
Zannichellia palustris major (Boenninck.) Koch. Horned Pondweed.
Fresh and brackish ponds and ditches. Scattered (map 51). Bulb geophyte.

**Family Liliaceae** (Lily Family)

**Allium arenicola** Small. Wild Onion.
Sandy woods, Labette county (map 51a). Bulb geophyte.

**Allium canadense** L. Wild Garlic, Wild Onion.
In fields and prairies. East half (map 52). Bulb geophyte.

**Allium cepa** L. Onion.
Cultivated and occasionally escaped. Bulb geophyte.

**Allium cernuum** Roth. Nodding Wild Onion.
Prairies. Saline county (map 53). Bulb geophyte.

*Allium helleri* Small is given in Small as ranging north to Nebraska. No Kansas specimens at hand fit the description, however.

**Allium mutable** Michx. Wild Onion.
Woods, thickets and prairies. Scattered in east four-fifths (map 54). Bulb geophyte.

**Allium nuttallii** S. Wats. Wild Onion.
Plains and prairies. West three-fifths and Labette county (map 55). Bulb geophyte.

Sweet-smelling bulbous prairie herb. Central (map 55a). Bulb geophyte.

**Allium porrum** L.
Escaped from cultivation. Saline and Washington counties (map 56). Bulb geophyte.

**Allium stellatum** Ker. Wild Onion.
Rockyland prairies. East third (map 57). Bulb geophyte.

**Allium textile** Nels. and Maebred. Wild Onion.
Hills in high plains. Northwest (Cheyenne and Decatur counties) (map 58). Bulb geophyte.

**Allium vineale** L. Crow Garlic.
Saline county (map 58a). Introduced. Bulb geophyte.

**Androsteodiphum caeruleum** (Scheele) Greene.
Prairies. Central, west of Flint Hills (map 59). Bulb geophyte.

**Asparagus officinalis** L. Asparagus.
Frequently escaped from cultivation. East half (map 60). Rhizome geophyte.

**Camassia scilloides** (Raf.) Cory. (Rhid. 38:405. 1936.) Blue Camas, Wild Hyacinth, Swamp Sego.

**Camassia esculenta** (R.).
Thickets and meadows. East third (map 61). Bulb geophyte.

**Erythronium albidum** Nutt. White Adder's-tongue, White Dogtooth Violet.
Rich woods along streams and bluffs. East half (map 62). Bulb geophyte.

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**Erythronium mesochoreum** (R.).
Rocky prairies, ravines and barrens. East half (map 63). Bulb geophyte.

**Hemerocallis fulva** L. Day Lily.
Meadows and along streams escaped from cultivation. Johnson county (K.U.) (map 64). Rhizome geophyte.

**Lilium michianum** Farwell. Turk's-cap Lily.

**Lilium canadense** (R.).
Meadows and swamps. East fourth (map 65). Rare. Bulb geophyte.

**Melanthium virginicum** L. Bunchflower.
Swamps and meadows. East sixth (map 66). Rhizome geophyte.

**Monothecodium bivalve** (L.) Britton. False Garlic.
Prairies and barrens. East half (map 67). Bulb geophyte.

**Oenothera umbellata** L. Star-of-Bethlehem.
Rarely escaped from gardens (Riley and Saline counties) (map 68). Bulb geophyte.

**Polygonatum canaliculatum** (Muhl.) Pursh. Large Solomon's Seal.

**Polygonatum commutatum** (Schulte) (R.).
Polygonatum giganteum** Dietr. (R.).
Moist woods and alluvial thickets. East half (map 69). Rhizome geophyte.

**Smilacina racemosas** Fernald. (Rhid. 40:400. 1938.) False Spenard, False Solomon's Seal.
Rocky woods and thickets. Scattered in east half (map 70). Rhizome geophyte.

**Smilacina stellata** (L.) Desf. False Solomon's Seal.
Moist rich woods and thickets. Scattered in north two-thirds (map 71). Rhizome geophyte.

**Smilax bona-nox L. Smilax, Greenbrier.
Thickets. Scattered in east (map 72). Specimens not showing the fiddle leaves frequently identified as *S. rotundifolia*. Liana.

**Smilax ecirhata** (Engelm.) Wats.

**Nemedia ecirhata** (R.).

**Smilax herbacea** L. Carrion Flower, Smilax.

**Nemedia herbacea** (R.).
Woods and thickets. East fourth (map 74). Root tuber geophyte.

**Smilax herbacea** lassioneuron** (Hook.) A. DC. Carrion Flower, Smilax.

**Smilax lassioneuron** (R.).
Woods and thickets. East half (map 75).

**Smilax hispida** Muhl. Greenbrier, Smilax.
Thickets. East two-thirds (map 76). Liana. A few very long peduncled specimens have been identified as *S. pseudo-china* L.
Trillium depressum (R.).
Woods. Shawnee county (map 77). Rhizome geophyte.
Trillium sessile L. Trillium, Wake-robin.
Woods. Extreme east (Miami and Cherokee counties) (map 78). Rhizome geophyte.
Trillium viride Beck Trillium.
Trillium viridescens Nutt. Trillium.
Rocky or alluvial woods. Southeast (map 79). Rhizome geophyte.
A specimen collected by E. N. Plank in 1896 labeled T. viride Beck from southwestern Kansas certainly with wrong locality.

Uvularia grandiflora Smith. Bellwort.

Veratrum woodii Robbins. False Hellebore.


Yucca filamentosa L. Spanish Bayonet. Needle and Thread.
Cultivated, sometimes naturalized. Chamaephyte.

Yucca glauca Nutt. Yucca, Soapweed, Beargrass.
Plains, hillsides and sand dunes. West three-fourths (map 81). Chamaephyte.

Zygadenus nuttallii S. Wats. Death Camas.
Toxicoscordion nuttallii (R.).
Prairie, on dry limestone slopes and rocky ravines. South three-fourths of east two-thirds (map 82). Bulb geophyte.

Many species of the family Liliaceae are in Kansas only in cultivation. Among them are Convallaria majalis L., Lily of the Valley; Hosta spp.; Muscari botryoides (L.) Mill, Grape Hymacinth; Tulipa spp., Tulip.

FAMILY PONTEDERIACEAE (Pickerelweed Family)

Eichhornia crassipes (Mart.) Schlecht. Water Hymacinth.
Cultivated, but not persisting after escaping.

Heteranthera dubia (Jacq.) MacM. Water Stargrass.

Zosterella dubia (R.).
Streams and still water. Scattered in central (Riley to Decatur counties) (map 83). Hydrophyte.

Heteranthera limosa (Sw.) Willd. Mud Plantain.
Shallow water. Scattered throughout (map 84). Hydrophyte. A form albaflora Benke from great Bend, Barton county, August 10, 1929. Benke 527 (type) in Field Museum. (Rhod. 34:9. 1932.)

Heteranthera reniformis R. & P. Mud Plantain.

Heteranthera peduncularis (R.).
Shallow water. Scattered in east half (map 85). Hydrophyte.

Pontederia cordata L. Pickerelweed.
Bordering shores, ponds and swamps. Extreme southeast (Cherokee county) (map 80). Hydrophyte.

FAMILY COMMELINACEAE (Day Flower Family)

Commelina communis L. Creeping Day Flower.
Waste places. Scattered in east fourth (map 87). Hemicyryptophyte.

Commelina erecta L. Day Flower.
Banks, woods and sand bars. East half (map 88). Hemicyryptophyte.

Commelina erecta crispa (Wooton) Palmer and Steyermark. Day Flower.
Sandy and rocky places. Southwest fourth to Saline county (map 89). Plus Cheyenne county. Hemicyryptophyte.

Commelina longicaulis Jacq. Day Flower.
Commelina nudiflora.
Moist sandy or alluvial, open or cultivated ground. East sixth (map 90). Hemicyryptophyte.

Commelina virginica L. Day Flower.
Perennial in damp soils. East half and Sheridan and Kiowa counties (map 91). Hemicyryptophyte.

Tradescantia bracteata Small. Spiderwort.

Tradescantia canaliculata Raf.
Tradescantia reflexa Raf. (R).
Especially in sandy soil. East half and Seward county (map 93). Hemicyryptophyte.

Tradescantia hirsutiflora Bush.

Tradescantia occidentalis (Britton) Smyth. Spiderwort.
Wet prairies and plains. West two-thirds (map 94). Hemicyryptophyte.

X Tradescantia occidentalis X T. canaliculata.

Tradescantia pilosa Loom. (Tradescantia subaspera Kor-Gavel). "Kans.," fide Rydberg but not known west of eastern Missouri. One Riley county specimen, must have been cultivated.

Tradescantia tharpii Anderson & Woodson.
Tradescantia brevicaulis (R.).
Rocky prairies, hillsides and thickets. Central (map 95). Hemicyryptophyte.

X Tradescantia tharpii X T. bracteata.

Tradescantia virginiana L. Many old collections so labeled, but not known west of eastern Missouri.

FAMILY JUNCACEAE (Rush Family)

Marshes and low places. Central (Saline county) (map 96). Helophyte.

2. Contributed by F. J. Hornaman.
Juncus acuminatus obtusatus F. J. Hermann.
Wet places. Pottawatomie county (map 96). Helophyte.

Juncus aristulatus Mieh.x.
Juncus biflorus Ell.
Moist sand prairies and meadows. Southeast fourth plus Saline county (map 97). Helo-hemicyryptophyte.

Juncus balticus montanus Engelm.
Juncus ater (R).
Valleys of the plains and high plains. Southwest fourth and Cheyenne county (map 98). Helo-hemicyryptophyte.

Juncus diffusissimum Buckley.
Low spots in prairies and plains and borders of streams. Scattered (map 99). Helophyte.

Juncus dudleyi Wieg.
Moist prairies and wet places along streams in plains. Scattered throughout (map 100). Helo-hemicyryptophyte.

(Approaching J. effusus pylaee [Laharp.])
Swamps, borders of ponds and streams. Southeast (Sedgwick and Crawford counties) (map 101). Helophyte.

Juncus interior Wieg.

Juncus kansanus F. J. Hermann.

Juncus tenus Wild. (R).
Scattered in east half (map 104). Hemicyryptophyte.

Juncus marginatus Rostk.
Low sandy meadows and prairies. East half (map 105). Helo-hemicyryptophyte.

Juncus marginatus setosus Coville.
Moist thickets. South central (Kingman county) (map 105). Helo-hemicyryptophyte.

Juncus neomexicanus Wieg.

Juncus nodatus Coville.
Wet sand prairies, borders of streams. East half (map 107). Hemicyryptophyte.

Juncus serpoides Lam.
Wet sandy soil. Central (Stafford county) (map 108). Helophyte.

Juncus torreyi Coville. Rush.
Borders of ponds and streams, and wet sandy areas in prairies and plains. Throughout (map 109). General. Helophyte.

Juncus validus Coville.
Wet sandy places. Southeast (Chautauqua county) (map 110). Helophyte.
Carex annetiana xanthoarpa (Bieb.) Wieand. Sedge.

*Carex brochyglossa* Mack. (R).

*Carex ariticta* Mackenzie. Sedge.

*Carex varia* Muhl. (R).

*Carex austriaca* (Small) Mack. Sedge.
Dry soil. Scattered, mostly central (map 126).

*Carex bicknellii* Britton. Sedge.
Dry soil. East third plus Sherman county (map 127).

*Carex blanda* Dewey. Sedge.

*Carex festucacea* in part.
Dry soil. Throughout except southwest eighth (map 129). Hemicyryptophyte.

*Carex brevior* (Dewey) Mack. Sedge.

*Carex brevior* moesta (Mack.) F.C. Gates.
Dry soil. Scattered in east three-fifths (west to Osborne county) (map 130). Hemicyryptophyte.

*Carex bushii* Mackenzie. Sedge.

*Carex cephalophora* Muhl. Sedge.

*Carex conjuncta* Booth. Sedge.
Moist meadows and thickets. Extreme eastern (Wyandotte county) (map 133). Hemicyryptophyte.

*Carex convoluta* Mack. Sedge.
Dry woods. Leavenworth and Wyandotte counties (map 134). Hemicyryptophyte.

*Carex crapei* Dewey. Sedge.
Limestone areas. Shawnee county (map 135). Hemicyryptophyte.

*Carex crass-corvi* Shuttlew. Sedge.
Swamps and low wet woods. Wabaunsee and Wyandotte counties (map 136). Hemicyryptophyte, helophyte.

*Carex davisi* Schw. & Torr. Sedge.
Thickets, meadows and borders of streams. Northeast sixth (map 137). Hemicyryptophyte.

*Carex elaeocharoides* Bailey. Sedge.
(C. stenophylloides of old lists.)
Carex lanuginosa Michx. Sedge.  

Carex leavenworthii Dewey. Sedge.  
Prairies. Scattered in east third south from Cloud county (map 154). Hemicyrptophyte.

Carex lupulina Mahl. Sedge.  
Swamps. Wyandotte and Leavenworth counties (map 155). Hemicyrptophyte, helophyte.

Carex meadii Dewey. Sedge.  

Chautauqua and Montgomery counties (map 157). Hemicyrptophyte.

Carex muhlenbergii enervis Boott. Sedge.  
Prairies. Cherokee county (map 158). Hemicyrptophyte.

Carex muskingumensis Schwein. Sedge.  
Moist woods and thickets. Wyandotte county (map 159). Hemicyrptophyte.

Carex nebrascensis Dewey. Sedge.  
Meadows and swamps of high plains. Cheyenne county (map 160). Hemicyrptophyte (helophyte?).

Carex normalis Mack. Sedge.  
Woodlands. Wyandotte county (map 161). Hemicyrptophyte.

Carex oligocarpa Schkuh. Sedge.  
Dry woods. Riley and Wyandotte counties (map 162). Hemicyrptophyte.

Carex praegracilis W. Boott. Sedge.  
(C. marchica of old lists.)  
Plains and prairies. Scattered but mostly in north half (map 163). Hemicyrptophyte.

Carex retroflexa Mahl. Sedge.  

Carex rosea Schkuh. Sedge.  
Woods and thickets. Franklin and Wyandotte counties (map 165). Hemicyrptophyte.

Carex seaparia Schkuh. Sedge.  

Carex shortiana Dewey. Sedge.  
Moist woods. Leavenworth and Wyandotte counties (map 167). Hemicyrptophyte.

Carex siegertii Dewey. Sedge.  
Im mature specimens from Logan county in western Kansas seem to be this species (map 167a).

Carex sparganioides Muhl. Sedge.  
Swampy woods and thickets. Leavenworth and Wyandotte counties (map 168). Hemicyrptophyte.

Carex stipata Muhl. Sedge.  
Wet meadows and swamps. Cloud and Saline counties east plus Crawford county (map 169). Hemicyrptophyte.

Carex tribuloides Wahl. Sedge.  
Prairies. Wyandotte county (map 170). Hemicyrptophyte.

Carex vulpinoides Michx. Sedge.  
Swampy places. General except less frequent westward and absent in extreme west (map 171). Hemicyrptophyte.

The following are credited definitely to Kansas in Rydberg's Manual, but no specimens have been located to support such distribution:

Carex mesochorea Mack.  
Carex xerantia Bailey.  
Carex tetanica Schkuh. as specimens are C. meadii.  
Carex shriveri Britton.  
Carex trichocarpa Muhl. but not the specimens.

The following from Britton, 3d edition:

Carex lanuginosa kansana Britton (not now recognized).  
Carex castanea Wahl.  
Carex filifolia Nutt.

The following species are listed by Smyth as occurring in Kansas, but are unsupported by specimens and all are more or less doubtful:

531. Carex gigantea Rudge.  
532. Carex utriculata Boott.  
533. Carex utriculata Boott.  
534. Carex monile Tuckerman.  
535. Carex setifolia Britt.  
536. Carex lirida Wahl.  
537. Carex squarrosa L.  
538. Carex aristata R. Br.  
539. Carex diamand Schrank.

Cyperus americanus Torr. & Hook. Sedge.  
Wet soil. At least east third-fourths (map 172). Therophyte.

Cyperus diandrus Torr. Sedge.  

Cyperus echinocarpus Muhl. Sedge.  

Cyperus esculentus L. Yellow Nutgrass.  
Moist ground, sand and gravel bars and cultivated ground. Rhizome tuber-bearing. Probably throughout (map 175). Geophyte.

Cyperus ferrugineus Boeckl. (Rhod. 37:150. 1935.)

Cyperus speciosus Vahl.  

Cyperus filiculmis Vahl. Sedge.  
(Exclusive Cyperus bokhai Britton.)  
Dry fields and hill sides. Throughout (map 177). Rhizome geophyte.
Cyperus flavescens L.
Low ground. Johnson and Wyandotte counties (map 178). Therophyte.

Cyperus hallii Britton.
Wet places. Southeast (west to Barber county, north to Osage county) (map 179). Hemicycryptophyte.

Cyperus houghtonii Torr.
Sandy places. Possibly throughout (map 180). Geophyte?

Cyperus inuleus Muhl.
Wet sandy soil of ravines, river bars, and cultivated grounds. East five-sixths (map 181). Therophyte.

Cyperus ovularis (Michx.) Torr.
Sandy soil along streams, dry open woods and prairies. Southeast ninth (map 182). Geophyte.

Cyperus pseudovagatis Steud.
Wet places in prairies and borders of streams. Southeast (Neosho and Cherokee counties) (map 183).

Cyperus rivularis Kunth.
Along streams and in ponds. North central (map 184). Therophyte.

Cyperus rotundus L.

Cyperus schenckii Torr.
Sandy, low ground along streams and ponds. West two-thirds and northeast sixth (map 185). Hemicycryptophyte.

Cyperus strictus L.
Low, wet ground, along streams and ponds. East two-thirds and Stevens county (map 186). Hemicycryptophyte.

A variety, capitata Britton, in Kingman county; variety, composita Britton, in Riley and Leavenworth counties; variety, gracilis, in Riley county and variety, robusta Britton, scattered in east two-thirds (map 187). Hemicycryptophyte.

Eleocharis acicularis (L.) R. & S. Spikerush.
Wet places. Throughout (map 188). Hemicycryptophyte.

Eleocharis compressa Sulliv. Spikerush.
Eleocharis acuminata (R.).
Wet places, bordering ponds and ditches. Scattered (map 189). Hemicycryptophyte.

Eleocharis elliptica Kunth.
Eleocharis capitata borealis Swenson.
Wet places, uncommon. Douglas county (map 190).

Eleocharis engelmanni Steud.
Wet soil. Woodson and Saline counties (map 191). Therophyte.

Eleocharis geniculata (L.) R. & S.
Eleocharis atropurpurea (Retz.) Kunth of old lists.

Eleocharis macrostachya Britton. Spikerush.
A species complex which includes Eleocharis palustris and E. palustris glaucaeeus of old lists and E. palustris Torr., E. mamillata Lindb., and E. zuendiformis Fernald & Bracke as to Kansas specimens of more recent work.
Wet soil. Throughout (map 193). Hemicycryptophyte.

Eleocharis obtusa (Willd.) Schultes. Spikerush.
Muddy borders of streams and ponds. East half (194). Therophyte.

Eleocharis tennis verrucosa Svenson.
Wet places. Cherokee county (map 198). Hemicycryptophyte.

Eleocharis wolffii A. Gray.
Wet soil. Throughout (map 199).

Fimbristylis castanea puberula (Michx.) Britton.

Fimbristylis interior Britton.
Meadows. Scattered throughout (map 201). Hemicycryptophyte.

Fimbristylis microstachya (Michx.) Blake.
Fimbristylis automnalis (R.).
Sandy soil. South central and southeast (map 202). Hemicycryptophyte.

Foliene simplex Vahl. Umbrellagrass.
Moist soil. Scattered mostly in central (map 203). Hemicycryptophyte.

Hemiarapha drummondii Nees.
Damp sand. Wyandotte and Neosho counties (map 204). Therophyte.

Hemiarapha micrantha (Vahl.) Pax.

Hemiarapha micrantha aristulata Coville.
Sandy banks. Trego and Cloud counties (map 206). Therophyte.

Kyllingia pumila Michx.
Cyperus deminutus Hattf., & Kikenth.
Moist or wet soil in prairies or woods. Wyandotte county (map 207). Therophyte.

Rynchospora corniculata (Lam.) Gray. Beaked Rush.

Scirpus americanus Pers. Bulrush, Three-square.
Fresh or saline swamps and sandy or alluvial banks of streams. West two-thirds and east through the Kansas river valley (map 209). Helophyte.

Scirpus americanus longispicatus.
Trego and Morton counties. Helophyte.

Scirpus atrovirens Muhl.
Swampy open ground. East five-sixths (map 210). Helophyte.

4. Plants all checked over by Dr. H. K. Swenson in 1939.
Scirpus fluviatilis (Torr.) Gray. River Bulrush.
Wet places along streams and ponds and in ditches. Scattered in east and central and southwest (map 211). Helophyte.

Scirpus hallii A. Gmey.
Wet places. Rooks county (map 212). Theroxephyte.

Scirpus linearis Michx.
Swamps and wet prairies. East half and 7/8 Seward county (map 213). Helophyte.

Scirpus pallaucus (Britton) Fernald.
Wet open ground. Scattered (map 214). Helophyte.

Scirpus pallasianus A. Nels.
Salt marshes. West two-thirds (map 215). Helophyte.

Water and wet places in prairies. Throughout (map 216). Helophyte.

Scleria paniculata Muell. Nutgrass.

Scleria triglomerata Michx. Tall Nutgrass.

Family Poaceae (Gramineae) (Grass Family)

Aegilops cylindrica Host. Goats Grass.
Wheat fields and waste places in towns and along railroads. Introduced. Central (map 219). Theroxephyte. (Winter annual.) Pubescent plants are known as var. rubiginosa Popov and have the same range.

X Aegilops cylindrica x Triticum aestivum was discovered by C. O. Johnson in Geary county in 1937 and was present in quantity in 1938. Also Barton county.

Agropyron cristatum (L.) Beauv. Crested Wheatgrass.
Cultivated fields and vicinity. West (map 220). Hemicyryptophyte.

Agropyron paniculatum (Schwein.) Hitch.
Agropyron tenutum Vasey. (R).
Agropyron trachycaulum typicum Fernald.
Dry soil. Cheyenne county (map 221). Hemicyryptophyte.

Agropyron pseudoprepens Scribn. & Smith.

Agropyron repens (L.) Beauv. Quackgrass, Couch Grass.

Agropyron smithii Rydb. Western Wheatgrass, Bluejoint.
Prairies and plains. Throughout, but commoner westward (map 223). Hemicyryptophyte—rhizome geophyte.

Agropyron subsecundum (Link.) Hitch.
Agropyron commutum.
Agropyron richardsonii (R).
Meadows and thickets according to Smyth. Hemicyryptophyte.

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Agrostis alba L. Redtop.
Agrostis palustris Huds.
Including A. vulgaris of Smyth's List.
A. stolonifera L. and A. tenax Scob. (R).

Agrostis cliffortiana Schultes.
Dry soil. Southeast (Chautauqua and Crawford counties) (map 225). Therophyte.

Agrostis ciliaris. (R).
Credited to Kansas but no evidence of its occurrence. The specimens are Agrostis alba.

Agrostis hymenalis (Walt.) B.S.P. Hairgrass, Ticklegrass.

Agrostis perennans (Walt.) Buckerm.
Including A. schweinitzii Trin. (A. perennans aestivalis Vasey.)

Alopecurus aequalis Sobol. Floating Foxtail Grass.
Alopecurus arizalinus Michx. (R).
Wet meadows. Shawnee county (map 228). Hemicyryptophyte.

Alopecurus carolinianus Walt. Foxtail Grass.
Alopecurus genevensis L. (R).
Wet meadows, ditches and waste ground. Scattered in east three-fourths (map 229). Therophyte.

Alopecurus myosuroides Huds. Foxtail Grass.
Waste places and railway banks. Adventive from Europe.
Riley county (map 230). Hemicyryptophyte.

Alopecurus pratensis L. Meadow Foxtail Grass.
Meadows and waste places. Riley county (map 231). Hemicyryptophyte.

Andropogon fuscatus Muhl. Big Bluestem, Bluejoint Turkeyfoot.
Andropogon provincialis Lam. (R).

Andropogon hallii Hack. Turkeyfoot.
Including A. chrysoecomus Nash. (R).

Andropogon ischaemum L.
A patch 30 by 50 feet of this low grass, west of Howard, Elk county, was found in 1937 by D. R. Cornelius. Specimens transplanted to Manhattan are flourishing (1939).

Andropogon saccharoides Sw. Silver Beardgrass.
Bothriochloa saccharoides (Sw.) (R).
Prairies and plains. Mostly southwest, but to Osborne, Shawnee and Labette counties (map 234). Hemicyryptophyte.
Andropogon scoparius Michx. Little Bluestem, Prairie Beardgrass.

Andropogon ternarius Michx. Silvery Beardgrass.
First collected in Kansas in 1936 by D. R. Cornelius.

Andropogon virginicus L. Beardgrass, Broomedge.
- Meadows, only in cultivation. Hemicyriptophyte.

Aristida adscensionis L. Tufted Wiregrass.

Aristida fasciculata Torr. (R).
- Dry open ground. Southwest (map 238). Therophyte.

Aristida basiramea Engelm. Triple-awn.
- Dry prairies. East half (map 239). Hemicyriptophyte.

Aristida curtissii (A. Gray) Nash.
- Dry soil in open ground. Cloud and Saline counties (map 240). Hemicyriptophyte.

Aristida desmantha Trin. & Rupr.
- Open sandy soil. Credited to southwestern Kansas by Smyth, but no specimens.

Aristida dichotoma Michx. Poverty Grass.
- Dry open prairies and woods. Labette and Cherokee counties (map 241). Hemicyriptophyte.

- Dry soil, hills and plains. Southwest sixth (map 242). Hemicyriptophyte.

Aristida fendleriiana Steud. Fendler Triple-awn.
- Dry soil, plains and hills. Southwest fourth (map 243). Hemicyriptophyte.

Aristida intermedia Scribn. & Ball. Triple-awn.
- Low sandy soil. Scattered in east two-thirds (map 244). Hemicyriptophyte.

Aristida longespica Poir.

Aristida gracilis Ell. (R).
- Poor or sandy dry soil. Extreme southwest (Morton county) (map 245). Therophyte.

- Dry or sandy, plains and foothills. West two-thirds (map 246). Hemicyriptophyte.

Aristida longiseta robusta Merr.
- Dry or sandy, plains and foothills. Scattered in west two-thirds (map 247). Hemicyriptophyte.

Aristida oligantha Michx. Prairie Triple-awn.

Aristida purpurascens Poir. Arrowfeather.
- Dry sandy soil. East half (map 249). Hemicyriptophyte.

Aristida purpurea Nutt. Purple Triple-awn.
- Dry hills and plains. Southwest and Riley county (map 250). Hemicyriptophyte.

Aristida ramosissima Engelm. Triple-awn.

Aristida rigidilim Nash. Triple-awn.

Arrhenatherum elatius (L.) Beauv. Oatgrass.
  (350 in Smyth). Hemicyriptophyte.

Arrundo donax L. Giant Reed.
- Only in cultivation in Kansas. Rare. (371 in Smyth.)

Avena fatua L. Wild Oats.

Avena sativa L. Oats.
- Cultivated, escaping to waste ground along roads and railroads. Scattered throughout. Therophyte.

Beckmania syzigachne (Steud.) Fernald. American Sloughgrass.
- Wet ground. Sherman and Shawnee counties (map 251).

Bouteloua curtipendula (Michx.) Torr. Tall or Side oats Grama.
- Prairies, plains, rocky hills and open woods. Throughout (map 252). Hemicyriptophyte.

- Plains and prairies. West five-sixths (map 253). Hemicyriptophyte.

- Prairies, plains and rocky hills. West five-sixths (map 254). Hemicyriptophyte.

Brachyelytrum erectum (Schreber) Beauv.
- Moist or rocky woods. Wyandotte county (map 255). Hemicyriptophyte.

Bromus maxima L. Big Quaking Grass.
- Only in cultivation in gardens. Therophyte.

Bromus media L. Quaking Grass.
- Only in cultivation in gardens. Therophyte.

Bromus anomalus Roop. Nodding Bromegrass.

Bromus porteri (Coul.) (R).

Bromus carinatus Hook. & Arn.
- Open ground in Ellis county (map 256).

Bromus catharticus Vahl. Rescue Grass.

Bromus unioloides (Willd.) (R).
- Pastures and waste places. Central (map 257). Therophyte.
Bromus eiliatus laevigilumis Scribn. Bromegrass.
  Meadows and hillsides. Cloud county (map 258). Hemicryptophyte.
  Fields and waste places. Scattered in east third (map 259). Therophyte.
Bromus inermis Leyss. Awnless Bromegrass.
Bromus japonicus Thunb. Japanese Chest or Bromegrass.
  Bromus patens Scribn. Mert. & Koch. (R).
  Waste places. East half, west to Sheridan county in north (map 261).
  Therophyte (winter annual).
Bromus mollis L. Soft Chest.
  Bromus hordeaceus L. (R).
  Roadside, fields and waste places. Riley and Kiowa counties (map 262).
  Therophyte.
Bromus parallelus L. Canada Bromegrass, Hairy Woodchest.
  Moist rocky woodlands and shady banks. East third and Ottawa
  and Rooks counties (map 263). Hemicryptophyte.
Bromus pungens latifolius (Scribn.) Shear. Bromegrass.
  Bromus altissimus Pursh. (R).
  Meadows, Douglas and Leavenworth counties (map 264). Hemicryptophyte.
  A form incana (Shear) Hitchc., on wooded hills, northeast fourth
  of Kansas (map 265). Hemicryptophyte.
Bromus mexicanus L. Chest.
  Waste places. Labette, Wyandotte, Douglas and Ellis counties (map
  266). Therophyte.
Bromus secalinus L. Cheat.
  Grainfields, roadways, and waste places. East three-fourths (map
  267). Therophyte.
Bromus secalinus velutinus (Schr.) Coch.
  Waste places. Cloud and Montgomery counties (map 268).
  Therophyte.
Bromus squarrus L.
  "Kans." fide Rydberg but specimen are Bromus japonicus.
Bromus tepeorum L. Downy Chest.
  Waste places, roadways and sandy soil. Scattered, but mostly west
  three-fourths (map 269). The variety, mutus Klett & Rucht (map
  269), has been recently found in Sheridan county. Therophyte.
Buchloe dactyloides (Nutt.) Engelm. Buffalo Grass.
  High plains, dry hilltops and ledges in the prairie. Throughout, but
  most abundant westward (map 270). Hemicryptophyte. The most impor-
  tant grass of the high plains.
Calamagrostis canadensis (Michx.) Nutt. Reed Grass.
  Banks and swamps. Extreme west (Hamilton county) (map 271).
  Hemicryptophyte or helophyte.
Calamagrostis inermcs A. Gray.
  "Kans." fide Sten and Rydberg, but no authenticating specimen.

Calamovilla gigantea (Nutt.) Scribn. and Merr. Sandgrass.
  Sanddunes. Southwest to Sedgwick county and in Riley county (map
  272). Hemicryptophyte.
Calamovilla longifolia (Hook.) Hack. Sandgrass.
  Sanddunes and sand prairie. Jewell to Shawnee counties and Chey-
  enne and Comanche counties (map 273). Hemicryptophyte.
Cenchrus paniciformis Benth. Sandbar.
  Sandy soil of valleys, floodplains, fields and cultivated ground.
  Throughout (map 274). Therophyte.
Chloris subdolichastachya C. Müell. 
  Chloris brevifolia Nash (R).
  A single small specimen from the Kansas county, October 10, 1898, in the Field Museum, seems to be the only
  Kansas specimen known (map 274).Rhodes Grass.
  Meadowgrass occasionally cultivated under irrigation.
Chloris verticillata Nutt. Windmill Grass.
  Prairies and plains. Throughout (map 275). Hemicryptophyte.
Chloris virgata Swart. Feather Fingergrass.
  Chloris elegans H. B. K. (R).
  Sandy soil. Central (Edwards, Reno and Ellis counties) (map 276).
  Therophyte.
Cimna arundinacea L. Wool Reedgrass.
Cox lachryma-jobi L. Job's tears.
  Only in cultivation as an ornamental.
Cortaderia selloana (Schult.) Aschers. and Graebn. Pampasgrass.
  Only in cultivation.
  Cultivated and frequently escaped. East third-fifths (map 278).
Cynosurus cristatus L.
  Cultivated only.
Daecylis glomerata L. Orchard Grass.
  Fields and waste places. Scattered but commoner eastward
  (map 279).
Dianthus spicata (L.) Beauv. Wildoatgrass, Poverty Grass.
  Woods and hillsides. Extreme southeast (Cherokee county) (map
  280). Hemicryptophyte.
Diarrhena americana Beauv.
  Diarrhena arundinacea (R).
  Diarrhena flexuosa (Raf.
Digitaria filiformis (L.) Koehler. Slender Fingergrass.
  Syntheria filiformis (R).
Digitaria ischaemum Schreb. Small Crabgrass.

*Digitaria ischaemum* (R.)


Digitaria sanguinalis (L.) Scop. Crabgrass.

*Digitaria sanguinalis* (R.)

*Digitaria sanguinalis marginata* (Link).

Cultivated ground and waste places, lawns and roadsides (map 284). Throughout. Therophyte.

Distichlis stricta (Torr.) Rydb. Alkaligrass, Saltgrass.

Salt marshes, alkali soils and waste places. West three-fourths (map 285). Rhizome geophyte.

Echinochloa crusgalli (L.) Beauv. Barnyard Grass.

Including

*Echinochloa occidentalis* (Wieg.) (R.)

*Echinochloa punctata* (Poir.) (R.)

Moist open places, ditches, river banks, waste places and cultivated fields. Throughout (map 286). Therophyte.

Echinochloa crusgalli nitida (Pursh) Peterrm.

Including

*Echinochloa occidentalis* (Wieg.) (R.)

*Echinochloa microstachya* (Wieg.) (R.)

With the species but most frequently westward. Throughout (map 287). Therophyte.

Echinochloa crusgalli frumentaceae (Roxb.) Wight. Billion-dollar Grass.

*Echinochloa frumentacea* (Roxb.) (R.)

Sometimes cultivated, seldom escaping. Therophyte.

Echinochloa crusgalli zeylanensis (H. B. K.) Hitchc.

(Specimens are often identified as *E. colonna*.)

Wet sandy soil. Southwest fourth and Greenwood county (map 288). Therophyte.

Echinochloa valeti (Pursh) Heller.

Recorded by Smyth, but specimens are *E. crusgalli*. Therophyte.

Eleusine indica (L.) Gaertn. Goosegrass, Yard Grass.

Waste and cultivated ground, naturalized from Eurasia. East four-fifths (map 289). Therophyte.

Elymus canadensis L. Nodding Wild Rye.

River banks among bushes, prairie, open ground and sandy soil.

Scattered throughout (map 290). Hemicyrptophyte.

Elymus canadensis brachystachys (Scribn. & Ball) Farwell. Wild Rye.

Moist or partly shaded ground. Throughout except southwest (map 291). Hemicyrptophyte.


*Elymus canadensis f. glaucus* (Michx.)


Elymus macounii Vasey. Wild Rye.


Elymus villosus Muhl. Wild Rye.

*Elymus strigilosus* Willd. (R.)

Woods and on river banks. Scattered east half and southwest fourth (map 294). Hemicyrptophyte.

Elymus villosus arkansanus (Scribn. & Ball) Hitchc. Wild Rye.

*Elymus strigilosus* arkansanus (R.)


Elymus virginicus L. Virginia Wild Rye.

Moist soil, low woods, prairies and along streams (map 296). Hemicyrptophyte.

Elymus virginicus australis (Scribn. & Ball) Hitchc. Southern Wild Rye.

Prairies, rocky hills and open woods. Finney county (KU) (map 297). Hemicyrptophyte.

Elymus virginicus glabriusculis (Vasey.) Bush. Wild Rye.

*Elymus glabriusculis* (R.)

Woods and thickets. Doniphan (KU) and Wilson (KU) counties (map 298). Hemicyrptophyte.

Elymus virginicus intermedius (Vasey.) Bush. Wild Rye.

*Elymus intermedius* Scribn. (R.)

Thickets, low ground and river banks. Scattered in east fourth (map 299). Hemicyrptophyte.

Elymus virginicus subnotatus Hook.

*Elymus canadensis* Piper (R.)

Woods and open ground. East three-fifths (map 300). Hemicyrptophyte.

*Elymus glaucus* of Smyth's list is possibly *Elymus macounii*.

*Elymus condensatus* of Smyth's list was certainly misidentified.

Eragrostis barleri Dcavne.

Waste places. Saline county (map 301). Therophyte.

Eragrostis capillaris (L.) Nees. Lacegrass, Lovegrass.

Open dry places. East half (map 302). Therophyte.

Eragrostis cilianensis (All.) Link. Lovegrass, Stinkinggrass.

Waste places and cultivated ground. Throughout (map 303). Therophyte.

Eragrostis curtipes Gilib. Buckl.

Prairies, plains and open woods. Extreme south central (map 304). Hemicyrptophyte.

Eragrostis frankii C. A. Meyer. Frank's Lovegrass.

Moist low or sandy ground. East fourth (map 305). Therophyte.

Eragrostis hypnoides (Lam.) B. S. P. Smooth Creeping Lovegrass.

Moist sandy or gravelly river banks on wet ground. East half (map 306). Therophyte.

Eragrostis intermedia Hitchc. Plains Lovegrass.

Dry, rocky, gravelly or sandy prairies. Extreme south central (map 307). Hemicyrptophyte.
Engrois pectinacea (Michx.) Nees. Pursh Lovegrass.

Engrois pusillii Schrad. (R).

Waste places, open ground and along streams. At least two-thirds (map 308). Therophyte.

Engrois pilosa (L.) Beauv. India Lovegrass.

Cultivated ground and waste places. Throughout (map 309). Therophyte.

Engrois poesentes Beauv. Low Lovegrass.


Engrois reptans (Michx.) Nees. Hairy Creeping Lovegrass.

Sandy soil, river banks. Saline and Chautauqua counties (map 311). Therophyte.

Engrois secundiflora Presl.

Dry or sandy soil. Southwest fourth northeast to Pottawatomie county (map 312). Hemicyrptophyte.

Engrois sessilisica Buckl.

Acynopteris sessilisica Buckl. (R).

Plains and sandy prairies. Southwest to Kiowa county (map 313). Hemicyrptophyte.

Engrois spectabilis (Pursh.) Steud. Purple Lovegrass.

Engrois pectinacea (R).

Dry or sandy soil. Mostly east two-thirds (map 314). Hemicyrptophyte.

Engrois trichodes (Nutt.) Nash.

Sandy soil in barrens, sanddunes, or open sandy woods. Central and northeast sixth (map 315). Hemicyrptophyte.

Engrois trichodes pilifera (Schep.) Fernald (Rhod. 40:331, 1938).

Engrois pilifera (R).

Sandy woods. Tufted perennial in shady sandy places. Central (map 316). Hemicyrptophyte.

Exianthus ravennae (L.) Beauv. Ravenna Grass.

Only in cultivation as an ornamental. Hemicyrptophyte.

Eriochloa contracta Hitchc. Prairie Cupgrass.

Open moist to wet places, ditches, low fields. South and east of line from Grant to Washington counties (map 317). Therophyte.

Euchlaena mexicana Schrad.

Only in cultivation. Therophyte.

Festuca elicior L. Meadow Fescue.

Meadows, open woods and waste ground. East two-thirds (map 318). Hemicyrptophyte.

Festuca obtusa Spreng.

Festuca nutans Spreng. (G), (B & B).


Festuca octoflora Walt. Slender Fescue Grass.

Sandy or rocky soil in prairies and open woods. Throughout (map 320). Therophyte.

Festuca octoflora hirtella Piper.

Prairies, Ellis county (map 320a). A. W. Albertson in 1938.

Festuca ovina L. Sheep Fescue.

Cultivated in lawns and escaped in Ellis and Saline counties (map 321). Hemicyrptophyte.

Festuca paradoxa Desv. Fescue.

Festuca shortii Kunth.

Wet prairies, thickets and open woods. East third (map 322). Hemicyrptophyte.

Glyceria canadensis (Michx.) Trin.

"Kan." Ride B & R & Rydeburg, but no authenticating specimens.

Glyceria striata (Lam.) Hitchc. Fowl Meadowgrass, Manugar Grass.

Glyceria nertata (R).

Wet meadows and swamps. North half and east third (map 323). Hemicyrptophyte.

Glyceria grandis (414 in Smyth as G. americana) and

Glyceria septentrionalis (425 in Smyth as G. sultana).

Both without authenticating specimens and improbable.

Gymnopogon ambiguus (Michx.) BSP.

Dry sandy woods. Chautauqua county (map 324). Hemicyrptophyte.

Hierochloe odorata (L.) Beauv. Sweet Grass, Holy Grass.

Only in cultivation. Hemicyrptophyte.

Holorus lanatus L. Velvet Grass.


Hordenum jubatum L. Foxtail Barley, Squirreltail Grass.

Dry sandy soil, prairies and waste places. Probably throughout (map 325). Hemicyrptophyte.

Hordenum jubatum cespitosum (Scribn.) Hitchc.

Hordenum cespitosum Scribn. (R).


Hordenum pusillum Nutt. Little Barley.

Plains, waste places, and open frequently alkaline ground. Throughout (map 327). Therophyte.

Hordenum nodosum L. Meadow Barley.

Only in cultivation.

Hordenum vulgare L. Barley.

Cultivated; occasionally in waste ground. Therophyte.

Hordenum vulgare trifurcatum (Schlecht.) Alefeld. Beardless Barley.

Cultivated, or in waste ground. Therophyte.

Hystrich potalsa Moench. Bottlebrush Grass.


Imperata sanderbornii (396 in Smyth as only in cultivation).


Including Koeleria latifrons, Koeleria nitida and Koeleria gracilis (R).

Prairies. East two-thirds, west in the north to Cheyenne county (map 329). Hemicyrptophyte.

9-1646
Leersia lenticularis Michx. Catchily Grass.
Wet ground, ditches, and swamps. (271 in Smyth.) Hemicycotope-helophyte. No authenticating specimens known, but quite likely present.

Leersia ozyoides (L.) Swartz. Rice Cutgrass.

Leersia virginica Willd. Cutgrass, Whitegrass.
Moist or wet ground along streams and in woods. East three-fourths (map 331). Hemicycotope-helophyte. Most specimens are clearly the var. ovata (Poir.) Fern. except from Miami and Labette counties.

Leptochloa fascicularis (Lam.) Gray. Salt Meadowgrass.
Including Diplachne acautonata Nash. (R.), Brackish meadows, ditches, alkali flats or shallow water. Scattered in east three-fifths (map 333). Hemicycotope-helophyte.

Leptochloa filiformis (Lam.) Beauv. Red Sprangletop.
Including Leptochloa maculata Kunth.
Open or shady ground, fields and sandy river banks. Scattered in east two-thirds (map 332). Therophyte.

Leptochloa filiformis f. attenuata (Staud.).
Scattered in southeast. Therophyte.

Leptoloma cognatum (Schultes) Chase. Fall Witchgrass.
Dry soil, sand hills and sand prairie. East two-thirds (map 334). Hemicycotope-helophyte.

Lolium multiflorum Lam. Italian Ryegrass.
Introduced in lawns, fields and waste places. Scattered, mostly east (map 335). Therophyte.

Lolium perenne L. Perennial Ryegrass.

Lolium temulentum L. Darnel, Poison Darnel.
Introduced in fields and waste ground. Neosho and Riley counties (map 337). Therophyte.

Melica mutica Walt., 409 of Smyth's list is a misidentification.

Melica nitens Nutt. Three-flower Melic.
Rocky woods. East third and Finney county (map 338). Hemicycotope-helophyte.

Melica porteri Scribn. Porter Melic.

Miscanthus sinensis Anderss. Plumegrass, Eulalia.

Miscanthus sinensis gracilimus Hitchc.

Miscanthus sinensis variegatus Beal.

Miscanthus sinensis zebrinus Beal.
Only in cultivation as ornamentals.

Muhlenbergia andina (Nutt.) Hitchc. Foxtail Muhly.

Muhlenbergia conata (R.)
Plains and river valleys, southwestern, side Hitchcock (map 340). Hemicycotope-helophyte.

Muhlenbergia arenicola Buckl.
Sandy plains, mesas and foothills. Russell county (USNH) (map 341). Hemicycotope-helophyte.

Muhlenbergia asperifolia (Nees & Meyen) Parodi. Scratchgrass.
Sporobolus asperifolius (R.), Damp or marshy, often alkali soils along streams and ditches. West three-fifths (map 342). Hemicycotope-helophyte.

Muhlenbergia brachyphylla Bush.
East half, mostly north part (map 343). Hemicycotope-helophyte.

Muhlenbergia capillaris (Lam.) Trin.
Dry rocky or sandy soil. Elk and Chautauqua counties (map 344). Hemicycotope-helophyte.

Muhlenbergia cuspidata (Torr.) Rydb.

Muhlenbergia filiformis (Thurb.) Rydb.
Muhlenbergia simplicis (Scribn.).

Muhlenbergia foliosa (Roem. & Schult.) Trin.
Moist thickets, woods, swamps. Central (Kingman and Saline counties) (map 347). Therophyte.

Muhlenbergia mexicana (L.) Trin. Satin Grass, Wristum Muhly.

Muhlenbergia mexicana f. commutata (Scribn.)
Muhlenbergia commutata (R.).

Muhlenbergia microsperma (DC.). 305 in Smyth's list is a misidentification.

Muhlenbergia paspae Thurb., 308 in Smyth's list is a misidentification.

Muhlenbergia racemosa (Michx.) BSP. Marsh Muhly.
Moist meadows, thickets and open woods. Except southwest and southeast (map 350). Hemicycotope-helophyte.

Muhlenbergia schreberi Gmel. Nimblewill.
Dry hills and woods. East half (map 351). Hemicycotope-helophyte.

Muhlenbergia sobolifera (Muhl.) Trin.
Rocky woods and thickets. East half and Sheridan county (map 352). Hemicycotope-helophyte.

Muhlenbergia teminalis (Willd.) BSP.
Credited to eastern Kansas (304 in Smyth's List), but no authenticating specimens have been found.

Muhlenbergia sylvatica Torr.
Muhlenbergia umbrosa Scribn.
Muhlenbergia torreyi (Kunth) (R).
Moist woods and thickets. Scattered in east two-thirds (map 353). Hemicycrophyte.

Muhlenbergia torreyi (Kunth) Hitchc. Ringgrass.
*Muhlenbergia gracillima* Torr. (R).
Plains. Southwest fourth to Russell county (map 354). Hemicycrophyte.


Oryza sativa L.
Occasionally cultivated.

Oryzopsis hymenoides Nutt.
Erigeron hymenoides (R).

*Oryzopsis microstachya* (Torr. & Gray), 276 in Smith's list; *Oryzopsis racemosa* (Smith), 276. *O. nebrodensis* in Smith's list, and Oryzopsis superflida Michx., 277 in Smith's list, all without specimen evidence, and the latter two certainly misidentifications.


Panicum aeneum Michx.

Panicum capillare L.Tickgrass, Witchgrass. Dry or sandy soil, waste places and cultivated ground. Throughout (map 359). Therophyte.

Panicum capillare occidentale Rydb. Western Tickgrass.
*Panicum barbipilum* (R).
Sandy soil, open ground. Scattered in north half from Riley county west (map 360). Therophyte.

Panicum clandestinum L.
Moist ground. East third (map 361). Hemicycrophyte.

Panicum depauperatum Muhl.

Panicum dichotomiflorum Michx. Fall Panicum. Wet soil, fields, waste places and cultivated ground. East five-sixths (map 363). Therophyte. Mostly, if not entirely, the variety *geniculatum* (Wood) Fernald. (Rh. 38:387).

Panicum gattingeri Nash.
Open places. Scattered in central and southwestern Kansas (map 364). Therophyte.

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Paniceum latifolium L.
Woods. East sixth (map 367). Probably also 252 in Smith's list as *Paniceum boscii*. Hemicycrophyte.

Paniceum leibergii (Vasey) Scribn.
Prairies. East fifth (map 368). Hemicycrophyte.

Paniceum lindeyeri Nash.
Dry sandy or sterile woods or prairies. Labette county (map 369). Hemicycrophyte.

Paniceum linearifolium Scribn.
Dry, open woods and prairies. Southeast (Chautauqua and Cherokee counties) (map 370). Hemicycrophyte.

Paniceum malacophyllum Nash.

Paniceum miliacum L. Brookcarn Millet.

Paniceum obtusum H. B. K. Vine Mesquite.
Sandy or gravelly soil. Southwest fourth (map 373). Hemicycrophyte.

Paniceum perlongum Nash.
Prairies and dry hills. Saline, Riley and Geary counties (map 374). Hemicycrophyte.

Paniceum praecocius Hitchc. & Chase.
Dry, open places, prairies. East two-thirds (map 375). Hemicycrophyte.

Paniceum pseudopubescens Nash.
Sandy open woods. Central (map 376). First identified from wet year specimens as *Paniceum ovale* and so recorded in Hitchcock's manual. Hemicycrophyte.

Paniceum segetarium Ashe.
"Kans," sive Rydberg, but specimens are *P. villosissimum* Nash.

Paniceum segetarium Lam.

Paniceum scriberianum Nash.

Paniceum sphaerocephalum Ell.
Sandy ground. Southeast twelfth (map 378). Hemicycrophyte.

Paniceum tennesseense Ashe.
Open, rather moist ground and borders of woods. Scattered in east two-thirds (map 379). Hemicycrophyte.
Panicum texanum Buckl. Texas Millet.
   Prairies and low ground along streams and irrigation ditches. Hamilton county (map 380). Therophyte.

Panicum villosissimum Nash.
   Sandy or poor soil, open woods and hillsides. Saline county (map 381). Hemicycrophyte.

Panicum virgatum L. Switchgrass.
   Prairies and plains, especially in sandy soil. Throughout (map 382). Rhizome geophyte.

Panicum werneri Scribn.

Panicum wileyciamum Vasey.
   Prairies and plains. Central Kansas (map 383). Hemicycrophyte.

Pappophorum macrorhizum Nees. Pappusgrass.

Pappophorum vaginatum Buckl. (R).

Paspalum ciliatifolium Michx.
   Prairie. Southeast (map 384a).

Paspalum circulare Nash.
   Fields, open moist ground. Cherokee county (map 385). (219 in Smyth’s List as Paspalum laevis and 220 as Paspalum austrofiliolatum are both this.) Hemicycrophyte.

Paspalum floridanum glabratum Engelm. Paspalum.
   Low ground, marshes. Southeast (Montgomery to Crawford counties) (map 386). Hemicycrophyte. No Kansas specimens of the species itself are known.

Paspalum jubililorum glabrum Vasey.
   Moist ground in woods or on banks. Labette and Montgomery counties (map 387). Hemicycrophyte.

Paspalum repense Bergius. Water Paspalum.
   (Paspalum fluitans [Ell.] Kunth in Rhod. 39:385. 1937.)

Paspalum muconemum Muhl. (R).
   Aquatic, mostly submerged, rarely terrestrial. Southeast (Labette, Montgomery and Cherokee counties) (map 388). Hydrophyte (helophyte).

Paspalum stramineum Nash.
   Including Paspalum setaceum and Paspalum mahunbergii in Rydberg as pertaining to Kansas.
   Sandy soil in the open and in woods. Throughout (map 389). Hemicycrophyte.

Penisetum alopecuroides (L.) Spreng.
   Only in cultivation. Hemicycrophyte.

Pennisetum glaucum (L.) R. Br. Pearl Millet.
   Only in cultivation. Therophyte.

Pennisetum ruppeletii Steud. Fountain Grass.
   Only in cultivation. Hemicycrophyte.

Pennisetum villosum R. Br. Feathertop.
   Only in cultivation. Not persistent upon escaping. Hemicycrophyte.

Phalaris arundinacea L. Reed Canary Grass.
   Wet places, marshes, river banks and ditches. Scattered (map 390). Hemicycrophyte.

Phalaris arundinacea picta L. Ribbon Grass.
   Only in cultivation. Hemicycrophyte.

Phalaris canariensis L. Canary Grass.

Phalaris caroliniana Walt. Canary Grass.
   Wet ground. Southeast twelfth plus Saline county (map 392). Therophyte.

Phalaris minor Retz.
   Only in cultivation.

Phleum pratense L. Timothy.
   Meadows, roadsides, lawns and waste ground. East four-fifths (map 393). Hemicycrophyte.

Phragmites communis berlandieri (Fournier) Fernald. Reed, Cane grass.
   Swamps, marshes and in water. Widely scattered (map 394). Helophyte.

Poa annua L. Annual Bluegrass.
   Lawns, waste places and cultivated ground. Scattered throughout (map 395). Therophyte.

Poa arachnifera Torr. Texas Bluegrass.
   Grassy valleys. South central (map 396). Rhizome geophyte.

Poa arida Vasey. Plains Bluegrass.
   Including Poa pratensisformis Rydb. (R).
   Prairies, plains and alkali meadows. West two-thirds (map 397). Hemicycrophyte.

Poa bulbosa L. Bulbous Bluegrass.
   Escaped at Lindsburg, McPherson county, 1938 (map 398).

   Dry soil, in open ground or cultivated fields. Shawnee county (map 399). Therophyte.

Poa compressa L. Canada or English Bluegrass.
   Waste places, cultivated ground and woodlands in dry, mostly sterile soil. East third and Clark county (map 400).

Poa pratensis L. Kentucky Bluegrass.
   Lawns, fields, meadows and woodlands. Throughout, but more suited to northeast fourth (map 401). Rhizome geophyte.

Poa sylvestris A. Gray. Sylvan Speargrass.
   Rich woods and thickets. East third (map 402).
Poá trivialis L.  
Ottawa county (map 403).  
Smyth lists the following: 417. Poá bulbosa, 416. Poá annua, 418. Poá willoii, for none of which have authenticating specimens been found.

*Poá longiflora* Hitchc. credited to Kansas in Rydberg, but Smyth's specimen is *Poa annua* obtusa.

*Polygono monspeliensis* (L.) Desf. Rabbit-foots Grass.  
Sandy soil along the Arkansas river from Hamilton county to Cowley county (map 404). Therophyte.

*Puccinellia nuttalliana* (Schultes) Hitchc. Nuttall Alkaligrass.  
Moist usually alkaline or saline soil. Southwest fourth (map 405). Hemicyryptophyte.

Sandhills. Southwest fourth and Shawnee county (map 406). Hemicyryptophyte.

*Sasa japonica* Mak. Bamboo.  
Only in cultivation. Here a hemicyryptophyte.

*Schedonorus paniculatus* (Nutt.) Trel. Tumblegrass.  
Prairies and plains especially in sandy soil. Throughout (map 407). Therophyte.

*Secale cereale* L. Rye.  
Cultivated and escaping to waste places, roadsides, etc. Scattered, mostly northern (map 408).

*Setaria geniculata* (Lam.) Beauv. Knotroot Bristlegrass.  
Weeds, salt marshes and cultivated ground. Scattered in southern two-thirds (map 409). Rhizome geophyte.

*Setaria italica* (L.) Beauv. Foxtail Millet, Italian Millet.  
Cultivated and escaping along roadsides, etc. Throughout (map 410). Therophyte.

*Setaria lutescens* (Weigel) Hubbard. Yellow Foxtail, Yellow Bristlegrass.  


*Setaria viridis* (L.) Beauv. Green Foxtail, Green Bristlegrass.  
Waste places and in cultivated ground. Throughout. Abundant (map 413). Therophyte.

*Sitanion hystrix* (Nutt.) J. G. Smith.  
Including *Sitanion elymoides* Raf. (R).  
Dry hills and plains. West two-fifths and Republic and Cherokee counties (map 414). Hemicyryptophyte.

*Sorghastrum nutans* (L.) Nash. Indian Grass.  
Prairies, plains and open woods. Throughout (map 415). Hemicyryptophyte.

Fields and waste places. Scattered throughout (map 416). Rhizome geophyte to therophyte from south to north.

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**Sorghum vulgare** L. in many varieties cultivated, frequently escaping, but not persistent. Throughout. Therophyte.

*Sorghum vulgare* sudanense (Piper) Hitchc. Sudan Grass.  
Cultivated, frequently escaping, but not persistent. Scattered throughout. Therophyte.

*Spardina graminea* Trin. Alkaloid Cordgrass.  

*Spardina pectinata* Link. Prairie Cordgrass, Sloughgrass.  
Marshes and along streams in both fresh and brackish water. Essentially throughout, but less frequent in the northwest (map 418). Hemicyryptophyte.

*Spardina juncea* Pohl. 355 of Smyth's list is a misidentification.

*Sphenopholis intermedia* Rydb. Slender Wedgegrass.  
Including *Sphenopholis pallescens* in Rydberg and 343 of Smyth's list, both erroneously determined.  
Damp or rocky woods, ravines and meadows. East fourth (map 419). Hemicyryptophyte.

*Sphenopholis obtusata* (Michx.) Scribn. Wedgegrass.  
Prairies, plains and valleys. Throughout (map 420). Hemicyryptophyte.

*Sporobolus airoides* Torr. Alkaloid Sacaton.  
Dry plains and river valleys. Southwest and Shawnee county (map 421). Hemicyryptophyte.

*Sporobolus asper* (Michx.) Kunth. Dropseed.  
Including *Sporobolus longifolius*, 317 of Smyth's list.  
Dry or sandy soil of prairies and plains. Throughout (map 422). Hemicyryptophyte.

*Sporobolus asper* hookeri (Trin.) Vasey.  
*Sporobolus attenuatus* Nash. and *Sporobolus drummondii* Vasey.  

*Sporobolus asper* pilosus (Vasey) Hitchc.  
*Sporobolus pilosus* Vasey. (R).  
Prairies, plains and rocky hills. Scattered in central part from Stanton to Shawnee county (map 424). Hemicyryptophyte.

*Sporobolus clandestinus* (Spreng.) Hitchc.  
Including *Sporobolus canescens* Nash (R).  

*Sporobolus cryptandrus* (Torr.) Gray. Sand Dropseed.  
Sandy open soil. Presumably throughout (map 426). Hemicyryptophyte.

*Sporobolus flexuosus* (Thurb.) Rydb.  
Sandy soil of high plains. Seward county (map 427). Hemicyryptophyte.

*Sporobolus gracilis* Merr.  
*Sporobolus suaveolens* Nash. (R).  
"Kansa," rite of Rydberg, but ?.


Trisetum interomatum Buckl. No. 347 of Smyth's list, but no authenticating specimens have been located.

Trisetum supinatum (L.). No. 346 of Smyth's list, but certainly a misidentification.

Triticum aestivum L. Wheat. Cultivated, infrequently escaping and then not persistent. Probably throughout. Therophyte (winter annual).


**Family Hydrocharitaceae**


**Family Amaryllidaceae**


**Family Iridaceae** (Iris Family)

_Belamcanda chinensis_ (L.) DC. Blackberry Lily. Cultivated, escaped and established in prairies and along roadsides (map 448). Rhizome geophyte.

_Iris foetida_ Mack. and Bush. Iris, Blue Flag. Swamps, Leavenworth and Wyandotte counties (map 449). Rhizome geophyte.
Iris germanica L. German Iris, Fleur-de-lis.
Frequently cultivated, but rarely escaping. Saline county, escaped.
Rhizome geophyte.

Iris virginica L. Iris, Blue Flag.
Swamps. Wyandotte county (map 450). Rhizome geophyte.

Nemastylis acuta (Bart.) Herb.
Prairies. South fourth of east half (map 451). Bulb geophyte.

Sisyrinchium angustifolium Mill. Blue-eyed Grass.
Plains, west. (Cheyenne and Ford 7 counties) (map 452). Hemicyryptophyte.

Sisyrinchium campestre Bickn. Blue-eyed Grass.
Prairies. East half and south third of west half (map 453). Hemicyryptophyte. A var. kansasum Bicknell from its name should be in Kansas, but no specimens are present at Manhattan.

Sisyrinchium graminoides Bickn. Blue-eyed Grass.
Prairies. East sixth (map 454). Hemicyryptophyte.
Various species of Crocus, Gladiolus, and Iris in cultivation only.

**FAMILY DIOSCOREACEAE**

Dioscorea batatas Deene. Cinnamon vine.
Cultivated, escaped in Kansas river floodplain near Manhattan for several years, but killed in the 1935 flood. Tuber geophyte.

Dioscorea villosa L. Wild Yam.
*Dioscorea paniculata* Michx.
Thickets. East sixth (map 455). Geophyte?

**FAMILY ORCHIDACEAE** (Orchid Family)

Corallorrhiza wisteriana Conrad. Coralroot.
Leafless saprophyte with corrallloid roots in woods. Extreme southeast (Cherokee county) (map 456).

Cypripedium parviflorum Salisb. Yellow Lady’s Slipper.

Cypripedium parviflorum pubescens (Willd.) Knight. Large Yellow Lady’s Slipper.
Woods. Northeastern (probably Doniphan county).
Hemicyryptophyte.

Cypripedium reginae Walt. Showy Lady’s Slipper.
*Cypripedium hirsutum* (R.).

Habenaria leucophaea (Nutt.) Gray. White-flowered Prairie Orchis.
*Blephariglottis leucophaea* (R.).
Wet meadows. Northeast sixth (map 458).

Liparis loeselii (L.) Richard. Twayblade.

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Orchis spectabilis L. Showy Orchid.
*Galeorchis spectabilis* (R.).
Woods. Wyandotte and Doniphan counties (map 460). Hemicyryptophyte.

Pogonia ophioglossoides (L.) Ker.


Spiranthes cernua ochroleuca (Ryd.) Ames. Ladies’ Tresses.
*Spiranthes ochroleuca* (R.).

Spiranthes graminea (Bigel.) Beck. Ladies’ Tresses.

Spiranthes vernalis Engelm. and Gray. Ladies’ Tresses.

Triphora trianthophora (Sw.) Ryd.
*Spiranthes trianthophora*.

**CLASS DICOTYLEDONEAE**

**Subclass Dicotyledoneae—AXIFLORAE**

**FAMILY MAGNOLIACEAE** (Magnolia Family)

Liriodendron tulipifera L. Tuliptree.
Only in cultivation. Mesophanerophyte.

**FAMILY CALYCANTHACEAE**

Calycanthus fertilis Walt. Strawberry bush.
In cultivation. Riley county.

**FAMILY ANONACEAE**

Asimina triloba (L.) Dunal. Pawpaw.
Rich woods, especially in ravines. East third (map 464).

**FAMILY SAURURACEAE**

Saururus cernus L. Lizard-tail.

**FAMILY RANUNCULACEAE** (Buttercup or Crowfoot Family)

Anemone canadensis L. White Anemone.
Low ground. Kansas river valley west to Riley county (map 466). Hemicyryptophyte.

Anemone caroliniana Walt. Prairie Anemone.
Prairies. Scattered throughout, except possibly extreme west (map 467). Root tuber geophyte.

Anemone cylindrica A. Gray. Anemone.
Anemone decapetala Ard. Anemone.
Prairies. Scattered in central and east (map 469). Root tuber geophyte.

Anemone virginiana L. Anemone.

Aquilegia latisepala Greene. Columbine.

Clematis fremontii S. Watts.
 Viola fremontii (R).

Clematis ligusticifolia Nutt. Western Virgin’s Bower.

Clematis pitcheri T. and G. Clematis, Leather Flower.
 Viola pitcheri (T. and G.) (R).

Clematis virginiana L. Virgin’s Bower.
Among bushes. Northeast quarter (map 475). Liana. A form mis-
sonriens (Ryd.) Fern. in woods of northeast sixth (west to Cloud
county) (map 475a).

Delphinium ajacis L. Garden Larkspur.
Escaped from cultivation. Scattered (map 476). Therophyte.

? Delphinium exaltatum Ait. Larkspur.
Woods. Cowley county (Ryd.) but?. Hemicyryptophyte.

Delphinium tricorne Michx. Dwarf Larkspur.

Delphinium virensens Nutt. Prairie Larkspur.
Prairies and plains. Throughout (map 478). Hemicyryptophyte.

Ranunculus septentrionalis Poir. Swamp Buttercup, Crowfoot.
Species formerly identified as this prove to be R. hispidus falsus, which takes
away proof of the presence of R. septentrinalis, although it should be present.

Thalictrum dasycarpum Fisch. and Ave-Lall. Meadow Rue.
Thickets and meadows. East four-fifths, especially east half (map 493). Hemicyryptophyte.

Species of Aquilegia, Clematis, Delphinium, Paeonia are frequently
cultivated.

FAMILY LAMIACEAE

Akebia quinata Deene. Akebia.
Only in cultivation. Liana.
Callirhoe alceaoides (Michx.) A. Gray. Poppymallow.
Dry soil in prairies. East half to Edwards county (map 506). Hemicryptophyte.

Callirhoe digitata Nutt. Poppymallow.
Dry soil. Southeast fourth (Harvey and Cherokee counties) (map 507). Hemicryptophyte.

Callirhoe involucrata (T. & G.) A. Gray. Poppymallow.
Plains and prairie. West three-fourths and more east in the north (map 508). Hemicryptophyte.

Callirhoe papaver (Cav.) A. Gray.

Cosmos herbaceum L. Cotton.
Sometimes cultivated in east third, occasionally escaping in southeastern. Therophyte.

Hibiscus esculentus L. Okra.
Cultivated for food. Therophyte.

Hibiscus municipalis Cav. Marshmallow.

Hibiscus syriacus L. Rose of Sharon.
Cultivated as an ornamental. Nanophanerophyte.

Hibiscus trionum L. Flower-of-an-hour.

Malva neglecta Wallr. Common Mallow, Cheeses.

Malva rotundifolia L. Malva rotundifolia (R.).
Fields, lawns, and waste places. East half, especially northern part (map 511). Therophyte.

Maevia parviflora L. - See Japonica.

Malva rotundifolia L.
Malva parviflora (R.) Smith.

Malva sylvestris L.
Waste places. Northwest (Cheyenne and Sheridan counties) (map 515b).

Malva verticillata v. crispa L.
In cultivation escaping? (Dickinson and Osborne counties). Thermophyte.

Sida hederacea (Dougl.) Torr.
Dioscorea hederacea (R.).
Alkaline flats. Meade county (map 515b). Hemicryptophyte.

Sida spinosa L. Sida.
Waste places and fields. East half and Sheridan county (map 514).

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Celtis rugulosa Rydb. Hackberry.
In valleys in hills in high plains. West half (map 525). Microphanerophyte.

Ulmus alata Michx. Winged or Wahoo Elm.
Along streams. Also planted. “Kans,” fide Rydberg, but specimen is Ulmus thomasi. No native specimens known, but cultivated in a few places. Mesophanerophyte.

Ulmus americana L. American Elm.
Woods principally along streams. Except southwest sixth (map 526). Mesophanerophyte.

Ulmus fulva Michx. Slippery Elm, Red Elm.
Rich woods and along streams. North third and east half (map 527). Mesophanerophyte.

Ulmus japonica Sargent. Japanese Elm.
In cultivation, escaped in Logan and Riley counties. Mesophanerophyte.

Ulmus parvifolia Jacq. Chinese Elm.
In cultivation. Mesophanerophyte.

Ulmus procera Salisb. English Elm.
Ulmus campestris.
In cultivation and escaped in Saline county. Mesophanerophyte.

Ulmus pumila L. Chinese Elm.
In cultivation and escaping. Throughout. Micro-mesophanerophyte.

Ulmus pumila arborea Litiin. Chinese Elm.
In cultivation in Shawnee county. Mesophanerophyte.

Ulmus thomasi Sarg. Cork or Rock Elm.
Ulmus racemosa Thomas.

Broussonetia papyrifera (L.) Vent. Paper Mulberry.
Only in cultivation.

Cannabis sativa L. Indian Hemp, Marihuana, Cannabis.
Waste places, especially along streams. East three-fourths (map 529). Therophyte.


Humulus lupulus L. Hops.
Waste ground as an escape. East half and Kearney county (map 530). Hemicyrrophyte-vine.


Morus alba L. and varieties. White Mulberry.
Escaped from cultivation. Presumably scattered throughout (map 532). Microphanerophyte.
Morus nigra L. Black Mulberry.  
Escaped from cultivation. At least central (map 532a).  
Mesophanerophyte.

Morus rubra L. Red Mulberry.  

**FAMILY URTICACEAE**  
(Nettle Family)

* Boehmeria ciliata (L.) Sw. False Nettle.  
Woods and low ground. Scattered in east two-thirds (map 534).

* Boehmeria ciliata drummondiana Wedd.  
*B. ciliata drummondiana* (R).  
Swamps. Pottawatomie and Crawford counties (map 534a).

* Laportea canadensis (L.) Gand. Wood Nettle.  

* Parietaria pensylvanica Muhl. Pellitory.  
Shaded banks, rock or gardens. North half and east fourth (map 536). Slender therophyte.

* Pilea pumila (L.) A. Gray. Richweed, Clearweed.  
Damp shaded places. East half and Kiowa county (map 537). Therophyte.

* Urtica procera Muhl. Nettle.  
Including *Urtica viridis* Rydb.  
Alluvial soil and waste places. North third and east half (map 538).

**FAMILY GERANIACEAE**  
(Geranium Family)

* Erodium cicutarium (L.) L’Her. Alfloria.  

* Geranium carolinianum L.  

* Geranium maculatum L. Wild Geranium.  
Woods. Extreme east (map 541). Hemicyrptophyte.

* Geranium rotundifolium L.  

**FAMILY OXALIDACEAE**  
(Oxalis Family)

* Oxalis europaeus Jord.  
Oxalis, Wood Sorrel.  
*Oxalis corniculata* of Am. auth., not L.  
*Xanthoxalis corniculata* (R).  

*Xanthoxalis bushii* Small.  
*Xanthoxalis bushii* (R).  
Open woods and thickets, rocky ravines and waste ground. East half (map 544). Hemicyrptophyte.

* Oxalis stricta L. Yellow Wood Sorrel.  
*Xanthoxalis stricta* (R).  
Fields, roadsides, ravines, prairies and woods. East two-thirds (map 545).

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* Oxalis violacea L. Wood Sorrel.  
*Inonotus violacea* (R).  
Prairies and woods. East two-thirds (map 546).

**FAMILY BALSAMINACEAE**

* Impatiens balsamina L.  
In cultivation, seldom escaping, not hardy. Riley and Doniphan counties. Therophyte.

* Impatiens balsamina L.  
Jewelweed, Touch-me-not.  

* Impatiens nortoni Rydb.  
Jewelweed, Touch-me-not.  

* Impatiens pallida Nutt.  
Jewelweed, Pale Touch-me-not.  
Wet woods and thickets and springy banks. East third (map 549). Therophyte.

**FAMILY LINACEAE**  
(Flax Family)

* Linum compactum A. Nelson. Yellow Flax.  
*Cathartolinum compactum* (R).  
Dry plains. West two-thirds (map 550). Hemicyrptophyte.

* Linum lewisii Pursh. Blue Flax.  
Plains in hills. Scattered in west half (map 551).


* Linum rigidum Pursh. Yellow Flax.  
*Cathartolinum rigidum* (R).  
Plains and hills. West two-thirds (map 553). Hemicyrptophyte.

* Linum rigidum puberulum Engelmann. Yellow Flax.  
*Cathartolinum puberulum* (R).  
Dry plains. West fourth (map 554). Hemicyrptophyte.

* Linum sulcatum Riddell. Yellow Flax.  
*Cathartolinum sulcatum* (R).  
Dry plains. West two-thirds (map 555). Hemicyrptophyte.

* Linum usitatissimum L. Flax.  

* Linum virginicum L.  
*Cathartolinum virginicum* (R).  

**FAMILY ZYGOPHYLLACEAE**

* Kallstroemia hirsutissima Vail.  
Sandy soil. Southwest fourth to Rooks county, plus Elk county (map 558). Therophyte.

* Kallstroemia intermedia Rydb.  

Zygophyllum fabago L. Fields. Geary county (map 561).

**Family Rutaceae**


Cultivated species include the shrub, Dictamnus albus L., the tree, Phellodendron amurense Rupr., and the garden herb, Ruta graveolens L.

**Family Simaroubaceae**


**Family Polygalaceae** (Milkwort Family)


**Family Euphorbiaceae** (Spurge Family)


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Crotonopsis elliptica Wild. Sandy or rocky soil. Southeast (Cherokee and Chautauqua counties) (map 578). Therophyte.


Euphorbia dictyosperma Fisch. and Mey.
Euphorbia arkansana (R).
Euphorbia missouriensis (R).
Rocky ledges, ravines, open ground, etc. Scattered throughout (map 587). Therophyte.

Euphorbia geyeri Engelm.
Chamaesyce geyeri (R).
Plains and prairies. Southwest fourth (map 588). Therophyte.

Euphorbia glyptosperma Engelm.
Chamaesyce glyptosperma (R).
Sandy and loamy soils of plains, valleys and flood plains. West three-fourths and Wyandotte and Labette counties (map 589). Therophyte.

Euphorbia greenii Mills.
Chamaesyce greenii (R).
Dry or sandy plains. Southwest fourth (map 590). Hemicycryptophyte.

Euphorbia heterophylla L. Spurge.
Ponsettia heterophylla (R).
Open rocky woods, thickets, ravines, and alluvial soils. Except southwest (map 591). Therophyte.

Euphorbia hexagona Nutt.
Zygophyllum hexagona (R).
Dry or sandy plains. Except southeast eighth (map 592). Therophyte.

Euphorbia humistrata Engelm.
Chamaesyce humistrata (R).
Sandy and rocky soils. Scattered in east third (map 593). Therophyte.

Euphorbia hysopifolia L. Upright Spurge.
Chamaesyce hysopifolia (R).

Euphorbia nutans Lag.
Euphorbia preslii Guss.
Fields, thickets, waste ground. East three-fourths and Greeley and Wallace counties (map 594). Therophyte.

Euphorbia lata Engelm.
Chamaesyce lata (R).

Euphorbia lucida L.
Galarhoea lucida (R).

Euphorbia maculata L. Spotted Spurge.
Chamaesyce maculata (R).
Dry ground, cultivated and waste places. About east two-thirds (map 597). Therophyte.

Euphorbia marginata Pursh. Snow-on-the-mountain.
Lepidens marginata (R).
Prairies, plains and river bottoms. Possibly throughout, but less frequent in east fifth (map 598). Therophyte.

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Euphorbia nuttalii (Engelm.) Small.
Chamaesyce nuttalii (R).

Euphorbia obtusata Pursh.
Galarhoea obtusata (R).
Dry soil. Scattered, mostly central (map 600). Therophyte.

Euphorbia petaloidea Engelm.
Chamaesyce petaloidea (R).
Sandy plains and prairies. Scattered in west two-thirds (map 601). Therophyte.

Euphorbia serpens B. B. K.
Chamaesyce serpens (R).
Usually in heavy soil on prairies and plains. Throughout (map 602). Therophyte.

Euphorbia serpyllifolia Pers.
Chamaesyce serpyllifolia (R).
Plains. West two-thirds (map 603). Therophyte.

Euphorbia stictospora Engelm.
Chamaesyce stictospora (R).
Dry soil. Throughout, commoner west (map 604). Therophyte.

Phyllanthus carolinensis Walt.
Moist thickets. Southeast (Labette and Crawford counties) (map 605). Therophyte.

Richins communis L. Castor Oil Plant.
Cultivated, occasionally escaping, but not persisting. Therophyte.

Stillingeria salicina (Torr.) Raf. Queen's Delight.
Sandy soil. South third of east half (map 606). Specimens were formerly called S. sylvatica L.

Tragia nepetaefolia Cav.
Sandy soil. Scattered in east third (map 607). Hemicycryptophyte.

Tragia ramona Torr.
Dry soil, more xeromorphic westward. East three-fourths (map 608). Hemicycryptophyte.

FAMILY CALLITRICHACEAE

Callitriche heterophylla Pursh. Water Starwort.
Still water or mud. Scattered in east two-thirds (map 609). Hydrophyte or helophyte.

FAMILY CRITACEAE

Helianthemum bicknellii Fern. Frostweed, Rock Rose.
Crocanthemum bicknellii (R).
Rocky prairies and dry open woods. East third (map 610). Hemicycryptophyte.

† Lecan legetti.
Woodson county (KU) †.
A specimen in KU from Woodson county, not certainly identifiable, seems to be this.
Lechea tenuifolia Michx. Pinweed.
   Rocky open woods and ravines. Scattered in east half (map 611).
   Chamaephyte or hemicyryptophyte (?).

Lechea villosa Ell. Pinweed.
   Open rocky woods, ravines. Cherokee county (map 612). Chamae-
   phyte (?), hemicyryptophyte (?), the variety macrotheca Hodgdon in
   Rice county (map 612).

**FAMILY HYPERICACEAE (St. John's-wort Family)**

Ascyron hypericoides multiculae (Michx.) Fernald. St. Andrew's Cross.
   (Rhod. 38:333. 1936.)
   Rocky open woods. Extreme southeast (Cherokee county) (map
   613). Chamaephyte? Hemicyryptophyte?

Hypericum ascyron L. Great St. John's-wort.
   Banks. Extreme northeast (Dompanian county) (map 613).
   Nanophanerophyte.

   Rocky prairies, ravines and woods. East fourth, mostly south of
   Kansas river (map 614). Hemicyryptophyte.

Hypericum drummondii T. & G. Pinweed, Orange Grass.
   *Sorothrachum drummondii* (R).
   Dry soil, fields, barrens and open woods. Southeast twelfth (map
   615). Therophyte.

   Low ground. Clay county (map 616). Therophyte.

Hypericum muticum L. St. John's-wort.
   Prairie swales and borders of ditches and ponds. Southeast and Kan-
   sas river valley to Cloud and Saline counties (map 617).

Hypericum perforatum L. St. John's-wort.

Hypericum punctatum Lam. St. John's-wort.
   Moist thickets, woods and prairies. East third (map 619). Hem-
   icyryptophyte.

Hypericum punctatum pseudomaculatum (Bush.) Fernald. St. John's-wort.

**FAMILY VIOLACEAE (Violet Family)**

Calceolaria verticillata (Ortega) Kuntze. Green Violet.
   Dry prairies and plains. Scattered in west three-fourths (map 620).
   Hemicyryptophyte.

   *Hydranthis coloratum* (R).
   Rich woods. Leavenworth and Wyandotte counties (map 621).
   Hemicyryptophyte.

Viola arvensis Murray. Pansy Violet.

Viola arvensis Schw. Smooth Yellow Violet.

A variety, *leiocarpa* Fernald & Wiegang, with ovaries and capsules
   glabrous is found in Linn county. (Rhodora 23:275. 1921.)

Viola missouriensis Greene. Missouri Violet.
   Low woods, thickets and river flood plains. Scattered in east two-
   fifths (map 624). Hemicyryptophyte.

X Viola missouriensis x sororia.
   Low open ground. "Kans.," fide Rydberg.

Viola nephrophylla Greene.
   Wet springy places. Crawford and Saline counties (map 625).

   Foothills and plains. Northwest fourth (map 626). Hemicyryptophyte.

Viola papilionacea Pursh. Blue Violet.
   Including *Viola pratensis* Greene (R).
   Woods, thickets, prairies and river flood plains. Except the south-
   west (map 627). Hemicyryptophyte.

X Viola papilionacea x sororia. (=X Viola rosea House)
   Moist woods, thickets, and open ground along roads and banks.
   Crawford county. Hemicyryptophyte.

Viola pedata L. Birds-foot Violet.
   Rocky open woods and prairies. Southeast twelfth (map 628). Hemi-
   crypophyte. *Var. lineariloba* DC. in McPherson county (map 628).

Viola pedatifida G. Don. Prairie Violet.
   Prairies. East two-fifths (map 629). Hemicyryptophyte. The leaf
   form *V. bernardi* Greene is present in at least four counties between
   Linn and Riley.

   *Viola kitaibehana rafinesquii* (Greene) Fernald. (Rhod. 40:445-446. 1933.)
   Fields, gardens and waste places. East three-fifths and Sheridan
   county (map 630). Therophyte.

Viola retusa Greene.
   Borders of streams. Riley and Saline counties (map 631). Hem-
   icyryptophyte.

Viola sugetita Aiton.

Viola sororia Willd. Hairy Blue Violet.
   Moist meadows, prairies. Northeast fourth plus Crawford county
   (map 632). Hemicyryptophyte.

Viola tricolor L. Pansy.
   Cultivated frequently, occasionally somewhat naturalized in grass
   in Reno county.

**FAMILY PASSIFLORACEAE (Passionflower Family)**

Passiflora incarnata L. Maypop. Passionflower.

Passiflora lutea L. Passionflower.
   Thickets and open rocky woods. Southeast two counties (map 633).
   Vine-hemicyryptophyte.
FAMILY PAPAVERACEAE (Poppy Family)

Argemone hispida A. Gray. Prickly Poppy.
High plains. West two-fifths (map 634). Therophyte.

Argemone intermedia Sweet. White Prickly Poppy.
Plains and prairies and in waste places. West four-fifths and Wyandotte county (map 635). Therophyte.

Argemone mexicana L. Prickly Poppy.
Possible escape from cultivation. Douglas county. Therophyte.

Argemone squarrosa Greene. Prickly Poppy.
High plains. South half of west two-fifths (map 636). Therophyte.

Papaver rhoeas L. Corn Poppy.
Waste places, moist woods, escaped. Wabaunsee county (map 637). Therophyte.

Sanguinaria canadensis L. Bloodroot.
Woods. Extreme east (map 638). Rhizome geophyte.

FAMILY FUMARIACEAE (Fumitory Family)

Adlumia fungosa (Ait.) Greene. Climbing Fumitory.

? Corydalis aurea Wild.

Corydalis aurea occidentalis Engelm. Corydalis.

Corydalis montana (R.)
Open or rocky woods, prairies and waste places. East three-fifths (map 629). Therophyte (Biennial).

Corydalis campestris (Britton) Buchholz and Palmer. Corydalis.

Corydalis crystallina Engelm. Corydalis.
Fields and open ground. Southeast twelfth (map 641). Therophyte.

Corydalis flavula (Raf.) DC. Corydalis.
Rocky woods. East fifth (map 642). Therophyte.

Corydalis micrantha (Engelm.) Gray. Corydalis.

Dianthus caryophyllus (L.) Bernh. Dutehman’s Breeches.
Rich woods or banks. East third (map 644). Bulb geophyte.

FAMILY RESEDACEAE (Mignonette Family)

Reseda lutea L.
Escaped from cultivation not persisting. Shawnee county.

FAMILY CAPPARIDACEAE

Cleome serrulata Pursh. Bee Flower.

Peritoma serrulata (R.)
Sandy areas, plains, prairies, waste places, etc. West three-fifths and northeast sixth (map 645). Therophyte.

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Cleome spinosa L. Spider flower.

Cleomea montana Torr.
River valleys and plains. South central and southwest (map 646). Therophyte.

Cristatella jasminoides T. & G. Cristatella.
Sandy soil. West three-fifths (map 647). Therophyte.

Pulicaria trichrophyta T. & G. Chammyweed.
Sandy and rocky cliffs. Essentially throughout (except part of southeast) (map 648). Therophyte.

FAMILY BRASSICACEAE (Mustard Family)

Allaria officinalis Andr. Garlic Mustard.
Waste places. Naturalized in northeast sixth (map 649).

Arabis thaliana (L.) Heynh. Mouse-ear Cress.

Arabis canadensis L. Sicklepod.
Rocky woods. East third (map 650). Therophyte (Biennial).

Arabis dentata (Torr.) T. & G. Rock Cress.
Rich woods, ravines, river banks. Scattered in east third, especially north part (map 651).

Arabis beuvigata (Muhl.) Poir. Rock Cress.
Dry rocky places. Cherokee and Douglas counties (map 652).

Arabis pygmaea var. Hopkins.

Arabis ovata (R.)
Among rocks in waste places. Riley and Pottawatomie counties (map 653).

Arabis virginica (L.) Poir. Rock Cress.
Open sandy places. Sedgwick, Linn, Crawford and Cherokee counties (map 654).

Barbarea vulgaris R. Br. Winter Cress.
Waste places, naturalized from Europe. Riley and Saline counties (map 655).

Berteroa incana (L.) DC. Hoary Alyssum.
Waste places. Introduced in Riley, Jackson and Sedgwick counties (map 656).

Brassica campestris L. Swedish Turnip, Rutabaga.
Fields and waste places, escaped from cultivation. East third and north third of west half (map 657). Therophyte-Biennial.

Brassica juncea (L.) Lesson. Indian Mustard.
Fields and waste places, adventive or naturalized from Asia. Scattered in east half (map 658). Therophyte.


Brassica arvensis (L.) Rab.
Sinapis arvensis (L.) (R.)
Fields and waste places, introduced. Scattered in north half and Cherokee county (map 659). Therophyte.
  Waste places and fields, introduced. East half and scattered in west
  (map 660). Therophyte.

Brassica oleracea L. and varieties. Cabbage, etc.
  Cultivated, escaping, but not persistent.

Camelina microcarpa Andr. False Flax.
  Waste places, naturalized. North half and Sedgwick county (map
  661). Therophyte.

Camelina sativa (L.) Crantz False Flax.
  Waste places, naturalized. Douglass (KU), Rawlins and Ellis coun-
  ties (map 662). Therophyte.

Capsella bursapastoris (L.) Medic. Shepherd's-Purse.
  Fields, waste places, roadsides, and gardens, naturalized. Presumably
  throughout, unless not in southwest (map 663). Therophyte (winter
  annual).

Cardamine bulbosa (Schreber) BSP. Bitter Cress.
  Wet woods and prairies. Potawatomi, Cherokee and Leavenworth
  counties (map 664). Hemicyryptophyte ?

Cardamine parviflora macrocarpa (Britton) O. E. Schulz. Bitter Cress.
  Cardamine parviflora L. (R).
  Wet rocky ledges, ravines and open woods. Extreme south in east
  fourth (map 665). Hemicyryptophyte.

Cardamine pennsylvanica Muhl. Cress.
  Wet springy places. Saline and McPherson counties (map 666).
  Hemicyryptophyte.

Conringia orientalis (L.) Dumort. Hare's-ear Mustard.
  Waste places, introduced. Scattered in northern half (map 667).

Dentaria lacinata Muhl. Toothwort.

Descurainia intermedia (Ryd.), Daniels. Tansy Mustard.
  Sophia intermedia Rydb. (R).
  Plains, prairies and waste places. Scattered both in east half and
  northwest sixth (map 669). Therophyte (or biennial).

Descurainia magna (Ryd.), F. C. Gates. Tansy Mustard.
  Sophia magna Rydb. (R).
  River bluffs. Gove county (map 670).

Descurainia pinnata (Walt.) Britton. Tansy Mustard.
  Sophia pinnata (Walt.) (R).
  Dry or sandy soil. Throughout (map 671).

Descurainia pinnata brachycarpa (Richardson). Detling, Tansy Mustard.
  Sophia pinnata brachycarpa (Richardson).
  Waste places. North Central (map 672).

Descurainia richardsoni (Sweet). O. E. Schulz. Tansy Mustard.
  Sophia richardsoniana (R).
  Sandy valleys of high plains. Logan county (map 672a).

  Sophia multiflora Gilib. (R).
  Waste places, naturalized from Europe. Mostly scattered in north
  half (map 673). Therophyte.

Draba brachycarpa Nutt.
  Dry hills and fields. Very scattered in east half (map 674). Ther-
 rophyte.

Draba cuneifolia Nutt.
  Rocky open woods and prairies. East half, very scattered (map 675).
  Therophyte.

Draba cuneifolia leiocarpa O. E. Schulz.

Draba reptans (Lam.) Fernald. Draba, Whitlowgrass.
  Draba caroliniana Walt. (R).
  Ravines, waste ground. Kansas river valley east from Clay county
  and in Sedgwick, Cowley and Chautauqua counties (map 676). Ther-
 rophyte.

Draba reptans micrantha (Nutt.) Fernald.
  Draba micrantha (R).
  Including Draba coloradensis Rydb. (R).
  Sandy soil in prairies and marsh. Northwest fourth and east half
  (map 677). Therophyte.

Eruca sativa Lam. Garden Rocket.
  Waste places, introduced. Riley county (map 678). Therophyte.

Erysimum asperum DC. Prairie Rocket, Western Wallflower.
  Cheirinia aspera (R).
  High plains coming east on prairies. West third and north central
  (map 679). Therophyte (biennial).

Erysimum inconspicuum S. Watts. Prairie Rocket.
  Cheirinia inconspicua (R).
  Dry soil. Scott county (KU) (map 680).

Erysimum repandum L.
  Cheirinia repanda (R).
  Waste places, naturalized from Europe. Scattered in north half of
  east two-thirds (map 681). Therophyte.

Hesperis matronalis L. Dame's Rocket.
  Fields and roadsides, recently introduced. North central (map 682).
  Hemicyryptophyte or therophyte.

Iodonanthus pinatifidus (Michx.) Steud. Purple Rocket.
  River banks. East sixth to Potawatomi county (map 683). Hemi-
  cryptophyte.

Lepidium campestre (L.) R. Br. Peppergrass.
  Fields and waste places, introduced. East third, scattered (map 684).
  Therophyte.

Lepidium densiflorum Schrad. Peppergrass.
  Including Lepidium neglectum Thellung in (R).
  Plains, fields, waste places, prairies. Throughout (map 685). Ther-
 rophyte.
Lepidium draba L. White Top.
   *Cardaria draba* (R.).
   Waste places and in cultivated ground. East half, increasing (map 688). Hemicyryptophyte.

*Lepidium perfoliatum* L. Peppergrass.
   In waste places and cultivated fields, introduced. Scattered in north half (map 687). Therophyte.

*Lepidium obovatum* Small.
   Waste ground. A southern species, known in limited area in Salina, since 1900, by John Hancin (map 689 as L. pubescent). Hemicyryptophyte.

*Lepidium ramosissimum* A. Nels. Peppergrass.
   In waste or cultivated ground. Northwest fourth (map 688). Therophyte.

*Lepidium virginicum* L. Peppergrass.
   Including *Lepidium texanum* Buckl. (R.).
   Fields, roadsides and waste places, naturalized from Europe. East half and scattered in northwest quarter (map 689). Hemicyryptophyte.

*Lesquerella globosa* (Desc.) S. Wats.

   High plains. Logan, Ellis and Cheyenne counties (map 690). Hemicyryptophyte.

   High plains. West half (map 691). Hemicyryptophyte.

*Lesquerella repanda* (Nutt.) S. Wats. Bladderpod.

*Lobularia maritima* Desv. Sweet Alyssum.
   Freely cultivated, seldom escaping. Riley county. Therophyte.

*Mathiola bicornis* DC. Evening Stock.

*Nasturtium officinale* R. Br. Watercress.
   *Rorippa nasturtium-aquaticum* (L.) Schinz and Thell.
   Streams and mud, naturalized from Europe. Scattered in east three-fourths (map 693). Helophyte.

*Raphanus sativus* L. Radish.
   Waste places, escaped from cultivation. Northeast and north central (map 694).

   *Armoracia rusticana* Gaerth. (R.).
   Around dwellings. Escaped in northeast fourth (map 694a).

*Rorippa hispida* glandula Lunell. Yellow Watercress, Marsh Watercress.
   Water or wet places. East half (map 695). Seldom a plant with a few hairs on the stem.

*Rorippa obtusa* (Nutt.) Britton. Yellow Watercress.
   Wet places. Wyandotte county (map 696). Therophyte.

*Rorippa sessiliflora* (Nutt.) Hitch. Yellow Watercress.
   Wet open woods, borders of ditches and streams. East half and northwest third (map 697). Therophyte (biennial).

*Selenia auriculata* Nutt. Yellow Watercress.
   River valleys. Except the southern and the northeast corners (map 698). Therophyte.

*Siysymbrium altissimum* L. Tumble Mustard.
   Fields, waste ground and railroad ballast, naturalized from Europe. Scattered mostly north half (map 700). Therophyte.

*Siysymbrium officinale* (L.) Scop. Hedge Mustard.
   *Erucastrum officinale* (R.).
   Fields, waste places, railroad ballast, naturalized from Europe. East fourth (map 701). Therophyte.

*Siysymbrium officinale* leiospermum DC. Hedge Mustard.
   *Erucastrum officinale* leiospermum (DC.).
   Waste places, naturalized from Europe. East half (map 702). Therophyte.

*Stanleya pinnata* (Pursh) Britton. Prince's Plume.
   Dry canyons in high plains. Hamilton and Trego counties (map 703). Hemicyryptophyte.

*Stanleya pinnata* integrifolia (James) Rollins. (Lloydia 2:119. 1939) Prince's Plume.
   Including *S. glauca* (R.).
   Dry plains and hills. West third, mostly northern half of it (map 704). Hemicyryptophyte.

*Thlaspi arvense* L. Penny-cress.
   Waste places and roadsides, naturalized from Europe. Northeast quarter and scattered in northwest quarter (map 705). Therophyte.

**FAMILY illegniaceae (Corrigiaceae)**

(Whitlow-wort or Knotwort Family)

*Anychna canadensis* (L.) BSP. Forked Chickweed.
   Open woods and hillside. East fourth (map 706). Therophyte.

*Anychna polygonoides* Raf.
   Dry soil. South half of east half (map 707). Therophyte.

*Paronychia diffusa* A. Nels. Whitlow-wort.

*Paronychia jamensis* T. & G.
   *Paronychia wesiokii* Rydb. (R.).
   Dry plains and hills. West three-fifths (map 708).

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5. Verified by Robert F. Martin in 1939.

11—1646
FAMILY CAMPHORACEAE (Pink Family)

Agrostemma githago L. Corn Cockle.
Cultivated and waste ground. North half of east third (map 709).
Therophyte.

Arenaria fendleri A. Gray. Sandwort.

Arenaria patula Michx. Sandwort.

Sabulina stricta Michx. (R).
Rocky woods and open places. South part of east fourth (map 710).
Therophyte.

Arenaria serpyllifolia L. Thyme-leaved Sandwort.
Sandy soils, fields and open places, naturalized from Europe. Central (map 711). Therophyte.

Arenaria stricta Michx. Sandwort.

Sabulina stricta Michx. (R).
Rocky places. "Kans," hide Rydberg, probably really the next.

Arenaria texana (B. L. Robinson) Britton. Rock Sandwort.

Sabulina texana (Robinson) (R).
Rocky hillsides, ravines, and sandy ground. West half, especially north part, plus Cowley and Crawford counties (map 712).

Cerastium brachypodium (Engelm.) Robinson. Mouse-ear Chickweed.

Cerastium nutans Raf. Dodding Chickweed.
Moist ground, prairies, woods, waste and cultivated ground. East fourth (map 714).

Cerastium vulgatum hirsutum Fries. Mouse-ear Chickweed.
Fields and thickets. Scattered in east half (map 715). A form, glándulosum (Boenn.) Druce of this variety in Ellsworth and Shawnee counties.

Gypsophila elegans Bieb.
Escaped from cultivation. Crawford county.

Lychnis alba Mill. White Campion.

Melandrium album (R).
Waste places, adventive from Eurasia. Saline, Riley and Ellis counties (map 716).

Sagina decumbens (Ell.) T. & G. Pearlwort.
Not Sagina procumbens as stated in (R).
Waste ground, open rocky or sandy ground. Chautauqua and Cherokee counties (map 717).

Saponaria officinalis L. Soapwort, Bouncing Bet.
Along roads and in waste places, introduced. Scattered in east three-fourths plus Scott county (map 718). Hemicyryptophyte.

Silene antirrhina L. Sleepy Catchfly.

Silene antirrhina divaricata Robinson.

Silene latifolia (Mill.) Britton and Rendle. Bladder Campion.

Silene vulgaris (Moench) Garcke (R).
Fields and waste places, naturalized from Europe. Scattered in east third (map 720). Hemicyryptophyte.

Silene noctiflora L. Night-blooming Catchfly.

Silene stellata (L.) Ait. f. Starry Campion.

Spergula arvensis L. Spurrey.
Fields and waste places, naturalized from Europe. Riley county (map 723). Therophyte.

Stellaria media (L.) Cyrill. Chickweed.
Lawns, waste places, and cultivated ground. East half and scattered in west half (map 724). Therophyte.

Vaccaria vulgaris Host. Cow Cockle.

Saponaria vulgaris L.

FAMILY ELATINACEAE

Bergia texana (Hook.) Souther.
Sandy or alluvial soil. Scattered, west to Gray county (map 726). Therophyte.

Elatine americana (Poir.) Arn. Waterwort, Mud Purslane.
Shallow water or mud. Sherman and Harvey counties (KSTC) (map 727). Therophyte.

FAMILY PORTULACACEAE (Portulaca Family)

Claytonia virginica L. Spring Beauty.
Rich woods or in thickets. East half, but mostly east third (map 728). Corm geophyte.

Portulaca grandiflora Hook. Garden Portulaca.
Occasionally escaping from cultivation.

Portulaca neglecta Mack. and Bush.

Portulaca olerascea L. Purslane, Pursley, Pusley.
Fields and waste places, cultivated ground. Throughout (map 729). Therophyte.

Portulaca parvula A. Gray.
Sandy soil. East three-fourths, mostly southern part (map 730). Therophyte.

Portulaca retusa Englom
Sandy soil. Seward county (map 731). Therophyte.

Talinum calycinum Englom. Falseflower.
Sandy soil or exposed rocky ledges. Scattered, mostly central (map 732). Hemicyryptophyte.

Talinum parviflorum Nutt. Falseflower.
FAMILY AIROSIACEAE (Carpetweed Family)

Mollugo verticillata L. Carpetweed.
Fields and waste places. Probably throughout, except, perhaps, most
of the northwest (map 734). Therophyte.

Sesuvium verrucosum Raf. Sea Purslane.
River banks and saline plains. Ford county (map 735). Hemicyrto-
phyte.

FAMILY TAMARICACEAE

Tamarix gallica L. Tamarix, Tamarisk.
River floodplains, roadsides and salt marshes. Cheyenne Bottoms
near Great Bend, where a 35,000-acre lake in 1927 has been thinly in-
vaded. Scattered in west two-thirds (map 730). Nanophanerophyte-
microphanerophyte.

FAMILY SALICACEAE* (Willow Family)

Populus alba L. White or Silver Poplar.
Occasionally planted and escaping along fence rows. Scattered in east
and west (map 737). Mesophanerophyte.

Populus canadensis eugenii (Simon-Louis) Schelle. Carolina Poplar
Frequently planted and occasionally escaping. Mesophanerophyte.

Populus deltoides Marsh. Cottonwood.
Populus virginiana Fourr.
Along streams. Throughout, but less frequent westward (map 738).
Mesophanerophyte, rarely megaphanerophyte. A form pilosa (Sarg.)
Sudw. in lowlands fide Rehder.

Populus nigra Italicus Dur. Lombardy Poplar.
Frequently planted, seldom escaping. East third, especially north-
est. Mesophanerophyte.

Populus sargentii Dode. Plains Cottonwood.
Along streams. West two-thirds, more frequent westward (map 739).
Mesophanerophyte to megaphanerophyte.

Populus tremuloides Michx. Quaking Aspen.

Salix alba L. White Willow.
Seldom escaping from cultivation. Shawnee county. Mesophaner-
ophyte.

Salix alba vitellina (L.) Stokes.
In cultivation, seldom escaping. Riley county. Mesophanerophyte.

Salix amygdaloides Anders. Peach-leaved Willow.
Low woods, lake shores, alluvial banks of streams. Throughout, but
commoner northward (map 740). Mesophanerophyte.

Salix amygdaloides Wrightii (Anders.) Schn. Wright Willow.
Small tree along stream in southwest (map 741). Microphanerophyte.

Salix nigra Glaf.
Along streams. Saline, Pratt and Reno counties. Mesophanerophyte.

Salix babylonica L. Weeping Willow.
In cultivation in east third. Mesophanerophyte.

Salix cordata Muhl. Heart-leaved Willow.
Wet open ground along streams, especially near springs. Scattered
(map 742). Nano-mesophanerophyte.

Salix discolor Muhl. Pussy Willow.
Cultivated.

Salix exigua luteosperma (Ryd.) Schneider. Sandbar Willow.
Sandbars. West fourth to Sedgwick county (map 743). Nano-
phanerophyte.

Salix fragilis L. Crack Willow, Brittle Willow.
Cultivated and escaped (map 744). Mesophanerophyte.

Salix humilis rigidula Anders. Prairie Willow.
Prairies. East half (map 745). Nanophanerophyte.

Salix interior Rowe. Sandbar Willow.
Sandbars. Throughout (map 746). Nano-microphanerophyte. Two
plants have leaves 11 mm. wide.

Salix interior pedicellata (Anderson) Ball. Sandbar Willow.
Including Salix hessica (Ryd.) shrub, scattered (map 747).

Salix lontipes wardii (Bebb.) Schneider. Ward Willow.
Salix wardii (R.).
Along streams. Scattered in south two-thirds of east two-thirds (map
748). Mesophanerophyte.

Salix missouriensis Bebb. Missouri Willow.
Along larger streams. East two-thirds (map 749). Micro-mesophan-
eryphyte.

Salix nigra Marsh. Black Willow.
Along rivers and other wet places. Southeast diagonal half. East of
a line from Nemaha to Comanche counties (map 750). Mesophaner-
ophyte.

Salix nigra Lindheimeri Schneider.
Along a stream in Neosho county, July 28, 1930. C. R. Ball.

Salix tristis Ait. Dwarf Gray Willow.
Shrub scattered in east half (map 751). Nanophanerophyte.

FAMILY PHYTOLEACEAE (Pokeweed Family)

Phytolacca decandra L. Pokeweed.
Phytolacca americana L.
Along streams, in gardens and thickets. East half plus Sheridan
county (map 752). Hemicyrtophyte.

FAMILY AMARANTHACEAE (Amaranth Family)

Amaranthus blitoides S. Watts.
Dry ground, roadsides and waste places. Throughout (map 754).
Therophyte.

*A. Material of Salix checked over by C. R. Ball.
Amaranthus graecizans L. Tumbleweed.
Amaranthus hybridus L.
Naturalized from Europe in waste places and fields. East half and scattered in west half (map 756). Therophyte.
Amaranthus hypochondriacus (L.) Robinson. Prince’s Feather.
Cultivated and rarely escaped. Ellis (Hays) and Washington counties. Therophyte.
Amaranthus palmeri S. Wats.
Rocks and in river valleys. Widely scattered (map 757). Therophyte.
Amaranthus powelli Wats.
A recent specimen from Saline county (Hance 2180).
Amaranthus retroflexus L. Green Amaranth, Pigweed, Redroot.
Naturalized from Europe in waste places and fields. Throughout (map 758). Therophyte.
Amaranthus spinosus L. Spiny Amaranth.
Amaranthus sanguineus (A. Gray) Benth.
Sandy soil. Southwest sixth and Saline county (map 760). Therophyte.
Celosia argentea cristata Kunze.
In cultivation, not persistent after escape.
Froelichia campestris Small.
Dry or sandy soil. Scattered throughout except northwest, more frequent in central (map 761). Therophyte.
Froelichia gracilis Moq.
Sandy soils. Scattered, perhaps throughout (map 762). Therophyte.
Gomphrena globosa L. Globe Amaranth.
In cultivation, not persistent after escaping.
Iresine rhizomatosa Standley.
Tidestromia lanuginosa (Nutt.) Standl.
Clidemia lanuginosa (R).
High plains. West third plus Riley and Lyon counties (map 764). Therophyte.

FAMILY CHENOPODIACEAE (Goosefoot Family)

Atriplex argentea Nutt. Saltbush, Silverscale.
Alkaline flats and dry open ground. West two-thirds and Wyandotte county (map 765). Therophyte.
Atriplex canescens (Pursh) Nutt. Wingscale.
Dry uplands and alkaline flats. West fourth (map 766). ?Chamaephyte.
Atriplex hortensis L. Gardenseal.
Waste ground, escaped from cultivation. North central (map 766a).

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Atriplex patula hastata (L.) Hall & Clements. Saltbush, Silverscale.
Alkaline meadows and flats. West three-fifths (map 767). Therophyte.
Atriplex rosea L.
Alkaline soils. Wyandotte county (Standley). Therophyte.
Chenopodium album Small.
Dry soil. West fourth (map 768). Therophyte.
Chenopodium album L. Lamb’s-quarters.
Including Chenopodium paludosum Reichenb. and several “forms.”
Fields, waste places, thickets, etc. Throughout (map 769). Therophyte.
A form lanceolatum (Muhl.) Aellen occurs in Rooks and Ellis counties.
Chenopodium ambrosioides L. Mexican Tea.
Waste places and thickets. East half plus Cheyenne county (1934) (map 770). Therophyte.
Chenopodium atrovirens Rydb.
Canyons. West (Scott county) (map 771). Therophyte.
Chenopodium berlandieri Moq.
Dry soil. East two-thirds (map 772). Therophyte. The quadri-nomials and quinquenomials of Aellen are left to the future.
Chenopodium hirsutum Moq.
Chenopodium botrys L. Feather Geranium, Jerusalem Oak.
Waste places, naturalized from Europe. Wyandotte and Morton counties (map 774). Therophyte.
Chenopodium cycloides A. Nels.
Sand hills in Grant county (Type locality) (map 775). Therophyte.
Chenopodium fremontii S. Wats.
Chenopodium giganteum D. Aellen.
Chenopodium hybridum (R).
Woods and rich waste places, naturalized from Europe. East two-thirds and scattered in west (map 777). Therophyte.
Chenopodium glaucum L. Oak-leaved Goosefoot.
Alluvial soil, introduced Wyandotte county. Introduced (map 778). Therophyte.
Chenopodium infernum (S. Wats.) Heller.
Dry ground, especially in prairie dog towns. West half (map 779). Therophyte.
Chenopodium leptophyllum Nutt.
Sandy or dry soil. Scattered throughout (map 780). Therophyte.
Chenopodium leptophyllum leptophylloides (Murr.) Thellung & Aellen.
Chenopodium desiccatum A. Nels. (R).
Dry soils. West half (map 781). Therophyte.
Chenopodium leptophyllum praetericola (Ryd.) F. C. Gates.
Chenopodium pratericola Ryd. (R).
Sandy soils, fields and waste ground. Especially in west four-fifths (map 782). Therophyte.
Chenopodium leptophyllum subglabrum S. Wats.
Sandy soil. Scattered throughout (map 783). Therophyte.

Chenopodium murale L.

Chenopodium petiolare H. B. K.
Dry soil. Graham county (map 783a). Therophyte.

Chenopodium salinum Standl.
Alkaline land. Southwest (map 784). Therophyte.

Corispermum hyssopifolium L.
Including Corispermum marginale Rydb. (R).
and Corispermum villosum Rydb. (R).
Sand hills, sandy valleys and fields. West half (map 785). Therophyte.

Corispermum nitidum Kit. Bugseed.
Sand hills and in canyons. Southwest (map 786). Therophyte.

Cycloloma atriplicifolium (Spreng.) Coulter. Winged Pigweed.
Sandy soil of fields, floodplains, railroad ballast. Scattered throughout except the southeast (map 787). Therophyte.

Eurutia lanata (Pursh.) Moq. Winter Sage, Winter Fat.
Low pubescent undershrub on high plains. West (Logan county) (map 788). ? Chamaephyte.

Kochia scoparia (L.) Schrad. Summer Cypress, Mexican Fireweed.
Waste places, fields and roadsides, introduced recently and spreading rapidly. Scattered, except perhaps in the southeast, most frequent in west two-thirds (map 789).

Kochia trichophylla Stapf. Firebrush, Summer Cypress.
Fields and roadsides, escaped from cultivation, mostly in Kansas river counties (map 790).


Salicornia rubra A. Nels. Glasswort.
Alkaline shores. Stafford county (map 792).

Salicornia australis A. Nels. Russian Thistle.
Fields, waste places, flood plains, etc. Throughout, but more frequent in west (map 793). Therophyte.

Spinacia oleracea L. Spinach.
In cultivation, not persisting after an occasional escape.

Suaza depressa (Pursh) S. Wats. Sea Blite.
Saline or alkaline soil. Central and west (map 794). Therophyte.

Suaza erecta (S. Wats.) A. Nels. Sea Blite.
Alkaline or saline soil. South central and southwest (map 795). Therophyte.

Family Polygonaceae (Buckwheat Family)

Eriogonum alatum Torr.
High plains. Scott county (map 796). Hemicyrptophyte.

Eriogonum annuum Nutt.
Sand prairies and high plains. West two-thirds, commoner in south part (map 797). Therophyte.

Eriogonum corymbosum Bentham.

Eriogonum helichrysoidea (Gaud.) Rydberg.
Badlands. Logan, Gove and Ellis counties (map 798). Hemicyrptophyte.

Eriogonum jamesii Bentham.
Hills on high plains. Logan county (map 799). Hemicyrptophyte.

Eriogonum lachnogynum Torr.
High plains. Extreme southwest (Morton county) (map 800). Hemicyrptophyte.

Eriogonum longifolium Nutt.
Sandy soil. Southwest twelfth (map 801). Hemicyrptophyte.

Eriogonum scouleri Moench. Buckwheat.
Rich cultivated or waste ground, escaped from cultivation (map 802). Scattered. Therophyte.

Polygonum achoreum Blake.

Polygonum aviculare L. Knotweed.
Waste places, naturalized from Europe. Scattered (map 804). Therophyte.

Polygonum aviculare angustissimum Mein. Knotweed.

Polygonum neglectum Besser.
Waste places and about dwellings. Scattered (map 805).

Polygonum buxiforme Small.
Sandy or alkaline soil. Throughout (map 800). Therophyte.

Polygonum coeruleum pratenseum (Greene) Stanford. (Rhod. 27:165. 1925.) Smartweed.

Passerina pratensis (R.)
Prairies and open woods or borders of streams and ponds. Throughout, except perhaps extreme west (map 807).

Polygonum convolvulus L. Climbing Buckwheat, Black Bindweed.

Biderdyskia convolvulus (R.)
Thickets, waste and cultivated ground. Throughout. Introduced (map 808). Therophyte to vine.

Polygonum cuspidatum Sieb. & Zucc.
In cultivation. Riley and Shawnee counties. Hemicyrptophyte.

Polygonum densiflorum Mein. (See Weatherby, Rhod. 38:415, 1926.) Smartweed.

Passerina portoricensis (Bert.) (R.)
Swamps. Cowley county (U. S. N. M.) (map 809).

Polygonum dumetorum L. False Buckwheat.

Biderdyskia dumetorum (R.)

Polygonum erectum L.
Low wet woods and banks of streams and ponds. East half (map 810). Therophyte.
Polygonum hydropiper L. Water Pepper.
   Persicaria hydropiper (R).

Polygonum hydropiperoides Michx. Little Waterpepper.
   Persicaria hydropiperoides (R).
   Swamps, wet open ground about ponds and streams. Scattered in
   east two-thirds (map 812). Helophyte.

Polygonum hydropiperoides f. strigosum (Small) Stanford. Little Waterpepper.
   Persicaria hydropiperoides strigosum (R).
   Including Polygonum opelousumoid Riddell.
   Swamps. East two-thirds (map 813). Helophyte.

Polygonum lapathifolium L. Smartweed.
   Persicaria lapathifolium (R).
   Including Polygonum incarnatum.
   Wet open ground, bordering ponds, river floodplains, and waste
   ground. East three-fourths plus Kearny county (map 814). Therophyte.

Polygonum lapynum Small.
   Along roads and rivers. West half (map 815). Therophyte.

Polygonum leptocarpum B. L. Robinson.
   Sandy places. Cowley county (map 816). Therophyte.

   Persicaria longistyla (R).
   Wet or moist open ground along streams, in roadside ditches and
   around ponds (map 817). Therophyte or hemi-therophyte.

   Persicaria nebraskeensis (R).
   Water and wet places. Cloud county (map 818).

Polygonum omisum Greene. Smartweed.
   Persicaria omisum (R).
   Wet ground and dried up ponds. Riley and Saline counties (map
   819). Therophyte.

Polygonum orientale L. Prince's Feather.

Polygonum pennsylvanicum L. Smartweed.
   Persicaria pennsylvanica (R).
   Waste and cultivated ground and borders of streams and ponds (map
   821). Therophyte.

Polygonum persicaria L. Lady's Thumb.
   Persicaria maculosa (R).
   Waste places and rich soil. Mostly east half. Introduced (map 822).
   Therophyte.

   Persicaria persicarioideae (R).

Polygonum prolificum (Small) Robinson.
   Sandy places. Grant, Cloud and Leavenworth counties (map 824).
   Therophyte.
Rumex occidentalis S. Wats. Dock.
Wet places. Saline county (map 837). Hemicyryptophyte.

Rumex patientia L. Patience Dock.
Waste places, native of Europe. Scattered in east half, Sheridan and Cheyenne counties (map 838). Hemicyryptophyte.

Rumex triangulivalvis (Dausier) Rech. f.
Rumex mexicanus Meisn. (R).
Along rivers. Wyandotte county (map 838a). Hemicyryptophyte.

Rumex venosus Pursh. Wild Hydrangea.
Sandy soil, cinders, prairies and plains. West two-thirds (map 839).

Rumex verticillatus L. Swamp Dock.
Swamps and low wet woods. Wyandotte county (map 840).

**Family Nyctaginaceae** (Four O’clock Family)

Abronia fragrans Nutt. Sand Verbena.
Dry soil. Southwest fourth to Cheyenne county on west border (map 841). Hemicyryptophyte.

Tripterosylos micrantha (R).
Sandy soil on high plains. Hamilton county (map 842). Therophyte.

Mirabilis alba (Walt.) Heimer.
Allionia albida (R).
Dry soils. East half to Clark county (map 843).

Mirabilis carletoni Standl.
Allionia carletoni Standl. (R).
Plains. At least Barber and Saline counties (map 844). Hemicyryptophyte. Type locality Barber county, Kansas.

Mirabilis glabra (Wats.) Standl.
Allionia glabra (R).
Dry soil. Southwest (Hamilton and Kearny counties) (map 845). Hemicyryptophyte.

Mirabilis hirsuta (Pursh). MacM.
Allionia hirsuta (R).
Allionia pilosa
Sandy soil, dry open ground. East half (map 846). Hemicyryptophyte.

Mirabilis jalapa L. Four-o’clock.
Only in cultivation. Rooks county (Hays).

Mirabilis linearis (Pursh) Heimer.
Allionia linearis (R).
Allionia decumbens (R).
Allionia diffusa (R).
Dry soil of plains and prairies. Throughout, except northeast (glaciated section) (map 847). Hemicyryptophyte. Prostrate to low bushy branched plants from Cheyenne to Greeley to Scott to Rooks counties have been known as A. diffusa. (Heller (map 847a). Plants from two counties (Wichita and Rooks) are transitionals to regular Mirabilis linearis.

Mirabilis nyctaginea (Michx.) MacM. Wild Four-o’clock.
Allionia nyctaginea (R).

Mirabilis nyctaginea ovata (Pursh).
Allionia ovata (R).
Dry soil. Scattered (map 849). Hemicyryptophyte.

**Family Primulaceae** (Primrose Family)

Anagallis arvensis L. Shepherd’s Weatherglass, Pippermel.

Androsace occidentalis Pursh. Androsace.
Dry or sandy soil, rocky prairies, open woods and ravines. Except extreme west (map 851). Therophyte.

Dodecatheon meadia L. Shooting Star.
Rocky bluffs. Southeast (Montgomery and Cherokee counties) (map 852). Hemicyryptophyte.

Dodecatheon radicatum Greene.

Lysimachia ciliata L. Fringed Loosestrife.
Steironema citatum (R).
Moist thickets, banks of ponds and streams. East half (map 853). Hemicyryptophyte.

Lysimachia hybrida Michx.
Steironema hybrida (R).

Lysimachia nummularia L. Moneywort.
Cultivated, seldom escaping. Atchison and Franklin counties.

Samolus parviflorus Raf. Water Pippermel, Brookweed.
Samolus floribundus H. B. K.
Wet places. Southeast and south central sixth (map 855). Hemicyryptophyte-helophyte.

**Family Plantaginaceae** (Plantain Family)

Plantago aristata Michx.
Dry soils, prairies and waste ground. At least east half (map 856). Therophyte.

Plantago asiatica L.

Plantago elongata Pursh.
Wet places. Central (map 858). Therophyte.

Plantago heterophylla Nutt.

Plantago lanceolata L.
Lawns, roadsides and waste places. East half, but mostly east fourth, plus Sheridan county (map 859). Naturalized.
Plantago major L. Plantain.  

Plantago rupasii R. & S.  
Dry or sandy soil in valleys, prairies and plains. Throughout (map 861). Therophyte.

Plantago pusilla Nutt.  
Wet places. Ellis, Cloud and Shawnee counties (map 862). Therophyte.

Plantago rhodesperma Dene. Red-seeded Plantain.  

Plantago rugelii Dene. Rugel's Plantain.  
Woods, waste places, dooryards. East two-thirds, but mostly east half (map 864). Hemicyryptophyte.

Plantago spinulosa Dene.  
Plains. Scattered in west half (map 865). Therophyte.

Plantago virginica L.  
Dry soil. East half (map 866). Therophyte.

**FAMILY ERICACEAE (Heath Family)**

Vaccinium arboreum Marsh. Farkleberry.  
_Botodendron arboreum_ (R).  
Sandy soil in woods. Southeast corner (U. S. N. M.) (map 867).  
Nano to microphanerophyte.

Vaccinium canadense Kalm. Blueberry.  
_Cyanococcus canadensis_ (R).  

Vaccinium stamineum L. Squaw Huckleberry.  
_Polyeodium stamineum_ (R).  
Rocky woods. Extreme southeast (Cherokee county) (map 868).  
Nanophanerophyte.

Vaccinium stamineum neglectum (Small) Dean.  
_Polyeodium neglectum_ (R).  
Rocky open woods. Extreme southeast (Cherokee county) (map 869). Nanophanerophyte.

Vaccinium vacillans Kalm. Lowbush Blueberry.  
_Cyanococcus vacillans_ (R).  
Rocky woods. Extreme southeast (Cherokee county) (map 869).  
Chamaephyte to nanophanerophyte.

**FAMILY SAPOTACEAE**

Sandy soil. Southeast, north to Wyandotte county, and west to Harper county (map 870). Microphanerophyte.


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**FAMILY EUPHORBIEAE (Euphorbia Family)**

Diospyros virginiana L. Persimmon.  
Borders of woods along small streams, to the northwestward cultivated. Native in south half of east third and cultivated as far as Harper, Ellsworth, Riley and Atchison counties (map 871). Mesophanerophyte.

**FAMILY POLEMONIACEAE (Phlox Family)**

Gilia acerosa (A. Gray.) Britton.  
_Gilia rigidula acerosa_ (A. Gray).  
_Giliastrum acerosum_ (R).  
Sandy plains. South two-thirds of west third (map 872). Chamaephyte (? hemicyryptophyte).

Gilia aggregata (Pursh) Spreng. Gilia.  
Hills of high plains. Clark and Stevens counties (map 873).

Gilia calcaria M. E. Jones. Gilia.  
Sandy soil of high plains. Hamilton county (map 874).

Gilia inconspicua (Smith) Doug. Gilia.  

Gilia laxiflora (Cowl.) Osterhout. Gilia.  
Plains. Harper and Stevens counties (map 875).

Gilia longiflora (Torr.) G. Don. Gilia.  
Sandhills of high plains. Southwest, east to Harper county (map 876).

Gilia rupestris (L.) H. Leslie.  
Cultivated on sandy soil. Chautauqua and Montgomery counties.

Gilia spicata Nutt. Gilia.  
Hills of high plains. Hamilton and Scott counties (map 877). Therophyte or hemicyryptophyte.

Navarretia breweri (A. Gray) Greene.  
"Kans. (?)" fide Rydborg.

Phlox bifida glandifera Beck.  

Phlox divaricata laphami Wood. Woodland or Blue Phlox.  

Phlox maculata L. Phlox.  
Low ground. Leavenworth county (Rare). (KU) (map 880). Hemicyryptophyte.

Phlox paniculata L. Phlox.  

Phlox pilosa L. Prairie Phlox.  
Sandy prairies. East third. The plants in northeastern Kansas, i.e., north of Kansas river basin, are variety _fulgida_ Wherry (map 882) and those in southeastern Kansas are variety _virgins_ (Michx.) (map 882) Hemicyryptophyte.
Polœmonium reptans L. Jacob's Ladder.
Woods and thickets. Brown, Doniphan and Cherokee counties (map 883). (?Therophyte.)

FAMILY CONVOLVULACEAE (Morning-glory Family)
Convulvulus arvensis L. Bindweed, Field Bindweed.
Including Convulvulus ambigens House (R.).
Cultivated and waste ground. Throughout (map 884). Rhizome geophyte.
Convulvulus inermis Vahl.
Dry hills and plains. Southwest (3 counties) (map 885). Some specimens formerly identified as Convulvulus hirsutus A. Gray.
Convulvulus interior House. Bindweed.
Sandy soil. Probably throughout, or except southwest (map 886).
Escaped from cultivation. East (Bourbon county).
Convulvulus sepium L. Hedge Bindweed.
Including Convulvulus americanus (Sims) Greene (R.)
and Convulvulus fruticosus Mack. & Bush, a short-peduncled plant, the forms present.
Thickets, fields and fence rows. Except perhaps southwest (map 887).

Cuscuta ephemerith Ensm. Dodder.
Moist ground, thickets; on coarse herbs and shrubs. Northeast fourth (map 888). Therophyte-vine.
Cuscuta euryi Engelm. Hazel Dodder.
Thickets; on hazel and other shrubs. Scattered, Meade, Rooks and Riley counties (map 889). Therophyte-vine.
Cuscuta curta (Engelm.) Rydb.
“Kans.” fide Rydberg.
Cuscuta eucarpida Engelm. Dodder.
Low open woods and thickets along streams: on Ambrosiaceae and rarely legumes. Except northwest (map 890). Therophyte-vine.
Cuscuta glomerata Choisy. Dodder.
Cuscuta paradoxa Raf. (R.).
Wet ground, thickets and woods along streams, on Compositae and other tall herbs. Throughout, but mostly east half (map 891). Therophyte-vine.
Cuscuta gronovii vulgivago Engelm. Dodder.
Moist ground, thickets and prairies; on various coarse herbs and shrubs. Marshall county (map 892). Therophyte-vine.
Cuscuta indecora Choisy. Dodder.
Cuscuta pentagona Engelm. Dodder.
Thickets and prairies: on herbs especially composites. East half (map 894). Therophyte-vine.
Moist ground along streams, thickets and woods; on species of Polygonum and other herbs. East half (map 895). Therophyte-vine.

Evolvulus nuttallianus R. & S. Evolvulus.
Sandy soil on plain and prairie. Except extreme east (map 896). Hemicyryptophyte.
Ipomoea batatas Lam. Sweet Potato.
Cultivated, not persisting after escape. Therophyte.
Ipomoea hederacea Jacq. Blue Morning-glory.
Cultivated and waste ground, roadsides, etc. East half, scattering westward (map 897). Therophyte-vine. Common.
Ipomoea hirsuta L. Small White Morning-glory.
Sandy soil, plains and prairies. West four-fifths (map 899). Root tuber geophyte. The large root often weighing 20 to 30 pounds or more.
Ipomoea pandurata (L.) G. F. W. Mey. Man-of-the-Earth.
Ipomoea purpurea (L.) Roth. Common Morning-glory.
Cultivated and waste ground, roadsides, etc. Mostly east half (map 901). Therophyte-vine.
X Ipomoea hederacea x purpurea.
Hybrids both ways have been collected at Salina by Hanein and doubtless exist at other places in the state.
Thickets. East half, plus Sheridan county (map 902). Therophyte.
Quamoclit cocinea hederifolia House.
Thickets. Riley and Crawford counties (map 902). Therophyte.
Quamoclit vulgaris Choisy. Cypress Vine.
Waste places, naturalized from tropical America. Doniphan and Riley counties (map 903). Therophyte.

FAMILY HYDROPHYLLACEAE (Waterleaf Family)
Ellisia nyctelea L.
Moist woods, thickets, cultivated and waste ground. Dwarfing westward. Throughout, except southwest fourth (map 904). Therophyte.
Hydrophyllum appendiculatum Michx. Waterleaf.
Decumum appendiculatum (R.).
Hydrophyllum virginianum L. Waterleaf.

Phacelia hirsuta Nutt. Scorpionweed.
Phacelia integrifolia Torr. Scorpionweed.
Gypsum soil. Extreme south central (Barber and Harper counties) (map 908). Hemicyryptophyte (?).

12—16'6
Phacelia tanacetifolia Benth.
Escaped from cultivation. Geary county.

**Family Boraginaceae** (Borage Family)

Cryptantha crassiepala (T. & G.) Greene.
Loose soil on plains. West two-fifths to Ellsworth county (map 909).
Theropyte.

Cynoglossum officinale L. Hound's-tongue.

Cynoglossum virginianum L. Wild Confrey.
Rich or rocky woods. "Kans.," sde Rydberg.

Echium vulgare L. Viper's Bugloss.
Waste places and roadsides. Ford, Pottawatomie and Riley counties (map 911).

Heliotropium convolvulaceum A. Gray.
*Euploca convolvulacea* (R.).
Sandy high plains. Southwest fourth, east to Reno county (map 912). Theropyte.

Heliotropium indicum L. Indian Heliotrope.
*Tiarella indicum* (R.).

Heliotropium spathulatum Rydb. Heliotrope.
River valleys. Finney and Grant counties (map 913). Hemicyryptophyte.

Heliotropium tenellum (Nutt.) Torr.
*Lithocereus tenella* (R.).
Dry soil. Southeast sixth (map 914). Theropyte.

Lappula americana A. Gray.

Lappula cinnamata Gilib. Stickseed.
Waste and cultivated ground. East third (Kansas river valley, plus Greenwood county) (map 916). Theropyte.

Lappula heteroperisperm Greene.
Valleys. West half, but especially northwest fourth (map 917). Theropyte.

Lappula occidentalis (S. Wats.) Greene.
Sandy areas and plains. Probably throughout, but more common westward (map 918). Theropyte.

Lappula virginiana (L.) Greene. Stickseed, Beggars' Lice.
Woods and thicketes. Northeast half plus southeast two-thirds, plus Sheridan county (map 919).

Lithospermum arvense L. Corn Gromwell.
Railway ballast and waste ground. East third and north central (map 920). Theropyte.

Lithospermum canescens (Michx.) Lehman. Puceoon.


*Lithospermum carolinianum* (Walt.) MacM.

*Lithospermum gmelini* (Michx.) (R.).
Prairies, plains and open woods. East half, mostly north quarter (map 922). Hemicyryptophyte.

Lithospermum latifolium Michx.

Lithospermum officinale L.

Lithospermum linearefolium Goldie. Narrow-leaved Puceoon.
Including *Lithospermum breviflorum* and
*Lithospermum mandanense* (R.).
Dry soil in prairies and plains. Probably throughout (map 924). Variable. A Sumner county plant is identified by Rydberg as *L. brevi-
florum* Engelm. & Gray, and several plains specimens from western Kansas as *L. mandanense* Spreng., but neither seems separable as a
species. Hemicyryptophyte.

Mertensia virginica L. Mertensia, Lungwort.

Myosotis virginica (L.) B. S. P. Forget-me-not.
Dry and rocky places. East half, plus Ellis and Cheyenne counties (map 926). Theropyte.

Onosma hispidissimum Mack. False Gromwell.

Onosma occidentale Mack. False Gromwell.

Oreocarya cana A. Nels.

Oreocarya suffruticosa (Torr.) Greene.

**Family Solanaceae** (Potato Family)

Chamaesarachus conoides (Moric) Britton.
High plains. Southwest sixth and Woodson county (map 930). Hemicyryptophyte.

Chamaesarachus coronopus (Dunal) A. Gray.

Datura metel L.
Cultivated and escaping. Ellis to Cloud to Shawnee to Greenwood counties (map 931). Theropyte.

Datura stramonium L. Jimsonweed.
Including *Datura tatula* L.
Cultivated and waste ground, thicketes along streams. East half and Hamiltion county (map 932). Theropyte.
Lycium chinense Mill. Chinese Matrimony Vine.
Cultivated, seldom escaping. Lianna to microphanerophyte.
Lycium halimifolium Mill. Matrimony Vine.
Thickets and waste places. Escaped. North half (map 933). Mostly
nanophanerophytes.
Lycopersicon esculentum Mill. Tomato.
Cultivated, occasionally escaping.
Escaping from cultivation. Clay, Riley and Sheridan counties (map
934). Therophyte.
Petunia axillaris B. S. P.
Cultivated. Atchison county (KU).
Petunia violacea Lindl. Petunia.
Much cultivated, seldom escaping. Riley county, etc. Therophyte.
Physalis ambigua (A. Gray) Rydb.
Prairies. Saline and Shawnee counties (map 935). Hemicycrophyte.
Physalis angulata L. Ground Cherry.
Physalis comata Rydb. Ground Cherry.
Hillsides and plains. Rooks to Douglas counties (map 937). Hemicycrophyte.
Physalis heterophylla Nees. Ground Cherry.
Roadsides, fields and waste places. East two-thirds, plus Sheridan
county (map 938). Hemicycrophyte.
Physalis ixocarpa Brot. Tomato.
Railroad banks. Riley and Pottawatomie counties (map 939).
Therophyte.
Physalis lancedata Michx. Ground Cherry.
Prairies and plains. Throughout (possibly except southeast) (map
940). Hemicycrophyte.
Physalis longifolia Nutt. Ground Cherry.
River valleys and rich soil. Throughout (map 941). Hemicycrophyte.
Physalis macrophylla Rydb. Ground Cherry.
Physalis missouriensis Mack. & Bush.
Physalis mollis Nutt. Ground Cherry.
Thickets along streams. Barber county (KU) (map 944). Hemicycrophyte.
Physalis pendula Rydb. Ground Cherry.
Physalis pruinosa L. Strawberry Tomato.
Cultivated ground. Osborne and Wyandotte counties (map 946).
Therophyte.
Physalis pubescens L. Ground Cherry.

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Physalis pumila Nutt. Ground Cherry.
Prairies and valleys. East half, plus Kiowa and Wallace counties
(map 948). Hemicycrophyte.
Physalis rotundata Rydb. Ground Cherry.
Plains and prairies. West three-fourths (map 949). Hemicycrophyte.
Valleys and cultivated ground. Throughout, but more frequent in
east third (map 950). Hemicycrophyte.
Physalis virginiana Mill. Ground Cherry.
Prairies, valleys, woods, thickets and cultivated grounds. East half,
plus Cheyenne county (map 951).
Quinqueloba lobata (Torr.) Raf.
Physalis lanata Torr.
Solanum carolinense L. Horse Nettle. Carolina Nightshade.
Sandy soil, rocky prairies, railroad ballast, and waste ground. East
half (map 953). Hemicycrophyte.
Solanum citrinifolium A. Br.
Androcer a citrinifolia (R).
Solanum dulcamara L. Bittersweet.
Solanum elaeagnifolium Cav. Nightshade.
Rocky prairies, railroad ballast and waste ground. East and south
(map 954). Hemicycrophyte.
Solanum nigrum L. Black or Garden Nightshade.
Waste places and cultivated ground. East two-thirds, the western
specimens passing into the next (map 955). Therophyte.
Solanum nigrum interius (Ryd.) F. C. Gates.
Solanum interius (R).
Androcer a rostrata (R).
Open situations, plains, roadsides, cultivated land, etc. Throughout
(map 957). Therophyte.
Solanum torreyi A. Gray. Nightshade.
Rocky or sandy open ground. South central and Saline county (map
958). Hemicycrophyte.
Solanum triflorum Nutt. Nightshade.
Plains, prairies, cultivated ground. West half plus Riley and Wyandotte
(railroad yards) counties (map 959). Therophyte.
Solanum triquetrum Cav.
Solanum tuberosum L. Potato.
Cultivated, seldom escaping and not long persistent. Tuber geophyte.
Family Oleaceae

Forestiera acuminata (Michx.) Poir. Adelia.
*Adelia acuminata* Michx. (R).
Swamps and river banks. Extreme southeast, also planted elsewhere (map 960). Microphanerophyte.

Forsythia virgissima Lindl. Golden Bell.
Shrub, escaped in Washington and Shawnee counties (map 960a).

Fraxinus americana L. White Ash.

Woods and along streams. East four-fifths (map 962). Micromesophanerophyte.

*Fraxinus pennsylvanica campestris* (Britton) F.C. Gates. Prairie Ash.
*Fraxinus campestris* (R).
Along prairie streams, river banks, river bluffs along streams in prairies and plains. Scattered, apparently except southwest and southeast ninth (map 963). Micro-(meso?)-phanerophyte.

*Fraxinus pennsylvanica lanceolata* (Borkh.) Sarg. Green Ash.
*Fraxinus lancifolia* (R).
Low woods, swamps and borders of streams. Apparently except southwest (map 964). Micro-mesophanerophyte.

*Fraxinus quadranugulata* Michx. Blue Ash.

Syringa vulgaris L. Lilac.
Cultivated and persisting after abandonment. Microphanerophyte.
Several additional species are in cultivation. They include species of Chionanthus, Fontanesia, Fraxinus, Ligustrum, Olea and Syringa.

Family Loganiaceae

The shrubs, *Buddleia davidii* Franch. and *B. japonica* Herms. are only in cultivation.

Family Gentianaceae (Gentian Family)

Centaurium texense (Griseb.) Fern. Centaury.

Eustoma russelianum (L.) Griseb. Eustoma.
Grassland on high plains and prairies. Southwest fourth, including Reno county (map 966). Therophyte to hemicyryptophyte.

Gentiana puberula Michx. Purple Gentian.
*Dasystephana puberula* (R).
Prairies. East third (map 967). Hemicyryptophyte (at least often biennial).

Sabatia angularis (L.) Pursh. Rose Pink, Sabatia.
Rocky open woods and thickets. Extreme southeast (Cherokee county) (map 968).

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Sabatia campestris Nutt. Prairie Pink.
Prairies, fields and ravines. Southeast ninth (map 969).

Family Apocynaceae (Dogbane Family)

Amsonia illustris Woodson.
Rocky open ground and gravel bars of streams. Allen and Cherokee counties (map 970). Hemicyryptophyte.

Amsonia tabernemontana Walt. Amsonia.

Amsonia tabernemontana salicifolia (Pussh.) Woodson.
*Amsonia salicifolia* (R).

Apocynum cannabinum L. Indian Hemp, Dogbane.
Fields, prairies and thickets. At least east three-fourths (probably throughout) (map 973). Hemicyryptophyte.

Apocynum cannabinum glaberrimum DC. A. album (R).
Fields and thickets. Scattered, northeast to southwest (map 974). Hemicyryptophyte.

Apocynum cannabinum pubescens (Mitchell) DC.
*Apocynum pubescens* (R).
Rocky open woods, thickets and waste ground. East two-fifths (map 975). Hemicyryptophyte.

Apocynum sibiricum Jacq. Dogbane.
Fields, valleys and hillside. Throughout (map 976). Hemicyryptophyte.

Apocynum sibiricum cordigerum (Greene) Fernald.
*Apocynum cordigerum* Greene (R).
*Apocynum hypericifolium cordigerum* (Greene) Beg. & Bel.

Vinea minor L. Periwinkle, Myrtle.
Cultivated and sometimes escaping. Doniphan and Harvey counties. Chamaephyte.

Family Asclepiadaceae (Milkweed Family)


Acerates curculata Engelm. Green Milkweed.

Acerates hirtella Pennell. Green Milkweed.
Rocky prairies. Extreme east and southeast, plus Cloud county (map 980). Hemicyryptophyte.

Acerates lanuginosa (Nutt.) DC. Green Milkweed.
Prairies. East half, scattered plus Sherman county (map 981). Hemicyryptophyte.

Acerates viridiflora (Raf.) Eaton. Green Milkweed.
Dry or sandy soil. Throughout (map 982). Hemicyryptophyte.
Acerates viridiflora lutescens Britton.  
Sandy soil. Throughout, but more frequent in east half (map 983).  
Hemicyryptophyte.  

Acerates viridiflora linearis A. Gray.  
Dry soil. Decatur, Stevens, Finney, and Labette counties (map 984).  
Hemicyryptophyte.  

Asclepias amplexicaulis Smith.  

Asclepias arenaria Torr.  
Sandy soil. West half, plus Riley and Shawnee counties (map 986).  
Hemicyryptophyte.  

Asclepias brachyphylla Engelm.  
Dry soil. “Kansas,” soid Rydberg, reported by Smyth.  
Hemicyryptophyte.  

Asclepias galioide H. B. K. Bedstraw Milkweed, Whorled Milkweed.  
High plains. Sherman county (map 987). Hemicyryptophyte.  

Asclepias incarnata L. Swamp Milkweed.  
Swamps and along streams. Throughout (map 988). Helophyte.  

Asclepias kansana Vail. Kansas Milkweed.  
Prairies and open woods. East three-fifths + Thomas and Sheridan counties (map 989). Hemicyryptophyte.  

Asclepias latifolia (Torr.) Raf.  
Dry plains. West half to Sedgwick county (map 990). Hemicyryptophyte.  

Asclepias meadii Torr.  
Prairies. Douglas county (KU) (map 991).  

Asclepias pumila (A. Gray) Vail. Low Milkweed.  
Dry plains. West three-fourths, mostly west half (map 992).  
Hemicyryptophyte.  

Asclepias purpurascens L. Purple Milkweed.  
Rocky open woods and thickets. East seventh and Wallace county (map 993). Hemicyryptophyte.  

Asclepias quadrifolia Jacq.  
Rocky open woods and thickets. Extreme southeast (Cherokee county) (map 994). Hemicyryptophyte.  

Asclepias speciosa Torr. Showy Milkweed.  
Valleys of prairie and plain. Throughout, but less frequent in southeast (map 995). Hemicyryptophyte.  

Asclepias sullivantii Engel.  
Prairies and thickets. East half (map 996). Hemicyryptophyte.  

Asclepias syriaca L. Milkweed.  
Fields and waste places. East two-thirds, plus Decatur county (map 997). Hemicyryptophyte. Confused with A. kansana, if specimens are not observed. As A. kansana was not named when most of the milkweeds were collected, recollecting of fruiting specimens is much to be desired. However, by no means all the pods have numerous processes, characteristic of A. kansana.  

Aesculapias tuberosa L. Butterflyweed, Orange Milkweed.  
Dry fields, meadows and prairies. East three-fourths (map 998).  
Hemicyryptophyte.  

Aesculapias variegata L.  
Hemicyryptophyte.  

Aesculapias verticillata L. Whorled Milkweed.  
Dry prairies, valleys and rocky hillsides. Mostly east three-fourths (map 999). Hemicyryptophyte.  

Asclepias decumbens (Nutt.) A. Gray. Spiders Milkweed.  
Dry, sandy soil. Central (map 1000). Hemicyryptophyte.  

Asclepias viridis (Walp.) A. Gray. Spider Milkweed.  
Dry and rocky prairies. East two-thirds and Logan county (map 1001). Hemicyryptophyte.  

Cyananthera nigra (L.) Pers.  
Escaping from cultivation. Riley county. Vine hemicyryptophyte.  

Dolichos lablab latus Midd. Sandvine, Climbing Milkweed.  
Moist alluvial woods, thickets and cultivated fields. East two-thirds (map 1002). Root tuber geophyte.  

Periploca graeca L. Silkvine.  
Escaped from cultivation in woods along streams. Greenwood county (map 1003). Liana.  

Family Scrophulariaceae7 (Figueroa Family)  

Antirrhinum majus L. Snapdragon.  
Frequently cultivated, but not persisting after an escape. Gardens throughout. Therophyte.  

Aureolaria grandiflora (Benth.) Pennell. False Foxglove.  

Aureolaria grandiflora cinerea Pennell. False Foxglove.  
Dry soil. Southeast ninth (map 1004). Hemicyryptophyte.  

Buchnera americana L. Blue Hearts.  
Upland prairies and ravines. Southeast twelfth (map 1005). Hemicyryptophyte-therophyte (biennial).  

Castilleja citrina Pennell.  
Bluffs at edge of high plains region. Comanche to Harper counties (map 1006). Hemicyryptophyte.  

Castilleja coccinea (L.) Spreng. Indian Blanket, Painted Cup.  
Prairie. Extreme east (map 1007). Hemicyryptophyte (biennial or therophyte).  

Castilleja indivisa Engel.  
Sandy soil. “Kans.” soid Rydberg, but no specimen discovered.  

Castilleja sessiliflora Pursh. Indian Paintbrush.  
Prairies and plains. West four-fifths (map 1008). Hemicyryptophyte.  

Chelone glabra L. Turtlehead.  
“Kans.” soid B&B, Rydberg, but no specimens discovered.  

Collinsia verna Nutt. Blue-eyed Mary.  

7. Specimens of Scrophulariaceae checked over by F. W. Pennell.


Gerardia aspera Doug. Gerardia. 
Agalima aspera (Doug.) Britton. Prairie and moist ground along small streams. East two-thirds, plus Hamilton county (map 1012). Therophyte.


Gratiola virginiana L. In pools between sand dunes. Reno and Anderson counties (map 1018). Helophyte.


Linaria canadensis (L.) Dumort. Open places. Crawford county (KU) and Stevens county (Mo. Bot. Gard.) (map 1020).

Linaria texana Schleg. Blue Toadflax. Rocky prairies and sandy open ground. East half (map 1021). Therophyte or hemicyryptophyte.


Lindernia angustifolia (Michx.) Pennell. False Pimpernel. 
Hylotelephium angustifolium (Walt.) (R.). Borders of ponds and streams. Scattered in east half (map 1023). Therophyte (?).

Lindernia dubia typica (L.) Pennell. False Pimpernel. 
Hylotelephium dubium (R.). Low wet woods and borders of streams and ponds. Scattered in east half (map 1024). Therophyte (?).

Lindernia dubia major (Pursh) Pennell. False Pimpernel. 
Hylotelephium dubium (R.). Wet places. Scattered in east half (map 1025). Therophyte (?).


Mimulus glabratus fremontii (Benth.) Grant. 


Paulownia tomentosa (Thum.) Steud. Paulownia. In cultivation, winterkilling to a greater or less extent each year. East third. Microphanerophyte.

Pedicularis canadensis L. Lousewort. Woods and thickets. East third (map 1030). Helophyte-hydrophyte, more or less hemiparasitic.

Penstemon albidos Nutt. Beartdung.

High plains. West half (map 1031). Hemicyryptophyte.


High plains. Extreme southwest (map 1032). Hemicyryptophyte.


Penstemon caudatus Heller. Beartdung. 
Penstemon acuminatus. 


Penstemon grandiflorus Nutt. Beartdung.

Sandy and rocky prairies. Smoky Hill-Kansas river valley region in east two-thirds (map 1038). Hemicyryptophyte.
Penstemon pallidus Small. Beadumg.  
Only in cultivation. Shawnee county.

Penstemon tubaeformis Nutt. Beadumg.  
Moist prairies and thickets. East third, mostly southeast sixth (map 1039). Hemicyemophyte.

Scrophularia lanceolata Pursh. Figwort.  
Including Scrophularia occidentalis Rydb.  
Woods. Scattered in east half (map 1040). Hemicyemophyte.

Scrophularia marilandica L. Figwort.  
Including Scrophularia neglecta Rydb. (S. m. l. neglecta [Rydb.] Pennell.) The type specimen from Rilev county (Norton 779 in N. Y. Bot. Gard.).  

Tomandera auriculata (Michx.) Raf. Gerardi.  
Otothyllum auriculatum (R.).  
Low ground in prairies and thickets. East fourth (map 1042). Therophyte.

Tomandera densiflora (Benth.) Pennell. Gerardi.  
Otothyllum densiflorum (Benth.) (R.).  

Verbascum blattaria L. Moth Mullen.  
Fields and waste places. Scattered (8 counties) in east half and Sheridan and Hamilton counties (map 1044). Hemicyemophyte (biennial).

Verbascum thapsus L. Mullen.  
Fields and waste places. East three-fifths, but especially east fourth (map 1045). Hemicyemophyte (biennial).

Veronica arvensis L. Speedwell.  
Cultivated and waste ground, overcut lawns, naturalized from Europe.  
East half (map 1046). Therophyte.

Veronica comnata Raf. Brooklime.  
Veronica comnata Pennell.  
Wet places and in water. Scattered in north third (map 1047). Helophyte, hydrophyte. Variety globerrima Pennell in the same territory (map 1047).

Veronica didyma Tenore. Speedwell.  
Scattered in northeast fourth (map 1048). Therophyte.

Veronica elegans L. Speedwell.  
Cultivated and waste ground. East fifth (map 1049). Therophyte.

Fields, cultivated and waste ground, more common than the species. Scattered throughout, on the increase (map 1050). Therophyte.

Veronica triphylos L.  

Veronicastrum virginicum (L.) Farwell. Culver’s Root.  
Meadows and thickets. East fourth (map 1052). Hemicyemophyte.  
The form villosus (Raf.) Pennell in Jackson county.

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Family Bignoniaceae (Bignonia Family)

Campsis radicans (L.) Scen. Trumpet Creeper.  
**Teocica radicans** (L.) Juss. (R.).  
Woods and thickets, probably native in extreme southeast and escaped elsewhere in southeast Kansas (map 1053). Cultivated in east third, often as the variety speciosiss.  
Liana.

Catapla bignonioides Walt. Catalpa.  
Only in cultivation. East. Tree.

Catapla speciosa Warder. Catalpa.  
Introduced along streams and into waste ground, also cultivated, occasionally escaping (map 1054). Tree.

Family Martyniaceae (Unicorn-plant Family)

Martynia louisiana Mill. Devil’s Claw.  
*Phascoladenia louisiana* (R.).  
Plains and in cultivated and waste ground eastward. Frequent in west two-thirds, occasionally more eastward (map 1055). Therophyte.

Family Orobanchaceae (Broomrape Family)

Orobanche ludoviciana Nutt.  
*Myzorrhiza ludoviciana* (R.).  
Parasite on roots of Xanthium, Artemisia and other composites, etc., in sandy soil in river flood plains. Scattered, mostly western, Geary and Allen counties in eastern Kansas (map 1056).

Orobanche uniflora L. Cancerroot.  
*Anisophlebus uniflorus* (R.).  
In woods, parasites on tree roots. Spreading in east half (map 1057).

Family Lentibulariaceae (Bladderwort Family)

Utricularia vulgaris americana A. Gray. Bladderwort.  
*Utricularia macrorhiza* LeConte (R.).  
Pond and slow streams. Scattered, if suitable habitats, presumably throughout (map 1058). Hydrophyte.

Family Acanthaceae (Acanthus Family)

Dianthera americana L. Waterwillow.  
Marshes and streams. In Kansas river valley and south in east third (map 1059). Helophyte or hemicyemophyte.

Diplorium brachiatum (Pursh) Sprague.  
Low alluvial soil in woods and thickets. Southeast corner counties and Sedgwick and Osage counties (map 1060).

Ruella caroliniana (Walt.) Steud. Ruellia.  
*Ruellia eblinosa* Pursh (R.).  
Rocky prairies and thickets (map 1061). Hemicyemophyte.

Ruellia strepens L. Ruellia.  
Family Phrymaceae (Loosestrife Family)


Family Verbenaceae (Verbena Family)


X Verbena bracteata x hastata. MePherson county.

X Verbena bracteata x stricta. MePherson county.

X Verbena bracteata x urticifolia. Open ground. Pottawatomie county.


Verbena hastata L. Vervain or Verbena. Low open woods and thickets, wet prairies, and waste ground. Throughout, except the westernmost counties (map 1069). Hemicyrptophyte.

X Verbena hastata x stricta. Barber, Cloud, Elk, Shawnee, Cherokee and Osborne counties.

X Verbena hastata x urticifolia. Scattered, Meade, Crawford and Bourbon counties.


X Verbena simplex x hastata. Eastern Kansas (Neosho, Osage, Cherokee, Butler, Lyon, Montgomery and Douglas counties).

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X Verbena simplex x stricta. Montgomery county.


X Verbena strieta x urticifolia. Pottawatomie, Doniphan and Labette counties.

X Verbena urticifolia x simplex. Crawford county (Ross Herbarium).

The shrubs *Vitex agnus castus* L. (Chaste Tree), and *Vitex negundo* (Pl. Clarke are found only in cultivation.

Family Lamiales (Mint Family)


Lamium amplexicaule L. Dead Nettle, Henbit. Waste places and cultivated ground, recently introduced and spreading rapidly in lawns. East half (map 1081). Therophyte.

8. In part checked by Carl Epling.
Leomuris cardinca L. Motherwort.
Fields, roadsides and about dwellings. North half east from Sheridan county and Cherokee county (map 1082). Hemicyryptophyte.

Leomuris sibirica L. Motherwort.

Lycopus americana Muhl. Water Horehound.
Low wet woods and margins of ponds and streams. Throughout (map 1083). Hemicyryptophyte or helophyte.

Lycopus lucidus Turcz. Water Horehound.
Wet soil, especially in thickets. Marshall, Riley and Miami counties (map 1084). Hemicyryptophyte or helophyte.

Lycopus uniflorus Michx.

Lycopus virginicus L. Water Horehound, Bugleweed.
Low wet woods and open ground. Northeast fourth (map 1086). Hemicyryptophyte.

Marrubium vulgare L. Horehound.
Hillsides and waste ground, especially about old dwellings. East four-fifths (map 1087). Hemicyryptophyte.

Melissa officinalis L. Bee Balm, Lemon Balm.

Mentha arvensis glabra (Benth.) Fernald. Horse Mint.
Mentha glabrior (Hook.) Rydb. (R).
Swamps, marshes, along streams and in springy places. East half, plus a xerophyte plant in Hamilton county (map 1089). Hemicyryptophyte or helophyte.

Mentha longifolia Huds. (See Rhod. 26:175. 1924.)
Mentha sylvestris L.
Escaped from cultivation in Sedgwick county (map 1090).

Mentha piperita L. Peppermint.
Probably only in cultivation. Scattered in east third (map 1090). Hemicyryptophyte.

Mentha spicata L. Spearmint.
Fields and waste places, naturalized from Europe. Cloud county (map 1091). Hemicyryptophyte.

Monarda bradburiana Beck.

Monarda citriodora Cerv.
Monarda dispersa Small. (R).

Monarda eliptophidiodes A. Gray.

Monarda fistulosa L. Bergamot.

Monarda dentata Benth.
Hillsides. Chase, Marion and Jackson counties (map 1094). Hemicyryptophyte.

Monarda mollis L. Wild Bergamot.
Monarda fistulosa mollis (L.) Benth.
Rocky prairies and thickets. East two-thirds (map 1095). Hemicyryptophyte.

Monarda punctata occidentalis Epling. (Madroño 3:25. 1935.)
Often identified as Monarda pectinata Nutt. from (R). Sandy open ground. Scattered mostly in south central; Shawnee county (map 1096). Hemicyryptophyte.

Nepeta cataria L. Catnip, Catnip, Cat Mint.
Fields, roadsides, ravines and waste ground, especially about old dwellings. East half, plus northwest fourth (map 1097). Hemicyryptophyte.

Nepeta hederaaceae var. foliosa Benth. Ground Ivy, Gill-over-the-ground.
Geranium hederaaceae L.
Waste places, thickets, etc., naturalized from Europe. East third (map 1098). Hemicyryptophyte-chamaephyte.

Perilla frutescens (L.) Britton. Beefsteak Plant.
Escaped from cultivation along roads, in fields, waste ground and along streams. Eastern, mostly northeast fourth (map 1099). Hemicyryptophyte.

Physostegia formosior Lunell. False Dragonhead.
Dracocephalum formosius (R).

Physostegia intermedia (Nutt.) Engelm. & Gray. False Dragonhead.
Dracocephalum intermedium (R).
Dracocephalum denticulatum Ait. (R) (?).
Prairies. Southeast twelfth (map 1101). Hemicyryptophyte.

Physostegia virginiana (L.) Benth. False Dragonhead.
Dracocephalum virginianum (R).

Physostegia virginiana speciosa (Sweet) A. Gray. False Dragonhead.
Dracocephalum speciosum (R).

Prunella vulgaris lanceolata (Barton) Fernald. Self-heal.

Pyrenanthera flexuosa (Walt.) BSP. Mountain Mint.
Rocky open woods, fields and thickets. East third (map 1104). Hemicyryptophyte.

Pyrenanthera pilosum Nutt. Mountain Mint.
Prairies and open woods. East fifth (map 1105). Hemicyryptophyte.

9. Specimens of Pyrenantherum verified by E. Grant, during 1939.


Salvia pratensis L. In pasture (station now destroyed, Hanein). Saline county. Hemicryptophyte.


Scutellaria lateriflora L. Mad-dog Skulkeap. Swamps or along streams. Throughout (map 1111). Hemicryptophyte or helophyte.


Stachys ambiguus Sm. Swamps. Riley county (map 1115a). Hemicryptophyte. Specimens key to Stachys pustulosa in R.

Stachys annua L. Waste places, naturalized from Europe. Shawnee county (map 1116). Therophyte.

Stachys palustris L. Extreme east (Wyandotte county) (map 1117).
Geum canadense camporum (Ryd.) Fernald & Weatherby.
   Woods and prairies. East four-fifths (map 1130). Hemicycrophyte.
Geum laciniatum trichocarpum Fernald. Avens.
   Geum virginianum L. (R).
   Thickets. East (Anderson and Sedgwick counties) (map 1131).
   Hemicycrophyte.
Geum vernum (Raf.) T. & G. Early Water Avens.
   Moist woods and thickets. Southeast sixth (map 1132). Hemicycrophyte.
Gillenia stipulata (Muhl.) Trelease. American Ipecac.
   Potentilla stipulata (R).
   Rocky woods. Extreme southeast (Cherokee county) (map 1133).
   Hemicycrophyte.
Potentilla argentea L.
Potentilla arguta Pursh.
   Drymocallis ogrominioides (Pursh.) (R).
   Prairies and rocky places. East fourth (map 1134). Hemicycrophyte.
Potentilla nicolletii (S. Wats.) Sheldon.
   Low ground. Riley county (map 1135).
Potentilla norvegica hirsuta (Michx.) Lehman.
   Potentilla monspeliensis L. (R).
   Rich soil and waste places. East half, mostly northern part (map 1136).
Potentilla paradoxa Nutt.
   Low ground. Northeast (Cloud to Wyandotte counties), plus Hamilton county (map 1137).
Potentilla rivalis Nutt.
   River valleys. Riley and Wyandotte counties (map 1138).
Potentilla rivalis millegana (Engelm.) Wats.
   Potentilla millegana (R).
   Waste places. Sheridan, Cloud and Clay counties (map 1139).
Potentilla rivalis pentandra (Engelm.) Wats.
   Potentilla pentandra (R).
   Bottomland. Riley, Shawnee and Saline counties (map 1140).
   Therophyte.
Potentilla simplex Michx. Cinquefoil, Five-finger.
   Potentilla canadensis L. (R).
   Rocky open woods and waste ground. East fourth (map 1141).
Potentilla sulfurica Lam.
   Waste places. Northeast sixth (map 1142).
Poteridium annuum (Nutt.) Spach.
   Moist places. Extreme southwest (Morton county) (map 1143).
   Therophyte.
Rosa arksansana Porter, as now understood is a Rocky Mountain species. A Comanche county specimen, however, somewhat resembles it.

Rosa blandia Ait.
   Prairies. Scattered in east half (map 1144). Nanophanerophyte.
Rosa carolina L. Pasture Rose.
   Hillsides. Extreme southwest (Cherokee county) (map 1145). Nanophanerophyte.
Rosa carolina villosa (Best) Rehd.
   Rosa canina Pursh. (R).
   Hillsides. Southeast (Linn and Cherokee counties) (map 1146).
   Nanophanerophyte.
Rosa conjuncta Rydb.
   Hillsides. Extreme east (Linn county) (map 1146). Nanophanerophyte.
Rosa pimpinellifolia L.
   Escaped from cultivation. Doniphan and Linn counties (map 1146a).
   Nanophanerophyte.
Rosa rubifolia R. Br.
   Thickets. East third (map 1147). Nanophanerophyte.
Rosa rubiginosa L. Sweetbrier.
   Thickets. Riley and Jackson counties (map 1148).
Rosa rudenscula Greene.
   Thickets. Lyon county (map 1149).
Rosa serrulata Raf.
Rosa setigera Michx. Prairie Rose, Climbing Rose.
   Thickets. East seventh (map 1151). Nanophanerophyte.
Rosa subserulata according to E. J. Palmer is “common in sandy woods in Jasper county, Missouri, and undoubtedly extends into Cherokee county,” Kansas, but no herbarium specimens are known.
Rosa suffulta Greene. Prairie Rose.
   Prairies and plains. Throughout, but less frequent in southwest (map 1152). Nanophanerophyte. (Most specimens formerly known as R. arksansana.)
Rosa woodii Lindl.
   Plains. Western (Rawlins and Hamilton counties) (map 1153). Nanophanerophyte.
Rubus flagellaris Wild.
   Rubus baileyanus Britton.
   Rubus pilosifolius Blanchard.
   Rubus aborigineum Rydb.
   Open woods and thickets. East third (map 1154). Chamaephyte to hemicycrophyte.
Rubus flagellaris occidentalis Bailey.
   Thickets. Saline county (map 1155).
Rubus hispidus L.
Rubus laciniatus Wild.
   Cultivated in Cherokee county. Hemicycrophyte.
Rubus laudatus Berger. (Probably better considered under *Rubus ostysifolius."
Thickets. Saline county (map 1156).
Rubus nigrobacicus Bailey.
Thickets. Woodson and Leavenworth counties (map 1157).
Rubus occidentalis L. Black Raspberry.
Thickets, etc. East two-thirds (map 1158). Nanophanerophyte.
Rubus odoratus L. Flowering Raspberry.
Cultivated, sometimes escaping (Ryd.). Nanophanerophyte.
Rubus ostysifolius Rydb. Blackberry.
*Rubus argutus* Link (R).
Open places. East two-thirds, but mostly east third (map 1159).
Nanophanerophyte.
Spinus salicifolia L. Meadowsweet.
Escaped from cultivation. "Kans." side Rydberg but no specimens.
Spinus tomentosa L.
Wet places. "Kans." side Rydberg but no specimens.
Many species of this family are cultivated in Kansas, but have shown no signs of escaping. They include the shrubs *Ezocha racemosa* K. japonica, *Physocarpus opulifolius*, *Potentilla fruticosa*, *Rhodotypos sericeus*, *Rosá sp., Rubus sp., Sorbaria sp.,* and *Spinus sp.,* and the garden strawberry, *Fragaria chiloensis.*

**Family Malva** (Apple Family)
Amelanchier canadensis (L.) Medin. Service Berry, Juneberry.
Rocky woods and thickets. East fourth (map 1160). Microphanerophyte.
Amelanchier canadensis nuda Palmer & Steyermark.
Cherokee county (map 1160).
Amelanchier humilis Wieg.
Open ground. Rare in east fifth (map 1161). Nanophanerophyte.
Amelanchier laevis Wieg.
*Crateagus* calpodendron (Ehrh.) Medin.
*Crateagus* calpodendron hispidula (Sarg.) Palmer.
*Crateagus hispidula* Sarg.
*Crateagus spinulosus* Sarg.
Thickets. Southeast (map 1164).
*Crateagus* calpodendron obesa (Ashe.) Palmer.
*Crateagus globosa* Sarg. (R).
Thickets. East fourth, especially southeast (map 1165). Microphanerophyte.
*Crateagus* rocinoides Ashe.
*Crateagus* ursinoides. (Thickets. Riley and Cherokee counties (map 1166). Microphanerophyte.

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*Crateagus* collina Ell.
*Crateagus* macropoda Sarg.
*Crateagus* vicina Sarg.
Thickets. Southeastern (map 1167).
*Crateagus* crassifolia L. Cockspur Thorn.
*Crateagus* discolor Sarg.
*Crateagus* rubrifolia Sarg.
Thickets. Eastern (Franklin and Cherokee counties) (map 1169).
*Crateagus* engelmannii Sarg.
*Crateagus* muneta Sarg. (R).
Thickets and open woods (map 1170).
*Crateagus* lamahnea Sarg.
*Crateagus* dasyphylla Sarg. (R).
Open woods and thickets (map 1171). Microphanerophyte.
*Crateagus* mackenzii brachycephala (Sarg.) Palmer.
*Crateagus* brachyclada Sarg. (R).
Rocky open woods. Southeast (map 1172). Microphanerophyte.
*Crateagus* mollis (T. & C.) Scheele.
*Crateagus* laxifolia Sarg.
Open woods and thickets along streams. East third (map 1173). Microphanerophyte.
*Crateagus* palmeri Sarg.
Cherokee county (map 1174).
*Crateagus* regalis paradoxus (Sarg.) Palmer.
Prairies and thickets along small streams (map 1175).
*Crateagus* stevensiana Sarg.
Wilson county (map 1176).
*Crateagus* suecunda Schrad. Thornapple.
*Crateagus* nevadensis Ashe.
Thickets. Ellis and Pottawatomie counties (map 1177). Microphanerophyte.
*Crateagus* suecunda permentosus (Ashe) Palmer.
Thickets. East third (map 1178).
*Crateagus* viridis L.
*Crateagus* furcata Sarg.
Thickets. Southeast (map 1179).
Malus angustifolia Ait. Crabapple.
Malus coronaria (L.) Mill. American Crabapple.
Thickets. Eastern (Riley, plus two counties) (map 1180). Microphanerophyte.
Malus ioensis (Wood) Bailey. Iowa Crabapple.
Malus pumila Mill. Apple.
*Malus* sylvestris (L.) Mill.
Extensively cultivated. Microphanerophyte.
Prunus communis L. Pear.
Cultivated, escaping. Saline county.

Sorbus aucuparia L.
Cultivated and escaping in Bourbon county. Phanerophyte.

Among the several cultivated are species of the following genera:
Amelanchier, Aroma, Chamaenerhoes, Cretaegus, Cydonia, Malus, Pyrus and Sorbus.

**FAMILY PRUNACEAE (Plum Family)**

**Prunus americana Marsh. Wild Plum.**
Thickets, prairies and river banks. East two-thirds and north part of west third (map 1181a). Nano-microphanerophyte.
A few leafy twigs of what seems to be this species but with leaves whose margins suggest elm leaves have been collected in Washington, Ellis and Butler counties. Whether they are a hybrid, diseased plants, or a new form is not now known.

**Prunus angustifolia Marsh. Chickasaw Plum.**
Including a variety watsoni Waugh (P. watsoni Sarg.), apparently the common plant in Kansas, and a variety, varia Watson & Hedr., a stouter plant with broader leaves, less inclined to be conduplicate, most frequent in the southeastern part of the state.
Thickets, prairies, especially on sandy soils. Triangle between Seward, Jewell and Cherokee counties, plus Sheridan and Cheyenne counties (map 1182). Nano-microphanerophyte.

**Prunus armeniaca L. Apricot.**
Cultivated, seedlings occasionally found wild. Saline county.

**Prunus besseyi Bailey. Sand Cherry.**

**Prunus cerasus L. Sour Cherry.**
Cultivated, infrequently escaping.

**Prunus domestica L. Garden Plum.**
Cultivated, sometimes persisting after abandonment. The variety insititia occurs as seedlings in a ravine near Salina.

**Prunus gracilis Engelm. & Gray.**
Including **Prunus rugosa Rydb.**

**Prunus hortulana Bailey. Plum.**
Thickets. Southeast sixth to Wyandotte county (map 1185). Microphanerophyte.

**Prunus lanata Mack. & Bush. Plum.**
Thickets. North half and southeast sixth (map 1180). Microphanerophyte.

**Prunus mahaleb L. Mahaleb Cherry.**
Cultivated and escaping. Lincoln, Miami, Clay and Lyon counties (map 1187). Nano-microphanerophyte.

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**Prunus mexicana S. Wats. Bigtree Plum.**
Rocky open woods and thickets. Southeast (Wilson, Chautauqua, Montgomery and Labette counties) (map 1188). Microphanerophyte.

**Prunus munsoniana Wight & Hedr. Wild Goose Plum.**
Thickets and borders of streams. Southeast ninth, plus Rooks county (map 1189). Microphanerophyte.

**Prunus orthosepala Kochne. Plum.**
X Prunus angustifolia watsoni x Prunus americana.
Thickets, originating in Ellis county, Kansas. Ellis county (map 1190). Nano-microphanerophyte.

**Prunus persica Batsch. Peach.**
Cultivated, escaping in Wallace, Mitchell and Saline counties (map 1191).

**Prunus serotina Ehrh. Black Cherry.**
**Prunus virginiana (R)**

**X Prunus slavini Palmer (P. gracilis x P. angustifolia).**
Hybrid. Harvey and Cowley counties, fide E. J. Palmer (map 1193).

**Prunus virginiana L. Chokecherry.**
**Prunus nana DuRoi. (R)**
River banks and rocky woods. East half, especially north half of it (map 1194). Nano-microphanerophyte.

**Prunus virginiana melanocarpa (A. Neh.) Sarg. Chokecherry.**
**Prunus melanocarpa (R)**

Species of Prunus frequently albeit exclusively in cultivation include:
P. avium L. (Mazzard), P. padus L. (European bird cherry), and P. triloba Lindl. (Flowering Almond).

**FAMILY MIMOSACEAE (Mimosa Family)**

**Acacia angustissima hirta (Nutt.) Robinson. Prairie Acacia.**
**Acacia hirta (R)**
Sandy prairies and plains. Southern border. Chautauqua and Morton counties (map 1196).

**Desmanthus illinoensis (Michx.) MacM. Prairie Mimosa, Acan.**
Rocky open ground, thickets and prairies. Throughout, except riverless high plains (map 1197). Hemicyryptophyte.

**Desmanthus leptolobus T. & G.**
Moist prairies. Extreme southwest and scattered in the central (map 1198). Hemicyryptophyte.

**Prosopis chilensis glandulosa (Torr.) Standley. Mesquite.**
**Nettus glandulosa (R).**

**Schrankia uncinata Wild. Sensitive Brier.**
**Leptoloblii nutallii DC. (R).**
Prairies and dry soils. Probably throughout (no specimens from central west and extreme northeastern counties) (map 1200). Hemicyryptophyte.
FAMILY CASSIEAE  (Cassia Family)

Cassia marilandica L. Sena.

Cassia marilandica of Saha, but not Linnaean type (R).
Thickets and open woods. East two-thirds (map 1201). Therophyte
(biennial).

Cassia occidentalis L. Coffee Weed.
Alluvial waste ground. Wyandotte county (map 1202).

Cassia tora L.
Waste ground. Wyandotte county in 1866 (map 1203). Therophyte.

Cercis canadensis L. Redbud, Judas tree.
Woods, thickets, hills and along streams. East two-fifths, cultivated
farther west (map 1204). Microphanerophyte.

Chamaecrista fasciculata (Michx.) Greene. Partridge Pea.

Chamaecrista fasciculata Michx.
Thickets, rocky hillsides, roadsides and prairies. East two-thirds
(map 1205).

Chamaecrista niciitans (L.) Moench. Sensitive Pea.

Chamaecrista rostrata Wooton & Standley.
Sandy soil. Southwest sixth (map 1206a).

Gleditsia triacanthos L. Honey Locust.
Woods especially along streams and ravines. More and more freely
planted. Originally native in the east half, but planted throughout and
freely escaping throughout (map 1207). Mesophanerophyte.

Gleditsia triacanthos f. inermis (Pursh) Fassett. Thornless Honey Locust.
Woods occasional, but most frequently in cultivation. Throughout.
Mesophanerophyte.

Gymnocladus dioica (L.) K. Koch. Kentucky Coffee Tree.

Diospyros virginiana L. Persimmon.

Hoffmanseggia densiflora Bentham.

Larrea divisia (R.).

Plains. Extreme southwest (Morton county) (map 1209). Hemicyc

Hoffmanseggia jameissi T. & G.

Larrea jameissi (R.).

Plains. West third, east to Barber county (map 1210). Hemicyc

FAMILY KRAMERIACEAE  (Krameria Family)

Krameria secundiflora DC.
Sandy soil. West (Morton and Thomas counties) (map 1211). Hemicyc

FAMILY FABACEAE  (Pea or Bean Family)

Amorpha canescens Pursh. Lead Plant.
Rocky open woods, prairies, and plains. East three-fourths to Rawl

Amorpha fruticosa L. False Indigo.
Including the inconstant varieties angustifolia Pursh (A. fragrans Sweet),
its form latior Fassett, and tennesseensis (Shuttlev.) Palmer.

Wet ground along streams and about ponds. Very valuable in soil
erosion projects. Presumably throughout (map 1213) mostly as the

Amorpha nana Nutt.
Prairie hillsides. Riley, Wabaunsee, Geary and Rooks counties (map

Amphicarpus bracteatus (L.) Fern. Hog Peanut.

Amphicarpus comosus (L.) (R).

Thickets. Cherokee county, plus Cloud and Doniphan counties (map

Amphicarpus bracteatus comosus (L.) Fern. Hog Peanut.

Amphicarpus pitcheri T. & G. (R).

Moist woods and thickets. East half, plus Sheridan county (map

Apis americana Medic. Ground Nut.

Apis tuberosa Moench. (R).

Thickets along streams. East half, plus Kiowa county (map 1217).

Root tuber geophyte. At least some specimens from Pottawatomie,
Riley, Saline and Cherokee counties are the variety, turrigera Fernald.

Arachis hypogaeae L. Peanut.


Astragalus caespitosus (Nutt.).

Orophaca caespitosa (R).

Astragalus triphyllus Pursh.

Dry gravelly hills. Extreme central west (map 1218). Hemicyc

Astragalus canadensis L. Rattleweed, Milk Vetch.

Open woods, thickets, prairies and plains. East third, plus northwes

Astragalus cassicarpus Nutt. Ground Plum.

Geopramson cassicarpus (R).

Plains. Prairie and plain. Throughout (map 1220). Hemicyc

Astragalus distortus T. & G. Milk Vetch.

Holocephala distortus (R).

Rocky prairies. Extreme east (Cherokee and Miami counties) (map

Astragalus flexuosus Doug.

Pasophaca flexosus (R).

Dry plains. South central (Harper county) (map 1222). Hemicyc
Astragalus gracilis Nutt. Milk Vetch.  
**Microphacus gracilis** (R.).  
Plains. West half (map 1223). Hemi-creptophyte.

**Microphacus parviflorus** (R.).  
Plains. Third fourth west, or Graham to Barber counties (map 1224). Hemi-creptophyte.

Astragalus leptocarpus T. & G.  
_Hamose leptocarpus_ (R.).  

Astragalus longifolius (Push.) Rydb. Rattlepod.  
_Phoca longifolia_ (R.).  
Sandhills. West (Finney and Hamilton counties) (map 1225). Hemi-creptophyte.

Astragalus lotiflorus Hook.  
_Botidotheca lotiflorus_ (R.).  
Plains and prairies. West three-fourths, plus Woodson county (map 1226). Hemi-creptophyte.

Astragalus lotiflorus cretaceus (Buckl.) F. C. Gates.  
_Botidotheca cretacea_ (R.).  
Prairies. Central (map 1227).

Astragalus lotiflorus nebraskensis Bates.  
_Botidotheca nebraskensis_ (R.).  
Plains. Trego, Rooks and Osborne counties to Scott county (map 1228). Hemi-creptophyte.

Astragalus missouriensis Nutt. Speedpod.  
_Xylophaxia missouriensis_ (R.).  
Plains and prairie hills. Mostly west half, but east to Riley county (map 1229). Hemi-creptophyte.

Astragalus mollissimus Torr. Woolly Locoweed.  
Prairies and plains. West half (map 1230). Hemi-creptophyte.

Astragalus pectinatus Hook. Milk Vetch.  
_Coemidophaxia pectinatus_ (R.).  
Dry plains. West third (map 1231). Hemi-creptophyte.

Astragalus platensis Nutt. Ground Plum.  
_Geoprumnion platensis_ (R.).  
Prairies and plains. Scattered, but more northward (map 1232). Hemi-creptophyte.

Astragalus racemosus Pursh.  
_Tiun racemosum_ (R.).  
Plains and hills. West half to Cloud county (map 1233). Hemi-creptophyte.

Astragalus mexicanus trichocalyx (Nutt.) Fernald. (Rhod. 39:317. 1937.)  
Ground Plum.  
_Geoprumnion trichocalyx_ (R.).  

X_Baptisia_ bicolor Greenman & Larisey (B. minor x B. leucophaea.) Hybrid Wild Indigo.  
Rocky prairies. At least Riley and Saline counties (map 1234c). Hemi-creptophyte.

_Baptisia lanceolata_ T. & G. Wild Indigo.  

_Baptisia leucophaea_ Nutt. Wild Indigo.  
_Baptisia bracteata_ (G.) (B. & B.).  
Rocky prairies and open woods. East half, except northwest corner of half (map 1234b). Hemi-creptophyte.

_Baptisia minor_ Lehman. Wild Indigo.  
_Baptisia australis minor_ (Lehm.) Fernald.  
_Baptisia vesparina_ Small in R.  
Rocky prairies. East two-thirds, except northwestwards (map 1234).

Cicer arietinum L. Chick Pea.  
In cultivation, occasionally escaping. Riley and Sheridan counties.

Crotalaria sagittalis L. Rattlebox.  
Dry or sandy soil. East half, plus Hamilton and Seward counties (map 1235). Therophyte.

Dalesia alopecuroides Wild.  
_Parosaella alopecuroides_ (Wild.) Rydb. (R.).  
_Parosaella dalea_ (L.) Britton.  
Prairies in sandy ground and along rivers. Scattered in east two-thirds (map 1236). Therophyte.

Dalesia aurea Nutt.  
_Parosaella aurea_ (R.).  

Dalesia enneandra Nutt.  
_Parosaella enneandra_ (Nutt.) Britton.  
Prairies and plains, often abundant. West two-thirds, seldom more eastward (map 1238). Hemi-creptophyte.

Dalesia jameisi T. & G.  
_Parosaella jameisi_ (R.).  
Dry plains. Southwest (Stanton and Morton counties) (map 1239). ?Hemi-creptophyte.

Dalesia lanata Sprig.  
_Parosaella lanata_ (R.).  
Dry soil of high plains. Southwest (Hamilton to Barber counties) (map 1240). ?Hemi-creptophyte.

Dalesia nana Torr.  
_Parosaella nana_ (R.).  
Dry soil in plains. Southwest (Hamilton, Finney to Comanche counties) (map 1241). Hemi-creptophyte.

Desmodium uncinatum (Michx.) DC. Beggar's Lice, Beggar's Ticks.  
_Desmodium grandiflorum_ (G.).  
_Meibomia acuminata_ (R.).  

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Desmodium bracteosum (Michx.) DC.
  Melhonia bracteosa (R.).

Desmodium bracteosum longifolium (T. & G.) Robinson.
  Melhonia longifolia (R.).
  Dry open woods and thickets. East third (map 1244). Hemicyclephyte.

Desmodium canadense (L.) DC. Ticktrefoil.
  Melhonia canadensis (R.).
  Prairies, rocky hillside and woods. East third, plus Comanche county (map 1245). Hemicyclephyte.

Desmodium canescent (L.) DC.
  Melhonia canescent (R.).
  Moist ground in thickets and borders of woods. East half (map 1246). Hemicyclephyte.

Desmodium hissitanum (Hook.) Robinson.

Desmodium dilleni Darl.
  Melhonia dilleni (R.).
  Rocky open woods and thickets. East third (map 1248). Hemicyclephyte.

Desmodium illinoense Gray. Ticktrefoil.
  Melhonia illinoensis (R.).
  Prairies and rocky open woods. About east four-fifths (map 1249). Hemicyclephyte.

Desmodium nudiflorum (L.) DC. Ticktrefoil.
  Melhonia nudiflora (R.). Ticktrefoil.

Desmodium paniculatum (L.) DC.
  Melhonia paniculata (R.).

Desmodium pauciflorum (Nutt.) DC.

Desmodium rigidum Ell. Ticktrefoil.
  Melhonia rigid (R.).
  Rocky and sandy woods and prairies. Chautauqua county (map 1251). Hemicyclephyte.

Desmodium sessilfolium (Torr.) T. & G.
  Melhonia sessilfolia (R.).
  Rocky open woods, thickets and prairies. East half, plus Hamilton county (map 1252). Hemicyclephyte.

Galactia regularis (L.) BSP. Milk Pea.
  Woods and thickets along streams. Chautauqua county (map 1253).

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Galactia volubilis mississippiensis Vail. Milk Pea.
  Galactia mississippiensis (R.).
    Rocky or sandy woods and hillsides. Extreme southeast (Cherokee county) (map 1254).

Galega officinalis L.
  "Escaped from cultivation—Kans." fide Rydberg.

Glycyrrhiza lepidota (Nutt.) Pursh. Licorice.
  River valleys, prairies, waste ground. Presumably throughout (map 1255).

Indigowoad ledeodepala Nutt. Indigo Plant.
  Dry soil. Extreme southern (Harper to Clark counties) and Rawlin and Shawnee counties (map 1256).

Lathyrus arcanus (Smith and Rydb.) Rydb. Vetchling.
  Dry sandy plains. Northwest (Cheyenne and Logan counties) (map 1257).

Lathyrus latifolius L.
  Recently escaped along fence row in Leavenworth county.

Lathyrus pusillus Ell. Vetchling.
  Rocky open woods and ravines. Southeast (Montgomery to Cherokee counties) (map 1258). Therophyte.

  Prairies and plains. Northwest, plus Riley and Geary counties (map 1259).

Lathyrus venosus Muhl. presumably the var. intonans Butters and St. John. Bushy Vetch.
  "Kans." fide Rydberg, no specimens seen.

Lepispeza capitata Michx.
  Rocky and sandy prairies and open woods. West two-thirds, plus Hamilton county (map 1260). Hemicyclephyte.

  Rocky open woods and thickets. Extreme southeast (Cherokee county) (map 1261). Hemicyclephyte.

Lepispeza intermedia (Wats.) Britton. (Rhod. 25: 25. 1924.)
  Lepispeza frutescens (L.) (R).
  Rocky open woods and thickets. Linn and Wyandotte counties (map 1262). Hemicyclephyte.

Lepispeza manningii Mack. & Bush.
  Barrens or open rocky woods. Pottawatomie county (map 1263). Hemicyclephyte.

Lepispeza nutallii Darl.
  Rocky thickets. Chase and Shawnee counties (map 1264). Hemicyclephyte.

Lepispeza propinquums Michx. Bush Clover.
  Dry rocky woods. Chautauqua county (map 1265). Hemicyclephyte.

Lepispeza repens (L.) Bart. Bush Clover.
  Rocky or sandy open woods. East third (map 1266). Hemicyclephyte.
Lespedeza striata (Thunb.) H. & A. Japan Clover.
Cultivated and escaped along roads and in rocky open woods. East third (map 1267). Therophyte.

Lespedeza stuevi Nutt.
Dry open woods, thickets and prairies. Southeast fourth (map 1268). Hemicyryptophyte.

Rocky or dry open woods, thickets, and rocky prairies. East third (map 1269).

Rocky or dry open woods, thickets and prairies. Southeast fourth, plus Wyandotte and Dickinson counties (map 1270).

Lotus americanus (Nutt.) Bisch.

Acmispon americanus (R.)

Prairies, especially in sandy soil. Central and eastern Kansas, east and west of the Flint hills region, south of glaciated area (map 1271). Therophyte.

Lupinus platensis S. Wats. Lupine.

Lupinus pusillus Pursh. Low Lupine.
Plains, especially in sandy places. West third (map 1272). Therophyte.

Medicago lupulina L. Nonnach, Black Medick.
Lawns, fields and waste places. East three-fourths, spreading in recent years (map 1273). Therophyte.

Medicago sativa L. Alfalfa.
Commonly cultivated and escaping. Throughout (map 1274). Hemicyryptophyte.

Melilotus albus Def. White Sweetclover.
Roadsides, railways, fields, and waste places. Presumably throughout (map 1275). Therophyte (biennial).

Melilotus officinalis (L.) Lam. Yellow Sweetclover.
Roadsides, fields and waste places. At least east four-fifths (map 1276). Therophyte (biennial).

Oxytropis lambertii Pursh. Steamless Loco, Locoweed.
Including Oxytropis involuta (A. Nelson). (R.) and Kansas specimens labeled Oxytropis disper (A. Nels.) and Oxytropis pinetorum (Heller).

Oxytropis platensis Nutt.
Plains and prairies. West three-fourths (map 1277). Hemicyryptophyte.

Petalostemum candidum Michx. White Prairie Clover.
Prairies and rocky hillsides. Just over east half plus Seward county (map 1278). Hemicyryptophyte.

Petalostemum compactum (Spreng.) Sweezy. Prairie Clover.
Sand hills on the plains. Southwest (Grant and Stevens counties) (map 1279). Hemicyryptophyte.

Petalostemum multiflorum Nutt. Prairie Clover.
Rocky prairies and plains. Essentially throughout (map 1280). Hemicyryptophyte.

Petalostemum occidentale (Gray) Fernald. (Rhodora 39:28. 1937.) Prairie Clover.

Petalostemum oligophyllum (Torr.) Ryd.

Prairies, plains and canyons. Essentially throughout (map 1281). Hemicyryptophyte.

Petalostemum porteriannum Small. Prairie Clover.
Plains. Morton and Stevens counties in southwest and apparently also Edwards and Saline counties (map 1282). Hemicyryptophyte.

Petalostemum pulcherrimum A. Heller. Prairie Clover.
“Kans.,” fide Rydberg, but specimen is from northeastern Oklahoma.

Petalostemum purpureum (Vent.) Ryd. Prairie Clover.
Plains, prairies and hills. Probably throughout, but infrequent in west fifth (map 1283). Hemicyryptophyte. A few northwestern specimens (Cheyenne, Decatur, Thomas and Sheridan counties) suggest P. noltei Ryd., and several eastern specimens (Saline to Marshall to Wyandotte counties) (map 1284) are P. pubescens (Gray) Fassett.

Petalostemum standefeldii Small. Prairie Clover.
Plains. (Finney county) (map 1284). Hemicyryptophyte.

Petalostemum temulifolium A. Gray. Prairie Clover.
Plains. Southwest (Hamilton and Morton counties) (map 1285). Hemicyryptophyte.

Petalostemum tetonense (Coult.) A. Heller. Prairie Clover.

Petalostemum villosum Nutt. Prairie Clover.

Psoralea argophylla Pursh. Psoralea.

Psoralidium argophyllum (R.)
Prairies and plains. Essentially throughout, less frequent in southwest and extreme southeast (map 1287). Hemicyryptophyte.

Psoralea cuspidata Pursh.

Pedemontanum cuspidatum (R.)
Sandy soil. West half (map 1288). Hemicyryptophyte.

Psoralea digitata Nutt.

Psoralidium digitatum (R.)
Sandy prairies and plains. Southwest and south central sixth plus Wyandotte county (RR) (map 1289). Hemicyryptophyte.

Psoralea esculenta Pursh. Pomme de Prairie, Pomme Blanche, Indian Breadroot.

Pedemontanum esculentum (R.)
Prairies and plains. Throughout, except southwest and northeast glaciated area (map 1290). Geophyte.

Psoralea floribunda Nutt.

Psoralidium floribundum (R.)
Prairies and valleys. East half, plus Logan county (map 1291). Hemicyryptophyte.

Psoralea hypogea Nutt. Small Indian Breadroot.

Pedemontanum hypogaeum (R.)
High plains. Finney county (map 1291a). Geophyte.

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Psoralea lanceolata Pursh.
Including Psoralea micranthum A. Gray.
Psoralidium lanceolatum and Psoralidium micranthum (R).
Sandy plains. Irregularly nearly throughout (map 1292). Hemi-cryptophyte.
Psoralea lineariifolia T. & G.
Psoralidium lineariifolium (R).
Psoralea psoroides eglandulosa (Ell.) Freeman. (Rhod. 39:426. 1937.)
Psoralea pedunculata (Mill.) Vail. (Orchidaceae pedunculatum (R).
Open rocky woods and prairies. Extreme southeast (Cherokee county) (map 1294).
Psoralea tenuiflora Pursh.
Psoralidium tenuiflorum (R).
Prairies and plains. Throughout, but commoner in west two-thirds (map 1295). Hemi-cryptophyte.
Robinia hispida L. Rose or Bristly Acacia or Locust. In cultivation, seldom escaping. Riley county (cult.). Atehison and Douglas counties (escaped) (map 1296). Nanophanerophyte.
Robinia pseudoacacia L. Black Locust. Naturalized and frequently planted. Throughout, but less frequent westward (map 1297). Mesophanerophyte.
Sesban macrocarpa Muhl. Escaped from cultivation. Riley and Wyandotte counties (map 1298). Therophyte.
Sophora sericea Nutt. Silky Sophorn. Dry prairies and plains. Mostly west half, but east to Saline and Woodson counties (map 1299). Hemi-cryptophyte.
Strophostyles helvolus (L.) Britton. Wild Bean. Sandy and rocky woods and thickets. East half approximately and west to Kiowa county in the south (map 1300). Vine.
Stylosanthes biflora (L.) BSP. Pencil Flower. Rocky open woods or sandy soil. Southeast twelfth (map 1303). Hemi-cryptophyte.
Tephrosia leucosperma (Rydb.) Cory.
Craeace leucosperma Rydb.
Sandy or rocky open woods and prairies. Central third (Clay to Kiowa to Chautauqua counties) (map 1304).
Craeace virginiana L. (R).
Rocky open woods and prairies. East third (map 1305).

Thermopsis rhombifolia (Nutt.) Richards.
Trifolium aureum Polk. Yello Clover.
Trifolium incarnatum L. Crimson Clover.
Fields and waste ground. In cultivation, rare. Therophyte. (Trifolium medium L. Zigzag Clover. Adventive from Europe. Credited to Kansas in Rydberg, but specimens seen all Trifolium pratense, Hemi-cryptophyte.)
Trifolium pratense L. Red Clover.
Trifolium procumbens L. Low Hop Clover.
Fields and waste places, naturalized from Europe. Cowley and Cherokee counties (map 1310).
Trifolium reflexum L. Buffalo Clover.
Trifolium reflexum glabrum Lojacano.
Waste rocky ground. East fourth, plus Republic county (map 1311).
Trifolium repens L. White or Dutch Clover.
Trifolium resupinatum L.
Introduced in Riley and Saline counties (map 1313).
Vicia americana Muhl. Vetch.
Open woods and thickets. East half (map 1315). Hemi-cryptophyte.
Vicia caroliniana Walt. Vetch.
Vicia ludoviciana Nutt. Vetch.
Vicia oregana Nutt. Vetch.
Meadows. Except the southeast sixth (map 1316). Vine.
Vicia sativa L. Spring Vetch.
Escaped from cultivation. Wyandotte county (map 1317). Therophyte.
Vicia sparsifolia Nutt. Vetch.

Prairies and plains. Scattered (map 1318). Hemiepiphyte

Vicia trifida Dietr. (? really V. organa form?) Vetch.


Vicia villosa Roth. Winter Vetch.

Fields and waste places, escaped from cultivation. Scattered in east third (map 1319). Therophyte. (Sometimes mistaken for V. cicer L.)

Among the many legumes most frequently in cultivation in Kansas are:

TEENS: Cynarastrum latens (Michx. f.) Koch, American Yellowwood; Sophora japonica L., Pagodtree.

SHRUBS: Caryopteris xeranthemata Lam., Siberian Pea; Cytisus arborescens L., Blackeye Senna; Cytisus capitatus, Scotch Broom; Lespedeza cuneata Koch; Lespedeza japonica Bailey; Robinia pseudoacacia Vent. Common Locust.


VINES: Convolvulus cneorum DC., Jack Bean; Dolichos lablab L., Hyacinth Bean; Glycine max (L.) Merr., Soy Bean; Mucuna sp.; Phaseolus vulgaris and other species, Beans; Pisum sativum L., Garden Pea; Vicia spp., Vetch; Vigna sesquipedalis W. F. Wight, Asparagus or Yardlong Bean; Vigna sinensis (L.) Endl., Cowpea.

HAMS: Hedysarum borealis Nutt.

FAMILY SAXIFRAGACEAE (Saxifrage Family)

Heuchera richardsonii grayana Rosendahl, Butters & Lakela. Alumroot.

Heuchera hispida Pursh. (R.).

Rocky open woods. East fifth (map 1320). Hemiepiphyte.

FAMILY HYDANThRACAEAE (Hydrangea Family)

Shrubs including Itea virginica L., and various species of Hydrangea and Philadelphus (mock orange) are found only in cultivation.

FAMILY GROSSULARIACEAE (Gooseberry Family)

Ribes missouriense Nutt. Missouri Gooseberry.

Grossularia missouriensis (R.).

Woodlands along streams. East half to Osborne county (map 1321).

Ribes odoratum Wendl. Flowering Currant.

Chrysobota pygmaea odorata (R.).

At least west four-fifths, introduced eastwards (map 1322). Nanophanerophyte.

Additional species of Ribes in cultivation include Ribes americanum Mill, Ribes grossularia L., Ribes sibirum L., and Ribes sativum Syme.

FAMILY CRASSULACEAE (Crassula Family)

Penthorum sedoides L. Ditch Stonecrop.


Sedum nuttallianum Raf. Stonecrop.

Dry ground. Southeast (Chautauqua and Montgomery counties) (map 1324). Therophyte.


Sedum triphyllum (Haw.) S. F. Gray. Stonecrop.


FAMILY HAMAMELIDACEAE (Witch Hazel Family)

Occasionally cultivated are the shrub, Hamamelis virginiana L., (Witch Hazel) and Liquidambar styraciflua L. Sweetgum.

FAMILY PLATANACAEAE (Sycamore Family)

Platanus occidentalis L. Sycamore.

Woods and along streams and planted as a shade tree. Mesophanerophyte.

Platanus occidentalis L. Sycamore.

Woods and along streams and planted as a shade tree in towns. East half (map 1327). Mesophanerophyte. A Douglas and a Leavenworth county specimen are f. attenuata Sarg.

FAMILY LYTHRACEAE (Loosestrife Family)

Ammannia auriculata Willd. Ammania.

Ditches, muddy margins of ponds and slow streams. Scattered in east six-sevenths (map 1328). Therophyte.

Ammannia cocinea Roth. Toothcup.

Ditches, muddy margins of ponds and slow streams. East six-sevenths (map 1329). Therophyte.

Cuphea petiolaris (L.) Koch, Blue Waxweed.

Hillbides or on dry soil. Southeast (Miami to Labette counties) (map 1330). Therophyte.

Decodon verticillatus (L.) Ell. Swamp Loosestrife.


Lythrum salmoneum Pursh. Winged Loosestrife.

Wet prairies and alluvial margins of ponds and small streams. Probably throughout, except perhaps the northwest (map 1331). Hemiepiphyte.

Lythrum lineare L.


Peplis diandra Nutt. Waters Purslane.

Dolichos diandra (R.).

Borders of ponds and ditches or in shallow water. Jackson and Saline counties (map 1332).

Rotala ramosior interior Fernald & Griscom. Toothcup, Rotala.

Wet places. Scattered in east half (map 1333). Therophyte.

FAMILY MELASTOMACEAE (Meadow Beauty Family)

Rhedia interior Pennell. Meadow Beauty.

Moist sandy soil. Extreme southeast (Cherokee county) (map 1334). Hemiepiphyte.
FAMILY OENOThERACEAE (Evening Primrose Family)

Circaea latifolia Hill. Enchanter's Nightshade.

*Circaea lutetiana* L. (R).

Epilobium coloratum Muhl. Willowherb.
Wet ground along streams. Scattered (Northwest, central and northeast) (map 1336). Includes specimens previously recorded as *E* *pilobium adenocaulon*. Hemicycrophyte.

Epilobium lanceolatum Muhl.
Swamps. Scattered, central (map 1337). Hemicycrophyte.

Epilobium strictum Muhl.

Gaura biennis Pitcher T. & G. Butterflyweed.
Prairies. East half and Sherman county (map 1338). Therophyte (biennial). The species is credited to Kansas in Rydberg, but all the specimens seen are easily referable to the variety.

Gaura cocinea Nutt. Butterflyweed.
Plains and prairies. West two-thirds (map 1339). Therophyte (biennial).

Gaura cocinea glabra (Lehm.) Munz.

*Gaura glabra* (R).
Dry plains and prairies. West fourth (map 1340).

Gaura cocinea parvifolia (Torr.) Ricketts.

*Gaura parvifolia* (R).
Dry hills and plains. West half (map 1341). Hemicycrophyte.

Gaura michauxii Spach.

Dry plains and prairies. Probably throughout, except perhaps southeast (map 1342). Therophyte (biennial).

Gaura simplicifolia Nutt.

Gaura villosa Torr.
Plains and prairies. Southwest sixth (map 1343).

Jussiaea diffusa Forsk. Floating Primrose-willow.
Shallow water and on muddy banks. South two-thirds of east half (map 1344). Usually helophyte.

Ludwigia alternifolia L. False Loosestrife, Seedbox.
Swamps and shallow water. East half (map 1345). Helophyte (or hemicycrophyte).

Ludwigia glandulosa Walt.
Swamps. Extreme southeast (Cherokee county) (map 1346). Helophyte (or hemicycrophyte).

Ludwigia natans stipitata Fern.
Swamps. Southern (Cowley county) (map 1346a on Plate 80).

Ludwigia palustris americana (DC.) Fremd & Griseom. Marsh Purslane.

*Ludwigia palustris* (R).
Borders of slow streams, ponds and ditches. East two-thirds (map 1347).
Oenothera limifolia Nutt. Sundrops.  
\textit{Pentaphylloium limifolium} (R.).  
Prairies, dry soils. Southeast twelfth (map 1362). Therophyte.

Oenothera missouriensis Sims. Missouri Evening Primrose.  
\textit{Meggertium missouriense} (R.).  


Oenothera missouriensis inana Torr.  
\textit{Meggertium argophyllum} R. R. Gates (R.).  
Dry gravelly hills. Central, especially east central (map 1364). Hemiepiphyte.

\textit{Meggertium oklahomensis} (R.).  
Hillsides and plains. South central (Barber county) (map 1365). Hemiepiphyte.

Oenothera perennis L. Sundrops.  
\textit{Kruelis perennis} (R.).  

Oenothera rhombijetala Nutt. Evening Primrose.  
Sandy prairies. Central (map 1366).

Oenothera serrulata Nutt.  
\textit{Meriolix serrulata} (R.).  
\textit{Meriolix intermedia} Rydb. (R.). (The irregularly larger flowered and/or leaved more eastern plant in Kansas.)  
Fields, prairies and plains. Probably throughout, but infrequent in extreme east (map 1367).

Oenothera serrulata drummondii T. & G.  
\textit{Meriolix melanolaetosus} Rydb. (R.).  
Dry soil. “Kans.” fide Rydberg, but not north of Texas fide Munz.

Oenothera serrulata oblanealota (Rydb.) F. C. Gates.  
\textit{Meriolix oblanealota} (R.).  
Pratt, Kan. (J. N. Rose & Wm. R. Fitch 17158 in U. S. N. M.) and Reno county (map 1368).

Oenothera spachiana T. & G. Sundrops.  
\textit{Kruelis spachiana} (R.).  

Oenothera speciosa Nutt. White Evening Primrose.  
\textit{Hartmannia speciosa} (R.).  

Fields, prairies, waste grounds. Possibly throughout, less frequent towards northwest (map 1370). Therophyte (biennial).

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Oenothera triflora Nutt.  
\textit{Lavazia triflora} (R.).  
Limestone ravines, prairies and waste ground. Scattered in east two-thirds (map 1371). Hemiepiphyte.

Oenothera triloba Watsoni (Britton) F. C. Gates.  
\textit{Lavazia watsonii} (R.).  

Stenosiphon linifolius (Nutt.) Britton.  
Dry prairies and plains. Probably throughout (map 1373). Hemiepiphyte.

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FAMILY HAYNEAEAE

Myriophyllum exalbescens Fernald. Water Milfoil.  
Ponds and slow streams. Northwest (Decatur and Sheridan counties) (map 1374). Hydrophyte. Specimens usually identified as \textit{M. spicatum} L.

Myriophyllum heterophyllum Michx. Water Milfoil.  

Myriophyllum pinnatum (Walt.) BSP. Water Milfoil.  
Ponds, ditches and muddy shores. Central, scattered (map 1376). Hydrophyte.

Myriophyllum proserpinacoides Gill. Water Feather.  
In an abandoned spring in Saline county (map 1377). Hydrophyte. A Chilean species often cultivated in pools and aquaria.

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FAMILY ARISTOLOCHIACEAE

Aristolochia macrophylla Lam. Dutchman’s Pipe.  
“Kans.” fide Rydberg. Specimens are all \textit{Aristolochia tomentosa}, however.

Aristolochia serpentina L.  
Rich woods Extreme southeast (Cherokee county) (map 1378). Hemiepiphyte.

Aristolochia tomentosa Sims. Pipe Vine, Dutchman’s Pipe.  
Woods. Southeast (Chautauqua to Cherokee counties) (map 1379). Liana.

Asarum canadense L. Wild Ginger.  

Asarum canadense reflexum (Becknell.) Robinson. Wild Ginger.  

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FAMILY CACTACEAE (Cactus Family)

Echinocereus earepotosus Engelmann & Gray. Hedgehog Cactus.  

Echinocereus viridiflorus Engelmann. Hedgehog Cactus.  
Plains and hills. Southwest three counties (map 1382). Stem succulent.

Neomammillaria missouriensis (Sweet) Britton & Rose. Ball or Nipple Cactus.  
Plains and hills. Scattered in central to Wabaunsee county (map 1383). Stem succulent.
Neomammillaria radiosa (Engelm.) Rydb.
Plains. Edwards and Ellis counties (map 1334). Stem succulent.

Neomammillaria similis (Engelm.) Britton & Rose.

Neomammillaria vivipara (Nutt.) Britton & Rose.
Plains. West three-fifths (map 1336). Stem succulent.

Opuntia camanchica Engelm.
Plains and hillsides. Saline and Sedgwick counties (map 1336a). Stem succulent.

Opuntia fragilis (Nutt.) Haw.
Plains and hills. West half (map 1337). Stem succulent.

Opuntia humifusa Raf. Prickly Pear.
Sandy soil. Throughout except the glaciated northeast (map 1338). Stem succulent.

Opuntia imbricata (Haw.) Engelm. Tree Cactus.
Opuntia arborescens Engelm. (B. & B.).
Foothills and plains. Native in Decatur county and often cultivated in western Kansas (map 1339). Stem succulent.

Opuntia macrocentra Engelm. Prickly Pear.
Plains and prairies. Scattered (map 1360). Stem succulent.

Opuntia polyacantha Haw.
Plains and prairies. West third (and Shawnee county [cult.]) (map 1391). Stem succulent.

Opuntia tortispina Engelm.
Hills. Woodson and Saline counties (map 1392). Stem succulent.

Pediacanthus simpsoni (Engelm.) Britton & Rose.

FAMILY LOASACEAE (Loasa Family)

Mentzelia decapetala (Pursh) Urban & Gilk. Sand Lily, Nuttallia.
Nuttallia decapetala (R.).
Plains and hills. West half (map 1393). Therophyte (biennial).

Mentzelia nuda (Pursh) T. & G.
Nuttallia nuda (R.).
Gravelly hillsides. Southwest (Hamilton and Seward counties) (map 1394).

Mentzelia oligosperrna Nutt. Stickleaf.
Rocky hillsides. Several counties in east half and a few in west half (map 1395). Hemicyryptophyte.

Mentzelia stricta (Osterhout) Stevens ex Jeff. & Little. Sand Lily, Nuttallia.
Nuttallia stricta (R.).
Plains and hills. West half (map 1396). Hemicyryptophyte.

FAMILY CUCURBITACEAE (Gourd Family)

Cucurbita foetidissima H. B. K. Missouri Gourd.
Pepo foetidissima (R.).
Plains, prairies, waste ground and along roads and railways. West four-fifths, plus Leavenworth and Wyandotte counties (map 1397). Hemicyryptophyte with large taproot.

Cyclanthera disecta (T. & W.) Arn.
Woods and thickets. West half (map 1398). Therophyte climber.

Echinocystis lobata (Michx.) T. & G. Balsam Apple.
Micromelus lobata (R.).

Sycos angustus L. Bur or Star Cucumber.
Alluvial woods and thickets. East half (map 1400). Therophyte vine.

The watermelon (Citrus vulgaris Schrad.), muskmelon (Cucumis melo L.), cucumber (Cucumis sativus L.), pumpkin (Cucurbita pepo L.), and the gourd (Lagenaria vulgaris Ser.), are often found growing for a season on dumps, waste ground, along roads and in picnic spots.

FAMILY RHAMNACEAE (Buckthorn Family)

Ceanothus americanus L. New Jersey Tea.
Rocky hillside prairies and woods. East third (map 1401). Nanophytophite.

Ceanothus ovatus Desf. New Jersey Tea.
Sandy or rocky hillside prairies and plains. East two-thirds, plus Morton county (map 1402). Chamae-nanophytophite.

Ceanothus ovatus pubescens T. & G. New Jersey Tea.
Sandy or rocky hillside prairies. East two-thirds (map 1403). Chamae-nanophytophite.

Rhamnus caroliniana Walt. Carolina Buckthorn.

Rhamnus lanceolata Pursh. Buckthorn.
Rocky open woods or thickets usually along streams. East half (map 1404). Microphylephyte.

Cultivated species belonging to this family include the following shrubs or small trees: Rhamnus cathartica L. and R. frangula, buckthorns, and Ziziphus jujube, the jujube.

FAMILY VITACEAE (Grape Family)

Ampelopsis cordata Michx. False Grape.
Open woods, thickets and river banks. East half with scattered counties in west half (map 1405). High liana.

Cissus incisa (Nutt.) Des Moulins.
Rocky ledges and sandy shores. Southeast (Chautauqua county) (map 1406). Therophyte.

Parthenocissus quinquefolia (L.) Planch. Virginia Creeper.
Parthenocissus quinquefolia (R.).
Open woods, thickets, and rocky hillsides. East half, plus Rush and Hamilton counties (map 1407). Liana.

Parthenocissus quinquefolia hirsuta (Donn.) Planch.
Parthenocissus quinquefolia (R.).
Rocky open woods and thickets. Scattered in east two-fifths (map 1408). Liana.
Parthenocissus vitacea (Knerr) Hitchc.

*Peevina vitacea* (R.).

Open woods and thickets along streams. Scattered, but mostly east half (map 1400). Liana.

Vitis aestivalis Michx. Summer Grape, Wild Grape.

Thickets and rocky places. Northeast (Brown to Leavenworth counties) (map 1410). Liana.

Vitis cinerea Engel. Winter Grape.

Alluvial woods and thickets. East two-fifths plus (?) Norton county (map 1411). Liana.

Vitis cordifolia Michx. Frost Grape.

Along streams in woods and thickets. East third (map 1412). Liana. A form, some or most of whose leaves are 5-lobed has been collected in Riley and Potawatomi counties.

Vitis lincecumii glauca Munson. Wild Grape.

*Vitis bicolor* Le Conte.

Woods and on river banks. Extreme east (map 1413). Liana.

Vitis longii Prince. Wild Grape.

Sandy soil. Southwest fourth, plus Rawlins county (map 1414). Nanophanerophyte.

Vitis rotundifolia Michx. Muscadin Grape.


Vitis vulpina L. Riverbank Grape.

Alluvial woods and thickets along streams. Throughout, except probably southwest (map 1415). Liana.

**Family Celastraceae** (Stafftree Family)

Celastrus scandens L. Climbing Bittersweet.


Ehretia americana L. Strawberrybush.

Low woods along streams. Coffey county (map 1416a).

Ehretia atrorubens Jacq. Wahoo, Burningbush.

Woods and thickets along streams. East half (map 1417). Nano-microphanerophyte.

Species of *Ehretia* in cultivation include: *E. alatus* Reg. (winged spindletree), *E. europaeus* L. (European spindletree), and *E. radicans* vegetus Rehd.

**Family Ilicaceae** (Holly Family)

Ilex decidua Walt. Holly, Winterberry.

Low wood and thickets. Southeast twelfth, west to Sumner county (map 1418). Nano-microphanerophyte.

**Family Staphyleaceae** (Bladdernut Family)

Staphylea trifolia L. Bladdernut.

*Staphylea trifolia* (R.).


**Family Elaegnaeae** (Oleaster Family)

Elaeagnus angustifolia L. Russian Olive.

Cultivated throughout, but sometimes escaping. Scattered, mostly northern (map 1420). Microphanerophyte.


*Shepherdia argentea* (R.).


**Family Santalaceae** (Sandalwood Family)

Comandra pallida A. DC. Bristled Tondlax.


Comandra richardsoniana Fernald. Bristled Tondlax.

Dry rocky woods. Northeast twelfth and east sixth (map 1423). Hemicyrtophyte, often hemiparasitic.

**Family Loranthaceae** (Mistletoe Family)

Phenodendron flavescens (Pursh) Nutt. Mistletoe.

Parasitic on various trees, especially Populus and Quercus. Southeast (Montgomery and Cherokee counties) (map 1424). Epiphyte.

**Family Sapindaceae** (Soapberry Family)

Cardiospermum halicacabum L. Balloonvine Heartseed.

Escaped from cultivation. Wyandotte, Republic and Barton counties (map 1425).

Koelreuteria paniculata Laxm. Chinese Varnish Tree.

In cultivation, escaped in Saline county (map 1426). Microphanerophyte.

Sapindus drummondii H. & A. Soapberry, Chinaberry.

Rocky hillsides. Scattered, Riley to Lincoln and Meade to Wilson counties (map 1427). Microphanerophyte.

Only in cultivation are *Xanthoceras sorbifolia* Bge. and *Koelreuteria bipinnata* French. The latter is winter hardy in Geary county only in mild winters.

**Family Aesculaceae** (Buckeye Family)

Aesculus glabra Wild. Ohio Buckeye.

Rich woods. Central east (Kansas river valley from Douglas county east) (map 1428). Mesophanerophyte. A tree transplanted from Ohio to near Salina is now giving rise to seedlings along Dry Creek (J. H. Hance).

Aesculus glabra sargentii Rehd. Western Buckeye.

*Aesculus arguta* Robinson (R).

Alluvial soil in woods along streams. Barely east half (map 1429). Nano-microphanerophyte.

In cultivation only, *Aesculus hippocastanum* L., the Horse Chestnut and *Aesculus octandra* Marsh, a southern buckeye, may seldom be found.
FAMILY Aceraceae (Maple Family)

*Acer negundo* L. Ashleaved Maple, Boxelder.
- Including the inconstant variety *violaceum* Kirch.
- *Negundo willowii* (Nieuw.) (R).
- River valleys. Northeast of line between Cheyenne and Sumner counties and cultivated in the southwest (map 1430). Usually mesophanerophyte, sometimes mesophanerophyte, very variable in color of twigs and in number of leaflets.

*Acer negundo* interior Sarg. Boxelder.
- *Negundo interior* (Britton) (R).
- Along streams. Montgomery and Riley counties (map 1431). Usually microphanerophyte.

- Woods. Extreme east north of Kansas river and cultivated farther west (map 1432). Mesophanerophyte.

*Acer saccharinum* L. Soft Maple, Silver Maple.
- Low wet floodland woods and alluvial bluffs of streams. At least east third and cultivated farther west (map 1433). Mesophanerophyte.


- In cultivation only *Acer ginnala* Maxim (Ginnala maple), *Acer platanoïdes* L. (Norway maple), *Acer rubrum* L. (Red maple) and *Acer tataricum* L. (Tatarian maple) may be found.

FAMILY ANACARDIACEAE (sumac Family)

*Rhus aromatica* Ait. Aromatic Sumac.
- *Rhus crenata* (Mill.) Rydb. (R).
- *Rhus nortoni* Greene in part (R).
- Sandy soil and rocky woods. Southeast from Wyandotte county to Labette county (map 1435). Nanophanerophyte.

*Rhus copallina* L. Sumac.
- Prairies, thickets and open woods. Northeast sixth, plus southeast fourth (map 1436). Nanophanerophyte.

*Rhus glabra* L. Smooth Sumac.
- Including *Rhus cimnastana* Greene (R).
- Dry soil. Except southwest sixth (map 1437). Nanophanerophyte.

*Rhus toxicodendron* negundo (Greene) F. C. Gates. Poison Ivy.
- *Toxicodendron negundo* (R).
- Lowland woods and thickets. East half (map 1438). Nanophanerophyte or liana.

- *Toxicodendron radicans* (R).
- Woods, thickets and river banks. At least east two-thirds (map 1439). Liana.

*Rhus toxicodendron* rydbergii (Small) Garrett. Poison Ivy.
- *Toxicodendron rydbergii* (R).
- Rocky hillsides and open woods along streams. West half (map 1440). Nanophanerophyte.
Betula nigra L. River Birch.
Banks of streams and in swamps. Southeast (Chautauqua and Cherokee counties, cultivated to northwest) (map 1452). Mesophanerophyte.

Corylus americana Walt. American Hazelnut.

Corylus cornuta Marsh. Beaked Hazelnut.

Borders of upland woods to the east and westward in rocky ravines and hillsides. East third (map 1455). Mesophanerophyte. A few glandular hairs on some specimens from Wabaunsee, Pottawatomie and Riley counties suggest f. glandulosa (Spach.) Mach. Berlin.

The following are known only in cultivation: Alnus spp. (alders). Betula pendula Roth. (Weeping birch), Carpinus caroliniana Walt. (Bluebeech). Corylus avellana L. (Hazel).

**Family Fagaceae (Beech or Oak Family)**

Quercus alba L. White Oak.
Chiefly upland woods. East sixth, cultivated westward (map 1456). Mesophanerophyte.

Quercus bicolor Willd. White Swamp Oak.
Alluvial ground along streams. East (Pottawatomie and Shawnee counties) (map 1457). Mesophanerophyte.

Quercus borealis maxima (Marsh.) Ashe. Red Oak.

Quercus macrocarpa (R.).
Upland woods and rocky hillsides. At least east third, west to Cloud county (map 1458). Mesophanerophyte.

X Quercus busii Sarg. (Quercus marilandica x velutina.)

X Quercus hirtellii Torr. (Quercus macrocarpa x Quercus mhlenbergii.)

Quercus imbricaria Michx. Shingle Oak.
Upland woods. Kansas river drainage west to Jefferson county, cultivated farther west (map 1459). Mesophanerophyte.

Quercus macrocarpa Michx. Bur Oak.

Quercus marilandica Münch. Blackjack Oak.
Dry or rocky upland woods. East third (map 1461). Microphanerophyte-mesophanerophyte. Var. ashei in Riley county.

**Family Betulaceae (Birch Family)**

Quercus muhlenbergii Engelm. Muğlenberg Oak, Chinquapin Oak, Yellow Oak.
Upland woods, rocky hillsides, ravines, abundant. East half (map 1462). Mesophanerophyte.

Quercus palustris Münch. Pin Oak.
Swamps and freshly planted as a street tree. Southeastern, but freely cultivated to north and west (map 1463). Mesophanerophyte.

Quercus prinoides Willd. Chinquapin or Scrub Chestnut Oak.

Quercus shumardii Buckl. Shumard's Oak, Red Oak.
Low or upland woods. Southeast (Linne to Cowley counties) (map 1465). Mesophanerophyte.

Quercus shumardii schneckii (Britton) Sarg. Schneck's Oak, Red Oak.

Quercus sericea Britton (R.).
Upland woods, bluffs and alluvial soil along streams. Southeast, plus Doniphan county (map 1466). Mesophanerophyte.

Quercus stellata Wang. Post Oak.
Upland woods and along small streams. East third, mostly southern half (map 1467). Mesophanerophyte.

X Quercus stelluloides Palmer. (Jour. Arnold Arb. 18:140. 1937.)
Quercus prinoides x Quercus stellata.
Wilson county. Mesophanerophyte.

Quercus velutina Lam. Black Oak.

Only in cultivation may be found Castanea dentata and Castanea crenata (chestnuts), and the following oaks: Quercus prinus L., specimens of which for the most part succumbed in the great drought of 1936, and the English oaks, Quercus robur L. and Q. robur pedunculata A. D. C.

**Family Araliaceae (Ginseng Family)**

Aralia racemosa L. Sarsaparilla, Spikenard.

Acanthopanax sieboldianus Mak. (Acanthopanax) and Aralia spinosa L. (Hercules' Club) are in cultivation only.

**Family Ammiaceae (Carrot Family)**

Ammoselinum poppei T. & G. Sand Parsley.
Sandy soil. A specimen collected by Plunk in southeast Kansas is in the U. S. Nat. Museum (map 1469a). Therophyte.

Anthemum graveolens L. Dill.
Cultivated, seldom escaping. Saline and Cloud counties. Therophyte.

Apium petroselinum L. Parsley.
Possibly only in cultivation.

Berula erecta (Huds.) Coville. Water Parsnip.
Swamps and streams. Mostly central, scattered in western and east thirds (map 1470). Helophyte.

15—1646
Bupleurum rotundifolium L. Thurowax.

Chaerophyllum procumbens (L.) Crantz. Wild Chervil.
Including Chaerophyllum procumbens shorti T. & G.
Rich or rocky open woods, thickets and open alluvial ground. East half (map 1471). Therophyte.

Chaerophyllum reflexum Bush.
Open woods and thickets. Southeast plus Pottawatomie county (map 1472). Therophyte.

Chaerophyllum texanum C. & R. Chervil.
Ravines and waste rocky ground. East two-fifths, mostly southeast (map 1473). Therophyte. (Often formerly identified as C. leviatureri Hook.)

Cicuta maculata L. Cicuta, Cowbane or Water Hemlock.
Swamp, springs and rocky hillsides. East two-thirds and Scott county (map 1474). With root tubers.

Conium maculatum L. Poison Hemlock.
Frequently cultivated and freely escaping to waste ground, along roads and even to the prairie. Scattered (map 1475). Therophyte (biennial).

Cryptotaenia canadensis (L.) DC. Honeywort, Honowort.
Rocky woods. East third (map 1476). Hemicyryptophyte.

Cymopterus acaulis (Pursh) Rydb.
Arid plains. West half (map 1477). Hemicyryptophyte.

Cynosciadium pinnatum DC.
Wet places. Extreme southeast (Cherokee county) (map 1478). Therophyte.

Daucus carota L. Carrot, Queen Anne's Lace.
Much cultivated, escaping to waste places. East third, plus Saline and Sheridan counties (map 1479). Therophyte (biennial).

Daucus pusillus Michx.
Rocky prairies. Extreme southeast (Cherokee county) (map 1480). Therophyte.

Erigenia bulbosa (Michx.) Nutt. Habinger-of-spring.

Eryngium leavenworthii T. & G.
Rocky prairies and hillsides. The Flint hill region, spread to northwest in railway ballast (map 1481). Hemicyryptophyte.

Eryngium yuccofoenum (yuccaefoenum) Michx. Rattlesnakemaster.
Rocky open woods and prairies. East third (map 1482). Hemicyryptophyte.

Eryngium planum L.
Only in cultivation. Riley, Clay and Sheridan counties.

Euphous americanus Nutt.
Rocky open woods. Southeast (Lin to Montgomery counties) (map 1483). Hemicyryptophyte.

Falcaria vulgaris Bornh.
A weed new to Kansas collected by Rudolph Cumro in 1936 in Marshall county (map 1484a).

Foenicum vulgare Gaertn. Fennel.
Probably only in cultivation.

Heracleum lanatum Michx. Cow Parsnip.
Moist rich woods and thickets. Northeast (Brown county) (map 1484).

Lomatium duaeifolium (Nutt.) Coulter & Rose. Whiskbroom Parsley.


Lomatium orientale Coulter & Rose. Whiskbroom Parsley.
Lomatium orientale (Coulter & Rose) M. E. Jones.
Rocky and plains. West four-fifths, especially northern half of it (map 1486). Hemicyryptophyte.

Lomatium villosum Raf.

Osmorhiza claytonii (Michx.) Clarke. Woolly Sweet Cicely.

Osmorhiza longistyli (Torr.) DC. Smooth Sweet Cicely.

Osmorhiza longistyli villicaulis Fernald.

Pasinaca sativa L. Parsnip.
Meadows and waste places, escaped from cultivation. Scattered in east half (map 1491). Therophyte (biennial).

Phellopterus montanus Nutt.
Plains. West third (map 1492). Hemicyryptophyte.

Pimpinella anisum L. Anise.
Only in cultivation.

Polytaenia nutalli DC. Prairie Parsley.
Polytaenia nutalli (DC.) Britton.
Rocky prairies and open woods. East third, plus Edwards county (map 1493).

Ptilium inaequale (Michx.) Raf.

Ptilium inaequale (DC.) Britton.
Swamps and depressions in prairie. Southeast five counties (map 1494). Therophyte.

Sanicula canadensis L.
Rocky open woods and thickets. Scattered throughout, but mostly east half (map 1495). Hemicyryptophyte.
Sanicula gregaria Dick. Black Snakeroot.
   Rocky open woods and thickets. Scattered in east half (map 1496).
   Hemicyrptophytes.
Sanicula marilandica L. Snacle, Snakeroot.
Sium suave Walt. Water Parsley, Water Parsnip.
   *Sium suavefolium* Gmel. (R).
   In water or very wet places. Extreme central east (Douglas to Wyandotte counties) (map 1498). Helophyte.
Spermolepis divaricata (Walt.) Britton.
   Sandy or gravelly prairies. Scattered (Riley to Seward counties) (map 1499). Therophyte.
Spermolepis cebina (Nutt.) Heller.
   Rocky prairies and gravelly or sandy soil along streams. "Kans." fide Rydberg. Therophyte.
Spermolepis patens (Nutt.) Robinson.
   Rocky or sandy prairies. East three-fourths (map 1500). Therophyte.
Tenuidium integrimum (L.) Drude. Yellow Pimpernel.
   Rocky or sandy woods or thicket. East fifth (map 1501). Hemicyrptophytes.
Thaspium barbinode (Michx.) Nutt.
   Rocky open woods along streams. East fourth (map 1502). Hemicyrptophytes.
Thaspium trifoliatum flavum Blake. Meadow Parsnip.
   *Thaspium trifoliatum* (L.) Gray.
   Thickets and rocky prairies. East fourth (map 1503).
Torrilis japonica (Houtt.) DC. Hedge Parsley, Hemlock Cervil.
   *Torrilis anthriscus* Gmel. (R).
   Roadsides and waste ground. Cherokee county (map 1504). Therophyte.
Zizia aurea (L.) Kock. Alexanders, Meadow Parsnip.
   Rocky woods and thickets. East half (map 1505). Hemicyrptophyte.

**FAMILY CORNACEAE (Dogwood Family)**

Coronaria asperifolia Michx. Ruffeave Dogwood.
   *Svidia asperifolia* (R).
   Dry rocky hillsides, thickets, open woods and alluvial ground of stream beds. East two-thirds (map 1506). Nana-microphanerophyte.
Coronaria floridana L. Flowering Dogwood.
   *Cephalanthus occidentalis* (L.) Britton.
   Borders of streams and ponds and in swamps. East half, plus Barton and Hodgeman counties (map 1510). Nano-microphanerophyte.
Coronaria teres Walt. Buttonwood.
   Rocky prairies. East half, especially southern third (map 1511). Therophyte.
Galium aparine L. Bedstraw, Cleavers.
Galium aparine vaillantii (DC.) Koch.
   *Galium vaillantii* (R).
   Low ground in thickets. Scattered east and west (map 1513). Therophyte.
Galium coccineum hypomalacum Fernald. (Rhod. 30:450. 1927.) Bedstraw, Wild Licoire.
   Rocky woods and thickets. East half (map 1514). Hemicyrptophyte.
Galium concinnum T. & G. Shining Bedstraw.
Galium obtusum Bigelow. Bedstraw.
   *Galium tinctorum* L. (R).
   Swamps and low wet woods and thickets. East third (map 1516). Hemicyrptophyte.
Galium pilosum Ait. Bedstraw.
   Rocky woods and thickets. East third (map 1517). Hemicyrptophyte.
Galium tinctorum L. Bedstraw.
   *Galium claytoni* Michx. (R).
   Marshes and open wet thickets. East fourth (map 1518). Hemicyrptophyte.
Galium triflorum Michx. Bedstraw.
   Moist open woods and thickets (map 1519). Hemicyrptophyte.
Galium verum L. Yellow Bedstraw.
Houstonia angustifolia Michx.
Rocky ledges and prairies. Throughout (map 1521). Hemicyryptophyte.

Houstonia minima Beck. Small Bluet.
Frassies, rocky ledges and dry, open woods. Some years in great abundance. East half, scattered (map 1522). Therophyte.

Sherardia arvensis L. Field Madder.
Cultivated and escaping but not established. Ellsworth and Sheridan counties.

Spermacoce glabra Michx. Smooth Buttonweed.
Borders of ponds and streams. Southeast (Labette and Cherokee counties) (map 1523). Hemicyryptophyte.

FAMILY CAPRIFOLIACEAE (Honeysuckle Family)

Loniceria dioica glaucescens (Ryd.) Butters.
Lonicer glaucescens (R). Honeysuckle.
Thicket-covered hillside. Northeastern sixth, plus Sedgwick county (map 1524).

Thickets and roadsides sparingly escaped from cultivation. East third (Montgomery and Riley counties) (map 1525). Vine to liana.

Lonicer profunda (Kirenehr) Rehder. Honeysuckle.

Lonicerum sylvaticum Gray. (G), (B & B).

Sambucus canadensis L. Elder, Elderberry.
Damp soil in woods and thickets. East three-fifths, plus Thomas and Scott counties (map 1527). Nano-microphanerophyte.

Symphoricarpus occidentalis Hook. Wolfberry.
Hillside, open woods and river banks. West two-thirds of north half and west fourth of south half (map 1528).

Symphoricarpus orbiculatus Moench. Coralberry, Buckbrush.
River banks, prairies bordering woods. East three-fourths (map 1529). Nanophanerophyte.

Triosteum auranticum Bicknell. Horse Gentian.
Rich or rocky woods and bluffs. East fourth (map 1530). Hemierycyptophyte.

Triosteum perfoliatum L. Horse Gentian.

Viburnum prunifolium L. Black Haw, Viburnum.
Woods, thickets and banks of streams. Southeastern, north to Johnson county, east to Cowley county, cultivated to northwest (map 1532). Microphanerophyte.

Woods and along streams. Extreme east (map 1533). Microphanerophyte. Specimens have previously been identified as V. lentago which is more eastern.

Viburnum rufidulum Raf. Viburnum, Black Haw.
Rocky woods, thickets and banks of streams. Southeast sixth (plus Phillips county Cult.) (map 1534). Microphanerophyte.

The following among those only in cultivation: 


FAMILY VALERIANACEAE (Valerian Family)

Valerianella amarella (Lindl.) Krok.
Low ground. Extreme central east (map 1535).

Valerianella radiata (L.) Dru.
Low ground. Southeast (map 1536). A Chautauqua county specimen suggests V. missouriensis Dyral.

Valerianella stenocalpa parviflora Dyak.
Low ground. Southeastern (Wilson county) (map 1537). Therophyte.

FAMILY DIPSACEAE (Tassel Family)

Scabiosa atropurpurea L. Sweet Scabious.
Once escaped from cultivation. Clark county.

FAMILY CAMPANULACEAE

Campanula americana L. Tall Bellflower.

Campanulastrum americanum in (R).
Woods and thickets, especially along streams. East third, plus Ellsworth county (map 1538). Therophyte.

Lobelia appendiculata A. DC.
Cited by Rogers McVaugh from Cherokee county (Melrose, by Rydberg and Inler 242) and Miami county (Paola, by Oyster, July, 1883), Rhod. 28:320. 1936. No specimens at Manhattan (map 1539).

Lobelia cardinalis L. Cardinal Flower.
Wet ground along streams. Southeast twelfth (map 1540).

Lobelia halei Smull.
A specimen of this species in Mo. Bot. Garden, said to be from Parsons, Labette county, is doubtful as to locality according to McVaugh (Rhod. 28:340. 1936).

Lobelia inflata L. Indian Tobacco.
Rocky open woods. East (Shawnee, Miami and Cherokee counties) (map 1541). Therophyte.

Lobelia paterula Michx. = what? in R.
"Kansas" file Rydberg but not according to McVaugh.

Lobelia siphilitica L. Blue Lobelia.
Borders of ponds and small streams and wet ledges under springs. East four-fifths (map 1542). At least several of those in most parts of central Kansas could be considered var. ludoviciana A. DC., but very many specimens are intermediate.

Lobelia spicata hirtella A. Gray. Lobelia.
Prairies and hills. East fourth (map 1543).

*Lobelia leptostachys* (R.).

Prairies. East third (map 1544). Therophyte (biennial).

*Lobelia splendidiss Willd. Western Cardinal Flower.

Wet ground along streams, etc. Except extreme east and southwest (map 1545). Therophyte.

*Platyodon grandiflorum* A. DC.

Only in cultivation.

*Specularia biflora* (R. & P.) Fisch. & Mey.

Fields, roadsides and waste ground. Southeast (Chautauqua, Cherokee counties) (map 1546). Therophyte.

*Specularia leptocarpa* (Nutt.) A. Gray. *Venus'-Looking-Glass.

Rocky or gravelly prairies and waste ground. East four-fifths (map 1547). Therophyte.

*Specularia perfoliata* (L.) A. DC. *Venus'-Looking-Glass.

Hillsides, prairies, dry woods, thickets and waste ground. Throughout (except extreme west) (map 1548). Therophyte.

**SUPERFAMILY COMPOSITAE**

**FAMILY HELIANTHACEAE**

*Actinomeris alternifolia* (L.) DC.

Lowland woods and thickets. East half and Sheridan county (map 1549). Hemicryptophyte.

*Berlandiera lyrata* Benth.

Dry plains and hills. Extreme southwest (Morton county) (map 1550).

*Berlandiera texana* DC.

Hillsides, plains and prairies. Scattered (Stevens, Rice, Reno and Saline counties) (map 1550A).

*Bidens aristosa* (Michx.) Britton. *Beggarticks.


*Bidens bipinnata* L. *Spanish Needle.

Open woods, thickets and waste ground. East half and Sheridan county (map 1551). Therophyte.

*Bidens cernua* elliptica Wiegand.

*Bidens elliptica* (R.).

Swamps and muddy borders of streams and ponds. North third (map 1552). Therophyte.


Wet ground bordering ponds and streams. East third (map 1553). Therophyte.

*Bidens comosa* acuta Wiegand. *Beggarticks.

*Bidens acuta* (R.).

Wet ground bordering ponds and streams. North central (map 1554). Therophyte.

*Bidens comosa* Muhl. *Beggarticks.


*Bidens frondosa* L. *Beggarticks.

Moist woods, thickets and waste ground. Scattered (map 1556). Therophyte.

*Bidens fruticosa* Greene. *Beggarticks.

Water and wet ground. Scattered, except perhaps the southeast (map 1557). Therophyte.

*Bidens involucrata* (Nutt.) Britton. *Beggarticks.

Swamps, wet prairies, cultivated fields and waste ground (map 1558). Therophyte (biennial).

*Bidens laevis* (L.) BSP.

Wet ground. “Reported from Kans. and Iowa” in Rydberg. No specimens.

*Bidens vulgata* Greene. *Beggarticks.

Wet to moist ground along streams and about ponds, fields, thickets and waste ground. North two-thirds of east two-thirds (map 1559). Therophyte.

*Bidens vulgata* puberula (Wiegand) Greene.

*Bidens puberula* (R.).

Wet ground. Scattered in east half (map 1560). Therophyte.

*Coreopsis caraminifolia* (DC.) T. & G.


*Coreopsis grandiflora* Hogg. *Coreopsis.

Prairies, ravines and thickets. Southeast ninth (map 1562). Hemicryptophyte.

*Coreopsis lanceolata* Villosa Michx. *Coreopsis.

*Coreopsis cassiniana* Alton. (R.).


*Coreopsis palmata* Nutt. *Coreopsis.

Prairies, thickets and open woods. East fourth (map 1563). Hemicryptophyte.

*Coreopsis tinctoria* Nutt. *Coreopsis.

Sandy or rocky open ground, plains and prairies. Southwest, central and east (map 1564). Therophyte.

*Coreopsis tripteris* L. *Tall Tickseed.

Dry to moist thickets and woods. Extreme east (Leavenworth and Miami counties) (map 1565). Hemicryptophyte.

*Coreopsis verticillata* L. *Coreopsis.


*Cosmos bipinnatus* Cav. *Cosmos.

Roadsides, at least once escaped from cultivation. Seward county Therophyte.

*Echinacea angustifolia* DC. *Purple Coneflower.

Upland and rocky prairies and plains. Throughout (probably) (map 1568). Hemicryptophyte.

*Echinacea pallida* Nutt. *Purple Coneflower.

Rocky prairies. East fifth (map 1569). Hemicryptophyte.


Rocky prairies. East fourth south of Kansas river (map 1567A). Rays present in these herbarium specimens have changed color in drying, from yellow to purplish-yellow.
Eclipta alba (L.) Hasek. Yerba de Tajo.
  Moist fields, borders of ponds, and river floodplains. East half and
  scattered in west (map 1588). Therophyte.
Engelmannia pinnatifida T. & G. Engelmannii.
  High plains. West two-fifths (map 1590).
Galinsoga aristulata Bucknell.
  Galinsoga ciliosa (Raf.) Blake.
  Waste places, introduced from Mexico. Scattered in east two-fifths
  (map 1570). Therophyte.
Galinsoga parviflora Cav.
  Waste places, naturalized from South America. Riley county (map
  1571). Therophyte.
Helianthus annuus L. Sunflower.
  In part Helianthus lenticularis Doug. (R).
  Throughout (map 1572). Therophyte.
  Rocky open hillsides. Riley, Saline and Shawnee counties (map 1573).
Helianthus ciliaris DC. Blueweed.
  Cultivated field, Osborne County. New in 1939. Geophyte.
Helianthus formosus E. E. Wats.
  Douglas county (KU) (map 1574). By F. H. Snow years ago.
Helianthus grosseseratus Martens. Sunflower.
  Prairies of borders of small streams. East two-fifths (map 1575).
  Hemicyryptophyte.
Helianthus hirsutus Raf. Sunflower.
Helianthus laetiflorus Pers. Sunflower.
Helianthus leptocaulis (S. Wats.) Blake. Sunflower.
Helianthus maximilians Schrad. Sunflower.
  Rocky prairies, hillsides and plains. Throughout (map 1579).
  Hemicyryptophyte.
Helianthus mollis Lam. Sunflower.
  Prairies, thickets in dry, barren ground. East fourth (map 1580).
  Hemicyryptophyte.
Helianthus mollisimus E. Wats.
  Miami county (map 1580a).
Helianthus petiolaris Nutt. Prairie or Kansas Sunflower.
  Fields, roadsides, plains, prairies and waste ground. Throughout, but
  scattered in east fourth (map 1581). Therophyte.
Helianthus rigidus (Cass.) Desf. Sunflower.
  Rocky open woods, thickets, and prairies. East half (map 1582).
  Hemicyryptophyte.
Helianthus salicifolius A. Dietr. Sunflower.
  Helianthus argydis DC. (G), (B & B).
  Upland prairies, limestone ravine, spreading north and westward in
  railroad ballast. South of Kansas river in east third, plus R. R. ballast
  in Cloud and Saline counties (map 1583). Hemicyryptophyte.
Rudbeckia amplexicaulis Vahl.

*Dracopelis amplexicaulis* (R.).

Moist prairies, roadside ditches. Scattered in south two-thirds of east half (map 1598). Therophyte.

*Rudbeckia grandiflora* C. C. Gmelin.


Open woods, thickets, rocky prairies and waste ground. East half and Sheridan county (map 1599). Hemicyrptophyte.

*Rudbeckia laciniata* L. Goldenglow.

Low open woods and thickets along small streams. Moist thickets. East third (map 1600). Hemicyrptophyte.

*Rudbeckia subtomentosa* Pursh.

Moist open woods, thickets, and borders of prairie streams. East fourth (map 1601). Hemicyrptophyte.

*Rudbeckia triloba* L. Brown-eyed Susan.


Rocky prairies. Mostly extreme east tier of counties (map 1603). Hemicyrptophyte.

Silphium laciniatum L. Compass Plant.

Prairies and rocky open hillside. East two-thirds to Sheridan county (map 1604). Hemicyrptophyte.

Silphium perfoliatum L. Cupplant.

Moist prairies and thickets. East third, plus Sedgwick and Meade counties (map 1605). Hemicyrptophyte.

Silphium speciosum Nutt. Rosinweed.

Includes *S. integrifolium mesochorum* Benke. (Benke 5176 from Barton county [Field Museum]).


Thelesperma gracile (Torr.) Gray.

Plains and prairies. West two-thirds and scattered in east third (map 1607). Hemicyrptophyte.

Thelesperma trilobum (Poir.) Britton.

Rocky prairies and plains. Southwest and southeast (map 1608). Therophyte (biennial).

Verbascum flavumoides Michx.


Rocky open woods and thickets. Southeast sixth (map 1610). Ximenesia eucnemoides Cav.

Valleys, not very common. Scattered in east and west (map 1611). Therophyte.

Ximenesia eucnemoides cruciata (Robinson & Greenm.) F. C. Gates.

*Verbena eucnemoides cruciata* Robinson & Greenm.

Ravines and valleys. Finney and Riley counties (map 1611a). Therophyte.

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Zinnia grandiflora Nutt.

High plains. Southern tier of counties from Comanche county west (map 1612). Hemicyrptophyte.

*Family Amaranthaceae* (Ragweed Family)

*Ambrosia bidentata* Michx. Ragweed.

Rocky prairies, fields and waste ground. South half of east fourth and Wyandotte county (map 1613). Therophyte.

*Ambrosia coronopifolia* T. & G. Western Ragweed.

*Ambrosia psilotachya* DC.

Plains and prairies, fields and pastures. Throughout (map 1614). Root geophyte.

*Ambrosia chitauer* L. Ragweed.

*Ambrosia artemisiifolia* eliator.

Including *Ambrosia media* Rydb. (R.).

Prairies, fields, pastures, waste places and cultivated ground. East two-thirds and northwest sixth (map 1615). Therophyte.

*Ambrosia longistylis* Nutt. Ragweed.

Prairie. Riley county (map 1616). Therophyte.

*Ambrosia trifida* L. Giant Ragweed.

Including *Ambrosia striata* Rydb. (R) to which most Kansas specimens belong.

Moist places, bottomlands and waste places. Throughout (map 1617). Therophyte. Plants with entire leaves occasionally occur (f. *integrifolia*), Riley county.

*Oxalis acanthocarpa* (Hook.) Coville.

Plains and sandy valleys. West third, mostly southern part (map 1618). Therophyte.

*Oxalis discolor* Nutt.

Dry soil. "Kans." fide Rydberg, but no specimens.

*Oxalis tenuifolia* Harv. & Gray.

Valleys in high plains. Southwest ninth and ?Osborne county (map 1619).

*Oxalis tomentosa* A. Gray.

River bottoms. West half and scattered in east (map 1620).

*Iva diata* Willd. Marsh Elder.

Alluvial soils, prairies and waste ground. Except northwest and north tier (map 1621). Therophyte.

*Iva xanthifolia* Nutt. Careless Weed.

*Consolida canescens* xanthifolia (R.).

Waste places and along streams. West three-fifths and northeast fourth (map 1622). Therophyte.

*Xanthium chinense* Mill. Cocklebur.

Fields, roadsides, alluvial ground, waste places, moist sandy flood plains. East third (map 1623). Therophyte. Forma *globuliforme* Crewecoeur, a mutant with 20-30 ovaries.

*Xanthium globosum* Shull.

Low alluvial soils and waste places. East Douglas, Shawnee and Greenwood counties (map 1624). Type from Lawrence. Therophyte.
Xanthium italicum Mor. Cocklebur.

Xanthium commutum Britton. (R).
Fields, roadsides, and waste places. At least east two-thirds to Sheridan county (map 1625). Therophyte.

Xanthium pennsylvanicum Wallr. Cocklebur.
Cultivated fields, roadsides and waste ground. Probably throughout (map 1626). Therophyte.

Xanthium pennsylvanicum laciniatum Sherff & Shull.

Xanthium speciosissimum Kearney. Cocklebur.

Xanthium spinosum L. Spiny Cocklebur.
Fields and waste ground. East fourth according to reports; a specimen has been seen from Cherokee county (map 1628), but no specimens are in the Kansas State Herbarium. Therophyte.

**Family Helianthaceae**

Actinella odorata Gray. Bitterweed, Colorado Rubber Plant.

*Hymenoxys odorata* (R).
Dry plains. Southwest fourth to Trego and Kiowa counties (map 1629).

Dysodia papposa (Veni.) Hite. Fetid Marigold.

*Boerhaavea papposa* (R).
Plains, prairies, waste ground, along roads, etc. Throughout (map 1630). Therophyte.

Flaveria campestris J. R. Johnston.

Gaillardia aristata Pursh. Gaillardia, Blanket Flower.

Gaillardia drummondii (Hook.) DC. Gaillardia.
Plains, cultivated and escaped in Ellis county (map 1633). Therophyte.

Gaillardia fastigiata Greene.
Waste or sandy places. South central (Edwards and Comanche counties) (map 1634). Therophyte (biennial).

Gaillardia lanceolata Michx. Gaillardia.
Sandy soil. Reno county (map 1635).

Gaillardia pulchella Foug. Gaillardia, Blanket Flower.
Plains. West three-fifths (map 1636). Therophyte.

Helium dumetorum Nutt. Sneezeweed.

*Helium altissimum* Link. (R).

*Helium montanum* Nutt. (R) to which most Kansas specimens would belong.
Moist prairies and borders of ponds and streams. Mostly east fourth (map 1637). Hemicyrptophyte.
Family Inulaceae


Antennaria campestris Rydb.
Prairies and plains. East three-fourths to Sheridan county (map 1651).

Antennaria falax Greene. Indian Tobacco.
Rocky open woods and prairies. East third (map 1652).

Antennaria longifolia Greene.
*Antennaria neglecta* Greene.
Open woods and prairies. East third (map 1653).

Rocky open woods and thickets. East third (map 1654).

Diapensia prolifera Nutt.

_Euala prolifera_ Nutt.

_Filago prolifera_ Britton.
Plains and prairies. Scattered in west half and Cowley county (map 1655). Therophyte.

Gnaphalium obtusifolium L. Cudweed, Everlasting.
Open rocky woods and thickets and waste places. Scattered in east three-fourths (map 1656). Therophyte.

Gnaphalium purpureum L. Cudweed.
Wet soils, prairies and thickets. Scattered in east half (map 1657). Hemicyclophtyte.

Gnaphalium uliginosum L.
Wet places. Shawnee county (map 1658). Therophyte.

Pluchea camphorata (L.) DC. Marsh Fleabane.
Salt marshes. Sedgwick county (map 1659). Therophyte.

Family Asteraceae


_Guettarda brauncamuoides_ (DC.) Blake.
Rocky upland prairies and pastures and hilltops, spreading rapidly.
East half and farther west in the south (map 1660). Therophyte.

Aphanostephus skirrobaasis (DC.) Trel.
Dry soil. South (Clark and Harper counties) (map 1661). Therophyte (biennial).

_Aster adsurgens_ Greene (Pittonia 4:211. 1800), (Rhod. 35:325. 1933). Aster.
_Aster crenatus_ Rydb.
High plains. West fourth (map 1662). Hemicyclophtyte.

_Aster anomalous_ Engelm. Aster.
Rocky open woods and thickets. Southeast (Wabaunsee, Woodson, and Wabaunsee counties) (map 1663). Hemicyclophtyte.

_Aster azureus_ Lindl. Blue Aster.
Prairies and thickets. East third (map 1664). Hemicyclophtyte.

_Aster coeruleus_ DC. Rhodora 32:27. 1933. Aster.
_Aster florivivis_ Osterhout (R).
Riley county. Hitchcock No. 726 (map 1665).

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Plains and river banks. Southwest fourth (map 1666). Hemicyclophtyte.

Aster drumondii Lindl. Aster.

_Aster eucosma_ L. Aster.
_Aster multiflorus_ Ait.

_Aster eucosma_ batesii (Ryd.) F. C. Gates. Aster.
_Aster eucosma_ (R).
Prairies. Central and northwest (map 1669). Hemicyclophtyte.

_Aster eucosma_ f. polycarpus (Ryd.). Aster.
_Aster polycarpus_ Rydb. (R).
Prairie hills. Saline county (map 1670). Hemicyclophtyte.

_Aster eucosma_ prostratus (Kitze.) Blake. Aster.
_Aster ecuina_ (L.) Blake. (R).
Prairies and sandy or gravelly ground along streams. East half (map 1671). Hemicyclophtyte.

_Aster eucosma_ f. stricticalis (T. & G.). Aster.
_Aster stricticalis_ (T. & G.) (R).
Moist ground along streams. Shawnee county at least (map 1672). Hemicyclophtyte.

_Aster exilis_ Ell. Aster.
Wet, especially saline soil. South central, west to Meade county (map 1673). Therophyte.

_Aster fendleri_ A. Gray. Aster.
Plains and sandhills. West three-fifths (map 1674). Hemicyclophtyte.

_Aster heviformis_ Rydb. Aster.

_Aster heviformis_ (R).
Rocky open woods and thickets. Northeast sixth (map 1676). Hemicyclophtyte.

_Aster lateriflorus_ pendulus (Ait.) Burgess. Aster.
Low wet woods or stream borders. Northeast (Atchison county) (map 1677). Hemicyclophtyte.

_Aster novae-angliae_ L. New England Aster.
Low ground along streams in prairies and thickets. East sixth (map 1678). Hemicyclophtyte.

_Aster oblongifolius_ Nutt. Aster.
Including _Aster kumeliei_ Fries (R) _Aster oblongifolius rigidus_.
Rocky prairies and open slopes. East two-thirds, plus northwest (map 1679). Hemicyclophtyte.

_Aster paludosus_ Ait. Aster.
Wet prairies. Southeast (Wabaunsee, Woodson, and Wabaunsee counties) (map 1680). Hemicyclophtyte.

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Aster paniculatus Lam. Aster. 
Low wet woods and moist prairies. Scattered in east four-fifths (map 1681). Hemieyrophyte.

Aster paniculatus articulatus Ait. Aster. 
Low wet woods and moist prairies. Riley, Clay and Barber counties (map 1682). Hemieyrophyte. 

Aster sensissimus Britton. 
Hemieyrophyte. 

Aster patens Ait. Purple Aster. 
Aster patensimus Lindl. (R). 
Aster tenacifolius Mohr. (R). 
Rocky open woods and thickets. Southeast to Sumner county (map 1684). Hemieyrophyte. 

Aster praealtus Poir. Aster. 
Aster salicifolius Lam. 
Wet prairies, thickets and borders of streams. Scattered in east four-fifths (map 1685). Hemieyrophyte. A specimen of M. A. Barber from Lawrence in 1907 seems to be the var. taxicola Wieg. Rhod. 35:25. 1933. 

Aster sagittifolius Wild. Wedemeyer. 
Rocky woods and ravines. Extreme east (Wyandotte and Lamber counties (map 1686). Hemieyrophyte. 

Aster sericeus Vent. Silky Aster. 
Rocky prairies and hills. East half and Hamilton county (map 1687). Hemieyrophyte. 

Aster tataricus L. t. 
In cultivation. Riley county, where escaped for three years. Hemieyrophyte. 

Aster turbinellus Lindl. Aster. 
Rocky open woods and thickets. Extreme southeast (map 1688). Hemieyrophyte. 

Aster vinosus subluminous Wiegand Aster. 


Bellis integrifolia Michx. 
Moist ground. East fourth (map 1690). Therophyte (biennial). 

Baccharis neglecta Britton. 
Saline soil. South central and Sherman county (map 1691). Nanophanerophyte. 

Baccharis salicifolia T. & G. Groundsel Tree. 
Saline soil. Southwest fourth (map 1692). Nanophanerophyte. 

Baccharis wrightii A. Gray. 
Saline soil. Southwest sixth (map 1693). Hemieyrophyte. 

Boltonia asteroides (L.) L'Her. 
Moist open woods and thickets. Cowley, Doniphan (KU), and Washington counties (map 1694). Hemieyrophyte. 

Boltonia latiflora A. Gray. 
Wet prairies and borders of streams. East half (map 1695). Hemieyrophyte. 

Chrysopsis angustifolia Rydb. Golden Aster. 
Sandy places. Saline, Meade and Rooks counties (map 1696). Hemieyrophyte. 

Chrysopsis aspera Greene. 

Chrysopsis bakeri Greene. 

Chrysopsis ballardii Rydb. Golden Aster. 

Chrysopsis berlandieri Greene. 

Chrysopsis foliosa Nutt. 
Sandy soil. Scattered in west half (map 1701). Hemieyrophyte. 

Chrysopsis hirsutissima Greene. 
Sandy soil. West third (map 1702). Hemieyrophyte. 

Chrysopsis hispida (Hook.) DC. Golden Aster. 
Sandy river valleys. West two-thirds (map 1703). Hemieyrophyte. 

Chrysopsis imbricata A. Nels. 
Plains and mountains. Scattered in west half (map 1704). Hemieyrophyte. 

Chrysopsis ptilosa Nutt. Golden Aster. 
Rocky or sandy prairies. Southeast (map 1705). Therophyte. 

Chrysopsis sternophylla (A. Gray) Greene. 
Dry plains and prairies. South two-thirds of west two-thirds (map 1706). Hemieyrophyte. 

Chrysopsis villosa (Pursh) Nutt. 
Dry hills. Ford and Ellis counties (map 1707). Hemieyrophyte. 

Chrysopsis viscosa (A. Gray) Greene. 
Mountains and dry ledges. West sixth (map 1708). Hemieyrophyte. 

Chrysothamnus pulchellus Baileyi (Woot. and Stand.) Hall & Clements. Rabbit Brush. 
Arid areas of high plains. Kearney county (map 1709). Nanophanerophyte. The species is recorded from Kansas in Rydberg, but the specimens are the variety or subspecies. 

Erigeron annuus (L.) Pers. Fleabane. 
Fields, prairies and waste ground. East half (map 1710). Therophyte (biennial). 

Erigeron bellidiastrum Nutt. Fleabane.  
Low ground on high plains. Southwest fourth (map 1711). Therophyte.

Erigeron canadensis L. Horseweed, Canada Fleabane.  
*Leptilium canadensis* (R.).  
Plains, prairies, fields, roadsides, cultivated land and waste places.  
Abundant. Throughout (map 1712). Therophyte.

Erigeron divaricatus Michx. Fleabane.  
*Leptilium divaricatum* (R.).  
Prairies, fields, lawns, and waste ground. East two-thirds (map 1713). Therophyte.

Erigeron flagellaris A. Gray. Fleabane.  
Banks of streams. Logan and Trego counties (map 1714). ± Chamise.

Erigeron philadelphicus L. Fleabane.  
Wet fields, meadows and woodlands. East third (map 1715). Hemicyrptophyte.

Erigeron pulchellus Michx. Robin's Plantain.  
Rocky open woods and thickets. Extreme southeast (Cherokee county) (map 1716). Hemicyrptophyte.

Erigeron pumilus Nutt. Fleabane.  
Dry plains. Northwest sixth (map 1717). Hemicyrptophyte.

Erigeron ramosus (Walk.) BSP. Fleabane.  
Dry prairies and thickets. Throughout (map 1718). Therophyte.

Euthamia graminifolia (L.) Nutt. Bushy Goldenrod.  
*Euthamia camporum* Greene (R.) (Pittotina 5:74. 1902.)

*Solidago graminifolia* (L.) Salisb.  
Low ground, fields and prairies. Scattered (map 1719). Hemicyrptophyte.

Euthamia gymnospertoides Greene. Bushy Goldenrod.  
*Solidago gymnospertoides* (Greene) Fernald.

Dry soils, rocky or upland prairies. East two-thirds and Hamilton county (map 1720). Hemicyrptophyte.

Euthamia nuttallii Greene. Bushy Goldenrod.  

(*Grindelia decumbens* Greene, credited to Kansas in Rydberg, based on misidentifications, ranges from Colorado to Arizona, with Steyermark.)

Grindelia lanceolata Nutt.  
Rocky prairies. Southeast twelfth (map 1722). Therophyte (biennial).

Grindelia squarrosa (Pursh) Dunal. Gum Plant.  
Plains and prairies, rocky and alluvial ground. Northern half and scattered in south half (map 1723).

Grindelia squarrosa nudata (Wood) Gray. Gum Plant.  
*Grindelia nudata* Wood (R.).  
High plains. Southwest fourth, plus Lyon county (map 1724). Therophyte (biennial).

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Gutierrezia diversifolia Greene.  
High plains. West fifth (map 1725). Hemicyrptophyte.

Gutierrezia linearis Rydb.  

Gutierrezia sarothrae (Pursh) Britton & Rusby.  
Plains and high plains. West half (map 1726). Hemicyrptophyte.

Heterotheca subaxillaris (Lam.) Britton & Rusby.  
Sandy floodplains, valleys and waste ground. Scattered in north half and west two-thirds of south half (map 1727). Therophyte (biennial).

Isoappus divaricatus (Nutt.) T. & G.  

Sandy hills and valleys. Central, especially south central (map 1728). Therophyte.

? Leucelyne alsinoides Greene.  
Dry hills. Scattered in west half (Hamilton, Kearny & Ellis counties). Hemicyrptophyte. It is questionable whether this is different from the next.

Leucelyne ericoides (Torr.) Greene.  
Plains and dry prairies. West three-fifths (map 1729). Hemicyrptophyte.

Plains and sandy hills. West two-fifths (map 1730). Therophyte.

Onopopsis engelmannii (A. Gray) Greene.  
Dry plains. Hamilton county (map 1731). Hemicyrptophyte.

Prionopsis ciliata Nutt.  
*Aploppus ciliatus* (Nutt.) DC.  
Plains, prairies, river banks and waste places. Possibly throughout (map 1732). Therophyte (biennial).

Sideranthus annulus Rydb. Iron Plant.  
Sandy soils of plains. South half of west half (map 1733). Therophyte.

Sideranthus spinulosus (Pursh) Sweet.  
Including *Sideranthus glaberrimus* Rydb. (R.).  
Plains and prairies. West two-thirds (map 1734). Hemicyrptophyte.

Solidago altissima L. Goldenrod.  

Solidago canadensis L. Goldenrod.  
Fields, prairies and thickets. Probably only extreme east (Leavenworth and Wyandotte counties) (map 1735). Hemicyrptophyte.

Solidago canadensis Gilvovanceaey Rydb. Goldenrod.  
Prairies, fields and thickets. Probably throughout (map 1736). Hemicyrptophyte.

Solidago dumentorum Linell. Goldenrod.  
Dry prairies and thickets. Scattered in northeast fourth (map 1737). Hemicyrptophyte.

Solidago flexicaulis L. Goldenrod.  
Solidago glaberrima Martens. Goldenrod.
Plains and hills and prairies. Throughout (map 1739). Hemicyrptophyte.

Solidago glaberrima moritura (Steele) Palmer & Steyermark.
Solidago moritura Steele.
Plains and prairies. Throughout (map 1740).

Solidago linheimeriana Scheele. Goldenrod.
Limestone bluffs and rocky woods. Scattered in east two-thirds (map 1741). Hemicyrptophyte.

Solidago mollis Bartl. Goldenrod.
Dry plains. West two-thirds (map 1742). Hemicyrptophyte.

Solidago nemoralis Ait. Gray Goldenrod.
Open woods, thickets, prairies, fields and waste ground. Scattered in east three-fifths (map 1743). Hemicyrptophyte.

Solidago nemoralis decemflora (DC) Fernald. (Rhod. 38:226. 1936.) Goldenrod.
Solidago longpetiolata Mack. & Bush. (R).
Rocky open woods, thickets and prairies. East third (map 1744). Hemicyrptophyte.

Solidago petiolaris Ait. Goldenrod.
Dry open woods and thickets. North half of second fifth east (map 1745). Hemicyrptophyte.

Solidago prosera Ait. Goldenrod.
Solidago altissima prosera (Ait.).

Solidago rigida L. Goldenrod.
Oligoneuron rigidum (R).
Prairies, thickets and rocky open ground. Mostly east two-thirds (map 1746). Hemicyrptophyte.

Solidago serotina Ait. Goldenrod.
Meadows, prairies, plains, valleys and banks. Throughout (map 1747). Hemicyrptophyte.

Solidago speciosa Nutt. Goldenrod.
Rocky open woods, thickets and prairies. Wyandotte and Cloud counties (map 1748). Hemicyrptophyte.

Solidago speciosa angustata T. & G. Goldenrod.
Solidago rigiduscula (R).
Rocky open thickets and prairies. East third (map 1749). Hemicyrptophyte.

Solidago trinervata Greene. Goldenrod.
Plains and hills. Scattered in west half (map 1750). Hemicyrptophyte.

Solidago ulmoloida Muhl. Goldenrod.
Including Solidago microphylla Engelm. (R).

Townsendia excapa (Richards) Porter. Townsendia.
Dry prairies and plains. Scattered in west two-thirds (map 1752). Hemicyrptophyte.

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Family Vernoniacae

Elephantopus carolinianus Willd. Elephant's Foot.
Open woods. East fifth north to Osage county (map 1753).

Vernonia baldwinii Torr. Ironweed.
Credited to Kansas in various manuals, but apparently not west of Missouri.

Vernonia crinita Raf. Ironweed.
River banks, valleys, open woods and thickets. Southeast (north to Linn and west to Elk county) (map 1754). Hemicyrptophyte.

Vernonia fasciculata Michx. Ironweed.
Prairies, meadows, alluvial soils along streams, rich moist soil. East two-thirds (map 1755). Hemicyrptophyte.

Vernonia fasciculata corymbosa (Schwein) Schubert. (Rhod. 40:220. 1908.)
Vernonia corymbosa Schwein. (R).
Barton county (map 1756).

Vernonia interior Small. Ironweed.
Vernonia baldwinii interior (Small) Schubert.
Plains, dry prairies, pastures and waste ground. Probably throughout (map 1757). Hemicyrptophyte.

X Vernonia interior x crinita.
Prairies and thickets. Southeast eighth (map 1758). Many southeastern specimens are fertil hybrids. Hemicyrptophyte.

Vernonia marginata (Torr.) Raf. Ironweed.
High plains. Seward and Morton to Saline county (map 1759). Hemicyrptophyte.

Vernonia missurica Raf. Ironweed.
Low ground and moist prairies and waste places. Extreme east (map 1760). Hemicyrptophyte.

X Vernonia missurica x crinita.
Low ground and moist thickets. Cherokee county. Hemicyrptophyte.

Family Eupatoriaceae

Brickellia umbellata (Greene) Rydb. Thurowort.
Hillsides and canyons. West half (map 1761). Hemicyrptophyte.

Eupatorium altissimum L. Thurowort.
Prairies, rocky hills and thickets. East half (map 1762). Hemicyrptophyte.

Eupatorium coelestinum L. Mistflower.
Wet stream banks in woods. East seventh (map 1763).

Eupatorium falcatum Michx. Joe-Pye Weed.
Moist ground in woods and thickets. East fourth (map 1764). Hemicyrptophyte.

Eupatorium maculatum L. Joe-Pye Weed.
Moist ground in woods and thickets. East third (map 1765). Hemicyrptophyte.

13. Critical specimens checked by H. A. Gleason.
Eupatorium perfoliatum L. Boneset.
Wet places along streams and in woods. East three-fifths (map 1766). Hemicyryptophyte.

Eupatorium rugosum Houtt. White Snakeroot.
Eupatorium rugosum var. Reichenbach. (R).

Eupatorium serotinum Michx.

Kuhina hitchcockii A. Nelson.
Dry prairies and plains. Throughout (map 1769). Hemicyryptophyte.

Kuhina sunaeolens Fresen. Kuhina.
Kuhina canadensis L. C. & G.
Dry prairies, plains and open woods. Probably throughout (map 1770). Hemicyryptophyte.


Liatris kansana (Britton) Rydb. Kansas Gayfeather.
High Plains. Southwest sixth and Cheyenne county (map 1772). Corm geophyte.

Liatris punctata Hook. Blazing Star.
Dry prairies, hills and prairies. Throughout (map 1773). Corm geophyte.

Liatris pycnostachya Michx. Gayfeather.
Prairies and rocky open ground. Mostly east third, but to Reno county (map 1774). Corm geophyte.

Liatris scariosa Willd. Gayfeather.

Liatris aspera (Michx.) Greene (R).
Rocky prairies and open rocky woods. East half (map 1775). Corm geophyte.

Liatris squarrosa compacta T. & G. Blazing Star.
Liatris squarrosa (R).
Prairies and open woods. West half of east half (map 1776). Corm geophyte.

Liatris glabrata Ryd.
Sandhills and bluffs. Scattered on the northeast-southwest diagonal (map 1777). Corm geophyte.

Liatris squarrosa hispida (Ryd.) F. C. Gates. Blazing Star.
Liatris hispida Ryd. (R).
Prairies and rocky open woods. East third and Sheridan and Thomas counties (map 1778). Corm geophyte.

Family Antheridaceae

Achillea asplenifolia Vent.
Along roads. Shawnee and Neosho counties (map 1779). Hemicyryptophyte.

Achillea millefolium L. Yarrow.
7. Senecio obovatus umbratilis Greene. Ragwort.
   Moist ground. East fourth (Crawford, Douglas and Shawnee counties) (map 1803).
   Upland prairies, plains, rocky woods. East half and northwest fourth (map 1808).
   Hemicyryptophyte.
   High plains. West half, plus Cloud and Shawnee (cultivated) counties (map 1809).
   Hemicyryptophyte.
    High plains. Southwest (Finney and Edwards counties) (map 1804).

FAMILY CAROIDEAE

Arctium minus (Hill) Bernh. Burdock.
   Including Arctium nemorosum Lejeune.
   Waste places. East half, a few in west half (map 1810). Therophyte (biennial).

Carduus nutans L. Plumeless Thistle.
   Roadsides and cultivated ground. Washington county (map 1811).

Carthamus tinctorius L. False Saffron.
   Waste places, escaped from cultivation. Sheridan county, cultivated in Clay county (map 1812).

Centaurea americana Nutt.
   Prairies and plains. Butler, Harvey and Saline counties (map 1813).

Centaurea cyanus L. Bachelor's Button, Cornflower.
   Waste ground, escaped from cultivation. Scattered widely throughout (map 1814).
   Therophyte-hemicyryptophyte.

Centaurea maculosa Lam.

Centaurea melitensis L.
   In cultivation, escaping to waste places. Riley county (cultivated). Therophyte.

Centaurea piersii Pall. (C. repens L. ?). Star Thistle, Russian Knapweed.
   Waste places and cultivated ground, spreading too rapidly. Scattered in east two-thirds (map 1815).

Centaurea solstitialis L. Barnaby's Thistle.
   Waste places and cultivated ground, alfalfa fields. Northeast and Reno county (map 1816). Therophyte.

Cirsium dissectum (L.) Spreng. Pasture Thistle.
   Including Cirsium invenustum (Pammel). (R).
   Thickets, open rocky slopes, low alluvial woods and waste ground. East two-thirds or more (map 1817).

Cirsium arvense (L.) Scop. Canada Thistle.
   Fields, roadsides and waste places. North two-thirds of east sixth (map 1818).

Cirsium discolor (Muhl.) Spreng.
   Allen county (map 1819).
Lactuca canadensis integrifolia (Bigel.) T. & G. \(L_{1}\). \(L_{1}\) & G. \(L_{1}\) Wild Lettuce.<br>\(L_{1}\) Lactuca integrifolia Ell.<br>Along rivers. Scattered in east two-fifths (map 1832). Therophyte (biennial).<br>Lactuca floridana (L.) Gaertn. \(L_{1}\) Wild Lettuce.<br>Open woods, thickets and hillsides. East third and Rooks county (map 1833). Therophyte.<br>Lactuca nudicaulis (Nutt.) Riddell. \(L_{1}\) Wild Lettuce.<br>River banks and wet places. Throughout (map 1834). Therophyte (biennial). A blue-flowered form \(L_{1}\) campestris (Greene) Fernand (\(L_{1}\) campestris Greene) is present in central Kansas (map 1835).<br>Lactuca pulchella (Pursh.) DC. \(L_{1}\) Wild Lettuce.<br>Wet meadows, prairies and plains. North of southwest-northeast diagonal (map 1836).<br>Lactuca sativa L. Garden Lettuce.<br>Much cultivated, occasionally escaping, but not persisting.<br>Lactuca serriola L. \(L_{1}\) Prickly Wild Lettuce.<br>\(L_{1}\) Lactuca serriola L. (R.).<br>Fields and waste places. Scattered mostly in east two-thirds (map 1837). Therophyte (biennial).<br>Lactuca villosa Jacq. \(L_{1}\) Wild Lettuce.<br>Open woods, banks and thickets. Riley county (map 1838). Therophyte.<br>Lactuca virosa L. \(L_{1}\) Wild Lettuce.<br>Waste places and fields. Scattered probably throughout, but more frequently eastward (map 1839). Therophyte (biennial).<br>Lygodium juncea (Pursh.) D. Don. Skeletonweed.<br>Plains and prairies. West two-thirds and Doniphan county (map 1840).<br>Lygodium rostrata A. Gray.<br>Canyons and sandy plains. Scattered in west two-thirds (map 1841). Therophyte.<br>Malacothrix sonchoides (Nutt.) T. & G. \(L_{1}\) Desert Dandelion.<br>Plains. “Kans,” fide Rydberg. Therophyte.<br>Prenanthes aspera Michx. \(L_{1}\) Rattlesnake-root.<br>Nabalitus asper (R.).<br>Rocky open woods and prairies. East two-fifths (map 1842).<br>Prenanthes crepidinae Michx.<br>Nabalitus crepidinae (R.).<br>Open woods and thickets. “Kans,” fide Rydberg.<br>Ptiloria pauciflora (Torr.) Raf. \(L_{1}\) Dry high plains. Southwest ninth (map 1843).<br>Pyrrophagopus coloanumus (Tall.) DC. \(L_{1}\) False Dandelion.<br>Dry soil. East half, more frequent southern (map 1844).<br>Pyrrophagopus grandiflorus Nutt. \(L_{1}\) False Dandelion.<br>Prairies. Central third, plus Miami and Crawford counties (map 1845).
INDEX

Index to the phyla, classes, families and genera, and the more important common names. Numbers immediately following an m. after a genus or family indicate the map numbers on plates 1-80. Synonyms are given in italics.
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