INITIAL REPORT ON THE VEGETATION OF McDONOUGH COUNTY, ILLINOIS[1]

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McDonough County is located in the west-central part of the state. It originally included 16 townships of approximately equal area (it now has 18) and has an area of 576 square miles. According to Hopkins et al. (1913) the elevation ranges from 500 to 775 feet above sea-level with an average of 690 feet. The greater part of the county is drained through the Lamoine River and its branches into the Illinois River. The principal streams extend in almost parallel lines toward the southwest. This part of the county is considerably dissected by erosion and is least suited to ordinary agriculture. Most of the county is covered with glacial drift from 10 to 140 feet thick, and considerable areas in the northern part are capped with loess up to 50 feet thick. Hopkins et al. (1913) have divided the soils into three main types: dark upland prairie soils, swamp and bottomland soils, and lighter colored upland timber soils. The average rainfall is 34.76 inches (Hambidge, 1941).

McDonough County, according to the geographic classification of Shelford (1931), is in the Macomb District of the Western Division of Illinois. In a map of the vegetation of the state Vestal (1931) showed that somewhat more than half of the county was originally prairie. The prairie, called the Bushnell Prairie, extended west into Warren and Henderson counties. Wright (1947) made a study of McDonough County prairies.

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Methods Used in Studying the Vegetation

To reconstruct a picture of the original vegetation the following were consulted: (1) Histories of the county (Walters, 1885, and Alexander, 1907); (2) records of the land survey of the county which were completed in 1856; (3) report of the soils survey of the county (Hopkins et al. 1913). Field observations were also made.

Only limited observations have been made in all parts of the county. The most extensive reconnaissance and collecting were done in the central part where a timbered area with a minimum amount of disturbance and a relic area of prairie were studied. Very few records of plants collected in the county have been found and there is no adequate description of the flora. Miller and Tehon (1929) have mapped the distribution of the trees in the state by counties. They list only 10 trees for McDonough County. A herbarium has been started and is being developed with the objective of securing specimens and habitat data for all existing plants in the county. Duplicates are being sent to the Illinois State Museum.

Original Vegetation

The land survey of 1856 prepared manuscripts which give an apparently accurate picture of the vegetation at that time. The surveyors divided the county into townships and further subdivided it into sections and quarter sections. The corners of these divisions were located by posts in treeless areas and with

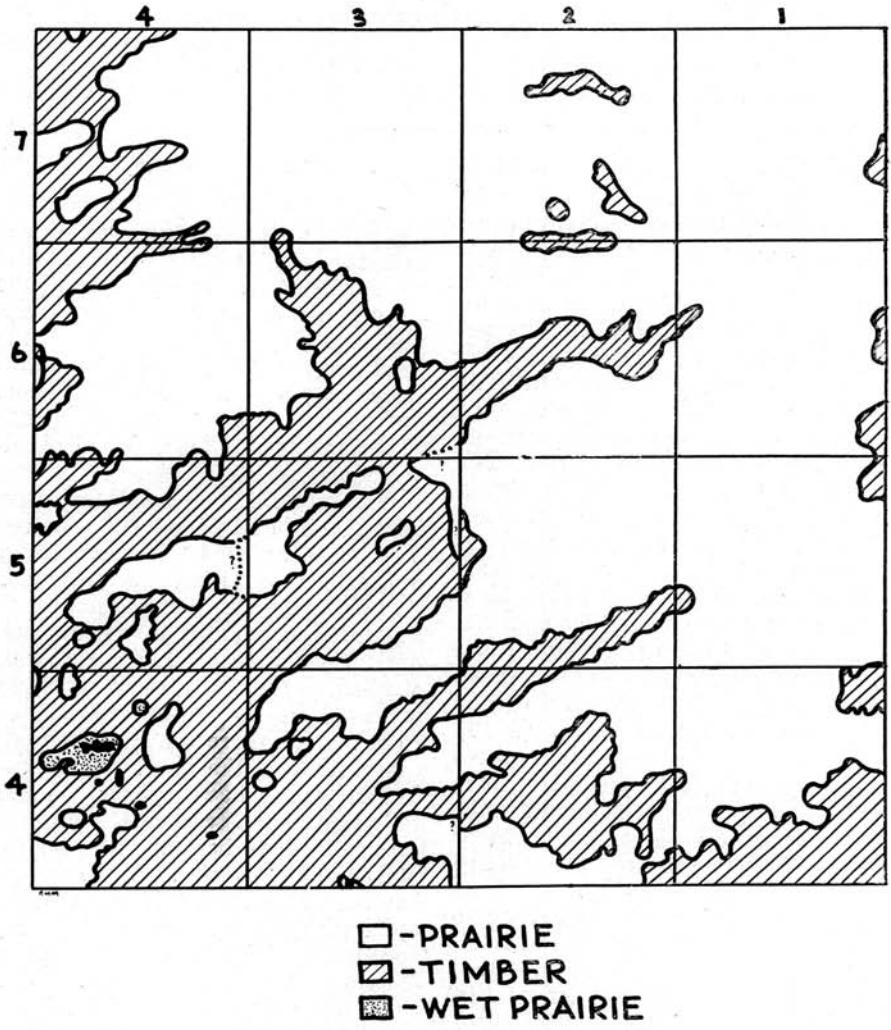

FIG. 1.—Prairie and timber areas of McDonough County as shown by 1856 survey records.

reference to trees in the timbered regions. The records include the species of trees, their diameter and their location. Sixteen species of trees were listed. The areas of timber and prairie were mapped for each township and then a composite map for the entire county was made. Some apparent errors were found, for instance Spanish oak was listed, and this now occurs only in the southern part of the state, and the boundaries of the vegetation types do not always coincide for adjacent townships. A map made from these data is shown in figure 1.

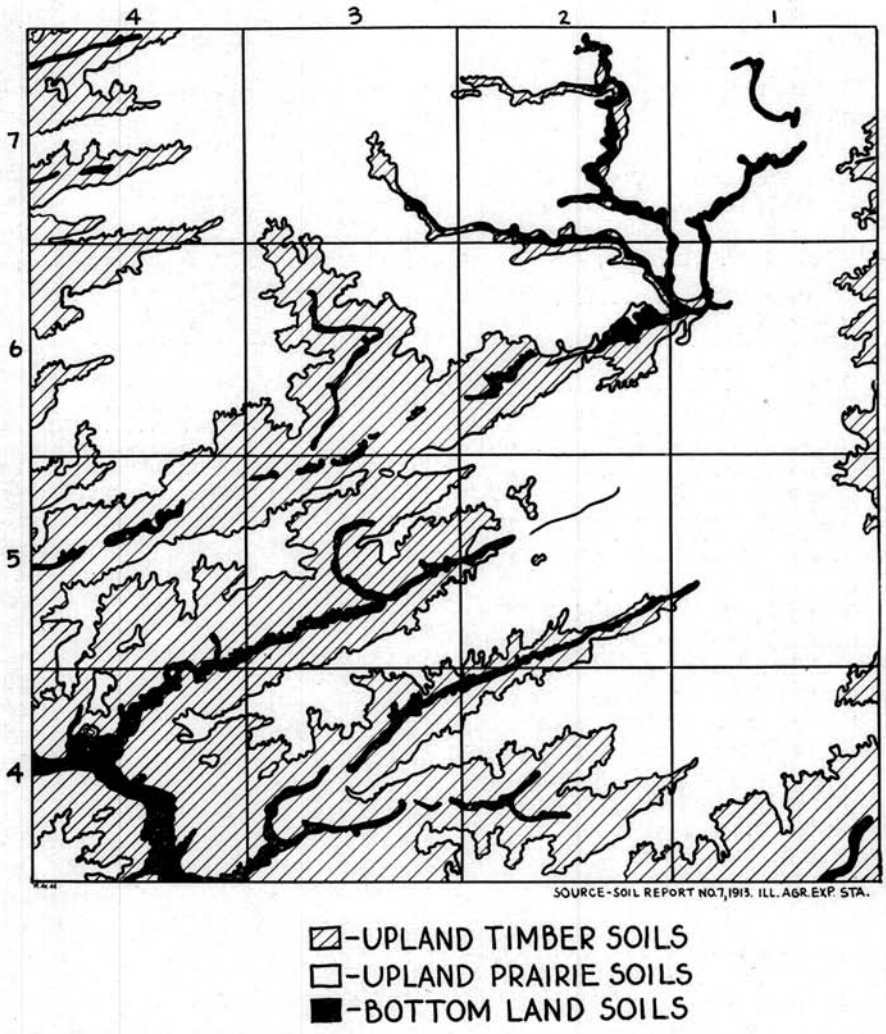

FIG. 2.—Distribution of timber, prairie, and bottomland soils of McDonough County. (Compare with fig. 1.)

Another map of the county was constructed based on the soils map of the county (Hopkins et al. 1913) to show the distribution of timber, prairie and bottomland soils (fig. 2). There is a close correlation with the map made by the 1856 surveyors. A less detailed map was made by Vestal (1931) from the same data for the entire state.

Some idea of the relative abundance of important tree species perhaps can be obtained by tabulating the number of times that a tree was listed in locating corners of the county divisions. The trees in Township 6 North and 3 West (Emmett) listed most often by the surveyors were white oak (49 times) and black oak (47 times) and other species

were listed altogether only 33 times. Table 1 gives a complete tabulation of all the trees listed. The present distribution of trees in this township is quite similar.

TABLE 1.—NUMBER OF TIMES THAT CERTAIN TREES WERE LISTED IN LOCATING SECTION CORNERS IN T. 5 N., R. 4 W. (EMMETT)

White oak	49
Black oak	47
Hickory	15
Elm	6
Birch	3
Black Jack oak	2
Spanish oak (?)	1
Black walnut	1
Sugar tree	1
Maple	1
Buckeye	1
Mulberry	1
Linden	1

Township 4 North and 4 West (Lamoine) contains a considerable area of low lying land and in 1856 was mapped as containing four lakes and two areas of wet prairie as shown in figure 1. The trees listed by the surveyors indicate a wide distribution of pin oak. Pin oak was listed 32 times and white oak 59 times and black oak 27 times. Table 2 gives the complete tabulation.

TABLE 2.—NUMBER OF TIMES THAT CERTAIN TREES WERE LISTED IN LOCATING SECTION CORNERS IN T. 4 N., R. 4 W. (LAMOINE)

White oak	59
Pin oak	32
Black oak	27
Hickory	26
Overcup oak (?)	21
Maple	9
Elm	7
Red oak	2
Hackberry	2
Cottonwood	2
Buckeye	1
Cherry	1
Ironwood	1
Linden	1
Spanish oak (?)	1

T. 7 N., R. 3 W. (Sciota) was shown as containing only a small tongue of timber extending up from the southwestern edge. Only 7 trees were used in locating division corners (Table 3) and the survey records indicated that these were in the small areas mapped as timber. The

TABLE 3.—NUMBER OF TIMES THAT CERTAIN TREES WERE LISTED IN LOCATING SECTION CORNERS IN T. 7 N., R. 3 W. (SCIOTA)

Hickory	2
Pin oak	2
Black oak	1
White oak	1
Linden	1

boundaries of this timbered area are practically the same now as they were in 1856. The rest of the township contains only a few scattered trees in the vicinity of farmhouses.

A history of the county (Alexander, 1907) states that originally there was a "splendid growth of oak, maples and black walnut" and that the smaller trees included ironwood, wild cherry, wild plum and others. In describing the open prairies at the time of early settlement it says, "And how delightful to recall even the fleeting visions and memories of those primitive days; the rushes and lilies of the sloughs and ponds; the delicious wild strawberries; the yellow ground cherries and other wild fruits that bloomed or ripened in the prairies of this favored land, . . . the countless varieties of wild flowers that profusely decked and perfumed this home of early settlers. Truly what a flower garden and orchard this prairie country was, not excelled by the modern creations of horticulture and floriculture!" A list of more than 100 flowering plants was included. Most of these are still found, but no collections of skunk cabbage, white trillium, red-berried elder, certain orchids and gentians which were listed have been made.

Present Vegetation

According to Telford et al. (1926) the original timber area decreased from 119,001 acres to 22,460 acres by 1924. The prairie has almost entirely disappeared. A small area of prairie was found recently a few miles from Macomb which included many typical prairie plants. Most of the area is well drained, but some is swampy. It is burned over nearly every year, but the sod is not plowed. Bunch flower *(Melanthium virginicum)* and the fringed orchid *(Habenaria leucophaea)* both listed by Jones (1945) as rare in Illinois were found in considerable numbers. Table 4 is a list of some of the plants that were collected here. These were included by Sampson (1921) in his list of plants in Illinois prairies. Of the 52 plants, 40 are included in his *Andropogon furcatus* association. It is hoped to make a more complete study of this area. Shelford (1931) stated that, "cut-off prairies in the western part of the Macomb district seem to likewise afford promise for detailed study."

Table 4.—Some Prairie Plants Found in a McDonough County Prairie[1]

(See text for a fuller explanation)

Equisetum arvense—Horsetail
Andropogon furcatus—Tall blue stem
Sorghastrum nutans—Indian grass
Panicum virgatum—Switch grass
Calamagrostis canadensis—Reed grass
Spartina pectinata—Cord grass
Hordeum jubatum—Foxtail grass
Cyperus spp.—Cyperus
Eleocharis sp.—Spike rush
Carex spp.—Sedges
Tradescantia canaliculata—Spiderwort
Juncus spp.—Rushes
Lilium michiganense—Wild lily
Hypoxis hirsuta—Star-grass
Salix humilis—Prairie willow
Anemone canadensis—Meadow anemone
Heuchera hispida—Alum root
Fragaria virginiana—Wild strawberry
Rosa carolina—Wild rose
Baptisia leucantha—Wild indigo
Desmodium sp.—Tick clover
Oxalis violacea—Violet wood sorrel
Euphorbia corollata
Viola papilionacea—Common blue violet
V. pedatifida—Prairie violet
Lythrum alatum—Loosestrife
Eryngium yuccafolium—Rattlesnake master
Lysimachia ciliata—Fringed loosestrife
Apocynum cannabinum—Hemp dogbane
Asclepias tuberosa—Butterfly-weed
A. syriaca—Common milkweed
A. verticillata—Horsetail milkweed
Phlox glaberimma—Smooth phlox
Lithospermum canescens—Gromwell
Monarda fistulosa—Bergamont mint
Pycnanthemum flexuosum—Mountain mint
Ruellia ciliosa—Wild petunia
Lobelia spicata—Lobelia
Vernonia missurica—Ironweed
Liatris sp. Blazing star
Solidago spp.—Goldenrods
Aster spp.—Asters
Silphium lacinatum—Compass plant
S. terebinathinaceum—Prairie dock
S. integrifolium—Rosin-weed
Parthenium integrifolium—American feverfew
Echinacea pallida—Pale coneflower
Ratibida pinnata—
Helianthus grosseratus—Sunflower
Coreopsis palmata
Cacalia tuberosa—Indian plantain

[1] The nomenclature of Jones (1945) is followed in this paper.

About five miles west of Macomb in T. 5 N., R. 4 W. (Emmett) is a rugged timbered area called Argyle Hollow. Some of it has been heavily pastured and all of it has been cut-over. More than 1,000 acres are being acquired by the state for a park. Extensive reconnaissance and collecting has been done in the least disturbed areas as much of it will be inundated by a lake to be built soon. The dominant trees of the uplands are white and black oaks *(Quercus alba, Q. velutina)* and shagbark hickory *(Carya ovata)*. Associated species include bur, post, black jack and shingle oaks *(Quercus macrocarpa, Q. stellata, Q. marilandica, Q. imbricaria)*, and pignut hickory *(Carya glabra)*. At the lower part of the ravines are sugar maple *(Acer saccharum)*, elms *(Ulmus americana, U. fulva)*, river birch *(Betula*

nigra), buckeye *(Aesculus glabra)*, and yellowbud hickory *(Carya cordiformis)*. The underlying herbs include trout lily *(Erythronium americanum)*, Dutchman's breeches *(Dicentra cucularia)*, bellwort *(Uvularia grandiflora)*, phlox *(Phlox divaricata)*, several ferns including the very common brittle fern *(Cystopteris fragilis)*, maiden hair fern *(Adiantum pedatum)*, broad beech fern *(Phegopteris hexagonaptera)*, ebony spleenwort *(Asplenium platyneuron)*, and many others. The present trees are similar in their distribution to that given by the surveyors in 1856 (Table 1).

Summary

1. The original and present vegetation of McDonough County, Illinois, is described. Data were secured by field observations, from histories of the county, from the survey records of 1856 which included maps of the timbered and prairie areas and lists of species of trees, and from soils maps. There was a close correlation between the soils of the county and the vegetation map of 1856.

2. A list of 52 prairie plants found in a relic area of prairie is given; 40 of these have been included by Sampson (1921) in the *Andropogon furcatus* association.

3. The distribution of common plants in a timbered area is described.

Literature Cited

Case, H. C. M. and K. H. Meyers. 1934. Types of farming in Illinois. Univer. Ill. Agric. Exper. Sta. Bull. 403. 226 pp.

Hambidge, G. (ed.) 1941. Climate and man. U. S. Dept. of Agric. Washington, D. C. 1248 pp.

Hopkins, C. D. et al. 1913. McDonough County soils. Univ. Ill. Agric. Exp. Sta. Soil Report No. 7. 46 pp.

Jones, G. N. 1945. Flora of Illinois. Monograph No. 2, Am. Mid. Nat., Notre Dame, Ind. 317 pp.

Laughberaugh, J. (Surveyor General). 1856. Field notes of McDonough County (Manuscript prepared in St. Louis, Mo.) On deposit in the courthouse in Macomb.

McLean, A. (ed.) 1907. Historical encyclopedia of Illinois and history of McDonough County.

Miller, R. B. and L. R. Tehon. 1926. The native and naturalized trees of Illinois. Nat. Hist. Survey. Bull. 18. 339 pp.

Sampson, H. C. 1921. An ecological survey of the prairie vegetation of Illinois. Nat. Hist. Survey Bull. 13: 523-577.

Telford, C. J. 1926. Third report on a forest survey of Illinois. Nat. Hist. Survey Bull. 16: 102 pp.

Vestal, A. G. 1931. A preliminary vegetation map of Illinois. Trans. Ill. Acad. Sci. 23:204-217.

Walters, J. S. et al. (ed.) 1885. History of McDonough County.

Wright, P. G. 1947. Prairies of McDonough County. (Unpublished report).