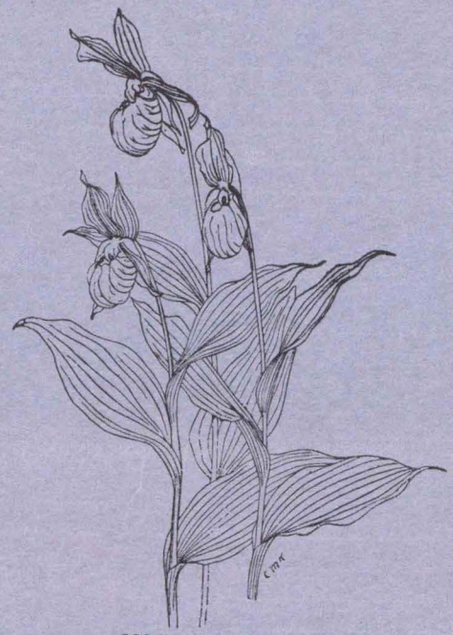
Iowa State Conservation Board, Eldora Pine Creek State Park

Iowa

ELDORA PINE CREEK STATE PARK

HARDIN COUNTY, IOWA



MOCCASIN FLOWER

1925

ELDORA PINE CREEK STATE PARK

Publication of Park Booklet, Series No. 2

P. T. DAVISON, *Custodian*

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Eldora Pine Creek State Park

THE TREE

EDGAR A. GUEST

A tree before my doorway stands
And welcomes me with open hands.

I hear it through my window pane
Singing an anthem to the rain.

Or lending to a sterner breeze
The lilt of marching melodies.

And whether skies be dark or fair,
I know that tree is standing there.

I sometimes wonder if it knows
How swiftly time's bright river flows?

And if it knows that it shall stay
Long after I have gone away?

I boast my little time of power,
I dance away my merry hour.

Grow proud and feel myself secure
And think my conquests shall endure;

And yet I know some day the tree
Shall see the gray hearse come for me.

Shall greet the sun and feel the rain
And sing outside my window pane.

And watch the children at their play,
Long after I have gone away—

A thousand glories it shall see
In many an age denied to me.

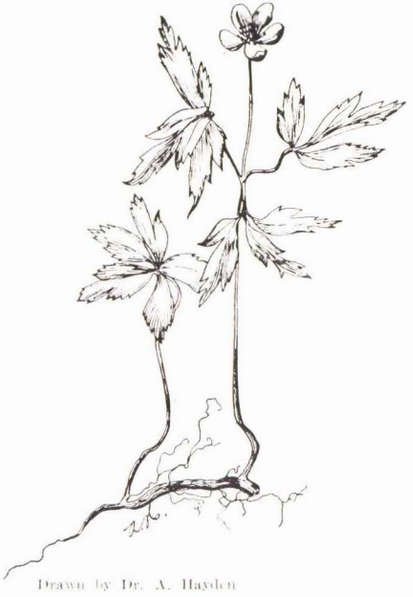
ACQUISITION OF THE ELDORA PINE CREEK STATE PARK

Soon after the organization of the State Board of Conservation steps were taken toward the acquisition of the area now known as the Eldora Pine Creek State Park. The first steps taken toward this acquisition were made on April 26, 1919, when an inspection was ordered and a report made later by the chairman of the board. On August 30, 1919, E. R. Harlan was also asked to make an inspection. On October 7, 1919, Mr. C. L. Hays came before the board and outlined the wishes of the citizens of Eldora. The board at that time adopted a resolution to ask for an appropriation to cover the purchase of the tract.

On April 3, 1920, C. L. Hays, J. S. Newcomer, S. D. Moser, W. L. Kuser again went over the proposition stating that tangible gifts in the way of land and cash donations would be made in order to obtain the park. On September 25, 1920, W. H. Soper, C. T. Stouffer, Charles Moser and Thomas Larson appeared before the board setting forth that the citizens of Eldora urged that there

FIG 1

BAPTISIA OR WILD INDIGO



Drawn by Dr. A. Hayden

FIG. 1 and 1-A

ANEMONE OR WIND FLOWER

be included in this tract certain Indian mounds, the Pine Creek area, Tower Rock, Falling Rock and Wild Cat Cave. They also stated that in addition to the gift of land some $25,000 in cash would be donated.

At a meeting of the State Board of Conservation on September 25, 1920, the board recommended to the Executive Council the acquisition of 200 acres of land, more or less. It was understood that if feasible they would like to make an artificial lake of the Pine Creek bottom. Subsequently Dr. J. H. Lees, after an investigation, reported that the land was of such a nature that an artificial lake was practical.

On November 19th of the same year the board sent another resolution to the Executive Council asking that the matter of purchasing Eldora Pine Creek Park be closed. On June 18, 1921, the Conservation Board made an appropriation of $10,000 toward its purchase. Subsequently an additional sum of $7,500 was added to this. At a later time this sum was further increased with the approval of the Executive Council.

By action of the board on the same date the general superintendency of the park was given to the chairman of the board; and on May 9, 1922, the honorary custodianship was given to Mr. J. S. Newcomer.

On November 10, 1922, Mr. S. D. Moser and Mr. J. S. Newcomer urged the purchase of seventeen acres additional ground. They also presented the matter of a public golf course and the wishes of the Pine Lake Country Club. Action on this matter was deferred and subsequently Hon. W. G. Haskell, after thorough investigations, recommended to the board the use of a small acreage for this purpose. After proper restrictions the board granted the use of this small acreage for the golf course. At the same meeting an additional appropriation of $7,900 was made to help complete the dam in the Eldora Pine Creek Park. This action was taken on September 14, 1923.

ELDORA PINE CREEK STATE PARK

By L. H. Pammel

Beautiful, picturesque Pine Lake, in Hardin county, is one of the most attractive places in central Iowa. The lake covers an area of eighty acres and occupies the flood plain of Pine Creek. The beautiful setting is that of Wisconsin and Minnesota. On the margin of the lake are paper birches and white pine intermingled with oak, hazel, ironwood, brake, Clayton and maidenhair ferns, wood anemone, cranesbill, mandrake, aster and goldenrods. To the north of the lake one may see tall, towering walls of the coal measure sandstone with its marginal fern, club moss, bush honeysuckle, wintergreen birch and white pine—truly a northern landscape set in prairie Iowa.

The Park* is easily accessible by a good primary road that runs through Steamboat Rock. The mileage from different points is as follows:

Des Moines, 83 miles; Waterloo, 50 miles; Grundy Center, 18 miles; Cedar Rapids, 107 miles; Marshalltown, 32 miles; Ames, 52 miles; Mason City, 65 miles; Hampton, 32 miles; Grinnell, 64 miles.

The Park may be reached from Des Moines, Nevada and Ames via Jefferson Highway, Primary Road No. 1; from Cedar Rapids, Belle Plaine and Tama via Lincoln Highway, Primary Road No. 6, to Marshalltown, north on Primary No. 14 and west on Primary No. 58; Waterloo, Reinbeck and Grundy Center on Primary No. 58 and Primary No. 59; Mason City, Hampton and Iowa Falls on Primary No. 1 and Primary No. 58; Ft. Dodge and Webster City on Primary No. 51 and Primary No. 58; Boone east on Primary No. 16, north on No. 1 and east on No. 58.

The benefiting population is about three hundred and fifty thousand people.

The Park, by resolution of the State Board, was created on September 25, 1920. The water was turned into the lake on December 23, 1923. It ran over the dam on February 27, 1924. The water is largely spring fed. The total park area is 200 acres, of which the lake contains about 80.

The Industrial School. This school for boys is located at Eldora and was created by legislative act of March 31, 1868. It was first located at Salem, in Henry county. In 1872 it was permanently located at Eldora. The object of the school is the proper training of juvenile delinquents. The boys learn useful trades and receive a good common school education under the best influences. Intellectual and industrial education is the keynote of the school. It has made good and useful citizens out of the vast majority of boys

* Distances to the Eldora Pine Creek State Park was furnished by Mr. P. T. Davison, custodian.

sent there. The physical equipment consists of fine brick administrative and educational buildings, as well as a fine set of barns.

City Park, Eldora. Eldora has a fine city park on the banks of the Iowa River in the corporate limits of the city. The park contains a little less than 40 acres. There are excellent boating facilities, which are made possible through the storage water of the Iowa Light and Power Co., whose dam is a little distance below the park. The Iowa River at this point is spanned by a beautiful high bridge. The character of the trees, mostly second growth, is much the same as in the Eldora Pine Creek Park area. The artificial lake at this point affords boating facilities for some distance up the river.

PICTURESQUE HARDIN COUNTY

Mr. Frank E. Foster, in an Iowa publication, wrote as follows:

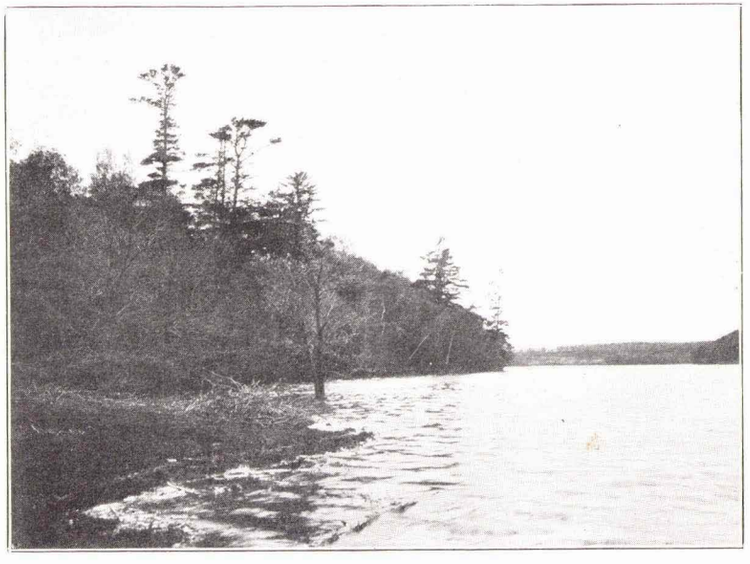
"You Iowans touring around a bit in your automobiles—you who enjoy nature when she is unusual, untamed and picturesque—take out your map of Iowa and put a big blue mark—or red mark—or some other kind of a mark on Hardin county."

The most picturesque part of Hardin county is the Iowa river. This river has its source in the lakes and ponds of Hancock county. One branch of this stream has its source in Crystal Lake. The river flows through a prairie country, entering the county near the middle line of Alden township. It flows through this level prairie country until it nearly reaches Iowa Falls, where it passes through a limestone gorge which was made by the erosive action of water and ice for countless ages. Real, beautiful Iowa may be seen at this point, and no other city or town of the Hawkeye state can duplicate the beautiful setting that nature has given to Iowa Falls. The river flows peacefully down the valley at one point near Hardin City, makes a sharp turn around a very narrow ridge, and here again we have another superb setting.

Dr. S. W. Beyer, in speaking of the geology of Hardin county, says:

"Beyond Steamboat Rock the sandstone ledges are obscured by a drift talus, but the restraining bluffs lose none of their precipitousness and range even higher than along the lower course, attaining a height of at least one hundred fifty feet above the present channel between Steamboat Rock and Hardin City and again between Hardin City and Eagle City. These eminences are largely composed of glacial debris. An impure limestone at the base of the bluff, near the Jackson-Clay township line on the south side of the great bend at Hardin City, forms a shattered ledge some eight to ten feet above the level of the water in the river. The extremely circuitous meanders in the vicinity of Eagle City and Hardin City marks the Altamont moraine crossing."

There are many interesting tributaries of the Iowa river in Hardin county. Mention may be made of Elk Run, Rock Run and Pine Creek, each of these streams having peculiar features of its own, and many fine springs of clear water mark the region. One of the most noted of these springs is known as Silome Springs, just



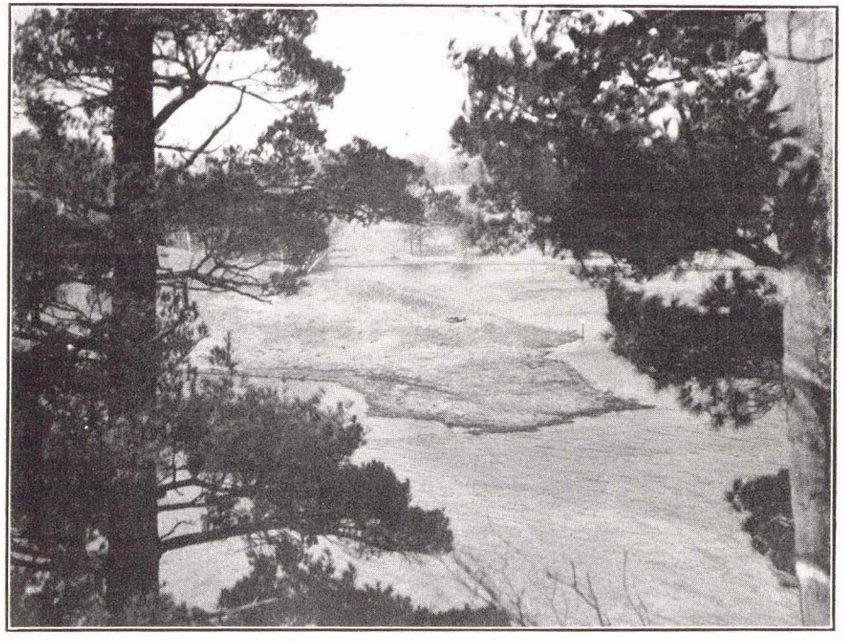
Photographed by H. I. Featherly FIG 2

WHITE PINE ON PINE LAKE

outside of the city of Iowa Falls, which is used for recreational purposes. Surrounding the springs are beautiful shady nooks. Canoeing is an exhilarating sport which may be enjoyed by those who desire to do so. The canoe trip from Alden to Iowa Falls, Steamboat Rock and Eldora is full of interest, especially the dash down the rapids which marks the course of the river between Alden and Iowa Falls. At Steamboat Rock interesting sandstone rock is conspicuous in Iowa scenery. One of the most interesting of these rocks is known as Falling Rock, and one passes by interesting gorges like those of Wild Cat Glen before Eldora is reached.

This sanctuary of wild life contains many interesting plants. The banks of the streams are lined with all of the types of trees found in central Iowa, and among these are a number of rare species like the paper birch, cherry or wintergreen birch and the stately white pine. So well has has this been expressed by Susan Fennimore Cooper that we quote from her because it applies so well to the trees in this park:

> "In the midst of smooth fields it speaks so clearly of the wilderness that it is not the young orchard of yesterday's planting, but the aged native pines which seem the strangers on the ground. The pine of forest growth never fails to have a very marked character of its own; the great shaft rises clear and unbroken by bent or bough, to more than half its great elevation, thence short horizontal limbs in successive fan-like growth surround the trunk to its summit, which is often crowned with a low crest of upright branches. The shaft is very fine from its great height and the noble simplicity of its lines; in coloring, it is a pure clear gray, having the lightest and smoothest bark of all its tribe, and only occasionally mottled with patches of



Photographed by H. I. Featherly

FIG 3

WHITE PINE ON PINE LAKE

> lichens. * * * It needs but a few short strokes of the ax to bring one of these trees to the ground; the rudest boar passing along the highway may easily do the deed; but how many years must pass 'ere its equal stand on the same spot! Let us pause to count the days, the months, the years; let us know the generations that must come and go, the centuries that must roll onward, 'ere the seed sown from this year's cones shall produce a wood like that before us. * * * This little town itself must fall to decay and ruin; it must become choked with bushes and brambles; the farms of the valley must be anew buried within the shades of a wilderness; the wild deer and the wolf and the bear must return from beyond the Great Lakes; the bones of the savage men buried under our feet must arise and move again in the chase, 'ere trees like those, with the spirit of the forest in every line, can stand on the same ground in wild dignity of form like those old pines now looking down on our homes."

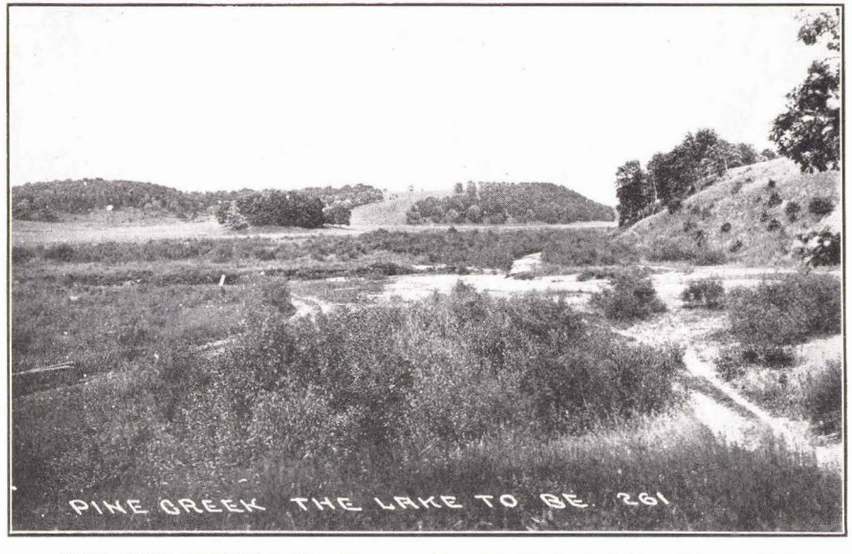
Picturesque Pine Lake Near Eldora. The pioneer who settled at Eldora named one of the streams Pine Creek because of the abundance of white pine. A fine dam has been placed near the outlet of this stream which serves as a bridge for one of the primary roads at one end of the park which impounds the water, making an artificial lake of some eighty acres, with a beautiful little island. The lake has been named Pine Lake and there is no finer setting anywhere in Iowa than this little bit of woodland with its boreal plants. The writer made this comment in one of the park bulletins:

"This park, in central Iowa, is quite different from any other

area in Iowa. It is a bit of northern Wisconsin transplanted to the prairie region of this state. Many years ago when Iowa was new and just admitted to the sisterhood of states, the national government ordered a survey of the Northern Mississippi Valley. A geologist, David Dale Owen, made a reconnaissance of this region to study the geology. He discussed, among other things, the occurrence of coal beneath the coal measure sandstone and found the white pine and paper birch and thus began a study of the scientific aspect of the region. Later S. W. Beyer traced out the interesting geological features of the region and especially notes the wonderful Altamont moraine which left its traces of gravel and sands just to the west of the region which is now in a state park. The pioneers perpetuated the white pine in the name Pine Creek, which was given to the area where the white pine once was fairly numerous on the sandstone outcrop. Rising to the right from a beautiful artificial lake of some acres are the steep, sandy slopes which are covered with paper birch, pin cherry, chokecherry, ironwood, white and red oak. This gives a lovely view with a fine rural setting and far beyond are the thickly green carpeted blue grass pastures. The creek makes a sharp turn at the end of the lake and the left bank here is covered with birch, oak, service berry and pin cherry and a single large white pine tree, perhaps two hundred and fifty years old. On the right bank down the valley the native plum just in blossom and here and there a cluster of wild crab just ready to pour out its fragrance. The beautiful rose pink blossoms stand out in all their glory, and what a contrast here and there; the common red haw, with its white bloom, a week later the Washington and Margaretta thorn come into bloom. Underneath the shades of these oak, elm, maple and basswood, the beautiful clumps of anemonella, St. Jacob's ladder, the yellow bellflower, blue and yellow violets, the windflower, bloodroot and hepatica are in fruitage, the false Solomon's-seal and spikenard pushing out delicate white flowers. Once the pink lady's-slipper was common on the banks of the shady north slope and the yellow lady's-slipper, the showy orchis were common. In a secluded area is a most picturesque little canyon known as Wild Cat Glen. The area contains same beautiful ferns; Clayton fern, spleenwort and ostrich ferns.

"Let us go up along the Iowa river a little farther to the north where there is a rock exposure which has long been called 'Falling Rock.' Here the sandstone rock rises a hundred or more feet above the floor of the Iowa valley. It is one of the most remarkable areas in Iowa, with its many beautiful marginal and maidenhair ferns, brake, phegopteris, a little club moss, the cherry birch, paper birch, bush honeysuckle and white pine. The sandstone ledges somewhat detached with deep and narrow canyons now, alas, with the timber removed, and much erosion has taken place. Near the little town of Steamboat Rock is a rock exposure that pioneer citizens named 'Steamboat Rock' from a fancied resemblance to a steamboat. On all of these ledges are white pine, perhaps much more common once than now.

"The state, through gift, has acquired the Falling Rock area as well as the Wild Cat Glen. The acquisition of these unique areas are thus preserved for the future students in botany, zoology and geology. The student interested in archaeology will find the fine Indian mounds, in the park, of real interest. The citizens of Eldora have taken a real interest in this park. They have not only given liberally towards the creation of the state park, but they have provided a beautiful park on the Iowa river adjacent to the city. The beautiful lake is, of course, an asset to the city. I can only think of this setting in the woods of central and northern Wisconsin. Yonder in the middle of the lake is a wooded island. The water of the lake is pure spring water, to which has been added some that comes after a rain from the adjacent fields. Why should we go to Wisconsin when there are such beautiful places in Iowa?"



THE PINE CREEK BOTTOMS BEFORE IT WAS MADE INTO A LAKE

THE IOWA VALLEY—HISTORICAL

By Charles L. Hays

A fifty-mile gash cut across the gently rolling prairies of Iowa. This is how the Iowa River in Hardin county looked to the first settlers. Crooked, narrow, rock-bound in places, the bluffs cut by many deep ravines, and the whole skirted and clothed by fringes and wide-spreading groves of native woods.

It afforded a sanctuary for every species of wild animal and wild fowl known to the upper Mississippi region, and was a favorite hunting ground for several Indian tribes. The numerous Indian mounds found on the high bluffs overlooking the river, into some of which large trees strike their roots, tell us of centuries of Indian occupation. These mounds are generally round or oval, twenty to fifty feet across,and one to three feet high. Other earthworks show of Indian fortifications and fierce tribal battles. Numerous arrowheads speak of both the hunting ground and battle field.

The last of these battles was a siege, and took place about 1840, a few years before the first white settlement, in the narrow neck of the big bend at Hardin City. Doc. Beaver, who, as a young brave, fought in this battle, and who lived many years on the Tama reservation, described the battle to Mr. A. W. Whittaker, going over the battle ground with him. The Foxes and Winnebagoes, expecting an attack from the warlike and powerful Sioux, retired within the dense woods of the big bend at Hardin City and threw up earthwork defenses across the high ridge constituting the neck. Behind them was a high, wooded peninsula half a mile wide and two miles long. In front were their breastworks facing east. The Sioux horsemen approached from the northwest, rode past them, and attacked from the southeast. The siege was short, but decisive, as was the way of Indian warfare. The intrenched allies repulsed the mounted invaders with much slaughter, but allowed the survivors to retire with their dead. The old earthworks are still plainly visible, but fading into the surrounding levels.

Small parties of Indians from the Tama reservation still camp occasionally in the old woods, along the river, and are kindly received by the whites.

The first white settlers chose the sheltering woods for their homes. The heavy timber, thick brush and deep ravines attracted some of the criminal type, where hiding places for horse thieves made detection unlikely.

Among the early settlers reputed to be horse thieves were the Bunker family, living in the woods a few miles southeast of Eldora. During the late fifties two men of the family were hanged in Tama county by citizens, and the rest disappeared.

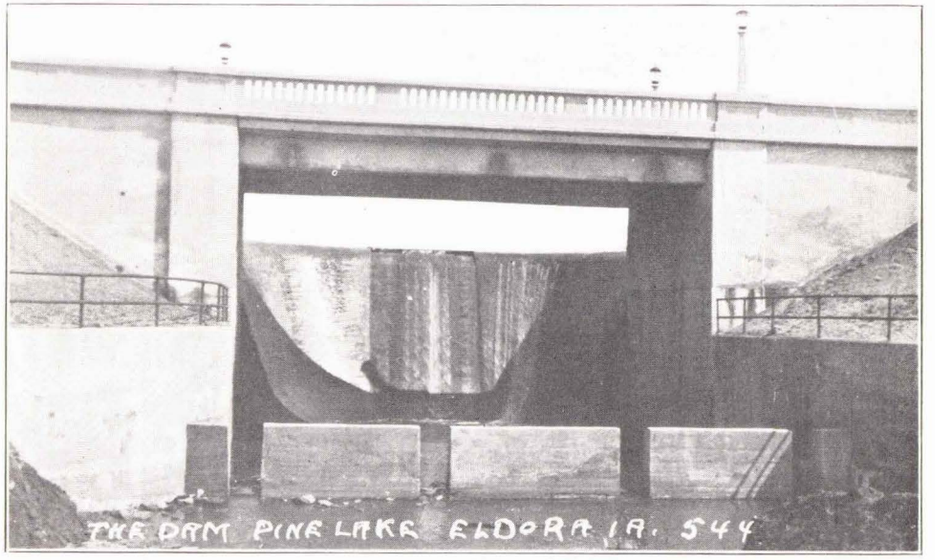


Fig 4

Many respectable families also settled on small timber lots in the big groves, poor and struggling, almost a class by themselves, and distinct from the prairie farmers on either side.

The most notable crime ever committed in the county was the killing of Enoch Johnson, long a timber dweller along the Iowa River. When murdered he was under indictment for counterfeiting, and was popularly reputed to be a horse thief and moonshiner. His body was found one autumn morning in 1884 north of Gifford.

Among the early settlers in the Steamboat Rock woods were the Rainsbarger family, a handsome and likeable people, whom Herbert Quick describes in "The Hawkeye" as the Bushyagers. The young men of the family were adventurous and boisterous, and were probably guilty of depredations. One of them was a son-in-law of the murdered man. He and his brother were arrested for the murder and finally convicted. Many neighbors always refused to believe in their guilt. Many years later an Eldora attorney became convinced that others had killed Johnson, and after repeated efforts before several governors and the parole board, finally secured the pardon of the convicted men. Their quiet and law-abiding life and the good character of the other members of their family is the wholesome sequel to the most exciting episode of local history.*

The first railroad in Hardin county was the Dubuque and Sioux City, now the Illinois Central, built in the early sixties through Ackley, Iowa Falls and Alden. A little later Charles C. Gilman, a

* The attorney who wrote this article is too modest to mention his part in trying to secure the release of the Rainsbargers. A brother of C. L. Hays, Willet M. Hayes, was at one time assistant secretary of agriculture, a citizen of this county. He was the first sponsor of the Vocational Educational measure of the United States government.

young railroad man from Dubuque, built the Central Iowa, a little coal road, from Ackley to the mines at Eldora. It has since expanded into the M. & St. L. System.

Alden and Iowa Falls are built on both sides of the Iowa River where it flows between perpendicular cliffs of white limestone, to which cling cedars, the survivors of an ancient evergreen forest, creating scenes of surpassing beauty. At Steamboat Rock and Eldora the valley is slightly wider, and the limestone has given way to occasional cliffs of tawny brown sandstone, while some thirty venerable specimens of a prehistoric white pine forest still cling to the cliffs in somber grandeur.

The river has a fall in Hardin county of some hundred and forty feet. The pioneer settlers constructed no less than twelve water-power dams, most of which are now abandoned. They were at Union, Sandersonville, Secor, Eldora, Steamboat Rock, Cunningham, Hardin City, Eagle City, three at Iowa Falls and two at Alden.

Coal was early discovered in the bluffs facing the Iowa River between Eldora and Steamboat Rock. It was mined for many years on both sides of the river in a small way. Prospectors report a large body of coal west of the river without a suitable roof for economical mining. The extensive area east of the river covered by a sandstone roof overlying the coal has probably never been adequately explored. A good road is now being constructed across this region. Most of the coal so far mined has been taken north of Eldora where the river flows around three sides of a sharp hog-back ridge, formerly called by the miners "The Bloody Nose." An abundance of coal shales and clay suitable for brick, tile and other products is also exposed in the face of the river bluffs north and south of Eldora.

The following from Hardin County Ledger:*

"The bit of clean water called Pine Lake is spring fed. It pleases the eye. The new road wends near by through the State Park.

* This is taken from an article by Mr. Hays and seems most appropriate in this connection and is added by the editors.

Photographed by Mr. O. Miller

FIG 5

MINK

Photographed by Mr. O. Miller

FIG 5-A

COTTONTAIL

Trails will be later cut in every direction through the woods. The old trees will be allowed to lie as they fall where removal is not necessary. The decaying wood will give food for bacteria. Insects will thrive on the bacteria. The insects will be food for the birds. It is the birds that we want.

"The brush, bushes and leafage will afford a sanctuary for wild life. There will be the chipmunks, striped squirrels, gray squirrels, the red-bellied fox squirrels and perhaps occasionally the black or flying squirrel. There will, of course, be rabbits. There may be ground hogs. It would be fine if a family of badgers and another of raccoons could be established. It is perhaps too much to hope for a beaver dam, although Pine Creek would be admirably suited for one. The wild birds will sing and mate and nest among the trees. The wild creatures will sing and chatter and climb and run and hide and burrow.

"There will be no sound of the gun. The wild things will appear and disappear, half trusting, half afraid. There will be tangles for them where men never go; where the boys and girls will only peep and peer into the mysterious leafy places. There will be open places where tired people can rest, and playgrounds; shady and sheltered places. There will be the retired silent places where the town dwellers, tired of crowds, can find quiet. There will be amusement places where the isolated workers can find the crowds and company they crave. There will be the boating and the bathing in the clear waters of the lake. The new bathhouse will be erected. Wells will be sunk where needed, for drinking water. Cottages will be erected and more lots will be sold for other cottages.

"But the park will be, perhaps, first of all, a nature park and only secondary an amusement park. It will be the recreation spot for multitudes during the summer. It belongs to the state of Iowa."

Photographed by Mr. O. Miller

FIG 6

CHIPMUNK

Photographed by J. C. Guthrie

FIG 6-A

GROUND HOG

The state of Iowa has secured Pine Lake Park at Eldora and impounded Pine Lake, a most beautiful little body of the clearest spring water, with sandy bathing beaches. The state and the several towns by the river have some four hundred acres of public parks and river boating courses.

There is a bewildering number and variety of beauty spots along the river both near to and remote from towns, where additional parks could be selected.

The forest conservation plan of President Coolidge has peculiar application to a prairie state like Iowa, and to the fifty-mile gorge of the Iowa River which crosses Hardin county from northwest to southeast.

The water power policy advocated by Governor Kendall and lately enacted into law by the state of Iowa, gives promise of the construction of power dams and a series of impounded water bodies which will use the wasted power of the river and still further enhance the beauty of the river valley.

HERBERT JOHN QUICK

By L. H. Pammel

The pioneer life of this region, Steamboat Rock, Eldora, Iowa Falls and Hardin county and parts of Grundy county, has been splendidly depicted by Herbert Quick, who, during his school days on a farm in Grundy county not far from Steamboat Rock, experienced the second phase of pioneer life. He came close to the heart of many people in this vicinity and thus has given to us a finer and better picture of rural life than any other Iowa author. It seems appropriate that in giving a historical sketch of this region that reference should be made to this author of the prairies. Mr. H. W. Stafford, of Ames, a schoolmate of his, says, "No other pupil of that class turned out as did H. J. Quick, the interesting character who passed away on Mother's Day. It may have been that Mother's Day was significant in this instance, for Herbert Quick, in his youth at least, was just the sort of boy who would live close to his mother."

Of all the literature pertaining to pioneer Iowa, with its limitless prairies, fine streams and wooded slopes, no one, in my judgment, has given us a truer picture of the pioneer life and pastoral scenes of early Iowa than this prairie author.

Vandemark's Folly, The Hawkeye and The Invisible Woman have for their setting this section of rural Iowa, and it is most appropriate that most of us who are interested should let the world know a few of his impressions. He took great interest in everything pertaining to out of doors and at the Booklovers' Meeting last summer at McGregor he said to Mrs. Pammel that the park movement in Iowa is great constructive work and future generations will call the present generation blessed for having provided places where our wild life is preserved and where people may commune with nature.

Dante M. Pierce, in the Homestead for May 14th, said, "Many

hundreds of thousands of American farmers mainly—will miss Herbert Quick as though he had been a personal friend—I know of no one who can fill his place."

But let Herbert Quick tell us about the prairie.*

"The upland phlox (we called them pinks) were gone; the roses had fallen and were represented by green haws turning to red; the upland scarlet lilies were vanished, but the tall lilies of the moist places were flaming like yellow stars over the tall grass, each with its six dusty anthers whirling like little windmills above its red stigma; and beside these lilies, with their spotted petals turned back to their roots, stood the clumps of purple marsh phlox, while towering over them all were the tall rosin-weeds with their yellow blossoms like sunflowers, and the Indian medicine plant waving purple plumes." How beautiful is the illustration of the breaking of the prairie sod, likening it to a wedding day. "The next day was a wedding day—the marriage morning of the plow and the sod. It marked the beginning of the subdual of that wonderful wild prairie of Vandemark township and the Vandemark farm." Then the description of the cutting of the red root sometimes called the New Jersey tea: "And once in a while the whole engine, and the arms of the plowman also, felt a jar, like that of a ship striking a hidden rock, as the share cut through a red root of wood, sometimes as large as one's arms, topped with a clump of tough twigs with clusters of pretty whitish blossoms." In another place he describes those beautiful prairie brooks so common in the prairie sections, and Hardin county had its share. He laments the loss of these through civilization. "There every few miles there ran a rivulet as clear as crystal, its bottom checkered at the riffles into a brilliant pattern like plaid delaine, by the shining of the clean red, white and yellow granite pebbles through the ripples from the banks." He tells us how the pioneer of the fifties caught chubs, shiners, pumpkin-seeds and bullheads in a little pond not ten feet broad and where he listened to the frogs and prairie chickens. Where he could hear the wolves howl and where during the winter of 1855-6 deer were killed by settlers who went in on snowshoes and killed these with clubs and axes. He says we never could have preserved these animals in a country all of which was destined for the plow—"but they ought to have been given a chance for their lives." Indeed Herbert Quick was a conservationist.

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* Quick (John) Herbert, author; born near Steamboat Rock, Grundy County, Iowa, October 23, 1861; died at Columbia, Mo., May 10, 1925, where he had gone to make an address; only son of Martin and Margaret (Coleman) Quick; reared on farm; attended country schools; engaged in teaching, 1882–90, becoming principal of ward school in Mason City, Iowa, and meantime studying law; married Ella D. Corey, of Syracuse, N. Y., April 9, 1890. Admitted to Iowa bar, 1889; engaged in La Follette's Weekly, Madison, Wis., December, 1908–July, 1909; editor of Farm and Fireside, Springfield, Ohio, 1909–16; member Federal Farm Loan Bureau, Washington, terms 1916–24 (resigned, August 1, 1919). Was member and counsel for Citizens' Committee in Sioux City, and in that capacity prosecuted boodlers, etc., 1894. Thrice nominated for mayor of Sioux City, and once elected, serving 1898–1900; nominee for supreme judge, 1902. Club: Cosmos (Washington, D. C.). Author: "In the Fairyland of America," 1902; "Aladdin & Co., 1904; "Double Trouble," 1905; "The Broken Lance," 1907; "American Inland Waterways," 1909; "Virginia of the Air Lanes," 1909; "Yellowstone Nights," 1911; "On Board the Good Ship Earth," 1913; "The Brown Mouse," 1915; "From War to Peace," 1919; "The Fairview Idea," 1919; "Vandemark's Folly," 1922; "The Hawkeye," 1923. Also many articles in *Saturday Evening Post, Country Gentleman, etc.* Chairman committee in charge of affairs in Far East, American Red Cross (rank of colonel), 1920. Home: "Coolfont," Berkeley Springs, West Virginia.

THE FLORA OF HARDIN COUNTY

By L. H. Pammel

The flora of Eldora Pine Creek is most interesting. It is remarkable that a boreal flora should occur in this part of the state. The interesting plant life was referred to by Dr. David Dale Owen, who made a study of the geology during the middle of the last century. This author referred to the occurrence of the white pine on the summits of the hills along the Iowa river in Hardin county. This early geologist did not, however, recognize or report on the other interesting plants of the region.

One of the interesting phases of botany is a study of plants with reference to their adaptation. Plants of widely different relationship are frequently associated in communities. Such plants show the same adaptations as regards their structures and growth.

Certain physiographic features of the country have a marked influence on the plant communities. Sandy, moist rocks support a very different class of plants than limestone rocks, or alluvial bottoms of the streams. These features often determine the geographic limitations of some trees. The white pine *(Pinus Strobus)* is a very local tree in this state, being confined to the sandstone ledges of northeastern and central Iowa. The white pine is not, however, always found where sandstone ledges occur. Extensive carboniferous sandstone deposits occur along the Des Moines from Fort Dodge, Moingona south, and, while the forest growth at various points in Boone county is somewhat similar to that of Hardin county, three of the prevailing species do not occur, namely, white pine and two birches, the paper birch *(Betula papyrifera)* and the cherry gray or wintergreen birch *(B. lutea)*. Botanists have long recognized that species tend to move northward or southward, and less frequently plants move eastward and westward. The westward extension of the eastern trees in Iowa is marked by certain valleys.

Geological formations have influenced the distribution of plants, and this influence is certainly well shown in the area embraced in the state park at Eldora and regions adjacent thereto.

It may be well in this connection to give a brief account of the remarkable boreal plant types found here: The white pine, the gray or wintergreen birch, the paper birch, marginal fern, shield fern, Clayton's flowering fern, rattlesnake fern, small club moss, walking leaf fern, polypody fern, beech fern or oak fern.

It is interesting to note that the only locality in the state where the marginal fern occurs is in a small area on the Iowa river, in the state park between Steamboat Rock and Eldora. The nearest point where the white pine occurs is at the Backbone Park, in Delaware county, and the nearest point where the wintergreen birch occurs is near Osage.

Photographed by H. L. Fatherly

FIG 7

POLYPODY FERN COVERING SANDSTONE ROCK

Ferns and Their Relatives

The following ferns and their relatives occur in the park or regions adjacent thereto: polypody, oak fern, maidenhair, common brake, cliff brake, walking leaf fern, marsh shield fern, marginal fern, wood fern *(Aspidium spinulosum)*, bladder fern *(Cystopteris fragilis)*, woodsia *(W. obtusa)*, sensitive fern, ostrich fern, Clayton's fern, rattlesnake fern *(Botrychium virginianum)*, common horsetail *(Equisetum arvense)*, scouring rush *(Equisetum hyemale*, var. *robustum)* and club moss *(Lycopodium lucidulum)*.

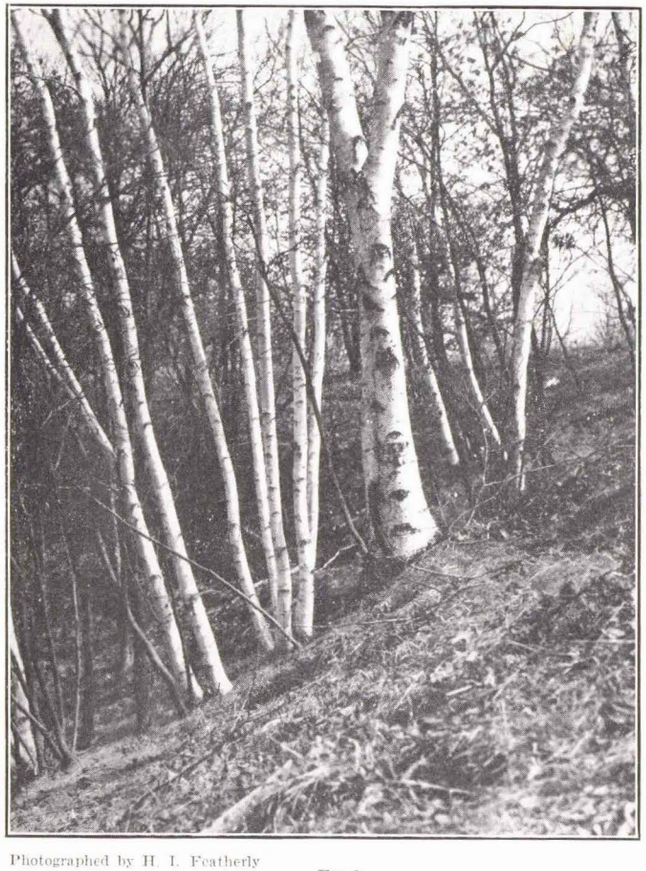
Trees

Conifers. There are not many species, but some of the types occurring are of great interest. Of the conifers, the most interesting is the white pine, which at one time was abundant, especially

at what was formerly known as Pine Creek. Many years ago the writer found a stump of white pine which was nearly four feet in diameter. Some of these old trees were two hundred and fifty years old. The only other conifer is the red cedar, which never was abundant.

Willows and Poplars. The tree representatives of the willow family are black willow and almond-leaved willow, occurring on the margin of the streams. The sand-bar willow, scarcely a tree, is common along streams. There are three species of the genus populus or poplar of the same family, first the quaking aspen abundant on the hills, as is also the large-toothed aspen. The cottonwood, the largest member of the genus, is abundant on the Iowa river.

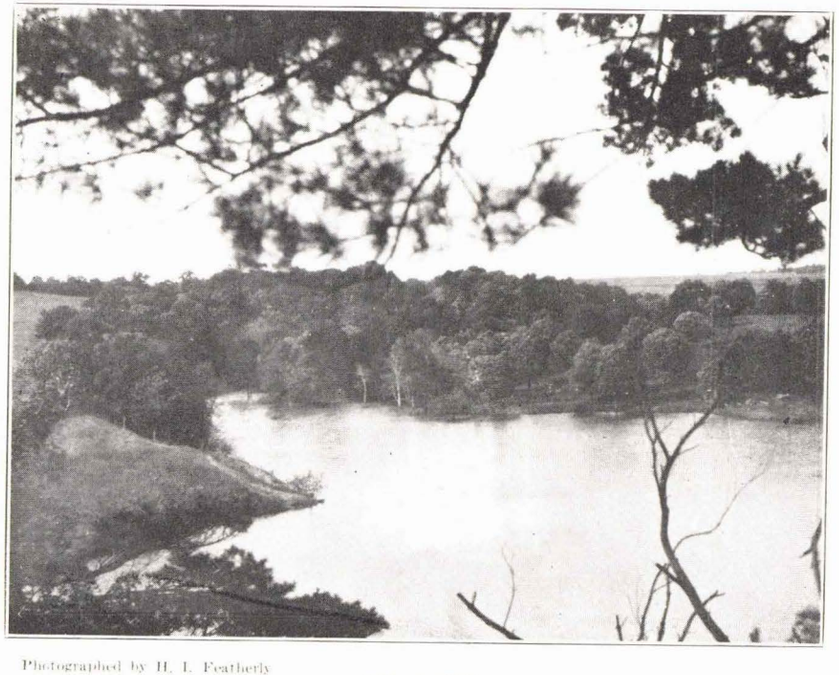
Walnut and Hickory. The walnut family is represented by the common butternut found on the hillsides and the black walnut abundant along streams. There are only two species of hickory, the



Photographed by H. I. Featherly

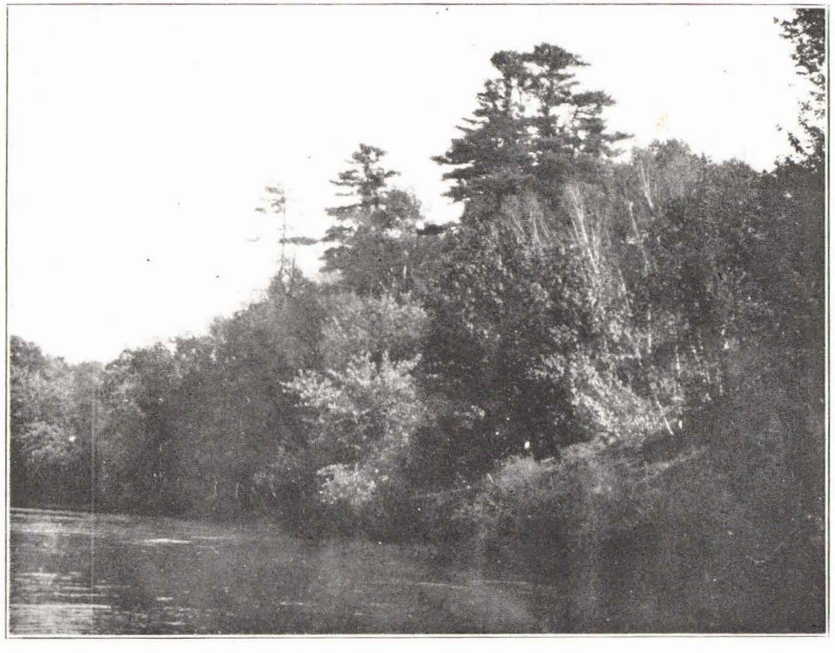
FIG 8

PAPER BIRCHES



Photographed by H. I. Featherly

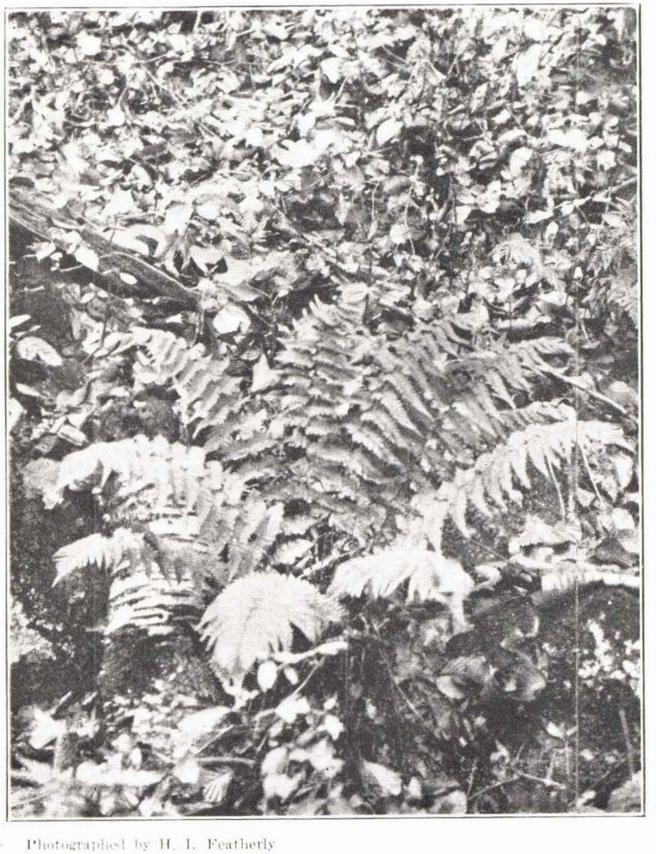
PINE LAKE



Photographed by H. L. Featherly

FALLING ROCK

BETWEEN STEAMBOAT ROCK AND ELDORA



Photographed by H. L. Featherly

MARGINAL FERN

Photographed by Dr. Ada Hayden

SHOWY ORCHIS

shell-bark, easily recognized by the shaggy external bark and large terminal buds. This species is found abundantly in upland woods, as is also the bitternut or swamp hickory, which has small yellowish buds and the bark not exfoliating. The nut is bitter, not sweet, as is that of the shellbark hickory.

Birches. There are four species of the birch family. The hop hornbeam or ironwood common on slopes of hills, the blue beech or ironwood found on shady north slopes, the bark of which is smooth; the yellow or gray or wintergreen birch, the leaves of which have a wintergreen flavor and the bark detached in filmy layers is yellowish or grayish in color, and the paper birch, with white bark separating in thin layers, is common over the hills on sandstone rock.

Oaks and Elms. The oaks were formerly abundant over the whole region, especially along the river. The area now embraced in the park was densely covered. The most valuable of the oaks is the white oak. The young second-growth white oak is abundant. The second interesting oak is the bur oak, which produces a thick and woody cup fringed at its upper end. The red oak, with its shallow cup, also is common throughout the region. There are also occasional specimens of northern pin oak *(Q. ellipsoidalis)* scattered through the woods. The cup of the quercitron oak *(Q. velutina)* acorn has velvety brown scales which are pubescent or hairy. There are two species of elm, the slippery elm, with very rough leaves and pubescent buds, and the American or white elm, with smoothish buds and leaves. The hackberry is also found.

June Berry, Hawthorn, Plum, Apple and Cherry. The common June berry is abundant on hillsides. The small tree, with its white flowers, forms a unique part of the landscape in early spring. Some of the most interesting trees in North America are the hawthorns, of which one of the most interesting is the punctate hawthorn or haw, with its white flowers followed by an abundance of greenish-brown fruit. Another is the Margaretta hawthorn. This is a small

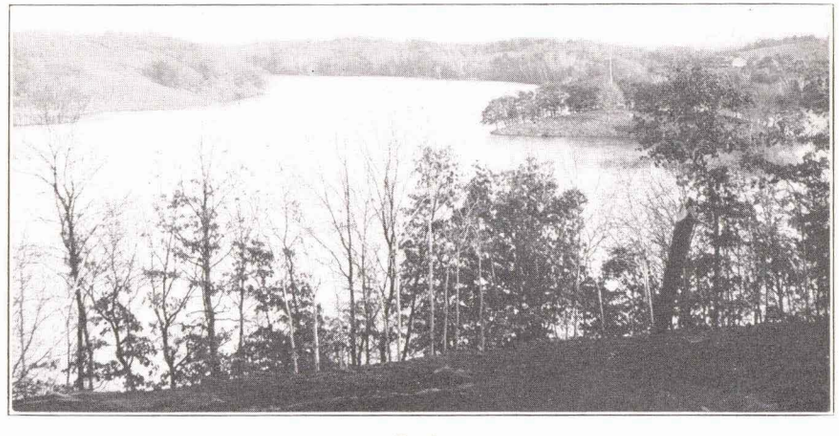


FIG 9

PINE LAKE, THE ISLAND, OAKS AND BIRCHES

tree with glossy leaves and white flowers. It is abundant in woods and on banks of streams. One of the latest of the hawthorns to bloom is the hairy haw *(Crataegus tomentosa)*. The common red haw *(C. mollis)* is the largest of the red hawthorns and is common in the park. Of the plum and cherry the most common is the black cherry, with white flowers in racemes. This is a rather large tree with reddish-brown branches. The choke cherry is a small tree with grayish bark. The inner layers of bark have a disagreeable odor. The pin cherry, with small clusters of flowers and small red fruit, is not uncommon. The common American wild plum occurs throughout the woods and on the banks of streams. The common wild crab is abundant throughout the park and is a beautiful tree, one of the most typical and unique of the trees of Iowa.

Honey Locust, Coffee Bean, Maples and Wahoo. The coffee tree, with its large branches and greenish flowers, occurs along the Iowa river. The honey locust, with inconspicuous flowers and thorny trunk, is also common along the Iowa river. Occasionally one is found practically thornless. The burning bush or wahoo is a tree-like shrub common on the banks of the streams. Of the maples the black sugar maple, which here is about as common as the true sugar maple *(Acer. saccharum)*, occurs in the uplands. The white or silver maple is common on the Iowa river, as is the box elder.

Basswood and Ash. The basswood is common on the top and slope of hills. Formerly there were some magnificent trees in the park area. Of the ash trees there are two, the black ash abundant on the slopes of hills and the green ash common along streams. The leaflets of the black ash are green on both sides and not stalked. The tree generally contains witches broom caused by an insect.

Shrubs

The shrubs in the Eldora Pine Creek State Park are not numerous in species and they are widely distributed in different families of plants. The only woody monocot in this region is the green brier, with spiny stems. This is a member of the lily family.

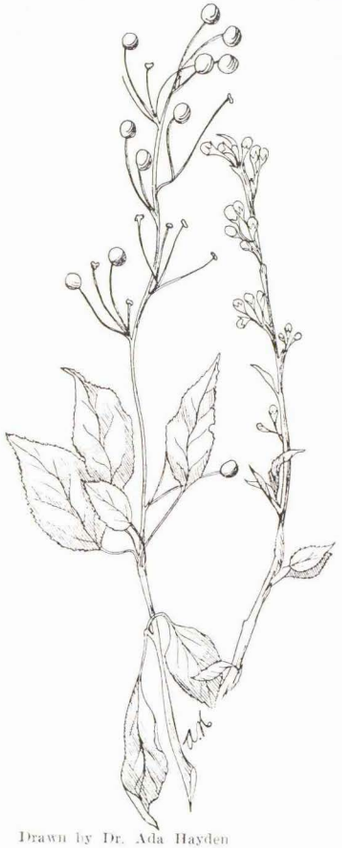
Willows, Hazel and Moonseed. There are several shrubs of the willow family. Of these we may mention the common prairie willow, which is rarely more than three to four feet high, with leaves downy underneath and more or less rugose veined above. The pussy willow *(Salix discolor)* is common along the stream. The leaves are lanceolate serrate, smooth and bright green above. The plant blooms early in the spring, forming the so-called pussy catkins. There is only one shrub of the birch family, the common American hazelnut, which is abundant in the region. One of the interesting climbing vines of the region is the moonseed, which is a member of the moonseed family. It is a climbing vine with angled or lobed leaves, inconspicuous flowers and fruit black with a bloom.

Gooseberries and Currants. There are a few shrubs of the saxifrage family. Of these there are two types of gooseberries, the prickly fruited gooseberry, which is especially common in sandy woods, and the Missouri gooseberry, with smooth fruit. This is

found in the woods quite widely distributed. The wild black currant is common in alluvial thickets and rich soil. The flowers are larger than those of the gooseberry and yellowish white.

Meadow Sweet and Roses. Along the Iowa river one may find an occasional Meadow Sweet with flowers in racemes. Nine-bark is not uncommon on the rocky talus and slopes of hills. There are two species of rose, the wild prairie rose *(Rosa pratincola)* and the white woodland rose *(Rosa blanda)*, the stem of which is either unarmed or occasionally has prickles. This species is found in rocky places. Of the brambles the common wild red raspberry is abundant, as is also the thimbleberry or black-cap raspberry. There are also several types of blackberries.

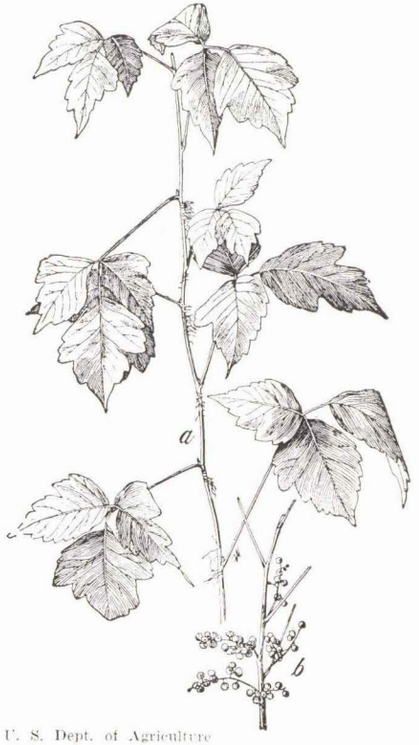
Lead Plant, Sumach and Bitter Sweet, Prickly Ash and Wild Grape. The shrubs of the legume family consist of the common lead plant, which is found in dry places, and the false indigo of the same genus, a taller shrub, is found along the Iowa river and other



Drawn by Dr. Ada Hayden

FIG 10

PIN CHERRY



U. S. Dept. of Agriculture

FIG 10-A

POISON IVY

river banks. The prickly ash, with small inconspicuous yellowish flowers and prickly stems, is abundant in woods, as is also the smooth sumach, with red fruit, smooth compound leaves and milky juice. The poison ivy, with white fruit and compound leaves of three leaflets; the Virginia creeper, with compound leaves of five leaflets, are common in the woods. The burning bush or wahoo is a small tree-like shrub with smooth pods and red fruit. There is also an abundance of climbing bittersweet, a tiny shrub with orange-colored pods which on opening display the scarlet covering of the seeds. The wild grape is abundant in the woods. The bladder nut, with inflated fruit and compound leaves with three leaflets and greenish striped branches, is common on rocky borders of woods.

New Jersey Tea, Leatherwood, Dogwood. Of the buckthorn family there are two species of redroot, the New Jersey tea, common in prairies or borders of woods, and the narrowed-leaved New Jersey tea, with finely glandular-serrate leaves and white flowers, common in sandy soil. The leatherwood or moosewood or wicopy, with yellow flowers that bloom early in the spring, has soft wood and fibrous bark. It is not uncommon on the Iowa river on north shady slopes. There are several species of dogwood with white flowers. The round-leaved dogwood is common on rocky hillsides and the gray dogwood, with white fruit and silky leaves, is common on the borders of woods. The silky cornel or kinnikinnik, with reddish branches, occurs in wet places. The alternate-leaved dogwood is common in shady places on the slopes of sandy, rocky hillsides. The branches are greenish.

Honeysuckle and Elder. Of the honeysuckle family mention may be made of the common red-flowered honeysuckle found in upland woods. It is also along the Iowa river. At Falling Rock there is a considerable quantity of the bush honeysuckle, a plant with taper-pointed leaves and yellowish flowers and long-beaked pod. Related to the honeysuckles are the elders. The common elder is abundant in low grounds. The red-berried elder, though not in the park, occurs at Hardin City and is a rather rare species for central Iowa. Another plant not uncommon is the wild raisin or black haw. This shrub is common in woods along banks of streams. The flowers are white in flat-topped clusters and the fruit bluish black. Another kind of black haw, known as the arrow-wood, occurs in the timber. This, too, has white flowers, but the leaves are more or less roundish or broadly ovate.

It will be noted that there are many shrubs in the area and that these shrubs are confined almost entirely to the wooded bluffs and the bottoms along streams. Only four woody plants, the prairie rose, two kinds of New Jersey tea and the lead plant are found in the open prairie regions.

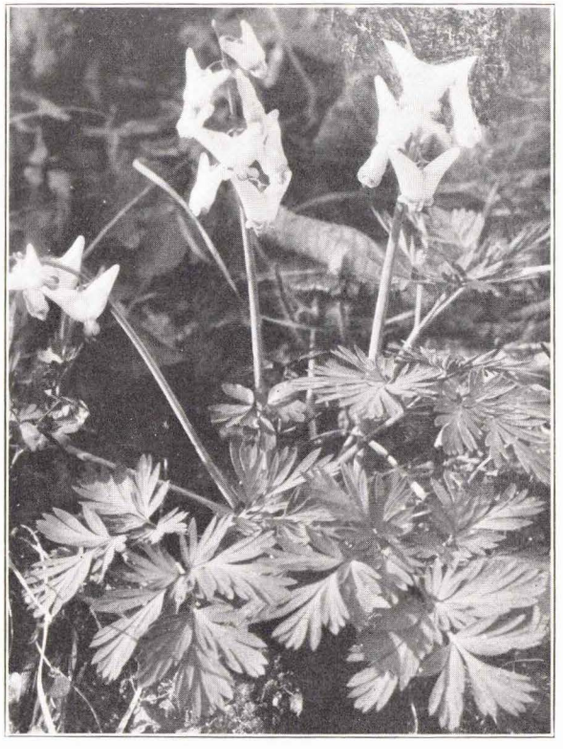
HERBACEOUS FLOWERING PLANTS

By L. H. Pammel

Some of the herbaceous plants are as follows:

Water Plants. In the slow-running streams are several different species of pond weed *(Potamogeton)*, several species of arrow-head along the borders of ponds and low grounds along the Iowa river. The most abundant of these is the large-leaved kind, *Sagittaria arifolia*. Common water plantain *(Alisma Plantago-aquatica)* is found in low grounds.

Grasses. The most important of the grasses are the blue stems, the little blue stem *(Andropogon scoparius)*, tall blue stem *(A. furcatus)*, Indian beard grass *(Sorghastrum nutans)*, two kinds of crab



Photographed by Dr. Ada Hayden

Fig 11

DUTCHMAN'S BREECHES

grass or finger grass, the common crab and the smooth, several species of panic grass, among which mention may be made of the tickle grass and Scribner's panic grass and several others related to it, as well as the large-leaved panic grass *(Panicum latifolium)*, barnyard grass, yellow and green foxtail, sandbur, the water or Indian rice *(Zizania palustris)*, two species of rice cut-grass *(Leersia virginica* and *L. oryzoides)*, reed canary grass *(Phalaris arundinacea)*, holy or vanilla grass, porcupine grass, triple-awned grass and several kinds of dropseed grasses *(Muhlenbergia)*, timothy, floating foxtail and rush grass *(Sporobolus)*. Mention may be made of the fragrant rush grass or bunch grass *(Sporobolus heterolepis)*, red top or bent grass, hair grass, blue-joint grass, especially in low grounds *(Calamagrostis canadensis)*, June grasses *(Eatonia obtusata* and *Koeleria cristata)*, wild oat grass *(Danthonia)*, common in dry sandy soil, slough grass, mesquite grasses, reed grass, purple eragrostis, orchard grass, several species of meadow grasses like blue grass, several species of manna grasses, sand fescue grass, several brome grasses, western wheat grass, wild barley, terrell grass *(Elymus virginicus)*, Canadian wild rye and woodland wild rye *(Elymus striatus)* and bottle-brush grass.

Sedges. Of the sedge family several species of cyperus like *Cyperus artrovirens* and Northern nut grass, spike rush *(Eleocharis)*, common in low grounds, borders of ponds and low streams. The greater bulrush *(Scirpus validus)* is common in water and in low grounds. There are many species of sedge proper, Carex, all difficult to identify.

Arum, Duckweed, Spiderwort and Rush Family. The Indian turnip or jack-in-the-pulpit, as well as the green dragon or dragon root is common in the woods also. The sweet flag or Calamus occurs on the borders of swamps. Two kinds of duckweed may be found in ponds. The common spiderwort is abundant in sandy places and is easily recognized by the purplish flower and fleshy leaves. There are also several species of rushes *(Juncus)*. These species for the most part occur in low grounds. They are grass-like looking plants.

Lily, Amaryllis, Yam and Iris Families. The bellwort, with yellow flowers, is an early spring-blooming plant found in rich woods. There are also several species of onions like the wild garlic. The early wood lily (pioneers called it the wild tulip) is common in swamps or low grounds. In prairies may be found the wild Turk's-cap lily. The dog-tooth violet and two kinds of Solomon's-seal, the one in prairie soil *(Smilacina stellata* and the *S. racemosa)* or false spikenard, also the two or three-leaved false Solomon's-seal *(Maianthemum canadense)*, as well as carrion-flower *(Smilax)* belong to the spring flora. The common wild yam, star grass, blue flag, blue-eyed grass are other interesting plants.

Orchid Family. Two kinds of lady's-slipper or moccasin flower, the large pink lady's-slipper *(Cypripedium hirsutum)* and the yellow lady's-slipper are interesting plants of the region. The pink lady's-slipper used to grow in great quantities on the banks of the Iowa river thirty years ago. It was a gorgeous sight to see these

plants in bloom. The white-fringed orchis also was abundant. They have now become quite rare. Several species of lady's-tresses *(Spiranthes)* are common in prairie-like openings and woods.

Birthwort, Smartweed, Four O'Clock, Goosefoot and Amaranth Families. The wild ginger is one of the early spring-blooming plants with brownish flowers with pungent root. Mention may be made of the yellow dock, pale dock and sheep sorrel *(Rumex)*, also of the smartweeds, goose grass, the marsh smartweed, the water smartweed and heart's-ease. The maple-leaved and common goosefoot and Russian thistle are also found. There are such common weeds as the common green pigweed, the Iowa tumbleweed and the prostrate pigweed of the amaranth family. The common wild four o'clock is abundant on the right of way of railways.

Pink, Purslane, Water Lily and Crowfoot Families. The common sandwort *(Arenaria lateriflora)*, chickweed, common mouse-ear chickweed, sleepy catch-fly common in sandy soil and with little pink flowers, bouncing bet, the spring beauty common in woods, sometimes occurring in great masses, and related to it is the common purslane. The common white water lily was once common in lakes in the uplands, but has now become quite rare, and so, too, was the spatter-dock abundant. Of the crowfoot family there are the water crowfoot with white flowers, the early crowfoot with yellow flowers and fascicled roots and the creeping swamp buttercup common in low ground. There are two kinds of meadow rue, the early meadow rue, common in timber or woods, and the prairie meadow rue. The hepatica is one of the interesting early flowering plants which is common. The windflower anemone or pasque flower at one time occurred on the grassy knolls of the prairie. The so-called thimbleweeds related to the anemone are common in sandy and rocky places. The wood anemone *(A. quinquefolia)* is common. There is only one virgin's-bower, a common plant with white flowers that blooms in August. There is the rue anemone with thickened roots and white flowers. The marsh marigold occurs in swampy places, but is not common. The columbine with red flowers, not uncommon in woods, especially rocky places, is one of the most interesting of our North American plants. The baneberry, of the same family, with whitish flowers and berries cherry red or sometimes white.

Poppy, Mustard and Fumitory Families. Only one member of the poppy family is abundant, namely, common bloodroot with white flowers. There is the common Dutchman's-breeches with pretty white flowers in racemes and a granulate bulb. Of the mustard family one may find the common whitlow grass *(Draba caroliniana)* common in sandy soil, especially in gravel morainic areas. Peppergrass, of which there are two kinds, are common weeds. So, too, is the shepherd's-purse and several species of mustard *(Brassica)* and several hedge mustards *(Sisymbrium)*. Tansy seed mustard is common in sandy soil. The flowers are yellow. The pepperroot or toothwort with fleshy roots is common in woods. The flowers are white or purplish and the plant blooms in early spring. There are also several species of rock cress *(Arabis)*.

Gooseberry, Rose and Clover Family. One of the interesting rather early spring-blooming plants is the common alumroot with roundish hairy leaves. This occurs in sandy soil. Of the related plants there is the bishop's cap, which is found on the sandstone rock. Of the rose family there are two common strawberries, the prairie strawberry with thicker and heavier leaves than the European strawberry *(Fragaria vesca)*. This is found on sandstone rocks. There are also several species of five-finger. The creamy-white flowered with thick hairy leaves occurs in sandy soil. The Canadian five-finger is common not only in sandy soil, but the right of way of railways—a typical prairie flower. There are two species of avens, the common with white flowers occurring in woods and the large-leaved, yellow-flowered avens in low grounds. Agrimony with yellow flowers and bur-like fruit is common in woods. The partridge pea of the clover family is one of the common plants of sandy soil. There are also two species of baptisia or wild indigo. These have large white or creamy-white flowers in ample flowered clusters. There are several species of introduced clovers like the red, white and alsike and the white and yellow sweet clover. There are two species of prairie clover, the rose colored and the white. Both of these are found in prairie-like openings and in prairies. There are several types of trick trefoil in the woods and several on the prairie. There is one type of bush clover *(Lespedeza)* found in the open prairies. There are several species of native vetches, one with purple flowers especially common in the prairies, and there are also several species of everlasting pea and one common species of cow vetch in woods or borders of woods and the ground plum which is common prairie species. The flowers are purple. The fruit is large, smooth and ovoid globular. One of the native beans may be found in considerable quantities in sandy soils. The common climbing hog peanut is common in woods.

Flax, Geranium, Milkwort, Spurge, Wood Sorrel and Mallow Families. The yellow-flowered native flax is common in sandy soil. In rocky, open woods may be found the violet wood sorrel with fleshy leaves and violet purple flowers. In open fields there is the yellow-flowered field sorrel. These are members of the wood sorrel family. Of the geranium family there is but a single species, the common wild geranium or crane's-bill, which is an early spring-blooming plant occurring on the borders of woods and along the right of way of railways. There are several species of milkwort and common among these is the seneca snakeroot with white flowers and little later the flesh-colored species and the bright red purple *(Polygala incarnata* and *P. sanguinea)*. The three-seeded mercury of the spurge family has inconspicuous flowers and is an autumn-blooming plant. There are several common species of spurge, the prostrate spurge, spotted spurge and the rather pretty white-flowering spurge *(Euphorbia corollata)*. There is only one common member of the mallow family, the common mallow or cheeses which is a weed found in dooryards.

Violet, Loosestrife, Evening Primrose and Carrot Families. Of the violets mention may be made of the blue, the yellow and bird-foot violets. The common purple loosestrife is found in low grounds. The common evening primrose with yellow flowers is common as a wayside weed and the *O. rhombipetala* is common in sandy soil. There is only one willow-herb *(Epilobium coloratum)*. Of the carrot family the rattlesnake master or button snakeroot with yucca-like leaves and the flowers in heads is common on the prairie. Seneca or black snakeroot is common in the woods. There are two kinds of sweet cicely. The spotted cowbane with white flowers is poisonous and grows in swamps. Golden Alexander *(Zizia aurea)* is common in meadows and rich woods. Its flowers are yellow and in umbels. The cow parsnip with large leaves and white flowers occurs in low woods.

Primrose, Gentian, Dogbane and Milkweed. The small primrose or cowslip with fresh-colored flowers occurs on calcareous banks in the vicinity of Iowa Falls. There are several different species of yellow-flowered loosestrife. The tufted loosestrife *(Lysimachia thyrsiflora)* occurs in cold swamps, while the common yellow loosestrife *(Steironema ciliatum)* is common in low places in woods. Of the gentian family mention may be made of the five-clustered leaved gentian with blue flowers found in moist situations, the large blue-flowered closed gentian and the white gentian, the latter found in woods. Of the dogbane family the spreading dogbane with pinkish flowers is common in woods and the Indian hemp is common in fields. Of the milkweed family the butterfly-weed is common along the right of way of railroads and in sandy soil. The swamp milkweed is common in low grounds. The common milkweed is a weed of the fields. Other species also occur.

Morning-Glory, Polemonium, Water Cress, Borage Families. The common bindweed or morning-glory *(Convolvulus sepium)* is common in alluvial soil and in fields. There are also several species of parasitic dodders, on various herbaceous plants like the goldenrod, sunflower, hazel and smartweed. There are two sweet Williams of the polemonium family. One, the blue-flowered, is found in woods and is one of the early-blooming plants and the pink-purple phlox or sweet William blooms later. This occurs in sandy woods or prairies, especially along rights of way of railroads. The common waterleaf is one of the early-blooming plants found in woods. The St. Jacob's-ladder or Greek valerian is common in woods and is an early-blooming plant with light-blue flowers. Of the borage family mention may be made of the lungwort, bluebells or Virginia cowslip found in woods. The flower has a delicate blue color. There are also several species of gromwell or puccoon. Two of the species are found in prairies or prairie-like openings.

Vervain, Mint, Nightshade Families. The vervains are common. Of these mention may be made of the white vervain, the hoary and blue and prostrate vervain. The hoary is found in sandy soil. Along the stream one may find the little fogfruit *(Lippia lanceolata)*. Of the mint family mention may be made of the germander or wood sage, skullcap, of which there are two species; common catnip, false dragonhead and hedge nettle *(Stachys)*, the horsemint *(Monarda fistulosa)* common along the right of way of railways

and borders of woods. The flowers are lilac or pink. The mountain mint or basil is common along rights of way of railways and in prairie-like openings. Water horehound *(Lycopus)* and wild peppermint occur in low grounds. The common black nightshade of the nightshade family is an abundant weed. The ground cherry, of which there are several species, are common and there are two species of jimson weed.

Figwort, Plantain, Madder and Honeysuckle Families. The common mullein is widely naturalized, as is also the toadflax. Both species have yellow flowers. The figwort is common in woods. The turtlehead or snakehead is common in shady places in woods. The blue monkey flower is common along the borders of streams. Culver's-root is common in the prairie. There are also several species of purple Gerardia, especially in low grounds. Lousewort or wood betony is common along the right of way of railways and borders of upland woods. Of the plantain family there are several more or less common weeds like the common plantain and Rugel's plantain. There are several bedstraws of the madder family. The cleavers or goose grass is common in woods and the northern bedstraw *(Galium boreale)* with white flowers occurs in upland woods. The horse gentian of the woods is an erect herb and has reddish flowers with dull orange fruit.

Bluebell, Lobelia, Sunflower and Gourd Family. There are two native species of the gourd family, the one-seeded bur cucumber and the wild balsam-apple and of the bluebell family Venus's-looking-glass with blue flowers occurs in sandy soil. The common American bellflower, a tall plant with blue flowers, occurs in rich, moist soil. Of the lobelia family the common prairie lobelia, the blue-flowered great lobelia and the cardinal-flower once were common along the Iowa river. Of the sunflower family, the largest family of flowering plants, the species are so numerous that only a few can be mentioned. Most of these plants bloom late in the season. The only early-blooming plant is the Indian tobacco, everlasting or pussy's toes. This is found in sandy soil or open places and in sandy woods. Another early-blooming plant is the ragwort. This has yellow flowers. It occurs in similar situations and in prairies. Of the late-blooming plants attention may be called to the narrow-leaved ironweed with reddish-purple flowers. The thoroughworts or bonesets occur in low grounds. The joe pye weed occurs in woods and the purple-flowered boneset in swampy places along the streams. The white snakeroot is common in woods. The kuhnia is common in gravelly places, especially prairies. There are several species of beautiful button snakeroot or blazing star and there are many species of goldenrod. Of these mention may be made of *Solidago latifolia* in woods as well as the *Solidago ulmifolia* which also occurs in woods. Of the prairie species mention may be made of the Canadian, the meadow, Missouri and large-flowered goldenrod and in gravelly places the *S. nemoralis*. All of the goldenrods have yellow flowers and bloom from August to frost. There are many different species of asters. Attention may be called to the New England aster, the white-flowered aster, the silky aster, the blue woodland aster,

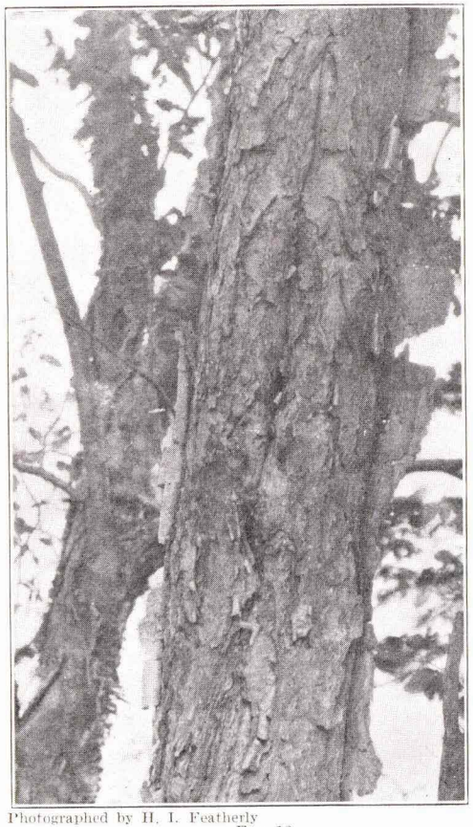
the azure aster, the willow-leaved aster, etc. The flowers are either white, blue, purple, pink and the disk is yellow. Of the fleabanes attention may be called to whiteweed and horseweed and the Philadelphis fleabane. The latter occurs in woods. The rosinweed or compass plant is common in prairies and the cup plant, also of the same genus, is common in rich soil. The ragweeds and cockleburs are common weeds. Of the coneflowers the black-eyed Susan is common in sandy soil and the purple coneflower with purple-like flowers is common in prairies. One of the very striking things of the Iowa prairie is the prairie coneflower with yellow rays. Of the sunflowers attention may be called to the common sunflower *(Helianthus strumosus)*. In the dry sandy soil also may be found another species of sunflower with yellow disks *(Helianthus occidentalis)*. Crownbeard is common in woods. There are also several species of bur marigold or Spanish needle or beggar-ticks. Some of these with rather large yellow-like flowers are common along the streams. Sneezeweed is common in low grounds of the prairies and along streams. Common yarrow is abundant in the uplands, especially in dry soil. There are several species of wormwood *(Artemisia)* and one common species of Indian plantain *(Cacalia tuberosa)*. This may be looked for on the prairie. Burdock is a common weed. Canadian thistle, bull thistle, wood thistle *(Cirsium discolor)* are common, as well as prairie Iowa thistle *(C. iowense)*, dandelion, sow thistle, and several species of lettuce are common and there is one common species of rattlesnake-root *(Prenanthes alba)* and one species of hawkweed *(Hieracium)*.

TOADSTOOLS, MUSHROOMS, BRACKET FUNGI AND PUFFBALLS

By L. H. Pammel

The woods and fields abound with a number of interesting plants belonging to a great group known as fungi. These plants do not have leaves, stems or flowers. They reproduce by tiny microscopic structures called spores. These germinate and produce a mycelium from which later grows the structure called the mushrooms. Most of the toadstools, mushrooms, puffballs and bracket fungi live on dead organic matter. A few of these types are parasitic and often very destructive to timber. Some of the related fungi like rust of wheat and corn, smut of wheat and oats are parasitic; that is, they get their nourishment from living plants. Other parasitic fungi are those found on aster and goldenrod. On many of these latter plants may be seen small orange-colored pustules on the lower surface of the leaf. This is the goldenrod or aster rust. One may see on many of the leaves of the red haw, yellow spots caused by a species of rust which has another stage of the fungus on the red cedar, the so-called cedar apple fungus. This cedar apple rust is also carried to the Wealthy apple where similar yellow spots are produced.

Most persons are familiar with a mealy or powdery substance found on the lilac, rose, sunflower, basswood and elm. These are powdery mildews which are parasitic on those plants. These powdery mildews do not bear their spores like the rust and toadstool, but the small spores are produced in sacs. They are related to the blackknot of the choke cherry. This blackknot occurs in the form of a warty excrescence on the branches of the choke cherry, black cherry and wild plum. Most persons are familiar with what is known as the morel, a plant belonging to the same great group, bearing its spores in sacs. The plant consists of two distinct parts, a stem and a cap. The cap is somewhat elongated and marked by broad pits. The cap is light grayish ochre yellow. The technical name of the common morel is *Morchella esculenta*, which means it is edible. It is the best of all of the edible fungi. The morel is not uncommon in spring in rich woods. Another relative is the cup fungus known as *Peziza*. These fungi are usually small, cup-shaped bodies. Some are red, some yellow, orange, black or white. They occur on rotten logs or sometimes on the ground.



Photographed by H. I. Featherly

FIG 12

GRAY BIRCH

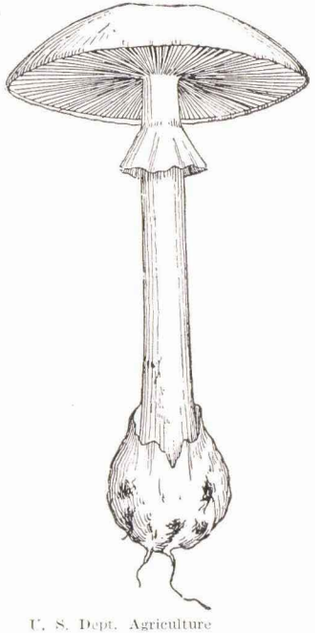


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FIG 12-A

DEATH CUP

The mushrooms or toadstools are gill fungi; that is, underneath the cap are radiating gills which bear the spores. Many of these gill fungi are stalked. Some persons apply the term mushroom to the edible type and toadstool to the poisonous species. It is, however, difficult to separate the poisonous ones from the edible by characters commonly applied by the laiety. Some forms may be poisonous to some persons and noninjurious to other persons. Some poisonous species occur in the Eldora Pine Creek area like the fly agaric *(Amanita muscaria)*. It is a handsome, striking plant, the upper part of the cap or pileus being colored red to orange with numerous white scales. The gills are white, the stem is cylindrical or hollow. This species is poisonous. Another poisonous species found in the park area is the death cup *(Amanita phalloides)*. The cap or pileus is fleshy, viscid or slimy with white scales on top; underneath the cap is a volva which hangs down. The gills are white. The stem is inserted in a cup. This might be called one of the toadstools. It is deadly poisonous. The green gill *(Lepiota Morgani)* is another fungus which is common in fields, often forming fairy rings. This fungus has a large cap or pileus, whitish, often covered with scales, flesh-white, gills white at first, turning brownish or greenish, tall stout stem, somewhat bulbous at the base. It is not safe to eat this.

The pore-bearing fungi or bracket fungi are common in the woods on stumps, dead trees, etc. They are often bracket-like or shelf-like, sometimes fleshy and sometimes dry. The boleti which are common in woods are fleshy, resembling toadstools with a cap and stalk. The under surface consists of a fleshy structure with many little pores. They are found in woods. The most conspicuous of the bracket fungi is the common shelf fungus, *Fomes applanatus*, found on cottonwood and plum. The cap is sometimes quite large, more than a foot across where it is attached to the wood. The upper surface when fresh is whitish becoming brownish, the lower surface whitish with numerous small pores. The hoof fungus *(Polyporus fomentarius)* is horseshoe-shaped, brownish underneath and a grayish brown color above. It occurs on birches. There are several fungi of soft texture found on deciduous trees. One is the birch polypor *(Polyporus betulinus)*, a whitish-brown to reddish-brown tough fleshy fungus with small pores. The sulphur fungus *(Polyphorus sulphureus)* is a reddish yellow or orange, fleshy, spongy fungus, fan-shaped and lobed and occurs at the base of stumps or base of living trees, especially ash and oak. Another very common fungus, the rainbow shelf fungus *(Polystictus versicolor)*, is distinctly zoned with different colors, velvety or silky on top with small pores on lower surface, common on logs and stumps.

Puffballs are familiar objects on the ground and dead logs of trees. When fresh the flesh is white, but as the plant matures the interior is converted into a mass of powdery spores. One type of the puffball occurs on old logs. It is pear-shaped and is known as the stump puffball *(Lycoperdon pyriforme)*. The giant puffball, sometimes twelve inches across, is *Clavatia gigantea*. The spores are brown or olive brown. The small lead-colored puffball of the

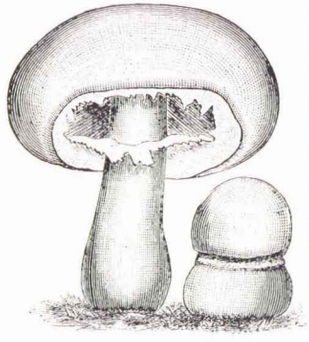
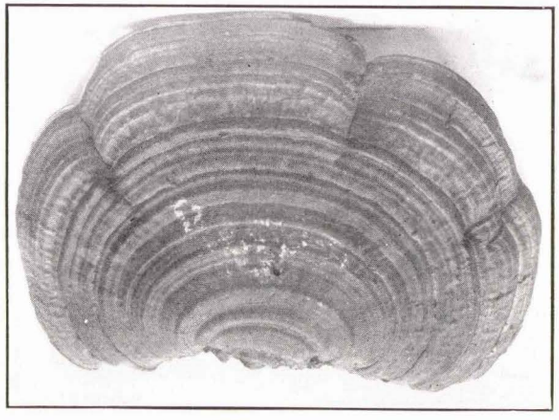


FIG. 13
COMMON MUSHROOM



Photographed by Mr. O. Miller

FIG. 13-A
SHELF FUNGUS

field is *Bovista pilea*. This has purple-brown spores. Stinkhorns are not uncommon. They are characterized by the carrion-like odor. When young the mass in the ground resembles an egg or a puffball. This structure contains a gelatinous mass. The stalk is pushed out and a hollow stem with numerous spores at the top where it is enlarged. This is somewhat mucilaginous and resembles the morel in the little folds, but with a strong odor. The name of the fungus is *Ithyphallus impudicus*. It is common in the summer and autumn. Puffballs are edible when fresh, that is, when the flesh is white. The stinkhorn is, however, never edible.

BIRD LIFE

The story of the birds may be introduced with a fine poem on Bob White:

BOB WHITE

LEROY TITUS WEEKS

Oh, sweet to the ear
In the early morn
Is the whistle clear
Over rustling corn
Of the brown little bird whose rich content
Is a breath of life by summer sent.
His gladness thrills
The heart, and spills
The laughter of nature over the hills.
"Bob White!" "All right!"
"O, Bob White!"

He sings of dells
With rippling rain,
Of tinkling bells
In shady lane,
Of sunburned cheek and sun-filled heart,
Of joyous life in the fields apart.
A true chevalier,
And the haunting dream of the Golden Year.
He spreads good cheer.
"Bob White!" "True Knight!"
"O, Bob White!"

Where leaves are aflame
In the autumn air,
His trig little dame
With wifely care
Will gather her brood about her breast,
As the sun dips low in the purple West.
And lilt love's glee
Across the lea—
The deep, undying mystery:
"Loyalty!" "Loyalty!"
"Loyalty!"

BIRDS

The following birds may be looked for in the Eldora, Steamboat Rock and Iowa Falls area:

Pied-billed Grebe
Forster Tern
Mallard
Green-winged Teal
Blue-winged Teal
Shoveller
Pintail
Wood Duck
Redhead
Canvasback
Greater Scaup Duck
Solitary Sandpiper
Bartramian Sandpiper
Long-billed Curlew
Ruddy Duck
Great Blue Heron
Black-crowned Night Heron
Yellow-crowned Night Heron
King Rail
Virginia Rail
American Coot
American Woodcock
Wilson Snipe
Pectoral Sandpiper
Least Sandpiper
Sanderling
Greater Yellow-legs
Yellow-legs
American Barn Owl
American Long-eared Owl
Short-eared Owl
Barred Owl
American Golden Plover
Killdeer
Bobwhite
Mourning Dove
Marsh Hawk
Sharp-shinned Hawk
Coopers Hawk
Red-tailed Hawk
Red-shouldered Hawk
Swainson Hawk
Broadwinged Hawk
American Rough-legged Hawk

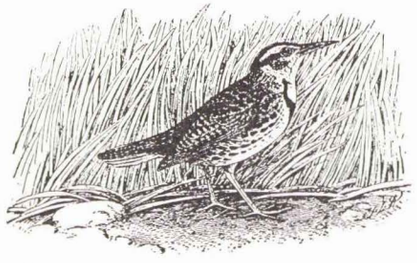


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FIG 14

MEADOW LARK

U. S. Dept. of Agriculture

FIG 14-A

BOB-O-LINK

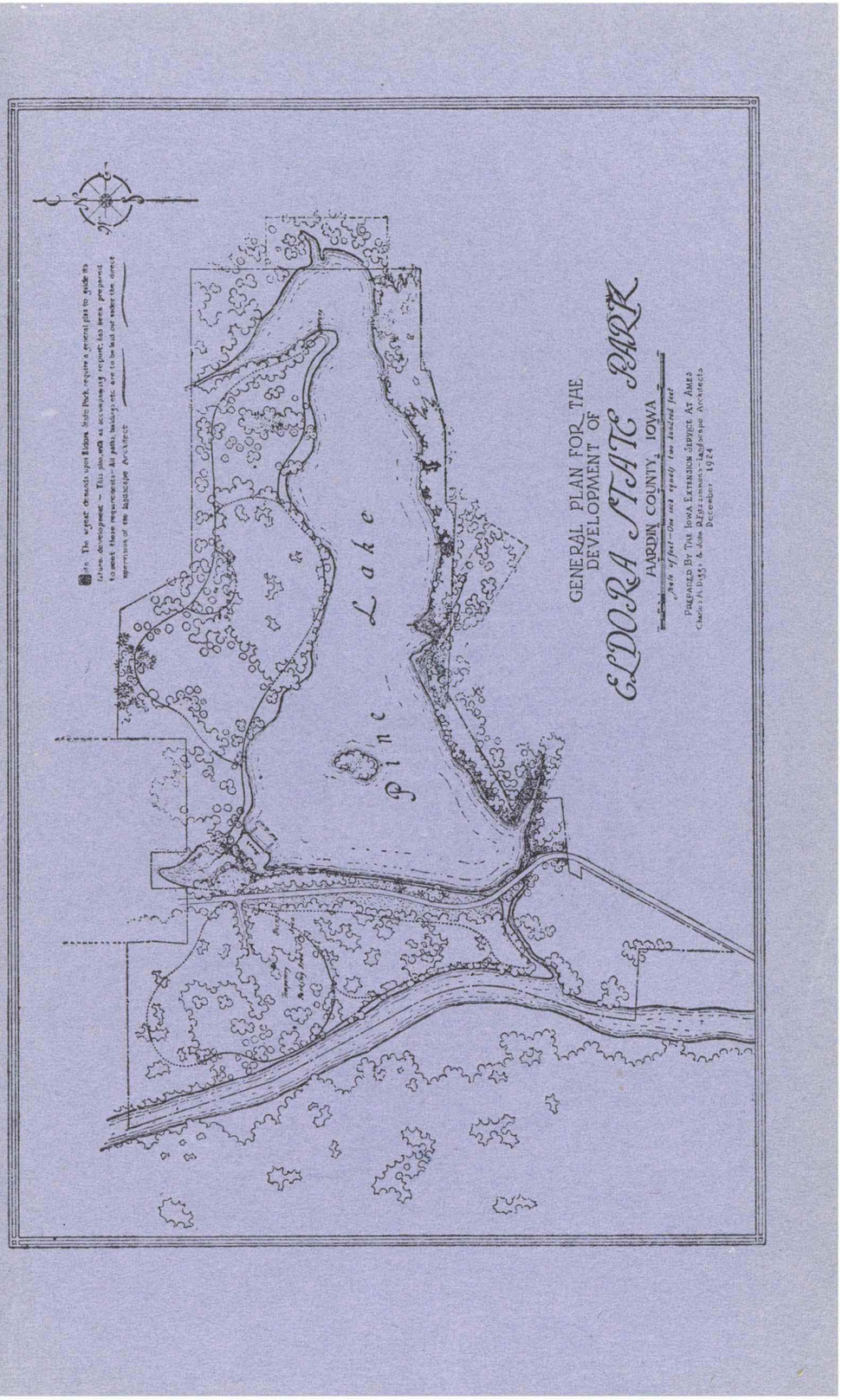
Golden Eagle
Bald Eagle
Duck Hawk
Pigeon Hawk
American Sparrow Hawk
American Osprey
Phoebe
Wood Pewee
Yellow-bellied Flycatcher
Least Flycatcher
Prairie Horned Lark
Saw-whet Owl (Very rare)
Screech Owl
Snowy Owl (Rare)
Great Horned Owl
Yellow-billed Cuckoo
Black-billed Cuckoo
Belted Kingfisher
Hairy Woodpecker
Northern Downy Woodpecker
Yellow-bellied Sapsucker
Northern Pileated Woodpecker
Red-headed Woodpecker
Red-bellied Woodpecker
Northern Flicker
Red-shafted Flicker (rare)
Whippoorwill
Nighthawk
Chimney Swift
Ruby-throated Hummingbird
Crested Flycatcher
Chestnut-collared Longspur
Vesper Sparrow
Savanna Sparrow
Grasshopper Sparrow
Leconte Sparrow
Nelson Sparrow
American Magpie
Blue Jay
American Crow
Bobolink
Cowbird
Yellow-headed Blackbird
Red-winged Blackbird
Meadow Lark
Orchard Oriole
Baltimore Oriole
Rusty Blackbird
Bronzed Grackle
Purple Finch
Redpoll
American Goldfinch
Pine Siskin
Snowflake
Lapland Longspur
White-bellied Swallow
Bank Swallow
Rough-winged Swallow
Bohemian Waxwing
Cedar Waxwing
Northern Shrike
White-rumped Shrike
Northern Loggerhead Shrike
Red-eyed Vireo

Lark Sparrow
Harris Sparrow
White-crowned Sparrow
White-throated Sparrow
Tree Sparrow
Chipping Sparrow
Field Sparrow
Slate-colored Junco
Song Sparrow
Swamp Sparrow
Fox Sparrow
Towhee
Cardinal
Rose-breasted Grosbeak
Indigo Bunting
Dickcissel
Scarlet Tanager
Purple Martin
Cliff Swallow
Barn Swallow
American Redstart
Catbird
Brown Thrasher
Western House Wren
Winter Wren
Short-billed Marsh Wren
Brown Creeper
White-breasted Nuthatch
Red-breasted Nuthatch
Tufted Titmouse
Black-capped Chickadee
Warbling Vireo
Yellow-throated Vireo
Blue-headed Vireo
White-eyed Vireo
Bell Vireo
Black and White Warbler
Western Parula Warbler
Yellow Warbler
Myrtle Warbler
Magnolia Warbler
Black-poll Warbler
Oven-bird
Louisiana Water-thrush
Northern Yellow-throat
Yellow-breasted Chat
Wilson Warbler
Golden-crowned Kinglet
Ruby-crowned Kinglet
Blue-gray Gnatcatcher
Wood Thrush
Wilson Thrush
Olive-backed Thrush
Hermit Thrush
American Robin
Bluebird

LEPLEY PARK

This little park is a gift from Irvin Lepley of Hardin county and is to commemorate the splendid achievements of the pioneer Lepley and Hays families of Marshall and Hardin counties. The road between Union and Eldora goes through the park. The park is one and one-half miles north of Union. Trees of American and slippery elm, basswood, bur, white and red oaks, black cherry and hickory are found in the park. The Iowa river is a quarter of a mile away. This splendid little park with fine shade trees and beautiful woodland flowers serves the Union and rural community splendidly. The citizens of Union erected the small log cabin and placed a fine memorial granite boulder of the Wisconsin drift sheet in the park to commemorate the pioneers of Marshall and Hardin counties. The park was accepted on December 6, 1919.

FLY AMANITA, POISONOUS TOADSTOOL. UPPER PART OF CAP RED AND COVERED WITH SCALES.



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 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	Winneshiek
Gitchie Manito 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	20	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
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	168	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.

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

Iowa State Conservation Board, Eldora Pine Creek State Park