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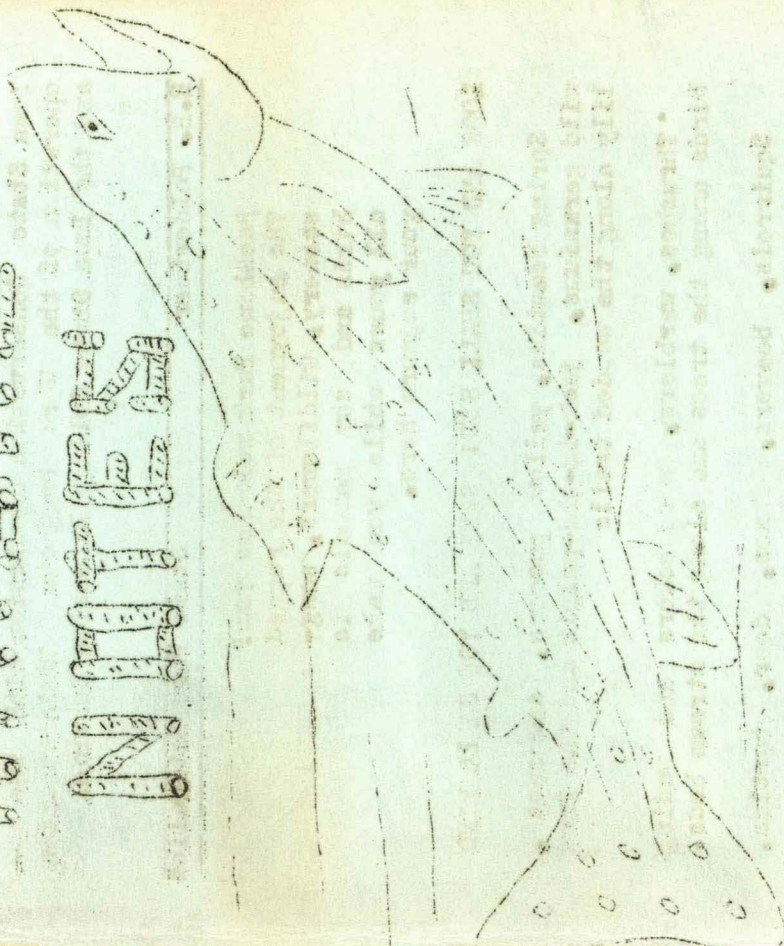
Backbone Nature Notes

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BACKBONE NATURE NOTES



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Backbone nature notes

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NATURE NOTES

Vol. II

May 18, 1940

This bulletin is prepared by the Park Naturalist for the information of the guests of the Backbone State Park in order that an unspoiled primitive area may be more fully appreciated, utilized and protected. It is issued by the Iowa State Conservation Commission with the cooperation of the Work Projects Administration and the Iowa State College Extension Service.

E.B. Polderboer

State Park Naturalist

Backbone Park welcomes you!
The enjoyment of the rugged
scenery, wildflowers, song-
birds and shy mammals is
all yours while you make
your sojourn here.

LOOK AND YOU SHALL SEE! SEEK AND YOU SHALL FIND

Spring beauties, yellow puccoons, anemones,
wild geraniums, jack-in-the-pulpit and the fawn
lily along the wooded trails

Thrushes, warblers, woodpeckers and wading
birds among the trees and along the stream beds.

Squirrels, beavers, foxes, deer, turtles,
frogs, and fishes in their native haunts.

Pleasure, rest and satisfaction from being
alone a few moments with nature and away from
the cares and the scurry of civilization.

AT YOUR SERVICE -- THE NATURALIST

For the third consecutive year Backbone Park offers the free nature guide service. Since the public has little time to spend in exploration and inquiry as to the location and naming of the various things of interest within the park, the service of the naturalist is intended to bring the most to the attention of the public in the shortest time. The FREE guide service is furnished by the Iowa Conservation Commission and all that is asked in return is that all our park guests respect the park rules and treat the plants and animals in a manner commendable of good sportsmanship and sound conservation.

For the benefit of those wishing to take the hikes and nature tours in the park the following schedule will be followed in May and June:

SUNDAY HIKES	-	9:30 a.m. On backbone ridge
		1:30 p.m. At the Park Store
TUESDAY	-	2:00 p.m. General nature tour from park store
THURSDAY	-	7:30 p.m. Star gazing on Backbone Ridge
SATURDAY	-	7:00 a.m. Start from park store for Bird Hike

SPECIAL HIKES - as arranged. Ask the Custodian
or the Naturalist

Take the bird hikes now! Birds are migrating and
are more easily seen at this season than later
in the summer when they are nesting.

HOW MANY ANIMALS ARE IN BACKBONE PARK

How many animals can you name? What percent of the total number of animals in the park do you know? If you know one sixth of the animals in the park you are an exceptionally well trained student of natural history. There are about 2,000 animals in the park alone and the average person seldom knows more than 150 of their common names.

Of the total 2,000 animals 1,400 are insects, 200 are birds, 30 are mammals, about ten are frogs, toads, salamanders, less than ten are harmless snakes and turtles, possibly 75 kinds are fish and the remainder are worms, rotifers, spiders, centipedes, milipedes, snails, clams, hydroids, sponges and simple one celled protozoans.

Most conspicuous of these animals are the mammals, birds, snakes, fishes and the larger insects. The mammals that attract the most attention are the virginia deer and the beaver; the smallest mammal in the park is the shrew that eats three times its weight in food each day. The extremes in size among the bird residents and migrants of the park varies between the bald eagle with a seven foot wing spread and the diminutive ruby throated humming bird. Bull snakes and blacksnakes are the largest snakes in the park and the DeKay snake is possible the dwarf of this group of animals. Minnows, darters and the sunfishes compose the majority of the fish population in the Maquoketa River; the carp, catfish bass and trout are less numerous than the other fishes but attain a much larger size than the others. Of the insects the large silk moths, butterflies and beetles attract the most attention. Prominent among these is the Luna moth and the Cecropia moth.

Think of all the animals that you know. You will be surprised to find how many there are

left that you do not know and probably will never meet up with.

THE UGLY FISHLING

Did you ever catch a Miller's-Thumb? Perhaps you never have and if you are seeking a large game fish for the sport or frying pan you will never want one. The Miller's-Thumb is also known as the sculpin to some people.

As a fish the sculpin doesn't command much respect since its body is thin and tapered and seemingly much overbalanced by an exceptionally large head with goggle eyes and a pouting mouth. Around its neck is a broad frilled Lord Fauntleroy collar which is formed by a pair of expanded lateral fins.

Such a homely and apparently no account fish seems hardly worthy of a sportsman's attention but in spite of it's lack of fish personality it is of great interest to the angler and the fish culturalist because of its indicating ability. Long ago it was found that trout thrived in spring-fed streams where the Miller's-Thumb was found. This indicated that water, food and chemical conditions that suited the Miller's-Thumb was also suitable to the trout.

Before Backbone Park's State Fish Hatchery was built this ugly fishling was found in the waters of the Maquoketa River and this fact was instrumental in location of the hatchery at it's present site. When you see an angler with a large string of trout remind him to give a note of thanks to the docile sculpin loafing beneath the boulders in the river for his part in showing the fish culturalist where to plant the game fish that add so much to his enjoyment.

HERE AND THERE ABOUT THE BACKBONE IN MAY

- Bird's Foot Violets are in blossom along the nature trail southwest of the park store
- Jack-in-the-Pulpit preaches today; see him on any of the trails that lead through the deep woods
- Look ahead as you walk through the woods and you may see the chestnut sided, Black and White, and Prothonotary Warblers flitting about among the branches of the oaks and elms
- Last winter's beaver lodge may be seen across the lake from the Devil's Oven
- Deer tracks are to be seen in the old road leading from the Lamont Branch to the west gate of the park
- Listen for the oven bird to sing it's "Teacher-Teacher" note from the ridge tops at this season
- If you are fortunate a woodcock may flush at your feet while you stroll along the river bottom some distance back from the road
- Fishing is good in the river between the hatchery and the Lamont branch. One angler took a seven pound trout but still admitted that the big ones got away.
- Phoebes are again building their nests under the bridges in the park and no doubt one will soon be building in the shelter house again
- The Raccoons are again investigating the picnic grounds at night for scraps left by this season's visitors.
- A family of young foxes have been living in a den on the east side of the park since their arrival in this world last March.

LOVE 'EM AND LEAVE 'EM!

At the present time there are scores of wild flowers appearing along the trailsides. These flowers are your property and the park is your flower garden; you own them as a share holder in a public stock company. No one can destroy them without your consent and neither can you destroy them without the consent of the public.

This is a perpetual flower garden and each year in the future they will continue to bloom in this sanctuary secure from the grazing and plowing of civilization. These flowers are, in some cases making their last stand in an adverse environment and for that reason picking or removal of a few plants from their environment may mean extermination of a species.

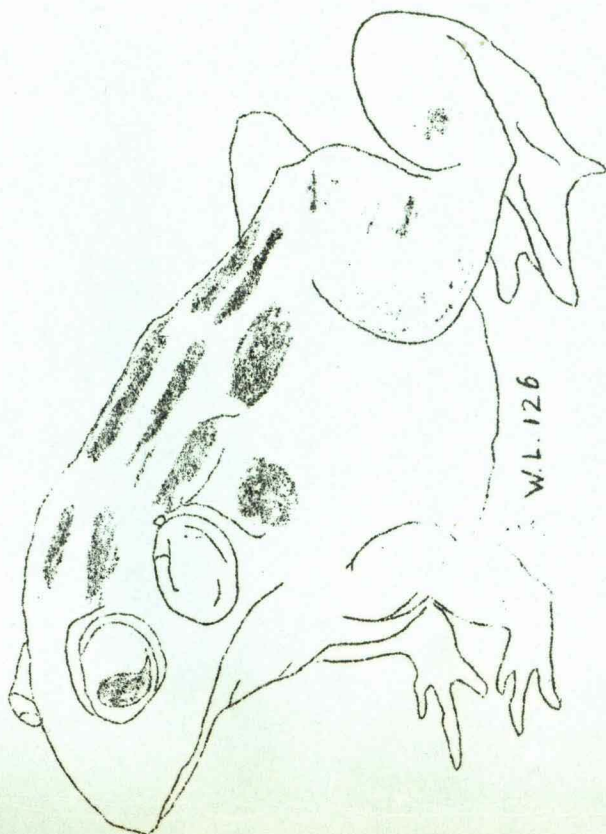
Why pick the rare and unusual wild flowers? In most cases they wilt as soon as picked and lose their natural beauty in a short time. In addition to this the flower is the seed factory upon which future flower crops depend; the leaves are the food factories of the plant and when they are picked along with the flowers the plant must, literally, starve to death.

Pick them and they die. Leave them and they will live to give you the colorful enjoyment of flower time for many springs to come.

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BALKESTONE NATURE NOTES



LEOPARD FROG

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Vol. II

June 16, 1940

No. 2

Backbone Nature Notes are printed for the visitors of Backbone State Park in order that more than a casual view of this beautiful area and an appreciation of its plants, animals, and scenery may be acquired. For him that has eyes to see and for him that has ears to hear may this bulletin be a guide to the recreational opportunities of this park, and may this information give each and all an inspiration to utilize and protect an unspoiled primitive area in such a manner that it will continue to be enjoyed by many generations to come.

E. B. Polderboer

State Park Naturalist

TREES

I think that I shall never see
A poem lovely as a tree.

A tree whose hungry mouth is prest
Against the earth's sweet flowing breast;

A tree that looks at God all day,
And lifts her leafy arms to pray;

A tree that may in summer wear
A nest of robins in her hair;

Upon whose bosom snow has lain;
Who intimately lives with rain.

Poems are made by fools like me,
But only God can make a tree.

---Joyce Kilmer

WHAT IS CONSERVATION ?

When we speak of conservation many people interpret the word to mean the saving of a plant or an animal from destruction. To others conservation is a restriction imposed to prevent hunting, trapping, fishing, or the raising of a large corn crop. In the true sense conservation means the WISE USE OF A NATURAL RESOURCE.

Wise use of farm land consists in keeping the soil on the land in such condition that it continues to yield good crops. Rotation of crops, addition of fertilizers, restoration of nitrogen to the soil with legume crops, and erosion control are all instruments of conservation; they are the wise practices that are employed to maintain productivity of the land. When these practices are not followed the soil is exploited or robbed of its fertility. Exploitation is unwise use of land.

In the case of forests conservation consists, not in the prevention of tree cutting, but in the selection of mature trees so that the most lumber and by-products may be obtained from each tree. Previous to government acts controlling forest cutting tall stumps were left, immature trees were cut, and only large boards were cut from the center of the trunk. Today only mature trees are cut and every available board foot of lumber is used. Wood refuse is used in paper manufacture and other wood fragments are used in various ways to prevent cutting of more timber than should be wisely cut.

Certain forest lands are located near lakes, mountains or scenic areas that make them valuable as resorts and recreation centers. Such places



provide a greater income to persons living in the region than a forest crop would pay thus the wisest use, in this case, is to leave the forest as a part of the scenery that attracts tourist trade. Such use of a forest keeps a number of people employed and over a period of years will produce a far greater income than a forest crop that can only be harvested on a profitable scale but once in a hundred years.

As a wild game producer, Iowa's fertile prairies were once the greatest wildlife producing grounds in the United States. The prairie meadows and marshes produced myriads of ducks, geese, wading birds, prairie chickens, and fur bearers. The prairie groves and river valley timberlands teemed with passenger pigeons, grouse and song birds. This same fertile soil that once produced the vast game crop also produces a large percentage of the nation's grain crops. Since man depends more upon grain and livestock than upon wild game to maintain our present social order the changing of the prairie to the farm land is certainly most practical. With this change marshes were drained and the grasslands disappeared and when the prairie vanished the prairie chickens and ducks vanished with it. In their place many times their weight in beefsteaks and pork chops are produced, mostly from foods fed in the form of cereal crops that replaced the prairie grass.

Iowa is not without game. There is some game that does not fit in with agriculture. The prairie chicken will never come back unless the prairie comes back and that is not likely to happen. But in its place the ringneck pheasant



has come. The ringneck gets along well with civilization. It nests in the fence rows and hayfields and is as much at home in the Iowa Cornfields as in the wilds of its native China. In southern Iowa the Bob-white quail has found the cultivated lands to its liking. Cottontail rabbits have increased with an abundant corn supply and with the increased rabbit supply the carnivorous furbearers have been able to maintain their numbers in spite of intense trapping. Our present plan of farm conservation consists in the propagation of game and the adjustment of the environment to suit animals, birds, and fishes that thrive in the presence of agriculture.

State park, preserves, and refuges are another wise use of land. Such areas are often rugged and make but poor pasture lands. When cleared they are unattractive. Often these places have rare ferns, flowers, trees, or interesting animals that would become but a memory of the past were the land not state owned. These areas are visited by thousands of people annually and they add indirectly to the prosperity of the community. They also serve as a refuge for game and song birds which overflow into surrounding territory. Surely such a place as a park which acts as a reservoir for wildlife and supplies recreation, peace of mind and soul, and rare forms of life no longer existing in our fields and dooryard is one of the finest products of our conservation system and the attempt to use our natural resources wisely.



FROGS

Perhaps the oddest creature that one encounters on a hike is the frog. His relatives are found throughout the world. They are found deep in caves, in the tree tops, on highlands, and in the wet lowlands. In fact one need not be surprised to find some of his relatives right in one's own dwelling.

The comparative anatomist tells us that the frog is the animal that gave the world legs. That awkward, goggle-eyed, smooth-skinned creature that crouches motionless at the pond's edge is the connecting link between fishes and land animals. When the frog begins the process of becoming a frog he starts as an egg and from the egg he emerges a tadpole with a fin-like tail-piece and a set of gills that make him appear to be every bit a fish in his infancy. As the tadpole grows older legs sprout in place of fins and still later the young tadpole pokes his nose out of water and gulps air that is held in sac-like lungs which are a new improvement in the animal world. Soon after the lungs are formed the tail disappears and the frog emerges from the water and becomes a land animal. Another change that places the frog above his fish-like ancestors is the development of a three-chambered heart which is one chamber more than the fish possess and one chamber less than that possessed by the mammals.

Among men the fear of war and predation comes but once in a generation, but among the frog families the fear of the enemy is constant from the day of hatching until old age is reached; that is, if a frog ever lives to a ripe old age. As a tadpole it is pursued by predaceous water beetles and parasitic bugs, and most of the fishes from sluggish bullheads to the great northern pike swallow



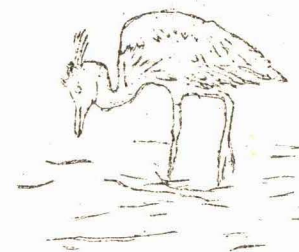
both the tadpoles and their parents at every opportunity. The water snakes and garter snakes pursue them in the shallow ponds and do their part to prevent a plague of frogs from overtaking the land. Adult frogs find mother crows, great blue herons, bitterns, skunks, minks and raccoons eagerly seeking to devour them in every meadow and on every shoreline. The enormous family of frogs that come from the great jelly-like masses of frog eggs are the soup line for a large variety of animals.

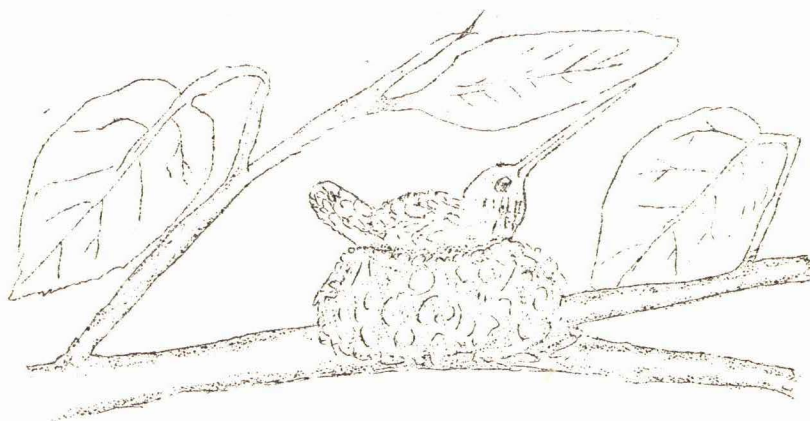
Those who search for the various members of the frog group will find them mostly in moist places. A frog's body is nearly 90% water, and when kept for a short time in a dry place the frog literally evaporates and shrivels up. So to find them look in marshy spots, along streams, in wet meadows, moist woods, gardens, and cellars. In the cellar one often finds the American hop-toad remaining quietly at a crack in the cellar door catching flies with each flicker of his tongue to fill his paunchy interior, which never seems to get filled. In the meadow the green and black spotted leopard frog may be found. He leaps as much as a yard or more when in a hurry, and when at times he does not hurry enough he becomes a bulge in the center of a well-fed garter snake. On sultry nights an eerie croaking in the tree tops announces the presence of the tree frog, a small fellow that can change from a green to grayish color in a few minutes and can climb a perpendicular wall with the aid of suction cups at the tips of his fingers and toes. Early in the spring every pond and creek thrills with the "rickety-rickety-rick" of the cricket frog. He is so small that he is often overloaded as the producer of such loud notes; when finally located, however, he shows an expanded throat nearly as large as his own small body so that it

seems he really puts his all into his singing.

Along the Maquoketa River, a frog resembling the leopard frog is often seen. It wears a brown polka-dot jacket and a white waistcoat as does the leopard frog, but if you look closely you will see that this one wears sulphur-yellow stockings which identify it as the pickerel frog whose native home is considered to be in the eastern states. Jumbo, the bull frog, is not abundant in Iowa. A few are found in the southern counties but the frog-leg appetite of man plus other enemies and his own cannibalism keeps his numbers reduced. A small edition of the bull frog is the green frog who spends most of his time sitting in a green pond with only his head exposed as he utters melancholy growls at unpredictable intervals.

One cannot other than admire the frogs and their relatives. In spite of being subjected to the preying of enemies from the time they changed from fish-like ancestors to leg-bearing creatures they still persist in presenting their odd-shaped bodies as a living example of an evolution that took place centuries ago. The frog is not just another animal; he is a living fly trap, a food supply for a vast animal world, and a living history book of animal progress.





Humming Bird on It's Nest

BIRD NESTS

Between 50 and 70 species of birds nest in Backbone Park. Nearly all of our native birds build their own nests excepting the cowbird which lays it's eggs in other birds nests and allows the host bird to feed and rear it's young. Some birds take over old nests of other birds and make small improvements on them.

The earliest nesters are the Great-horned owls and Barred owls. They often are incubating eggs when the temperature is below zero in March. They use old crow nests, cliffs or hollow trees for their nest sites.

Phoebes make nests of mud and moss and place them in the shelves of cliffs that have a protecting roof above them. Sometimes they will build under caves and bridges if a suitable shelf is available. Park visitors may see phoebe nests in the park store shelter house and on the Catacombs bluffs.

Orioles and vireos build hanging basket nests. The oriole prefers a branch of an elm that is out a considerable distance from the trunk of the tree. Oriole nests contain much horse hair and string. The vireo's basket is about the size of a small fist and is made of vegetable fibers; they are usually suspended from small branches of small trees and are often quite close to the trunk. June is nesting time for the vireos and orioles.

An old handkerchief, necktie or bread wrapper may often be found in a wood thrush nest in the cool moist river bottom woods. This nest is usually at a height of three to six feet above the ground in an ironwood or large shrub and is quite cleverly concealed by a canopy of leaves. Aside from the rag and paper collection found in the thrush nest it resembles that of the robin, a near relative of the thrush.

If you see a medium sized yellowish brown bird carrying a snake skin it is very likely that you saw a Crested Flycatcher carrying a part of it's nest lining to the nest site in some hollow tree. It is rarely that one finds a flycatcher's nest without a snake skin wound about it. Perhaps mother flycatcher thinks that the skin will scare away enemy birds; who knows?

Birds are probably very unintelligent creatures. They do not have the power of reason that dogs, horses, men and other mammals have, but in spite of this they do remarkable work through pure instinct. The weaving and plastic work of nesting birds is often a wonder to those who know how poorly man does his craftsmanship with his great gift of reasoning power.

-II-
PLANTS OF THE AGES

Flowers are a modern invention in the plant world. We are living in an age of flowering plants. At one time there were no true flowers in the world. Most of the early non-flowering plants passed out of existence long ago, but a few of their descendants still persist.

About a dozen distinctive flowerless plants may be found in the park if one searches for them.

They are the ferns, horsetails, and club mosses.

There are others too that are much simpler and often difficult to identify in the forms of mosses, liverworts, and algae. The latter two often compose what appears to the average observer to be pond scums and water mosses.

The ferns are plants that have stems, leaves and roots but produce spores which are really naked plant embryos without a food supply surrounding the instead of a true seed with a food supply. In seed plants a flower generally comes before the seed is produced; in ferns there are no flowers.

On all of the trails in the park some ferns may be found. The Catacombs Trail has numerous bladder ferns, lady ferns, interrupted ferns, and maiden hair ferns. A few walking ferns, purple cliff brake, winged beech, and sensitive ferns are also found on this trail. Following the trail south of the park store on the west bank of the Maquoketa River a few large ostrich ferns are to be seen. They are not abundant but their large size make them attractive. Christmas ferns and horsetails are thinly scattered along the trail at the base of the east bluff following the great loop beyond Backbone proper.

Bracken ferns are residents of the dry upland woods and many of these large ferns resem-

bling an eagle in flight (they are called eagle ferns because of this shape) may be seen at the top of the bluff as one follows the trail leading south of the sharp curve near the fish hatchery. When following the "sharp curve" trail note the club mosses that grow on the shaded west bank of the ascending trail. Although insignificant plants they represent a group that is a link in the chain between sexual and asexual plants and are very rarely seen in Iowa.

The rattlesnake fern, a near relative of the ferns that played a great part in forming our coal beds, may be seen growing individually along most of the park trails. It has a spore-bearing stem that rises from the center of three horizontal fronds, or leaflets, which makes it appear like a coiled rattler with its tail elevated. Old settlers once believed this fern, when steeped in warm milk, would counteract the poison in a snake bite.

For the pleasure of looking at a history of the past in the plant kingdom stroll down the wooded aisles and see these living fossils at the trailside. You will never regret time spent in making the acquaintance of the little known non-flowering plants.

NATURE CALENDAR

It was once said by an old naturalist that the time of year could be recognized by an out-of-doorsman by the kinds of flowers in bloom and the birds that were present. It is quite true that without a calendar one can tell the season by the living things present.

On the following calendar the arrival dates for some forms of wildlife in the Backbone are listed. Refer to this calendar from time to time and come to the park to see the children of Nature on their arrival dates.

- MARCH 20. Mallard, pintail and scaup ducks appear on the Backbone Lake.
- APRIL 1-15. Least flycatcher, purple finch, junco and yellow-bellied sapsucker. Skunk cabbage and snow trillium.
- APRIL 15-30. Black-throated green, chestnut-sided warblers, field sparrow, song sparrow and white-throated sparrow.
- MAY 1-15. Scarlet Tanager, Baltimore oriole, redstart, towhee and rose-breasted grosbeak. Dog-tooth violet, wood anemone, dutchman's breeches, rue anemone and false rue anemone.
- MAY 15-30. Wood thrush, ovenbird and water thrush. Wild geranium, Canada anemone and May apple.
- JUNE 1-15. Vireos, chickadees, phoebes, flycatchers and cardinals are nesting. Waterleaf, ragwort, chickweed and yellow lady's slippers are in blossom.
- JUNE 15-30. Wood thrushes are nesting and the bouncing betts begin to bloom.
- JULY 1-15. Hare bells and blue bell flowers (wood stars) are in bloom.
- JULY 15-30. White snakeroot and Joe Pye weed are in bloom.
- AUGUST 1-15. Yellow Gerhardia and liatris begin to flower. American egrets and young great blue herons appear on the lake. Cicadas are singing.
- AUGUST 15-30. Golden rod and New England asters are in bloom. Golden-winged warblers and mallard ducks appear in the park previous to the fall migration.
- SEPT. 1-15. Hazel nuts and hickory nuts are becoming ripe. Squirrels and chipmunks are busy storing the nuts for winter. Blue-winged teal and gadwall ducks come to the lake.

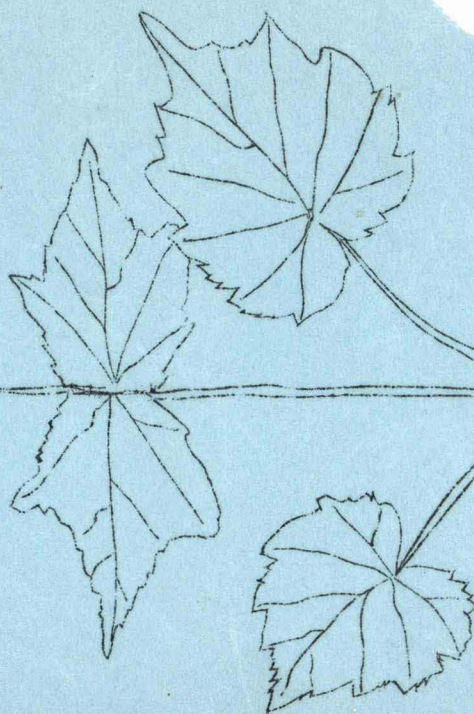
BACKBONE

STATE PARK

NATURE NOTES

July 28, 1940

Vol. 2



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NATURE NOTES

Vol. 11

July 28 1940

No. 5

THE NATURE GUIDE SERVICE IN BACKBONE

Backbone Park has an interesting geological history and an abundance of wild-life in the form of fishes, birds, mammals, insects, and plants. Self-guiding nature trails and free nature guide service are provided in the park for all who are interested in this form of recreation. An exhibit is placed at the bulletin board south of the park store showing a few of the interesting things to be found in the park.

A schedule of hikes is listed below:

SUNDAY HIKES	1:30 P.M.	Hike starting from the park store.
	3:00 P.M.	Hike starting from top of Backbone Ridge.
TUESDAY	2:00 P.M.	General tour (trees, ferns, flowers, birds, and mammals) from the park store.
WEDNESDAY	7:00 A.M.	Bird hike starting from park store.
THURSDAY	8:30 P.M.	Star gazing on Backbone Ridge.
SPECIAL HIKES		for scouts, campfire girls, 4-H clubs, garden clubs, etc. may be arranged with the Custodian or Naturalist.



OUR FRIENDS THE BIRDS OF PREY

Few people seem to know that most of the hawks and owls are protected. Some persons even believed that a bounty was paid on eagles until a fine of fifty dollars was assessed them for shooting this bird.

The eagles is now rarely seen in interior Iowa. A few may be seen flying high over Backbone at rare intervals, and as many as fifty or more may be seen on the Mississippi River near the dam when the ice goes out. They feed chiefly on dead fish along the river and prey to a small extent on available birds and mammals. Some young livestock may be taken, but the birds are so scarce that records of such depredations are few.

One owl and two hawks are not protected in Iowa. They are the great horned owl, Cooper's hawk, and the sharp-shinned hawk. All are residents of the extensive woodlands. The great horned owl is as large as a full-grown chicken and is known to eat s'unks and pheasants although the cottontail rabbit is its chief staple food. The Cooper's hawk and the sharp-shinned hawk are swift, slate blue, darting hawks that are seldom seen. They feed on many small and medium-sized birds and catch many young chickens near woodlots without the farmer even knowing that they are about.

The hawks most frequently seen and most easily shot are the large soaring hawks such as the red-tailed, red shouldered, and marsh hawks. They are easy targets as they sit exposed on prominent poles and dead tree-tops near a farm grove. If the farmer were aware of their value to him they would not receive such unwarranted persecution. Other innocents often shot for curiosity are the small screech owls and the long-winged short-eared owls of the marshes.

The food habits of the smaller owls and the soaring hawks have been studied by examination of pellets of bones, fur, and feathers regurgitated by the birds after the digestible part of the prey had been digested. Stomachs of shot birds were also

-4-

analyzed. The bulk of the food eaten by the useful hawks and owls has been found to consist chiefly of rats, mice, and ground squirrels, all of which cause damage of greater financial significance in the state of Iowa in one year than all of the poultry killed in the entire United States by all three of the harmful hawks and owls.

The wise guy who prides himself on displaying the broad-winged hawks on the fence and barn, spread eagle fashion, deserves a reprimand from his neighbors for assisting the propagation of rats, gophers, mice, and ground squirrels.

Mother Nature made the birds of prey for a purpose and man cannot improve upon that purpose. In trying to balance nature in his own way he often does much more harm than good.

LIFE IN THE PARK IN JULY

Ox-eye daisies, larkspur, coreopsis, and lead plants have come in to bloom during the first week of this month.

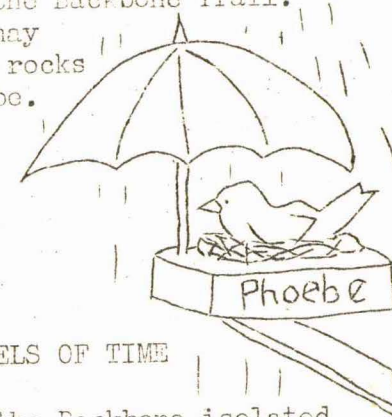
Families of young animals present in the park include six young mink found along the Maquokets

-5-

River above the central picnic area. One of the little fellows died from injuries suffered while crossing the road near Watercross Spring. He was the victim of a driver who did not heed the 15 mile per hour speed limit.

A mother raccoon and several youngsters keep the dusty areas about the park store padded down with their large tracks.

Among the young birds leaving their nests early in July were red-eyed vireos, redstarts, towhees, and phoebes. The vireo nest may be seen along the trail leading south of the pine grove on the Backbone Trail. A phoebe nest may be seen in the rocks on the Catacombs.



SENTINELS OF TIME

Throughout the Backbone isolated pines may be seen rising above the tops of the surrounding trees. Many of these old natives have seen the days when the Revolutionary War was fought. Some of the pines on the bare stony places grow slowly and

-6-

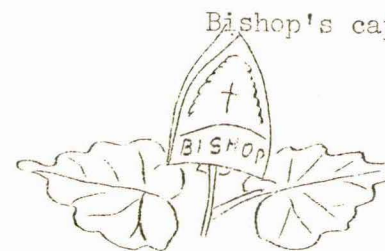
have a rough weather-beaten bark not seen on the fast-growing nursery pines planted on the glaciated soils of central Iowa. As with the human race, poverty makes for fertility among the pines. Transplanted pines on black fertile soils do not produce fertile cones and hence only one crop of pines can be grown. The old native pines on the high stony ledges that are starved for moisture and food, however, store enough of the life-giving elements to produce cones once in seven years. These cones are filled with fertile seeds capable of growing into a new generation of native Iowa pines.

A distant relative of the pines, the red cedar, also has stood sentinel for centuries on the Backbone Ridge. The oldest cedars are dry and weather-beaten. Their trunks are twisted and dwarfed. Their dry roots reach out over the surface of the rocks like the fingers of a skeleton attempting to reach the last drop of moisture in the shallow dolomite rock crevices. To all appearances the cedars are living ghosts; only the green fingertips of the upraised branches betray the spark of life that still remains. The oldest of these cedars have annual rings numbering well over 300, thus placing the date that the tree sprouted from a seed back to the year 1600 A. D.

-7-

NAMES

How do plants and animals get their names? Below are listed a few that we commonly know.



Bishop's cap or miterwort in a small saxifrage bearing an erect stem with seed pods that resemble the miter or cap of the bishops of various Christian churches.

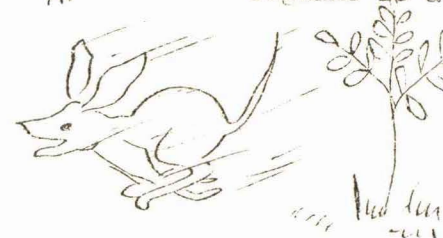
The indigo bunting is a bird that wears a blue coat the color of the indigo wash bluing.

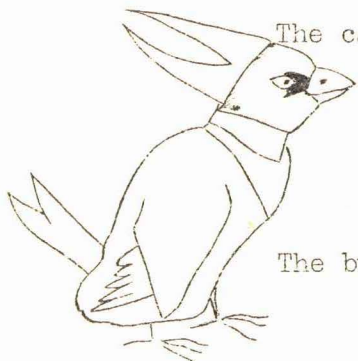


Fleabane is a small, ragged-looking daisy that was believed to be a bane to fleas. It was once thought that fleabane placed in a dog house would drive out the fleas.



Dogbane is a plant despised by dogs. They are said to make a wide detour when approaching this red-stemmed milkweed-like plant.

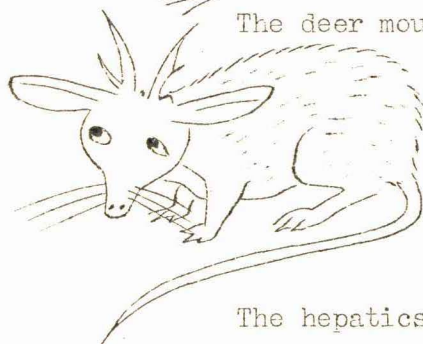




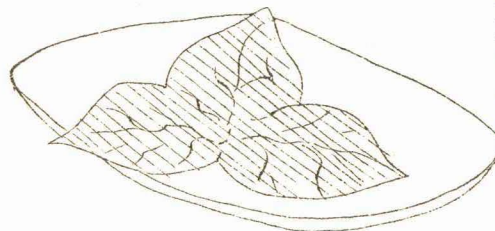
The cardinal is a bird wearing a bright red coat, the color of the robe worn by the cardinals of the Catholic Church.



The butcher bird is the name given the migrant skrike, the black, gray, and white bird of the roadside. He is adept at catching baby ground squirrels, mice, sparrows, grasshoppers, and snakes. After killing his prey he hangs it on a thorn or barbed wire fence to cure for future eating.



The deer mouse has large ears, pop eyes, fawn-colored fur on the back, and a white chin and stomach. this combination, along with its nervousness, makes this mouse comparable to the deer.

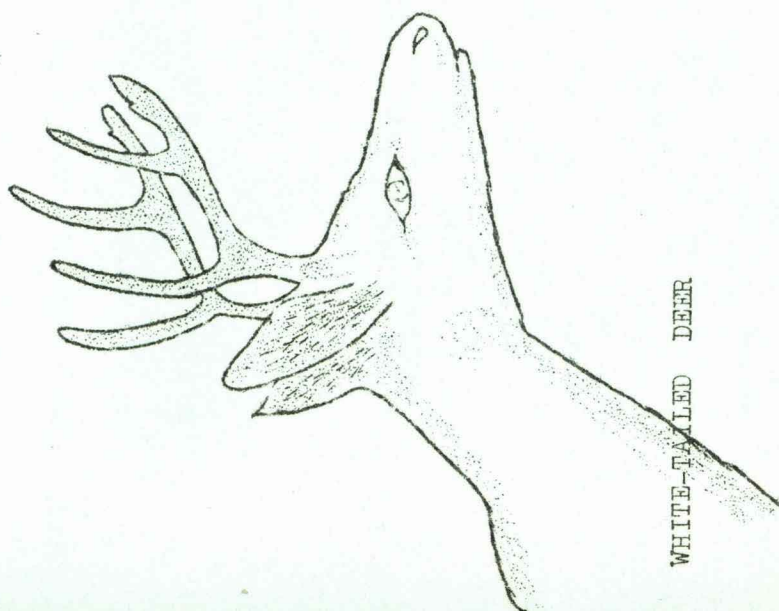


The hepatics or liver leaf gets its name from the Greek Hepatikes meaning liver. The leaves are the shape of a liver and turn liver colored in winter.

V. 2 no. 2
pt 2

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Backbone Nature Notes



WHITE-TAILED DEER

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NATURE NOTES

Vol. II June 30, 1940 No. 2

This bulletin is prepared by the Park Naturalist for the information of the guests of the Backbone State Park in order that an unspoiled primitive area may be more fully appreciated, utilized and protected. It is issued by the Iowa Conservation Commission with the cooperation of the Work Projects Administration and the Iowa State College Extension Service.

E. B. Polderboer State Park Naturalist

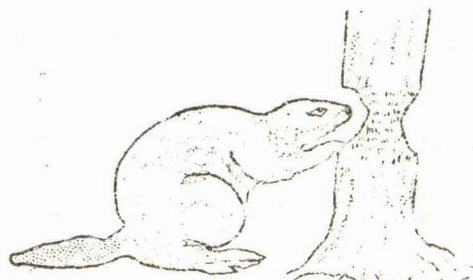
SCHEDULE OF HIKES

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3:00 P.M. Hike starting from top of Backbone ridge.
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- SPECIAL HIKES- as arranged with the Custodian or the Naturalist. Feel free to write regarding special group tours.

The Naturalist will be available all days of the week excepting Mondays. The Naturalist service is furnished to the public without charge by the Iowa Conservation Commission.

W.L. 129

-3-



BEAVER

Among the animals present in the park we have some beaver living in the river and lake. Once in a while one is lucky enough to see one but that is a very rare occurrence. The dams that they have built in the past year may be found by following the Catacombs trail upstream for about a half mile.

A beaver lodge can be seen from the Backbone ridge by looking across the lake from the Devil's Oven. The lodge appears to be a large pile of peeled sticks stacked up near the lake shore.

If you are alert you may note several trees, mostly cottonwoods and poplars, cut down at the waters edge. Some of these trees measure as much as 20 inches in diameter, a very large tree for a small animal to cut down with its incisor teeth.

-4-

CAN YOU ANSWER THESE ?

1. How many leaflets on the stem of poison ivy?
2. What color is the spiderwort flower?
3. What bird commonly sings "Teacher-Teacher"?
4. What is the largest animal in Backbone Park?
5. To what rare family of plants does the lady's slipper belong?
6. What fern was once used as a cure for rattlesnake bite?
7. How many animals are native to Iowa?
8. What shrub found in the park is a member of the citrus fruit family?
9. What fern transplants itself from runners?
10. What are three native evergreen trees found in the park?
11. How old are the oldest cedars on the Backbone ridge?
12. What bird of the river bottom woods sings "Drink-your-tea"?
13. How many species of elm trees are in the park?
14. What is the large tree called that has small green berries and an alligator skin bark?
15. What trout was originally a native to the Maquoqueta river?
16. What fern has large spreading fronds that resemble ostrich plumes?
17. What animal in the park cuts down large poplar and cottonwood trees for food?
18. What member of the lily family has only three leaflets and requires 20 years to produce its first flower?
19. What are the larval forms of beetles called?
20. What insect builds funnel-shaped traps in the sand to catch insects?

-5-

(Questions continued)

22. What family of meat eating animals are well equipped with musk glands?
23. Of what kind of rock is the "Backbone" composed?
24. How do you find the north star by the big dipper?
25. How many wildflowers is each person allowed to pick in a state park?

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ANSWERS TO NATURE QUESTIONS

1. Poison ivy has three leaflets.
2. The spiderwort is a three petaled blue flower.
3. The oven bird sings the teacher song.
4. The largest native animal in the park is the white-tailed deer.
5. The lady's slipper belongs to the orchid family.
6. Rattlesnake fern was used as a snakebite cure.
7. Over 2000 species of animals live in this state.
8. Prickly ash is a member of the citrus family.
9. Walking fern transplants itself with runners.
10. Native evergreens in the park are the white pine, red cedar and the American yew.
11. The oldest cedars are about 300 years old.
12. The wood thrush sings "Drink-your-tea".
13. About 75 trees and shrubs are found in the park.
14. The hackberry has ridged bark and green berries.
15. The brook trout was a native of northeast Iowa.
16. The ostrich fern has the large plume-like fronds.
17. Beavers cut down large poplars and cottonwoods.
18. The great trillium takes 20 years to blossom.
19. Young beetles are known as grubs.
20. Ant lions or doodle bugs build traps in the sand to catch ants and other insects.

-6-

(Answers continued)

21. The raccoon walks flat footed and leaves prints in the mud that resemble baby hand and foot marks.
22. The weasel family has the well developed musk glands; skunks, civets, mink and weasels are in this family.
23. Backbone ridge is composed of dolomite rock and unlayered stone containing lime and magnesium.
24. The north star is found by drawing a line through the stars on the cup part of the dipper opposite the handle. The north star is in front of the cup and the dipper rotates around the north star continually at slow speed.
25. It is unlawful to pick wildflowers in the park.

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THE SUMACH FAMILY

In a short five minute walk one can encounter four members of the sumach family in the Backbone park. Of these four, three are called sumachs and the fourth, to the surprise of many, is the poison ivy.

The staghorn sumach is an attractive shrub that favors the stony bluffs in Iowa. It is seldom seen on the fertile prairies. When the branches of this shrub are examined they are found to be covered with a fuzz or velvet which resembles the velvet stage of a stag deer's horns in midsummer.

Smooth sumach is found over the entire state and grows on all types of upland soils quite readily. This is the glossy, smooth-stemmed sumach that displays the brilliant red leaves

(Sumach family continued)

along the roadside in the fall. The seeds of both staghorn and smooth sumach are red and are borne in large cone-shaped clusters. The leaves serve a useful purpose in tanning leather.

At the south end of the central picnic area bridge in the park some bushes about three feet tall display three leaflets that appear to be small editions of the poison ivy leaflets. This bush is the aromatic sumach which gives off a smell of dill when the leaves are squeezed.

Poison ivy is the only poisonous member of the family in the park. It has three glossy leaflets and waxy white berries. It grows along nearly every trail as low-growing stalks and vines. An oil secreted by the leaves causes the poisoning. It causes blisters, swelling, and scales, but fortunately not all who come in contact with the plant are affected by it.

Ferric chloride mixed in equal parts of water and alcohol is a good cure. Use of this mixture on hands and legs before going into the woods or fields is a good preventative also. Other cures are potassium permanganate water and sweet spirits of niter.

Most of the members of the sumach family live in the tropics. Some of them are food producers such as the Spanish plum, mango tree, pistachio, and cashew nuts. Mahogany is a relative that is famous as a furniture lumber producer.

HISTORY OF THE BACKBONE

Thousands of years ago the same sun we see to-day came up in the east, as it has always done, and shone down on an ancient sea that heaved its surface in continuous swells over the area where this state now stands. Ancient animals swam in this sea. Some were sponges, others were mollusks, hydroids, corals, and brachiopods. As in the present day oceans these animals lived in ooze and sandy bottoms of the sea.

The Backbone is an open history book of what has happened in those years of the dim past. Below our dolomite rocks we find sandstone, a solidified mass of ocean bottom sands. Above the sandstone the dolomite rises to a height of one hundred feet or more. Contained in the dolomite are well preserved fossils of corals and pentamerous brachiopods that look like egg-shaped clams. These animals died and their skeletons disintegrated and became part of the sea-bottom ooze. As one generation of sea animals died a new generation grew on top of the skeletons of the old and thus, over a period of thousands of years, land was built up just as the coral reefs are building up in the Pacific Ocean today.

Later in the earth's history some land formerly exposed sank away and the action of volcanoes and earthquakes caused upheavals of land in other places. The Niagara Sea that once covered central United States moved out and left the old sea bottom high and dry. The Backbone area at that time was a tiny hump in a vast expanse of sea bottom.

During a period of several more thousands of years the great ice sheets of the north crept over the land and deposited gravel and boulders over this ancient sea bottom. Traces of the old Kansan

glacier may still be seen in the low places at the north and east end of the park. The Iowan glacier followed with granite boulders and till and covered the land surrounding the Backbone hump.

A mighty stream of water flowed for several thousands of years through the area we now know as the Maquoketa valley that runs through the Backbone. Most of this water came from the melting ice of the glaciers and the gravel that washed through the stream bed assisted in carving a very deep, wide valley in the dolomite rock.

The Backbone is a narrow ridge standing out above the river valley like a great vertebral column of rock. It is the carving of the river that makes a horseshoe bend and returns in a parallel valley that leaves the odd Backbone formation.

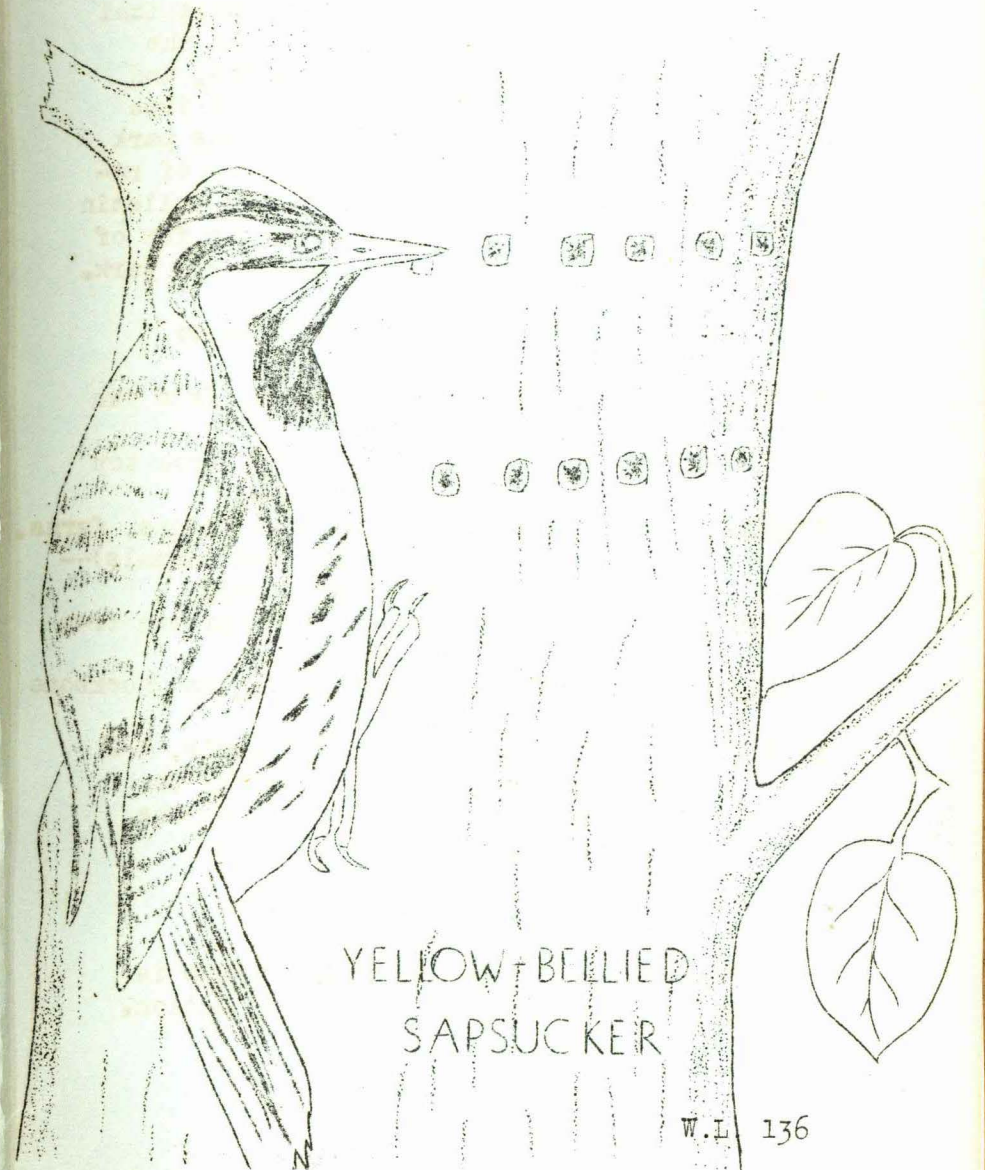
Though the glaciers sent their thaw waters through the park they never passed over the park proper. No granite boulders can be found in the park such as one finds on the low glaciated prairies. Instead the fine clay-like soil, called loess, was brought in by ancient dust storms and deposited on top of the rocks; the lack of boulders in this fine soil shows us that this was not brought in by the glacier.

Look at the wide valley of the Maquoketa and the height of its cliffs and try to think how long it would take 100 men to pile up the cement to equal the depth of the dolomite rocks and then try to feature how long it would take for the same 100 men to cut out the wide valley the full length of the park. We can not feature the time that nature spent in building and carving this northeastern Iowa beauty spot.

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V. 2 no. 4

BACKBONE NATURE NOTES



YELLOW-BELLIED
SAPSUCKER

W.L. 136

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-1-
NATURE NOTES

Vol. II July 15, 1940 No. 4

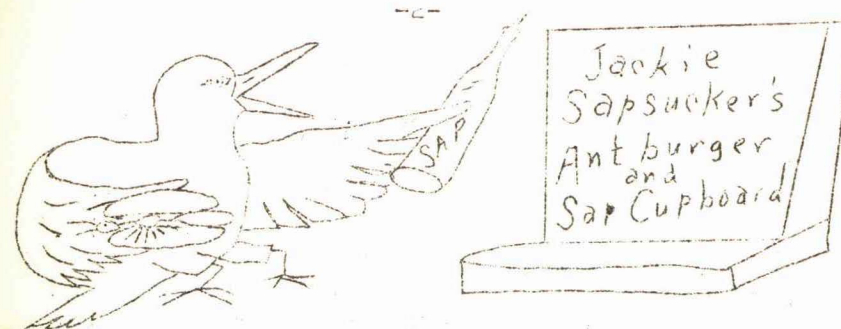
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Thursday July 18--8:30 P.M. a movie is scheduled showing nesting birds in action.



THE SAPSUCKER 'S SODA FOUNTAIN

Did you ever notice the rings of tiny holes encircling pine, maple, basswood, and cedar trees? It looks as if some small elfen driller had tried his drill bit on the trees. If you were present in the months of March, April, and May you would very likely see a medium-sized woodpecker drilling these holes or visiting them.

Just why does he do it? Evidently it is his "sweet tooth", for he drills the holes and returns to them repeatedly to suck the sweet sap that oozes out. He literally opens up a self-serving soda fountain so that he can continually "set 'em up" to himself.

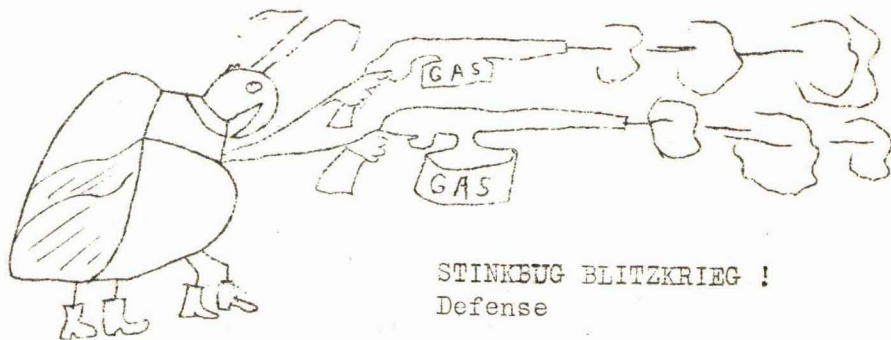
Not only does the sap attract the bird, but also numerous insects that have a "sweet tooth" also. Many ants and various insects come to the drill holes to feed and are easily captured by the sapsucker, so that he has a meal of spicy antburgers to go with his sap dessert.

MUMPS ?



Does the chipmunk have a chronic case of mumps? No! What you see are cheeks full of hazelnuts, acorns, hackberry seeds, or what have you.

Jimmy Chipmunk has pockets in his cheeks and like a small boy usually keeps them filled with all sorts of things. His manners are bad too. He tries to talk when his mouth is full.



STINKBUG BLITZKRIEG !
Defense

Phew! Who touched that three-cornered bug? Lest you didn't know it, that triangular-shaped fellow was a stink bug. Gas and chemical warfare are not new to him. When man, skunk, or bird attacks him he immediately fires two gas guns from the hip that are fed ammunition from a small tank-like gas magazine. It stops some of his enemies, but the skunk eats him anyway. Why should the skunk mind a little gas?

BACKBONE NATURE TRAILS

Many of the park visitors desire to know where to find the various trails and interesting features that Backbone has to offer. The following group of trails may be of interest to those wishing trail information.

BACKBONE RIDGE. A high dolomite rock ridge that stands as a narrow backbone or imaginary vertebral column 90 feet above two valleys in a loop of the Maquoketa River, Backbone Ridge is located near the center of the park. It is at the top of a ridge leading to the east park entrance and is distinctly labeled with a rustic "Backbone" sign.

The attractions on the Backbone Ridge are the Devil's stairway, Devil's Oven, and the Devil's Chimney. A fine view of the river valley scenery can be obtained from the heights.

Interesting plants on this trail include the native white pine and the chestnut oak.

The small, twisted red cedars growing from the dry rocks are remarkable for their age, some of them being over 300 years old. A large sycamore tree can be seen towering above the trees in the river valley to the west of the Devil's Stairway.

Along the trail passing the pine grove south to the loop in the river the hiker will see numerous maiden hair and lady ferns. If the trail on the east

side at the base of the bluffs is taken rattlesnake, walking, cliff brake, interrupted, cinnamon, bladder, and Christmas ferns may be seen. This same lower trail presents a showy array of the hepaticas, false rue anemones, columbines, and giant trilliums in season.

Across the lake from the lower trail a beaver house may be seen close to the east shore. Late in the summer the American egret and the great blue heron may be seen on the lagoon.

Most of the trees and interesting plants have been labeled for the nature trailers who visit the Backbone.

THE CATACOMBS TRAIL. For interesting ferns and plants this is one of the best trails in the park. It starts from the Maquoketa bridge near the north end of the central picnic grounds and follows a scenic course along the south bank of the river. The Catacombs may also be reached by following a trail leading down from the scenic overlook between the park lodge and the central picnic grounds.

The Catacombs are narrow aisles in the dolomite rock formed by erosion. They resemble, in a small way, the Catacombs of Rome; a group of ruined underground tombs famous as a retreat for the persecuted Christians of ancient Rome.

American yew and saxifrages, plants native to the Canadian wilds, grow here in abun-

dance where the cool, shaded, moist rock walls lend an environment similar to that of their native north country.

Phoebe nests are to be seen on the rock shelves in the Catacombs where rock projections form an awning over the nest. Following upstream on the trail below the Catacombs, raccoon and deer tracks may be seen in the sand and mud. Cut and fallen trees as large as 12 to 20 inches in diameter betray the work of beavers. Several beaver dams may be seen on the Maquoketa as the hiker follows the streamside trail.

LAMONT BRANCH NATURE TRAIL. This is a scenic trail from which a grand view of the Backbone Ridge can be had at a distance. It starts across the road from the park store and goes south almost to the Lamont Creek. Shooting stars, harevells, yellow puccoons, bracken ferns, bird's foot violets, liatris, and yellow gerardia flowers grow along this trail. Ovenbirds and whip-poor-wills frequent the leafy upland woods here. A return trail follows the river bottom, and on this return trail the few remaining ostrich ferns may be seen. In August the return trail is strikingly pink with large beds of Bouncing Bet blossoms.

SHARP CURVE TRAIL. On a bluff leading south of the road that makes a sharp bend near the fish hatchery is located the Sharp Curve Trail. It is significant because of the numerous club mosses that grow at the trail-side. Along the bluff tops a large bed of eagle ferns can be found.

RICHMOND SPRINGS TRAIL. At beautiful Richmond Springs starts this trail in the north end of the park. The springs are remarkable for their size and are the source of all of the water used in the State Trout Hatchery. A large sign tells the geologic history of the springs. The path above them passes through a grove of red cedars and then southward to the bluff above the cave. Late summer flowers such as the blazing stars and the gerardias are common along this trail.



A BIT OF PRAIRIE

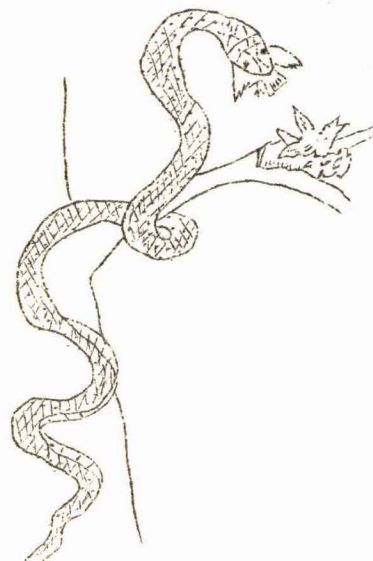
In the midst of the Backbone forest lands small bare places are found that remind us that we are in a prairie state. Backbone is not only a preserve for the forests but also a sanctuary for small fragments of the

vanishing prairie that has nearly disappeared with the advent of the plow.

On the Backbone and Lamont Branch Trails tall great blue stem and lesser blue stem grasses grow. Here and there the blue gramma grass may be seen. These grasses once formed a great waving grassy sea that abounded with buffalo and prairie chickens.

Other prairie plants of interest are the lead plant, rattlesnake master, prairie clover, and burr clover. Once familiar to all old timers they now are almost a novelty to our present generation.

SNAKES



Several kinds of snakes live in the region about Backbone Park. Though they are feared by many people, nearly all of them are harmless and some of them are very useful. Only one snake in northeast Iowa is to be feared; that one is the timber rattlesnake.

To our knowledge the timber rattler has not been seen in Backbone Park for over 20 years. One reason for the scarcity of "rattlers" in the Backbone region is the type of rock formation that exists. The tall, smooth-faced dolomite bluffs are not attractive as hibernation grounds and retreats for "rattlers" who prefer the true limestone hills whose rocks are full of crevices and stacked like brick masonry.

The large number of people visiting the park is not conducive to snake's well being so very few of any kind are found in the parts of the park frequented by the public. Those that may be encountered are the red-barred garter snake, fox snake, bull snake, black snake, and blue racer. All of these snakes except garter snakes lay leathery-shelled, capsule-shaped eggs. Garter snakes and rattle snakes' young are born alive.

The most valuable of our snakes is the bull snake whose chief diet consists of mice, rats, and ground squirrels. A few bull snakes have the bad habit of eating eggs when they can be found.

The black snake is of doubtful value and is much hated by bird lovers because of his ability to climb trees

and eat eggs and young birds in the nests. Since they eat a few small rodents they do in some manner compensate for their bad habits.

Fox snakes are sometimes called milk snakes because of a fictitious belief that they milk cows. This feat would be impossible since the needle-like teeth in the milk snake's mouth would not induce "Bossy" to stand still while being milked.

Blue racers are misunderstood and many believe them poisonous. They are harmless, but do have a mean disposition and strike savagely when cornered. Some blue racers will chase children and adults who run from them just as a turkey gobbler or rooster will sometimes do. The racer will run the other way just as fast when the pursued person stops, turns around, and runs in his direction. Now and then one who ranges in the woods may come upon a blue racer trying to swallow snakes nearly as large as himself. The writer once saw a three-foot blue racer swallow a two-foot garter snake.

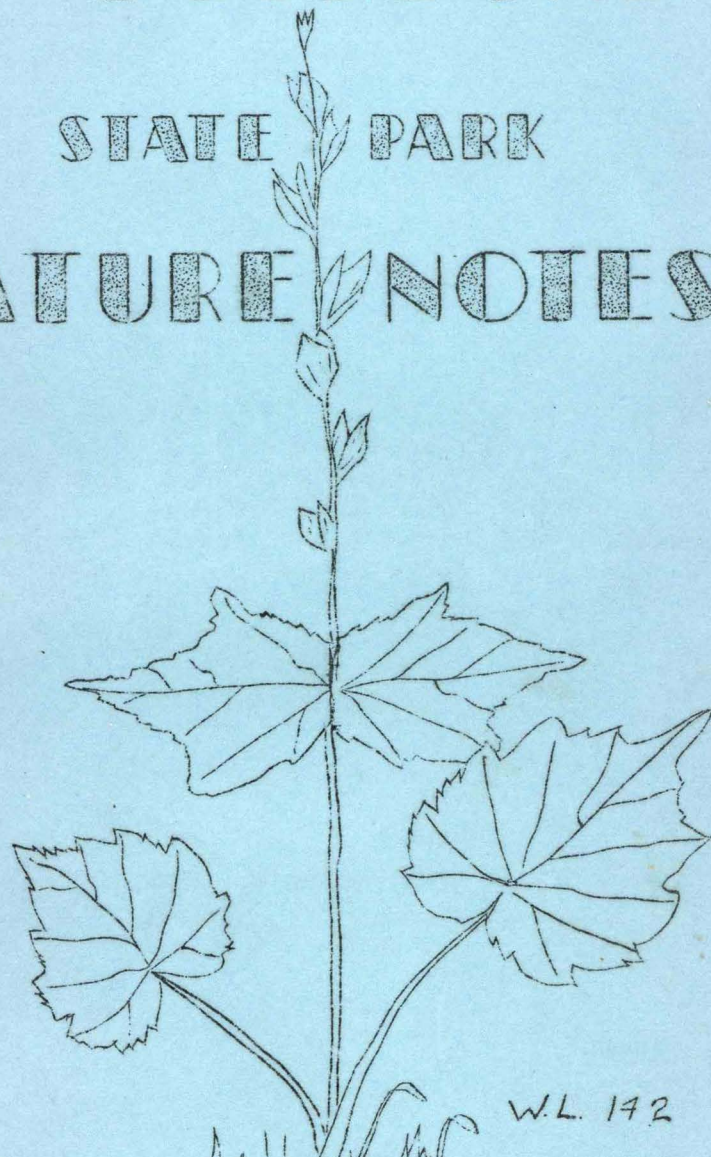
With the exception of the rattlesnake our northeast Iowa snakes are non-poisonous and are generally harmless. They are all relatively scarce now and should not be persecuted unless they are habitual egg eaters or are known to be destructive in fish ponds or other such places.

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BACKBONE

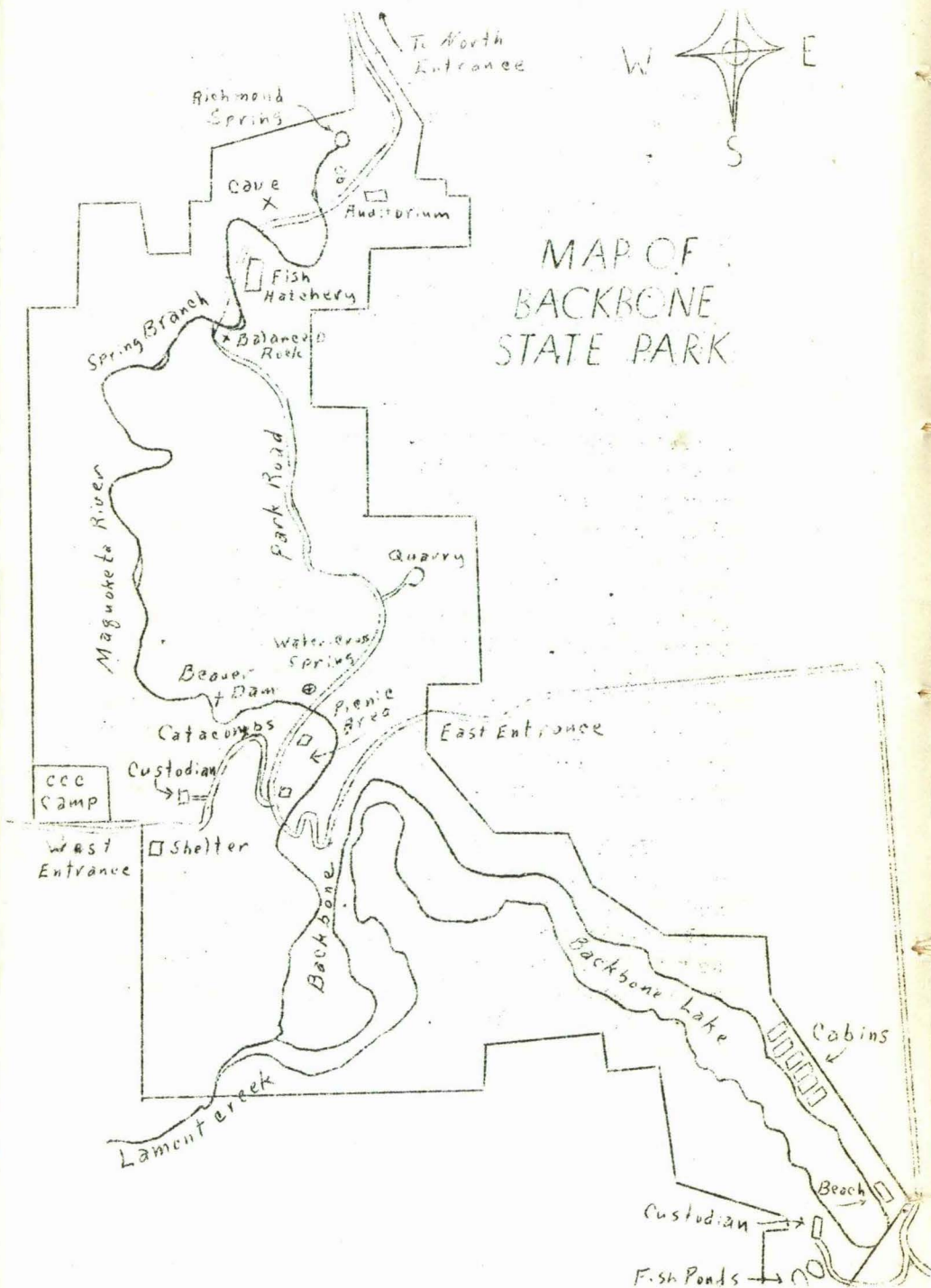
STATE PARK

NATURE NOTES



W.L. 142

BISHOP'S CAP OR MITERWORT



NATURE NOTES

Vol. 11

July 28, 1940

No. 5

THE NATURE GUIDE SERVICE IN BACKBONE

Backbone Park has an interesting geological history and an abundance of wild-life in the form of fishes, birds, mammals, insects, and plants. Self-guiding nature trails and free nature guide service are provided in the park for all who are interested in this form of recreation. An exhibit is placed at the bulletin board south of the park store showing a few of the interesting things to be found in the park.

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OUR FRIENDS THE BIRDS OF PREY

Few people seem to know that most of the hawks and owls are protected. Some persons even believed that a bounty was paid on eagles until a fine of fifty dollars was assessed them for shooting this bird.

The eagles is now rarely seen in interior Iowa. A few may be seen flying high over Backbone at rare intervals, and as many as fifty or more may be seen on the Mississippi River near the dam when the ice goes out. They feed chiefly on dead fish along the river and prey to a small extent on available birds and mammals. Some young livestock may be taken, but the birds are so scarce that records of such depredations are few.

One owl and two hawks are not protected in Iowa. They are the great horned owl, Cooper's hawk, and the sharp-shinned hawk. All are residents of the extensive woodlands. The great horned owl is as large as a full-grown chicken and is known to eat skunks and pheasants although the cottontail rabbit is its chief staple food. The Cooper's hawk and the sharp-shinned hawk are swift, slate blue, darting hawks that are seldom seen. They feed on many small and medium-sized birds and catch many young chickens near woodlots without the farmer even knowing that they are about.

The hawks most frequently seen and most easily shot are the large soaring hawks such as the red-tailed, red shouldered, and marsh hawks. They are easy targets as they sit exposed on prominent poles and dead tree-tops near a farm grove. If the farmer were aware of their value to him they would not receive such unwarranted persecution. Other innocents often shot for curiosity are the small screech owls and the long-winged short-eared owls of the marshes.

The food habits of the smaller owls and the soaring hawks have been studied by examination of pellets of bones, fur, and feathers regurgitated by the birds after the digestible part of the prey had been digested. Stomachs of shot birds were also

analyzed. The bulk of the food eaten by the useful hawks and owls has been found to consist chiefly of rats, mice, and ground squirrels, all of which cause damage of greater financial significance in the state of Iowa in one year than all of the poultry killed in the entire United States by all three of the harmful hawks and owls.

The wise guy who prides himself on displaying the broad-winged hawks on the fence and barn, spread eagle fashion, deserves a reprimand from his neighbors for assisting the propagation of rats, gophers, mice, and ground squirrels.

Mother Nature made the birds of prey for a purpose and man cannot improve upon that purpose. In trying to balance nature in his own way he often does much more harm than good.

LIFE IN THE PARK IN JULY

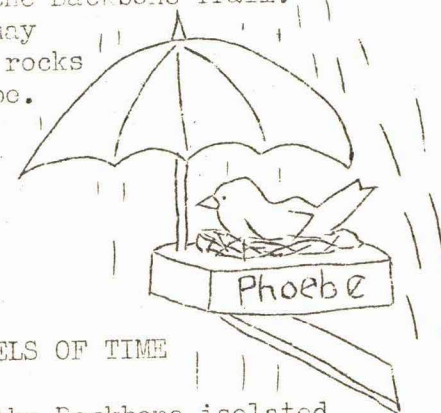
Ox-eye daisies, larkspur, coreopsis, and lead plants have come into bloom during the first week of this month.

Families of young animals present in the park include six young mink found along the Maquokets

River above the central picnic area. One of the little fellows died from injuries suffered while crossing the road near Watercross Spring. He was the victim of a driver who did not heed the 15 mile per hour speed limit.

A mother raccoon and several youngsters keep the dusty areas about the park store padded down with their large tracks.

Among the young birds leaving their nests early in July were red-eyed vireos, redstarts, towhees, and phoebes. The vireo nest may be seen along the trail leading south of the pine grove on the Backbone Trail. A phoebe nest may be seen in the rocks on the Catacombe.



SENTINELS OF TIME

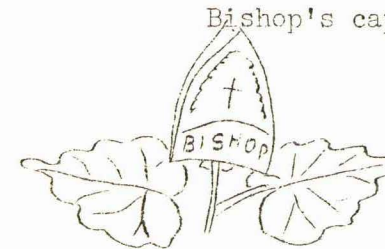
Throughout the Backbone isolated pines may be seen rising above the tops of the surrounding trees. Many of these old natives have seen the days when the Revolutionary War was fought. Some of the pines on the bare stony places grow slowly and

have a rough weather-beaten bark not seen on the fast-growing nursery pines planted on the glaciated soils of central Iowa. As with the human race, poverty makes for fertility among the pines. Transplanted pines on black fertile soils do not produce fertile cones and hence only one crop of pines can be grown. The old native pines on the high stony ledges that are starved for moisture and food, however, store enough of the life-giving elements to produce cones once in seven years. These cones are filled with fertile seeds capable of growing into a new generation of native Iowa pines.

A distant relative of the pines, the red cedar, also has stood sentinel for centuries on the Backbone Ridge. The oldest cedars are dry and weather-beaten. Their trunks are twisted and dwarfed. Their dry roots reach out over the surface of the rocks like the fingers of a skeleton attempting to reach the last drop of moisture in the shallow dolomite rock crevices. To all appearances the cedars are living ghosts; only the green fingertips of the upraised branches betray the spark of life that still remains. The oldest of these cedars have annual rings numbering well over 300, thus placing the date that the tree sprouted from a seed back to the year 1600 A. D.

NAMES

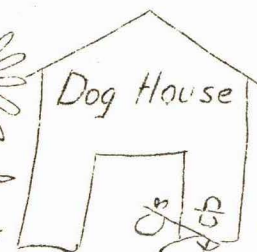
How do plants and animals get their names? Below are listed a few that we commonly know.



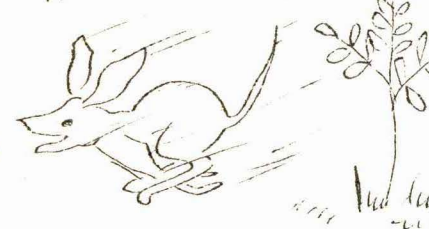
Bishop's cap or miterwort in a small saxifrage bearing an erect stem with seed pods that resemble the miter or cap of the bishops of various Christian churches.



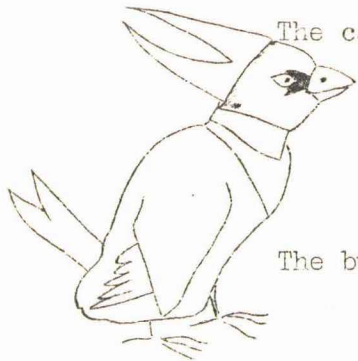
The indigo bunting is a bird that wears a blue coat the color of the indigo wash bluing.



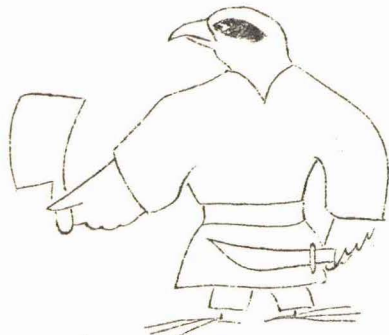
Fleabane is a small, ragged-looking daisy that was believed to be a bane to fleas. It was once thought that fleabane placed in a dog house would drive out the fleas.



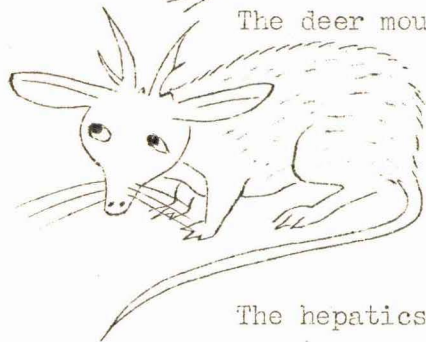
Dogbane is a plant despised by dogs. They are said to make a wide detour when approaching this red-stemmed milkweed-like plant.



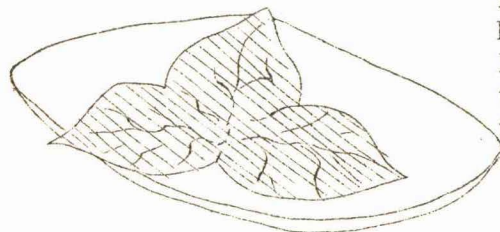
The cardinal is a bird wearing a bright red coat, the color of the robe worn by the cardinals of the Catholic Church.



The butcher bird is the name given the migrant skrike, the black, gray, and white bird of the roadside. He is adept at catching baby ground squirrels, mice, sparrows, grasshoppers, and snakes. After killing his prey he hangs it on a thorn or barbed wire fence to cure for future eating.



The deer mouse has large ears, pop eyes, fawn-colored fur on the back, and a white chin and stomach. this combination, along with its nervousness, makes this mouse comparable to the deer.



The hepatics or liver leaf gets its name from the Greek Hepatikes meaning liver. The leaves are the shape of a liver and turn liver colored in winter.

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