Iowa State Conservation Board, Dolliver Memorial State Park

Iowa

DOLLIVER MEMORIAL STATE PARK

WEBSTER COUNTY, IOWA

BLUE JAY

1925

DOLLIVER MEMORIAL STATE PARK

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A DOLLIVER MEMORIAL PARK BEHOLD!

By Louise Manning Crosland

When spring returns with joys supreme,
The cold dark earth as from a dream
Begins to wake.
The grass and flow'rs with lifted heads
Now hear the call and from their beds
Push from the sod.

The trees and fields that were so bare
Just seem to know it's time to wear
A new attire.
The brooks and streams now raise their song,
Since for a while that seemed so long
They could not speak.

The wooded hills send back their lay,
When countless feathered throats so gay
Warble in tune.
The fragrant scent of new-turned ground,
The leafy stirrings—all these sound
The call of spring.

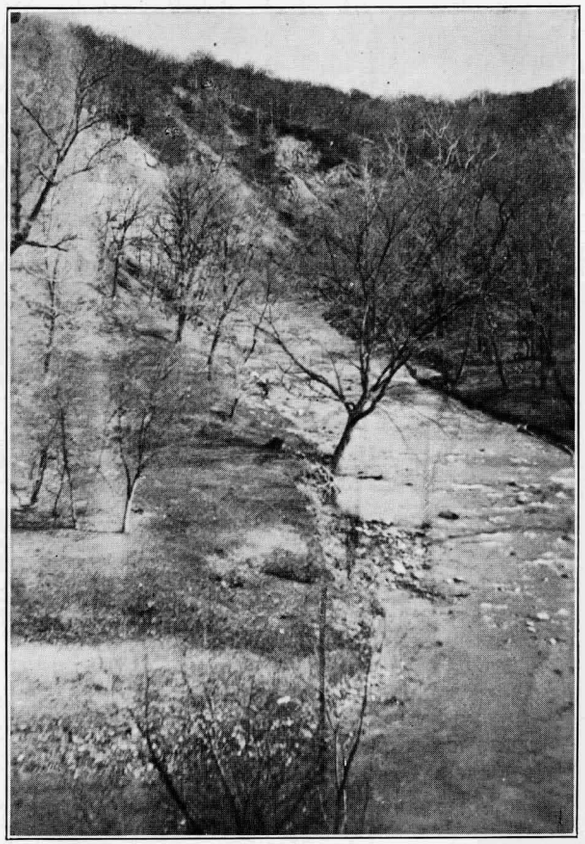
It seems always in days of spring
That Mother Nature wants to bring
A new, clean world.
For there is something always near
In spring's most wholesome atmosphere
Your spirit calls.

And even in the sunset's glow,
Or twilight notes that lull us so,
There is a calm.
All these expressions to us say
In a truly, beauteous way—
There is a God.

LOCATION OF PARK AND HOW TO REACH IT

Dolliver Memorial Park is located in Webster County in Otho township on the Des Moines River.* The park is 13 miles from Fort Dodge, 25 miles from Webster City, 17 miles from Gowrie, 10 miles from Dayton, 3 miles from Lehigh, 30 miles from Jefferson, 30 miles from Rockwell City, Ames 45 miles, Boone 31 miles, Ogden 23 miles, Des Moines 80 miles.

*This information was furnished by Mr. C. N. Douglas, Custodian of the Dolliver Memorial Park.



Photographed by H. C. Fuller

FIG. 1.

PRAIRIE CREEK IN DOLLIVER MEMORIAL PARK IN WINTER

The park may be reached from Des Moines over Highway No. 60. From Des Moines to Boone west to Highway No. 90, to Dayton north to Highway No. 50, and then east on this five miles. From Fort Dodge it may be reached on the Daniel Boone Trail. South 6 miles from Fort Dodge and 2 miles east to Otho and south, then east and south, then in a southeasterly direction to the park. It may be reached from Waterloo and Webster City on Primary No. 5 to Fort Dodge and then south to Otho and into the park. From Ames and Story City the park may be reached by going north on the Wilson Highway No. 16 to Blairsburg, then west to Fort Dodge and south to Otho and southeast to the park, or west to Ogden, Primary No. 6, then north on 90 to Dayton and then to Lehigh. Dolliver Memorial Park, including Polk County, provides recreation for nearly four hundred fifty thousand people.

Soon after the creation of the State Board of Conservation and the appointment of the Commission, petitions were presented by O. M. Oleson, I. W. Paige, Rev. F. E. Drake and others to create a state park. After a thorough investigation by the board, and favorable reports by E. R. Harlan, John Ford and the chairman of the board, that this tract was desirable for recreation, historic and scientific purposes the area was recommended. On September 5, 1915, a resolution was adopted to recommend the purchase to the Executive Council. On December 6 of the same year a second resolution was sent to the Executive Council. On April 6, 1920, Mr. R. O. Greene, of the Fort Dodge Chamber of Commerce, presented the matter of using the Dolliver Memorial Fund as a part of the donation from Fort Dodge toward the creation of this park. The state was asked to name the park after Senator Dolliver and to place a suitable memorial tablet in the park. The park was not actually acquired until sometime early in 1921. Hon. John Ford, of Fort Dodge, used his best efforts to secure the park. The first custodian of the park was J. D. Black. He was followed by Mr. C. N. Douglas, who is the present custodian. The park was dedicated June 28, 1925.

DOLLIVER MEMORIAL PARK

BY L. H. PAMMEL.

This park, situated on the Des Moines river about two and a half miles from Lehigh, Iowa, and about fourteen miles in a southeasterly direction from Fort Dodge, is strictly a rural park of 457 acres. On one side the Des Moines river, on the other it connects with fine open prairie farms. Prairie creek flows through a part of the park. In addition to this there are numerous small ravines, fine springs, and some small streams with flowing water. The sandstone cliffs face the Des Moines river, extending back into the larger ravines. One is known as the copperas cliff because of the deposit of copperas which is exposed. Sometimes these rocks are

strongly ferruginous, sometimes they are laid in nearly horizontal layers sometimes slightly irregular and sometimes eroded into fantastic shapes.

Boneyard Hollow is one of the most interesting of the ravines, fairly wide at the entrance, then narrowing into a little canyon-like gorge, extending back for some distance, narrowing out into several other little ravines. At some places these gorges are quite abrupt and during an abundant flow of water a miniature waterfall is formed. This gorge, too, is interesting for the type of plants found in it, especially the ferns, like the walking leaf fern, the bladder fern, with its little bulblets, woodsia, spleenwort, osmunda and maiden hair fern and polypody. With the exception of one species, which is found in Woodman's Hollow, and the ostrich fern, all the ferns in central Iowa occur here. The area is also remarkable in that such plants as the prickly gooseberry, wild ginger, Solomon's seal, spikenard, water leaf, mandrake, bloodroot, hepatica, blue and yellow violets, Dutchman's breeches occur in abundance.

Mr. Hal C. Fuller has the following interesting account of the Boneyard Hollow: "Shooting out abruptly from the precipitous banks of the Des Moines river valley is Boneyard Hollow, located two miles north of Lehigh. This hollow derived its name from the wagonloads of buffalo bones which had been unearthed there by the early settlers and later by the curio hunters who have found many fine specimens, not only of petrified bones, but arrowheads, Indian axes, and in 1915 a leaden plate was unearthed there with a Latin inscription which since has greatly interested historians. This leaden plate may attach to Boneyard Hollow a national importance, for it is claimed that this plate was deposited there in 1701 by Father Hennepin and explorers. Curator Harlan interested Archbishop Ireland in the find and church history was resorted to in an effort to prove the authenticity of the plate.

"Boneyard Hollow is a narrow ravine running out perhaps three-quarters of a mile from the Des Moines river. A small creek flows at the bottom and the tiny valley between the perpendicular walls has a thick growth of small trees and farther back from the mouth of the ravine, ferns and other foliage growth is luxuriant. The abrupt cliffs on either side go up fifty to seventy-five feet; and it is claimed that in the days before the white man came to this locality that the Indians used Boneyard Hollow for a trap for the buffalo. The bones of these animals, which lay several feet in thickness, have been unearthed here."

During my visit at this park on July 13, 1924, the area presented a remarkably fine appearance. On the hogback, which connects the different ravines, occurs a prairie flora. Here may be found the commandra, dalea, wood betony, puccoon and sweet William. On the other hogbacks there are great quantities of the juniper moss, reindeer lichen and pale vetch, the exact counterpart of the area found at the Ledges, in Boone county. In fact, there is a remarkable repetition of the plant life in all of these coal measure sandstone areas. They are all extremely interesting, from Fort Dodge to the lower Des Moines river. Of course, we do not

Photographed by Oliver Miller

FIG. 2.

GROUND OR PRAIRIE SQUIRREL

U. S. Dept. of Agriculture

FIG. 2A

BROWN THRESHER

have, in the Dolliver Park, the white pine and paper birch which are found at Steamboat Rock and Eldora. However, the flora is of an island type, just as is the flora at Eldora and the Ledges.

The trees also are of interest, and among those found are the quaking aspen, large toothed aspen, shellbark hickory, pignut hickory, black walnut, butternut, coffee bean, black maple, black ash, and white ash; the latter species must nearly reach its northern limit in central Iowa at this place. There are a few at Fort Dodge. Great quantities of fine second growth white, red, and bur oaks occur here. There were also fine clumps of blue beech, ironwood and basswood. Along the river bottoms the cottonwood, soft maple, green ash, black willow, almond-leaved willow, sandbar willow and American elm occur. In the bottoms of the Prairie creek are fine specimens of corky bark elm, American elm, hard maple and basswoods and some honey locust.

This area is a very remarkable one for central Iowa and is unique. There are splendid open spaces for camping and picnic parties. During the process of erosion, the valley has been widened much more than has the valley at the Ledges. We must, therefore, accord this park the credit of being one of the most unique ones in the state and from the standpoint of plant life, fully as interesting as the Ledges and Eldora Pine Creek.

WOODMAN'S HOLLOW AND WILD CAT CAVE

Woodman's Hollow, lying to the northwest of Dolliver Park, is a beautiful little canyon of sandstone rocks with a little stream flowing through it, emptying into the Des Moines river. The Des Moines skirts the high banks of sandstone rock covered with overhanging red cedar. Woodman's Hollow is not a part of the Dolliver Park, but it is one of the most interesting little canyons in

Central Iowa. Woodman's Hollow is a gorge cut out of the sandstone rock, made by the water dashing over the rocks for centuries. The dry slopes on the top of the hills in the spring are covered with blue-eyed grass and lobelia. The sandstone rocks contain a variety of interesting ferns like polypody, walking leaf fern, and in the canyon are great patches of the ostrich fern. The more common trees are the maple, large toothed aspen, the white, bur, red, and black oak. Fine specimens of butternut, basswood and elm.

Another interesting spot is Wild Cat Cave. This lies north of Woodman's Hollow and Dolliver Memorial State Park. Wild Cat Cave also has a stream which empties into the Des Moines river below the cave proper. "Along the west walls are a series of six or seven shallow chambers hollowed out of the soft sandstone cliffs which tower upward sixty or seventy feet. In summer moss, ferns, wild flowers, and trees make beautiful the crests and over-arch

Photographed by Dr. A. Hayden

FIG. 3.

THE PASQUE FLOWER BEAUTIES OF THE APRIL PRAIRIES

quaint isles and lanes," so says a writer in the pamphlet on Fort Dodge. For those who are interested in this charming country they should follow directions given in this same circular on the Webster County Scenic Drive:

"It leads from Fort Dodge south to Roberts, thence east, thence south through Otho, thence in a south-easterly direction to Dolliver State Park. Through Dolliver Park to and out the south entrance, thence south and east to the town of Lehigh, where the Des Moines river is crossed, thence north, passing Woodside Floral Farm. During the past few years this beauty spot has attracted visitors for many miles. Each year more flowers are shown. The first week in June is probably the best time of all to visit this place. Some twenty kinds of lilies, eleven kinds of lilacs, twelve kinds of spiraea, thirty kinds of roses, one hundred varieties of iris, perennials of many kinds, as well as shrubbery grow here. Few people right here, near this beautiful garden, realize that there are fifteen thousand umbellum lilies alone, as well as two thousand tiger lilies, and peonies so numerous they are unnumbered. A stop is well worth while. From here the drive proceeds northwesterly by the entrance to 'Wild Cat Cave,' by the gypsum mills and into Fort Dodge."

PUBLIC PARKS

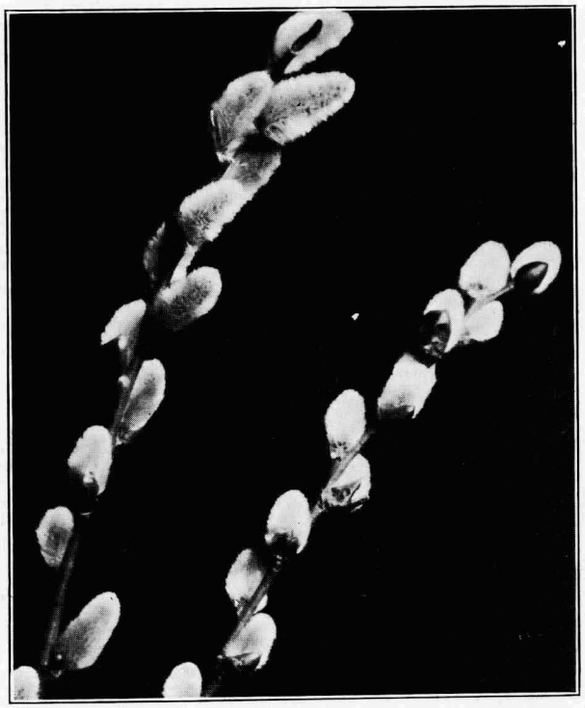
Fort Dodge. The city of Fort Dodge has four city parks. Oleson Park of some eighty acres of fine timbered lands on the south side of the city. This park is the gift of Mr. O. M. Oleson. There are miles of fine drives in this park, enchanting ravines and beautiful hill slopes covered with a variety of native and indigenous plant life. There are magnificent specimens of the elm, both the common and slippery, the white, red, bur oaks, basswood, black and choke cherry, white, black and green ash, and a variety of beautiful summer and spring flowers. Mr. Oleson has a great love for flowers and has done much in the way of preserving plant life for this region. He is a local botanist.

Reynolds Park is situated in the eastern part of the residential district of the city and was given to the city by Mr. George Reynolds, whose work as a public official is well known to the people of the United States. Phinney's Park, on the west side of the Des Moines river, was given by the late Joseph Phinney. Like the Oleson Park, there are fine trees of cottonwood, maple, ash, elm, basswood, and a large variety of flowers.

The city also has a number of public squares, small parks, and some of these are adjacent to residential sections. Of these parks we may mention the pretty R. W. Crawford Park, Towers Square, Public Square and Island Park. There are also small parks in the towns of Dayton, Gowrie, Duncombe and Callender.

PARKS OF HAMILTON COUNTY

Hamilton County. In addition to the Little Wall Lake State Park in the southern part of Hamilton county, attention may be called to the beautiful parks in Webster City. Of these the Kendall Young Park on the outskirts of the city and the Briggs Park several miles from Webster City on the Boone river. There is also a fine small park in the heart of the city on picturesque Boone river. Here may be seen some trees of the original forest. Fine oaks, elms, both slippery and American, and cottonwood. There are other conveniences. These parks are worthy of mention because they have done much to stimulate an interest in park work in that county.



Photographed by Dr. A. Hayden

FIG. 4.

PUSSY WILLOW

SOME HISTORICAL MATTER ON WEBSTER COUNTY

BY L. H. PAMMEL.

Certain matters pertaining to the history of Webster county are of interest in connection with Dolliver Memorial Park. The earliest settler of the county was Henry Lott. At least he was the first man to build a cabin in the county. This cabin was built on the north side of Boone river, near the junction of this stream and the Des Moines; and near here occurred the death of Milton Lott and the death of the first wife of Henry Lott, whose first husband was Mr. Huntington. Originally, the Lotts came from Pennsylvania, where Mr. Huntington died.*

Henry Lott moved to Red Rock, Marion county, in 1843, where he was an Indian trader with the Sacs and Foxes. He moved to Webster county in 1846. Here he expected to do business with the Sioux Indians, but trouble soon developed between Si-dom-i-na-dotah and his band of Sioux Indians. This Indian chief told Mr. Lott that he was occupying land belonging to the Sioux. However, the map published by Tanner in 1839 indicated that the Sioux hunting grounds were further north on the upper forks of the Des Moines river, now Humboldt county. It is evident that Lott was not an intruder and that the Sioux Indians had no claim to this territory.

Lott and his stepson were eye witnesses to the destruction of the Lott property. He also witnessed the taking of horses. Later it was found that the Indian also took some silverware which Mrs. Lott had received from her first husband and was precious to the family. During the time that this occurred Mr. Lott and his stepson had concealed themselves on the opposite side of the Boone river. Lott left his wife and 12-year-old boy on the place and this by some was considered a cowardly act.

Lott and his stepson at once made their way to the Pea settlement in Boone county not far from the present Ledges State Park. In the course of three days Henry Lott returned with Johnny Green and friendly Musquakie and Pottawattamie Indians. Johnny Green was a helf-breed. In addition to the Indians he brought two members of the Pea family, two of the Hull family, and two of the Crooks family. They found Mrs. Lott in terrible condition, probably frightened and terrified by the yells of the Indians and other threatening things.

Mrs. Lott died soon afterwards. The boy was found dead from exposure on December 18, 1846, on the bank of a little creek which flows into the Des Moines river near the present village of Centerville, Boone county. The rescue party placed the boy in a coffin made out of the logs of a tree, which has long since been removed. The body remained in the log until the 14th of January, 1847,

*Mr. C. L. Lucas in "History of Fort Dodge" and "Webster County, Iowa," by H M. Pratt—page 63.

when it was buried with simple ceremonies. Those attending the ceremony were John Pea, Senior and Junior, Jacob Pea, Thomas Sparks, John N. and William Crooks, and Henry Lott. This was the first funeral held in this region.

Fifty-nine years later, through the efforts of Mr. C. L. Lucas of Madrid, the spot where Milton Lott was buried was marked with a memorial tablet. Mrs. Lott was buried on the banks of the Boone river in a place later known as Vegor's cemetery. A fine monument was erected by the Old Settlers' Picnic Association to commemorate the death of the first woman settler of Webster county. Henry Lott was much attached to his wife and is said to have planted a grape vine over the grave.

Lott soon afterwards left his settlement and moved to Dallas county, building a second log cabin about five miles south of Madrid. During the fall of 1847 Lott moved to Fort Des Moines where he married a McGuire, daughter of Francis McGuire. In the spring of 1849 he again moved to the old cabin near the mouth of the Boone river. Three children were born to them, two girls and a boy. At the birth of the boy the mother died, September 10, 1851. She was buried in the northeast quarter of the southeast quarter of section 27, Otho township, near what later became the Van Valkenburg's home. The grave has not been marked.

After finding homes for the children in the fall of 1853 Lott moved north to Humboldt county (going through Fort Dodge on his way), settling near the mouth of a stream which has since been named Lott Creek. Here he met his old enemy, the Indian Chief Si-dom-i-na-do-tah. He made many calls on this Indian, apparently friendly. On one of these visits Lott was shown the silver from his first wife. He became enraged and determined to kill the Indian chief, which was done shortly afterwards in cold blood, and soon afterwards killed the other members of the family.

Some time later the Indians discovered the death of their chief and family and the burning of the Lott cabin. This was reported to Major Williams of Fort Dodge and to Fort Ridgely. The Indians were certain that Lott committed the deeds. A coroner's jury of Webster county, of which Rev. John Johns, a Baptist minister, was the coroner, met at Homer, then the county seat, and found Lott and his stepson guilty of the act. Little effort was made to get him. What became of Lott no one knew. The claim was made that he went to California; but all trace of him was lost. The Spirit Lake massacre was therefore connected with the crime committed in Humboldt county by Lott.

It is of interest to know that Captain Nathan Boone, son of Daniel Boone, started to survey the "neutral line" on April 19, 1832. This was for the purpose of separating the warring tribes of Indians. This line began at the mouth of Trout Run, six miles below Decorah, thence to about the confluence of the east fork of the Des Moines river. Boone did not survey very much of the territory, owing to the hostility of the Indians. It is certain, however, that Nathan Boone was in Boone county on the Des Moines

river. The survey was resumed by James Craig in September, 1833, completing it to the Des Moines river at McGuire's bend. The government survey for the Raccoon Forks north was started in 1848 and the first settlement made by Lott was at the mouth of the Boone river in 1848.

The Mericles, Frank McGuire, Messrs. Spaulding, Brannon, Tolman, Pierce, Eslick and others followed later. These early settlers came mostly from Missouri, North Carolina, Indiana and a few from New York. Of interest in this connection is the coming of Rev. John Johns. He arrived soon after the earlier settlements. He was an abolitionist and went as a delegate to the Republican convention in Des Moines in 1856 where he made a remarkable speech. This minister was a hunter and trapper, and with his coonskin garb appeared before the Des Moines convention. He later attended the national Republican convention in Chicago, walking from this western county to Dubuque, wearing his coonskin cap and carrying his rifle. He was made a delegate at large from Iowa.

Fort Dodge, or as it was first called, Fort Clark, was established in 1850 chiefly to check the depredations of the Indians. General military orders were issued on May 31, 1850, to establish a fort at or about Lizard Fork or Creek and the Des Moines. The troops sent consisted of a part of the Sixth Infantry and came largely from Fort Snelling, Minnesota. General orders No. 19 ordered Brevet Major Woods to proceed to Lizard Fork of the Des Moines river. Captain Daniel Woods, with Company E of the Sixth Infantry and two officers and sixty men, arrived at the new fort on August 2, 1850. It was named in honor of Brigadier General Newman S. Clark, Colonel of the Sixth Infantry, who was commanding the Sixth Military Department, with headquarters at Jefferson barracks near St. Louis, Missouri. The name of the fort was changed to Fort Dodge on June 25, 1851, by general orders of the army to honor Senator Augustus Caesar Dodge of Iowa. On March 30, 1853, orders were issued to disband the fort and Major Woods left the fort with most of his men on April 18, 1853. Major William Williams was the first postmaster of the fort and became also the first mayor of the town in 1869 and 1870. He platted the town in 1854.

The Spirit Lake Massacre of 1857 is incidentally connected with the Lott tragedy in Humboldt and Webster counties. The story of this massacre has been graphically told by such writers as Thomas Teakle in "The Spirit Lake Massacre," by Gue in his "History of Iowa," Inghams "In-ka-pa-du-tah's Revenge," Abbie Gardner Sharp's "History of the Spirit Lake Massacre," and Smith's "History of Dickinson County." Suffice it to say in this connection that during the year 1856 settlements were started at Okoboji and Spirit Lakes, that these settlers reached the lakes during the months of July and August. There were about fifty persons; prominent among these were the Rolland Gardner and Harvey Luce families, Dr. I. H. Herriott, Bertell Snyder, William and Carl Granger, James H. Mattocks and wife, Joel Howe, Alvin Noble and wife, Joseph N. Thatcher and wife, and William Marble and wife.

The massacre occurred between the 8th and the 13th of March, 1857, and news of the destruction of the settlement was brought to Fort Dodge by O. C. Howell, R. U. Wheelock and B. F. Parmenter. These parties, owning some property on Spirit Lake, reached the Thatcher cabin on the 15th of March and found the mutilated bodies of Noble and Ryan. Fort Dodge at once started a relief expedition. Two companies were formed, Company A, commanded by C. B. Richards, and Campany B by Captain John F. Duncombe. They were joined by another company from Webster City, known as Company C, and commanded by J. C. Johnson. These companies were formed into a battalion commanded by Major William Williams by the authority of Governor Grimes. The expedition left Fort Dodge on March 24, 1857. The company was joined at Emmetsburg by Honorable C. C. Carpenter and Angus McBane, residents of Fort Dodge.

THE RIVER LAND GRANT

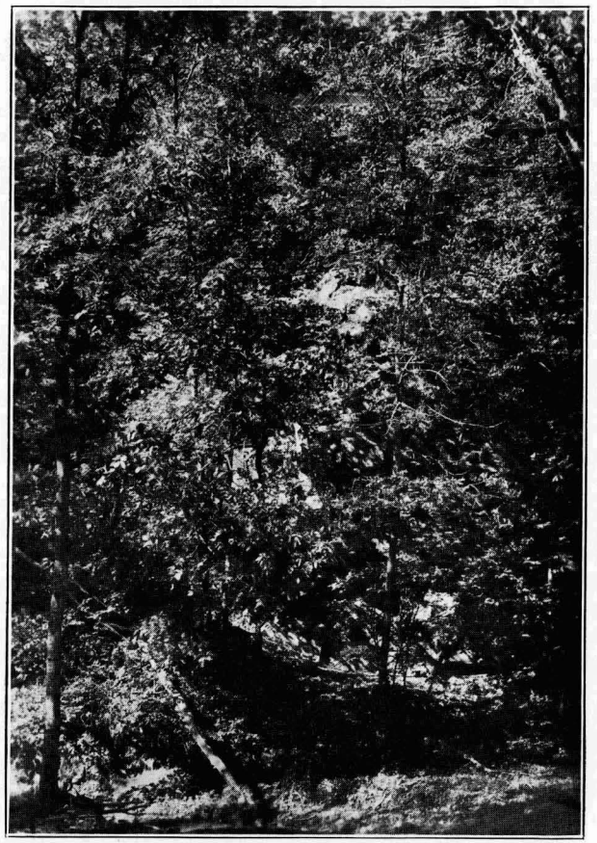
A matter of considerable interest to the settlers of the Des Moines river was the river land grant. This was passed by Congress and became a law in August, 1846. It is thought that this grant was proposed by A. C. Dodge who was a territorial delegate in Congress. The grant was made for the purpose of improving the navigation of the Des Moines river from its mouth to Raccoon Fork, the grant consisting of every alternate section of public lands in a strip five miles in width on each side of the river, subject to the approval of the treasurer of the United States. The land was selected by agents appointed by the governor of the state. This grant was afterwards given to the Des Moines Navigation and Railroad Company. There was much litigation. It was held for some time, and rightly so, that this grant did not extend beyond the Raccoon Forks. However, in 1851 the claim of the state of Iowa to the odd sections above the Raccoon Forks was admitted.

It would seem that the commissioners appointed by the governor were very desirous to have the river improved for the purpose of transportation. It thus happens that when this park was created the Litchfield interests, who were the successors of the Des Moines River Navigation Company, gave to the state for park purposes some of the original land grant given to them by the government.

STEAMBOAT UP THE DES MOINES TO FORT DODGE

An item of interest was the arrival of the steamboat "Charles Rogers," constructed for the Fort Dodge Navigation Company in Pittsburgh. The hull was seventy-six feet long, fifteen feet wide, with two cylinders ten and twelve inches in diameter.

Captain Beers left Pittsburgh on the 14th day of October, 1858, touching Cincinnati, Evansville, Cairo, St. Louis and Keokuk. The boat made several round trips to Des Moines from Keokuk that fall. The boat was laid up for the winter eighteen miles below Ottumwa, and arrived in Fort Dodge the middle of May, 1859. Hon. John F. Duncombe, a distinguished citizen of that city and the editor of the Fort Dodge Sentinal, described an excursion of the "Charles Rogers" in the issue of April 7th, 1859. In part he said as follows: "We had always believed that the navigation of our river was practical, but to know it filled our citizens with more pleasure than a fortune." A public meeting in honor of the event was held at the public schoolhouse. Major Williams presided and thanks were tendered to Captain F. E. Beers, Henry Carse and A. F. Blackshere, and others who promoted the boat building enterprise. A sociable "soiree," in honor of the event, was held in Masonic Hall on May 23, 1859. Among the managers appear the names: Hon. C. C. Carpenter, Hon. W. U. Meservey, Hon. L. L. Pease, and Major William Williams.



Photographed by C. D. Petersen

FIG. 5.

PICTURESQUE HILLSIDE WITH COVERING OF TREES AND SHRUBS

THE RAILROADS

Fort Dodge did not have a single line of railroad for many years, but in 1877 the city started a railroad program. When it was learned that S. H. Taft of Humboldt and J. J. Smart of Des Moines were interested in building a railroad from Ames, Webster City to Humboldt and Rutland*, a company of business men of Fort Dodge organized a company known as the Fort Dodge and Fort Ridgley Railroad and Telegraph Company. George R. Pearsons was chosen treasurer and general superintendent. The projected road was a narrow gauge, running in the direction of Fort Ridgley, Minnesota. Elliott E. Colburn was the chief engineer and Gus T. Peterson secretary.

The capital stock proposed was $2,000,000. The road was financed in several ways, bonds, land grants and other subsidies. The board of supervisors, who voted a subsidy, made a contract which contained numerous provisions. Of these, mention may be made of the one that the road should be completed to the county line by January 1, 1879. It was difficult to accomplish this. It was further provided that the speed of the trains should be fifteen miles an hour.

The Fort Dodge and Ridgley road was later sold to the Minneapolis and St. Louis. The road was purposely built crooked so that the corners of every other section were traversed in order to secure an additional subsidy of land. The Fort Dodge road connected with the Minneapolis and St. Louis at Livermore and was completed in 1879.

The Illinois Central extended from Chicago to Sioux City, Iowa; the Omaha, Nebraska, branch was completed much later. The Sioux Falls, South Dakota, came through Fort Dodge in 1869. The road gave the city direct and excellent traffic connection with the east and west. These roads have made out of Fort Dodge an excellent business center. The Fort Dodge, Des Moines and Southern Electric line came to the city in 1907. The Crooked Creek railroad, which reached Lehigh in 1878, was later taken over by the same company. These lines gave an excellent outlet to Boone, Des Moines and Webster City. The Chicago and North Western came through the southern part of the county, Dayton and Harcourt, in 1882.

GYPSUM

The gypsum industry is an important one for Fort Dodge. The first gypsum mill was started in 1872 and was operated by George S. Ringland, Webb Vincent and S. T. Meservey. In 1924 nearly 500,000 tons were shipped from Fort Dodge.

Dr. J. H. Lees, in another portion of this booklet, has given a brief account of the geology of gypsum deposits. The deposit indicates an arid climate at one time. The lagoons and lakes where this material was deposited once prevailed in this region. These lakes extended across the county in a northeast-southwest direction, and the

*The Mason City and Fort Dodge R. R. Co., now the Chicago Great Western, came to Fort Dodge in 1897.

beds were formed during this dry period. The beds vary from ten to thirty feet in thickness.

An interesting journal of an unknown author was left by Mr. Edwin Goddard, of Keosauqua. In this the author gave a description of the country of the upper Des Moines visited by him in 1848. The party consisted of this unknown author, a Mr. A. Randall and a Mr. Lott. He described the place where Henry Lott lived and gave an account of the prairie, the timber, and the high bluffs. This author describes plaster paris on the bluffs which he said has a depth of eighteen to twenty feet and is inexhaustible. Further on he refers to gypsum with a layer of sandstone a few feet below. He describes somewhat in detail the flat ridge above the brook. He mentions such trees as the basswood, black walnut, red oak, hickory. He seems to have noticed a difference of tree growth on the bluffs, because he refers to the basswood, butternut, sugar tree and ironwood. Whoever this unknown author may have been, it is certain that he was an educated man who knew something about science.

INDIAN MOUNDS

There are two classes of mounds in Webster county, namely: observation and burial grounds. These are found on the banks of Lizard Creek, and, according to H. M. Pratt in his well-written "History of Webster County," are especially numerous in the neighborhood of Lehigh and McGuire's Bend. In addition to numerous Indian utensils and implements, skeletons have been found. A well-known find of a burial mound was made on the Marshall farm in Humboldt county near the Webster line. There were thirteen skeletons in a sitting posture arranged in a circle and facing outward.

BONEYARD HOLLOW

One of the interesting places in Dolliver Memorial Park is "Boneyard Hollow." Some legendary stories are connected with it. This hollow or canyon is flanked by sandstone ledges, and the narrow valley during part of the year has flowing water which empties into the Des Moines. The terrace, geologists think, belongs to the Wisconsin glaciers. Bones of human beings, Indian arrowheads, some implements made of copper and bones of elk, deer and buffalo have been found there. The bones are not of recent origin, because mature trees are growing over the terrace. These bones are so old that they crumble on exposure to the air. It is supposed by some that it is one of the Indian dump piles. Of course, these relics probably antedate contemporary history. There is no reason to doubt that they belong to the Indian.

BUFFALO, ELK, DEER AND BEAR

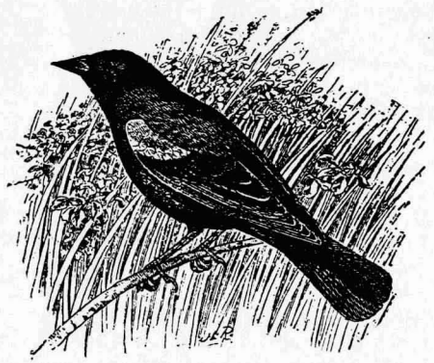
These were here when the first settlers came to the county. It is certain that elk were observed in the late forties. Mr. E. S. Geyer relates that there were plenty of deer prior to 1856. During the

winter of 1856-1857 deer died from starvation. Buffalo at one time were numerous, since buffalo skeletons have been found in sloughs in central Iowa. Such a find is recorded for Deer Creek township on the farm of Henry Enghorn. Henry Lott trapped the last bear in the county.

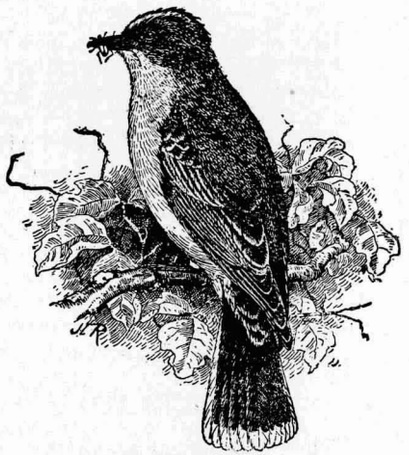
THE PRAIRIE

Much of Webster county was prairie. The land back of the wooded ravine of the Des Moines river is flat; originally this was prairie with its prairie sloughs, ponds and even little lakes. It was richly tinted in the spring and summer with a fine array of flowers. In early spring there were flowers like the sweet William, buttercup, meadow rue, cranesbill, violet, vetches and golden Alexander. Philadelphia lily, wild tiger lily with its recurved petals, the marsh marigold, Culver's root, small white moccasin flower were abundant on these prairies. On the gravel knolls we find the needle grass with its sharp-pointed callus and a twisted awn, the larkspur, the crowfoot violet with its divided leaves and light bluish flowers, and, most beautiful of all, the pasque flower with its erect flowers of light lavender color followed later by hairy appendaged fruit. In low swales and sloughs there is the yellow loosestrife, cowbane with its white flowers, which is commonly called "wild parsnip" and which is deadly poisonous; other plants are water plantain, and, where there is a little water, the arrow leaf, spatter-dock, duckweed, white water lily, reed and manna grasses and an occasional pond with wild rice.

Later in the summer these prairie meadows were aglow with many species of goldenrod, blue and white asters, and the meadow sunflower which the pioneers called artichoke. The Iowa thistle and wild rose were also prevalent. Alas! the prairies today only occur



U. S. Dept. of Agriculture
FIG. 6
RED WINGED BLACKBIRD



U. S. Dept. of Agriculture
FIG. 6A
KINGBIRD

along the highway and the right-of-way of railroads, but even here there are many intruders, like the white and yellow sweet clover, the ragweed, burdock and wild parsnip.

These prairies have been subdued and this was done with the old breaking plow which has been graphically described by L. S. Coffin in the "History of Webster County." The beam was made of heavy timber seven to twelve feet long. The first colter was fastened to the beam and extended to the point of the "shear." The moldboards were made of wood. As the sod was very tough, the "shear" had to carry a keen edge to cut the roots. The furrow cut was twenty to thirty-two inches wide. The prairie-breaking plow team consisted of from three to six yokes of oxen. About two acres a day were broken.

Mr. Coffin tells us that in 1854, when the rush of immigration occurred, the prairie breaking was done in April and sod corn planted. Later flax was planted on this new ground. The sloughs were numerous in this county. Charles Aldrich, the fine pioneer, collector, legislator and editor, gives an account of these in the same publication, in which he refers to the "black grass," which undoubtedly was the rush. These sloughs were the abomination of the pioneer. About the only compensation was the myriads of birds that found these marshes ideal. The "yellow-headed blackbirds," grackle, and redwings breeded by the millions in these prairie sloughs. Marsh wrens, ducks, geese and crane also found their abode here, as well as minks, muskrats and "myriads of beautiful dragon flies." Mr. Aldrich describes the trip he made with Cyrus C. Carpenter from Fort Dodge, afterwards a distinguished governor of this state. His trouble in crossing the ravine and the difficulty in getting good drinking water are mentioned. Then Mr. Aldrich tells us about his drainage of these sloughs. The Iowa drainage law was passed in 1872 and signed by Governor C. C. Carpenter on April 24, 1872. It was the first drainage law passed in the United States. The first drainage work in Webster county was started in the year 1893 in Cooper township. This was a failure; since then practically the whole of the county has been drained.

Just a word about Hon. Jonathan P. Dolliver, after whom the park is named. He came to Fort Dodge after the Civil War, practiced law, was sent to congress in 1888, and was appointed United States senator in 1900, reelected in 1902, 1907 and 1913. He died in 1910. Not only was Dolliver a fine and convincing orator, but he was a statesman of high order and was strongly urged for the presidency by the progressive Republican party. He was succeeded by another illustrious son of Fort Dodge, Judge W. S. Kenyon, who served in the United States senate from 1911 to 1921 when he was appointed United States circuit judge by President Harding.

Mr. C. C. Carpenter, one of the pioneer settlers of Fort Dodge, was governor of Iowa from 1872 to 1876.

THE CARDIFF GIANT

In July, 1868, two young men, Mr. George Hull, of Syracuse, New York, and a Mr. Martin, of Cedar Rapids, Iowa, came to Fort

Dodge, as they said, to make a study of the geology of the region. They located a ledge of gypsum rock and made an arrangement with a Michael Foley to quarry a stone about twenty feet long and three feet wide. They had the rock loaded on a wagon, and, after removing some 1,500 pounds with many difficulties, finally reached Boone, where it was loaded on a flat car and billed to Chicago. It was taken to a stone yard of Mr. Burghart and two German stone cutters, Mr. Saile and Mr. Menkham, carved it into a fine-looking giant, pricked it with needles to give it the appearance of the human skin, and applied sulphuric acid to give it the appearance of age. Some other changes were made, such as shortening the limbs, giving a contracted appearance. It was then shipped to George Olds, Union, New York.

When it arrived, October 13, 1868, it was taken away to a party by the name of Newell, a brother-in-law of Hull. Two weeks later it was buried five feet under the ground near Cardiff, Onondago county, New York. On October 27th, while Newell pretended to be digging a well, he reported finding this giant. The find caused a great deal of excitement. Many believed it was the remains of a real human being. Dr. James Hall, the geologist, thought it was genuine. Alexander McWorter, who took the pains to make a closer study, found an inscription which gave the clue that the giant was a fake. Dr. Andrew D. White was one of the first to declare it a "hoax." An old schoolmate of Dr. White in some way got hold of some of the rock, which he gave to Dr. White, who at once saw it was not the hard Onondago limestone, but a much softer material. It afterwards proved to be gypsum. Many suspicious circumstances revealed the fact that this giant was cut out of stone.

Even after it became known that the giant was a "hoax" the giant was exhibited in various places. The last place it was exhibited was at the Pan American Exposition in Buffalo, and afterwards it was sent to Fitchburg, Massachusetts. Finally a few public-spirited citizens of Fort Dodge purchased the giant, which now rests in that city.

DOLLIVER PARK—HISTORY

C. N. Douglas

The first log cabin in Otho township, located on the bottom land a little north of the mouth of Boneyard Hollow in section 26, Dolliver Park, was built by Henry Lott* in the fall of 1846. Mr. Lott did not cultivate much land, but spent the major part of his time hunting, trapping and trading with the Indians, who made up the

* This is at variance with what historians have generally stated, namely, on Boone river was where the cabin was built, Mr. Douglas writes. Uncle George Hart, now 96 years old, one of the oldest settlers, tells me Lott's cabin was on the hills just to the north of Boneyard Hollow in the park. His wife was buried north of the Hollow some forty rods west of the park.

greater portion of the inhabitants. His second wife was the daughter of Francis McGuire, of Yell township. She died December 10, 1851, and was buried in the southwest corner of the SW¼ of section 26. She left an infant son, who was the first child born in Otho township. Henry Lott moved to Humboldt county in 1853 and encountered trouble with the Indians. In trying to escape he followed the Des Moines River. The Indians trailed him down the river to about where the McGuire Ford is and there he was lost sight of. Some of the older settlers believe he escaped, while others tell the story that on the return of the Indians the chief informed them that they had killed Lott.

Steamboat Rock, one of the historic points of the Des Moines river at Dolliver Park, is to the upper or north end of the park. Three small boys were enjoying themselves fishing when their attention was attracted to a boat coming upstream. As it drew nearer they could see the large paddles dipping the water. A landing was made for the purpose of taking on fuel and while the crew were chopping wood the boys inspected the boat. These paddles were driven by a small upright engine. The river was low and the crew decided to camp and wait for the river to rise. This boat was owned by Snell and Butterworth, who operated a general store at Homer.

Todd's Island, another of the historic points of the river at the park, gets its name from the Todds, who operated a sawmill at this point in the early sixties.

Frake's Riffle, at the lower end of the park, is known to every angler for miles around. It derives its name from one Jim Frakes, who, with the assistance of neighbors, built a fish dam at this point. The dam was constructed of logs, trees and boulders and one could get a wagon load of fish out of this trap almost any time.

Boneyard Hollow, perhaps the most popular of all the historic points in the park, is said to have been an Indian Buffalo drive. Over these great bluffs the Indians drove the buffalo that they might obtain their hides for clothing and flesh for food. At the foot of these bluffs one may still find parts of bones and occasionally an ax or arrowhead.

Some of the old settlers inform us that these bottoms along the river and brakes were a favorite place for hunters. It was here that the wild turkeys could be found in large numbers. In the great forests of walnut, maple and elm the wild game found a refuge. The writer has been informed that at one time the black walnut logs that had been cut for lumber were so thick on the ground that one could walk from the mouth of Prairie Creek to Lehigh, then Gyson's Mill, without getting off one of these logs. In early spring one would find sugar camps here. Wild crabs were gathered by the settlers and when cooked with the maple syrup one had a dish fit for a king. Wild grapes, plums, gooseberries and other fruit grew abundantly.

The copperas beds, known to many as the most beautiful and interesting spot of the park, is a cool sandstone bluff along the shores of Prairie Creek some hundred and fifty feet high and several hundred feet in length. Here may be found one of the most interesting

deposits of varied mineral substances, such as copperas (sulphate of iron), magnesia and sulphur. The shale contains petrified plant remains. From these hills the early pioneers obtained the minerals for the coloring of cloth for their garments.

Prairie Creek, a very interesting stream, winds its way among these great hills and bluffs of sandstone of the park and also affords an outlet to the many wonderful springs of this region.

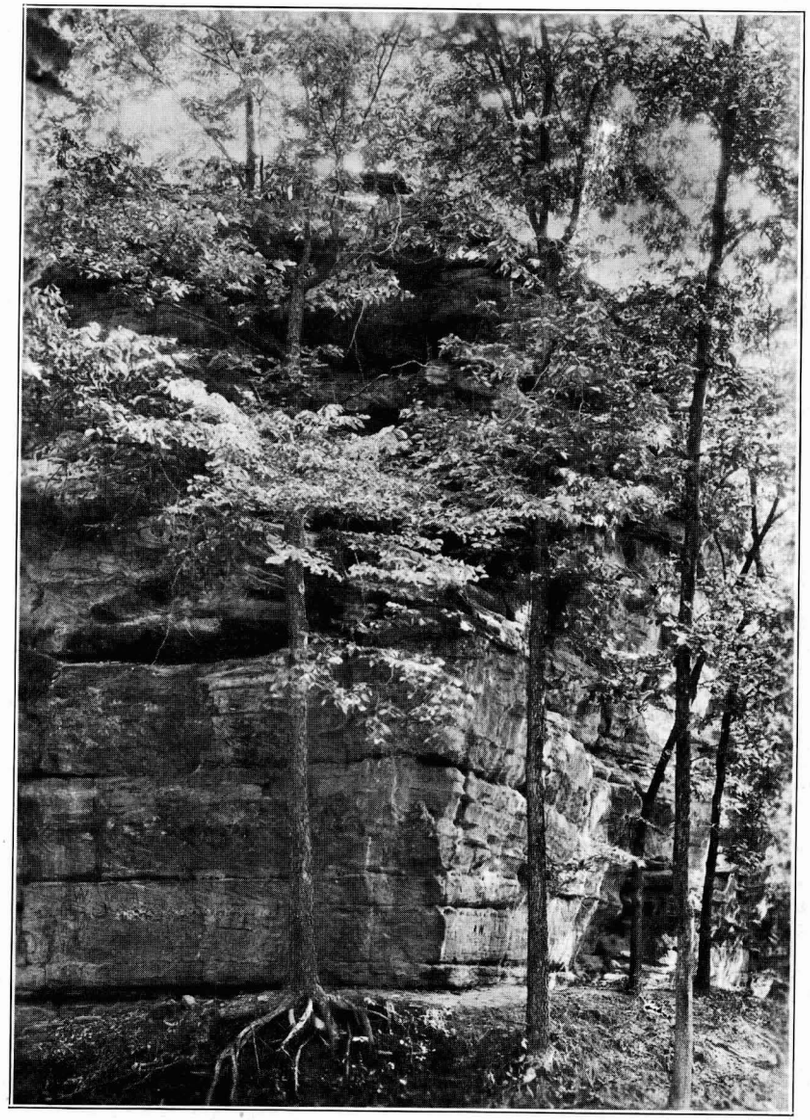
As Dolliver's Park is a portion of Otho township, it may be of interest to note some of the historic dates. Otho township was named for Otho—"Otho the Great" and "Otho the Good," king of Germany. The first frame house was built by Luchas W. Hart in 1857. The first marriage was that of Francis B. Drake and Caroline E. Hart, April 16, 1857, Rev. Kent officiating. Mr. Drake was appointed postmaster in 1858. Uncle Solomon Drake was the first music instructor conducting singing school. The first school was in a log room 10x12 presided over by Caroline Moore at $16 per month. There were twelve pupils. This was in the summer of 1857. F. L. Sperry was the first blacksmith. The Otho Congregational Church was organized March 13, 1855. The charter members were Deacon and Mrs. Norman Hart, Mr. and Mrs. Luchas W. Hart, Norman H. Hart and Caroline E. Hart, Rev. William Kent, the first pastor. The first warranty deed was given June 1, 1854, by Daniel Leaming to Norman Hart. The first coal was mined in 1854. The first hogs were marketed in Iowa City in 1859, hauled by wagon by O. P. and C. Fuller.

GEOLOGY OF DOLLIVER MEMORIAL PARK, FORT DODGE

By J. H. Lees, Iowa Geological Survey

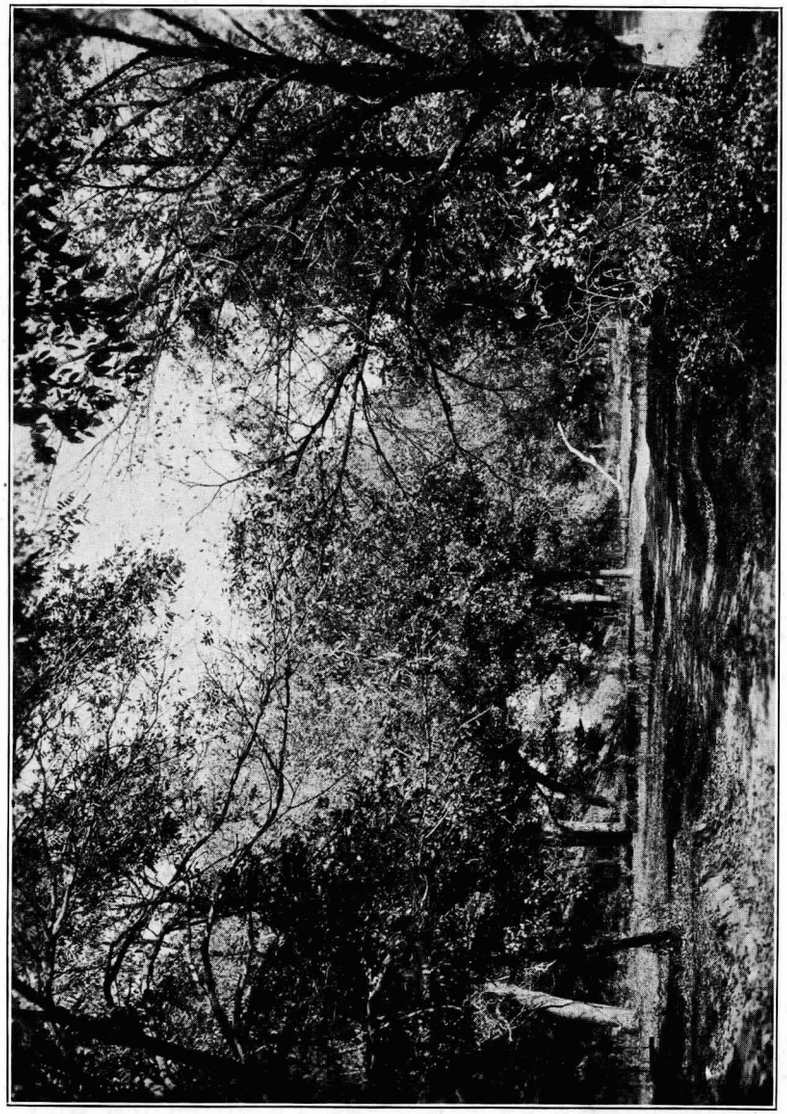
There are several factors which have combined to make Dolliver Park an area of great interest from the geological standpoint. The first of these, of course, is the deposits of sandstone and of shale which were laid on the floor of the old-time ocean which covered this part of Iowa during Coal Measures, or Pennsylvanian, time. These materials were brought in from the surrounding low-lying regions, especially those to the north, by the streams of the period in the form of sand and mud and in course of time they hardened to the strata as we know them today. In many places where the waters were shallow enough to form coastal swamps there was an abundant growth of appropriate vegetation and in these places we have coal beds, such as those of Lehigh, Coalville and Fort Dodge. At Dolliver Park, however, there are none of these beds, but only those built up of material carried in by streams as described above.

Long afterward a wonderful bed of gypsum was laid down in a valley near Fort Dodge, but as this deposit also does not seem to have reached to the Dolliver Park area we need not discuss it further here.



Photographed by C. D. Petersen

MASSIVE SANDSTONE ROCK IN THE DOLLIVER MEMORIAL PARK

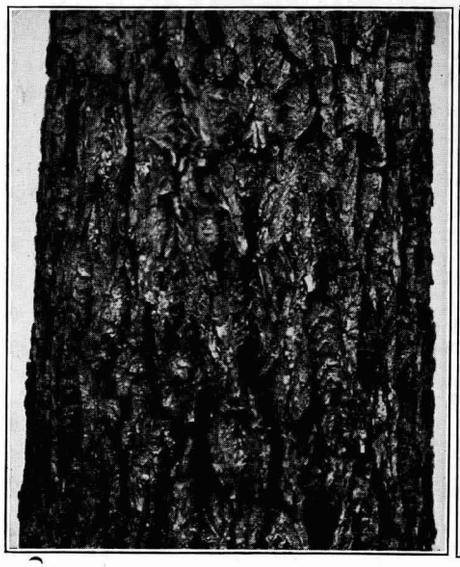


Photographed by C. D. Petersen

IN THE FLOOR OF THE DOLLIVER MEMORIAL PARK WITH HACKBERRY, ELM AND BASSWOOD.

Photographed by G. B. MacDonald

BARK OF WHITE OR AMERICAN ELM



Photographed by G. B. MacDonald

BARK OF BLACK WALNUT

Photographed by G. B. MacDonald

BARK OF BUTTERNUT

STATE	STATE PARK PROJ. NO.	SHEET NO.	TOTAL SHEETS
IOWA	6	1	22

STATE OF IOWA
PLAN AND PROFILE OF PROPOSED IMPROVEMENT ON THE
STATE PARK ROAD SYSTEM

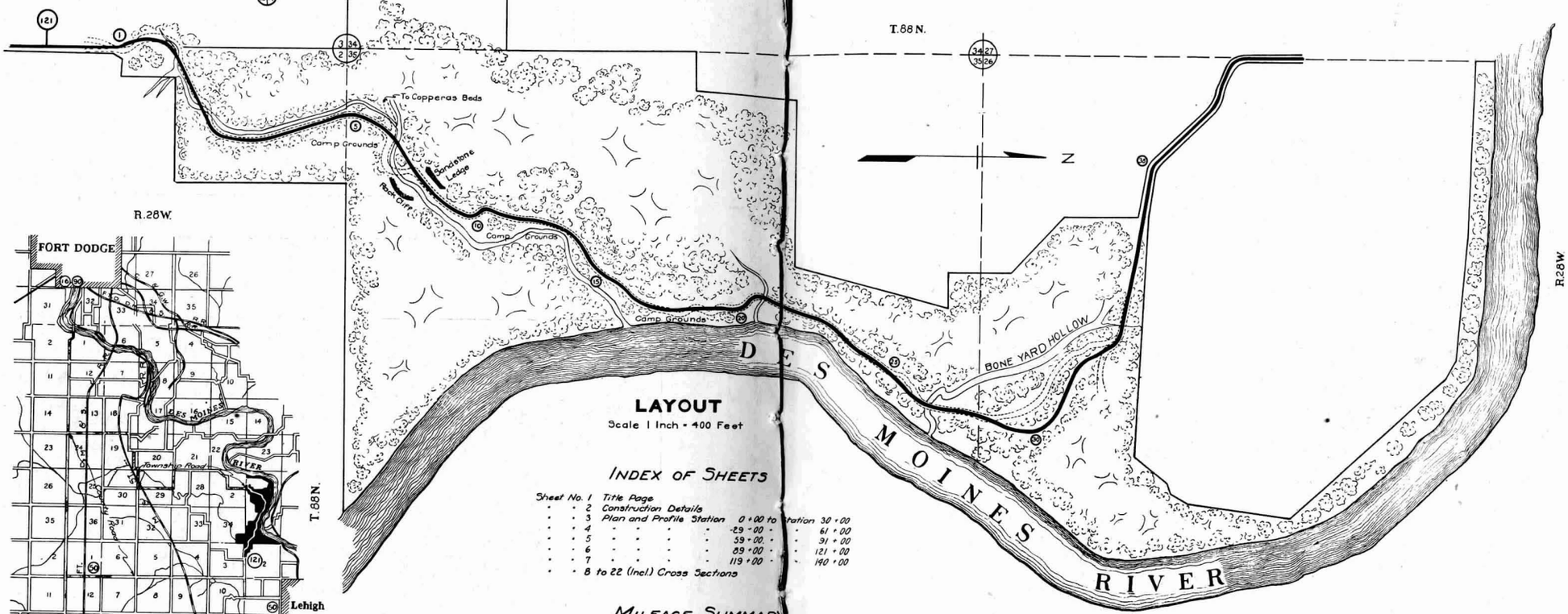
STATE PARK PROJECT NO. 6

DOLLIVER PARK — **WEBSTER COUNTY**

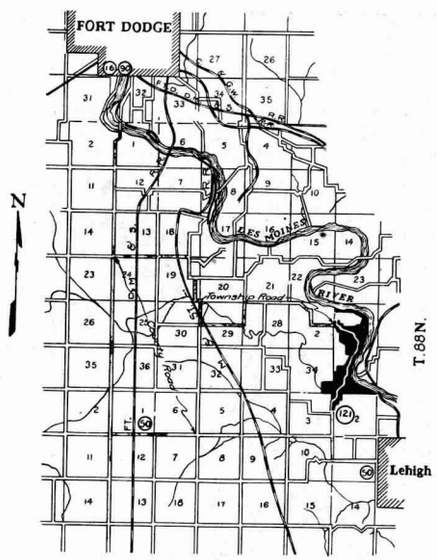
SCALES { PLAN 1 INCH = 100 FT.
PROFILE HOR. 1 INCH = 100 FT. VERT. 1 INCH = 10 FT.

CONVENTIONAL SIGNS

City Limits
Section Lines
Quarter Section Lines
Half Section Lines
Fence Lines
Park Boundary Lines
Guard Rail
Travelled Way
Base or Survey Line
Proposed Tile Drains
Tile Drains in place
Culverts
P.I. Numbers
Section Corners
Rock
Primary Road Numbers



LAYOUT
Scale 1 Inch = 400 Feet



LAYOUT
Scale 3/4 Inch = 1 Mile

INDEX OF SHEETS

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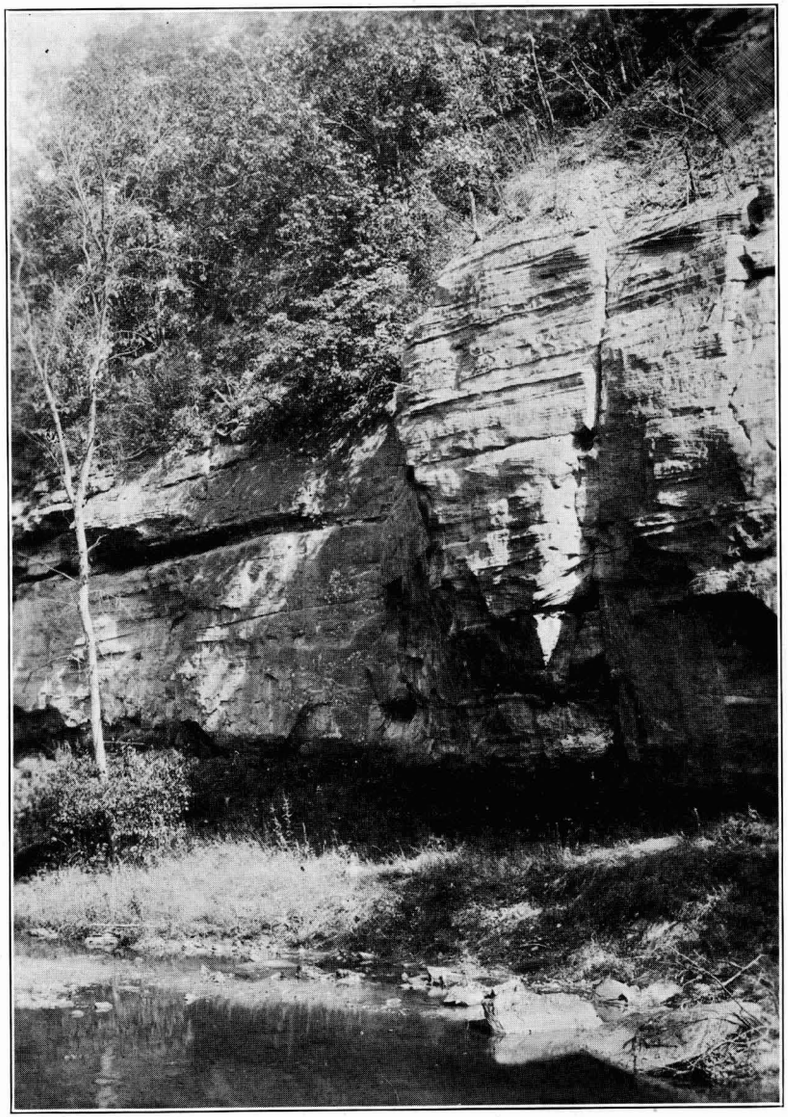
" 3	Plan and Profile Station	0+00 to Station 30+00
" 4	" " "	29+00 " 61+00
" 5	" " "	59+00 " 91+00
" 6	" " "	89+00 " 121+00
" 7	" " "	119+00 " 140+00
" 8 to 22 (Incl.)	Cross Sections	

MILEAGE SUMMARY

Sec. "A"	Sta. 0+00 to Sta. 14+94	1494 ft.	
	" 14+80 " " 38+00	2320 ft.	
		3814	= 0.722 Miles
Sec. "B"	Sta. 38+00 to Sta. 93+21	5521 ft.	= 1.045 Miles
Sec. "C"	Sta. 93+21 to Sta. 122+75	2959 ft.	= 0.861 Miles
	" 119+88 " " 135+84	1596	
Total Length of Project			2.628 Miles

Approved _____ Date _____
Chairman-Board of Conservation
Supervisor-State Roads
Landscape Architect

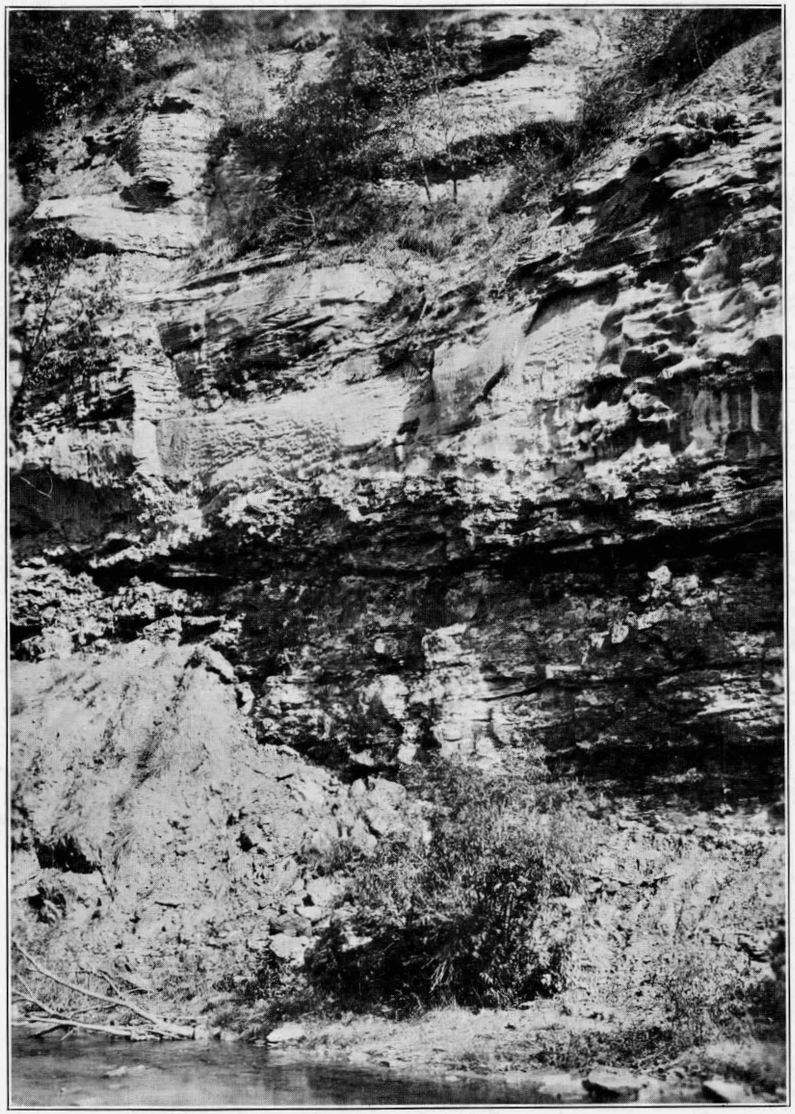


Photographed by C. D. Petersen

MASSIVE SANDSTONE ROCK IN DOLLIVER MEMORIAL PARK

Photographed by C. D. Petersen

SMALL GLEN WITH LOOSE SANDSTONE, OVERHANGING VIRGINIA CREEPER. BUTTERNUT IN THE FOREGROUND IN DOLLIVER MEMORIAL PARK

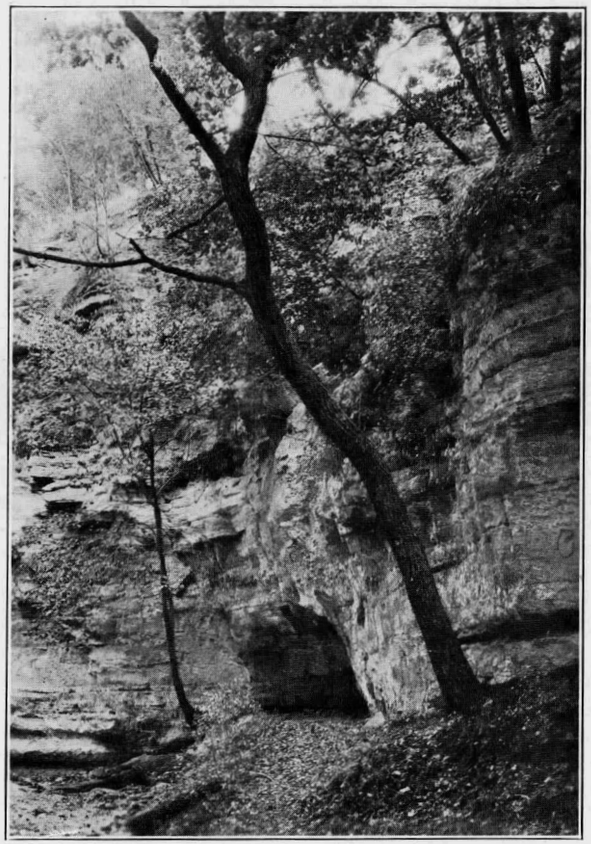


Photographed by C. D. Petersen

COPPERAS BEDS AND SANDSTONE ROCK SHOWING EROSION IN DOLLIVER MEMORIAL PARK

Other factors in the development of the region were the great continental glaciers which time and again spread over the northern United States, leveled off many of the irregularities of the surface and filled up the pre-existing valleys with the mingled clay and sand and rock which they had gathered in their journeys from the northland and which we know as glacial drift. Most of this material has not been carried very far, but some of it was brought from far up in Minnesota and Canada, as witness the granite bowlders and pebbles, none of which are native to the state where they now rest.

It must be understood that there was a long interval of time between the retreat of the Coal Measures seas and the advance of the glaciers. This interval covered millions and probably scores of millions of years and witnessed repeated advanced and retreats of



Photographed by C. D. Petersen

FIG. 7.

LEDGE OF SANDSTONE ROCK AND CAVE WITH OVERHANGING VIRGINIA CREEPER. DOLLIVER MEMORIAL PARK

the ocean over the Mississippi valley. During this time successive topographies were carved into the surface by the streams of the day, only to be effaced by the advance of the ocean or the wearing down of the land. But of these we have little evidence in the limited region we have under discussion.

The first of the glaciers to cover our area is known as the Nebraskan, but so long ago did it melt away and leave its burden of glacial drift exposed to the attack of the elements that these have well-nigh removed it from many places and it is ordinarily difficult or impossible to distinguish the deposits of this glacier in north-central Iowa. The same is true quite largely of the materials brought down by the second, the Kansan, glacier. There were two other glaciers which did not reach into this part of Iowa, but the fifth and last, the Wisconsin, sent down a broad lobe between Clear Lake and Storm Lake as far south as Des Moines. The mantle of drift left by this glacier partly filled the valley of the Des Moines and spread out as the surface material for many miles to the east and west, forming the basis for the soils of the garden of the world.

Another factor in the development of the park has been the nearby river and its tributary creeks and brooks. For centuries these have been cutting down their valleys, eating into the once fairly level prairies, carrying away the materials washed into their channels by their own action and by the work of dashing rains aided by crumbling frost and wasting sun. During all these ages these graving tools of Nature have been carving the face of the earth into all the forms of rugged beauty which we see today—beetling sandstone cliffs towering above the river which flows at their feet, high bluffs of rock or of glacial drift covered with trees and shrubs and standing guard over level valley floor or narrow canyon with cool and inviting depths. It is in this way that Prairie Creek valley has been cut down, through the clay and sand of the glacial drift and deep into the shale and sandstone of the Coal Measures. In the same manner, also, the smaller ravines, such as Boneyard Hollow, have been hollowed out of the old-time deposits of ocean and glacier.

Study of the history of Des Moines river shows that prior to the invasions of the ice sheets of the glacial period there was no such stream as the modern Des Moines. Drainage of the region there was, of course, but where these preglacial valleys lay or in what directions their streams pursued their courses is not yet known. Not until the first or Nebraskan glacier had left bare the prairies of the upper Mississippi valley did the Des Moines begin its work of shaping a great cleft across Iowaland and at that time its upper course did not extend across Webster county, but followed the depression now occupied by Beaver Creek across Polk, Dallas and Boone counties, probably into northwestern Iowa. The size of Beaver valley opposite Camp Dodge shows what a large stream the ancestral Des Moines must have been and how long a time it must have been at work before the Kansan glacier came down and filled its valley with ice and debris. After this ice melted away that part of the old valley above Des Moines seems to have been too much filled with glacial drift to be used again, so the resurrected stream cut a new

valley to the east of the old one and this became the real forerunner of the present valley, for the river has maintained essentially the same course to the present time. Through the thousands and possibly millions of years following Kansan glaciation the river was making its valley until in some part it was larger than it is today. Then the Wisconsin glacier, the last of the great ice sheets, covered the land once more and occupied the valley of the Des Moines. Probably it did not entirely fill the valley with its burden of clay and sand, for remnants still cling in places as terraces down on the valley sides. The remainder of the filling has been carried down the valley by the tireless waters of the river, which have also uncovered the sandstone bluffs along the river banks where Dolliver Park is now located. The smaller streams, likewise, such as Prairie Creek, have been hard at work in the same way, some of them making valleys which are younger than the Wisconsin glacial epoch, as is the case with the narrow, steep ravines, a few perhaps re-excavating older valleys which had been buried by Wisconsin glacial drift. The water level of Des Moines river at the mouth of Prairie Creek is 940 feet above sea, and, as the prairie level at the top of the bluff immediately to the west is 1,110 feet, it will be realized what a great amount of work has been done in the making of these valleys.

About sixty feet of sandstone is exposed above river level in the park area. The beds are very well shown in the lower part of Prairie Creek valley where a number of curious features are shown. At the foot of the cliffs there is a bed of coarse conglomerate which contains pebbles of foreign origin, that is, brought from distant regions, perhaps Canada or Minnesota or the mountain regions of the continent. These pebbles are cemented by iron oxide, which constitutes perhaps one-fourth of the mass. Above this is a thick bed of sandstone, which in places contains pieces of fossilized wood, as well as blocks of an older sandstone of local origin. The surface of this part of the bluff is sometimes white with a powdery deposit which has given it the name of the "copperas beds." The sandstone contains a good deal of iron in the form of pyrite, or "sulphur," as it is called by coal miners, because it consists of a combination of iron and sulphur. Pyrite is a hard, brassy mineral when it is pure, but when water soaks the sandstone of the copperas beds it oxidizes the pyrite, that is, adds oxygen to it, and then dissolves it. Then when the water comes to the surface it evaporates and leaves the mineral as a film of iron sulphate or "copperas" on the face of the bluff.

Another bed of sandstone contains a great number of roundish or elongated masses which usually break away from the enclosing rock with fairly smooth surfaces and may accumulate at the foot of the bluff because of their superior hardness. These are known as concretions and are entirely of inorganic nature, that is, they are not fossilized bones or other remains of ancient forms of life, but have been made right in the rock where they occur by a process of cementation of the sandstone. Just why they should have been made by Dame Nature is not well understood, but it is at least rea-

sonable to suppose that she can work as well without the agency of life as with it.

The botanist will find matters of interest in the relation between rocks and plants, how certain plants seek barren rocky slopes while others haunt the more fertile floors of the valley, how some thrive best in the cool shade of the forest, while others glory in the open spaces of the prairie. The interested layman, too, will gain pleasure and profit from the study of the various natural forms revealed within Dollivar Park—the beds of sandstone, the glacial bowlders and pebbles speaking of their long journey from the north, the streams and their work in shaping these topographic features to delight his eye, and the carpet of trees and shrubs and lesser plants which Nature has flung over all to conceal what else would have been a dreary waste. He will prove for himself the truth of Bryant's words that

> "To him who in the love of Nature holds
> Communion with her visible forms, she speaks
> A varied language."

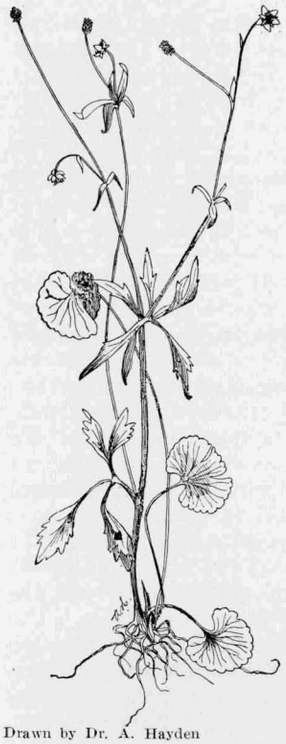
SOME COMMON INSECTS OF DOLLIVER PARK

By Sara Hoke, Iowa State College

No insects could be more fascinating than the dragon flies. Where water is abundant, as it is in Dolliver Park, they are conspicuous characters.

Various names have been given to these dainty creatures of irridescent blacks, blues, greens, browns, and reds with their great eyes shining like gold or precious stones. In the south they are known by the name of "snake-doctors." The belief is that where a "snake-doctor" is a sick snake is also. They are more commonly known in the northern states as "devil's darning-needles" and are accused of sewing up the ears of bad boys.

As a matter of fact, they are dangerous only to other insects. Since they have relatively strong biting jaws, the larger species may give you a gentle nip if you catch them. They are fierce enemies of their insect kindred, having an insatiable appetite for mosquitoes, thus giving them the name of "mosquito-hawks" in some sections of the country. They are perhaps the strongest fliers of all insects. They catch their prey while flying, eat it while flying, mate while flying, and some of them deposit their eggs while on the wing. The eggs are laid in water or pasted to aquatic plants. One female may lay as many as 100,000 at a time. When hatched the preadult stage (nymph) lives quietly in the water hidden by the silt, where it waits for its food, which consists chiefly of water-bugs, man-fly larvae, small crustaceans and numerous aquatic insect larvae. The duration of their nymphal existence varies from a few months to over a year, according to the species.



Drawn by Dr. A. Hayden

FIG. 8

COMMON BUTTERCUP

Drawn by Sara Hoke

FIG. 8A

DRAGON FLY

The dragon flies, unlike the butterflies and moths, go through only three stages in their development. The egg hatches into a wingless nymph; except for the absence of wings it is similar to an adult insect. The nymph is both the growing and transformation stage. It casts its skin repeatedly during growth and development. After two or three moults the wing-pads appear and with each successive moult increase in size until the last moult, when it crawls up on a twig, emerges from its old skin, transformed into a beautiful, full-grown creature with great eyes and shiny wings.

A very different order to the one just discussed is the one to which the beetles belong. Some common ones seen in Dolliver Park are the metallic wood-borers or flat-headed borers, so named because of the flat, broad head of the larvae. They are mostly wood-borers, although those of some of the smaller species live in galls of leaves and twigs. It is a footless, whitish tadpole-like grub, expressively known as a flat-headed or hammer-headed borer.

The adult beetles have an elongate body with heavy ridges and armor-plate like coverings. Green, violet, reddish, blue, copper, golden or bronze colored. These beetles run actively on tree trunks and they seem to delight in resting in the warm, bright sunlight, in which their resplendent colors flash like jewels. Our largest beetle belonging to this group is something over an inch in length.

Other beetles that attract a great deal of attention and wonder are the fireflies. They are sometimes known as lightning bugs. However, they are neither flies or bugs, although their soft bodies and flexible wing covers are not common characters of beetles.

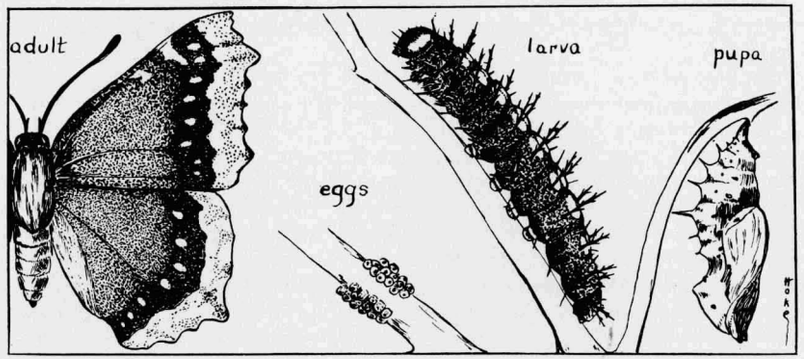
The lighting organ is usually situated just inside of the ventral wall of the last segment of the abdomen. The lighting organ is just like ordinary candle or electric light except that it glows without giving off any perceptive amount of heat. It seems that the light cells are derived from modified fat bodies, next to which is a layer of reflector cells which throw back the light so that all rays are directed outward. The light cells are richly supplied with air tubes (tracheae) and nerves. From a stimulus conveyed by the nerves, oxygen brought by the network of tracheae is released to unite with a substance of the cells, causing a slow combustion. To this the light is due. In some species the eggs also are luminous, as well as the larvae and pupae. The glow-worms are the larvae and wingless females of certain species of fireflies.

No insects are more admired than the butterflies and moths. The first one to appear in the spring is known as the mourning cloak. The adult hibernates in the winter and comes out very early in the spring, even before the pussy willows fluff their fur.

The wings of this butterfly are a purplish brown with a broad yellow border on the outer margin sprinkled with brown. Just inside this margin is a row of blue spots. The under side of the wings is the color of dead leaves. The wings when expanded measure two and one-half to three and one-half inches across. Like all other butterflies and moths, before it gets its wings, it has to be a caterpillar and be despised instead of admired. The caterpillar (growing stage, because after an insect gets its wings, it never grows any more) of this butterfly is about two inches long and is velvety black in color, covered with small, white, raised dots which produce a pepper-and-salt effect. There is a row of red spots along the middle of the back and the body is made conspicuous by two rows of long and sparsely branched spines.

It eats the leaves of elm, willow, poplar and other trees, often stripping the branches entirely. After it has eaten and grown all it can, it attaches itself to a limb and shrinks in length, developing as it does this a tough brownish cuticle which protects its body. This is known as the chrysalis (resting and transformation stage). In this cuticle it changes its shape from that of a caterpillar to a beautiful butterfly, then splits the old skin and emerges as a lovely winged creature.

Another interesting insect is the Isabella moth. The larvae of this species is the evenly clipped, furry caterpillar, reddish brown in the middle and black at either end. It is known as a woolly bear.



Drawn by Sara Hoke

FIG. 9

THE MOURNING CLOAK BUTTERFLY

From this caterpillar the phrase, "Hurrying along like a caterpillar in the fall," came. At this time of the year a nervous anxiety is apparent in every movement, when it apparently hastens to find a snug place in which to curl up for the winter. When spring comes it hustles for a little food, feeding upon various plants, blackberries and raspberries, plantain being a favorite, and then pupates in a cocoon made of silk, spun as a fluid from its mouth which is combined with its larval hairs.

The adult moth is a dull, grayish yellow with a few black dots on the wings, and frequently with the hinder pair and the abdomen tinged with orange red. On the middle of the back of the abdomen there is a row of about six black dots, which also appear on each side of the body.

When you are in Dolliver Park, observe our many insect friends and enemies. There are several hundred different kinds there. Much pleasure may be found in studying their habits and searching for the unusual forms.

SUCCESSION OF EARLY WILD FLOWER BLOOM IN CENTRAL IOWA

CHARLOTTE M. KING, Iowa State College

About the last of February the final sleet storm will spread its silver over our out-of-door world and gleaming branches of treetops will sweep against a sky of deepening blue. Stems and twigs of trees and shrubs brighten. We feel a presage of spring, and truly enough, for within a week or two ice has left the creek margins, soil is loosened, maples are budding and "pussies" are swelling on the willows. Some day soon we shall hear bees humming overhead, and the long train of flowers will have been ushered in by these blossoms of the maples, elms and willows. This train soon be-

comes a crowded procession moving to the song of robin, lark and redwing.

In central Iowa, and a day or two later for locations farther north, the soft maples bloom about March 18th, the elms about March 20th.

Wake robin, which may be found along the Des Moines river and some tributaries, begins bloom about March 22d; pasque flowers on high, open, pastured hill slopes appear about March 28th; hepaticas will be showing among the dry leaves in rich woodlands about April 1st; the pollen of pussy-willows will be appearing about April 5th.

By April 10th we have hazel, dogtooth violet, shepherd's purse, a few early dandelions, spring-beauty, dutchman's breeches, bloodroot and isopyrum wind flower. During this period the mourning dove arrives. At this time there are usually about fifteen flowers recorded.

The next group, from April 10th to 20th, appear in about the following order: Blue violet, cowslip, rue anemone, yellow violet, box elder, shadbush, and now the birches' stiff catkins become pendant fringes.

From April 20th to 30th we may expect the following: Bluebell, wild plum, toothwort, wild gooseberry, hard maple, red and bur oaks.

Look for the wrens about the last day of April; a warm season may bring them a week earlier. The 20th of April brings redbud bloom to central Iowa, from the south; on the prairies come the orange and yellow puccoons; and now comes a lovely group in open woods, the blue phlox, the wild crabapple and columbine, filling the world with beauty. There is nothing to surpass it in loveliness the world over. Prairie slopes are becoming blue with bird-foot violets, and in deep woods Jack-in-the-pulpit holds forth.

Overhead we notice the green pendant bloom of butternut and walnut; and wild geranium is showing in open places.

The second week in May will bring wild cherry, the showy orchid, the lady's-slipper and waterleaf. About the middle of May the white waxy bloom of mandrake may be noted under its umbrella-like shelters and the fragrance of wild grape bloom is upon the air. The wild prickly gooseberry hangs its delicate sprays from the ledges.

Hawthorns and dogwoods turn the woodlands into a beautiful scene as May passes out; and just before the entry of June early prairie roses are brightening here and there the woodland borders.

Grasses are blooming freely in June and about July 1st begin asters, in August the goldenrods and smartweeds, all continuing until frost.

There is a difference of several days between the bloom of the southern and the northern parts of Iowa. Shaded glens are slower in bloom than open, sunny regions. There may be a difference of two or three weeks in bloom of plants between cold and warm seasons.

FLORA

By L. H. Pammel

A number of botanists have been interested in the flora of the Dolliver Memorial Park. I may refer here to the work of O. M. Olsen, of Fort Dodge, and Mr. M. P. Somes, as well as Mr. Price and F. W. Paige. These men have thoroughly explored the region.

Plant Life. The region is interesting because of the isolated distribution of a number of the plants; that is to say, certain types of plants found here do not occur elsewhere in the immediate vicinity. For instance, the ostrich fern, which once was common, now occurs in only a few places in the park or land adjacent thereto. Certain species of fern, like the walking leaf, cling to the sandstone rock, polypody and some of hogbacks contain the reindeer lichen and juniper moss. Similar plants are found at the Ledges State Park. The trees were at one time large and beautiful, but many of the large trees were cut many years ago. One of the unique trees of the area was the red cedar and we are told by Mr. Charles V. Findley that for many years the red cedar of the vicinity were used for Christmas decoration. Mr. Charles V. Findley, of Fort Dodge, speaking of plant life, makes this statement:

"When I wandered through this hollow forty years ago as a boy, I learned to know and appreciate trees and shrubs. I became intimately acquainted with many forest trees; among them were the hard maple, black walnut, basswood, slippery elm, swamp ash, and the varieties of oak commonly found there. Among the shrubs could be found the buckthorn, moosewood, red cedar, wahoo, dogwood and pin-cherry."

Speaking of the red cedar, he says:

"For years the annual Christmas tree for the Otho church was selected from the red cedars that graced these ledges. No one suggested that the hand of depredation should be stayed. Today the naked cedar stumps stand out prominently on bold cliffs to condemn us for the thoughtlessness of the early days. I have dug seedling cedars and transplanted them. Two magnificent specimens are now in the yard, on the old farm, grown from these little seedlings. These hills should be reforested with the variety of trees and shrubs that have been the victims of ruthlessness.

"I remember the tramps in this woodland in May, that would bring one suddenly and unexpectedly upon a few yellow lady-slippers, or a little later when one should come across the large white variety, or luckily, in the earlier days, one could find an occasional orchid. But, alas, those surprises are now less frequent, because this nook where nature was once so lavish in producing the unusual plants is now subject to pasturage where nothing is sacred.

"In the quiet nooks of Woodman's Hollow is to be found the paradise of ferns in unequaled beauty, variety and abundance.

The ferns seen in the yards of Fort Dodge residences have been secured from this supply which seems to be inexhaustible at this time, but they, too, must succumb to the inevitable unless some protection is offered. These rare plants are merely weeds to many.

"I hope that this piece of woodland, with its beautiful and rugged scenery, its sandstone ledges that cannot be duplicated in central Iowa, its noble trees, its rare wild flowers and shrubs, its cascades, its refuge for wild animals and its retreat for the wild birds, will some day become a state park."

TREES

The hills are heavily wooded with black, red, white and bur oaks. There are two hickories, the pignut and shellbark hickory. The black walnut grows along the streams of the Des Moines and the butternut on the sides of the gorges and over the hills. The slippery, American and corky bark elm are common as well as the basswood and black maple. The soft or silver maple, American elm and cottonwood are common in the alluvial bottoms. The ironwood and large-toothed aspen are common over the hills. There are several different kinds of willows. The most common willow on the banks of the Des Moines river is the almond-leaved willow, followed in numbers closely by the black willow. Of course,

U. S. Dept. of Agriculture

FIG. 10

MOCCASIN FLOWER

Drawn by C. M. King

FIG. 10A

HEPATICA FLOWERS

there are great quantities of the sand bar willow which, however, scarcely attains the size of a tree. The green ash is abundant on the banks of the stream of the Des Moines river and also extends along the larger streams in the vicinity. The black ash is abundant on the shady slopes of the bluffs where there is considerable moisture. The white ash is not uncommon over the hills, particularly near the crest of hills or sometimes coming down over the slopes. Box elder, service berry, black, choke and pin cherry, American plum and wild crab apple, poison ivy, honey locust, and coffee beans are not uncommon. Several species of Haws are common and the red cedar once occurred in great quantities.

Woody Vines. Of the woody vines moonseed, wild grape, bittersweet and Virginia creeper may be mentioned. The green brier is also not uncommon in the area.

SHRUBS

Shrubs common to central Iowa are found in this park. These shrubs belong to a number of different families of plants. The earliest blooming shrub in the park is the common hazel nut which bears its flowers in catkins. This plant is related to the oak. Another early blooming shrub, the prickly ash, has small yellowish flowers and a very prickly stem. The odor of the bark is pungent, making it easily recognizable. Other spiny shrubs in the park are the woodland rose which blooms during the latter part of May or early in June and a climbing vine known as the green brier, which has roundish leaves and greenish flowers. The common red raspberry, an erect shrub with three leaflets and rather soft hairs, and then there are three kinds of trailing or climbing shrubs like the black-cap raspberry and the trailing blackberry, also with three leaflets, and the common blackberry. The blackberries have recurved prickles. There are also two kinds of gooseberries with prickly stems. The gooseberry with smooth fruit and the gooseberry with prickly fruit. The gooseberries are early blooming plants.

Another common shrub in the park is the bladder-nut, with creamy, yellowish flowers; the fruit is inflated. This plant is related to the maple. The common nine bark with simple leaves and white flowers in dense clusters. There are two types of New Jersey tea. One, the common species with pretty white flowers, which occurs in the borders of woods or prairies, and the other one only occurs in the more or less sandy places on the hilltops and has more hairy leaves.

There are four different kinds of dogwoods. Three of the dogwoods have blue fruit, namely, the alternate leaved, the kinnikinnik and the round leaved dogwood. The fruit of the gray dogwood is whitish with conspicuous red pedicels. The flowers of all the dogwoods are white and in small flat topped clusters. Another interesting shrub of the park is the wahoo. The flowers of this are dark purple, while the twigs are greenish. This is very ornamental in the fall when the scarlet covering of the seed shows; the

bitter-sweet, a climbing vine, is related to the wahoo. The pods are orange color, covering of seed is scarlet. There are four members of the honeysuckle family. The most abundant is the common elder with rather large flat topped flower clusters. This plant blooms in mid-summer and related to it is a common little climbing vine, the honeysuckle with stems running through the round upper leaf. The flowers are greenish yellow or purplish. The common black haw, or wild raisin, with white flowers in flat topped clusters and black fruit, edible. Another black haw, or arrow-wood, is related to it. This has smaller fruit and smaller flowers.

Several other shrubs are abundant, like the common fox grape with greenish fragrant flowers in ample clusters and later producing the well known pulpy fruit with a bloom. The Virginia creeper, related to the grape, or sometimes called the woodbine, with five leaflets, of which there are two types. One with disklike tendrils and the other with straight forked tendrils. Another climbing plant, the poison ivy with three leaflets and white fruit, is related to an erect poison ivy which does not climb. The sumach, with reddish fruit, greenish flowers, and milky juice, is related to the poison ivy. The bark is rich in tannin. The Indians used the fruit to make a kind of lemonade.

There are several leguminous shrubs. Of these the lead-plant, growing in prairie-like openings with white and downy compound leaves, attains height of one to three feet. It has violet or purple colored flowers. The false indigo is a taller shrub with rather smoothish leaves, is a plant of the river banks and related to the lead-plant. A low shrub of the madder or coffee family, the button-bush has white flowers in heads, and opposite or whorled leaves occurs in low bottoms.

HERBACEOUS PLANTS

The region has a large number of herbaceous types. The ferns are interesting. The region abounds in ferns, like the spleenwort, ostrich, maiden hair, walking leaf, cliff brake and the small bladder fern. Several rare species of sedges also occur: Lungwort, mandrake, bloodroot, hepatica, wind flower, prairie cone flower, blackeyed Susan, everlasting, Philadelphia fleabane, silky-leaved aster, white gentian, sweet cicely, zizia, pimpinella, meadow parsnip, polytaenia, evening primrose, sweet William, alum root, wild strawberry, the common and the vesca; hog pea, vetch, two kinds of bush clover, tick trefoil, milk vetch, prairie clover, false indigo, seneca snake root and the bastard toad flax, yellow violet, common birdfoot violet. This is only a small list of the interesting plants found in the region. Of the grasses mention may be made of the large-leaved panic grass, the small panic grass or Scribner's panic, two kinds of rice-cut grass, slough grass, wild oats (Danthonia), and numerous sedges and some of these quite rare.

A DAY WITH THE BIRDS IN DOLLIVER MEMORIAL PARK.

CARL FRITZ HENNING

"There is a quiet spirit in these woods,
That dwells wherever the southwind blows;
Where underneath the white thorn, in the glade
The wild flowers bloom."

If you want to become more intimately acquainted with the flowers, birds and wild life of Iowa's State Parks—then go through them afoot.

Walking has become almost a lost art. Yet it is only through walking that you can meet the dwellers of fields and woods in their favorite haunts and natural environment.

In an automobile you are whirred past inspiring rocks and noble trees, shady glens and rare plants, murmuring brooks and singing birds, so fast that there remains only a panoramic view of green fields and wooded hills, a changing canvas of color soon blurred into a misty memory.

But go afoot, walk and you will get in closer touch with nature and become better acquainted with God's great out-doors, with beauty spots that you never dreamed existed in Iowa.

The walker, the rambler of fields and woods, can tarry wherever fancy leads him.

He may talk with everyone he meets along the trail, or, if he grows tired of human companionship, he may sit by himself in the woods for half a day and if he is city rooted, he will find himself making acquaintances there with the out-doors he never knew before; he can rest on the mossy banks of a stream and listen to woodland songsters; he can enjoy the mystic charm of the deep woods amidst ferns and flowers; quench his thirst at cooling springs; eat his lunch in a shady glen and garner the very kernel of nature-lore knowledge, while his less fortunate friend, the autoist, driven by the winds of haste with visions dimmed to the wonders of nature, only sees clouds of chaff scattered along our highways—the wondrous glories of Iowa fall like a shadow across his trail. You may drive a dozen times through any one of our State parks and you will not know the parkland as a walker who has been there but once.

One of the most interesting parks in Iowa is known as Dolliver Memorial Park. This beautiful piece of woodland is a fitting memorial to one of Iowa's greatest statesmen, the late Hon. Jonathan P. Dolliver.

To the nature-lover this park is a diamond in the rough, around which cluster other areas of rare woodland gems, like Woodman's Hollow so richly endowed by nature that these, too, should be preserved to posterity.

It was the writer's good fortune to spend two days with the birds in Dolliver Memorial Park during the month of May, this year.

This interesting park is situated on the Des Moines River, two miles from Lehigh, Iowa, and about fourteen miles in a southeasterly direction from Fort Dodge, Iowa.

Interesting sandstone cliffs, sculptured as only nature can design, face the Des Moines River and extend back into the larger ravines.

Sometimes I wonder if we, who live in Iowa, appreciate, at the true worth, the inspiring bluffs and wooded hills that nestle along the beautiful Des Moines River from Fort Dodge to the Ledges State Park south of Boone, Iowa.

In summer as you look at the distant hills, clothed in a mantle of green, a mystic blue haze hangs over the valley adding to the glories of the day, while in the fall when the spirit of Indian summer days travel through our beautiful land these same hills change to red and gold. One may travel from the storm-tossed coast of the Atlantic to the sun-kissed shores of the Pacific, but nowhere will you witness more beautiful scenery than the glories of Iowa.

May is the month when the out-door study of birds really begins.

The air is soft and dry; the whole earth is fresh and green and full of pleasant odors. Sweet woodland songsters are singing everywhere, the vast army of warblers are passing through our state to their northern breeding grounds.

All nature speaks of the promise of summer and fruition and invites us with such urgency to come and witness her joy, that confinement in the house is never more irksome than now, and attention to work and duty is an effort of will.

First of the season's interest to the rambling naturalist is the northward migration of the birds.

During April the last of the winter visitors departed for their northern homes, leaving the all-the-year-round residents to begin their summer work and joys; they are quickly followed by the advance guard of those who, in the autumn, had retreated to the southland, and now take earliest opportunity to come back to us to rear their young.

If you are to succeed in really knowing our feathered friends, you must establish personal relations with them in their haunts, and this requires that you introduce yourself quietly.

You would resent the rudeness of a person so eager to know you that he burst your door and came into your home with a leap and a shout. So do the birds.

You should go quietly to the place of residence and respect their shyness and desire for privacy.

Remember, that every bird looks upon you as a source of danger —an enemy—until you have won its confidence; and you can never gain this unless you keep very quiet, avoiding noise and hasty movements. Do this and you will soon find the birds' little

flutter of alarm has passed, and that they are almost as curious about you as you are in regard to them; a little later they will forget your presence and go on in their affairs, which is what you most of all desire.

The early morning is the best time of the day in which to study birds.

The woodland songsters are early risers and do what many of us do not do—sing the praise of their Creator.

In the early morn the air is cool, and the light is good. The birds are hungry and so busy in feeding that you not only have the best opportunity to learn what they eat, and how they find or capture it, but they are less timid than later in the day. The songs, too, are never so joyous and frequently repeated as in the early morning hours, and consequently so easily to be learned and memorized.

You may even meet a racoon or fox returning from an all-night hunt—or surprise an oppossum taking his morning nap.

You should have an opera or field glass. Always have a note book with you and *make use of it.*

Few windows open so pleasantly into the temple of nature as that through which we look when we study the grace and beauty of birds.

We should fall short of the highest advantages, however, if we learned merely to recognize the birds apart, and failed to get some idea of the larger world of which they are but one delightful feature.

Prairie Creek is a beautiful woodland stream, winding through Dolliver Memorial Park playing and leaping over the rock-strewn bed, welcoming the visitors to rest or wander along its banks.

On first seeing this beautiful stream, I was reminded of my own beloved Ledges brook: both have the character of a mountain stream.

I could not refrain from repeating these lines:

"Laughing bubbling woodland brook,
Murmuring sweetly as you flow
Through the valley;
Tell me a tale of long ago."

One fancies something gleeful and hilarious in this wondrous stream.

Running water! What a delightful suggestion the words convey! Our thoughts and sympathies are set flowing by them; they unlock a fountain of pleasant fancies and associations in one's memory; the imagination is touched and refreshed.

Let us rest on the large sandstone rock that has fallen into Prairie Creek, where the wild wood spring mingles its clear waters with that of the creek.

What a wonderful spring it is—clear as crystal, the cold sparkling water flows strong from the sandstone wall.

Many minnows known as "chubs" play in the creek near the spring; an old frog croaks as if he had a cold and was asleep; the rough-winged swallows flit over the murmuring stream; a phoebe has built her lichen-covered nest against the side of the rock wall, under a protruding ledge, now and then darting into the air from an overhanging branch catching insects for her baby birds.

Near the phoebe's nest the sandstone walls are covered with mosses, lichens and ferns; beautiful wild columbines are in bloom on the cliffs; the American redstarts and yellow warblers sing as if enchanted, their sweet songs mingling with the tinkling melodious notes of the goldfinch that comes to the spring to drink.

On the hillside, across Prairie Creek from the spring, there nestles a cozy log cabin—it is the beautiful woodland home of Mr. C. N. Douglass, the custodian of the park, and his family.

Noble trees surround the log cabin residence and happy birds find a home among the swaying branches. What a peaceful scene! One could spend a whole day near the spring watching the birds.

It was here at the spring that I met many of Iowa's famous woodland songsters.

In the deep woods when the day draws to a close I enjoy hearing the melodious notes of the wood thrush.

I only know one song more sweet, the vesper of the veery:

"And when my light of life is low,
And heart and flesh are weary,
I fain would hear, before I go,
The wood-notes of the veery."

Although every day is a good day to study birds, not all birds can be found at any one time or place.

Some come to you to tell their stories unasked. Others flit by you as you follow the trails and woodland paths.

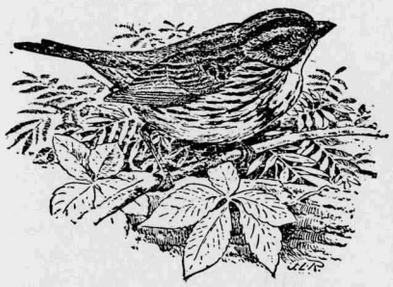
They disport overhead at hide-and-seek with the foliage as you loiter in the shade of the forest, and their music now answers the sigh of the tree tops, now ripples an echo to the voice of the brook.

The beautiful rose-breasted grosbeak and gorgeous scarlet tanager sing among the branches of the forest monarch; the Baltimore oriole hangs his cradle to the drooping branches of the largest tree, where gentle breezes and swaying branches can lull the baby birds to sleep; the cuckoo and mourning dove build in the wild crab and other small trees; the brown thresher, catbird, towhee and Indigo bunting prefer the thickets; the blue-gray gnat catcher and ruby-throated humming bird saddle their beautiful homes on a branch; the Louisiana water thrush, the shady fern-covered glen and babbling brook; the American red-start gold finch and yellow warbler enjoy the willow-lined streams, and so does the pretty Maryland yellow throat.

An interesting bird to meet along Prairie Creek is the Belted Kingfisher. He goes a-fishing up and down the stream, while the little green heron is content to stand in the shallow water for an hour at a time; the red-tailed hawk, monarch of the air, soars high over the valley, especially in the vicinity of Boneyard Hollow, while warbling bluebirds, cheerful black-capped chickadees and saucy wrens welcome you everywhere along the trail, be it at the spring, the "copperas beds" or the botanical wonderland of Boneyard Hollow.

Dolliver Memorial Park is a paradise for the birds—I wish that I could tell you more about our feathered friends. I found many different species, all living in perfect harmony within the park.

Birds turn back for us the flight of time. Their songs are voices from our vanished youth. Let us hope that the birds and flowers in all our State Parks may cheer us with song and beauty, when towards the sunset of life, the shadows will grow long upon the pathway.



U. S. Department of Agriculture

FIG. 11

SONG SPARROW

U. S. Department of Agriculture

FIG. 11A

DOWNY WOODPECKER

CONSERVATION OF NATURAL SCENERY IN IOWA

By B. SHIMEK, Botanist State University of Iowa

Unfortunately the idea of the preservation of small portions of our state in a natural condition is commonly associated in the minds of many of our citizens with the thought that it is chiefly a desire on the part of hunters and fishermen to save their preserves, or with the other thought that it is a sentimental desire, more or less selfish, to keep these beauty spots for the enjoyment of those who have leisure.

While neither of these concepts does full justice to the cause, both are worthy of consideration, and both should receive attention in connection with other arguments in favor of the preservation of certain portions of our state in a natural condition. The preservation of our fish is a matter of interest and importance not only to the sportsmen but to the many people who use fish for food. In order that our fine native fish may thrive it is necessary that the waters be kept clean and wholesome, and this can be done only when the borders of streams and lakes are left undisturbed by stock or plow. Especially is it desirable that wooded bluffs and slopes be not denuded of their forest covering, both because of the effect on erosion and on tributary springs.

The preservation of our native birds and some of the animals is becoming more and more a matter of importance. Our useful birds must have breeding places, and for this purpose tracts of prairie, forest and swamp should be set off, not merely for the purpose of propagating game birds, but that all of our useful birds might find shelter. Some of our native animals also contribute to the food supply, but even more and more restricted, and the time must soon come when fur-bearing animals will be propagated and protected. For this purpose suitable grounds are necessary. The skunk must have wooded banks, the muskrat requires swamps and banks of streams and these and similar places would be furnished by the preservation of such tracts as are here contemplated.

The preservation of beauty spots for recreation and pleasure comes from no one class, but from all of our people. We spend large sums of money to create artificial parks for this very purpose, why not preserve the natural parks which are scattered all over our state, unfortunately in constantly diminishing extent? The areas best suited to the purposes herein discussed are usually not well adapted to agriculture, and could be used much more profitably for other purposes. Moreover, it is not necessary, it is not desirable, that we cultivate every acre of land simply because it can be cultivated. Our homes are not restricted to places and provision for eating and sleeping, and our lives are not given only to money making. Why should we destroy every vestige of natural beauty in our state simply because someone may make a few more dollars? Why not turn our parks into fields and vegetable gardens, and our street and roadsides into cabbage patches? Why not use the front yard for onion beds, and grow cabbages in flower pots indoors? Surely we can afford to use a little of our state for other than money-making purposes!

There are, however, other good reasons for conserving some of our areas besides the two given.

Our most attractive scenery is in the vicinity of streams and lakes, and in such situations our reservations would be chiefly made. They would there serve not only the purposes already noted, but by the prevention of erosion, and of the washing of miscellaneous materials into the water, and by the exclusion of stock, our streams would be rendered free from pollution, a matter of great importance when we consider the extent to which such waters are used by our cities and towns. The latter must also contribute their share by keeping all sewage out of our lakes and streams.

The prevention of erosion, accomplished by permitting vegetation to grow unhindered along the bluffs, would avert the silting up of the streams and lakes which interferes with other uses of such bodies of water.

There is still another reason for conserving portions of our state. This may not appeal to a large number of people, but it is important nevertheless. There is need of saving a part of our native vegetation under original conditions for scientific purposes and studies, not merely that the student may find plants for study, but that investigations of our native flora may be continued with a view of determining the influence of various conditions upon plant life. The native flora presents many advantages for this purpose, for it represents the final outcome of all the influences which have acted upon plants in time past; and it offers a much better measure of the value of these influences than could any artificially introduced and cultivated plant.

CONSERVATION OF PRAIRIE

By Ada Hayden, Iowa State College

Iowa is said to be a prairie state, but what is a prairie to the present generation? Within 40 or 50 years, the broad stretches of tall shining grass trembling in the sunlight or tossed by the breezes into billowy waves, gorgeous as the season progresses with its pageant of brilliant hued flowers. A flint now and then picked up from a gravelly knoll recalls the feathered, moccasined, swift footed dweller of the plains. But he has passed on to happier hunting grounds and the prairie too is fast passing.

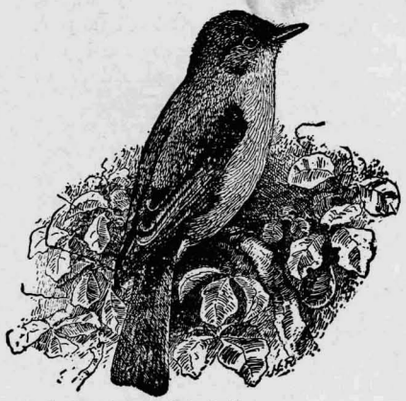
The goddess of agriculture has banished the prairie and over it spread green fields of shimmering, rustling, yellow-tasseled corn, acres of tawny oat shocks, and ragweed covered pastures. The buffalo which sniffed the prairie fire and raced madly to shelter from this red-tongued fury is now succeeded by the cow, a dweller of the resplendent red and white striped barn. A network of highways corrals the once wild expanse and down the dusty way throbs the busy, beetle-like car.

Few but the farm boy and the meadow lark know where the swamp now lingers, where the marigolds glitter in the marsh, where the red-brown knoll, fanned by the winds of March, turn pale lavender as the pasque flower wakes in the spring. Then as the splashing drops of April have carried the fragrance of these March flowers far, the grassy slope as a magic carpet is blue with violets. With June, the scarlet lily as torches, light the slope. The blazing star marks the zenith of July, and sunflowers and golden rod herald the climax of the summer, and the azure gentian, like pools of sky dropped down, bask in the warm October haze. So passes the panorama.

The activities of life have increased in complexity and responsibility, hence the greater the intensity of life, the greater is the need of inspirational forces. An iso'ated patch of New England daises along an Iowa railroad right of way, drew throughout its flowering period a throng of admirers from the town. Strangers unacquainted with the prairie come to explore these fascinating relics of the past. Scientists travel long distances to study it. Greenhouses capture some of these plants from the wild, transplant such as will endure, into captivity. The metropolitan, who lived

in the old homestead, wanders back again to the haunts of the meadow lark to renew the images gathered in his youth, only to find the source transformed into hogs and corn.

The prairie flora is an inspiration to men and most prized when gone forever. Savage tribes hand down legendary narrations of their environment and customs. Should not we do more than incorporate these natural gardens into literature and legend? Preservation of a few acres in each county could be accomplished *without encroaching upon economic* products and secure to the present and to the coming generations a heritage from which no individuals are justified in depriving them. Such reservation of prairie if made near the larger schools would be useful for study. Wherever located they would be available to the auto traveler. Other areas which do not conflict with private estates are the railroad rights of way. Railroads spend thousands of dollars in making beautiful parks at their stations, but what park planting can equal a mile or two of flaming Turk's cap lily which frequents the damp native prairie in July, or the white beds of nodding anemones, the red and white sweet William, the purple patches of gauzy spiderwort, the gorgeous butterfly weed, the glowing goldenrod, and the banks of stately, radiant sunflower. All these plants are carefully cultivated by florists in parts of the country where they are not native. Why not preserve now at a small cost what can not be replaced at any cost?



U. S. Department of Agriculture

FIG. 12

PHOEBE

U. S. Department of Agriculture

FIG. 12A

TOWHEE

WOOD NETTLE

QUEEN ANN'S LACE OR WILD CARROT

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