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Iowa State Conservation
Board, Pilot Knob State
Park

Iowa
City
Iowa
North

PILOT KNOB STATE PARK
MERRICK STATE PARK
EAGLE LAKE STATE PARK
RICE LAKE STATE PARK

AND

CRYSTAL, EAST AND WEST TWIN, AND
DUCK LAKES



Iowa
917.77
1092p
no.4

1925

Iowa
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I092p
no. 4

PILOT KNOB STATE PARK, MERRICK STATE PARK, EAGLE LAKE STATE PARK, RICE LAKE STATE PARK

LAKES IN WINNEBAGO AND HANCOCK COUNTIES

Publication of Park Booklet Series
No. 4.

H. L. TAYLOR, *Custodian Pilot Knob State Park*

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1911-SE-40

Pilot Knob State Park

MEMORIES

ALTA WOOD NELSON*

Cushioned in the lap of luxury, idly dreaming,
 The low drowsy hum of a swift running motor,
 Drops of rain glinting across the windshield,
 Swift gleaming lights rushing madly, blindingly towards us, lighting for a moment the raindrops falling on the black pavement, then passing ever so swiftly (and a sure hand at the wheel).
 I see again the low afternoon sun glinting through the cobwebby maze of little beard grass tinted a warm yellowish rose by the late frost;
 The dull rich coloring of a feather fallen from a cock pheasant's tail;
 Glimpses of an old ridge road winding through low growth of crab and scrub oak;
 The wine red tips of painted sumac limned against the gray of poplar thickets;
 The misty purple haze of distant hillsides;
 At the far edge of a marsh, a low spreading cottonwood, thickly twined with bittersweet, the bright orange-red berries standing out in high relief against a background of old gray oak, like pictures on old Japanese screens;
 Still ponds fringed with the dulled gold brown of sedges, catching and reflecting the glory of autumn clouds, deep dyed with the marvelous beauty of afterglow;
 And O, the joy of a wee violet a-bloom on a sunny slope with gay autumn leaves a-flutter in the lazy breeze of mid-November;
 The low, soft twitter of white throats feeding in the nearby thicket;
 The startled cry of a robin, then the still hush of twilight and the night falling softly, silently over the hills;
 Only a dream of autumn days passing swiftly by.

* After a visit to Pilot Knob State Park, November 20, 1924.

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PILOT KNOB STATE PARK

By L. H. PAMMEL

This wonderful park in Hancock county just south of the Winnebago county line is representative of one of the most interesting glacial geological areas in Iowa. It is well that such an area should be thrown open to the citizens of Iowa for their use so they can enjoy the wonderful panoramic view of northern Iowa and at the same time get a lesson in geology.

*The Pilot Knob State Park is four miles southeast of Forest City, eighteen miles northwest of Clear Lake, twelve miles northeast of Garner, twenty-eight miles northwest of Mason City and twenty-four miles west of Manly.

Highways. It is located one mile south of Primary Road No. 9, twenty-four miles west of the Jefferson Highway and four miles southeast of the Wilson Highway or Primary Road No. 15.

Forest City is midway between Des Moines and the Twin Cities on the Wilson Highway.

Within a radius of fifty miles there is a population of 190,000 in Iowa who can make use of this park for recreational purposes. Kossuth, Cerro Gordo, Hancock in Iowa furnish many of the visitors.

An early writer, speaking of Hancock county says: "It is watered by many small streams that meander through the grassy meadows like silver ribbons in an emerald setting, the largest being Lime Creek, which crosses the northeast corner. Several tributaries of the Iowa River take their rise within the boundaries of the county. There are several lakes, the largest being Eagle Lake, near the center, but the finest of all is Crystal Lake in the township of Crystal. These lakes generally abound in fish."

* This information was furnished by H. L. Taylor, custodian.



Photo by Elder Studio

FIG. 1.—PILOT KNOB IN WINTER

PILOT KNOB STATE PARK

Historical and Descriptive. The following is from an address delivered by the Chairman of the State Board of Conservation on Pilot Knob State Park when the park was dedicated on September 11, 1924:

"I have just seen some of the wonderful parks in Mackinac Island, Michigan, and Watkins Glen, New York, but I think these are no more wonderful than Pilot Knob in the heart of agricultural America. I am sure that I express to you the pleasure it affords the members of the State Board of Conservation and a representative of the Governor of Iowa, to be with you on this happy occasion. This park of 237 acres, situated in the highlands of northern Iowa, is unique among parks. A friend of mine, Mr. John R. Waller of Charles City, wrote me on January 10, 1921: 'This is the second highest point of land in the state, 1450 feet in altitude, and presents one of the very finest panoramic views in the United States. Viewed from every point of the compass there is spread out one of the most charming and extensive landscapes ever seen by human eye; a perfect Garden of Eden lying at their feet and extending for forty miles in every direction as far as the vision extends, showing to the astonished beholder one of the richest and best improved farming sections to be found anywhere under the sun. It is a sight unequalled by anything in the whole expanse of our great domain.' I have seen much of the United States and rarely can one see such a superb setting of rolling hills, little lakes, timbered groves and fertile farms in this truly great agricultural country. It occupies first place in the geological setting of middle America. It is superlative and now one of the great gifts of nature is forever to be set aside as a state park. The outgrowth of this park is the agitation made by such persons as Dr. Thomas H. Macbride, Dr. B. Shimek, Eugene Secor of Forest City, Mrs. C. H. McNider, Mrs. Ethel Thompson, Messrs. M. M. Thompson, E. J. Olson, W. R. Prewitt, Thorwald Thorson, Mr. John R. Waller and many other citizens of Hancock and Winnebago counties.

"Pilot Knob was dear to Mr. Eugene Secor, the horticulturist, lover of bees, poet and a great lover of the 'out-of-doors.' It was on the eminence 'Pilot Knob' that he received his inspiration to write the poem 'Pilot Knob.' The rolling hills, prairie, marsh and boulder that he could write in verse:

'Men digging from vale and plane
Viewed from this Knob, bare and ancient
Likewise shall pass, but thou wilt remain
Preaching the truth that we are transient.'

And how true it is. May the Knob never be tarnished by artificiality. Let it stand as a monument to the mighty action of the ice that swept over hill and dale. It was my pleasure to have known Eugene Secor soon after coming to Iowa, when I became connected with

* Bulletin Iowa State Parks, Volume 2, No. 5, page 6.

Iowa State College. He was one of the trustees and I mention this to show his many and varied interests in life. He was a lovable man of many human qualities. He loved the great out-of-doors, therefore the flowers, shrubs, trees and the busy bee were to him an inspiration. It is therefore fitting and proper that some part of this park should be connected with his name. I now dedicate the main highway in this park to Eugene Secor. This road will lead around the Knob and will be near Dead Man's Lake, which may also, if it seems wise, be called Secor Lake. The wooded tract contains the trees commonly found in this section of Iowa: white oak, red northern pin and bur oaks, basswood, bitternut, hickory, black walnut, elm, American elm, hackberry, butternut, black cherry, choke cherry, wild crab, plum, haws, and dogwoods. In the spring the woods are covered with hepatica, Dutchman's-breeches, wind flower, mandrake, blue and yellow violet. In the autumn and late summer goldenrods of various kinds, blue, white and New England asters; sunflowers, bonesets, Joe pye weed, jewell weeds. The little lake surrounded by glacial moraines contains wild rice, white water lily, spatterdock, arrow head, water plantain and at one time the red water shield. Here, then, we are trying to preserve the scientific in its flora and fauna, and the historic because there is an interesting legend connected with what is known as Dead Man's Lake. The historic features are of interest because during the pioneer times the timber was important to the early settlers who came here to get fuel and material to construct their houses. Long ago the big oaks, elm and basswood of the forest primeval were used. We now have a second growth. The forest problem is a pressing problem of the United States and we may well use areas like this for recreation and to demonstrate the value of reforestation to prevent erosion.

"The ten thousand visitors who were here last year amply testify to the value of this spot for recreation. The visitors came from many counties of Iowa and many states. This interest will increase as the state becomes older. The 'breathing spots' are becoming less and less all of the time

"From the scientific standpoint I mentioned some of the plants. The animal life is interesting. Once we had the wild turkey, ruffed grouse and prairie chicken and deer. They are gone. We still have some of the aquatic birds, the brown thrasher, robin, blue jay, whip-poor-will, mourning dove, owls and hawks. There are still brown squirrels, badgers and an occasional red fox, and muskrat. There should be more and we will have these when conditions have readjusted themselves.

"Not the least important from a scientific standpoint is the material brought here by the Wisconsin ice sheet. The wonderful Altamont moraine reaches its climax in this part of Iowa. Pilot Knob is the climax of the material left by the ice. Once a small bit of prairie, now overrun with hardy introduced plants. May it be restored. These morainic hills rise nearly 1500 feet above sea level. The glacier has left its impress on land adjacent to Pilot Knob, the

rolling hills, little lakes, groves and wonderfully fertile agricultural soil once largely a prairie teeming with its wonderful plant life like the lily, orchid, sunflower, meadow rue, aster, blazing stars and goldenrod. Its wild prairie animal life nearly all gone except the insects, a few small rodents and a few birds.

"This little sketch would not be complete without some reference to the history of the Pilot Knob Park movement. As early as April 26, 1919, the board considered the acquisition of the same, and again on September 5th of this same year. On December 13th of the same year this area was reported to the Executive Council for its favorable action. On August 1, 1920, a descriptive report of the area was filed by the chairman of the board and a resolution adopted by the board asking that this park be created. Some time earlier during the year a meeting of citizens was addressed on the invitation of Messrs. Thompson, Thorson and others to create an interest in the acquisition of the park. A meeting held in Ames on December 3, 1920, Thorwald Thorson, M. M. Thompson, Emery J. Olson and

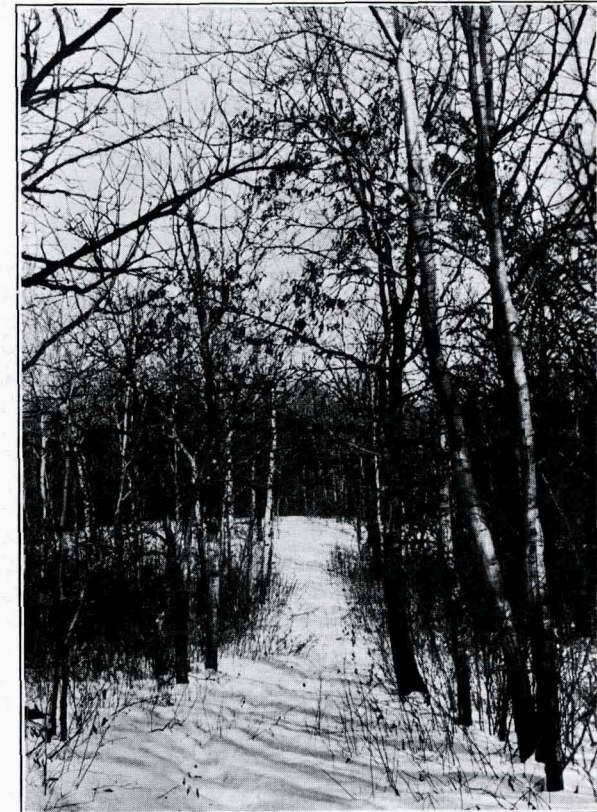


Photo by Elder Studio

FIG. 2.—THE OLD TRAIL, PILOT KNOB STATE PARK

O. E. Gunderson appeared before the board offering a considerable donation of money to purchase a part of the park tract. On June 18, 1921, the resolution of November 19, 1920, was set forth, stating that 120 acres of land would be donated by the citizens of Winnebago county to purchase the tract. The transaction completing the purchase of the tract was carried out in 1921 and Mr. H. L. Taylor was appointed custodian on May 9, 1922.

"I wish on behalf of the board to thank the generous citizens of Forest City who have made possible the creation of this park. The state owes you much and I assure you your hearty cooperation is appreciated.

"It is my pleasant duty on behalf of the State Board of Conservation to dedicate this park for the free use of the public, that its scientific and historical features shall be preserved forever. It is to be hoped that the distinctive scientific features may serve as a lesson in conservation."

These two counties in north central Iowa, of which Winnebago county forms the north boundary line of the state, are mainly prairie with scattered groves of timber giving a picturesque setting. These counties were but sparsely timbered, the most noted exception being the timber along Lime Creek, which has its source in the Little lake in southern Minnesota, and sluggishly flows through, for the first part of its course, a prairie territory. Southward more timber is evident and at and near small timbered streams like Pike Run and Bear Creek in Winnebago county which empty into Lime Creek. The stream flows southerly through a corner of Madison township and then southeasterly through Ellington township. The main stream, Lime Creek, then flows in an easterly direction through the northern part of Hancock county and here again the banks in many places, even before the early settlement of the county, were covered with a growth of fine trees. The stream flows easterly into Grant township of Cerro Gordo county and northeasterly into Fertile township of Worth county where it receives the drainage water of a number of the following streams: Willow Creek, which drains Clear Lake in Cerro Gordo county, and a number of smaller streams of the same county; Beaver and Winas creeks are part of the drainage system of Lime Creek. These small creeks, and other small tributaries, drain the peat bogs of Fertile township and Silver Creek drains those of Madison township and Lake Edward in Crystal township of Hancock county. The peat bogs are especially abundant in the northeastern part of Hancock county and southwestern Worth county.

Commercially, this peat is worth considering. Dr. S. W. Beyer, who made an exhaustive report on the peat beds, has described this peat. An account of it will be found elsewhere.

Eastward as the drainage becomes more mature the peat bogs are less frequent and a large lake, Clear Lake, one of the most interesting of Iowa, drains into Willow Creek and thence into Lime Creek.

HISTORY OF HANCOCK AND WINNEBAGO COUNTIES

By L. H. PAMMEL

In the early days the territory now constituting the counties mentioned above was part of the Winnebago neutral ground. Portions of three tribes lived in this region in harmony. These were the Winnebagos, Musquakies and Pottawattamies. The Indians could fish and hunt in this region to their hearts' content without molestation. Whether the great Indian chiefs Winneshiek and Omanoka (Wanoaker) were in this county is not known to the writer; probably, however, they were. It was not until after the Civil War that there was a considerable influx of the settlers into the territory.

Hancock County. The first settlement in the county was made on September 9, 1854. Mr. Anson Avery and his wife located in what was known as Upper Grove, where he built a log cabin and broke the first land in that county. It is now known as Avery township. George Nelson and his family came in October of the same year, settling near the Avery farm. However, it is stated that Mr. Nelson, with C. D. Philo, spent the winter of 1853-54 trapping and hunting in the region.

There were no other settlers in this region until the spring of 1855, when Malcolm Magill, Thomas Magill, Orich and Reuben Church, and Benoni Haskins also settled in Upper Grove township, while John Maben settled in Madison township and Jacob Ward in Ellington township in September, 1855. This township was visited by a severe cyclone in June, 1881, which destroyed many of the trees and buildings. This is the township in which Pilot Knob State Park is located. Bernard and Andrew Bolsinger came to the same township in December, 1855. Two frontiersmen, Jacob and Harrison Rice, came to the same township but they were not permanent settlers, their claim having been sold to John Maben. Thomas Bearas, a trapper and hunter, settled in Madison township in 1855 and later moved to Winnebago county. More settlers came in 1856-57. At first Hancock county was attached for judicial purposes to Webster county and this arrangement continued until 1857 and the first half of 1858. When there were enough residents in the county it became attached judicially to Winnebago county.

During the spring of 1858 an application was made to Judge Robert Clark, county judge of the latter county, to give Hancock county authority to organize separately and elect its officers. The first election was held on June 20, 1858, and it is interesting to observe that only twenty-two votes were cast. The officers elected were M. P. Rosecrans, county judge; George Louppe, clerk of courts; Benoni Haskins, sheriff; Reuben Church, treasurer and recorder; G. R. Maben, superintendent of schools; C. R. Wright, surveyor; C. J. Bonar, drainage commissioner. Evidently the early

pioneers recognized the fact that if Hancock county was to do anything agriculturally considerable must be done in the way of drainage.

The county business was transacted at Upper Grove, Ellington, or wherever the county officers happened to reside. However, on the 4th of November, 1858, John J. Popejoy and James Goodwin were appointed commissioners to locate the county seat, and they selected Section 31, Township 96, Range 23, where the old town of Concord now is located. Said land was donated to the county by Truman Seymour of New York. An interesting point in connection with the early history of Hancock county is the fact that Hon. W. P. Hepburn, who later served in the Civil War and was a distinguished congressman from southwestern Iowa, was employed by Hancock county to look after the interests of the county in Washington in connection with the swamp and overflow land.

In 1865 there were only two frame edifices 16x24 and 9 feet high. This constituted the courthouse at that time. The cost was two thousand dollars. During the year 1867 Mr. Maben built a courthouse costing nine thousand dollars and with all good equipment ten thousand dollars. The erection of this courthouse was voted at a special election and this item is rather interesting because in 1864, when the county court was selected at Concord, the county had only three hundred and fifty inhabitants. The new county seat was located on November 4, 1865, and the courthouse built and completed in 1869. The first term of the circuit court was held at Concord on June 11, 1869. The actual settlers along Lime Creek and Upper Grove, fifteen years after the first settlement, were only five hundred.*

Not a store was within the limits, the nearest market being thirty or forty miles away. The first county superintendent of schools was G. R. Maben. He was elected in 1858. Other early superintendents were Charles Gillespie, Charles Church and James M. Elder who followed each other. This county seems to have been particularly fortunate in its election of county superintendents. Among the list of state superintendents in 1873 we find the name of Alonzo Abernathy,** soldier, legislator, educator, graduate of the University of Chicago, who made a number of historical contributions.*** Later A. M. Deyoe was state superintendent of public instruction, having previously served as county superintendent of schools of Hancock county and also a school teacher at Britt.

The first school was taught by C. D. Pritchard, in the spring of 1857, in section 29, and the second by James M. Elder. The latter was the first settler in Concord, arriving there in December, 1865. The Elder family afterwards became quite conspicuous in the history of the county. One member of the family was greatly inter-

* Some of these items have been furnished by Peter Gilbert of Garner.

** Member of House of Representatives, 1866; principal of Des Moines College 1870-1871; superintendent of public instruction 1872-76; president Chicago University 1876-78; regent of University of Iowa 1890-1909.

*** Annals of Iowa 3rd, series 7, page 431.

Albert M. Deyoe . . . principal at Garner, four years; superintendent at Britt, nine years; county superintendent of Hancock county, nine years.

ested in horticulture and to him the county is indebted for the introduction of many ornamental shrubs, trees and fruit trees. He lived at Concord—a fine gentleman of the old school of pioneers.

Mr. A. D. Hiams erected a grist mill on the Iowa River in section 30 in 1873. This was long after the first settlements in the county. The first pioneer postoffice was at Upper Grove or sometimes called Amsterdam Village in Avery township. This was established in 1857. The first postmaster was Benoni Haskins, who laid out the town of Amsterdam in 1858. The houses were erected from lumber obtained in the vicinity. Probably all of the original trees of the Pilot Knob area were used for the construction of the pioneer homes in Ellington township.

The first building erected in Britt was the depot of the Chicago, Milwaukee and St. Paul railroad in 1870, but the town itself was not laid out until 1878. The Minneapolis and St. Louis depot was erected in 1880. It is the home of our present governor, John Hammill.¹ Garner was the former home of W. C. Ramsay.² The postoffice was established in 1870. It became the county seat. Garner was laid out in 1870 when the Chicago, Milwaukee and St. Paul Railway came through the town. The postoffice was established the same year. The town was named after one of the railroad officials. The present county seat was located in Garner after the Chicago, Milwaukee and St. Paul Railway came through the present site and the present courthouse was built in 1899 and occupied in 1904.

Of the late members of the legislature mention may be made of E. P. Healy³ and Senator Wichman.⁴

During the early pioneer days only the higher and well-drained land was used for agricultural purposes. It was not thought possible to make use of the swampy areas for cultivated crops. These prairies produced an abundance of fine hay and during the late seventies and early eighties the business of baling hay and shipping to Chicago markets was an important industry in Hancock county. Even then much of the hay remained uncut because of some four thousand acres of peat land in Hancock, Worth, Cerro Gordo and Winnebago counties.

Winnebago County. Winnebago county is the middle of the northern tier of counties in the state, bounded on the north by

¹ John Hammill.—Governor of Iowa, was born at Linden, Iowa county, Wisconsin; moved with his parents near Britt, Hancock county, Iowa; graduated from Britt high school, 1895; from the law department of the University of Iowa, 1897; practiced law in Britt, Iowa; elected county attorney in 1902, serving two terms; member of the state senate, 1908; lieutenant governor, 1920 and 1922; governor of Iowa since January, 1925.

² Walter C. Ramsay.—Secretary of state, was born in Ford county, Illinois, of Scotch parents; educated in common schools; in 1895 located at Garner, Hancock county, Iowa, where he taught in country schools; chief clerk of the Iowa house of representatives in the thirty-sixth, thirty-seventh and thirty-eighth general assemblies; appointed secretary of state in 1919; elected for the full term in 1920; re-elected in 1922.

³ Edwin P. Healy.—Representative from Hancock county, was born at Greenwich, O.; educated in common schools; station agent for the C., M. & St. P. railroad at Britt, 1879; engaged in banking business in 1890; vice president of Commercial State Bank of Britt; representative, 1920 and 1922.

⁴ John E. Wichman.—Born at Galena, Illinois; educated in public schools and Northwestern German English Normal School; removed to Hancock county, 1879; admitted to the bar, 1881; lawyer and banker; elected representative from Hancock county, 1916 and 1918, Thirty-seventh and Thirty-eighth General Assembly; Senator Thirty-ninth General Assembly.

Minnesota and the east by Worth county; on the south by Hancock and on the west by Kossuth county. It contains an area of about 400 square miles. The boundaries of the county were established by the legislature of Iowa during the legislative session of 1850 and 1851 and named after the Winnebago Indians, who at one time occupied the neutral ground of northern Iowa. Prior to 1851 this county was a part of Fayette.

At the session of the legislature in 1850 and 1851 it was attached to Polk county, in 1853 it was attached to Boone county and remained a part of that county until July 1, 1855, when it was attached to Webster and so remained under the judicial control of the latter county until the fall of 1857 when an election was ordered and the county organized. The following officers were elected: County judge, Robert Clark; treasurer and recorder, C. H. Day; clerk of courts, B. F. Denslow; sheriff, J. S. Blowers; superintendent of schools and surveyor, C. S. Scott; drainage commissioner, Darius Bray. The commissioners appointed to locate the county seat selected Forest City.

Early Settlement. Long prior to the settlement of the region this area was the hunting ground of the Winnebago Indians. As early as 1853 Leander Farlow and several companions came into the territory to hunt and trap. This was likewise true in 1854 and 1855 when Philip Tennis and several others visited the region. These travelers passed through the country in search of game.

There is some question as to who was the first settler in the county, but it is generally conceded that Thomas Bearse was the first to bring his family into the county,* which was in the spring of 1855, about three-fourths of a mile east of Forest City on Lime Creek. G. W. Thomas came in the spring of 1855, settling north of Rice Lake about a mile southeast of Lake Mills, and Wm. Gilbert also came the same spring. John Maben settled on the southwest quarter of section 25, township 98, range 24 and remained several years, then moved to Hancock county. John Gilchrist settled on the same range and township and section 26. The number of settlers was increased in 1856. Robert Clark located the land where Forest City now stands and laid out the town. It is interesting to note that the settlers came from New York, Indiana, Ohio and Maine. Of the other early settlers mention may be made of A. T. Cole, L. Hitt, Ira Plummer, Thomas Andrews, Wm. Lackore, Martin Bumgardner, and Wm. Porter. Joshua Thomas settled on the shore of Rice Lake in 1855.

The Norwegian settlement began in 1856 when some nine families settled in the northeastern part of the county. They have been a tower of strength to the community. Mention may be made of a few: Albert Peterson, H. J. Knudson, Chris Anderson, Louis Nelson. The second influx of Scandinavians came in 1865. The Scandinavian population is represented by people who originally came from Norway, Sweden and Denmark. Norway contributed the

* For details of the history of Winnebago county see history of Kossuth, Hancock and Winnebago counties, Iowa, Springfield, Illinois. 1884.

largest proportion of this population. The population in 1865 was 298; 1869, 1072; 1870, 1572; and 1880, about 5000.

The first death occurring was that of Mrs. Louis Nelson in 1857. The first child born was George R. Blowers in 1857. The first church organized in the county was the Methodist Episcopal and the first minister was Reverend Hankins. The first schoolhouse was built in 1858 and the first school was taught here by Sarah Beadle. Robert Clark was the first postmaster at Forest City and this was established in 1857. The first cabin erected was by Philip Tennis in 1854, about one-half mile from Forest City. The first sod turned was by Thomas Bearse, and John B. Gilchrist made the first land entry. The first Fourth of July celebration was in 1858 and the officer of the day was Charles R. Wright.

Early Times. David Secor in a reminiscence tells us that in June, 1859, in company of John Lamm, he started on foot from Mason City to look over the land of the county. Forest City at that time was known as Pucker Brush. Mr. Secor made his return to Mason City by constructing a raft made of walnut and butternut boards from the sawmill on Lime Creek. This raft contained about 3000 feet of lumber. It took two days to reach Mason City, where the craft was shipwrecked on a rock. The sawmill used the trees found on Lime Creek and Pilot Knob. The lumber cut by this sawmill was used for buildings, tables, benches, etc.—all the pioneer furniture was home made. The first sawmill erected at Rice Lake in 1864.

During the time of the early settlers, the Winnebago Indians were quite numerous and the Sioux Indians occasionally made a visit. The Indians did not entirely leave the country until 1862. During the Spirit Lake massacre, which news came to Forest City by way of Minnesota, the settlers were considerably alarmed. Mr. Secor tells us that the nearest flour mill to Forest City in 1857 was 100 miles away at Cedar Falls. The early settlers had to go to Mason City for their mail and previous to 1860 the nearest market for grain and pork was McGregor and Dubuque. Wheat sold for forty cents a bushel and dressed pork for two cents a pound.

Railroads. There are three railroads in the county. The Chicago and Northwestern which goes through Lake Mills was completed during the last quarter of the last century in 1899. The Burlington, Cedar Rapids and Northern, first known as the Burlington and Cedar Rapids and Minnesota, was afterwards leased to the Chicago, Rock Island and Pacific. This road was surveyed in the fall of 1870. The county entered into a contract with the railroad that it should receive a 5 per cent tax on all taxable property for the year 1871 in the townships of Forest, Center and Iowa, and a bonus of \$10,000 provided the road was completed by January, 1873. The road, however, did not push its work and the matter was dropped. Later, in 1881, a Forest City railroad project was organized. This road purchased the grade of the Iowa-Minnesota Railroad, which extended northwest of Forest City and southeast to Garner. The next railroad, the Iowa and Minnesota Railroad, which later became the Minneapolis and St. Louis, was organized in Fort Dodge, Webster

county, with John F. Duncombe as one of the prominent promoters. The grading of this road to Forest City was completed during the summer of 1873. The county in 1878 voted a subsidy of \$50,000 for the building project of the Minnesota and Iowa Southern Railway Company. The directors of this road were mostly Forest City people, and among the directors occur the names of J. Thompson, David Secor and J. W. Mahoney. About this time, 1878, negotiations with the M. and St. L. Railroad were entered into and this company agreed to take the former road and complete the construction provided it received a free right of way and that the subsidy would be turned over to them, which was granted accordingly. In 1879 the home company was reorganized with John Martin of the M. and St. L. Railroad president, David Secor vice president and Jasper Thompson treasurer. The new company, M. and St. L., therefore controlled the new railroad, which was completed in 1879. The first railroad train was pulled into Forest City on the 3d of December, 1879.

Game. Game was abundant during the early days. Mr. Secor relates the incident that prairie chickens could be seen by the hundreds in the region, that they destroyed the buckwheat crop in 1862 in the vicinity of Forest City. It was nothing uncommon to shoot nineteen or twenty prairie chickens in a short time and ducks were abundant on Lime Creek. The story is also related that Mr. Amos Chilson in the early 60's found a den containing seventy-three good sized snakes. Mr. Bearse, who built a log house on the east side of Lime Creek in May, 1854, had an encounter with a bear on what is now known as Bear Creek. So that bear must have been common in this region; at least, Mr. Bearse saw three on the afternoon he was out. Deer were also plentiful in the region. Mr. Bearse and Mr. Thomas had as many as 300 hanging up in the woods one winter. The deer were killed for their skins.

Indians. When the first settlers landed in Winnebago county, and for several years later, several bands of the Winnebago Indians made this their hunting and trapping grounds. The number varied greatly, sometimes numbering 100. Mr. Secor says: "During the summer they would bury their pots and kettles in the ground and, leaving their tepees standing, would go north into Minnesota to hunt, and return in the fall laden with the spoils of the chase. They were, however, meddlesome and inclined to thievishness and often caused the settlers much annoyance."

SCIENTISTS AND LEGISLATORS

Winnebago county has produced a number of scientific men. Of these we may mention Dr. Rudolph M. Anderson,¹ Canadian Geological Survey; Dr. A. L. Bakke,² botanist, Iowa State College; Carl D. La Rue,³ botanist, University of Michigan; Representative J. H. Anderson⁴; Howard W. Byers,⁵ former attorney general and speaker of the house, lived in Hancock county; and Senator Gunderson.⁶

DEAD MAN'S LAKE HAS OWN INDIAN STORY

By W. R. PREWITT

Within Pilot Knob State Park is a beautiful little lake with several points of distinction, the least of which comes from the legends which pertain to its name, "Dead Man's Lake."

The lake originally spread over about two acres; in fact, was of that area at the time it is supposed to have been given its weird name. Now, since the coming of the white man, natural surroundings have changed and about half of the lake is covered with moss and peat. However, the open water, on the edge of which grows a rare pond lily, is of sufficient size to retain its name and attract many sightseers.

It is stated on good authority that the lake has no bottom* at its center, that a great funnel-like hole contains this water, the source

¹ Rudolph M. Anderson, zoologist; born at Decorah, Iowa; graduated from Forest City high school and Iowa University; Ph.D., 1906; connected with the museum staff of Iowa University and that of the American Museum of Natural History, New York City; member of the Stefansson-Anderson expedition of the American Museum of Natural History to arctic regions, 1908-12, and of the Canadian arctic expedition, 1913-18. Member of a number of scientific societies, an author of numerous scientific papers, and actively interested in the conservation of wild life. Zoologist in charge of mammals, National Museum, Canadian Geological Survey, 1913—; acting chief of the biological division of the Survey 1920—.

² Dr. A. L. Bakke, professor of plant physiology, Ames, Iowa; born Fargo, N. D.; removed to La Crosse, Wisconsin, and later to Forest City, Iowa; graduated from Iowa State College; Ph.D., Chicago University, 1917; since 1910 has been on the botanical staff of Iowa State College; member of several scientific societies and has published numerous scientific papers.

³ Carl D. LaRue, botanist; born at Williamsville, Illinois; graduated from the Waldorf College, Forest City, and from the University of Michigan; in 1917 went as botanist for the American Rubber Company, located on the island of Sumatra, Dutch East Indies; has recently returned to the University of Michigan.

⁴ Joseph H. Anderson.—Representative from Winnebago county, was born in Winnebago county, Iowa; graduated from State Teachers' College, Cedar Falls, Iowa, in 1898; taught school, then engaged in farming; clerk of the district court of his county, 1905-13; elected representative from the ninety-fifth district in 1914, 1916, 1918, 1920 and 1922; speaker of the fortieth general assembly.

⁵ Howard W. Byers.—Formerly attorney general of Iowa, was born at Woodstock, Wisconsin; spent early days in Wisconsin; then on farm in Hancock and Kossuth counties, 1873-1876; went to Nebraska; came to Shelby county, Iowa, in 1878; admitted to practice law in June, 1888; located in Harlan, Shelby county, Iowa; representative from Shelby county in the twenty-fifth, twenty-sixth regular and extra sessions, and twenty-eighth general assembly; speaker of the house of the twenty-sixth regular and extra sessions; attorney general of Iowa, 1907-1910; corporation counsel of the city of Des Moines, 1911-1920; now in private practice in Des Moines.

⁶ O. E. Gunderson.—Senator from the forty-first district comprising Mitchell, Winnebago and Worth counties, was born at Kensett, Iowa; educated in rural schools, Northwood high school, St. Ansgar seminary and Institute, and Northern Illinois Normal School; county superintendent of schools of Worth county, Iowa, nine years. Connected with the Forest City National Bank twelve years; served at different times as city clerk, councilman, president of the Forest City Library Board, and elected Senator in 1924.

* This is a common belief, but there is no foundation for it.

of which is hidden. This cannot be vouched for in this article, but certain it is, and can be attested to by all who know the locality, that the supply of water is not affected by drought, and neither is it raised or lowered by local rainfalls, but remains at the same level year in and year out. The fact that nature placed this little lake high up above the surrounding country, with neither inlet nor outlet, so far as the water supply is concerned, is a marvel for geological study.

There is something weird about the surroundings of the lake; something that is "creepy" and awe inspiring, as the evening comes on; perhaps more so some years ago before it was included in a state park, and before it became a rendezvous for picnic parties. There is yet a weirdness about the surroundings that make people hesitate to remain there over night, in spite of the fact that it is more or less of a resort during all the summer days.

There are many different stories of how the lake got its name, most of the tales familiar in north-central Iowa, but the following story is probably the authentic one, and it has only recently been verified and withdrawn from the veil of secrecy which has shrouded it for years.

Dead Man's Lake was named, and the occasion for it being so named, was before the advent of the white man in this section. It is an historical fact that the Indian tribes had made this spot their headquarters for many, many years, but had abandoned it a few years before the first white man came up the Winnebago River. However, they did return occasionally to this particular spot, and later many of the first settlers remember these pilgrimages.

The first white man who followed the winding course of the Winnebago River (more lately dubbed Lime Creek), to a point south of Pilot Knob, visited the spot because it was the highest of the range of hills in the section, that he might get a better view of the unknown wilderness that swept on and on before his view to the north and west. From the height of Pilot Knob, he discovered the little lake nestling high upon the lower surrounding hills, and marveled that such a body of water should be located at the apparent high elevation. When he visited the lake he also discovered that it had but one lone inhabitant—an old Indian who proved to be a permanent fixture there. By patient exchanging of signs and by diagrams in the sandy soil on the lake bank, this white man learned much of the lore and history of the country, the tribe to which the old Indian belonged; and also that the lake was known as "Woetg la Las Joui Olu," meaning the "Lake of the Dead Man." His tribe had left him there and named his abiding place the "lake of the dead man," because he was dead so far as his tribe was concerned. The old fellow had been disappointed, so it was learned, when he had mixed in the tribe's politics, and became soured—like some white men do after they have been disappointed in politics, or betrayed by their fellow politicians—this old fellow had wanted to be head-pusher in dispensing powdered roots and herbs and mixing medicine for his tribe. His disappointment had led him to cease mingling

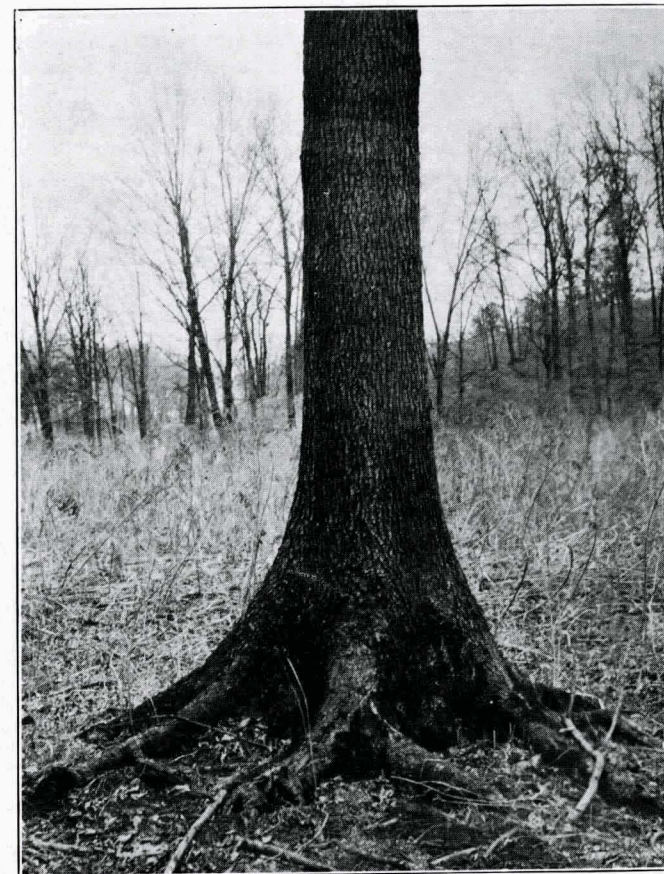


Photo by H. I. Featherly

FIG. 3.—THE HACKBERRY

with his tribesmen, and shortly afterwards when the Indians moved west, he refused to go with them.

At any rate he stayed at the lake—it may have been that he loved the dear old spot and reluctantly would leave it. Then it was his Indian tribe named the locality the "lake of the dead man"—present day slang would have said "lame duck." The one most peculiar incident in the finding of this lone Indian here by the first white man was that he was living in a neat little log cabin just above the lake and to the north about two rods from the water line. It is said by some that this same log cabin is the one that now stands some ten rods north of the lake, but the truth of this is not vouched for in this article.

Here he was living when the first white man came. Here he stayed and apparently never left his solitary retreat. Just east of his wonderful log cabin, in the hillside above the lake, was the opening of a large cave, a natural opening that had been formed during some early period—perhaps during the period when the “Wisconsin drift” covered this section—into which he made his daily pilgrimages, the reason for which no white man ever knew. And neither did white man ever set his foot within the cave. When this Indian died, a year or two after the coming of the first white man, his body was taken into the cave by the returning members of his tribe and buried. In leaving the locality the Indians obliterated the opening to the cave and its exact location has never since been discovered to a certainty. For many years after there was an apparent indication of such a cave on the hillside east of the lake, but of recent years it has wholly disappeared; and a few years ago when some men tried to find the opening they were unsuccessful. The state now refuses to allow any digging or prospecting for the old natural cave.

That is how “Dead Man’s Lake” got its name.

ANCIENT IOWA FIELD OF BATTLE NEAR PILOT KNOB

BY ARTHUR GOSHORN

The traveler who has trekked across the state from east to west on Iowa’s northernmost highway will remember the rolling hills that lie in the north-central portion of the state. They rise at the foot of Pilot Knob, and are seen ranging away far to the east. In places they are rough and broken, stone-covered and timber-clad, with forests of native oak; but as they roll away to the eastward their rigorous aspect gradually disappears.

The lofty timber takes a sparser growth on each succeeding slope, and sharp, stony ridges grudgingly give way to smoothly rounded knolls that break and spread and broaden into a high, level upland plain on the brink of the Lime Creek valley. The region is one of the state’s most rugged spots, and has been aptly named “The Highlands of Iowa” by Dr. Pammel, of Ames.

Many, many years ago the rolling hills were the chosen haunts of the Winnebago Indians. At peace with the whites, between them and the Sioux there existed for years the most bitter animosity. Clashes between the two tribes, so the early records show, were frequent and bloody and finally culminated in open war, a war of savagery and barbarism followed by pestilence and famine, grim vestiges of which remain to this day in the lands of the rolling hills.

The first or opening battle of the war between the Sioux and the Winnebagoes was staged in the north Iowa highlands at a point where the hills begin to break and creep out over the southern slope of Worth county, six miles east of Pilot Knob and near the village of Fertile. It is known in Indian tradition as the battle of Shungkahdah, and, while the early historian has failed to record it in the annals of long ago, its story is written on the battle ground in cold letters of flint, chert and obsidian.

Fortunate indeed is the traveler who has time and inclination to tarry for a day in the rolling hills and read at first hand the story of this thrilling drama staged by the savage men who fought hand to hand with clubs of stone, for there, in rich profusion, he shall see the relics of primordial war.

Possibly nowhere in the United States will the traveler find another spot so rich in stone relics of the American Indian as on the old battlefield of Shungkahdah. Within an area of less than 300 acres collectors and connoisseurs of

savage art have found more than 6,000 perfect arrowheads, darts, axes of porphyry, war clubs of feldspar, greenstone and chert. Besides these perfect specimens, almost a like number of imperfect ones or culls have been found in close proximity to the battlefield.

Apparently shot from the taut string of powerful bows, large numbers of arrowheads lie buried to a considerable depth in the lush black loam soil and every spring when the snow has melted on the battlefield the alternate thawing and freezing and heaving of the frost tends to lift them to the surface where, when the summer showers have washed the hillsides clean, they are readily glimpsed by the keen eyes of the connoisseur.

On the extreme eastern margin of the field, at a point once covered with a dense growth of underbrush and small trees, rows upon rows of arrowheads have been found, all pointing to the northeast. With a few exceptions, they are of the whitest Wisconsin flint, the favorite stone of the Winnebago lapidarist, and were, no doubt, brought from that state which was the original range of the early Winnebagoes. Perfect in contour, needle-pointed, and with serrated edges competent to pierce the body of a horse and rider alike, their workmanship is a high tribute to savage skill. Their position in even rows in the soil would indicate that they have been shot in whistling volleys by the Winnebagoes from a point to the southwest; and that the Sioux warriors were fighting under cover of the leafy ambuscade, there cannot be the shadow of a doubt. And thus by the same token, there is lucid proof that the arrows so plentifully strewn over a portion of the western half of the field were shot from the bowstrings of the stealthy Sioux.

For here, unlike those found in and about the timbered portion of the eastern part of the field, the arrowheads do not lie in rows, but are scattered about as if shot at random or by desultory firing. For the most part they lie with the point toward the southwest, showing that they were shot from the direction of the thicket where the Sioux are believed to have been in ambush. With a very few exceptions, all those known to have been found on this part of the field are of almost transparent chalcedony, a stone highly prized by the Sioux arrow-smith of a hundred and fifty years ago.

PILOT KNOB STATE PARK, FOREST CITY

J. H. LEES, Iowa Geological Survey

If one would understand the geologic features of Pilot Knob Park he must first learn the outlines of the history through which those features have passed. This history is confined entirely to the glacial or Pleistocene (ei sounded like long i) period, except, of course, that older rocks form the foundation on which the materials of Pleistocene age rest. This means, then, that the Knob and its neighboring eminences are built entirely of glacially carried materials. It owes its existence to the work of the great continental ice-sheets which crept out from the far north in the ages long past. But the glacier which shaped the great mounds of Pilot Knob Park was not the first of the series but rather the last. At least two of these glaciers had invaded the upper Mississippi valley with their icy battalions, burying the region for many years under their heavy mantles, then melting away under the increasing warmth of the recurring interglacial climates, leaving the loads of clay and sand and boulders which they had gathered in their journeys spread out as a layer of glacial drift, subject to all the action of the weather and the wash of streams. During the period in which these agencies

were dominant another glacier had invaded southeastern Iowa, but had failed to reach our area, and a fourth had covered much of the northeastern parts of the state and quite possibly had extended westward beyond the Pilot Knob region. There is little evidence at the surface regarding the sheets of drift left by the older glaciers and as all the streams are small and their valleys immature they do not reveal much of the underlying formations. Some of the deeper wells go down into a "blue clay" or a "hardpan" which in most cases represents the older glacial drift. But the surface materials and the present-day topography are due almost entirely to a later agent.

This agent was the last of the continental glaciers, the one known as the Wisconsin, from the fact that its drift sheet is well displayed and has been thoroughly studied in the state of that name. The glacier extended west across Minnesota and into the Dakotas and sent down a broad lobe into central Iowa between the present sites of Clear Lake and Storm Lake—both of which owe their existence to its marginal deposits—and as far south as Des Moines. Of course, the ice buried the old lands, covering valley and plain alike, and when it melted away it left a layer of clay and sand and pebbles and boulders which had for the most part filled the depressions and thereby transformed a rolling hilly country into one which was, and still is, in many localities, as level, or as gently rolling, as the surface of the summer sea. Some of the boundless plains of north-central Iowa today bear witness to the smoothing effect of this type of glaciation as contrasted with the rough mature style of topography shown in the southern counties of this state, where weathering and erosion have so long been effective.

But not everywhere nor always does the glacier leave its load as a mantle smoothly spread out. It will be understood that when an ice sheet is advancing it picks up such material as it finds loose to hand or can pluck from the bed rock and either incorporates this into its own mass or carries it along at its base. Then as the ice melts away, if its margin retreats at a fairly uniform rate as the climate gradually becomes milder, this load of detritus likewise will be left spread out on the surface as a fairly smooth blanket.

It sometimes happens, however, that an unusually cold or snowy winter, or a cool summer or a succession of such events will stop this regular and well-ordered retreat and put new heart and life, as it were, into the ice king's legions and for a time the retreat of the glacier's margins may be halted or there may even be a temporary advance. Such happenings have been noted many times in the modern glaciers of Alaska and Greenland and the Alps. Since the main body of the ice is advancing and bringing forward new supplies of drift material, as this reaches the nearly stationary margin it is dumped in great piles when the ice melts away. This dumping and heaping is aided by the streams which issue from under the ice and themselves are loaded with silt and sand. If the margin stands in the same general region for some time it may form a great range of irregular hills and hollows which stretch for miles

across the country, roughly parallel with the outer margin of the drift sheet. A number of these ranges, or moraines, as they are called, mark successive halts in the retreat of the Wisconsin glacier across north-central Iowa. One of the smaller of these has been called the Camp Dodge moraine. The Gary moraine, one of the most prominent of these glacial ranges in central Iowa, stretches nearly across the width of the Wisconsin drift sheet and is crowned by such great eminences as Mineral Ridge and Pilot Mound of Boone county. Several other more or less well defined moraines are present in northern Iowa and form the setting for the lake regions such as the Okobojis, Lost Island Lake, Clear Lake and many others of lesser renown. One of the best known hills among these moraines is Ocheyedon Mound in Osceola county, famed as being one of the highest points in the state, 1670 feet above the sea.

But unquestionably the finest of all these glacial mounds and, indeed, one of the most noteworthy in the whole upper Mississippi valley is Pilot Knob in Hancock county, with its associated and only slightly less elevated neighbors. It is not the highest point in the state (it stands 1450 feet above sea level), but yet it rises above the surrounding plains higher, probably, than any other similar hill in Iowa. Its summit is three hundred feet above Lime Creek, which flows at its southern base, a distance greater by half than the height of Ocheyedon or Pilot Mounds. It stands not alone in solitary grandeur, as do these others just mentioned, but is bordered to the west by a group of other great "mountains of the prairie" which give opportunity for a diversity of topography which is not possible with one such hill alone. Thus, to use President Macbride's eloquent phrases: "Between lie mountain meadows, as typically such as if the mountains really rose around us; sedgy bogs girt around by the white ranks of the aspen, walled in by impassable ridges. A tiny lake, Dead Man's Lake, lies to the south two hundred feet above Lime Creek, fed by springs, cold and clear, in summer decked by water lilies and all forms of northern aquatic vegetation, but the knob is nearly a hundred feet above us still."

But it is not alone the topography which gives this region so commanding a place among Iowa's scenic spots. Unlike many of the great glacial mounds, these in Pilot Knob State Park glory in a carpet of verdure which adds the crowning feature to one of the marvelous types of nature's handiwork. Not only the sedgy bogs and and lily spangled lakelet, but also forests of the greater trees, oak and ash, linden and hickory, lend themselves to the beautiful landscape. These diminish toward the top of the Knob and leave the summit windswept and bare, affording opportunity for a wonderful panorama, especially to north, south and east, where the surface drops directly to the glacial plain. From the summit, then, one may view a typical glacial topography, as discussed above, unchanged, essentially, by post-glacial activities of weather and water. The plain is practically as level as the ice-sheet left it; the streams still flow in shallow trenches, perhaps relict of a former topography, or across swales in the glacial plain; even the great hills themselves

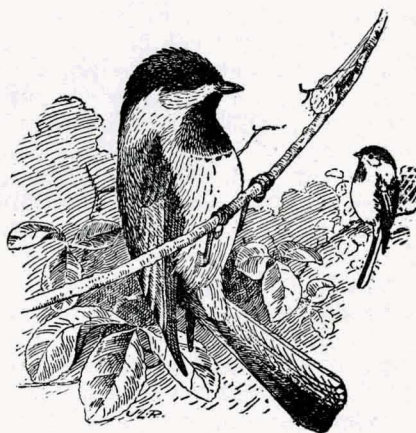
stand practically as they appeared at the close of glacial time, some thousands of years ago. The plain, as will be understood from what has gone before, is built up of intermingled clay and sand and coarser materials. The hills consist of the same indiscriminate mass with here and there pockets of gravel which were sorted out by the waters coming from the ice front.

We have outlined in some detail the history and work of an ice-sheet because a knowledge of the building of Pilot Knob and its fellows will make plain the history and character of many of those features of Iowa topography which trace their origins to the great glaciers. Knowing one we will be in better position to know all and to appreciate in some measure the interest and importance of that remarkable stage of earth history which we know as the Glacial Period—the Great Ice Age.



U. S. Dept. Agr.

FIG. 4.—BLACKBIRD



U. S. Dept. Agr.

FIG. 4A.—BLUE BIRD

FORESTRY NOTES FOR PILOT MOUND AREA

By DR. THOMAS H. MACBRIDE

The forest area in these counties was originally, and has been until recently, rather larger than usual in prairie counties. Especially is this true of Hancock and Winnebago. In the latter the greater part of the eastern townships was originally covered with forest trees and until comparatively recent years the same region has been more densely and extensively occupied by young native forest, the so-called "second growth." The same thing was true of a large part of Forest township and of Newton township, and there was native wood about Lake Harmon, and perhaps one or two other native groves were known to the pioneer. In Hancock county, Ellington township, with the southern slopes of Pilot Knob and the banks of Lime Creek, were all extensively wooded country, and na-

tive groves were found all along the Iowa river in Avery township and about Amsterdam. There is still a native grove at Twin Lakes and one in section 11 of the township of the same name, and another at Crystal Lake. The latter is now, in part, a park. In Kossuth county the native woods were limited pretty nearly to the valley and flood plain of the Des Moines River, particularly below the point where the tributaries, Black Cat and Plum Creek, enter. The list of species represented in these native forest plantations includes the names of nearly all the arboreal forms found in eastern or especially northeastern Iowa. Along the Des Moines about Algona and along Lime Creek east of Forest City and especially on Pilot Knob and on its attendant hills genuine forest conditions prevail. Undisturbed by fires the trees make luxuriant growth and add a beauty to these prairie landscapes otherwise unattainable. The presence of Pilot Knob and its wooded sides, seen like a blue wall from all the surrounding country for miles, has to this country and for it a real commercial value, and if the people who are so fortunate as to own farms and homes in the neighborhood of this piece of natural attractiveness are wise they will never suffer its beauty to be destroyed. Steps should be taken to make Pilot Knob with its woods, its lakes and its meadows, its exhilarating heights, a park to be for the delight and enjoyment of the people for all time.

Tree-planting in these counties has proceeded much as elsewhere for the purposes of shelter and fuel. Every farmer has a grove, and some of these are of fine proportions and show beautiful trees. Here as in other Iowa counties, the species planted have been selected as rapidly growing, rather than for value when grown. Nevertheless, there are plantations sufficient to show that all sorts of trees common to our northern nurseries may be successfully reared along these northern borders. Mr. Eugene Secor has hundreds of conifers to show how easily the farmers of this region may provide themselves with timber, even for lumber. The primeval trees in all the forests named have nearly all long since disappeared. They were the product of centuries and were ripe for the harvest. Time has not elapsed for their successors to attain much value; but there is no doubt that the most valuable hardwood trees of our northern forests will yet again find place upon the hills and by the streams of the countries to which they are native and in which history shows that they find congenial skies and soil.

TREES OF PILOT KNOB STATE PARK

By L. H. PAMMEL

The Trees. It is interesting that this moraine, one of the higher points in the state, should be covered with tree growth when the surrounding country is in large part prairie. However, a view from the point, Pilot Knob, shows plainly that the tops of many of the morainic hills are covered with trees while the lowlands, especially

along the streams, consists almost entirely of herbaceous plants. The number of the species of trees in the park area and adjacent region is not large. Some of the tree species actually do not occur in the park although they are in the vicinity.

Willow and Cottonwood Family. The black willow occurs along streams and borders of lakes though it is not abundant. The leaves of the black willow are narrowly lanceolate and green on both surfaces. The leaves of the peach-leaved willow are ovate-lanceolate and pale in color beneath. This willow is found along Lime Creek and a few other places along the larger brooks. It is not common in the park. The sandbar willow has narrow leaves tapering at both ends and not stalked. The leaves are more or less silky when young but at length become smooth. This willow is usually a shrub but occasionally a small tree. It is common along the larger streams and borders of little lakes in the vicinity. The beaked willow with obovate to elliptic lanceolate leaves is dull green and minutely downy above and pale beneath. This willow does not occur in the park although it is not uncommon in springy places in regions adjacent to the park. This is usually a shrub. The largest tree of the family is the common cottonwood, which has broadly deltoid leaves with crenate margins. This tree is especially common along Lime Creek and it also occurs in the park or regions immediately adjacent thereto. The quaking aspen or the American aspen, with smooth, greenish-white bark, roundish heart-shaped leaves and flattened stalks, is common in the region, although not abundant in the park. The large-toothed aspen with smoothish gray bark and somewhat larger leaves, which are roundish-ovate, has large sinuate teeth. This tree occurs in the region but is not common in the park.

Walnut, Butternut and Hickory. The butternut, with pinnately compound leaves which are downy underneath and somewhat clammy, has grayish bark with rather large scales. The black walnut has a somewhat similar leaf but less hoary. The fruit is round and smooth while that of the butternut is ellipsoid and clammy. The bark of the black walnut has diamond-shaped scales which are smaller than those of the butternut. The black walnut is less common in the park than the butternut. The shell-bark hickory gets its name from the fact that its bark separates from the tree in large exfoliating shaggy strips. This tree is common adjacent to the park. The hickory nut has large terminal buds. The bitternut or swamp hickory has tight-fitting bark and the buds are small and yellowish. The fruit is ellipsoid, slightly ridged, the meat is bitter.

Ironwood and Oaks. The ironwood or American hop or hornbeam has thin, oblong-ovate leaves which are taper-pointed, sharply double-serrate, hairy underneath. The sacs containing the seed resemble the common hop, hence the name, the common hornbeam. The oak species are not numerous. Once there were large trees over the area. One of the most interesting of the oaks is the white oak. The leaves of this are obovate-oblong, bright green above and paler beneath and turn bright red in autumn. The bark is pale and

scaly. The fruit matures the first year; the kernel is sweetish. The bur oak or mossy-cup oak has obovate or oblong leaves quite deeply cut, bright green above and paler beneath. The cup is deep, thick, woody and fringed. This is the most common oak in the region. The red oak has a shallow, saucer-shaped cup and large acorns; leaves are cleft, bristle-pointed. The bark of the trunk is dark in color. The cup of the northern pin oak (*Quercus ellipsoidalis*) is top-shaped or deeply saucer-shaped. The scales are brown or ashy in color, slightly pubescent covering a third or more of the acorn; common throughout the region. The leaves color a beautiful red in the fall.

Elms and Hackberry. The most common elm in the region is the slippery. It is easily recognized by the leaves, which are extremely rough above, taper-pointed and serrate. The buds before expansion are soft pubescent and covered with hairs. The American, white or common elm has smooth buds. The leaves are obovate or oblong, sharply pointed and often doubly serrate. They may be smooth above or rough. The hackberry is not uncommon in the region. The leaves are ovate-lanceolate, taper-pointed, sharply serrate. The fruit is dark purple at maturity.

Apple, Plum, Cherry, Haw, Juneberry. The common wild crab, occurs in thickets. The leaves are oblong or ovate-oblong, smooth, the lower surface covered with hairs. Flowers are in flat-shaped clusters, reddish in color. The fruit is yellow and delightfully aromatic. The American wild plum, a small tree, occurs in thickets. The leaves are narrowly obovate, sharply and double serrate. Serrations not glandular, flowers white and in umbellate clusters, fruit red. The shad bush or service berry is a small tree with smooth bark, whitish flowers. The fruit is red and edible. There are several haws. The most common of these are the large-fruited red haw and the punctate haw with greenish fruit and the small red-fruited haw (*Crataegus coccinea*). The wild black or rum cherry is a large tree with reddish-brown branches, aromatic bark, flowers in elongated racemes, fruit purplish black, related to the choke cherry, which is common throughout the park. The bark is grayish and the inner bark has a disagreeable odor. Flowers white in racemes, the fruit turning dark crimson and astringent. The wild red or pin cherry is a small tree with light reddish-brown bark, oblong-lanceolate, pointed leaves, green on both sides, few flowers in a cluster, fruit light red.

Honey Locust and Coffee Bean. The honey locust is a spiny tree with compound leaves; does not occur in the park although found along some streams in Hancock county and the coffee bean does not occur in the park although found in the region.

Maples. There are three species of maple in the park and the territory adjacent thereto. The white or silver maple is common along Lime Creek and is frequently planted in the region. The sugar or black maple is common in the park. The leaves of this are green and scarcely paler beneath, often a little downy. The box elder, commonly introduced in the region, is native along Lime Creek and may be found in the park.

Basswood and Ashes. The common basswood has large leaves, green and smooth above, flowers in cluster, yellowish. Fruit is dry and woody. There are two kinds of ashes, the black ash, which is found in the region, although none actually occur in the park, and the green ash, common in the park and along the streams in Hancock and Winnebago counties.

SHRUBS OF PILOT KNOB STATE PARK

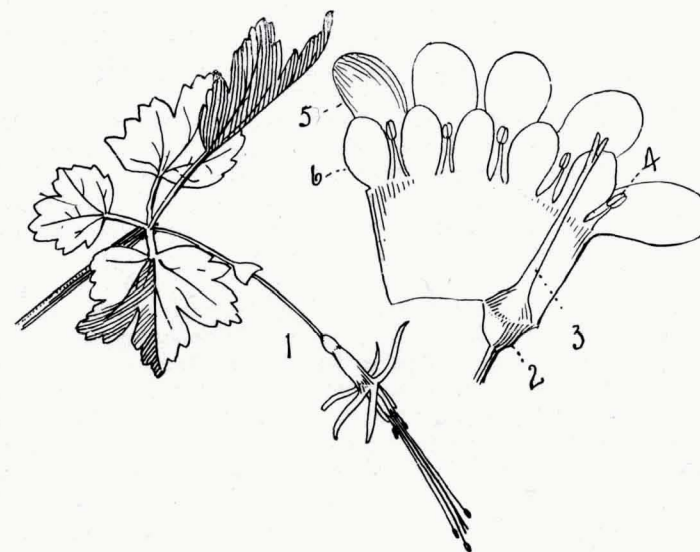
By L. H. PAMMEL

The list of shrubs found in the park is not very large. None of the shrubs found in the park are rare and the number is much less than one finds in parks further south, for instance, the Dolliver Park or at the Ledges State Park and particularly the shrubs found in the Lacey-Keosauqua Park.

Climbing Plants. There are a number of climbing plants in the park. Of these the greenbrier, a woody monocot of the lily family, is quite common. It is easily recognized by its greenish woody stem which is armed with prickles. Common moonseed with inconspicuous flowers and bluish fruit is common in the woods. The climbing bittersweet is common and abundant throughout the area as is also the Virginia creeper or woodbine and the wild grape or fox grape, which climbs over fences and trees. The honeysuckle, of the honeysuckle family to which the honeysuckle of the garden is related, is common in the timber.

Willows and Hazels. The most common of the willows is the prairie willow, a low shrub frequent on gravelly and clay banks. There are two pussy willows. Both of these pussy willows bloom early in the season. The big pussy willow does not occur in the park although it is not uncommon in low, springy places outside of the area. There are several interesting little willows found on the shore of the little lake in the park. Outside of the park in both Winnebago and Hancock counties there is an abundance of the hoary willow. In peat bogs and swampy lakes the myrtle-leaved willow is common, also an occasional shiny-leaved willow. The common hazel is abundant everywhere along the roadsides and fences in the park and borders of woods.

Gooseberry, Currant and Spiraea or Meadow-Sweet. The only gooseberry observed in the park is the Missouri gooseberry with smooth fruit. It is common in low grounds or flats and borders of streams. The black currant is more or less common on the border of the little lake. The meadow-sweet, a small, erect shrub with white flowers, is not uncommon in marshy ground. There is also an occasional specimen of the dwarf service berry. The black-cap raspberry is common throughout the woods. The blackberry with straight or recurved prickles and the red raspberry are common along the highways. The prairie rose is the common rose of the prairie, and is abundant everywhere.



Drawn by C. M. King

FIG. 5.—THE SMOOTH FRUITED
GOOSEBERRY

FIG. 5A.—PRICKLY GOOSEBERRY

Lead Plant, Prickly Ash, Sumach and Poison Ivy. The lead plant with woolly leaves and violet flowers is common on the clay banks, while the false indigo is found on the borders of lakes and streams. The prickly ash, a prickly shrub with small, greenish-yellow flowers is common throughout the park. In areas bordering on the prairies or along the highways near the park and borders of timber there is an abundance of poison ivy and the sumach.

Wahoo, Bladder Nut, New Jersey Tea. The wahoo or burning bush is common throughout the woods as is also the bladder nut, which produces whitish or cream-colored flowers followed by an inflated pod. The New Jersey tea, a low shrub, common to the prairies of the state, may be found along the roadside and borders of prairies and woodland in the park.

Dogwood, Snowberry and Wild Raisin. Several kinds of dogwood flourish in the park. Of these the silky kinnikinnick with purplish branches and the common dogwood abundant on dry hills with white flowers and white fruit and reddish pedicels bearing the fruit are abundant. There is an occasional alternate-leaved dogwood with white flowers and deep blue fruit. The snowberry, or wolfberry is of common occurrence throughout the park. The flowers are white tinged with purple and followed by a white berry. The wild raisin is a shrub with white flowers in cymes, yellowish before maturity and black when ripe. The common elder is abundant everywhere in low grounds. The white flowers are abundant and the fruit is blackish purple.

HERBACEOUS PLANTS

By L. H. PAMMEL

There are many interesting herbaceous plants and we have continual flowering of these from early spring until frost. Some species of plants are much more common than others, thus in the spring the protected hillsides are covered with the hepatica, Dutchman's breeches, blue and yellow violets and spring beauty, later followed by such types as cranesbill and the waterleaf.

Grasses. We need only mention in this connection a few of the grasses. One of the most interesting in the park is the wild rice, which at one time was common in Dead Man's Lake and some of the other partly drained lakes in the park. There are also such grasses as the little blue stem in open prairie spaces and its cousin, the tall blue stem. In the marshes one may find the reed canary grass and the rice cut-grass and several kinds of manna grasses. The sedges which are related to the grasses are abundant and there are many species of sedge or carex. In shallow pools and border of Dead Man's Lake may be seen the rush commonly called the bulrush and several related species.

Pond Lilies and Docks. They grow in damp situations. The pond or Dead Man's Lake contains three interesting water lilies, one the white water lily with fragrant white flowers and a thickened root stock, the spatterdock with yellow flowers and the patience dock is common on the margin of the little lake. The red water shield has not been observed in recent years. Dr. Macbride reported it as occurring in the lake. Mention may be made of several other plants found in the swampy places: Iris, a native plant commonly called the blue flag; the water plantain and the arrowhead. There are other water plants like the fresh water eel grass, elodea and water crowfoot and pond weeds (*Potamogeton*). The long, tubular yellow flowered puceon, orange-colored puceon, lousewort and wood betony and wild indigo are common in prairie-like openings and on the banks not covered by trees and shrubs.

Some Interesting Early Spring Plants. In addition to the early spring plants mentioned as occurring in the park attention may be called to several different kinds of crowfoot. One species with yellow flowers creeps along the ground, another with roundish leaves and inconspicuous yellowish flowers is common in the timber. Mention may also be made of the two kinds of meadow rue, one found in the marshy places and the other in the timber. Columbines are not uncommon, blue-eyed and yellow-eyed grass are common in the prairie-like openings as well as the common American vetch and the prairie sweet William with pinkish-purple flowers and the common blue phlox of the woods.

Early Summer Plants. Among the early summer plants are the Philadelphia fleabane (*Erigeron Philadelphicus*), the daisy fleabane (*E. annuus* and *E. ramosus*) and the horseweed, the cup plant, compass plant, woodland sunflower, the artichoke or meadow sunflower, several different kinds of marigold or stick-tight, yarrow, sneeze-

weed and Indian plantain and thistles, of these especially the wood thistle. The prairie thistle is the most interesting. The swamp thistle occurring in the peat bogs of Hancock county does not occur in the park, although adjacent to it. The gerardia, also in swamps, has purple flowers.

Some Mid-Summer Plants. Some of the mid-summer plants are the purple cone-flower in prairie-like openings and the white and purple prairie clover, also the Missouri goldenrod and the Philadelphia lily. Others are the greater lobelia, common wild peppermint, the prairie lobelia, the horse mint, the everlasting or lady's tobacco or pussy's toes, several kinds of milkweed and spiderwort. Shinleaf has also been reported by Mrs. McNider.

Late Summer and Early Fall Plants. The plants at this time of the year belong almost entirely to the sunflower family and of these we may mention the flat-top goldenrod (*Solidago rigida*) and the meadow goldenrod (*S. serotina*), the large flowered goldenrod (*S. speciosa*), the fragrant goldenrod (*S. nemoralis*), asters such as the white flowered aster (*Aster multiflorus*), blue flowered aster (*A. laevis*), azure blue aster (*A. azureus*), woodland aster (*A. sagittifolius*), silky aster (*A. sericeus*), New England aster (*A. novae-angliae*), violet-colored aster (*A. prenanthoides*), large white flowered aster (*A. umbellatus*).



After Gray's Genera North American Plants

FIG. 6.—BLUE COHOSH

PILOT KNOB

By EUGENE SECOR

It is quite needless for me to discuss the subject of parks as an asset of a great state in the presence of those before me. The giving of your time and your money to attend this meeting indicates that you are already interested and realize the importance of securing and preserving some of the beauty spots of Iowa before they are despoiled by unthinking men.

You do not belong to that class who see nothing in a tree but cordwood, posts or lumber, and nothing in a winding bluff or quiet ravine, although vine-clad and tree-covered and shrub-adorned, except a bit of scanty pasture.

If some people had their way there wouldn't be a thing left to remind us of our inheritance of grove and copse and wild flowers that once made Iowa charming with wild life and beauty. You realize the danger that confronts us, the tendency to sacrifice everything to the god of present gain.

This association was organized for the very purpose of discouraging and preventing so far as possible the desecration of God's holy places, spots that ought to be preserved in the natural beauty inherited from the glacier or from the weathering processes of bygone ages, clothed with matchless draperies of many colors and tints before the advent of the white man with his murderous axe. The pioneer is rarely a preserver of natural beauty, he destroys. Fortunately a few things have escaped the propensity of man to destroy works of art and the artworks of God.

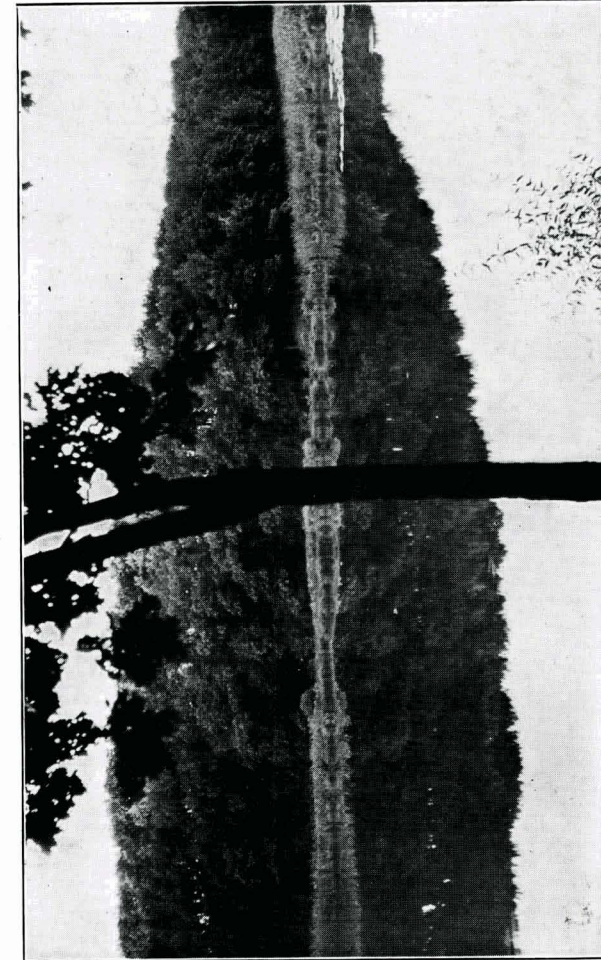
There are different types of natural beauty. Such is the variety in nature that there are hardly two things alike.

A jutting granite crag on the seashore, washed by the restless tides and angry waves for a thousand decades, surmounted by a long pine that has laughed at the winds for unknown years exhibits a rugged beauty that makes one want to unharness the camera to catch this Titan watcher of the ocean's moods on the spot where he stood guard when the Pilgrims landed.

In the unglaciated area of Iowa, near McGregor, there is another type of beauty. Its high peaks overlooking the Father of Waters and portions of Wisconsin, its wooded ravines, its solemn caves and picturesque views and varying expressions of nature's marvelous ways. That this is to be part of a national park at an early day is the prayer and the hope of all of us.

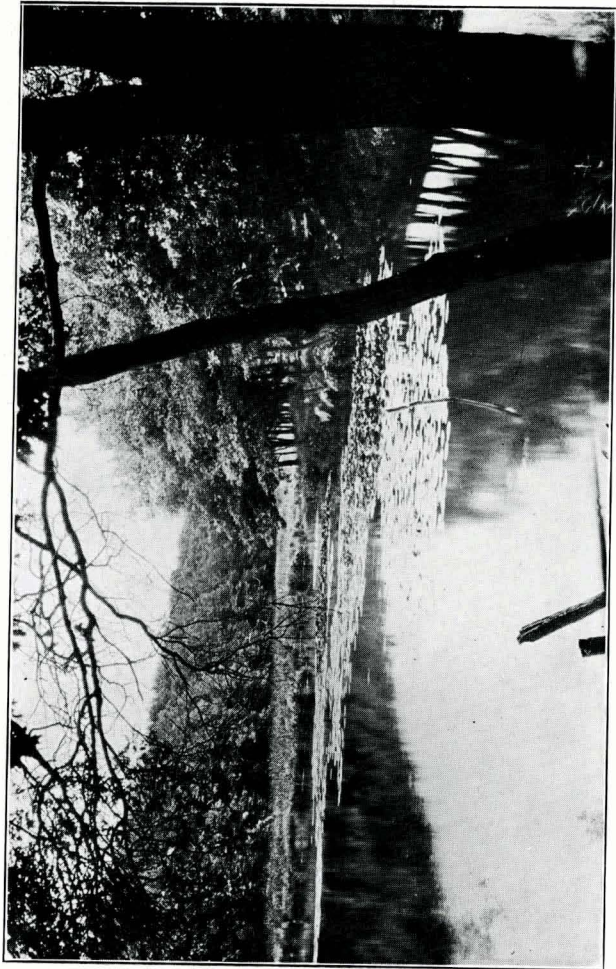
But I want to call your attention to another spot with another type of beauty, where I have wandered in times past and dreamed of a future park to be owned and controlled by the sovereign state I love so well. It is unlike any other spot in Iowa, and men of wide travel have told me that there is no finer view anywhere.

The men who made the original survey of this region for the government and who made plats and field notes for future use, called the highest peak Pilot Knob. Its altitude is only about fifteen hundred feet, and approximately three hundred feet above the



DEAD MAN'S LAKE. PILOT KNOB STATE PARK. VIEW FROM WEST

Elder Studio



FLOATING BOG IN DEAD MAN'S LAKE

Elder Studio



Photo by Dr. Ada Hayden

THE RED SHIELD WATER LILY
An Aquatic Plant

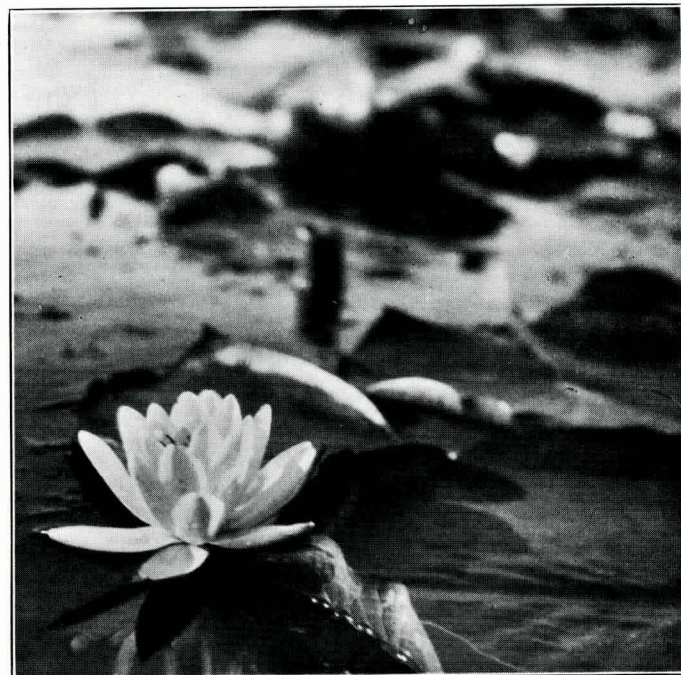


Photo by Dr. Ada Hayden

THE WHITE WATER LILY
An Aquatic Plant

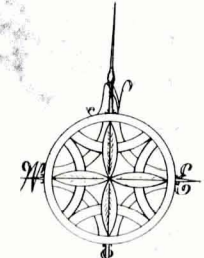


SKETCH PLAN of PILOT KNOB STATE PARK

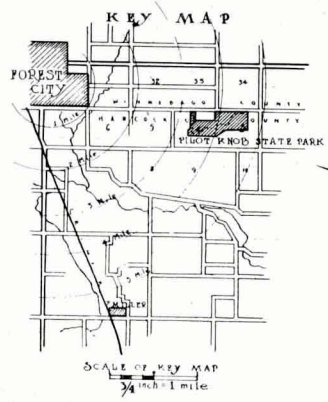
HANCOCK COUNTY, IOWA

Scale - One inch equals two hundred feet

PREPARED BY THE IOWA EXTENSION SERVICE AT AMES
 Charles A. Diggs, CONSULTING LANDSCAPE ARCHITECT
 John P. Schumaker, LANDSCAPE ARCHITECT



To Forest City, Osceola, Algona etc. via State Highway 29, 29, 219



Proposed Connection to State Highway 29

To Marly, Northwood, Marshall City, etc. via State Highway 2, 16, 29

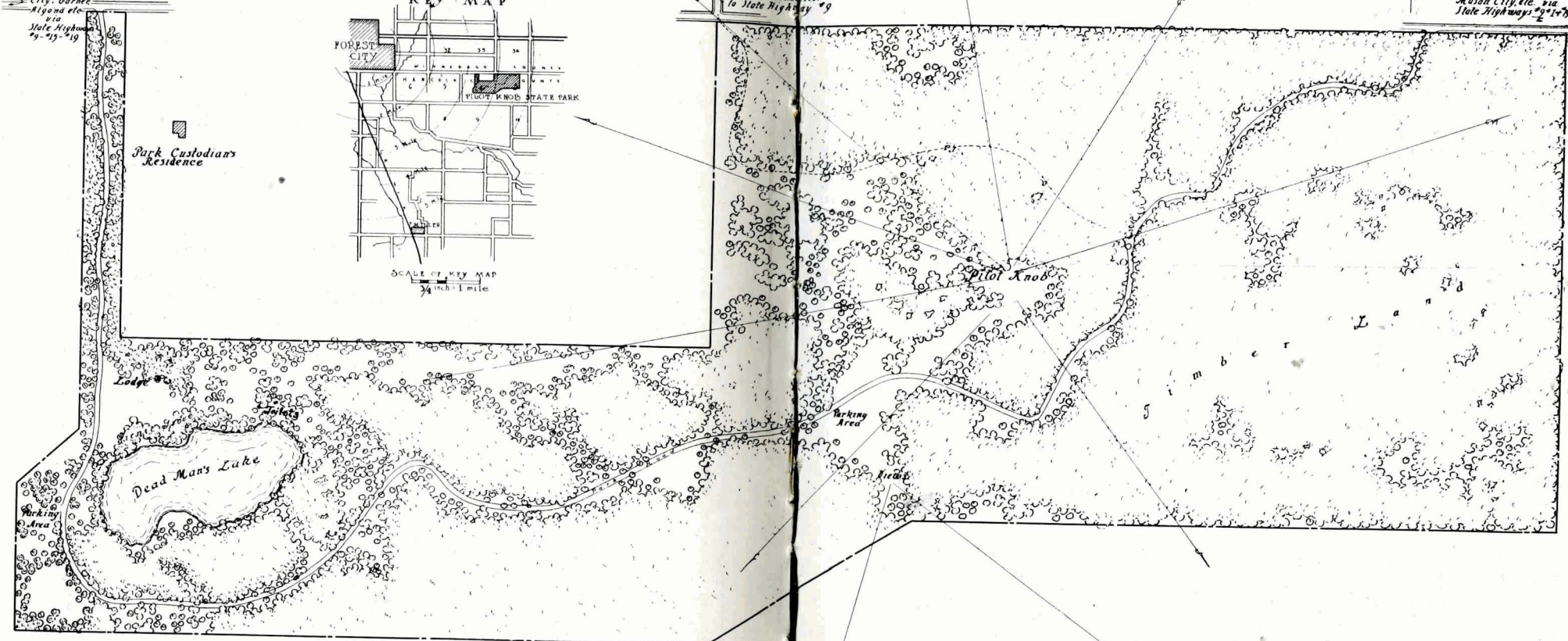




Photo by Dr. Ada Hayden

HEPATICA—AN EARLY BLOOMING PLANT

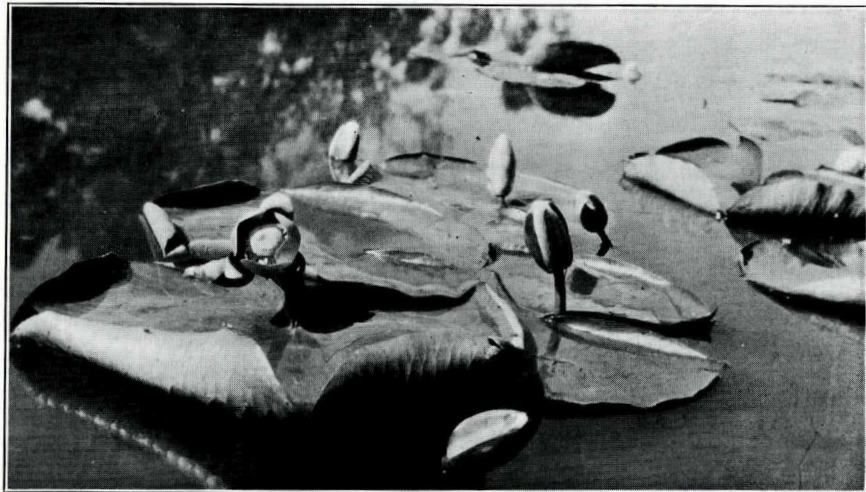
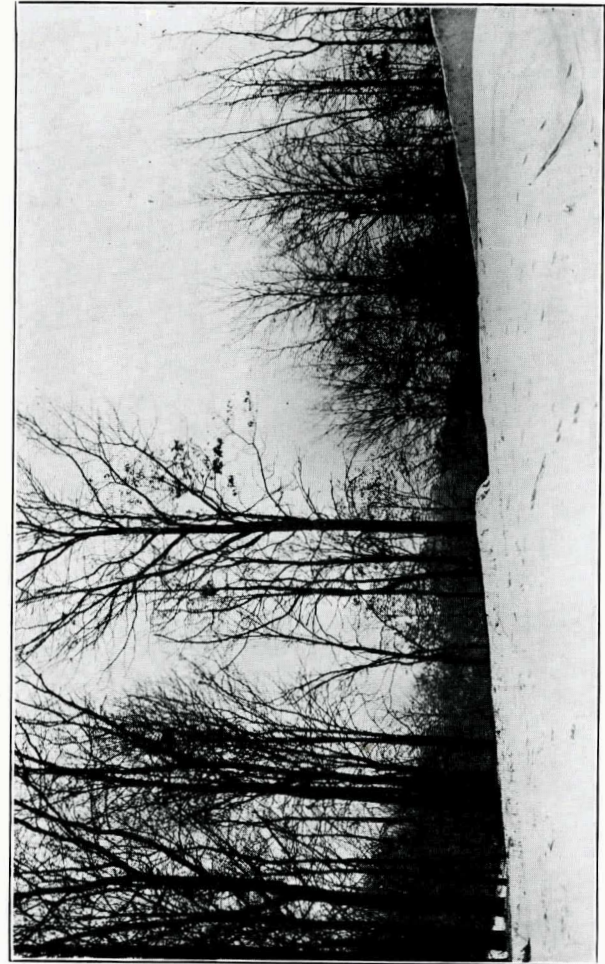


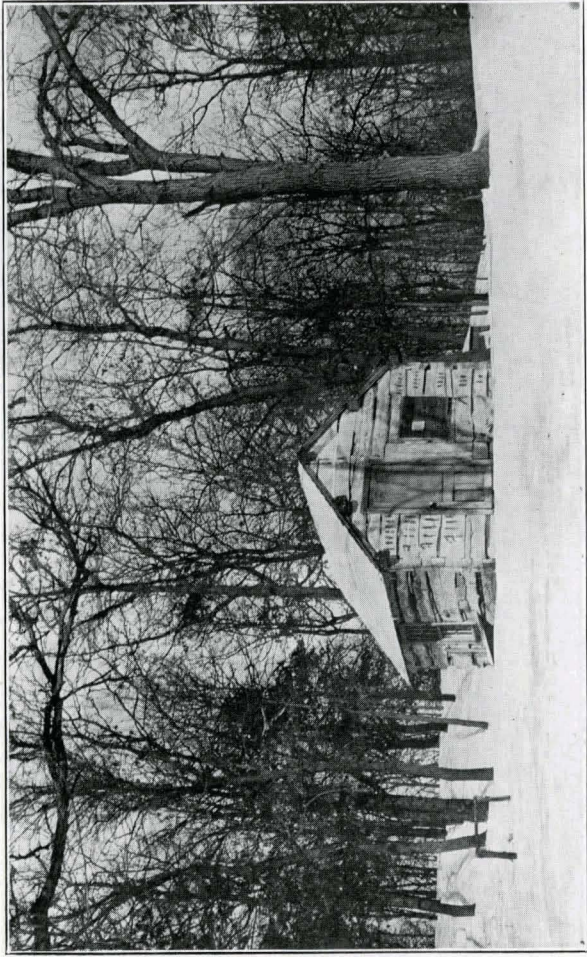
Photo by H. I. Featherly

SPATTER DOCK
An Aquatic Plant



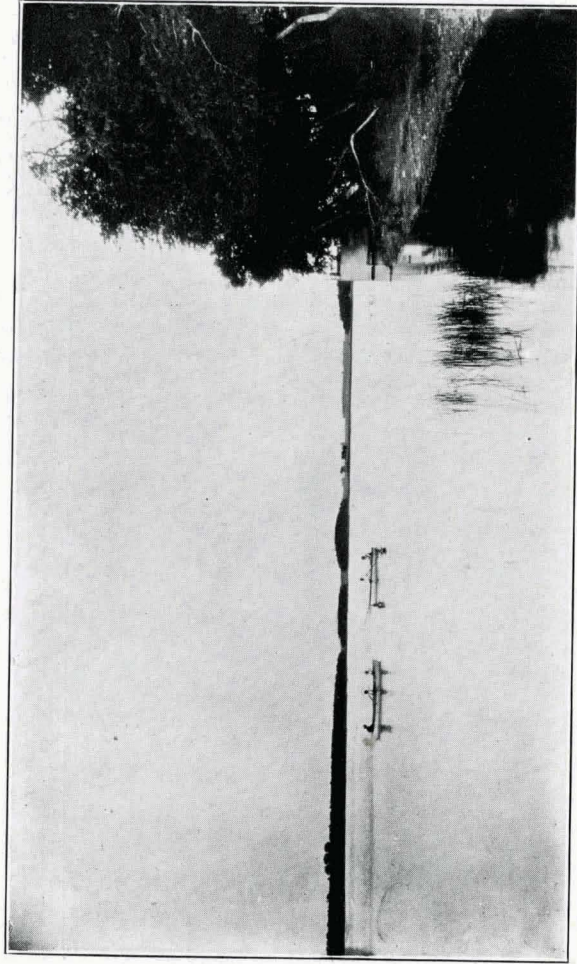
NEW ROAD IN THE PARK

Elder Studio

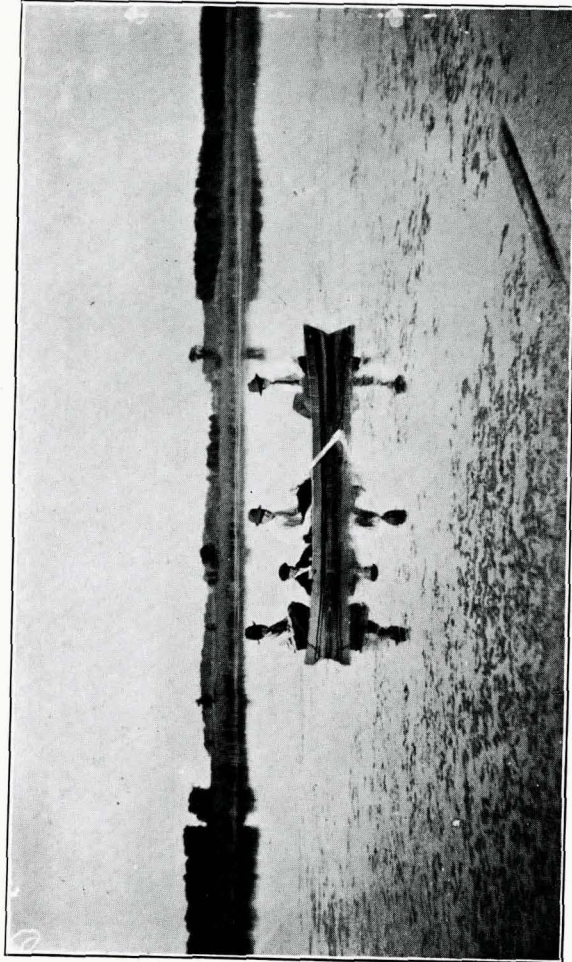


Elder Studio

AN OLD PIONEER LOG CABIN IN THE PARK



BURDICK'S POINT ON RICE LAKE, STATE PARK, NEAR LAKE MILLS, IOWA, SHOWING
ROUND ISLAND, BALD ISLAND AND HERON ISLAND IN DISTANCE.



LAKE SCENE, RICE LAKE STATE PARK, LOOKING TOWARD GOOSE ISLAND AND SAND BAR ISLAND—STATE OWNED ISLANDS.

valley which it overlooks. The Knob is about four miles east of Forest City, near the county line road that separates Winnebago and Hancock counties.

It is not the highest point in Iowa, perhaps, but it commands a view of the surrounding country that is nowhere surpassed.

Standing on Pilot Knob one feels that he is on the very top of Iowa, and according to geologic lore it is literally true. This pile of clay and gravel and boulders is said to be a part of the eastern moraine of the Wisconsin drift. Not that it came from the present state of Wisconsin, but it may be remembered that all this northwest country was at one time called Wisconsin territory.

Evidently the glacier that leveled the prairies of central northern Iowa came from the north. It may have brought material from Hudson's Bay. The hills of the Pilot Knob region are supposed to have been shoved laterally by the ice sheet and left in the irregular form in which we now find them. It was the last drift that overran the country we now call Iowa, and overlapped earlier and different glacial deposits.

From the top of Pilot Knob a larger area of fertile land may be seen than from anywhere else on this earth, I believe. It is a panorama of wealth-producing land that makes one proud of Iowa. No matter which way one turns it is a succession of fertile farms that denote prosperity. The varying shades and colors caused by different crops and at different times of the year make the view enjoyable at all seasons. Planted or natural groves about the farmsteads, country school houses and country churches all contribute to the variety of beauty of the scene. The native growth which one overlooks in the foreground is a study in colors. Every kind of tree and bush has its individual shade of dress when in leaf. As the birdman sees it from the upper air so the color connoisseur may enjoy the sight from this bit of terra firma.

The view in every direction is limited only by the short range of human vision. With a good glass one may overlook ten railroad stations and the valley of Lime Creek to the northwest, west, south and southeast. This river is skirted with native timber not yet entirely destroyed.

Within the park area of Pilot Knob there are other mounds of less altitude, among these hills a small lake nestles so like a brooding bird in its nest that many fail to find it. It has abrupt shores nearly the whole distance around, and no outlets unless the water is very high. It is bordered by a variety of native trees and shrubs where the shy vireo builds her nest in peace and aquatic fowls frequent its waters to feed and to breed in the tall grasses nearby. In its waters grow three species of pond lilies, one of which I am told is found nowhere else in Iowa (also occurs in Little Wall Lake.—Editor). The lake is frequented by botanists in search of rare specimens of plants and shells. With slight expense it could be dredged so that fish might be planted. Dead Man's Lake is a gem in nature's diadem, placed there when the grinding in the mills of God ceased in these parts.

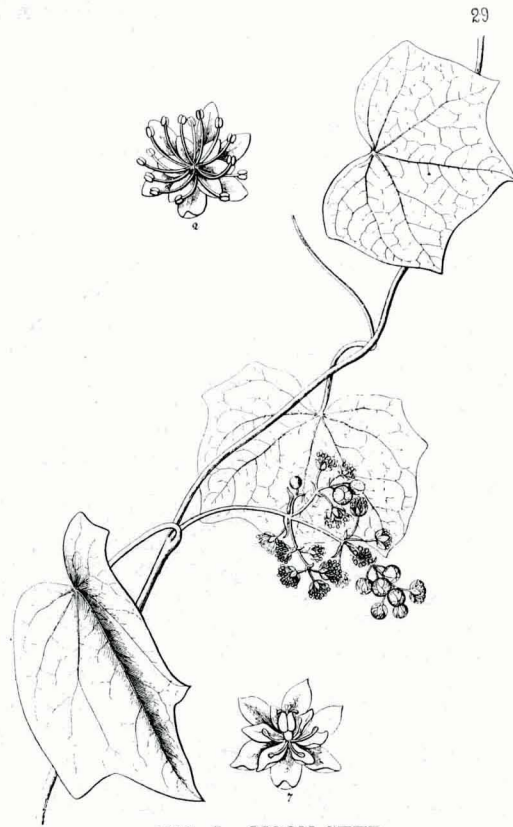


FIG. 7.—MOON SEED
After Gray Genera North American Plants

Within the area that ought to be included in a park are all the native trees and shrubs common in this region—walnut, ash, basswood, wild cherry, bur oak, jack oak, red oak and others. In addition to these there is a nice grove of white oaks, found nowhere else in all this region so far as I know.

The rare species of pond lily and the white oak grove, neither of which is sacred in the possession of the average farmer, ought to appeal to the nature lover and to the Iowa lover, inducing them to act as guardians of the future. Generations to come are the heirs of the wisdom or unwisdom of our procedure.

This area of three or four quarter sections would be a good place for a game preserve, and with slight improvement in the matter of roads, access to the interesting points could be arranged to accommodate tourists and picknickers. Everyone who visits this region and views Pilot Knob goes away feeling that it isn't necessary to cross the continent or ride the ocean waves to see the handiwork of God and the triumphs of man from the same spot at the same time.

Indulge me for a further moment while I tell you in rhyme of some of the impressions made on me during one of my early visits to

PILOT KNOB

Speak, Pilot Knob, tell me thy tale,
I would know more of thy story,
When didst thou erst the morning hail?
Naked but grand in thy glory.

Where in the north did God's great plows
Loosen this pile, earth and boulders?
Out of what bed didst thou arouse?
Brought to this spot on whose shoulders?

"Glacial moraine," geologists say;
"Left by the last ice invasion,
Youngest addition of pebbles and clay,
Ground by a slow rock-abrasion."

Ages ago me thinks I see
Rivers of ice on the prairie—
Mills of the gods—and this is the debris
Humped like a huge dromedary.

Iowa's plains were leveled for man,
Smoothed and made fit for his using,
When in God's wise, mysterious plan,
Landmarks were left of His choosing.

Old without doubt but thou art young,
Timed by the clock of world-making;
Absent, unborn when the stars were hung,
Heard not old Earth's primal quaking.

Centuries come and centuries go,
Speechless thou standest, beholding
Changes which only centuries know,
Changes of race and race-molding.

Nations are born, empires decay,
States are redeemed from the savage—
Such changes are the work of a day
Measured by thee and time's ravage.

Thou didst stand guard when the Redman came,
Saw his rude hut, his chaste wooing;
Pastur'd the wild swift-footed game,
Witness'd the hunter pursuing.

Beacon wert thou to early guides
Crossing these wild tractless regions?
Ah, beacon still, and one that abides,
Gone are the brave dusky legions.

Hunters and warriors have pass'd on,
Pass'd to the weird realms of shadows,
Paler-faced tribes came west with the dawn
Searching for new Eldorados.

Men digging wealth from the vale and plain
Viewed from this Knob, bare and ancient
Likewise shall pass, but thou wilt remain,
Preaching the truth that we're transient.

SUNSET FROM PILOT KNOB

By EUGENE SECOR

I've never seen a sunset from an ocean steamer. I've never seen the great luminary dip into the Pacific from any of the high mountain peaks of the Rocky or Sierra ranges.

But one doesn't need to travel two thousand miles or to risk an ocean voyage to see the sky in all its evening glory and the earth in its fruitfulness at the same time. Iowa is not without its beauty spots—spots, too, where the heavens seem to meet the earth in a joint effort to magnify our inheritance.

Such a spot is Pilot Knob, four miles east of Forest City. Camp with me on its summit any time when the clouds do not curtain the sky or an Indian summer haze limit the power of our glass, preferably in early harvest. A landscape is before and behind and all around us that for extent and beauty combined is hard to match. If one is proud of teeming fields and verdant pastures and cool leafage of restful groves he may feast his eyes on a succession of such landscape views, the extent and variety of which can nowhere else be found in Iowa, although she is fair to look upon in every part of her matchless domain.

The fields of golden sheaves where the binder has hummed all day reveal the auriferous deposit left by the Wisconsin drift. Other shades of ripening grain emphasize the promise of a harvest that seldom disappoints. Haystacks in a hundred fields surrounded by a lush aftermath add refreshment to the scene. The deep green of the tasseling corn on every farm foretells another harvest of the staple that has put Iowa on the map of the world. Cattle leisurely cropping grass in another hundred fields, and patches of timber in all directions—all these present a scene of rural wealth and contentment in a panorama as the airman sees it, but we are safe on solid ground and yet behold it.

Far in the west the sun is slowly sinking into the prairie. It is big and round and as yellow as a ripe pumpkin. The blinding light of its noonday splendor has been so softened that we watch it without blinking. Just above the descending orb an opalescent cloud is stretched across the sky, as if to catch and hold a little longer the glory of its reflected light. If an artist should paint such a pic-

ture we'd say it wasn't natural. But how could an artist overdraw such a picture as we now see? With one dash of his master brush the greater painter, the sun, has glorified all the western sky as a goodnight message to a tired world just as a mother tells her little ones the most beautiful story she knows as she tucks them in for their nightly sleep.

A sunset is both a beatitude and a benediction. Blessed are they that go out of sight leaving such a halo of influence that men will stop and wonder and take courage. May all who labor and need rest go to their peaceful beds for refreshment after a day of useful toil with as much surety of rising on the morrow with renewed energy as the golden disk before us.

But turn to the east. Another candle is lit in the sky. The full moon like a great silver disk is just above the tree tops in the distance. The world is not to be left in darkness tonight. One evening in every lunar month the full moon rises as the sun goes down. One may see both the silver and the gold at the same time—one to twenty-eight in the bimetalism of the heavens.

On no other night for twenty-eight days may this unique sight be enjoyed—the full moon rising and the sun setting at the same time. And in no other spot in Iowa may the phenomenon be observed under such inspiring scenic surroundings.

REPORT ON PILOT KNOB AND DEAD MAN'S LAKE HANCOCK COUNTY*

By L. H. PAMMEL.

This is an official report of the Pilot Knob area in Hancock county after an inspection. In the report on Iowa parks there are several papers as to why Pilot Knob should be made into a state park, one by Eugene Secor and one by Winnifred Gilbert. The writer made a visit to the region more than a year before the State Board of Conservation was created. At that time only the Knob was visited. After the creation of the Board several trips were made in a study of the various aspects of the region. The following report was submitted to the Board. For the benefit of those who are not familiar with technical terms the common names are used, the technical appearing as foot notes.

This region is one of the most unique in northern Iowa, and is of especial interest to the geologists and other scientists.

The region is rather difficult of access. There is a poorly constructed road from the Hancock County side entering the Pilot Knob area from a southeasterly direction. Dead Man's Lake lies in a southwesterly direction from the Knob and the Knob may be reached by this route from Forest City, entering the narrow valley through the Taylor farm. The road skirts the hill, passing through a wooded

*Before an area is purchased for park purposes an investigation is made. This is an illustration of the kind required by the State Board of Conservation.

tract and a small old glacial lake, now mostly a marsh. Dead Man's Lake is nestled among the wooded slopes surrounded by gently sloping hills covered with trees. An old road skirts the northerly shore of the lake which passes through the Taylor farm in a northeasterly direction. Evidently the pioneers of Forest City built the road so that the Knob might be reached for recreational purposes. It is hard to estimate how many persons in the past have used this area for recreation. It was used from earliest times of the settlement of the country, some fifty years ago. The average attendance in recent years has been about 1,500 persons per year. This year on Sunday, religious services were held on Pilot Knob. There are now nearly 600 persons weekly at the park during the summer. With good roads this number would be raised to between six and seven thousand persons per year. The Knob is now owned by Mr. Plummer, a banker of Forest City, who with Mr. Chance and Mr. Taylor own the land about Dead Man's Lake. They have permitted the free use of the area for recreation. If these generous citizens close the area from the public, the citizens will be deprived from the use of one of the most unique recreational areas in Iowa. Mr. Taylor has taken much interest in the use of the area. He has placed camp tables on the shore of the lake, cleared out the underbrush near the camping places, built a passable road, at his own expense, from his home to the lake. He has also kept a record of the visitors to the lake. In looking over this list it is interesting to note that the visitors come from many different points of Iowa and adjoining states. I note that there were visitors from the following places on the Fourth of July: Goodell, Garner, Leland, Swea City, Forest City, Lake Mills, Mason City, Britt, one person from Whitewater, Wisconsin, and eight from Minneapolis. On July 3rd there were 65 persons who visited the area, coming in groups for picnic, 17 from Leland and 18 from Forest City.

Let us turn to the geology of the region. The Knob, or Mound, and Dead Man's Lake, as well as the many other small marshes and lakes are of glacial origin. The Knob is what is known as the Altamont moraine, formed during the Wisconsin ice age.

The mound as viewed from the plains to the south appears like a low range of mountain foothills, one hill after another rising until the climax, Pilot Knob, is reached. Dr. T. H. MacBride has well described the mound as follows:

"But if the marshes are thus sometimes lakes, the knobs are occasionally no less like mountains. They everywhere surprise us by their abruptness and steepness and in Ellington township of Hancock County, are found two or more which so far transcend all others that they have long been famous. The highest of the group is Pilot Knob which as the barometer reads is nearly 300 feet above the waters of Lime Creek at its base, 1,450 feet above sea level. This is not only the finest morainic mound thus far described in Iowa, but is one of the finest in the whole country. Oheydan mound is only half so high. The famous Lapham Mound, Wisconsin, though more than 800 feet above the level of Lake Michigan is not so high above

the basal plain as is our Pilot Knob. The visitor approaches Pilot Knob more easily from Forest City. The mound is visible from the streets of the town as indeed from the prairies almost everywhere for miles in any direction, looming up dark and blue along the horizon. The highways climb at first by easy accent, but at length ascend rather abruptly to the western extension of the hill whence the Knob still looms above us nearly a mile further to the east. Between lie mountain meadows as typically such as if the mountains really rose around us; sedgy bogs girt around by the white ranks of the aspen, walled in by impassable ridges. A tiny lake lies to the south 200 feet above Lime Creek, fed by springs, cold and clear, in summer decked by water lilies and all forms of northern aquatic vegetation, but the Knob is nearly a hundred feet above us still.

Forests of oak and ash, linden and hickory spread all around diminishing as we ascend, until we reach the wind swept summit, perfectly bare; a miniature mountain in every particular. The view from the summit is certainly the finest of its kind. The Knob is so isolated and so steep on every side that the prospect in every direction is limited only by the powers of distinct vision. On the plain below us covered, as we know, with hillocks and knobs, all inequalities vanish. The scene entire seems level where houses, groves and towns appear in varied colors to the far horizon's rim. Here is the natural park for the people of Forest City."

TREES AND SHRUBS

The predominating trees are oaks. Of these I observed the bur,¹ northern pin oak,² red,³ and white.⁴ The white oak is, however, rare. It occurs at the east of Pilot Knob, on the shores of the little marsh on the Plummer tract, and this is the only place, I believe, in the region. On this same shore there is a black walnut grove, though this is not uncommon on Lime Creek near Forest City. There are some butternuts⁵ and a few bitternut hickories.⁶ The hard maple was not observed on the Mound though this species occurs near Forest City. Black cherry⁸ and choke cherry,⁹ basswood,¹⁰ American elm,¹¹ slippery elm,¹² black and green ash,¹³ hackberry,¹⁴ soft maple¹⁵ on Lime Creek, box elder,¹⁶ quaking aspen,¹⁷ cottonwood,¹⁸ service berry,¹⁹ wild plum,²⁰ wild crab,²¹ red haw,²² ironwood²³, a few red cedar²⁴ in woods, probably naturalized, hard maple²⁵ in Forest township; sandbar, almond-leaved, black, beaked and pussy willows;²⁶ the black and almond-leaved willow also occur on Lime Creek. Of the shrubs I noted the following: Buttonbush²⁷ (Dead

1. *Quercus macrocarpa*. 2. *Quercus ellipsoidalis*. 3. *Quercus rubra*. 4. *Quercus alba*. 5. *Juglans cinerea*. 6. *Carya cordiformis*. 7. *Acer nigrum*. 8. *Prunus serotina*. 9. *Prunus virginiana*. 10. *Tilia americana*. 11. *Ulmus americana*. 12. *Ulmus fulva*. 13. *Fraxinus nigra*, *F. lanceolata*. 14. *Celtis occidentalis*. 15. *Acer saccharinum*. 16. *Acer negundo*. 17. *Populus tremuloides*. 18. *Populus deltoides*. 19. *Amelanchier canadensis*. 20. *Prunus americana*. 21. *Pryrus iowensis*. 22. *Crataegus mollis*. 23. *Ostrya virginiana*. 24. *Juniperus virginiana*. 25. *Acer saccharum*. 26. *Salix fluviatilis*, *S. amygdaloides*, *S. nigra*, *S. rostrata*, *S. discolor*. 27. *Cephalanthus occidentalis*. 28. *Salix petiolaris*. 29. *Salix candida*. 30. *Salix humilis*. 31. *Rhus glabra*. 32. *Rhus toxicodendron*. 33. *Vitis vulpina*. 34. *Rosa pratincola*. 35. *Amorpha fruticosa*. 36. *Corylus americana*. 37. *Celastrus scandens*. 38. *Evonymus atropurpureus*. 39. *Ceanothus americanus*. 40. *Cornus sericea*. 41. *Viburnum lentago*, *V. dentatum*. 42. *Symphoricarpos occidentalis*. 43. *Spiraea salicifolia*.

Man's Lake), marsh willow,²⁸ and in some places in the ponds woolly-leaved willow.²⁹ In the little prairie openings the prairie willow,³⁰ sumach,³¹ poison ivy,³² wild grape,³³ rose,³⁴ lead plant,³⁵ hazelnut,³⁶ bittersweet,³⁷ wahoo,³⁸ New Jersey tea,³⁹ dogwood,⁴⁰ black haws,⁴¹ wolfberry,⁴² meadow sweet⁴³ not uncommon in bogs.

HERBACEOUS PLANTS

In the bog of Dead Man's Lake I may note bog sedges,¹ and *Carex* spp.² and rush,³ five-finger⁴, also buckbean,⁵ white water lily,⁶ yellow water lily,⁷ and the shield water lily.⁸ Though the red shield water lily is reported I did not see it, but it undoubtedly occurs as it is reported by Dr. MacBride. It may have been too early for its appearance or it may disappear for a season and then come again. It is a somewhat rare plant in North America. There were also several species of Potamogeton, an abundance of manna grass,⁹ pond weed,¹⁰ purple loosestrife,¹¹ yellow loosestrife,¹² lobelia,¹³ smartweed,¹⁴ and Joe-pye weed.¹⁵

In the woodland and border of woods the writer observed wood thistle,¹⁶ bladder campion,¹⁷ virgin's bower,¹⁸ blue and yellow violets,¹⁹ mandrake,²⁰ hepatica,²¹ bloodroot,²² cranesbill,²³ water-leaf,²⁴ nodding fescue,²⁵ wood leersia,²⁶ brome grass,²⁷ terrell grass,²⁸ wild rye grass,²⁹ bottle grass,³⁰ blue grass,³¹ timothy,³² wood agrostis,³³ hair grass,³⁴ dropseed grass,³⁵ culver's root,³⁶ pleurisy root,³⁷ whorled milkweed,³⁸ swamp milkweed³⁹ in swamps, lobelia,⁴⁰ prairie clovers,⁴¹ cow vetch,⁴² vervains,⁴³ yellow loosestrife,⁴⁴ trillium,⁴⁵ horsetail,⁴⁶ lespedeza,⁴⁷ Illinois tick trefoil,⁴⁸ trefoil,⁴⁹ sanicle,⁵⁰ avens,⁵¹ agrimony,⁵² buttercups,⁵³ pimpinella,⁵⁴ golden Alexander,⁵⁵ Simpson honey plant,⁵⁶ catnip,⁵⁷ lophanthus,⁵⁸ skullcaps,⁵⁹ the latter in marshes as are the mints.⁶⁰

It seems to me we should take over this region, Dead Man's Lake and Pilot Knob, as soon as possible for park purposes because of the scientific and recreational value. No doubt a study will show that it has a great many historical associations. There are some Indian mounds in the region. It is one of the most unique areas in northern Iowa.

1. *Dulichium spathaceum*. 2. *Scirpus atrovirens* and *Scirpus* sp. 3. *Scirpus lacustris*. 4. *Comarum palustris*. 5. *Menyanthes trifoliata*. 6. *Castalia tuberosa*. 7. *Nymphaea advena*. 8. *Brasenia schreberi*. 9. *Glyceria nervata* and *G. americana*. 10. *Potamogeton amplifolius*. 11. *Lythrum alatum*. 12. *Lysimachia*. 13. *Lobelia siphilitica*. 14. *Polygonum aquaticum*. 15. *Eupatorium purpureum*. 16. *Cirsium discolor*. 17. *Silene stellata*. 18. *Clematis virginiana*. 19. *Viola cucullata* and *V. pubescens*. 20. *Podophyllum peltatum*. 21. *Hepatica acutiloba*. 22. *Sanguinaria canadensis*. 23. *Geranium maculatum*. 24. *Hydrophyllum virginicum*. 25. *Festuca nutans*. 26. *Leersia virginica*. 27. *Bromus purgans* and *B. ciliatus*. 28. *Elymus virginicus*. 29. *Elymus striatus* and *E. canadensis*. 30. *Asprella hystrix*. 31. *Poa pratensis*. 32. *Phleum pratense*. 33. *Agrostis perennans*. 34. *Agrostis hiemale*. 35. *Muhlenbergia glomerata*. 36. *Veronica virginica*. 37. *Asclepias tuberosa*. 38. *Asclepias verticillata*. 39. *Asclepias incarnata*. 40. *Lobelia spicata*. 41. *Petalostemum candidum*. 42. *Astragalus canadensis*. 43. *Verbena stricta*, *V. hastata*, *V. bracteosa*, *V. urticaefolia*. 44. *Steironema ciliata*. 45. *Trillium grandiflorum*. 46. *Equisetum arvense*, *E. robusta*. 47. *Lespedeza capitata*. 48. *Desmodium illinoense*. 49. *Desmodium canadense*. 50. *Sanicula marylandica*. 51. *Geum canadense*. 52. *Agrimonia glyposepala*. 53. *Ranunculus abortivus* and *R. septentrionalis*. 54. *Pimpinella integerrima*. 55. *Zizia aurea*. 56. *Scrophularia nodosa*. 57. *Nepeta cataria*. 58. *Lophanthus scrophulariaefolius*. 59. *Scutellaria parvula* and *S. galericulata*. 60. *Mentha canadensis* and *Lycopus sinuatus*.

BIRDS AND ANIMALS OF THE PARK

A few words should be said concerning the birds and animals of the park. There are perhaps two hundred species of birds in the park. Of these the common are the meadow lark, brown thrasher, robin, blue jay, blue bird, purple martin, woodpeckers, whippoorwill, chimney swift, barn swallow, and the peewee, catbird, mourning dove, blackbird, humming bird, vireo, Canada goose (in migrations), teal, mallard, wood duck, crow, hawk, owl, tree sparrow and quail; turkey and prairie chicken at one time common.

Early pioneers record the presence of bear, elk, deer, and the timber wolf. In this region also may be found the coyote, red fox, raccoon, ground hog, prairie squirrel, mole, muskrat, chipmunk, flying squirrel, grey and fox squirrel, brown bat, weasel, field mice and cottontail; pickerel frog, bull frog, American toad, plains garter snake, prairie bull, common garter snake, blue racer, water snake, rattlesnakes probably no longer occur. Snapping turtle, common soft shelled turtle and wood turtle.

A number of persons in Hancock and Winnebago counties have been interested in the collection of meteorites and Indian relics. In this connection the collection of Mr. J. A. Treganza is worthy of mention. He has a part of the great meteor that fell on May 2, 1890, about twelve miles northwest of Forest City, near the town of Thompson.¹ Another part of this same meteor is now on exhibition in the New York museum. The meteor was no doubt in a single body, but on striking our atmosphere, exploded and broke into many pieces. Mr. Treganza said that more than three thousand pieces were found scattered along a distance of three miles. Mr. Treganza has a number of pieces of this meteor and, in addition, one that fell at Estherville in 1880 and the one that fell at Mott-Richardson, North Dakota, June 30, 1918.

Mr. Treganza has a fine collection of Indian relics of about 900 specimens. Mr. Treganza, in 1924, made an archeological survey of Hancock county for the State Historical Society in which he located six Indian camp sites. One of these is on the farm of Mr. H. L. Taylor, a short distance southeast of his residence and near the Park. Mr. L. G. Roberts of Britt, Iowa, is also a collector of Indian relics. He has about 400 specimens and all of these were found in Hancock county. Other collectors are H. Wood, Garner, Iowa, Jelle Tjaden, Woden, Iowa, and H. L. Taylor, custodian of the Park. Mr. W. W. Boutilier, Forest City, Iowa, is also a collector of Indian relics in Winnebago county.

¹ Mr. Chester R. Reed, of the American Museum of Natural History, has given me the following account:

"The Forest City meteorite fell near the new town of Thompson, eleven miles northeast of Forest City, Winnebago county, at 5:15 p.m., May 2, 1890. More than a thousand fragments were scattered over an area of one mile wide and nearly two miles long.

"A seventy-five-pound stone, the largest of this meteoric shower, is in the collection of the American Museum of Natural History. In addition there are forty-five other fragments from the same fall, ranging in weight from an ounce or less to ten pounds.

"The meteorite is a typical chondrite, belonging to the brecciated spherical chondrite group of Brezina. The stone is porous, and when it is placed in water

to ascertain its specific gravity, there is considerable ebullition of air. The crust is rather thin, dead black in color, and quite scoriaceous. When broken it reveals a light gray stone interspersed with innumerable dark particles of iron, and globules of troilite (FeS). The specific gravity is 3.638.

"In its passage the meteor was seen throughout all Iowa, and observers report it from Kansas, Dakota and Minnesota.

"The sudden light, the hissing passage, and terrific explosion terrified many people in northern Iowa, especially in Winnebago county and immediate vicinity. Observers likened the noise of the explosion to heavy cannonading, accompanied by a "rushing sound" or unearthly hissing. A tremor as of a slight earthquake was also noticed. This vivid display occurred in the face of a bright spring sun, and an almost cloudless sky. The dazzling head, likened to the moon in size, "sputtered" and threw off a long train of sparks. The heavy line of black smoke left in its wake marked its course for a full ten or fifteen minutes. Its course to the eye was from southwest to northeast, and its inclination to the earth was about fifty-five degrees.

"The meteorite was not hot when it struck the earth. One piece fell on a straw-stack and did not fire the straw. The seventy-five-pound stone fell on old turf, and after the stone was taken out portions of the dry grass carried down by it adhered to the surface, unburned. The only picture published, as far as known, appeared in Guide Leaflet No. 26, "The Meteorites in the Foyer of the American Museum of Natural History."

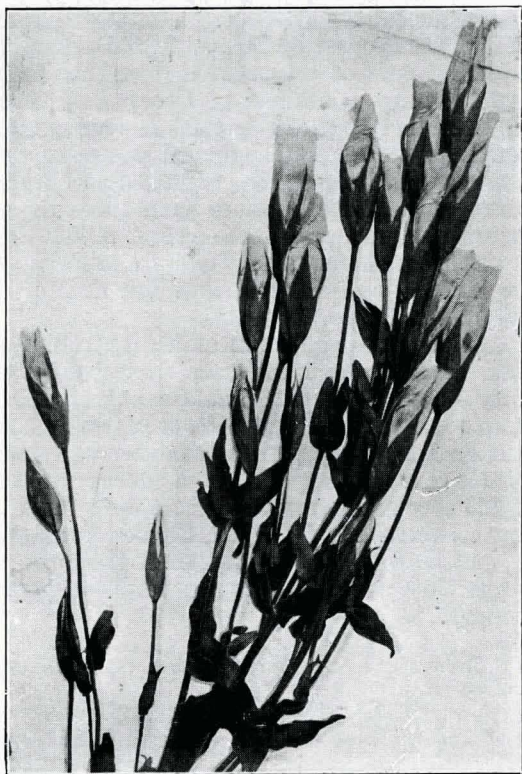


Photo by C. M. King

FIG. 15.—FRINGED GENTIAN

CLINTON MERRICK STATE PARK

CUSTODIAN R. W. PREWITT

By L. H. PAMMEL

This state park, located on one of the main thoroughfares entering Forest City, is in Hancock county. It has a custodian's lodge, the gift of Mr. Merrick. The park is taken care of by Forest City. It is located on a slight eminence, of morainic material, and has a little ravine.

The trees are those common to this vicinity. The following are the most important trees and shrubs: Basswood, white or American elm, sugar or hard maple, red and black oak, bitternut hickory, smooth-fruited gooseberry, hazelnut, smooth sumach, prickly ash; many fine herbaceous plants like Dutchman's-breeches, bloodroot, May apple, blue cohosh, hepatica, anemone, etc., and many fine autumn flowers. There are fine prairie plants along the highway and along the right of way of the several railroads entering the city.

The following is from the address delivered by the president of the board at the dedication of the park September 11, 1924. This gives a brief history of the park:*

We are gathered here today for the purpose of dedicating this beautiful parklet at the edge of Forest City in Hancock county. The Rev. L. R. Hall in the invocation delivered a few moments ago spoke feelingly of the flowers and trees, and their use to man. Let us always remember that this little park in the heart of a fine agricultural community and a fine type of citizenship will have its place in the uplifting of the community. The citizens are to be congratulated on their achievement in the building of a greater Iowa because of their interest in parks. They are to be congratulated because they were instrumental in receiving this little rural park. A park of this type is an asset for every community. Let us always remember the spirit of the donor, Mr. Clinton Merrick, who wished to better the farm life and the community through contact with the great outdoors. He wanted a rural setting for the community. Mr. Merrick told me that this park should be forever dedicated to the free use of the public, where public questions of the day might be discussed with the utmost freedom and candor, also where wholesome recreation might be indulged in. This home of Mr. Merrick, where he lived during the declining years of his life, surrounded by these beautiful oaks, walnuts, basswoods and elms, meant much to him. The flowers in the woods and the blooming shrubs gave him so much pleasure that he wished others might enjoy the same. Therefore this public park is his legacy to this community and commonwealth. Let us bestow our praise on him for his generous gift to the state of Iowa.

Let me give you in brief the history of the creation of this park. Some time before 1922 Mr. Merrick conferred with the citizens of Forest City in regard to this park proposition. If I recall correctly, the individuals with whom he conferred were Mr. W. R. Prewitt, Mrs. Ethel Thompson of Forest City. A little later he wrote me a letter asking for a conference with him on the needed improvements. Then he said, "I have asked Mrs. Thompson and Mrs. C. H. McNider to work out the details of the gift to the state." On June 16, 1922, Mrs. C. H. McNider presented the offer to the State Board of Conservation. This offer was promptly accepted by the board and further details were worked out by Mrs. McNider, Mrs. Thompson and Mr. Prewitt. It was finally deeded to the state on August 24, 1922.

* Iowa State Parks Bulletin, v. 2; p. 3-4; No. 5.

It may be of interest to give a brief account of the life of Mr. Clinton Merrick. I am indebted to Mr. Prewitt for these facts. Mr. Merrick was born at a time when the subject of slavery was uppermost in the minds of the American people. During his youth the feeling on slavery was intense and he therefore became imbued with the spirit of freedom, and the right for the government to liberate the slaves and to keep the United States of America under one flag. He felt it his duty, when old enough, to enlist as a soldier for the cause of freedom. He became a good, loyal soldier. He enlisted in the Seventeenth Illinois Cavalry as a drummer; came to Iowa from Chicago in 1880, purchased an 80-acre farm north of Forest City and lived on it until 1912, when he sold the place and moved to Forest City. He purchased the small tract of ground which is now the park and in 1914 built the little cottage. In November, 1922, he moved to the Soldiers' Home at Sawtelle, California. He was born in Kendall county, Illinois, in 1846, and died at Sawtelle, California, December 9, 1923. He was never married. He was always generous. On the completion of the cottage, October 2, 1924, he had a barbecue. Everyone was invited to be his guest. He donated freely to the poor. On Christmas every widow in town received a chicken. On another occasion he bought the remnant of a stock of clothing and gave it to the poor of the town. He frequently loaned money to the poor. Much of it was never given back to him. He was a frequent contributor to the press. To me he sent several articles dealing with the problem of conserving the water supply. He advocated the impounding of streams for this purpose. His views on topics of the times were always progressive—sometimes ultraprogressive.

May this little parklet serve a fine purpose in this community and the state. These woods are certain to make happy many an individual. Blessed is the man who thinks of making others feel the inspiration of the great out-of-doors.



FIG. 8.—INDIAN HEMP
U. S. Dept. of Agrl.

LAKES OF HANCOCK AND WINNEBAGO COUNTIES.

By an act of the legislature all of the meandered lakes in the state of Iowa are under the jurisdiction of the State Board of Conservation. The following meandered lakes occur in Hancock and Winnebago counties: Crystal, Eagle, East and West Twin Lakes in Hancock county; Duck and Rice Lakes in Winnebago county. Rice Lake is partly in Winnebago and partly in Worth counties. The State Board of Conservation has purchased and received by gift land in Winnebago county, on the shores of this lake and on the shores of Eagle Lake in Hancock county. Sooner or later it hopes to purchase land on the shores of some other lakes in these two counties. All the lakes mentioned here are valuable for fishing and hunting. Rice Lake has long been a sanctuary of wild life and when once restored this lake will be one of the most interesting of northern Iowa.

The following schedule gives a list of the meandered lakes occurring in these two counties, together with their location:

Lake	Sections	Twp. N.	Range W.	County
Crystal.....	99-10-15-16	97	25	Hancock
Eagle.....	18-19-30	96	24 & 25	Hancock
East Twin Lake.....	19-20-29-30	94	24-25	Hancock
West Twin Lake.....	19-24-25-30	94	24-25	Hancock
Duck.....	20-21	100	24	Winnebago
Rice.....	13-14-24 18-19-20	99	22-23	Worth and Winnebago

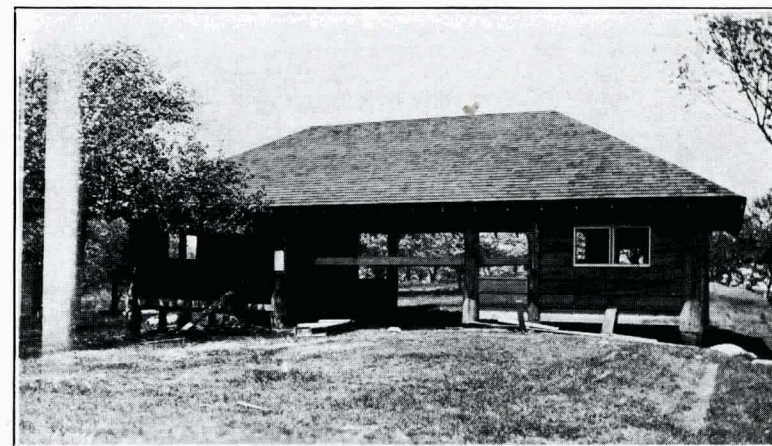


FIG. 10.—CABIN EAGLE LAKE

EAGLE LAKE STATE PARK IN HANCOCK COUNTY.

CUSTODIAN L. G. ROBERTS

By L. H. PAMMEL

Eagle Lake lies just north of the county road between Garner, the county seat, and Britt. On the east, north and west, township roads make it easy to reach from every direction. Crystal Lake lies about nine miles to the northwest, Clear Lake about fourteen miles to the east. The following statement occurs in the report on lakes:

"The western bank of the lake is rather high and covered with native timber. The eastern bank is, in general, less abrupt, and a large part is under cultivation, or used for grazing. The bottom of the lake is largely peat, the product of decaying vegetable growth. Underlying the peat the borings show blue clay and gravel.

"The water is shallow, four feet being the greatest depth found. It is so badly grown up with rushes that even a light duck boat is handled with difficulty. This growth of rushes, however, must be of comparatively recent date, for young men living in the vicinity tell of sailing and of running ice boats on the lake. With the exception of a few bullheads, no fish are caught.

"The area of the lake at the time of the survey was 837 acres. The area within the meandered line is 906 acres. The area of the watershed is 6,866 acres."

HISTORY OF EAGLE LAKE STATE PARK.

The first mention of this park was at a meeting on March 19, 1920, along with other lakes. The chairman of the board stated that a meander survey of the Highway Commission gives 69 acres as property of the state. At a meeting of the board at Cedar Rapids May 21, 1920, it was stated that there were 69 acres within the meandered line and that the State Board should acquire some 80 acres additional, the citizens to assist. At a meeting of the board, December 3, 1920, the Executive Council was asked to acquire certain lakes and Eagle Lake was among those listed.

At a meeting on March 9, 1923, the chairman of the board reported the desirability of an exchange of land on Wood Lake for property on Eagle Lake. Mrs. McNider moved that a technical land description of the state property be made and that the board ask the 40th General Assembly to give their authority to exchange. It was also extended to other state land exchange. On April 13, 1923, Mr. Harlan entered the following minutes:

"The matter of Eagle Lake with the petition of J. P. Spaller and others and the communication between R. R. Roberts and Dr. Pammel being before the board, the secretary was instructed to communicate with the parties interested the information that necessary legislation is in course to carry forward the purpose at which the parties aim."

Mr. E. P. Healy, representing the community of Britt, appeared before the board at its meeting in Des Moines on July 16, 1923, stating that the community of Britt would raise approximately \$3,000 for the purchase of some grounds and buildings. The board at this meeting approved the purchase of the Anton Reza-bek land and Mr. W. E. G. Saunders was asked to represent the board in closing the contract. Mr. H. F. Kenney made a report on this park August 8, 1924, which was approved. The inspection trip to Eagle Lake Park scheduled for September 11, 1924, was not made because of rain.

EAGLE LAKE PARK—HISTORICAL.

By L. G. ROBERTS.

Eagle Lake Park, located in Britt township, Hancock county, four and one-half miles northeast of Britt, while not a large park nor associated with any outstanding historic event in the development of the state, is a pretty and inviting place. Lying on the west banks of Eagle Lake, the land rolling and covered with a growth of oak trees of different varieties, many walnut, thornapple, black cherry, linden, elm, hickory and several varieties of shrubs; a beautiful grove of wild crabapples, a large amount of snowberry, and various kinds of vines, including Virginia creeper, green brier, bittersweet and wild grape, is the nucleus of one of our beautiful state parks.

A short history of the establishment of the park and events leading up to that end, may point out a way for interested communities to secure a park and to assist the state in its effort toward conserving beauty spots in Iowa. The writer of this article, L. G. Roberts, has been in close touch with all that has transpired on and near Eagle Lake since August, 1900, when he first landed in Britt and took up his duties as foreman in the *Weekly News* office. At that time the land around Eagle Lake was practically wild, north of the lake for ten miles was a swamp, partly covered with water, many large ponds, wild grass, wild rice, cane brakes and reeds and rushes. Ducks nested there in thousands. And many water birds resided there or visited there in their yearly migrations. His first visit to the lake was a week after his arrival in Britt. And a few weeks after he had a boat built and had secured a share in a shack, the only building on the lake.

The land where the park is now located was owned by Wm. Ward. In the Ward family were four boys, all devoted to hunting and fishing, and James (who gave his life in the late World War) was a real nature student. He knew the habits of every wild fowl that visited this locality. Naturally an artist, his canvases of wild life grace many a home in Britt. And he was a constant companion of the late Dr. Bailey, of Coe College, who spent his summer vacations at the Ward home and studied and collected birds, their nests and the surroundings connected therewith, for the museum at Coe College. He was also preparing a book on the birds of Iowa, which has been completed and published since his death. The Wards allowed anyone who wished to picnic on their land, and Mrs. Ward mothered many a young nimrod who was so unfortunate as to be upset in the lake or break through the "mushroom" ice in the early spring when hunting geese and ducks. But as population increased and many more people visited the lake, it became necessary to keep the gate, leading through the fence to the lake, locked in order to keep people from leaving it open and allowing stock to get out. This of course caused bad feelings, as such things always do. But as now, the few who would not be gentlemanly enough to use the place as they should, worked a hardship on others. But all this time the shack of the writer was left where first erected and he was at liberty to go in on the land at any time. Other shacks were built later, and to get to them (they being on state land) it was necessary to trespass on privately owned land.

Drainage projects were the "thing" now, and most of the vast marshes of the county were drained. Projects were up several times to drain Eagle Lake. The wooden dam erected by local people at the outlet of the lake, was blown out on two occasions. Matters came to court finally, and Attorney John Hammill, now Governor Hammill, handled the case which finally ended by a permanent injunction being secured from the state officials at Des Moines, restraining anyone from tampering with the dike or dam. A few hundred dollars was then raised and a dike and cement dam and spillway built. But it was inadequate and in a few years of no benefit. But finally the state took hold of matters and a large cement dam and spillway was erected and a mile and a half of dike graded. And then the question of a park began to germinate. But, as is always the case, most people were plenty willing to talk and suggest, and "let George do it." But the idea sprouted and grew. In the winter of 1922 many of the fine walnut trees on the now park tract, were felled and worked up into stove wood. And the main reason for this was that people gathering nuts would break down the limbs, sometimes chop off limbs to get the nuts, and otherwise disfigure trees.

And one of the things that made the writer use profane language one day was to go to the lake and find a party gathering chokecherries, their method being to climb the trees and saw off limbs, those below then picking the cherries. No wonder you are warned to "Keep Off!"

Anton Rezabek now owned the land. Meetings were held in Britt and much enthusiasm aroused. A committee was appointed to visit Mr. Rezabek and find out if an option could be secured on some of the land bordering the lake. He met the committee more than half way and allowed them an option on about forty acres, or any part of it wanted. Then the matter of raising money was in order. Soliciting committees were sent out. Enough money was raised so that it was possible to purchase thirteen acres at the contracted price of \$150 per acre. Then the idea of a state park was brought forward. After proper negotiations and conferring with the state legislature then in session, a trade was made with R. S. Rasmuson for about nine acres of land adjoining that already bought on the south. A tract comprising Wood Lake and marsh land tributary thereto was traded for this nine acres. Then the thirteen acres was deeded to the state. This gave a park of practically thirty acres, there being some nine acres or more of meandered land already held in title by the state. The state reimbursed the citizens of Hancock county with \$1,600, this to be used in improving the park. L. G. Roberts was made honorary custodian and work began. Loyal citizens buckled in and the park was cleaned up. Then contracts were let for fencing, a deep well was drilled, cement platform built around the well, closets erected and other needed conveniences, including stoves, garbage cans, etc., provided. This was all done in 1924. The custodian was desirous of seeing all the wild flowers, plants, etc., which formerly grew in the park, placed there again. J. A. Treganza, an ardent nature lover and the best posted man in north Iowa on geology, mineralogy and archaeology, was pressed into service. He has been untiring in his efforts to gather and plant flowers and plants. So far bloodroot, prairie lily, shooting star, purple cone, closed and blue gentian, phlox and lady's-slipper have been gathered and transplanted. Three kinds of ferns were also started. So far everything put in the park has grown nicely. The custodian was not idle. About one hundred plants of Virginia creeper have so far been placed along the line fence, and as many more will be in this autumn. All but two of these are growing nicely and in a couple more seasons will make a fine green hedge of the fence. Several dead trees are in the park. These were left and either Virginia creeper, green brier, bittersweet or trumpet honeysuckle are being planted at each. All these vines came from the neighboring land of James Rezabek and William Jakoubek, who gave permission to take anything wanted for the park. Many more flowers will be placed in the park. We are indeed fortunate in having a man like Mr. Treganza in our midst. Much of the expense of gathering these plants has been borne by him, a part by the state.

Sudden storms coming up and causing a scurry for autos, and several parties securing a downright soaking, started the idea of a shelter house. James Ross, one of the best park boosters, came to the front with an idea. The Red Men lodge of Britt had disbanded and their building was sold. Five hundred dollars was left in the treasury. He got in touch with some of the former members of the lodge, a meeting was called and largely attended. His suggestion was to donate this \$500 to the park toward a shelter house. The suggestion was most favorably received, a vote taken, and almost unanimously carried. Thus we had a start. The state agreed to furnish the balance of funds necessary for the building. The state landscape architect, R. F. Kinney, drew plans for a building and forwarded to Britt. Before work could be started winter came, and it was not until the spring of 1925 that the structure was started. A building 20x40 feet was built, in one end of which a rest room was made. The building is of rough lumber, corner posts are of logs, and altogether it makes a pleasing and rustic appearing shelter house. Its cost was in the neighborhood of \$900. It still requires staining and a few minor improvements to make it really complete.

The park has been well patronized. The usual troubles of parties wishing to drive where they please and do as they please in the park, have been encountered. Additional fences have been ordered erected to keep autos from driving over hills, destroying shrubbery, etc., but taken all in all we have had the cooperation of the public with but few disgruntled people calling the custodian and the state down.

PLANT LIFE OF EAGLE LAKE STATE PARK.

By L. H. PAMMEL

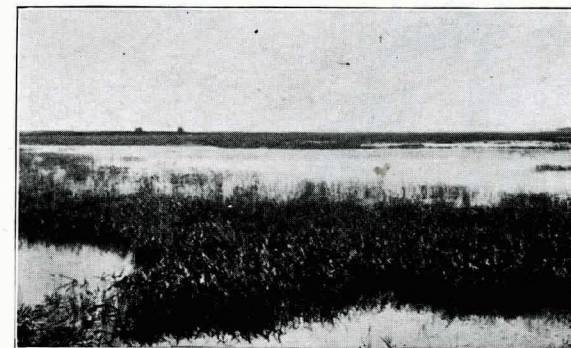
When the Highway Commission made a study of the lakes and lake beds of Iowa, the lakes of Hancock county and other lakes were studied in detail from the plant life standpoint by L. H. Pammel, J. L. Seal and L. W. Durrell. These authors made the following comments on the plant life of Eagle Lake in the Report of the Lakes and Lake Bed Survey of the Highway Commission.*

"Eagle Lake . . . is about four miles long by two miles wide, and a rather shallow lake. The greatest depth is about four feet. The bottom is peat resting on clay. Water plants are plentiful. There is an abundance of bulrush, as in other lakes of this character, scattered in patches over the entire lake. The greater bulrush and the cattail are common on the margins. These plants are intermingled with bur reed, patches of arrowhead and some wild rice. Water plantain and iris occur on the shore. The stonewort, pondweeds and slender Naias were distributed with the other water plants. The little pools on the shore were covered with duckweed, the ivy-leaved duckweed and the greater duckweed.

"Interesting successions and zonal distribution were noted from the shore to the open water. On the shore, sedges, plants of the marshes and slough grass were found in the mud; water plantain, then bluejoint grass followed by wild rice occurred. In shallow water, arrowheads, iris and bur reeds grew. In deep water, the rush, pondweeds followed by duckweeds, water lily and spatterdock flourished.

"A low wooded ridge separates Eagle Lake from Wood Lake. This lake is little more than a marsh. Here occurred many of the plants found on the shore line of Eagle Lake. One of the most conspicuous plants is the greater bulrush.

* Iowa Lake Bed Survey Report 1917, page 174.



Iowa Lake Bed Survey Report 1917

FIG. 9.—EAGLE LAKE, HANCOCK COUNTY

RICE LAKE STATE PARK

CUSTODIAN H. L. HILL

RICE LAKE.

By L. H. PAMMEL.

Rice Lake, one of the larger natural water reservoirs in the northern part of Iowa, is about eight miles from the northern boundary of the state and about two miles south of the city of Lake Mills. The western half of the lake is in Center township, Winnebago county, and the eastern half is in Bristol township, Worth county.



FIG. 10.—WILD IRIS

western half of the lake is in Center township, Winnebago county, and the eastern half is in Bristol township, Worth county. It is the source of Beaver Creek, one of the head waters of Lime Creek.

Rice Lake is a state-owned meandered lake bed of approximately 800 acres. Its area has been materially reduced since the attempt to drain it in 1906. The area of the original lake bed was approximately 1,200 acres, 500 acres of which was open water with a depth of from 2 to 25 feet, approximately 80 acres of the open area being from 10 to 15 feet in depth. The original lake was about three miles long from

of open water averaging from four to twelve feet deep. A large part of the former lake is now a miry area. Rice Lake proper contains five state-owned wooded or grassy islands and parts of others near the shore. There are also some fine wooded areas on the shore line, part of which are within the meander lines of the lake. Of the 55 acres of state owned wooded land the citizens donated 33.

HISTORY OF RICE LAKE STATE PARK.

Several years ago (1906) a petition was presented to the Executive Council asking that Rice Lake be drained. The petition was granted, but owing to the peaty nature of the soil the ditches soon became filled. Mr. St. John, of the fish and game department, had long recommended that the lake with its numerous islands and aquatic plants be made a wild life sanctuary.

At a meeting of the State Board of Conservation on February 6, 1920, Mr. G. B. L. Styve of Lake Mills, presented a petition from the citizens of Lake Mills, Forest City, Fertile, Scarville and Belmond asking that Rice Lake be restored and improved for park purposes. The original petition requested that a swampy area of some 120 acres* adjacent to the city of Lake Mills be included in this park project.

On May 14 of the same year, Mr. H. L. Hill, who has been active from the first, appeared before the board. The board, acting on a favorable report made by L. H. Pammel and W. E. Albert**, adopted a resolution reciting the fact that the area had been a sanctuary of wild life for a long time and should be preserved. The resolution requested the Executive Council to take the necessary legislative action to restore the lake and that some 200 acres of land be purchased. On December 3d, a resolution was adopted by the board asking the legislature to make a direct appropriation to restore the lake and pay drainage assessments, stating that the petitioners would act with the board in the restoration of the lake.

On June 8, 1923, Messrs. H. L. Hill of Lake Mills and O. S. Rislow of Forest City appeared before the board again urging a park area. The board at this meeting adopted a resolution declaring Rice Lake a state park, to be known as Rice Lake State Park. Mrs. C. H. McNider and L. H. Pammel were asked to make a study of the lake and receive such expert advice as necessary. This committee asked Dr. Harry G. Oberholser, of the United States Biological Survey, to make a report on the lake as a game refuge which report later was submitted.

On July 16, 1923, a committee consisting of Mrs. C. H. McNider, C. L. Niles and L. H. Pammel were asked to prepare a report on the practicability of building a dam. A favorable report was submitted. On October 12, 1923, Mrs. C. H. McNider submitted a letter from H. L. Hill from the Rice Lake Outing Club, which had purchased a tract of land near the lake, stating that this club would donate some lands. The board reiterated its position on the restoration of the lake, and requested that the Rice Lake Outing Club furnish the board information concerning the price of the land to be purchased by it. The same matter came before the board on December 14th. The board asked the Outing Club to furnish concrete facts, descriptions of the property to be donated and the land to be purchased by the board. At the meeting on February 8, 1924, Messrs. H. L. Hill and O. S. Rislow presented to the board definite arrangements to give the state 22 acres on the shore of the lake. The board then adopted a resolution to purchase 13.27 acres for \$1,900. On September 12, 1924, H. L. Hill, J. C. Odden, O. W. Rislow and J. R. King requested that the state purchase some additional acreage. This was referred to W. E. G. Saunders and Mrs. C. H. McNider. On December 12, 1924, an additional tract was purchased for \$3,500.

Mr. C. H. Diggs was asked to cooperate with the Outing Club to prepare plans for the park and Outing Club to fit in with the development plans of the state. The board will take care of the highways in the park as soon as it is possible to do so.

* This land it was expected would be donated to the state.

** A supplementary report was made on September 23, 1923.



Photo by C. M. King

FIG. 11.—WILD RICE AND ARROWHEAD

PLANT LIFE OF RICE LAKE PARK.

Mr. H. L. Hill writes: "There are now about 500 acres of fine timber about the shores of Rice Lake. . . . Thousands of large, native, hard maples grace the shores and furnish quantities of maple sugar. Thousands of shellbark hickories and butternuts furnish bountiful nut supply for both squirrels and men. . . . Chokecherries, black cherries, pin cherries or bird cherries, black haws, red haws, thornapples, wild raspberries, currants and gooseberries, plums, grapes, mandrakes or May apples, crabapples, hazelnuts, bitter hickory or pignuts, shellbark hickory nuts, butternuts, black oak and bur or white oak acorns, all these wild fruits (and nuts) are indigenous and found growing about this Rice Lake area in quantities. And in addition to the trees already mentioned there are excellent growths of elm, ash, ironwood, basswood, hackberry, aspen, poplar, willow varieties, cottonwood, etc."*

PLANT LIFE IN RICE LAKE PARK.

There are beautiful wooded islands in Rice Lake, splendid for park purposes. On these islands are such trees as the hard maple, northern pin oak, ironwood, quaking aspen, basswood, also a few hickory, slippery elm, American elm, green ash, black ash, black cherry, chokecherry, pin cherry.

On the shores are willows, like sandbar willow, almond-leaved willow, black willow and beaked willow. There are also a good many interesting shrubs, like the hazelnut, sumach, dogwood and hoary willow in boggy places, also vines like the wild grape and Virginia creeper.

* Advantages of Rice Lake as a Wild Game Sanctuary. By H. L. Hill. MSS.

ANIMALS OF RICE LAKE PARK.

Writing about "Advantages of Rice Lake as a Wild Game Sanctuary," Mr. H. L. Hill of Lake Mills says:

"Otter, mink, muskrat, skunk, civetcat, badger, red fox, raccoon and bobcats are native fur-bearing animals, and still to be found, excepting the bobcats. Fox squirrels, gray squirrels, red squirrels, flying squirrels occasionally, chipmunks, cottontails, jackrabbits, woodchucks, are native and common. It is a noted rabbit and squirrel hunting ground."



FIG. 12.—SKUNK.

The following species of water birds have been reported as breeding in and about Rice Lake.

American Grebe	Great Blue Heron
Pied-billed Grebe	Green Heron
Loon	Black-crowned Night Heron
Franklin Gull	Whooping Crane
Forster Tern	Sandhill Crane
Hooded Merganser	King Rail
Mallard	Virginia Rail
Blue-winged Teal	Carolina Rail
Pintail	Yellow Rail
Wood Duck	American Coot
Redhead	Florida Gallinule
Canada Goose (Probably only a migrant)	Wilson Phalarope
Trumpeter Swan	Woodcock
American Bittern	Long-billed Curlew
Least Bittern	Killdeer

In addition to these, some 70 species of land birds have been recorded as breeding about the lake.

Mr. H. L. Hill writes: "Rice Lake and its environs were a natural retreat for more kinds of birds than is usual to so limited an area. . . . The writer in company with three other parties made an excursion in 1903 into Goose Island (about two acres) situated in Rice Lake, and we found thirty-two kinds of birds' eggs at one time. . . ."

Mr. Hill lists nearly 200 birds which have been found at Rice Lake and does not consider the list complete.

PEAT BOGS OF WORTH AND WINNEBAGO COUNTIES.

By L. H. PAMMEL.

Since there is much peat in and about Rice Lake it will be convenient to discuss peat and peat bog plants. Dr. S. W. Beyer in a report on peat makes the following statement:

Ordinary vegetable matter is composed of cellulose and lignin, both of which, under atmospheric conditions tend to break down to much more simple compounds. Under water only partial breaking down of vegetable material occurs. The resultant partially decayed plant debris is known as peat. Physically, peat varies from highly fibrous, heterogeneous, lacework, of almost unchanged plant remains to a fiberless, homogeneous structureless muck or mud. Iowa peat ranges in color from a light brown to almost jet black in the nonfibrous varieties, the latter often showing shades of gray and blue due to the presence of clay and the remains of fresh-water shells.

Animal organisms imbedded in peat are preserved indefinitely. It is due to this antiseptic property that peat itself is preserved from decay.

Peat accumulates very, very slowly through the partial decay of successive generations of water plants that grow on the bottoms of shallow basins of water, or by the gradual extension of the plant border into deeper waters, and to some extent from plants that grow on top of water.

Professor Davis* describes a bog "as an area of wet, porous land on which the soil is made up of decayed and decaying vegetable matter, so closely consolidated, and containing so much water, that the surface shakes and trembles as one walks over it." Practically all Iowa peat deposits belong to the bog type, and all of commercial importance are confined to the Wisconsin drift sheet.

The average Iowa peat has about one-half the heat value of the average Iowa coal. The principal use of peat has been and is as a fuel. Peat may be used direct as cut peat, machine peat, or briquettes, or may be transformed into coke, half coke, producer gas or powder. The gas obtained from peat compares favorably in quality and heat value, with that obtained from coal. Peat as a source of producer gas must be of interest to north-central Iowa where other fuel is scarce. In the production of producer gas, tar and ammonium sulphate, may be recovered as by-products. The peat coke is far superior to the gas coke on account of its freedom from sulphur and other objectionable impurities.

Since there are many peat bogs in this region a little discussion of the flora of these bogs should be presented. The peat bogs may be divided into two general types with various subdivisions. Dr. C. A. Davis* in a discussion of the peat bogs divides them into nine classes:

- (1) Elm and Black Ash swamps.
- (2) Tamarack swamps, marshes and bogs.
- (3) Cedar (*Arbor Vitae*) swamps.
- (4) Spruce swamps.
- (5) Willow and Alder swamps.
- (6) Heath (Blueberry, Cranberry and *Cassandra*) swamps, marshes or bogs.
- (7) Grass and sedge marshes and bogs.
- (8) Rush marshes (*Cattail* and *Bulrush* marshes belong here).
- (9) Moss bogs (including *Sphagnum* bogs).

* Annual Report, Geological Survey of Michigan, 1906, pp. 108, *et seq.*

* Peat and Peat Deposits in Iowa. S. W. Beyer, Annual Report; Iowa Geol. Survey, Vol. XIX, p. 696, *et seq.*

* Professor C. A. Davis in Annual Report, Geological Survey of Michigan, 1906, pp. 108, *et seq.*

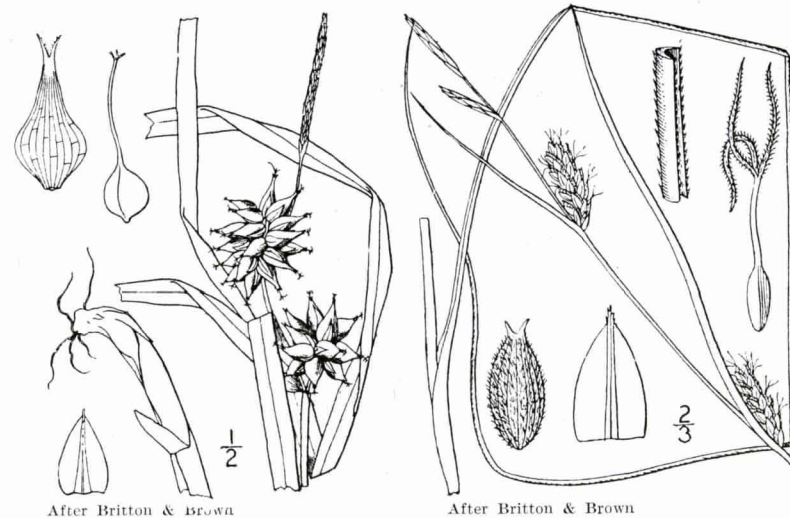


FIG. 13.—GRAY'S SEDGE

FIG. 13A.—SLENDER PEAT BOG SEDGE

I might say in this connection that classes (2), (3), (4), (6) and (9) are absent from the state of Iowa although these types are common in Wisconsin and Michigan.

The types of bogs common in Iowa are the following:

- (1) The Quaking Aspen bog.
- (2) Willow bog.
- (3) Grass and Sedge marshes.
- (4) Rush marshes.
- (5) Moss bogs.

The moss bog mentioned here differs from the moss bogs of Michigan and Minnesota in that sphagnum is absent. It is clear, however, that all of these bogs contain a mixed vegetation of many aquatic or semiaquatic and even dry land plants.

A bog is the outgrowth of a lake. The prominent peat bogs of Iowa, probably not since the time that Iowa became settled, were once lakes in which such plants as the white water lily, the spatter dock and water weed, like *Potamogeton*, were the common types of plants. The dead plants were deposited in the lake bottom making a heavy silt, then in succeeding generations more material was deposited until later the lake became practically filled and now has a floating bog. All the steps in the process of making land may be seen in Dead Man's Lake. A part of this lake is a floating bog and, for scientific purposes, should always remain a part of the park. On the edges of this pond may be seen such plants as iris, tall reed grass and arrowhead. The larger peat bogs of this area show various evolutionary stages of development. In the younger bogs, poorly drained, there are a few shrubby willows and gentians. However, in the older bogs, partially drained, one may find a few trees like the quaking aspen but the bulk of the material consists of a sedge.*

THE QUAKING ASPEN BOG.

The bogs of Cerro Gordo, Worth and Hancock counties may be compared with some very typical swamps in Wright and Hamilton counties. Both of these counties are in the Wisconsin drift area, and the swamps are in a more advanced stage than in the north and east. These swamps have materially changed since

* For an account of the peat bogs see papers by L. H. Pammel, *Flora of Iowa Peat Bogs*, and S. W. Beyer on *Peat and Peat Deposits*, Report of the Iowa Geological Survey, Vol. XIX.

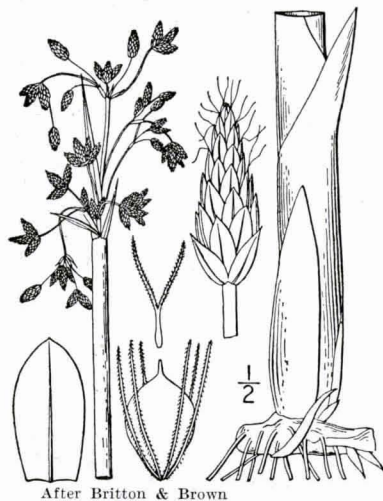


FIG. 14.—RUSH



FIG. 14A.—CYPERUS, ETC.

the surrounding country has been brought into cultivation. That these swamps were once lakes, receiving the water from the surrounding country, admits of no doubt. The old beach line is plainly evident. In the larger of these lakes the outer beach was covered with trees and shrubs. Of this arboreal vegetation we may mention bur oak, slippery elm, American or white elm, red ash and basswood. There are a few shrubs—hazelnut, smooth sumach, poison ivy and wolfberry. The smaller lakes are not surrounded by timber or shrubs. The outer beach line, which consists of a sandy gravel and humus, contains toothed-leaved primrose, western false gromwell, hoary vervain, prostrate vervain, hoary puccoon, narrow-leaved puccoon, downy painted-cup, stiff goldenrod and gray or field goldenrod. Kentucky blue grass is abundantly naturalized. The second beach is thickly covered with the dark-green bulrush, fowl meadow grass, meadow rue, slender bog rush, blue vervain and squirrel-tail grass. Formerly the small white lady slipper¹ was common. The third beach is thickly covered with sedge, larger blue flag,² everlasting pea,³ spike rush,⁴ thoroughwort,⁵ joe-pye weed⁶ and swamp milkweed.⁷ The fourth beach is mostly made up of bluejoint grass,⁸ sedge,⁹ lobelia,¹⁰ wild chess,¹¹ and marsh skullecup.¹² This beach is followed by abundant growth of reed,¹³ the great bulrush,¹⁴ common cattail,¹⁵ buckbean¹⁶ and Indian rice.¹⁷ Formerly the center of the swamp was a lake in which cow lily¹⁸ and water lily¹⁹ abounded, but owing to drying of the lakes these have in most instances disappeared. During the spring and early summer months there is an abundance of water in the small depressions, containing diatoms, desmids and other fresh-water algae. The willows, especially the glaucous willow, the hoary willow and the beaked willow, form an integral part of the flora. The quaking aspen occurs in the somewhat higher situations of the bog.

1. *Cypripedium candidum*. 2. *Irish versicolor*. 3. *Lathyrus palustris*. 4. *Eleocharis palustris*. 5. *Eupatorium perfoliatum*. 6. *Eupatorium purpureum*. 7. *Asclepias incarnata*. 8. *Calamagrostis canadensis*. 9. *Carex*. 10. *Lobelia kalmii*. 11. *Bromus kalmii*. 12. *Scutellaria galericulata*. 13. *Phragmites communis*. 14. *Scirpus validus*. 15. *Typha latifolia*. 16. *Menyanthes trifoliata*. 17. *Zizania aquatica*. 18. *Nymphaea advena*. 19. *Castalia tuberosa*.

THE WILLOW BOG.

Throughout the Wisconsin and Iowan drift area, willow bogs are frequent but they form only a small part of the peat bog flora. In the Iowan drift or in the driftless area in northeastern Iowa in Clayton, Allamakee and Winneshiek counties, the most important species are the beaked willow¹ and the glaucous willow² which are usually found along small runs or ditches which have been cut

through these marshes or along roadsides. The myrtle willow³ and the hoary willow,⁴ when occurring, are widely scattered over the bogs and are therefore a much more integral part of the bog flora than are the other species.

1. *Salix rostrata*. 2. *S. discolor*. 3. *S. pedicularis*. 4. *S. candida*.

MARSH AND SEDGE BOGS.

The peat bogs near Fertile contain many of the same plants found in the bogs east of Hanlontown. The most conspicuous is the slender sedge¹ which is a prevailing and predominating species. Much of the peat is derived from this plant. Associated with this sedge mat there is an abundance of water marigold,² marsh marigold,³ Carolina grass of parnassus,⁴ swamp thistle,⁵ Kalm's lobelia,⁶ swamp lousewort,⁷ fowl meadow grass,⁸ spike rush,⁹ closed gentian,¹⁰ fringed gentian,¹¹ boneset,¹² purple boneset,¹³ swamp saxifrage,¹⁴ white bellflower,¹⁵ small bedstraw,¹⁶ poison hemlock,¹⁷ water parsnip,¹⁸ wild timothy,¹⁹ greater dock,²⁰ purplish meadow rue,²¹ dulichium,²² false dragonhead,²³ marsh skullcap,²⁴ mad-dog skullcap,²⁵ ladies'-tresses,²⁶ Riddell's goldenrod,²⁷ rush aster,²⁸ wild chess,²⁹ fringed brome grass,³⁰ buckbean,³¹ cottongrass,³² St. John's wort,³³ beech fern,³⁴ fragrant orchis,³⁵ bluejoint grass,³⁶ bog reed grass.³⁷ Many other plants occur and no doubt partake in the form of peat. Of recent introductions mention may be made of smaller ragweed, smartweed, sunflower, blue grass, red top, bootjack, aster, late goldenrod.

1. *Carex filiformis*. 2. *Bidens trichosperma*. 3. *Caltha palustris*. 4. *Parnassia caroliniana*. 5. *Cirsium muticum*. 6. *Lobelia kalmii*. 7. *Pedicularis lanceolata*. 8. *Glyceria nervata*. 9. *Eleocharis palustris*. 10. *Gentiana andrewsii*. 11. *Gentiana crinita*. 12. *Eupatorium perfoliatum*. 13. *Eupatorium purpureum*. 14. *Saxifraga pennsylvanica*. 15. *Campanula aparinoides*. 16. *Galium trifida*. 17. *Cicuta bulbifera* and *C. maculata*. 18. *Sium cicutaefolium*. 19. *Muhlenbergia racemosa*. 20. *Rumex brittanica*. 21. *Thalictrum purpurascens*. 22. *Dulichium arundinaceum*. 23. *Physaostegia virginiana*. 24. *Scutellaria galericulata*. 25. *Scutellaria lateriflora*. 26. *Spiranthes cernua*. 27. *Solidago riddellii*. 28. *Aster junceus*. 29. *Bromus kalmii*. 30. *Bromus ciliatus*. 31. *Menyanthes trifoliata*. 32. *Eriophorum viridi-carinatum*. 33. *Hypericum virginicum*. 34. *Aspidium thelypteris*. 35. *Habenaria leucophaea*. 36. *Calamagrostis canadensis*. 37. *Calamagrostis in- capansa*.

When drainage has been carried on to a much further extent as in some of the bogs in Winnebago and Hancock counties, it may become densely covered with sticktight. One whole bog, acres of it, was a golden yellow by the growth of this plant. With it occurred a little of the poison hemlock.

RUSH BOGS.

These bogs are somewhat limited in extent. The whole of the bog near Fertile has been so sufficiently drained that little of the greater rush¹ occurred; however, in numerous small bogs in Hamilton, Winnebago and Wright counties, this rush formed an important part of the flora. Associated with this rush is the wild rice² which is abundant in Winnebago, Hamilton and Emmet counties. In these bogs the water is from a few inches to a foot or more in depth and often it gives away like a regular sphagnum bog, forming a well-matted system of roots. The greater reed grass³ is abundant. The yellow water lily and the white water lily are also abundant, occasionally also the pickerel weed⁴ and crowfoot,⁵ arrowhead,⁶ spike rush⁷ growing in mud, and water hemlock.⁸

1. *Scirpus validus*. 2. *Zizania aquatica*. 3. *Phragmites communis*. 4. *Pontederia cordata*. 5. *Ranunculus delphinifolius* and *R. aquatilis*, var. *capillaceus*. 6. *Sagittaria*. 7. *Eleocharis palustris* and *E. acicularis*. 8. *Cicuta bulbifera*.

MOSS BOGS.

There are none of the typical moss bogs in this state. The moss found in this state belongs to the genus *Hypnum*. Sphagnum has not been found anywhere in the bogs of northern Iowa.

CRYSTAL LAKE, HANCOCK COUNTY.

This beautiful lake in Hancock county, located near the northern boundary of the county in Crystal township, was surveyed by the Iowa Highway Commission in 1916 and a report on the same was made by the Commission.* The little town of Crystal Lake is just south of the lake. Britt is nine miles south and Forest City is eighteen miles northeast. The lake is accessible by a county road from the south and a township road from the east.

The Highway Commission gives the area of the lake as 274 acres. The watershed contains an area of 2,134 acres. There is nice open water, generally free from rushes. The banks are rather steep in places. The depth of the lake is six to seven feet. There is some silt in the lake.

In commenting on this lake the Highway Commission has said:

The drainage area is decidedly limited and no doubt a large part of the water supply comes from springs. Any attempt to raise the water level will overflow the low land lying to the northwest. This is not desirable. The outlet is to the southeast through a concrete culvert under the highway and thence through a dredge ditch to the Iowa River. The present water level represents a normal high stage. A rise of two feet would put the water over the road at the outlet and imperil the railroad track in places.

Local people are united in a desire to have the lake kept and improved. They are justly proud of this beautiful little sheet of water. They regard it as an asset to the community and express themselves as willing to cooperate in every way for its betterment.

Some steps have been taken to ask the State Board of Conservation to purchase land on the shores of this lake.

The Flora of the Region. The following are the important trees and shrubs: bur oak, American or white elm, slippery elm, basswood, hackberry, common red haw, green ash, almond-leaved willow, black willow, sandbar willow, pussy willow (*Salix discolor*), soft maple, box elder, cottonwood, choke cherry, ironwood, or hop hornbeam, hazelnut, dogwood (*Cornus Amomium*) snowberry and black walnut.

The following are some of the common herbaceous plants: hepatica, Dutchman's-breeches, bloodroot, May apple, waterleaf, false Solomon's-seal, spikenard, yellow, blue and birdfoot violets, smooth blue aster, New England aster, white aster, willow-leaved aster, large-flowered, Canadian, fragrant and meadow goldenrods, Iowa and wood thistle, meadow sunflower, closed and blue gentians. "Clumps of sagittaria and scirpus occur on the shallow southeast shore. Near these many floating algae were found. A portion of the shore line is well wooded.*

Of the animal life mention may be made of the ground hog, prairie squirrel or gopher, brown squirrel, muskrat, weasel. Of birds, Canadian goose, mallards, mudhens teals, terns, brown thrasher, robin, catbird, bluejay, crow, hairy woodpecker, yellow hammer, etc.

TWIN LAKES, HANCOCK COUNTY.

The following facts concerning Twin Lakes, Hancock county, are taken from the report by the Iowa Highway Commission on the survey of lakes in 1916.*

* Report of the Highway Commission on the Iowa Lakes and Lake Beds, page 90.

* Iowa Lake Bed Survey Report 1917, page 177.

* Iowa Lake Bed Survey Report 1917, page 91. East Twin Lake; page 92. West Twin Lake.

EAST TWIN LAKE, HANCOCK COUNTY

This is one of a pair of lakes, the other of which is known as West Twin. It lies wholly within Twin Lake township near the southern boundary of the county.

Kanawha, a town of five hundred people, on the M. & St. L. Ry., is four miles west of the lake. Goodell, a town of three hundred population, on the C., R. I. & P. Ry., is five miles east. The lake is easily reached from the highway that skirts it on the west. On the north the highway is not far from the lake and could, to advantage, be relocated so as to follow the shore even more closely.

"The banks of the north and south are high and covered with good sized groves of natural timber. On the west is one small slough which cannot be drained. The east one-quarter of the lake is shallow, and grown up to rushes; the rest is open water about a foot and a half deep.

The area at the time of the survey was 184 acres. The area inside the meander line is 193 acres. The area of the water shed is 1,292 acres. . . .

From the south, the drainage from a long string of sloughs enters the lake through a narrow break in the bank. The water surface in the most northern slough of this group is below the level to which the lake will be raised. Those farther south are a little higher. A plan for draining these sloughs through a saddle in the hills southeast of the lake has been considered. An earth embankment five hundred feet long would be needed to prevent the lake draining out through the same ditch. . . .

At the time the survey was made, a dam was being built by the Fish and Game Department, at the outlet, which will raise the water level 3.25 feet, or to an elevation of 103.25, referred to the map. The dam consists of a concrete spillway twelve feet long, and an earth embankment eleven hundred feet in length. This will increase the depth to about five feet. . . .

The lake, when the water rises, will form a valuable addition to Iowa's lakes, and the local people are well pleased with the work being done. They would like, however, to see the lake deepened by dredging. No complaint was heard of any nuisance arising from the lake.

The State Board of Conservation has on several occasions appropriated money to take care of the dam at the outlet.

There are many fine trees on the shores of the lake. The species much the same as for Rice and Eagle Lakes.

WEST TWIN LAKE, HANCOCK COUNTY.

West Twin Lake is located in the western part of Twin Lake township and extends into the eastern part of Amsterdam township. It is three miles east of Kanawha, and six miles west of Goodell. Eagle Lake is ten miles north; Twin Sisters Lake, seven miles south. The Highway Commission states:

This is a nice clear body of open water from five to six feet deep. There is no inlet and at the present elevation of the water surface, no outlet. The banks are good. There is practically no low land dependent on the lake for drainage. On the southeast, a grove of natural timber forms a pleasant picnic ground.

The area of the lake at the time of survey was 109 acres. The area enclosed by the meander line was 109 acres. Two hundred and twenty-nine acres of land are included in the water shed.

Only local people use the lake for fishing purposes. It has never been stocked but bullheads are found in abundance. There is very little natural shelter around the shore and, as a consequence, it is not of any importance as a nesting place for wild fowl. Occasional flocks only are to be found during the spring and fall migrations.

Owing to the very limited area which drains into the lake, the water supply is not all that can be desired. The water level fluctuates considerably. If the water were to rise two feet above its present level, it would escape to a small ditch south of the lake and follow down a natural depression to East Twin Lake which is 29 feet lower. If it were to rise a trifle higher, it could also escape to the southwest into the Boone River. The lake is almost exactly on the divide. The bottom is of mud and decayed vegetable matter.

PLANT LIFE OF WEST TWIN LAKE

There are few trees on the shores of this lake as indicated in the report on Lakes and Lake Beds. The lake is on the divide between the Iowa and the Boone rivers. There are a few willows, like the white willow, which were planted at an early day; also some almond-leaved and black willows. There are also a few green ash, cottonwoods and elms. The shores are lined with the shrubby wild indigo (*Amorpha fruticosa*), some buttonbush (*Cephalanthus*), and pussy-willow (*Salix discolor*). On the shores of the lake may be found an abundance of yellow flowering Spanish needles (*Bidens cernua*, *B. discoidea*, *B. connata*), ditch stonecrop (*Penthorum sedoides*), monkey flower (*Mimulus ringens*), meadow goldenrods (*Solidago serotina* *S. graminifolia*), mad-dog skullcap (*Scutellaria lateriflora*), the little scheuchzeria, water-plantain, cattail in marshy places, rushes (*Juncus*), manna grasses and fowl meadow grasses.

DUCK LAKE, WINNEBAGO COUNTY

Duck Lake, locally known as Lake Harmon, is near the center of Logan township. Forest City is about seventeen miles to the south, Lake Mills about twelve miles to the southeast. The nearest lakes are Silver in Worth county, fourteen miles to the east, and Crystal in Hancock county, twenty-two miles to the southwest. It is most easily reached by driving from Scarville, which is located on the C. & N. W. Railway. No public highway touches the lake. A private road from the north affords the only means of access with vehicles.

The Highway Commission states:

“The banks on the south and northeast are steep, on the west a low flat ridge separates the lake from a large swamp area which drains away from the lake. A large grove of native timber is located on the eastern shore. The area at the time of the survey was 77 acres. The area inside the meander line is 72 acres. The area tributary to the lake is 421 acres.

“The outlet is to the southeast through a dredge ditch to Lime Creek. The ditch has very little fall and is badly silted up. The ditch is not directly connected to this lake, and at the time of the examination the water in the lake, which stood about twelve inches below high-water mark, was a little higher than the water in the ditch. An outlet could be obtained by dredging out the ditch for a distance of three or four miles.”

PLANT LIFE OF DUCK LAKE REGION

“There is considerable low land to the southwest (of the lake) and this, like the other land adjacent to the lake, contains willows of several species, boneset, greater lobelia, calamus, joe-pye weed, carex, cattails, rice cut-grass, goldenrods, asters, Spanish needles, and on the shores of the lake are a few rushes.

“The timber belongs to private owners, which has thus far been protected. There is a nice rolling timbered grove consisting of green ash, bur oak, basswood, black walnut, black ash, red oak, black oak, and some tree willows. This timber is practically the only timber in that section of Winnebago county, and is surrounded by prairie and the lake is practically on the watershed.”



State Parks in Iowa

Designation	Acres	County
Backbone State Park.....	1300	Delaware
Bellevue State Park..... (Not completed)		Jackson
Theo. F. Clark State Park.....	24	Tama
Clear Lake State Park.....	20	Cerro Gordo
Devil's Backbone State Park.....	210	Madison
Dolliver Memorial State Park.....	457	Webster
Eagle Lake State Park.....	27	Hancock
Eldora Pine Creek State Park.....	200	Hardin
Farmington State Park.....	100	Van Buren
Fort Defiance State Park.....	50	Emmet
Fort Atkinson State Park.....	5	Winneschick
Gitchie Manitowish State Park.....	40	Lyon
Oak Grove State Park.....	92	Sioux
Lacey-Keosauqua State Park.....	1400	Van Buren
Ledges State Park.....	644	Boone
Lepley State Park.....	9	Hardin
Lewis and Clark State Park.....	300	Monona
Lost Island Lake Park.....	27	Palo Alto
Medium Lake Park.....		Palo Alto
Merrick Park.....	5	Winnebago
Morehead Caves.....	15	Jackson
Oakland Mills.....	77	Henry
Orleans Park.....	20	Dickinson
Palisades.....	140	Linn
Pilot Knob State Park.....	235	Hancock
Polk County.....		Polk
Rice Lake.....	55	Winnebago
Rush Lake.....		Palo Alto
Silver Lake.....	13	Delaware
Silver Lake.....		Dickinson
Silver Lake.....		Palo Alto
Okamanpedan (Tuttle) Lake and Park.....	10	Emmet
Twin Lakes and Park.....	20	Calhoun
Wall Lake.....	12	Wright
Wapsipinicon State Park.....	220	Jones
Flanders-Bixby..... (Not completed)		Marion
Little Wall Lake.....		Hamilton

All of the meandered lakes are state parks, as well as meandered rivers of Iowa.

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| 1. Nishnabotna River | 5. Iowa River |
| 2. Raccoon River | 6. Skunk River |
| 3. Des Moines River | 7. Maquoketa River |
| 4. Cedar River | 8. Wapsipinicon River |
| | 9. Turkey River |

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