

**MANUAL OF THE
FLORA OF JACKSON
COUNTY, MISSOURI**

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Manual of the Flora of Jackson County, Missouri by Kenneth K. Mackenzie

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MISSOURI

BY
KENNETH K. MACKENZIE
ASSISTED BY
B. F. BUSH AND OTHERS

KANSAS CITY, MO.
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INTRODUCTION.

SITUATED as it is, where the floras of several different regions blend, Jackson County, Missouri, is of especial interest to the botanist. Fortunately its flora has been studied as thoroughly probably as that of any other western area of similar size. The results of these investigations have appeared from time to time in several local floras. The first of these was entitled "Flora of Jackson County," and was published in 1882 by Mr. E. F. Bush. In 1885 Mr. Bush and Rev. Cameron Mann published a supplement to this flora, and in 1888 Mr. Bush published a second supplement. The species and varieties enumerated in these three lists are numbered consecutively and aggregate 1,004. In 1899 I published a "Spring Flora of Kansas City and Vicinity," which contained a key to the plants blooming before the first of June. This work also added a few species to those already enumerated in the previous works. In addition, a series of very instructive and ably written papers by the Rev. Cameron Mann appeared in the *Kansas City Star* during 1899, dealing with our local flora in a popular manner. To the best of my knowledge nothing else has been printed professing to deal with our local flora alone. A "Flora of Missouri" published in 1885 by Professor Tracy, and a "List of the Trees, Shrubs and Vines of Missouri," published in 1895 by Mr. E. F. Bush complete the list of works in which any Jackson County plants are enumerated.

At the time when the earlier lists were published, there was no work which dealt with the flora of this region. Consequently there was then much difficulty in arriving at a correct understanding of the species represented here and mistakes were inevitable, but considering the difficulties above mentioned they were not numerous, and are most noticeable in genera, which even now are only beginning to be understood.

This work is intended to include all species of the higher plants found growing wild within the limits of Jackson County, and embraces the results of all the botanizing done here up to the present time. All species enumerated in previous works and not included herein are omitted for some good reason, either because their occurrence could not be verified, because of erroneous determinations, or because the forms then regarded as distinct on further study have been proved not to be so. While as much care as possible has been taken to make this work accurate and complete, yet it must be recognized that no manual or flora ever published has entirely met these requirements, and further study and investigation will certainly reveal the necessity for corrections in and additions to this.

While many lists of plants occurring in certain restricted localities have been published, as far as I am aware no manual with full descriptions and keys devoted to but one county and professing to include all the species found in that county has ever been published in the United States. That I have attempted here. The book is intended for the use of students, and has been made as easy and as simple as possible. For that reason no attempt has been made to use natural keys, for such keys are always so full of exceptions as to make them worse than useless to the beginner. Therefore artificial keys have been constructed and used. The results obtained by the use of these keys can in each case be verified by the more enlarged and technical descriptions appearing under the families, genera and species respectively.

It is hardly necessary to dwell upon the manifest advantages possessed by a manual of this character for local use over those which deal with areas embracing many states. Two-thirds or three-fourths of the species described in such works will not be found in any given locality, and the pupil cannot fail to be hindered by the necessity of studying the descriptions of these species in order to differentiate them from those species which actually occur in his vicinity. This, added to the fact that in a local manual the exact locality in which any certain species can be found is given, is sufficient to show the advantages of such a work.

The descriptions here given are in most cases drawn from specimens collected in this county by myself and others. Where that has not been possible specimens collected elsewhere have been resorted to, and in one or two cases published descriptions have been used, specimens of these species not being available. These descriptions have been further compared with those of the standard manuals and are believed to be accurate as applied to the species found here. In describing families and genera the descriptions are applicable only to our own species, and exceptions illustrated by foreign species have been omitted. Save that combinations in which generic and specific name are identical are avoided, the names used, with few exceptions, are those used in Britton's "Manual of the Flora of the Northern States and Canada" and the sequence of families and genera there adopted has been followed. This is largely true of the sequence of species also.

DESCRIPTION OF JACKSON COUNTY.

JACKSON County, Missouri, is bounded on the north by the Missouri River, separating it from Clay and Ray Counties, Missouri; on the west by Wyandotte and Johnson Counties, Kansas; on the south by Cass County, Missouri; and on the east by Lafayette and Johnson Counties, Missouri. It is about twenty-seven miles long east and west, and from seventeen to twenty-seven miles wide north and south, and contains some six hundred and twenty-five square miles. In altitude it ranges from about 675 feet above sea level near Levasy to 1,100 feet near Lee's Summit. For so limited an area it exhibits a great diversity of surface, and consequently the flora is rich and varied.

As most people are aware, the Missouri River is extremely crooked, first approaching the bluff on one side and then the bluff on the other, thus alternately leaving great bottoms on opposite sides of the river. Of these bottoms there are five principal ones in this county, which are known as the Sheffield, Rush, Little Blue, Sibley and Levasy bottoms. The river is continually cutting into and eating away the up-river sides of these bottoms and adding to the lower sides. The sand and mud deposited on the lower side is at first only uncovered at low water, but being gradually added to is at length never covered save when the river is very high, parts indeed escaping from submergence entirely. In each of the bottoms there is a series of these areas added in successive years, each a little lower than the one next above. The flora of the outer of these areas or sandbars proper is very interesting and peculiar. In places *Salix interior* is so abundant that one can scarcely force his way through, and everywhere it is the predominant plant. In the more open places are found many herbaceous plants occurring no place else. Many species of *Cyperus*, *Potentilla*, *Roripa* and *Eragrostis* abound. *Juncus Richardsonianus*, *Juncus bufonius*, *Juncus Balticus*, *Aristida intermedia*, *Oxygraphis Cymbalaria*, *Sporobolus asperifolius*, *Corispermum hyssopifolium*, *Bergia Texana*, *Fuirena simplex*, *Limosella aquatica* and many other rarities have been found on these sandbars.

Passing from these outer sand-bars inland the flora gradually changes. *Salix interior* is first replaced by *Salix amygdaloides*, *Salix cordata Missouriensis* and *Populus deltoides*, and the herbaceous plants by *Equisetum robustum*, and these in turn give way to the giant elms, oaks and sycamores of the bottom forests. In the more open parts of these forests several species of *Melidonia*, *Sieglingia eslerioides*, *Helianthus tuberosus subcanescens*, *Anemone Canadensis*, *Apocynum hypericifolium*, *Vernonia maxima*, *Solidago serotina*, *Aster Missouriensis*, *Aster paniculatus* and various species of *Bidens* are

characteristic plants, while in the denser forests various vines such as *Ampelopsis cordata*, *Vitis vulpina*, *Falcata Pitcheri*, and *Rhus radicans* make traveling burdensome. In these dense forests occur those rare orchids: *Aplectrum spicatum*, *Gyrostachys plantaginea* and *Pogonia trianthophora*, and keeping them company the fungus-like *Monotropa uniflora* rarely appears.

Bordering these lowlands is a chain of bluffs, high and rocky in the western part of the county, but becoming lower and more sandy in the eastern part. Various creeks, greater or less in extent, break the continuity of this chain, and with their branches make the northern part of the county very uneven. The larger of these creeks are really small rivers, and extending through the width of the county, carry with them the flora peculiar to the broken uneven country. Getting away from the influence of these creeks and their branches one comes to the prairie, once open and nearly treeless, but now through the efforts of man fast losing its characteristic features. This prairie extends throughout the southern, especially the southwestern, part of the county, being there broken only by the larger streams.

The chief streams of the county are the Blue, running through the western part nearly due north and south; the Little Blue, running through the central part from the southwest to the northeast; Sni-a-bar Creek and its tributaries which cover the southeastern part; and Fire-Prairie Creek, which drains the northeastern part. The first three of these are bordered by wooded bluffs, but Fire-Prairie Creek, save for a narrow fringe of timber immediately adjoining it, runs through a nearly treeless bottom. Barely penetrating the southeastern part of the county are a few small wooded creeks ultimately emptying into the Osage and bringing in a few rare herbaceous species.

Along our streams *Salix nigra*, *Acer saccharinum*, *Aesculus glabra arguta*, *Ulmus Americana*, *Ulmus fulva*, *Juglans nigra*, *Quercus macrocarpa* and *Gymnocladus dioica* form the greater part of the forest, while on the bluffs and the uplands various species of oaks and hickories find their home. The sugar-maple is common in the northeastern part and the rock-elm abounds only along the rocky bluffs in the northwestern, but as a whole our trees are not local. The common smaller trees are *Ostrya Virginiana*, *Malus Ioensis* and various species of *Crataegus* and *Prunus*. The buckberry (*Symphoricarpos*) is the most common under-shrub, but the hazelnut (*Corylus Americana*) and the wild blackberry are close rivals, while along rocky branches, especially in the southern part, *Rhamnus lanceolata* is common. Various sumacs and several species of *Cornus* also abound, and twining over the larger plants are various species of wild grapes, true and false; the poison ivy and the wild hop are everywhere met with.

The herbaceous plants as a rule are more locally distributed than the woody, though of course many range almost throughout the county. In

the woods, especially of the northern part of the county, *Circaea Lutetiana*, *Teucrium Canadense*, *Impatiens biflora* and *aurea*, *Claytonia Virginica*, *Isopyrum biternatum*, *Erythronium albidum*, *Viola scabruscula* and *Viola cuspidata*, *Rudbeckia triloba*, *Eupatorium maculatum*, *Agrimonia mollis*, *Vernonia interior*, *Muhlenbergia diffusa*, various species of *Polygonum* and *Meibomia*, *Podophyllum peltatum*, *Sanicula Canadensis*, and several species of asters and goldenrods may be mentioned as characteristic species.

The Blue and the Little Blue and their tributaries have cut down through the limestone rock prevalent in the western part, and the outcroppings of these limestone rocks, especially abundant in the southwestern part, form our barrens. The limestone is usually covered by a thin layer of rich soil, which is moist in spring, but later on becomes dried out. These barrens are either bare of trees or covered by small scrub and are bounded on one side by the rocky bluffs of the creeks and on the other usually separated from the prairies by the scrub-oak woods. In these barrens many typical prairie plants occur, while other plants appear which are met with in no other place. Of the latter *Ophioglossum Engelmanni*, *Specularia leptocarpa*, *Mentzelia oligosperma*, *Euphorbia Arkansasana*, *Sedum pulchellum*, *Valerianella stenocarpa*, *Chacophyllum Texanum* and *Bouteloua curtipendula* may be mentioned. The rocky woods adjoining these barrens are chiefly remarkable for the vast number of individuals of some species which they contain. Here *Ratibida pinnata*, *Cassia Chamaecrista* and *Helianthus hirsutus* often give a yellow appearance to the landscape. It is in these barrens and the woods adjoining that many species of asters and goldenrods find their home.

The prairie region may be roughly divided into the high and the low prairies. Unfortunately for the botanist the high prairie is so fertile and easy of cultivation that very little of it now remains in its natural state, the best being found in the Missouri Pacific right of way, both north and south of Lee's Summit. Typical prairie plants are *Brauseria pallida*, *Lacinaria pycnostachya*, *Viola delphinifolia*, *Rudbeckia submentosa*, *Meibomia Illinoisensis*, several species of *Silphium* and *Helianthus*, *Petalostemon candidus*, *Petalostemon purpureus*, *Andropogon furcatus*, *Andropogon scoparius*, *Tripsacum dactyloides*, *Erythronium mesochoreum*, *Allium mutabile* and *Tradescantia reflexa*. Great rarities are *Polygala incarnata* and *Dodecatheon Meadia*.

The low prairie region is chiefly found along Fire Prairie Creek, along portions of the Little Blue, and sparingly along the Blue. Here *Vernonia fasciculata*, *Spartina cynosuroides*, *Rosa setigera*, *Asclepias Sullivantii*, *Koelia fluviatilis* and many species of sedges abound.

Besides these main subdivisions there are several localities of especial interest. Thus in the Sul-a-bar Creek region, *Polemonium reptans* is very abundant. In the northeastern part of the county *Iva ciliata* abounds, and in the southwestern, *Helianthus orgyialis*. About four miles southeast of Grain Valley, there are some sandy woods where *Zizia cordata*, *Stenophyllis capillaris*, *Aristida gracilis*, *Lechea tenuifolia* and *Centunculus minimus*