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Iowa Conservation Commission.  
Lacey-Keosauqua  
Nature Notes

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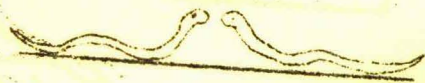


NATURE NOTES  
of  
Lacey-Keosauqua State Park

\* \* \* \*

"The Iowa State Conservation Commission, and the Works Progress Administration--Division of Recreation, in cooperation with the Iowa State College, present this circular for the information of the guests of Lacey-Keosauqua State Park.

"It is prepared for your information in order that the recreational and educational opportunities of an unspoiled primitive area may be more fully appreciated, utilized and protected."



Prepared by Richard F. Trump, Park Naturalist.

Illustrations by Lorene E. Trump.  
\* \* \* \*

June 15, 1940

## PARK PERSONALITIES

## A FEW FAMILIAR BIRDS

SINGER... "A hurried gush of silvery tremulous notes" is the song of the Lark Sparrow, according to C. A. Reed's BIRD GUIDE. But you don't have to believe it. Listen for yourself. There's a pair nesting on the golf course in the park, not far from the Lodge, and after hearing the song you can write a description for yourself.

The nest was discovered by workmen who ran over it with a mower; but no harm was done, and three hungry youngsters struggled out of the three white, dark-blotched eggs. The nest is on the ground, protected only by a single burdock plant that escaped the mower.

You can know the Lark Sparrow by its white-edged tail, its white and brown streaked head, and the dark spot at the center of its breast. It is the size of the common English Sparrow.

WALKER... Another tenant of the golf course is the Prairie Horned Lark. Instead of hopping, as the sparrows do, it walks. The little erectile feathers called horns are not easily seen, but you'll have no trouble observing the dark throat patch and the brown mask just below its eye.

This particular nest has even less protection than that of the Lark Sparrow, and to date (June 11) the eggs have not hatched. There are three of them, dull and speckled so that they match the surroundings very well.

FLYCATCHER... There are many places in the park where you may hear the plaintive cry of the Wood Pewee, but one of the best places to see the bird is in front of the bathhouse, where you stand to look down at the Lake.

A nest must be near, for one of the adult Pewees is frequently perched on a dead twig of one of the oaks. A true flycatcher, it almost always returns to the same perch after flying off to snare an insect from the air.



# MANDRAKE LORE

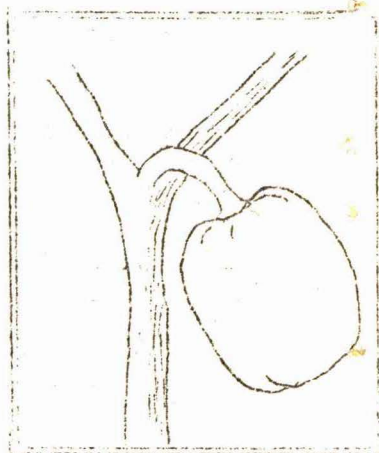
The information in this article was taken in part from a mimeographed pamphlet written by Dr. J. N. Martin, Botany Department, Iowa State College

Whether you call it a May apple, a mandrake, wild lemon, raccoon apple, wild jalop, or *Podophyllum peltatum*, it is the same interesting plant that you see along the shaded trails of Lacey-Keosauqua.

Besides having important uses of its own, it has absorbed some of the strange folklore of the European mandrake-- which actually belongs to an entirely different family. In the Middle Ages the European species was considered so potent that there were special directions for obtaining the curative roots. The collector was to approach the plant only at night, dig cautiously around the roots, then tie a hungry dog to the stem. When a bone was tossed just out of the dog's reach, the plant would be pulled out by the roots-- but the dog, if we can believe what they believed, would promptly die!

Our own mandrake is not quite so dangerous. In fact, the United States Dispensatory devotes considerable space to the medical uses of podophyllin, obtained from the underground stems called rhizomes.

Farther east, where May apples are even more plen-

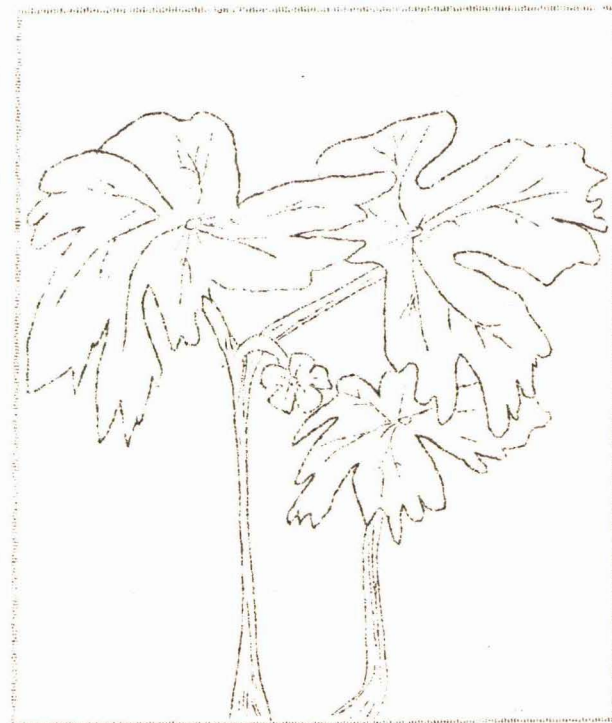


Watch for the ripening of the Mandrake fruits. On May 15 the flowers were out; on June 15 the fruits were about half grown

tiful than in Iowa, tons and tons of the rhizomes and roots are dug up for the extraction of podophyllin. Taken properly, it is a mild cathartic, but before its use was standardized in commercial preparations, it sometimes sickened the patient. In 1890 a lady 60 years old died from an overdose.

Dr. Martin states that if pastured too heavily on mandrakes, sheep may be poisoned; but this is a rare occurrence, at least in this region.

The mandrake rhizomes, interlacing the forest soil, send out shoots from their buds just as aerial stems of other plants do. Because of this underground spreading, you generally find whole gardens of May apples, in fairly dense stands. The plants may reproduce also from the seeds, but growth of the seedling is very slow. According to Dr. Martin it is about six years old before it produces flowers.



Seedling Mandrakes or May Apples grow slowly, requiring about six years to reach the flowering stage. They reproduce also by sprouts from the long underground stems.

(Continued on page 8)



## FIVE BLACK CROWS

Their family name is Corvidae.

But for short you can call them *Corvus brachyrhynchos brachyrhynchos*!



Keokuk, April 21. While hunting snakes for a Conservation Club exhibit we noticed a large fresh nest in tall hickory. I climbed and found five greenish eggs blotched with brown. Returned today for a snapshot, and hope to get more observations later. Though I didn't see the adults, it is doubtless a crow's nest.

May 4. I climbed the hickory for another look at the eggs, but found five cavernous mouths focused on me. Prepped myself in a crotch and took a couple of snapshots.

The old ones were cawing in alarm before I was half way across the golf course, fully a quarter of a mile from the nest. Did they know I wasn't a golfer? Leaving, I noticed there were three adults to see me off, so they must have drafted aid from some of their neighbors. But they have apparently learned that it doesn't pay to attack two-legged enemies.

May 8. In spite of the fact that the adults spend a good deal of their time cawing at me from a safe quarter mile distance, the fledglings grow. This evening I approached from the south and found two adults on fence posts several hundred yards from the nest. As I came closer they flew into the woods, apparently cawing all their friends into a vigilant attitude.

While I was arranging a fastener for my camera,

one of the little blackbirds tried to swallow a piece of cord twelve feet long, and I snapped him in the act. Finally arranged the camera on another hickory about ten feet away, and hope to pull the shutter with a thread while the parents are at the nest.

It was very kind of the crows to build in a hickory, which leafs out late, while other trees would now begin to shade the nest, making photography difficult.

May 11. After focusing the camera last evening, we built a rough blind of dead limbs and buck-brush. Then before six this morning we returned to try for a picture of the adults.

The rascals greeted us with caws and flew off to the deeper timber.

Hoping the crows would not be able to count, I left Lorene in the blind and walked down

to the creek. They apparently saw me leave but would not return to the nest.

Before leaving, I banded the fledglings, which look as if they will soon outgrow their nest. The bands, furnished by the U. S. Bureau of Biological Survey, are numbered and bear the return of the survey. If found, they will reveal something about the length of life and the travels of the family.

May 19. When I climbed to the crow's nest today, one of the young excitedly jumped from the nest and flopped

"The nestling crow requires about 10 ounces of food per day, or about 13 1/8 pounds for its nestling life of two weeks. At the end of that time it will weigh about a pound. During this period it will have eaten two and a quarter times its own weight of May beetles. The grasshoppers it has eaten would, if combined, form a mammoth insect about twice the size of the bird. Wild birds and poultry would each form a mass about a fifth of the crow's weight and corn about one and one-half times its mass." Other food items include small mammals, spiders, caterpillars, amphibians, crustaceans, and carrion.

...T. Gilbert Pearson  
Jan. 1933, National Geographic



heavily to the ground. Its wings served only to break the force of the fall. Rather than risk carrying it back up the tree, I brought it to the laboratory and am now feeding it on hamburger.

Incidentally, the crows in the nest no longer beg with open mouths when I approach, but stare at me with a hint of suspicion in their eyes.

At first it was necessary to open the captive's mouth forcibly and poke the food down its throat with a spatula. But the next day I introduced it to our stuffed crow from the museum. Then it (the live one) promptly opened its mouth and cawed loudly. I slipped in a spatula full of hamburger which I had ready.

May 29. Left the cage door open today, and when I returned Corvie-- as it was dubbed by one of the students-- was in the four-inch deep aquarium, enjoying a bath. He (or she???) went through all the bathing motions I've noticed in adult robins and jays, occasionally pausing for a drink.

Several times previously we have poked the end of a glass funnel into Corvie's begging mouth and poured a little water down. After this he always tilted his head several times while his throat made swallowing movements.

May 30. Having read that the young crow's diet gradually shifts to include more plant food, I've fed Corvie canned dog food for the last week. It goes down very well-- in vast quantities! But in spite of our attempts at training him to eat alone, he must still be fed by hand. If his beak is thrust forcibly into the food, he merely jerks back and wipes his beak on the side of the cage.

Corvie always backs to the edge of the cage before passing any waste, which explains why that nest in the hickory was so clean. Sometimes, bumping into the side of the cage, he turns and backs in the other direction. I'm wondering how the crows in the nest know the stopping place as they back to the edge of the nest.

In about a week now, one black crow will start into the world "on his own", wearing on his leg a small band, number 39-519799.

# MORE ABOUT MANDRAKES (See page 4)

Later in the summer, probably by the middle of August, the stems and leaves of the May apple will begin to wilt. Gradually they die down and disappear entirely. Underground, however, the stems and roots remain alive, and they are charged with the responsibility of starting new growth the following spring. To this end they are filled with food that was manufactured by the leaves and sent underground for storage.

Part of the food manufactured by the leaves is stored in another way, but for the same purpose: It is stored in the fruit and seeds, so that entirely new plants may be started.

Two questions are almost invariably asked when a plant is pointed out along the trail: "Is it poisonous?" and "Is it good to eat?" The poisonous properties of the mandrake have already been discussed, and you'll have to be your own judge about eating the fruit. It's a little like olives, spinach, and sardines. Either you like them very much or you very much don't! The flavor is very distinct and individual, so you are not likely to be neutral about it.

Having tasted it himself, the Naturalist is not afraid that the park's supply of May apples will be exhausted by hungry hikers.

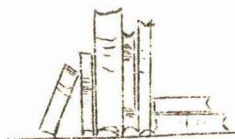
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## WHAT DO YOU KNOW ABOUT 'CHUCKS?

We've spent considerable time watching the local ground-hogs or woodchucks. Much is known about these common rodents, but there is still much to learn. How many dens does one 'chuck dig in a season? How does he, and she, care for the young? How far do they travel? How can they be captured alive and marked? .....Any ideas?



## A HALF-MINUTE ON BOOKS



DOWN TO EARTH by Alan Devoe, published by Coward-McCann, \$2.50.

The sub-title of this new book on the outdoors is "A Naturalist Looks About", and in it you read of everything from skunks and snakes to oysters and tigers. Although characterized by vivid descriptions that actually take you down to earth, there are sections with appeal for those interested in curious scientific facts. Here are two paragraphs from this chapter, "Drifts of the Air".

"It is necessary that birds preen themselves in order that their feathers be kept clean and in order that they be proofed against the weather. Just above the root of the bird's tails there is a tiny gland. It is a storage sac of oil. To preen themselves, birds press the gland with their beaks, forcing out an oil droplet, and then with their beaks spread the oil among their feathers, cleaning out the dust and distributing an even thin protective covering. It is by virtue of this oil-proofing

that they can fly in the rain without their flight feathers becoming water-soaked, and that the juncos and nuthatches and tree sparrows of winter are protected against infiltration of snow.

"The way of birds' singing is this: Their windpipes, connecting with the lungs, are forked; a branch goes to each lung. Just at the point where the windpipe divides there occurs a considerable enlargement. This is the syrinx, and it is the organ of their singing. There is a valve in the syrinx, a valve which flutters and vibrates when air is forced from the lungs. There are muscles whereby birds can tighten the syrinx valves, and can accordingly regulate the number of vibrations. As the number of vibrations is controlled, the pitch of the issuing sound is regulated."

## FORECAST

### SCHEDULE OF HIKES

#### SUNDAYS...

2:00 o'clock. Meet at the East Shelter (nearest the bridge) for a hike down the River Trail. The length of the hike will be arranged to suit your taste.

3:30 o'clock. Meet at the Bathhouse for a hike around (or part way around) the lake. If you haven't walked this trail, you've missed a fine chance to see plants, birds, and other wildlife.

#### OTHER DAYS...

Special hikes and programs may be arranged by any group or individual interested in the Park Naturalist's activities. Call Richard Trump, number 197-A at Keosauqua.

#### GUEST LEADERS...

On many of the Sunday hikes guest leaders will aid in pointing out interesting natural features in the park and in answering questions. Tentative plans include the appearance of Mr. W. D. Crabb of Iowa State College, specialist in mammals, for June 23; and on June 30 Dr. J. N. Martin, Iowa State College botanist plans to be here. Watch the papers for exact details.

#### HOW MUCH DOES IT COST???

Nothing! All services of the Park Naturalist are free, including special hikes and programs as well as those that are regularly scheduled.



V. 2 no. 2

IOWA STATE TRAVELING LIBRARY  
Des Moines, Iowa

# LACEY - KEOSAUQUA NATURE NOTES



Keosauqua, Iowa July 1, 1940

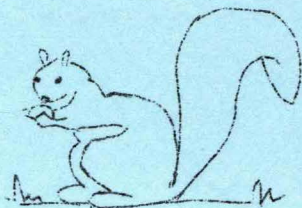


NATURE NOTES  
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Prepared by Richard F. Trump, Park Naturalist

Illustrations by Lorene E. Trump

\* \* \* \* \*

July 1, 1940

W.L. 130

BIRDS THAT <sup>-2-</sup>KILL TO LIVE

Just before sunlight brightened the corner of the meadow at Ely's Ford, I heard the desperate flutter of a mourning dove's wings. I looked up in time to see it disappear into the safer cover of the woods. A woodchuck that had been feeding cautiously in the meadow rose momentarily to a sitting position, then scrambled for the thickets. The red-tailed hawk flapped heavily to the bor-

In a sense all birds kill to live. The mourning dove, picking up waste grain from the field, is killing embryonic wheat plants. The woodpecker of the orchard is killing the larvae of boring beetles. The yellow-billed cuckoo devours woolly caterpillars that feed on the walnut leaves.

Strictly, then, these birds are predators. Why has man marked for special persecution certain birds that are large and feed on larger forms of life? This article is about the destiny of a few of these birds.

der of the woods and perched on a jutting limb. Several Baltimore Orioles dashed fretfully at the intruder. But after scanning the meadow with his keen eyes, the predator flew again, and with a thin squealing whistle was off in search of better hunting grounds.

In another place and another time, there might have been someone ready with a gun, and that hawk would have died with lead in its breast. There would have been no particular reason, but no particular reason is necessary. The bird was large. It might be dangerous. It might eat a bird or kill someone's chicken. And then, the bird was an easy shot--slow-flying, with wide wing-spread--so

(Continued on page 7)



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## TIPS ON POISON IVY



If you'd like a first class case of poison ivy, just take these tips from M. L. Jones, Chief Naturalist for the Iowa State Parks:

1. Don't bother to stay on the trails; poison ivy doesn't grow there.
2. Pick all the flowers you can find that are associated with 3-leaved plants. (It's not legal, but you will receive punishment by due process of natural law.)
3. Wear peck-a-boo shoes and no socks (Ivy likes ankles).
4. Play Tarzan on a poison ivy vine and then wipe the perspiration from your brow with your bare hands.
5. If blisters begin to itch a day or so after a hike, scratch vigorously. This is guaranteed to spread it all over your body.



!!!!!!!!!!!!!!!!!!!!!!!!!!!!

After taking all this friendly advice, you'll want to know what to do next. Friends can give you cures by the car-load, but if none of them work, here is a treatment found dependable after a great many trials throughout the country: Ask your druggist to mix alcohol and water, half and half, and then add iron chloride until he has a five percent solution. Bathe the affected parts.

This solution is said to be effective also in preventing poisoning if applied to the skin before you go to the woods.

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## TO MAKE A LONG STORY SHORT

W. Ray Salt, Canadian naturalist, who has banded a great many hawks and owls: "I don't think there is enough bad in any species to warrant its extermination. For individuals, yes, especially in the human race; but the species, no!"

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W. C. Lowdermilk of the Soil Conservation Service, concerning man-made deserts: "Gullies started which swept boulders and debris down onto the fertile lowlands. The streams had gradually dried up. Thus the forests were gone; the streams were gone; the soils were gone; and when the soils go, man either starves or migrates to other regions."

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The late J. E. Guthrie in THE SNAKES OF IOWA: "The fact that a snake rattles does not necessarily prove it a rattlesnake. Many snakes, such as the fox-snake and bull-snake, vibrate the tail violently when excited, and thus produce a very realistic rattle when in contact with a board or among dry leaves or in the sand. A rattlesnake alone has rattles on its tail."

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R. F. Hammatt of the U. S. Forest Service: "Wood in some form enters into most daily lives, from the cradle to the grave. Births and deaths are published in newspapers that, in the U.S., require close to 4,500,000 cords of pulpwood annually for their manufacture."

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# KNOW YOUR HAWKS

I. BUTEO HAWKS: Large size; short wide tail; wide wings. Slow fliers, often soaring high in air in wide circles. Rather tame, perching in plain sight on open limbs.

1. Red-tailed hawk--Largest, heaviest hawk common here. Dark streaks on belly. Adults are red on upper side of tail.

2. Red-shouldered hawk--A little slimmer than the Red-tailed. Dark bands across under side of tail. No streaks on belly, except on young.

II. ACCIPITER HAWKS: Smaller size; long tail, plainly banded beneath; short blunt wings. Don't soar, but fly by alternate flapping and gliding. Generally perch in cover of woods, and fly rapidly after their prey.

1. Sharp-shinned hawk--About the size of a dove. Has a square-tipped tail.

2. Cooper's hawk--A bit larger than the Sharp-shinned, and its tail is rounded at tip.

III. FALCONS: Small size; long pointed wings; long tail. Flight with rapid wing-beats.

1. Sparrow hawk--Slightly larger than Robin. Red tail (Note that this bird is much smaller than the Buteo with the red tail). Seen commonly along roads. Hovers in the air in one place while hunting.

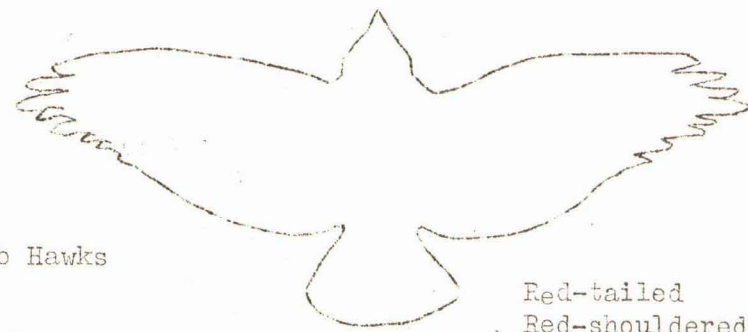
2. The Duck Hawk, a good deal larger than the Sparrow hawk, is no longer seen in Iowa.

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Whose hawk?...The next time you talk with a fellow who considers it his duty to shoot hawks, ask him whose hawk he is killing. Does he know what kind it is before he shoots? Does he know what it eats?...See the article beginning on page 2.

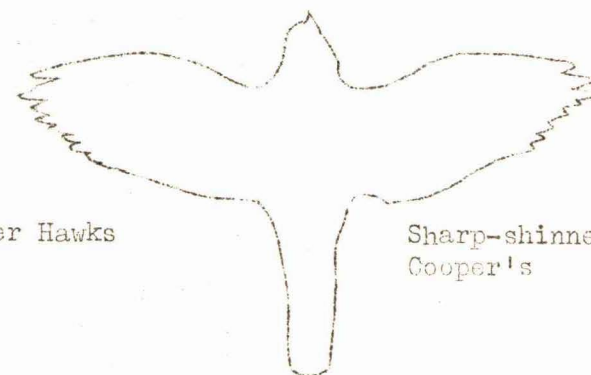
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## I. Buteo Hawks



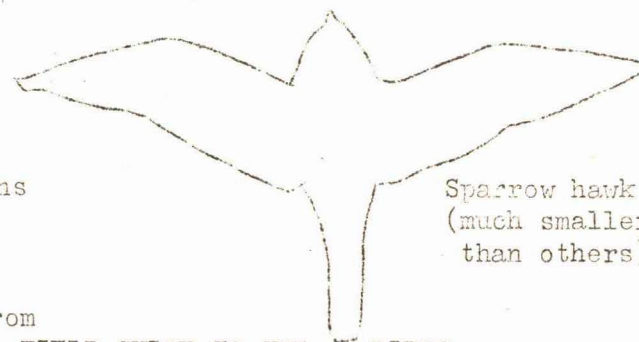
Red-tailed  
Red-shouldered

## II. Accipiter Hawks



Sharp-shinned  
Cooper's

## III. Falcons



Sparrow hawk  
(much smaller  
than others)

(Sketches from  
Peterson - A FIELD GUIDE TO THE BIRDS.



why not shoot?

To satisfy my curiosity later in the day, I reexamined the information furnished by the U. S. Department of Agriculture. Having tabulated the stomach contents of well over 5,000 hawks which have been sent to Washington in the last half century, the U.S. D. A. does not have to guess about the diet of hawks.

For the red-tailed predator that had frightened the dove and woodchuck, and annoyed the orioles, I found the following figures: Rats and mice, 55%; insects, 10.5%; rabbits, etc., 9.3%; small birds, 9.2%; poultry, 6.3%; and other miscellaneous food, 9.7%. So the chances are high that my early morning hunter was looking for mice!

For another buteo hawk, the red-shouldered, there was a somewhat similar record, though its diet included three times as many insects, fewer rats and mice, more frogs, and such a small amount of poultry that this item was not in the graph.

At first thought the records of the accipiter hawks not so clear. Both the Cooper's and the sharp-shinned take numerous birds, the first eating 55% small birds, and the latter 96.4% small birds. But the experts in game management and predator control have several things to say about the effects of these bird-eating hawks. One is that they take chiefly the diseased, underfed, or crippled birds which actually should be destroyed. If allowed to live, they spread disease or reproduce more weaklings.

Another thing the game managers argue is that nature is bountiful and provides for the accipiters' appetites. For example, in that quail's nest along the Woods Trail there were eleven eggs. The number is often greater than this, but if each pair of adult quails reared only one brood of eleven, there would be over five times as many quails next fall as there are now.

What then? The amount of protective cover of brush

and the amount of food available would not support them through the winter. With the severe competition for food and shelter, great numbers would die of starvation, disease, or exposure. And so, according to the biologists, the predators are useful, maintaining a healthy population of small birds which the land can support.

The value of the big buteos is even more obvious. Dr. T. E. Musselman points out that if a red-tailed hawk were to eat only one rat each week, and if each rat des-

TRIBUTE TO A MAN WITH AN OPEN MIND:

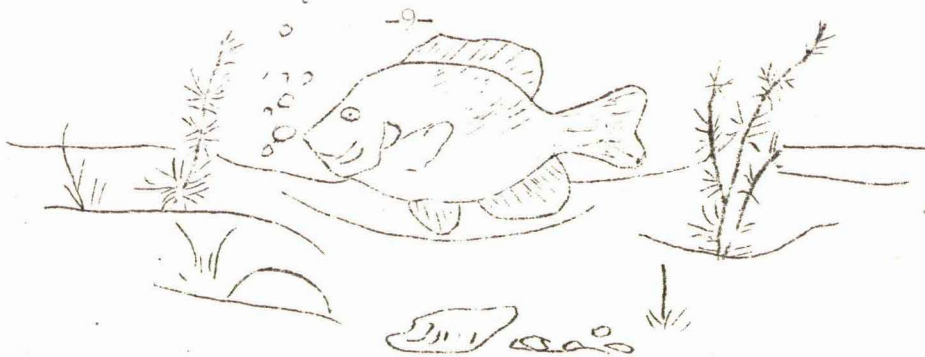
When Mr. Boone Long of Keosauqua wanted to know what the great horned owl eats, he captured a family of the young owls, put them in a cage with slats wide enough that the parents could still feed them, and watched the results. Although the diet of these birds might not be typical of all members of the species, Mr. Long found not a single feathered victim up to the time the young were full grown, when he released them.

troys one bushel of corn per year, then at a price of 50¢ per bushel, the hawk is worth \$26 per year on a rat basis alone. Actually it destroys many other harmful rodents.

The little sparrow hawk so common along the roads is, of course, misnamed. It might better have been called the grasshopper hawk, for over half its food is insect life, and the remainder mostly rats and mice. For that matter, most of our hawks are misnamed: They are all called "chicken hawks." Observers say that hawks are far more likely to eat a dead chicken, thrown into the field instead of being buried, than they are to take a live one.

And so, after my brief investigation, I've decided that a chicken hawk is any big bird that a gunner can hit but can't identify!





## PARK PERSONALITIES

**FIGHTER...**Hikers along the Lake a few weeks ago saw the blue-gill sunfishes guarding their nests in the shallow water. Along the beach especially there were dozens of little craters in the sand, the largest about a foot across. And in each crater a male blue-gill pugnaciously guarded the eggs layed there by the female. If frightened away, he always came back--to the same nest. His work serves not only to keep other fish from intruding, but also it is probable that the constant fanning of his fins helps to keep fresh water, with a good supply of oxygen, flowing over the eggs.

**LIVING FOSSIL...**Another jealous guardian of the nest is the common dogfish or bowfin, found in the Des Moines River. This is the only surviving species of a whole family of fishes that lived thousands of years ago. Zoologists suggest that the male bowfin's unusual care of the eggs and young may have helped the species survive. Another advantage over most other fishes is the bowfin's large lung-like air bladder, through which it can take part of its oxygen directly from the air. It can live several hours out of water.

**FISH-FEEDER...**The gizzard shad or skipjack of the Des Moines is mostly bones and is ignored by fisherman. It is decidedly useful because it feeds on tiny plants, and in turn becomes important food for the more highly prized meat-eating fishes without taking any of their food.

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## FORECAST

### SUNDAYS...

2:00. Settle your picnic lunch by a short hike down the River Trail. Meet at the East Shelter--the one nearest the bridge.

3:00. Prepare for your evening picnic with a hike on the Lake Trail. Meet at the Bathhouse.

### OTHER DAYS...

Special hikes and programs may be arranged by any group or individual interested in the Park Naturalist's activities. See the custodian, W. R. Chastain, or call Richard Trump, 197-A.

### OTHER GUIDES...

Guest leaders are being featured on some of the Sunday hikes. Watch the papers for details.

### PRIVATE...

If you prefer to hike without a guide, but are still interested in natural history, try the trail around the Lake and the River Trail between the Lodge and the West Shelter. They are marked with quiz-labels and signs pointing out some features that most people miss.

### IT'S STILL FREE...

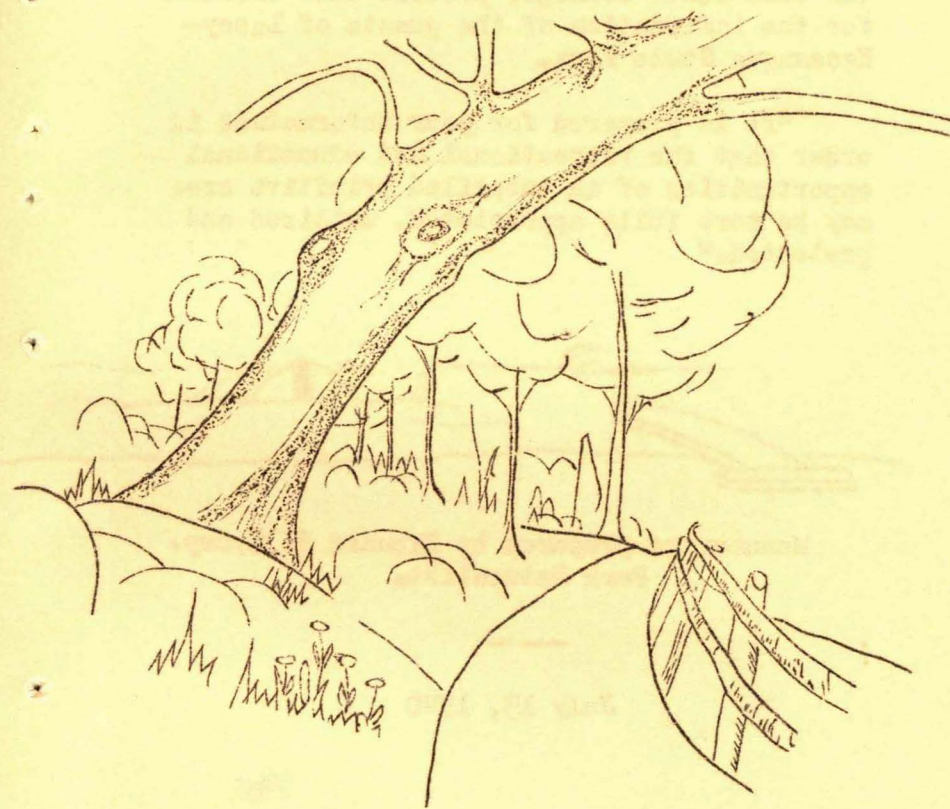
Despite numerous announcements, visitors continue to ask how much it costs to go on the nature hikes or to arrange special programs in conservation or nature study. There is no charge.



V. 2 no. 3

IOWA STATE TRAVELING LIBRARY  
Des Moines, Iowa

LACEY - KEOSAUQUA  
NATURE  
NOTES



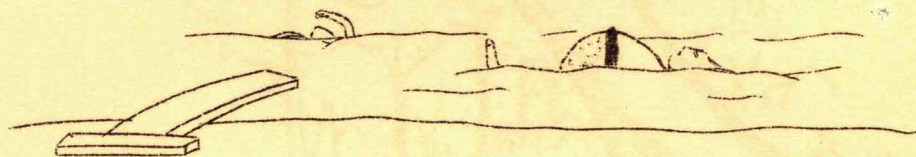
W.L. 134



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Manuscript prepared by Richard F. Trump.  
Park Naturalist.

July 15, 1940

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SNAP-SHOT RULES

The Keosauqua Commercial Club, in cooperation with the Park Naturalist, is sponsoring a photography contest. Read these rules, then get out your camera!

1. All entries must be pictures taken in Lacey-Keosauqua State Park.
2. Any amateur photographer not employed by the Iowa State Conservation Commission is eligible for awards.
3. There is no limit to the number of pictures that may be entered by one contestant.
4. Each picture must have written on the back the title, but NOT the name of the contestant.
5. The name and address of the contestant, together with the titles of his or her pictures, must be enclosed in a SEPARATE sealed envelope which will not be opened until the winning entries have been selected by the judges.
6. Pictures may be of any interesting feature in the park: plants, animals, scenery, people, etc.
7. Prizes, which will be announced in the next issue of this bulletin and also in newspapers of this region, will be furnished by Keosauqua merchants. (From comments of members of the Commercial Club, you can be certain that the prizes will be worth shooting at!)
8. All entries must be submitted to the Park Naturalist, Richard F. Trump, or to the Park Custodian, W. R. Chastain, on or before August 20, 1940. All prints entered in the contest become the property of Lacey-Keosauqua State Park, and will be retained in an album at the Lodge.
9. Prints may be enlargements but must not be larger than 5 by 7 inches. (Continues on page 6.)



- 3 -  
IT'S A SPREAD-HEAD!

Probably all groups of animal life have at least one member that bluffs its way through the world. Among snakes the chief contender for the title of best bluff is the dreaded Spread-head. You may prefer to call it a Puff Adder, Spreading Viper, Blowing Viper, Sand Viper, or any of its other nick-names, but still it is a bluff.

In most snake books you'll find this reptile called the hog-nosed snake, a name which it gets from its turned up snout, with which it burrows through the sand and loose earth.

Something was evidently wrong with nature's plan when this harmless reptile was given such a ferocious appearance and terrifying disposition; for wherever the Puff Adder squirms its way it makes enemies and suffers accordingly. Mostly from man!

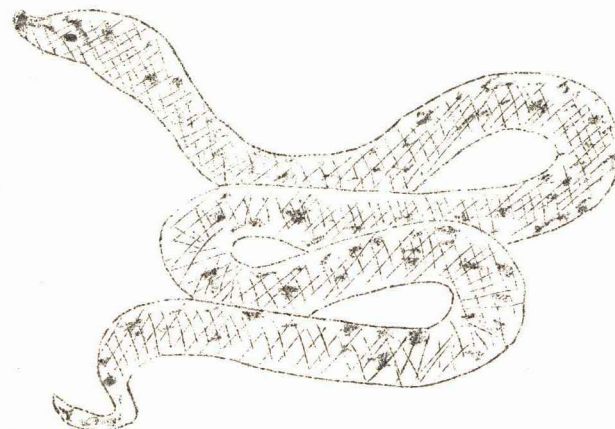
Last summer a large specimen was killed near the Keesauqua post office. If it had slithered off into the grass, as a Garter Snake or a Blue Racer would have done, it might have been safe. But instead it held its ground and pretended to fight.

The largest Hog-nosed Snake I have ever seen was brought to the biology laboratory at Keokuk by a student, and we kept it there as a pet for several weeks. When someone approached the cage the reptile's head would flatten out in Cobra style, and it would hiss loudly. We often handled it, and when someone reached into the cage it sometimes drew back its head and struck viciously. But as far as I observed, its head never quite reached the person's hand, and its mouth was never opened! Many of the students played with this snake, and although all of them were duly threatened, no one was ever bitten.

The experience of thousands of generations of the Spreading Viper has in some way taught it that there is

- 4 -  
no point in striking with the mouth open: it has no poison, no fangs.

If the fighting bluff doesn't work, the snake has another trick under its scales. It can play dead. In this performance it opens its jaws wide, froths at the mouth and goes through a frightful series of writhing death agonies. Turning on its back, it wiggles what appears to be its



last wiggle, then is quiet. If not bothered it will revive after a while and crawl away. But if while it is still "dead" you turn it right side up, it will promptly turn on its back again. You can't fool the Puff Adder; it knows the proper position of a dead snake!

Once when our pet played the dying act, we dumped it into a trough of water, expecting that the shock would make it change its tactics. But while a "live" Spread-head floats high on the water, this one sank slowly to the bottom. The only change we noticed was that its jaws gradually relaxed until its mouth was opened only about an inch. Thirteen minutes later it was still on its back, completely  
(Continued on page 8.)





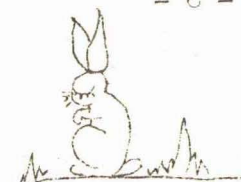
## GET YOUR PICTURE

A few good pictures are accidents. But the great majority come from practicing a few sound rules which you can apply with your own camera. Read about the contest on page 2.

Experts advise that to begin with you put a film in your camera, roll it to the first exposure, take your picture, then roll the film to the next exposure. There's no use trying to get two good pictures on one section of film!

Try to judge the proper exposure. If you have an exposure meter, fine. If not, remember that the brighter the light the shorter the exposure. If your camera has only one shutter speed, you'll have to confine your shots to average lighting or else use time exposure. It is possible of course to use film of different sensitivity. On most cameras with an adjustable shutter speed (1/50 second, 1/100 second, etc.), it is also possible to regulate the size of the opening through which light enters. This controls the amount of light which enters in a given time, and it is well to remember that for a large opening of the diaphragm, you don't need as long an exposure as for a small opening. If you don't understand the diaphragm arrangement on your camera, talk to your dealer. He'll show you what's what.

Many kinds of pictures are far more interesting if you can get a close-up. So it's a good idea to find by experimenting just how near the object you can get and still have the picture in focus. On cameras without an adjustment for focusing, about six feet is generally the limit. But with an adjustable focus you may be able to get within four feet. By adding a "portrait lens" costing around 75¢ you can get closer yet.



And then there is another little trick that will help in focusing. It is well known that with a small opening of the diaphragm you have greater depth of focus than when the diaphragm is opened wide. For example, with a large opening (say f6.3 or f8) you measure your distance carefully or the picture will be blurred. But with a small opening of f22 or f32 you can move closer to the object or farther away, yet still have the image in sharp focus. So if you want a close up of a rabbit, and your camera focuses no closer than five feet, set the diaphragm for a small opening, and try it at a distance of three or four feet. For a small opening you'll of course need slower shutter speed or brighter light.

WHERE TO POINT YOUR CAMERA...Candid shots of your friends, and scenery (especially with people included), are always interesting. But why not try something different? Find that place along the Woods Trail where the quail come every morning for a dust bath. Set up your camera, pointed in the proper direction, tie a thread to trigger, and wait in the bushes....Set up your camera in some clearing, fix a temporary blind, and bait those big turkey buzzards to a dead animal which you've placed within the aim of the camera....locate a well-used ground hog den, fasten your camera solidly, and fix a thread across his path so he takes his own picture; ground hogs come out as early as four in the afternoon and as late as nine in the morning; sometimes they are out at noon...If you'd like to go snap-shooting in the park, the Naturalist would be very glad to go along!

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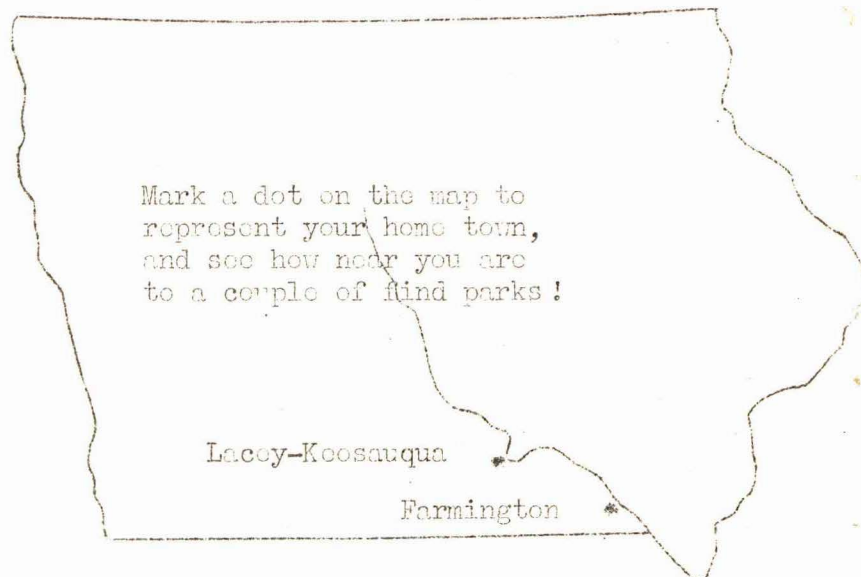
SNAP-SHOT RULES (continued from page 2)

10. All entries will be judged by a committee selected by the Keosauqua Commercial Club.



## ANOTHER FINE PARK

We visited recently in our neighboring State Park at Farmington. It has much that is worth seeing. The outstanding feature is the lake, formerly an area of back-



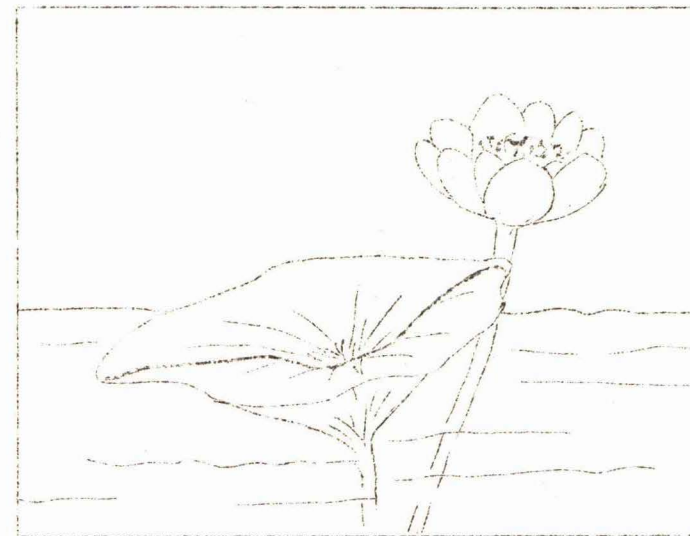
water from the Des Moines River. A dam has raised the water level until it covers a considerable part of the park.

Much of the lake surface is covered with America's most beautiful water plant -- the Lotus. The buds are now plainly swollen and will soon open with a gorgeous display of blossoms. The seeds, which ripen later in the fall, are extremely hard. They have been known to lay on the bottom of a pond for many years before finally germinating.

Several large beds of cattails, along with the Lotus, provide an ideal nesting site for Red-winged Blackbirds. Mr. George Coons, the Park Custodian, tells how fishermen

have rowed their boats within a few feet of the Red-wings' nests and watched the young birds.

Mr. Coons, who was formerly stationed at the State Game Farm often has interesting pets around the park. At present it is a skunk, but don't let that keep you away. As Mr. Coons says, "It's completely deodorized!"



IT'S A SPREAD-HEAD (See page 3.)

submerged, its mouth still partly open. Then suddenly it turned over and raised its head. A moment later it was swimming with its whole body at the surface.

This hog-nosed burrower lives mostly on insects, worms, frogs, toads, and rodents. It deserves your protection. You'll probably know it by its general bluffing actions; but look carefully at its up-turned snout. If you are not afraid to handle it, count the rows of scales around its body. There are 25 on the common eastern species, 23 on the western species, and you'll notice that each scale is keeled with a little ridge down the center.



## PARK PERSONALITIES



IN THE WATER...From points on the River Trail you can see the tracks of clams that have forced their way through the sand. "Pearl" buttons, made from their hard lime shells, are used all over the country. But with the increasing amount of erosion, streams are becoming so polluted with mud the annual clam crop is greatly reduced, and many button factories along the Mississippi are standing idle.

Clams or mussels feed by drawing a current of water through a small siphon tube at the lower part of the shell, straining out the tiny bits of food on which it lives, and allowing the water to pass out through another tube nearer the top of the shell. Oxygen also is taken from the water as it flows through the animal.

On first leaving the parent, a young clam attaches to the skin of a fish, where it looks like a "black-head" and lives as a parasite until large enough to take its food directly from the water.

ON THE LAND...Cousins of the clam, and close competitors in the way of speed, are the land snails, abundant along the park paths. During the driest parts of the summer they can seal shut the openings to their shells and lie dormant to save their precious water supply.

Land snails are unable to travel over dry rough surfaces, but they are supplied with glands in the front part of the body which secrete a thin layer of slimy liquid that lubricates their path. When they dry, these snail paths look like fine strips of cellophane.

The next time you see a snail shell hold it with the opening toward you. If the opening is on the right side, then it is said to be a "right-handed" snail. Some kinds are right-handed, other left-handed.

## FORECAST

An increasing number of groups such as Boy Scouts, Camp Fire Girls, 4-H Clubs and garden clubs are arranging for special hikes and programs that are not on the regular schedule. Any group may make such arrangements without charge by writing to Richard Trump at Keosauqua or by calling 197-A.

SUNDAYS...Hikes are scheduled to begin at the East Shelter at 2:00 o'clock and at the Bathhouse at 3:00. Guest leaders and other special features are announced from time to time in the papers of this area.

WEEK DAYS...Set your own time and place, then call the Naturalist. Don't feel that you must have large groups.

FOR PHOTOGRAPHY...If the Naturalist or the Custodian can be of any help to you in planning your entries for the contest announced on page 2, feel free to ask.

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Please cooperate in maintaining a beautiful park by obeying the state law which forbids the picking of flowers or fruit or the removal of any plants from state parks.

Thanks.



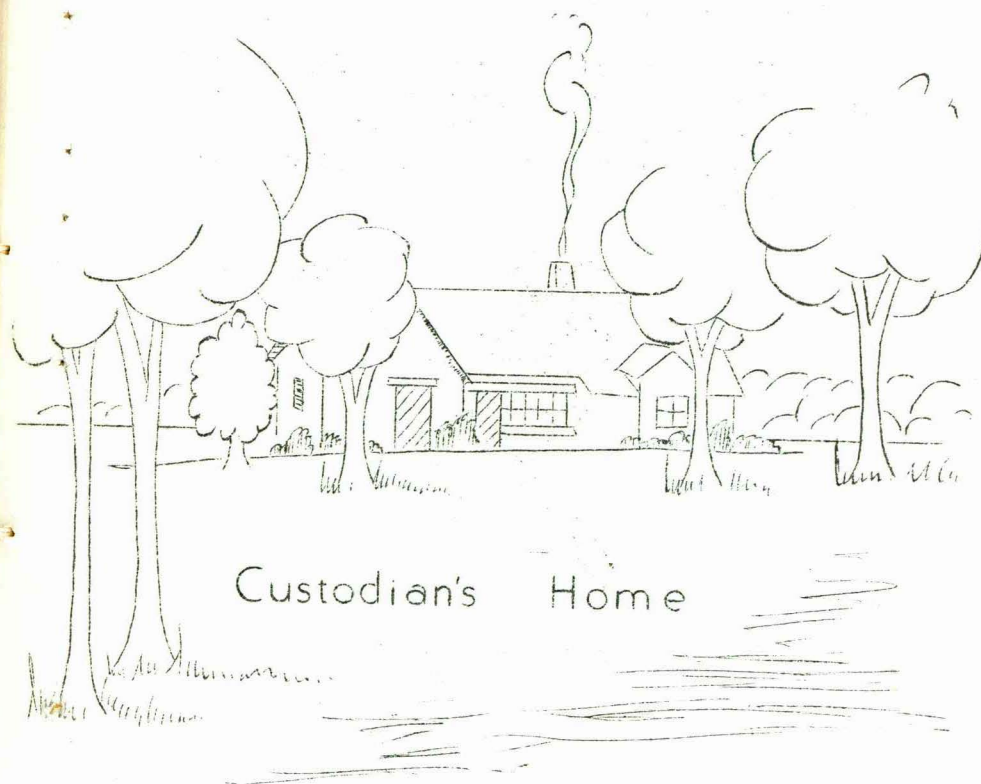
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LACEY - KEOSAUQUA

NATURE

NOTES



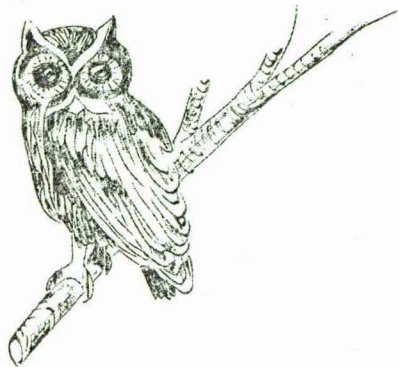


NATURE NOTES  
of  
Lacey-Keosauqua State Park

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"The Iowa State Conservation Commission and the Works Progress Administration--Division of Recreation, in cooperation with Iowa State College, present this circular for the information of the guests of Lacey-Keosauqua State Park.

"It is prepared for your information in order that the recreational and educational opportunities of an unspoiled primitive area may be more fully appreciated, utilized and protected."



Prepared by Richard F. Trump, .  
Park Naturalist  
Illustrations by Lorene E. Trump

August 1, 1940

## MEET THE CUSTODIAN

His name...W. R. Chastain, pronounced just as it looks.

His job...To help people enjoy their park and to help them preserve it for future enjoyment. The State conservation Commission, in administering the state parks, has found that certain rules are necessary. Mr. Chastain is stationed at Lacey-Keosauqua to help visitors understand these rules.

His past...With the A.E.F. in France, special police in the city parks of Des Moines, and Custodian of Pammel State Park near Winterset.

His home...pictured on the cover of this bulletin, was constructed six years ago, using stone from the quarry.

His wife...answers a million telephone calls each day and does a very good job of feeding her husband.

His hobby..."Vistas" along the park road, from which you can see the river without getting out of your car.

His stories...are as good as they come. Here's a sample: In a park where firewood was very scarce a couple of nicely dressed ladies approached the custodian and asked where they could get some wood.

"How much do you want?" said the custodian, showing them a supply that had been cut for sale.

"Isn't that sweet", replied one of the ladies.

"See, Rosie, the man has it all tied up in bundles for us."

"How much do you want?" repeated the custodian.

"Oh, four or five bundles ought to be enough", said one of the customers.

"They're ten cents a bundle", announced the custodian.

"Oh, I see", said the lady. "Don't you have any nickle bundles?"

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If you have a question about Iowa Conservation laws or park regulations, introduce yourself to the fellow with the bright badge. His name is Chastain.



## EROSION AND RIVERS

When you look at the Des Moines River, you probable say either "Isn't it muddy!" or "Isn't it shallow!" Both of which mean the same thing. For this is what erosion does to the river.

### IT FILLS THE CHANNEL

Earlier in the development of the state, river boats steamed up the Des Moines River for a considerable distance. Now they can't even enter the mouth, and around Keosauqua you wade the river without even washing your knees.

The trouble started when Iowa's forests were shorn off and the land planted to grain crops which allowed the soil to wash down the creeks and into the rivers. This is how channels are filled.

By modern methods of soil conservation further silting of our rivers can be partially prevented.

### IT STARVES THE FISH

Last summer Keosauqua residents stood on the bridge and stared at the thousands of dead fish which were floating down the river. At Farmington people were doing the same thing.

There were many guesses about the cause of this disaster, but the most reasonable solution was suggested when an Ottumwa chemist announced that the silt content of the water was extremely high. In muddy water there is less oxygen than in clear water, and the chemist declared that the oxygen content was the lowest ever recorded there. So the fish were suffocating and starving.

### IT COVERS THE CLAMS

The Des Moines River was once well populated with clams or fresh-water mussels. Now you look a long time before finding a live one. Important button factories along the Mississippi have closed because the shells are too hard to find.

Clams, like fish, can't live without food and oxygen, both of which are reduced in heavily silted water. Also, the slow-moving clams are not able to escape the thick layers of mud which settle to the bottom-- good fertile "mud" from Iowa's corn fields!

### IT FLOODS THE FIELDS

The abundant humus, leaf mold, and root systems of a native prairie or forest soil form a vast sponge that absorbs rainfall, then feeds it slowly into the soil and creeks.

But on watersheds that are highly cultivated and eroded rainfall washes wastefully into the gullies, carrying soil to the rivers. And the rivers are subject to extremes of low and high stages.

Ask at Hotel Manning in Keosauqua to see the high water mark on the building. It is a product of erosion!

### AND RAISES THE PRICE OF LARD

We are all paying for erosion. Not only from its effects on droughts and floods, for it actually reduced the income from agricultural lands and lowers the general standard of living.

Thanks to constant research, however, the U. S. Department of Agriculture and the Iowa State Extension Service know many of the answers to the erosion problem. Write for information.



# SNAPSHOT CONTEST

There's still time to take that picture that will win one of the cash prizes offered by the Keosauqua merchants. Here are the rules:

1. All entries must be pictures taken in Lacey-Keosauqua State Park.
2. Any amateur photographer not employed by the Iowa State Conservation Commission is eligible for awards.
3. There is no limit to the number of pictures that may be entered by one contestant.
4. Each picture must have written on the back the title of the picture, but NOT the name of the contestant.
5. The name and address of the contestant, together with the titles of his or her pictures, must be enclosed in a SEPARATE sealed envelope, which will not be opened until the winning entries have been selected by the judges.
6. Pictures may be of any interesting feature in the park: plants, animals, scenery, people, etc.
7. PRIZES WILL BE AS FOLLOWS: First-- five dollars in cash, second-- a Rolis Candid Type camera, and third-- one dollar in cash.
8. All entries must be submitted to the Park Naturalist, Richard F. Trump, or to the Park Custodian, W.R. Chastain, on or before Aug. 20, 1940. All prints entered in the contest become the property of Lacey-Keosauqua State Park, and will be retained in an album at the lodge.
9. Prints may be enlargements but must not be larger than five by seven inches.
10. All entries will be judged by a committee selected by the Keosauqua Commercial Club.

# MORE ABOUT SNAPSHOTS

If you've had trouble getting good snapshots, get out some of your old prints and see what's wrong. Check them against this list of errors, furnished by an Iowa photo concern: FOGGED-- Light entering camera, or not rolling the film tight. OVER EXPOSURE-- Negative dense and without contrast. Cause: Too long exposure-- using too large a diaphragm opening, or shutter failed to open and closely promptly. BLURRED NEGATIVE-- Entire image lacking in sharpness and oftentimes showing double lines. Caused by movement of camera while shutter was open.

\*\*\*\*\*  
 \*\* The prizes for this contest are being furnished \*\*  
 \*\* through the kindness and cooperation of the follow- \*\*  
 \*\* ing Keosauqua merchants. They can supply you with \*\*  
 \*\* extra copies of this bulletin. \*\*  
 \*\* WILLIAMS HOME FURNITURE, STRICKLING'S DRUG \*\*  
 \*\* STORE, COUNTY REGISTER and REPUBLICAN EAGLE, PRIEBE'S \*\*  
 \*\* DRY GOODS, VAN BUREN CLEANERS, RAUSCHER AND DUNSHEE \*\*  
 \*\* HARDWARE, LEO PEEL'S SERVICE STATION, DOROTHY BROS. \*\*  
 \*\* GROCERY, BROWN LYNCH SCOTT COMPANY, THE KEOSAUQUA \*\*  
 \*\* REPUBLICAN, HARBIDGE MOTOR COMPANY. \*\*  
 \*\*\*\*\*

OUT OF FOCUS-- The principle subject is not sharp while another part of the picture is clear. Caused by failure to measure distance and focus properly or by movement of the subject. DOUBLE EXPOSURE-- Failure to turn the key after each exposure. PART OF IMAGE CUT OFF-- If one end of image is cut off or partly blurred, the hand or sleeve of the operator may have come directly before the lens during the exposure.

FLAT OR DULL IMAGE-- Negative not sharp and clear due to dirty lens. Clean lens with soft linen cloth and brush out inside of camera when there is no film inside. STREAKS OF LIGHT-- Camera may leak light; see a dealer about it. Don't have sunlight shining directly on the lens. Don't oil the shutter. UNDER EXPOSURE-- See over exposure, above. It's just the opposite.



# A SHORT <sup>7</sup> TIME AGO

By John R. Shaffer  
Keokuk, Iowa

Note: Last summer when Mr. Shaffer attended one of the Sunday hikes, everyone enjoyed his comments about the Great Bend area before it became a park. This year, when he again visited his native county, we asked him for this article.

Regarding wildlife around Keosauqua, small animals were in abundance, rabbits, squirrels, possums, and raccoons. We had coon clubs and hunted coons every favorable night during the winter. Song birds were numerous, two of which are scarcer now, the oriole and kingbird (bee martin).

Of game birds there was an abundance of ducks some very good eating and others not. The merganser, sheldrake, sprigtails, and others were of poor quality, but we had also the better kinds-- the mallard, canvas-back, butter ball, large and small teal, blue bills and black jacks. The large brown and grey plover snipes were

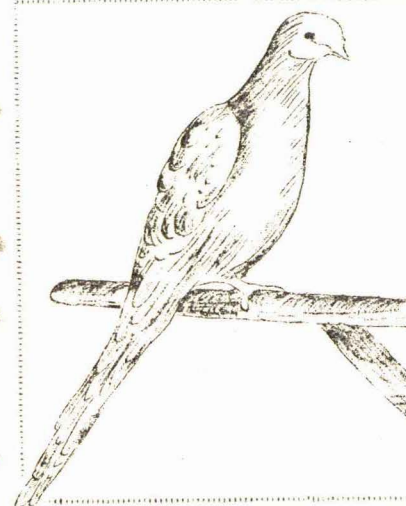
plentiful, but the curious bird was the wild pigeon. It stood alone in my mind because of its numbers and food, its food consisting chiefly of acorns, a food generally eaten by animals. They were in oak timber by the thousands. While hunting squirrels in the timbers belonging



The home of the passenger pigeon was the heavy oak woods of the Great Bend area. Most of the trees of the park were cut off a half century ago for railway ties.

-8-  
to Mr. Isick Jones, opposite the state park I raised a flock of these passenger pigeons that I estimated at ten thousand.

They were as a cloud in the sky, but they are gone now, their coming and going are unsolved mysteries. They went all at once, as the saying is, "here today and gone tomorrow". They went almost over night, and were seen no more, and it is reported by naturalists that they are found no place in the world.



Once abundant along the Great Bend, passenger pigeons are now extinct. The sketch is from a photograph of the last survivor. It died in a Cincinnati zoo September 1, 1914.

Among the thick woods. Anyone who could bring one down could pat himself on the back!

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Scientists say that cutting the timber and excessive shooting, especially of the young birds, were responsible for the disappearance of the passenger pigeon described in this article by Mr. Shaffer.

We also had numbers of quails and prairie chickens. But the greatest sport I ever had in all, was shooting pheasants (ruffed grouse). The place they were found in most abundance was in the Ely Ford timber that is now in Lacey-Keosauqua State Park. I would leave home early in the morning and get to the timber at sunrise where I could hear a dozen of them drumming on logs at one time. (According to Professor DuMont of Iowa University, the ruffed grouse, which was formerly called a pheasant, is still to be found in Van Buren County, though it is becoming rarer all the time.--R.F.T.) They fly in a zig-zag fashion



# PARK PERSONALITIES

## A FEW PLANTS NOW IN BLOOM

Partridge pea...The bright yellow flower that blooms so abundantly on the hot hillsides. In the park it grows in most of the higher clearings, along the roads, and along the Lake dam. It is in the clover family, but because it resembles the mimosa it is sometimes called the sensitive plant.

Ironwood...Found along most of the park roads. Like others of the composite family, the ironwood has tiny flowers packed so densely that each cluster, containing as many as thirty flowers, appears to be one blossom. The color is purple.

Black-eyed Susans, wild sunflowers, Indian cup-plants, and rosin weeds are among the other composite that you may now find in the park.

Wild bergomot...Blooming at the edge of the woods this member of the mint family adds purple to the summer colors. Like other members of the family it has a minty odor, and the stems are rather square. According to Dr. J.N. Martin the wild bergomot contains the chemical thymol which is an important antiseptic.

Blazing star...Start down the River Trail toward Keosauqua from the East Shelter. Before reaching the shaded woods you'll see some of the blazing stars on the hillside on the right side of the trail. After seeing the blossoms you will agree that they are well named.

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Are you that fellow who's been asking when the Path-house will be opened? It's open now, brother, showers and all! A trained life guard is on duty. And what's more you can buy candy and cold pop, at both the Bath-house and the Lodge. Sandwiches are available at the Lodge, but if you want a full dinner, make a reservation in advance.

# FORECAST

## SUNDAYS...

2:00. Settle your picnic lunch by a short hike down the River Trail. Meet at the East Shelter--the one nearest the bridge.

3:30. Prepare for your evening picnic with a hike on the Lake Trail. Meet at the Bathhouse.

## OTHER DAYS...

Special hikes and programs may be arranged by any group or individual interested. There is no charge. See the Custodian, W. R. Chastain, or call Richard Trump, 197-A at Keosauqua.

## OTHER GUIDES...

Guest leaders are being featured on some of the Sunday hikes. For example, on July 28 Mr. J. Wilbur Dole of Fairfield will be here. Mr. Dole is well known for his intimate knowledge of Iowa birds. Watch the papers for other announcements.

## PRIVATE...

If you prefer to hike without a guide, yet are still interested in natural history, try the River Trail between the Lodge and the West Shelter. Some of the interesting natural features have been marked with small signs and quiz-labels.

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INFORMATION PLEASE? If you have a specimen you'd like identified or a question on natural history, the Park Naturalist can probably help you. If not, he can at least tell you where to go for expert help.

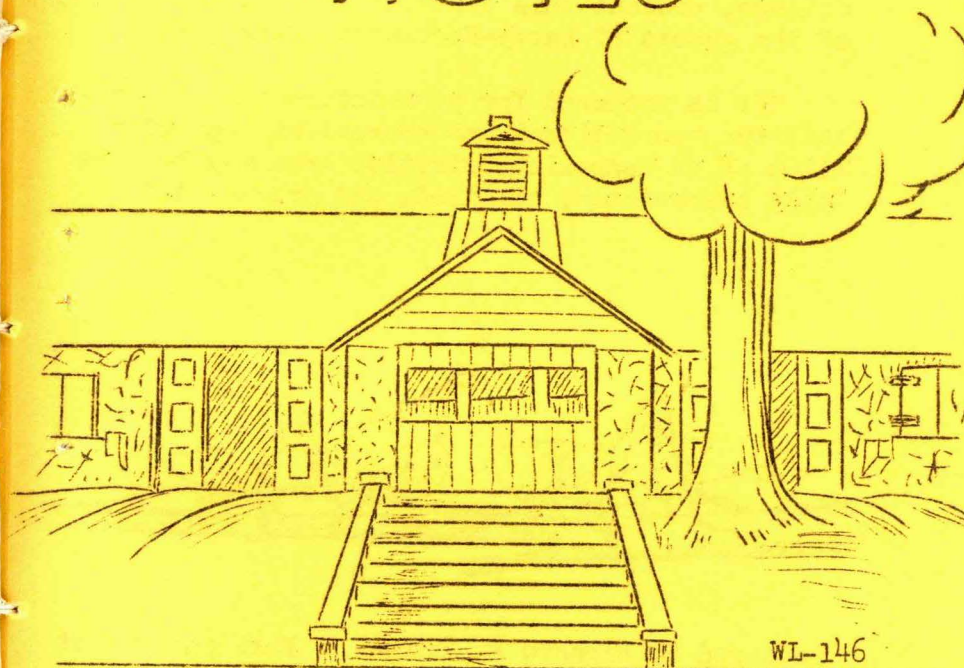


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LACEY - KEOSAUQUA

# NATURE NOTES



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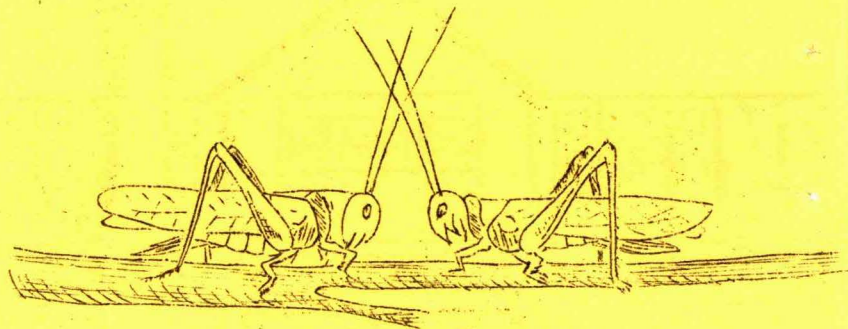
The Bathhouse



NATURE NOTES  
of  
Lacey-Keosauqua State Park

"The Iowa State Conservation Commission and the Work Projects Administration--Division of Recreation, in cooperation with the Iowa State College, present this circular for the information of the guests of Lacey-Keosauqua State Park.

"It is prepared for your information in order that the recreational and educational opportunities of an unspoiled primitive area may be more fully appreciated, utilized, and protected."



Prepared by Richard F. Trump, Park Naturalist

Illustrations by Lorene E. Trump

August 15, 1940

## PARK PERSONALITIES

GRASSHOPPERS...If you start collecting, you'll be amazed to see how many kinds of grasshoppers make their home in the park. Some live among the sedges and marsh smartweeds along the river. Others prefer the upland plants and the open prairie. And along the roads and hot hill sides you'll find those dust colored fellows that do more flying than hopping.

All grasshoppers have wings when mature. They grow by molting the skin at intervals, and the wings begin to appear before the insects are full size. Closely related to the grasshoppers are the katydids, crickets, and walking sticks. Most of these insects "sing" by rubbing together tiny file-like implements at the base of the wings.

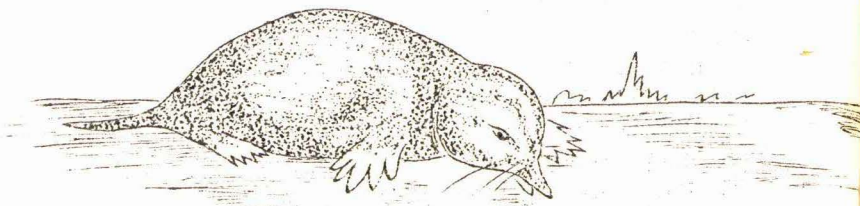
BEETLES...Outnumbering by far the kinds of hoppers found in the park, beetles are the largest order of all insects. Most of them have no common names, and there are undoubtedly many species yet to be discovered by scientists. Hikers frequently see the brilliant green tiger beetles along the woods trails. They are predaceous, living on other insects.

DRAGON FLIES...These animated midget aeroplanes are also called horse stingers, snake feeders, snake doctors, flying adders, and devil's darning needles.

They don't sting horses or have anything to do with snakes. Neither do they sew little boys' ears shut, as some bad little boys are told. But what they actually do is even more practical. They eat mosquitoes! This is what they are doing when you see them darting swiftly through the air--catching insects in flight. On one of the hikes we captured a dragon fly and offered it flies, small grasshoppers and other insects. One boy held the dragon fly by the wings while another brought the food. Within five minutes it had eaten three flies, two grasshoppers, and a few other small insects, and its appetite seemed untouched!



## ABOUT MOLES

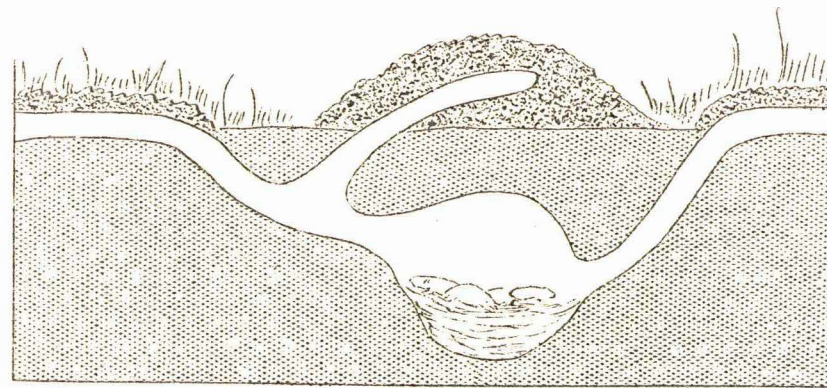


It is no simple matter to investigate the private life of an animal like the mole. We see the ridges where the underground tunnels reupt the surface of the golf course or lawn or across the park paths. And occasionally we find the loose mounds of soil that are brought to the surface from deeper tunnels or nests.

But what goes on inside the tunnels? How does a mole live? Years of patient observation and study have given biologists at least partial answers to those questions.

The body of the mole is constructed perfectly for its way of life. The eyes are reduced to mere slits which are of little use as sense organs. In their place the long snout is a sensitive touch organ that guides the animal in its constant hunting trips along the tunnels. And when the mole backs up through a section of tunnel, its hairless tail serves the same purpose. There are no protruding ears to hinder its progress through the soil.

Most remarkable of the mole's adaptations are its powerful front digging legs. Several times as wide as the hind legs, these short spade-like implements are powered by unusually well developed chest muscles. In its plowing action the mole reaches forward with both front legs and with palms out sweeps back from the



When moles dig deep in the soil for food or to build nests, they bring the displaced soil to the surface where it forms mounds that cover the vegetation. (From Iowa Circular 137.)

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nose with an action somewhat like the breast stroke in swimming. On one of the "Y" Camp hikes we came on a mole above the surface, but within a few seconds it had shoveled its way out of sight. We pushed back the soil and captured the powerful little mammal, thoughtlessly dropping it into the insect net. With only a few swift strokes it opened a hole large enough for escape!

Early in the spring the young moles are born, in nests similar to the one shown in the sketch. They grow rapidly and are soon out doing their own plowing. For food the moles search endlessly for worms, grubs, spiders, and soft insects which stray into the tunnels. Captive moles have been known to eat their own weight in worms and insects in a single day.

On the west coast there is another larger species of mole which lives partly on the roots and bulbs of plants, but in Iowa the moles have desirable diets and are pests in yards and gardens only because of their mounds and ridges.



## FIVE EASY LESSONS

### SEE

Even though we depend mostly on our eyes for our impressions of things outdoors, few of us see as well as Mr. Baynes has suggested. We overlook tracks along the creek and beaten trails through the grass that lead to dens at the edge of the clearing. And if by chance we pass one of these dens, we don't think to look for hairs around the entrance in order to determine who the tenant is.

If we are careless about the use of our eyes we are worse about using our other sense organs. Stop along one of the trails and remain quiet for five minutes-- not even mentioning the war in Europe or the price of hogs-- and "see what there is to hear"! One group, hiking on the Lake Trail, stopped to listen for bird songs. Ovenbird, Wood Pewee, Northern Yellowthroat, Indigo Bunting-- all of them were singing or calling, even though it was a hot day. And after we had stood there a moment someone called out attention to a faint scratching sound in the leaves. We looked and found that a snail crawling over a dead leaf made the sound-- one that we certainly would have missed if we had not been consciously listening.

Walk through the woods with a good botanist and you'll find that he is frequently smelling plants as well as seeing them. There is something over fifty kinds of plants in the mint family that grow in Iowa, and nearly

"Every mark on the tree, every scratch on the bark of a tree, every impression made in the grass by the body of a sleeping animal, is a character of this universal language."

Ernest Horn Baynes

### HEAR

### SMELL

### FEEL

all of them have characteristic odors. One way to make plant odors obvious to sensitive noses is to crush a leaf, then sniff it. Those like pennyroyal, catnip, and wild bergamot don't require such treatment, but some others are much more easily "snelled" in this condition.

When Mr. Dole led one of the hikes a few weeks ago, we were puzzled over a small shrub-like plant with long compound leaves. For a moment we thought we had found something new, but then one of the hikers bent down and sniffed a leaf. "Black walnut," he announced. Although it was a seedling, crowded into a peculiar shape, the odor was there!

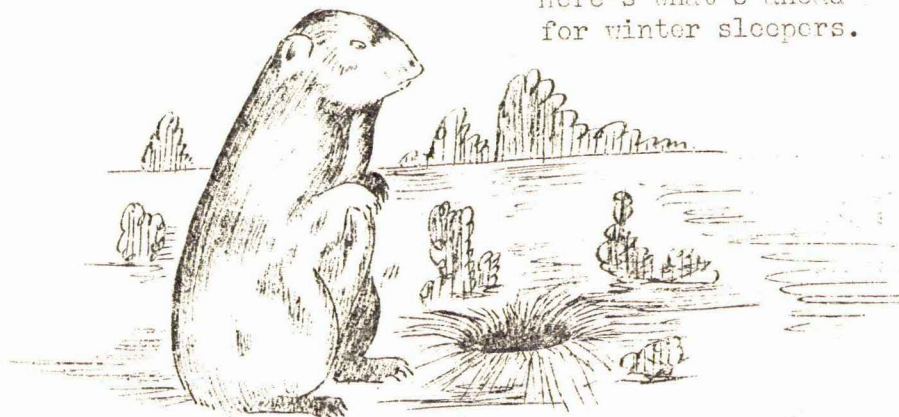
Tasting things is another way to get better acquainted with nature. We all know the difference between the flavors of walnuts and hickory nuts, but how many could recognize the difference between the acorns of white and black oaks? The Indians knew. They collected the sweeter white oak fruit and after leaching out the bitter tannin, used them for food. It is difficult to separate the sensations of taste from those of smell, but you'll find that many plants-- both leaves and fruit-- have distinctive tastes. Try the wild lettuce that grows so tall near the dam of the Lake.

Feeling? Yes, that's another way to become intimate with nature. Compare the feel of a mole's fur with that of a chipmunk. Feel the texture of poplar and elm leaves, of bedstraw and jewel weed. They all tell the truth!



## THEY HIBERNATE

It seems early to talk of hibernation. But after all there's a lot to be done before the first snow. Here's what's ahead for winter sleepers.



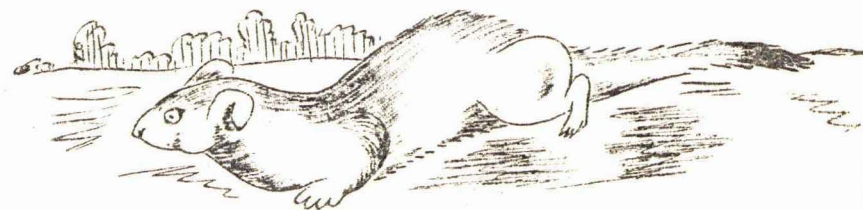
The Woodchuck-- a hibernator.

A hundred years ago a man in Hartford, Connecticut, kept a tame chipmunk or ground hog in his home. In the fall it curled up in a ball and went to sleep. After it had slept about six weeks the man placed it in the outstretched paws of his hunting dog, which was lying near the fire. But the woodchuck slept on. Only when rolled over the floor did the hibernating mammal open its eyes and rouse slightly. But soon it was torpid again, and it remained that way until spring.

Audubon and Bachman first told that story in their "Quadropede of North America" in 1854. Since then many tales and superstitions have circulated concerning hibernation, but we still know very little concerning this curious vacation from life.

It has been assumed that low temperature is the cause of hibernation, yet several kinds of mammals go into a similar sleep during excessive heat and drouth.

Biologists have suggested also that it is caused not by temperature variations but by lack of food. But the tame woodchuck had plenty of food. And furthermore the wild ones here in the park begin their hibernation



The weasel -- active through the winter.

while there is still a good supply of clover and other foods. Ground squirrels have been persuaded to hibernate earlier than usual by placing them in cans without much circulation of oxygen.

But whatever the cause may be, one condition is necessary--plenty of fat. That's why the ground hogs are eating so much right now. They must store up a layer of surplus food which will keep them through the winter and next spring before the food plants are out. Actually not much food is needed during the winter. For the animal almost stops living. Its heart beat is slow. It breathes so slowly that you might watch it for five minutes before seeing any inhaling movement.

Bears are much lighter sleepers than woodchucks. They are easily aroused, especially on warm days. In the skunk den you would find the female sleeping for increasingly greater periods as the weather became more severe, while the male would still be prowling for food at night.

A few scientists have toyed with the idea that human beings might hibernate. But they will first have to learn a good deal more about woodchucks and skunks and bears!



## TO MAKE A LONG STORY SHORT

(Part II)

Roger T. Peterson in BIRD LORE: "Nature photography is one of the best approaches to natural science there is. The long hours in the blind give an intimacy with birds and mammals that one can get in no other way."

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From OUTDOOR IOWA: "new law in Kentucky forbids the use of steel traps in trapping wild animals. Only devices which take the animal alive and unhurt, or which kill immediately, may be legally used."

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Theodore Roosevelt, one of America's first conservationists: "A people without children would face a hopeless future; a country without trees is almost as helpless; forests which are so used that they cannot renew themselves will soon vanish, and with them all their benefits. When you help to preserve our forests or plant new ones you are acting the part of good citizens."

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From OUTDOOR IOWA: "Four beavers on display at the Bangor, Maine, Sportsmen's Show very nearly disrupted the affair. Working overtime during the night the animals constructed a dam that plugged up the artificial stream that was their temporary abode. The big floor of the auditorium was flooded by this very impromptu act of the animals."

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## FORECAST

The Naturalist will be on duty throughout August, and the following schedule of hikes will be in force:

SUNDAYS...One hike, on the River Trail, starts from the East Shelter at 2:00 o'clock. Another, on the Lake Trail, starts from the Bathhouse at 3:30. Occasionally a group prefers a morning hike; it can be arranged without charge.

OTHER DAYS...Set your own time for hikes, campfires, or other programs in which the Naturalist might be of service. See the Custodian, W. R. Chastain, or call Richard Trump, number 197-A at Keosauqua.

THERE IS NO CHARGE FOR ANY OF THE SERVICES OF THE PARK NATURALIST. He is stationed here by the Iowa State Conservation Commission for your convenience.

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Do you have the back numbers?

Several readers have asked for back issues of Lacey-Keosauqua Nature Notes. A few copies of each number, from both 1939 and 1940, have been placed in the magazine stand at the Lodge. Help yourself.



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