IOWA
CONSERVATIONIST

Volume 13 AUGUST, 1954 Number 8

WILDLIFE AND FARM FENCE ROWS

THE FROGMEN ARE HERE!

By John Madson
Education Assistant

As long as there are fish and men in the world, the men will think up new and better ways of catching the fish.

In eastern Iowa some sportsmen are using the newest (and possibly the oldest) method of all: going down where the fish are and meeting them on their own level. A group of swimmer-fishermen, headed by Norman Crews of Davenport, has formed a club of skin-divers that makes ordinary pole-and-line fishing look a bit tame by comparison. Using big glass and rubber face masks equipped with snorkel tubes, rubber swim fins for their feet, and powerful spear guns, the swimmers dive down into the deep clear water sand pits near Muscatine. These pits, filled with big carp, are prime hunting grounds for quad-city skin divers.

A man swimming underwater can approach even the most wariest of fish closely. "The secret," says Crews, "is to swim slowly, without rapid movement. If you swim fast, the fish may think you're out to get him; if you take it slow, he may think you're just another fish." The range of the underwater spear guns is short, seldom more than 15 feet. But it's easy to get within range of a carp, even a big one. And because it is impossible for a fish to look at you head-on, he obligingly turns broadside. The powerful spear gun, driving a barbed spear with a strong spring, does the rest.

Now and then the fish catches the fisherman. Crews recently shot a carp that went at least 20 pounds and the fish went charging off across the lake towing Crews steadily behind him. Crews fought to the surface several times for air, but hung grimly on the line. After the fish had pulled him about 50 yards, the skin-diver got in close and grasped the protruding spear. The fish gave a powerful flip, pulled loose, and swam leisurely

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Jim Sherman Photo.
To pheasants, cover means life. Naked fence rows give almost no shelter for hiding, nesting, or protection from Iowa blizzards.

Canoeing the Turkey River—Elgin to Garber

By Ralph Church and Harold Allen

The Turkey is the largest river in the "Little Switzerland" area of northeast Iowa. It rises in Howard County and flows southeasterly 135 miles through Winneshiek, Fayette and Clayton counties to enter the Mississippi about 7 miles downstream from the Guttenberg dam.

The river divides itself into three quite distinct sections. In its upper reaches it flows through flat terrain. In the middle section, roughly from Spillville in Winneshiek County to Elkport in Clayton County, the river flows through the limestone bluff country, with a strong current, and rocky bottom. In the lower section, from the vicinity of Elkport to the Mississippi, the rate of fall is again very small, the current slow, and the bottom silt and sand.

An interesting stretch for canoeing is that from Elgin to Garber. In this stretch the valley is narrow and bounded by rugged bluffs. There is considerable hardwood timber interspersed with red cedar. The river bottom is generally rocky limestone. The rate of fall

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By Robert A. McCabe
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Department of Forestry and
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EDITOR'S NOTE: *This is a Wisconsin article, but it applies to Iowa or any other midwestern state. It is the story of wildlife's great enemy—"clean" farming.*

A fence can be happy at only two chores: keeping in or keeping out. The first fences were made to keep deer and cattle out of cultivated crops, for all else was open range.

The early Wisconsin farmer used whole logs to build his fences. Logs were plentiful and cheap, often so cheap as to have negative value. Land was also plentiful, and the zig-zag fences often embraced a fertile span of nearly two rods. In their width of thirty-odd feet lived and grew the wildflowers and farm game of early Wisconsin.

As new and larger fields were hewn from the forest's edge, it was easier and more expedient to make fences of split logs. Speed and efficiency were the by-words of farm operation, then as today. Thus the split rail fence made famous by "Honest Abe" became common in our state by 1860. Each zig and zag of log and rail fences created a tiny triangular refuge for wildflowers and wildlife. The old two-horse teams that plowed and planted these young fields needed plenty of room for "turnarounds," and so the generous fence row also served a practical purpose.

These sheltered triangles shaded the farmer's water jug and dog from the heat of the summer's sun. Brief visits by the man with a hoe, his dog and jug, caused little concern to the bobwhite, ruffed grouse and wild turkey broods in the quiet and safety of the fence row. During no other period on our agricutural history was there a more bounteous profusion of game.

No one thought of burning his fence row . . . no one had to . . . no one wanted to. Besides ugly charred vegetation and loss of valuable soil humus, fire would result in the loss of an almost equally

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1954 RABBIT, SQUIRREL SEASONS SET

The 1954 rabbit and squirrel seasons for Iowa have been set by the State Conservation Commission, with no changes over the seasons of last year.

The 1954 Iowa squirrel season will open on September 15 and extend through November 15. The entire state will be open, with a bag limit of six squirrels daily and a possession limit after the first day of the season of twelve squirrels. The season includes both fox and gray squirrels.

The 1954-1955 Iowa rabbit season will extend from September 15, 1954, to January 31, 1955, both dates inclusive. Shooting hours are from 6:00 a.m. to 6:00 p.m. daily. The daily bag limit of rabbits is ten, and there is no possession limit. The rabbit season includes both cottontails and jackrabbits.

Hunting seasons for game birds and other animals will be announced as they are set.

WE HAVE TO BELIEVE THIS "FISH" STORY

We've heard dozens of "fish" tales, many of them we didn't believe because we didn't actually see them with our own eyes.

But Thursday morning the editor saw one of those unbelievable fish stories.

Wyland Knutson and the editor were fishing off a bridge near Kennebec about 7:30 that evening. Wyland had released about 300 feet of line in hopes of catching a catfish when a doe deer started to swim across the river. He immediately started to reel in so that the line would not tangle, but he was too late. Miss Deer deposited the line on the bank on top of the willow and it required a trek down the river to release it.—*The Soldier Sentinel.*

Jim Sherman Photo.
General Atkinson built his fort in 1840, not to protect white men, but to keep the warring Sioux from the peaceful Winnebagoes.

THE FORT ATKINSON STATE MONUMENT

By Charles S. Gwynne
Professor
Department of Geology
Iowa State College

The Fort Atkinson State Monument of southwestern Winneshiek County was established to preserve the site and the ruins of the fort of that name. So its chief interest might be said to be historic. The trouble with that statement, from the geologists point of view, is that the interest does not go back far enough. The fort was built in 1840, not much more than a century ago. Before the white men came the site may have been favored by Indians, but even that takes us back not many thousand years. For the more ancient history, the geological story, we must go back some hundreds of millions of years.

Beneath the soil and subsoil of this part of Iowa lies the record of ancient seas which spread over the interior of North America many times in the remote past. The record is in the form of the hardened sediments laid down in the seas—shales, sandstones, limestones, and other sedimentary rocks. These rocks are at the surface as outcrops in many places along the sides of the valleys of northeastern Iowa.

One of these ancient seas existed during a period called by geologists the Ordovician. This period began about 450 million years ago and had a length of approximately 70 million years. During that time the shore line fluctuated slowly and widely. Sometimes large areas of the interior of North America were covered. Then again the seas would almost completely withdraw from what is now the continent. In Iowa the thickness of the deposits of the Ordovician seas is about 700 feet. Thousands of feet of sediments were laid down farther east.

Such a great thickness of rocks is capable of considerable subdivision by geologists. So we find directly underlying the soil and subsoil of Fort Atkinson and vicinity a limestone which is recognized by geologists as the Fort Atkinson limestone. It has been named, of course, from its occurrence at this locality.

It forms part of the Maquoketa formation, the top bedrock formation of much of Winneshiek and Clayton counties. The name in turn comes from prominent exposures at Maquoketa, in Jackson County. To carry it a bit farther, the Maquoketa is part of the Cincinnatian series, named from the city of Cincinnati. If we were to look into the record we would probably find that there are several formations in the Cincinnatian of Ohio. Also, probably, that it is many hundreds of feet thick, much thicker than in Iowa. The Fort Atkinson limestone was used in the construction of the buildings of the fort. It came from a quarry just at the edge of the monument area. The quarry is now all grown up with trees but the quarry wall can still be seen. The rock is in layers and can be easily identified as the same rock as is found all over the fort grounds.

It is a type of limestone, some of it brown, some rather blueish gray. The brown color is in part due to the weathering of rock which was originally blue gray. Some of the slabs are quite red in color. These are pieces which have been in contact with a fire. Originally brown in color, the iron compound, responsible for that color, has lost a water content and become a red mineral. Much of this limestone contains the impressions or the replacements of the broken shells of animals which lived in the seas. These are called fossils. Some of the rock seems to be made up almost entirely of these shell fragments.

This story of the bedrock of the fort and vicinity goes back as stated some hundreds of millions of years. But what has been going on since the retreat of the Ordovician seas? Other seas may have covered the area and left their deposits, but if so they have been eroded away. For tens of millions of years, at least, the rocks have been weathering, affected by the constituents of the atmosphere, by frost and by plant root action. Running water has been at work, carrying away the products of weathering, and cutting away at the bedrock.

Then came the glaciers, spreading from centers in Canada. The first, named the Nebraskan, spread as far south as the Missouri River. So did the next one, the Kansan. The Nebraskan covered all of Iowa. The Kansan covered all but the northeastern corner.

Much later came a third glacial inundation, by the Iowan glacier. Fort Atkinson is just outside the

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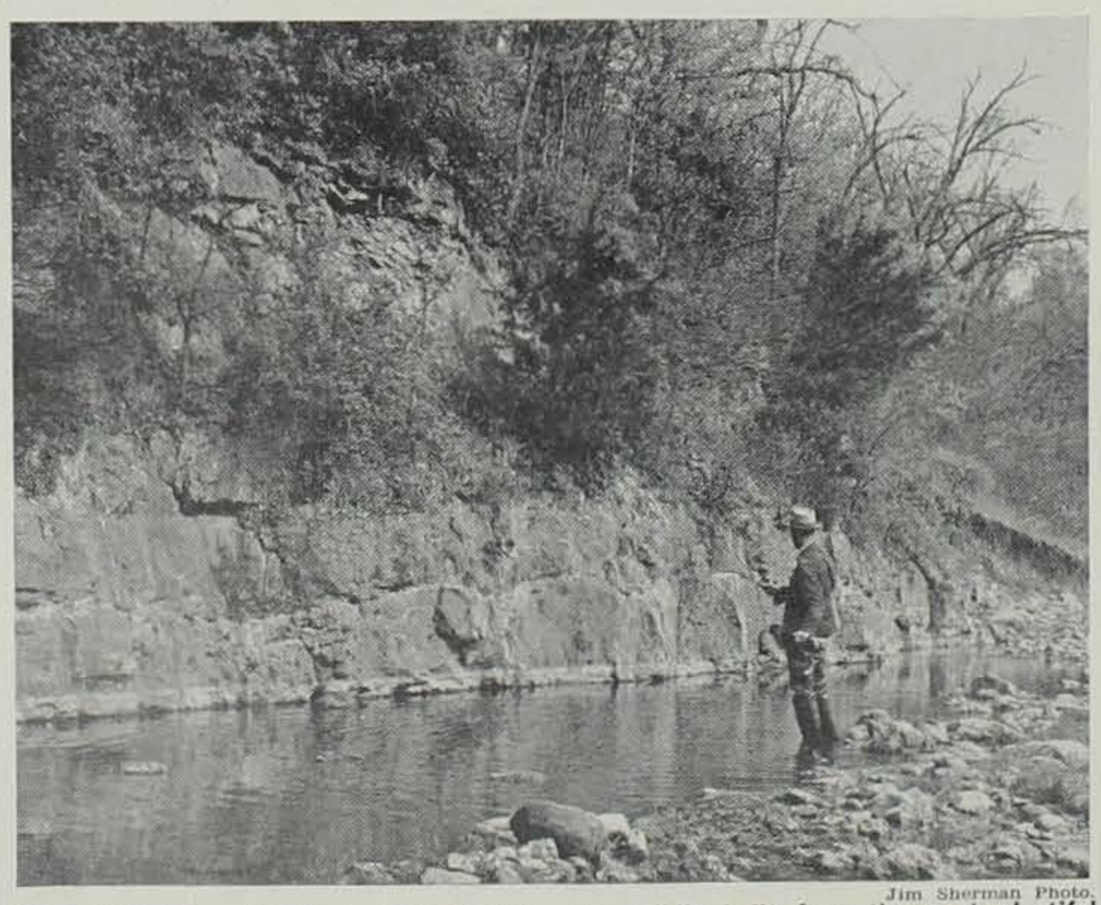
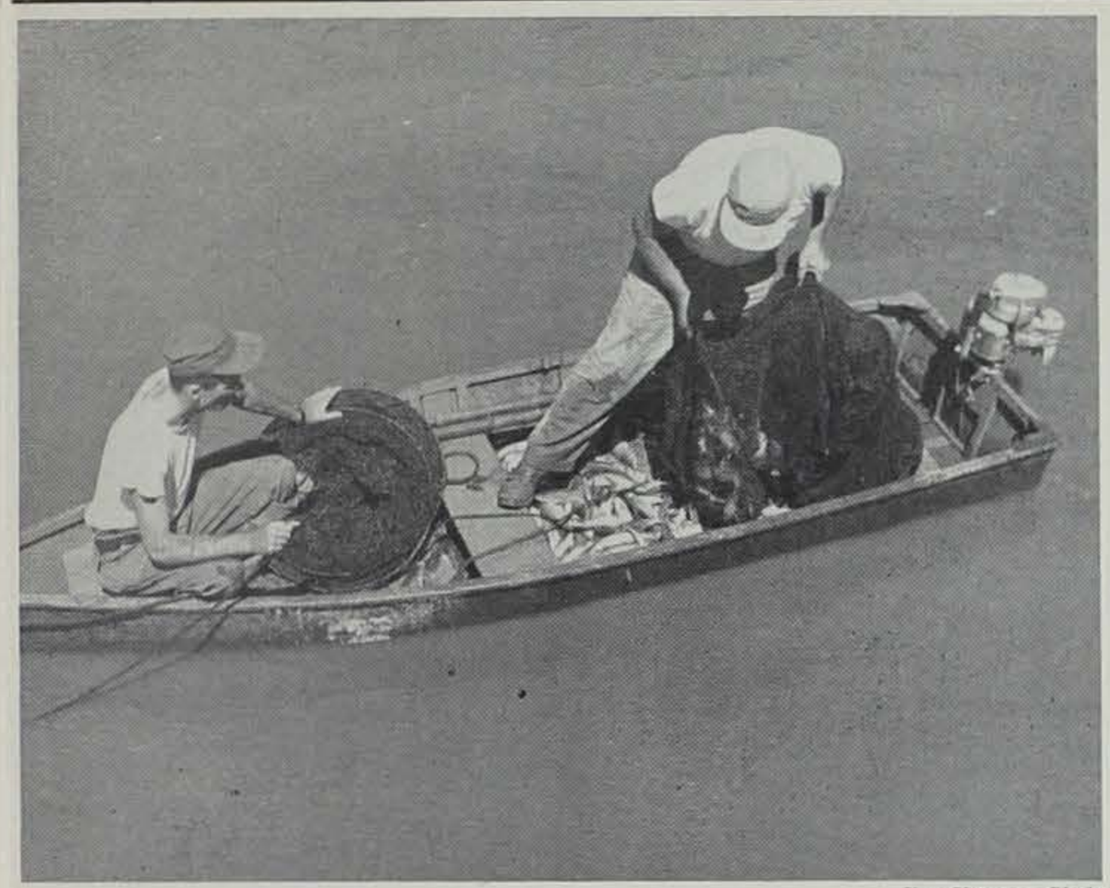


Jim Sherman Photo.
Like many pioneer buildings, Fort Atkinson was solidly built from the most plentiful material: the native limestone along hills and streams.



Jim Sherman Photo.
We know the catfish are there. Now all we need to know is the best bait and how to catch them.

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20,000 CATFISH PER MILE

Last fall fisheries biologist, Harry Harrison, had his own way on a 5-mile stretch of the Des Moines River.

His job was to trap as many catfish as possible during the fall, clip their fins and release them. In the spring he would try to recapture them, and by comparing the number of marked fish recovered to the number of unmarked fish he could get a close estimate of the total number of catfish in that part of the river.

Harry was working on a "sealed" portion of the Des Moines River—the stretch between Humboldt and Rutland that is blocked at both ends by dams. Catfish were halted from coming downriver by the dam and hydroelectric plant at Rutland, and few catfish came upstream over the Humboldt dam. And, once in the 5¼ mile section of river, few fish left. For all purposes, Harry was working in a closed shop.

Using hoopnets baited with a cheese mixture, he captured 14,889 channel catfish in the fall of 1953. These fish were marked and released. Through April and May of this year, Harry again dropped his hoopnets and captured a total of 6,681 catfish, 951 of which had been marked the previous fall.

By simple arithmetic, Harry estimated that the total population of catfish between Humboldt and Rutland last fall was 104,597 fish. The study area was 5¼ miles long, which adds up to 19,923 catfish per mile of stream!

He is confident that this estimate is very accurate, and gives a good picture of the 1953 fall population in that stretch of river. During the winter some fish died, and fishermen caught about 2,000 last spring. Harry believes that there was little catfish loss from parasites, disease, and old age. He thinks the total catfish losses for *all* causes were not more than 5,000 during the winter and spring, and that still leaves a lot of catfish. Taking these losses into account, the biologist estimates that there were around 100,000 catfish in the Humboldt area this spring!

So we know the catfish are there. The biologist has done his part . . . the rest is up to you.

HERE AND THERE

At Lake Okoboji last week, we watched the veteran and recently remodeled steamship, the Queen, again tour the lakes. It was conspicuous by its absence last summer when it was grounded for repairs and many a vacationist missed its chugging voyages up and down the blue waters. Now, all freshly painted and with many lights fore and aft, the Queen looks right sprightly. Popular music recordings even blared forth from its decks as it floated into our Manhattan Beach port. But there is one thing missing and that is its melodious whistle. The old whistle has been replaced with some kind of a diesel with a toot that resembles a loud blast from an automobile horn. Gone are the soft tones that used to echo over the waves from the time we as kids used to vacation at Okoboji until now. The new whistle even startled our dog who leaped to his feet and barked excitedly at what he must have thought (as we did) that a car with an ear-wrecking horn had driven into our yard. Yep, the Queen is like a graceful lady, all dressed up in new finery, but with a voice like a Bronx blues singer. —*Emmetsburg Democrat.*

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When Vern Boland's dog treed a fat, well-furred woodchuck near Waukon Junction recently, Boland thought it was just another groundhog.

This one, however, was different. The upper teeth had been broken or lost and the lower teeth had grown tremendously. They were nearly two inches long at the time of the animal's death, and had occluded one nostril, evidently interfering with the woodchuck's breathing.

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Waukon Newspapers Photo.
Boland's woodchuck was fat and in good condition, but sooner or later its teeth would have caused its death.

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Such accidents often happen to beavers, woodchucks, pocket gophers and other rodents. The incisors of some of these rodents grow 20 or more inches in a year, and it is necessary to keep them worn down. Gnawing and chewing help, but the animal depends mainly on the opposing teeth wearing on each other. If an incisor is broken the opposing tooth has little to wear it down and it may grow beyond control. This often prevents the animals from feeding, and starvation may result. In other cases the long teeth may grow entirely over the head, curve down, and penetrate the brain!

Jim Sherman Photo.
"She still has the shape and bearing of a queen; her voice is like a Bronx blues singer's."

Carl Rabe Photo.
They're fun to catch, boys, and they're fun to eat, too.

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WHO'S THE BEST CARP FISHERMAN?

The boys around Charles City won't have much time for mischief this summer; they're too busy trying to win a contest.

Bob Monroe, a Charles City sporting goods dealer, recently opened a contest to find the boy who could catch the most carp in the Big Cedar River by September 6. The contest was started (1) to keep boys fishing and conservation-minded and (2) to make just a little more room in the Cedar for game fish.

Bob writes that in one week after the flood, 352 carp were turned into contest headquarters, caught by local boys between the Main Street Dam and the Beauty Dam. The boys above, Gary Schaefer and Billy Freiberg, caught that string of carp in one morning.

SPEAKING OF DOGS

His blooded Weimeraner hunting dogs are the pride and joy of Jerry Jauron, Conservation Officer for Shelby and Harrison counties.

A while back Jerry was talking dogs with fisheries biologist Harry Harrison. "Jerry," Harry asked, "what'll you take for a good male dog?"

"Can't take less than $100," Jauron answered.

Harry thought that over for a minute.

"Tell you what," he said, "let's swap. I'll give you two of my $50 cats."

FISH-NAMING CONTEST AT STATE FAIR

When old Oscar, the giant lake sturgeon, died on the last day of the 1953 State Fair, a sad vacancy was left in the No. 1 fish tank of the Conservation Commission's exhibit building. But this year the game wardens can smile again, and the laughter of children will be heard. The veil of mourning has been lifted — the empty tank will be filled with a new, younger, but nameless sturgeon.

Old Oscar's successor will have a formal weighing-in ceremony during the fair, and will be named in a contest open to everyone. The new sturgeon, which is being held at the Backbone Park fish hatchery, is said to be slightly longer than Old Oscar but not as heavy. (In his prime, Old Oscar was about 5 feet long and weighed over 100 pounds.) Fair-goers will be given entry blanks for the fish-naming contest at the exhibit building and appropriate prizes will be awarded. First, second and third-place prizes will be presented. Winners will be notified before October 1.

The dates for the 1954 State Fair are from August 28 through September 6.

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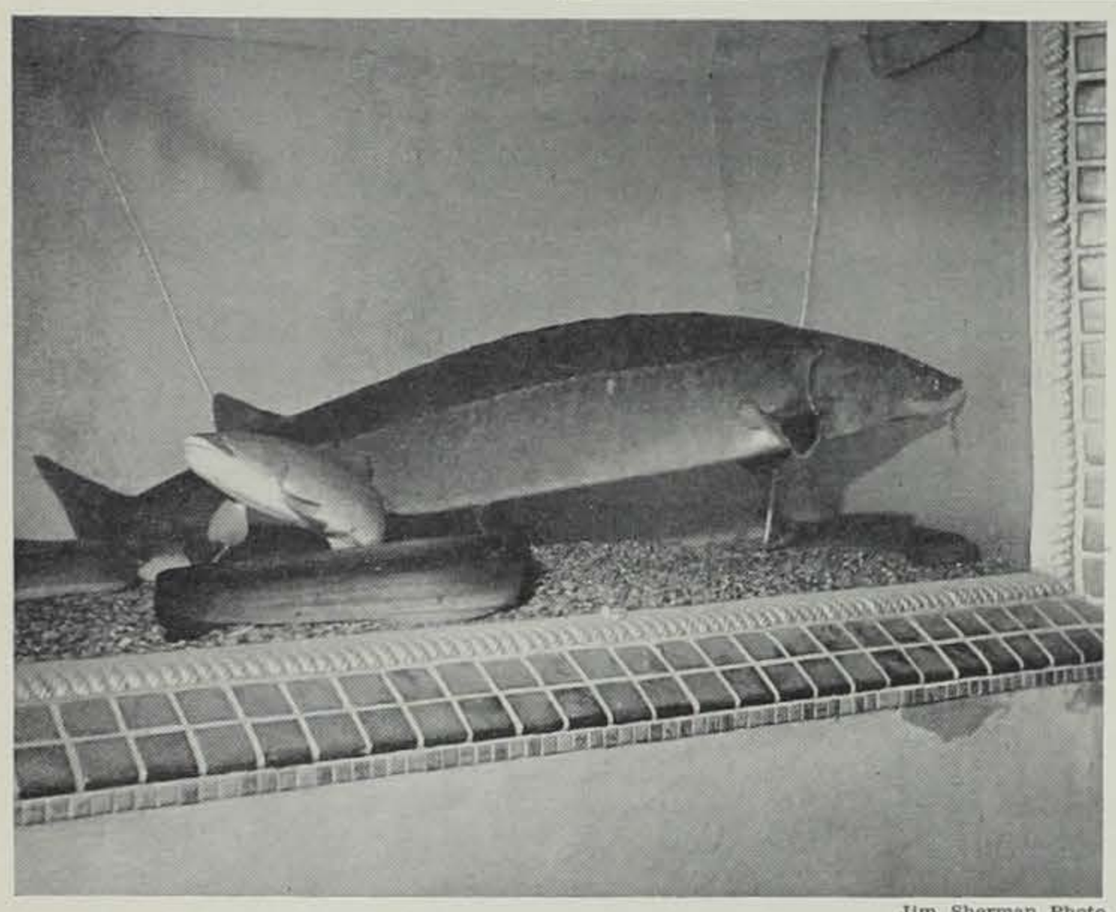
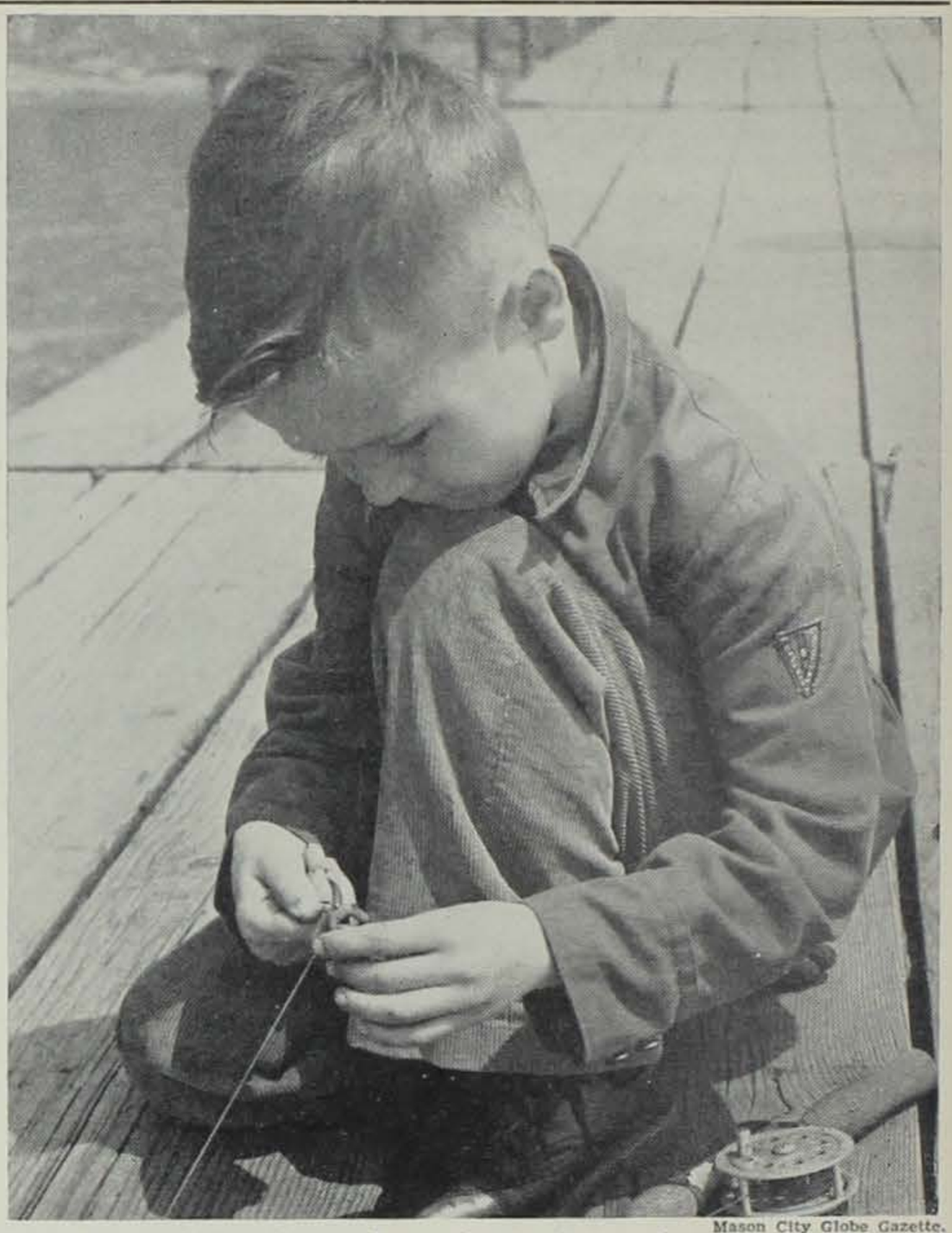
Because of their powerful gizzards, mallards can eat, break and digest hickory nuts.—*J. M.*



Jim Sherman Photo.

Old Oscar will be at the fair this year, but he's only a shell of his former self. What can we name his successor?



Mason City Globe Gazette.

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A GLORIOUS BARGAIN

For free, or thereabouts, a young man can get in on a good thing this summer—something that will get him over many a rough spot and last for 50 years.

The big bargain is fishing, and although the field is pretty crowded there always seems to be room for new talent. As a matter of fact, nearly a half-million kids have to take up fishing every year just to maintain the field forces of 18 million anglers who will pay more than $35,000,000 for licenses alone this year.

Now it's likely there'll always be kids who try fishing once and decide they'd rather stay home and study arithmetic. But every man who enjoys fishing can prepare a very economical bequest for his own young ones—or someone else's if need be—by giving them a fair chance to find out.

A minimum of instruction is required. You take a kid and an angleworm and a bluegill—and confront them with one another and things sort of develop naturally.

Equipment can also be minimum —a hook, a line and a pole. Don't clutter things up on that memorable first occasion with complicated gadgets in the way of spinning or casting reels, or expensive rods or trick lures. More kids are discouraged by being overequipped than otherwise. They'll overequip themselves just like Daddy soon enough anyway.

Simplicity brings with it spiritual advantages as well. Hardly anyone can arrange to be born in a log cabin these days, but every fisherman should be able to look back on his first encounter with a cane pole sometime between the age of five and ten.

Fishing, someone said, teaches you hard lessons the easy way

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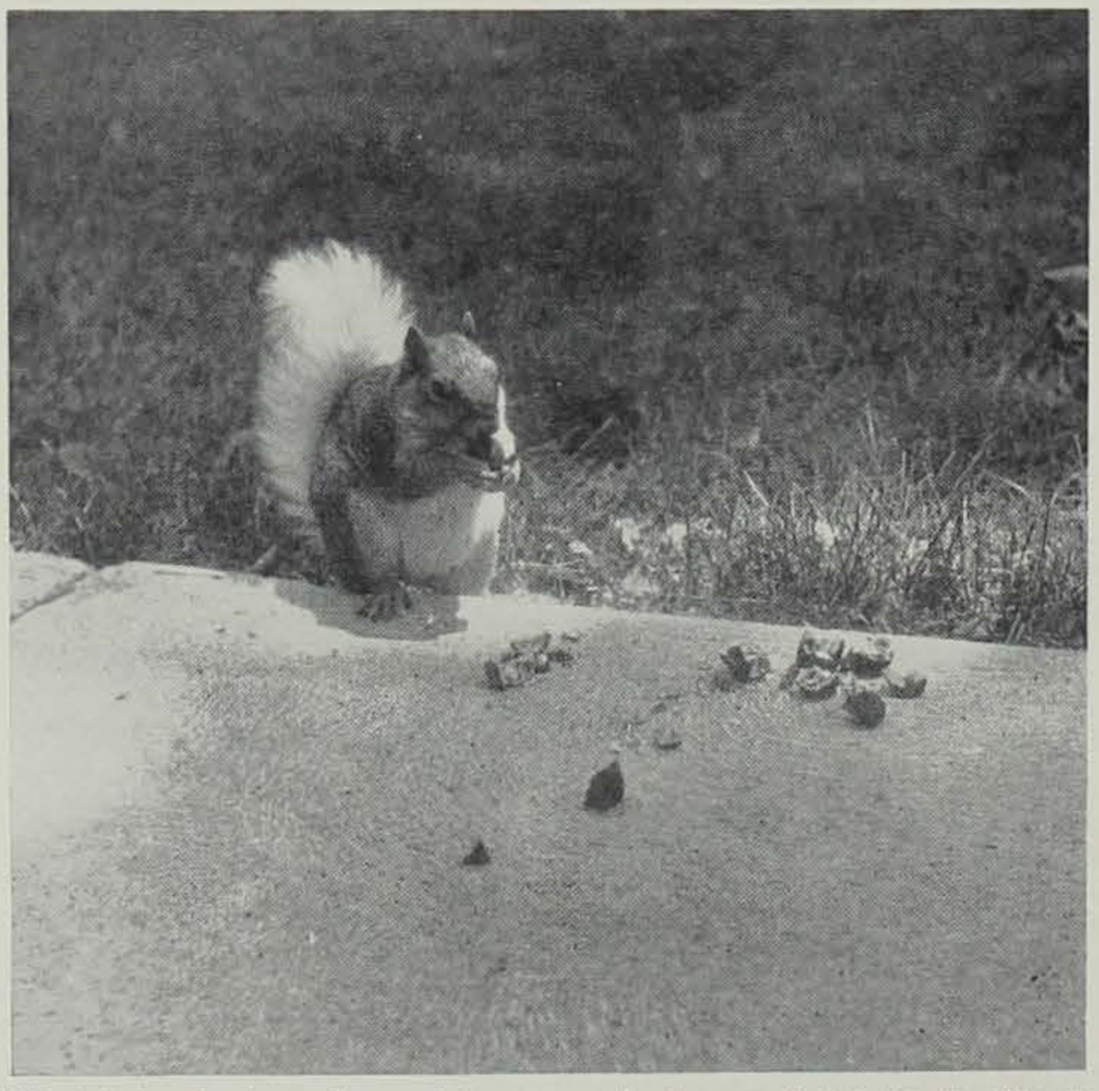
WHITE-TAILED SQUIRRELS

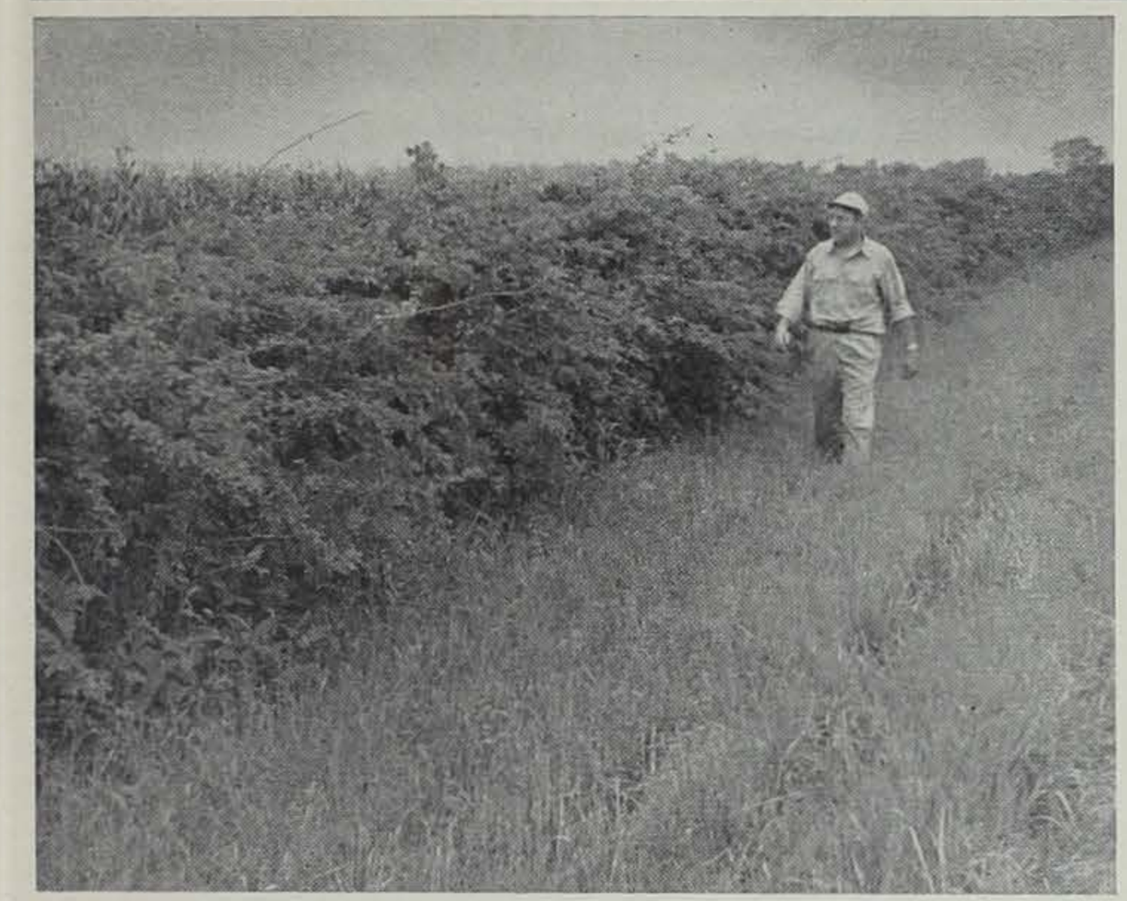
Every year when summer rolls around, the Conservation Commission starts worrying about feature animals to show at the State Fair. But Mother Nature usually comes through with something. This year she's turned up some white-tailed squirrels.

The three squirrels that will be featured at the Commission's Exhibit Building are like any other fox squirrels except for their snow-white tails. Members of the same litter, the squirrels were caught about a couple of months ago on a farm near Hartford, southeast of Des Moines. In the meantime, another family of white-tailed squirrels has popped up at Clarion, where a litter of four was born this spring in a big elm tree behind the Jack Eyler Funeral Home.

Such squirrels are really partial albinos, and while they are unusual, they are not rare. Color phases of all birds and animals occur in Iowa. In some parts of the state there are numbers of fox squirrels that are solid black.



White-tailed squirrels aren't rare, but are unusual. Because of their beauty they are usually petted, pampered, and fattened on pre-cracked walnuts.



Jim Sherman Photo.

"The current clamor for living fences is an admission that we have not understood our fence rows as vital, living parts of our farms."

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Wildlife . . .

(Continued from page 57)

valuable wooden fence. In the eyes of the rail splitter, the fence was of great value.

In this premechanized era of Wisconsin agriculture, the axe and grub hoe were also reserved for bigger jobs. So our fence rows flourished and with them the plants and animals that today we train men to study and conserve.

No single event had greater impact on farm wildlife than did the coming of the barbed-wire fence. In Wisconsin it came into use about 1880 and by 1900 both woven-wire and barbed-wire fences were common.

Our growing nation was pushing back its frontiers on all points of the compass. It was pushing on the homestead "back forty" as well. The land boom of the early 1900's caused fields to expand within their old boundaries.

Application of the simple rule that "a straight line is the shortest distance between two points" eliminated the lazy zig-zag of the split rail fence in favor of taut and tidy strands of barbed-wire. This was truly one of the first signs of intensive agriculture. The width of the fence row was thereby reduced fifty per cent, but the accompanying reduction in plants and animals was about eighty per cent. The reduction of fence row width was felt in the ever sought after expansion of the wallet; the reduction in fence row plants and animals if felt at all, was ignored. How else can we progress from old fashioned farming?

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Narrowed fence rows with backbones of barbed-wire had lost their value as wintering cover for wildlife, although they still made good travel lanes or avenues to food and other sources of cover. Between the wooden zig-zag and the straight wire fence, only their value as nesting cover remained the same.

Somewhere fence row burning had its origin under barbed-wire in a year when the spring season was wet. Dry spring weather placed the only restraint on the torch and the only reason for the restraint was the wooden fence post.

Even this was not to last. Steel mills born during the first World War began shortly thereafter to produce steel fence posts. By 1925 steel post were in wide use. "Clean farming" was the current fad. Noxious weeds suddenly lurked in the brushy fence row. Crop-devouring insects were also sheltered here. In the mask of cleanliness, fire followed the footsteps of steel fence posts across the land, robbing as it went.

Native woodland plants, making their last stands in the undisturbed fence row, now met death by fire. The luxuriant and brushy growth was replaced by quack grass and sweet clover. In the role of a new broom, fire also swept from the field edge such birds as the bobwhite, vesper and song sparrows, brown thrasher, catbird, warblers, fly-catchers, bluebird, wren and robin. Grass-nesting birds found the new fence rows too narrow so that eventually the major substitution for the songbirds was the field mouse.

Metal posts also made this the era of temporary fences. Field boundaries conceived at the breakfast table were cattle-tight by evening milking time.

Lately, though, a counter-tendency has begun to appear. The denuding of our farm landscape has accentuated our need for windbreaks. By the same token we also need bigger and better snowfences to protect our roads. We are beginning to realize how little snow is dropped on the lee side of a barbed-wire fence, and how little wind protection an electric fence affords. Grandpa could tell us about the lee side of a fence of split rails!

The increasing numbers of white and red pine windbreaks in central and northern Wisconsin are a welcome sight upon the land and testify to our growing awareness of the need for cover near the homestead and along roadsides.

The current clamor for living fences is the latest subtle admission that we have not understood our fence rows as a vital, living, important part of our farms.

The rail fence could not remain upon the rural scene any more than could stagecoaches or kerosene lamps, but its integrity as something more than a confiner of livestock lives again in a living fence. The economic utility of a living fence meets with unanimous approval. It matters little what plant or plants make up the "living" aspect in this new idea for fencing.

It is a sign of a healthy attitude toward our land when we can progress with new tools without forgetting the lessons learned with the old. The living fence is a new tool. The old fashioned fence row is not only a thing of nostalgic beauty, but its lessons are the essence of conservation.

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MAD IS RIGHT, FISHERMAN WANTS TO FIND WATCHER

Talk about a man being mad! This is a true story and it happened just last week at the Montezuma reservoir.

A certain party was out in a boat fishing. Doing right well, too. After he had caught several fish he happened to look up and could see someone on the bank watching with a pair of binoculars.

Hurriedly, he dumped the fish over the side, found out later that the man with the binoculars was just looking for enjoyment and all the fish he had, after checking, were legal anyhow. — *Montezuma Republican.*

CLEAR LAKE BULLHEADS

By Kenneth D. Carlander
Iowa Cooperative Fisheries Research Unit
Iowa State College

Bullheads have become of increased significance in Clear Lake in the last few years. Over half of the fish caught by shore and dock fishermen in July and August last summer were bullheads (see C. Di Costanzo's article in the June IOWA CONSERVATIONIST). Again this year the bullheads are providing most of the sport for those who fish along shore. The large size of the bullheads (most were 11 to 12½ inches long) was a particular stimulus to the bullhead fishermen last year. This year most of the bullheads caught by the anglers average about 8½ inches long, but a number of 12 to 13 inch bullheads also come in on the stringers.

We believe that we can now explain some of the changes which are taking place in the bullhead fishing on Clear Lake. The Iowa Cooperative Fisheries Research Unit, sponsored by the Iowa State Conservation Commission and Iowa State College, has collected information on the fish populations of Clear Lake since 1941. A special study of the bullheads was made by John Forney in 1951. Since bullheads do not have scales from which their age and growth can be determined, we know much less about the life history of bullheads than we do of many other fish (see "Bullheads are Bullheaded" in IOWA CONSERVATIONIST, May, 1948). However, recent research has indicated that a bullhead's age can be determined from rings on the spines or the vertebrae.

Most of the bullheads caught in 1950 were about 8 inches long. In 1951, the average total length was 9¾ inches. Forney found that the 1950 bullheads had 4 rings on their vertebrae and spines, while the 1951 bullheads were a year older and had 5 rings. No younger bullheads were found in 1950 and no one, two, three, or four year olds were found in 1951. The bullheads caught in 1950 and 1951 therefore were all from the 1946 hatch.

When bullheads first hatch they are cared for by the father bullhead and they remain in compact schools guarded by the male for several weeks. The schools appear as dark masses in shallow water and are very interesting to watch as the male herds them along. These schools remain together even after the father leaves them and often can still be seen close to shore the following spring when the young bullheads are a year old.

In 1951, 1952 and 1953, tremendous schools of bullheads were seen along the shores of Clear Lake. In 1946 and the spring of 1947 large schools had also been observed, but no young bullheads were seen in

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Church and Allen Photo.
Like part of the limestone bluffs, the old Motor grist mill has stood beside the swift Turkey River for nearly 100 years.

Canoeing . . .

(Continued from page 57)

is seldom less than four feet per mile and often exceeds six for long stretches, resulting in a strong current. There are no dangerous rapids and no stream obstructions except a dam at Elkader. In a few places fallen trees are lodged in bends of the river in such fashion as to make it advisable to wade the shallows around the obstructions.

The distance from Elgin to Garber is about 34 miles by water and makes an easy two-day trip. Elkader, about 18 miles below Elgin, is a good halfway point, with excellent hotel accommodations available. The best camp sites appear to be on the high gravel bars.

All distances mentioned have been converted into approximate traveling time. The total traveling time will be about 5½ hours from Elgin to Elkader and 5½ hours more to Garber. The times shown are for normal water levels prevailing in June. In particularly low water these times should be increased.

At Elgin put in at the bridge abutment on the upstream side, on the left bank as you face downstream. From the put in point cross the river above the bridge to the main channel along the right bank.

For about 6 miles below Elgin the current is fast and small rapids occur frequently. The river valley is some half mile wide in this stretch, bounded by high wooded hills. Seven and three-fourths miles (2 hours) below Elgin is the only highway bridge to be encountered above Elkader. About 3 miles (1 hour) below this bridge the valley narrows and the current again becomes quite fast. At the end of another half hour the flow from Big Springs will be seen entering the river from the left bank. This area is a private trout hatchery.

The dam at Elkader will be reached at the end of about 2 hours more. At the dam the old stone arch bridge, the remains of the old mill built in 1849, and the white towered court house make a most pleasing picture. Those fortunate individuals whose office windows overlook this scene are much to be envied.

Take out at the athletic field on the right bank 150 yards above the power dam. There are two dams to be portaged around, the large one above the bridge and a smaller one below. The portage should be down the main street to a put in point on the right bank about 400 yards (three city blocks) below the bridge, in the riverside park. The canoeist in his travels will encounter few portage trails with the conveniences offered by this one—an excellent hotel, restaurant, and cold drinks. To keep from totally disrupting business in the town it would be advisable to arrange for a car or truck with which to make the carry.

The valley below Elkader continues narrow, bounded by wooded hills. The current is fairly fast with occasional small rapids. Downstream 2¼ miles (¾ hour), Roberts Creek enters the river from the left. Three and one-half miles (1 hour) further on is the remains of the old mill town of Motor which had a brief prosperity in the 1860's. It is marked by an old iron bridge and a large stone building on the left bank.

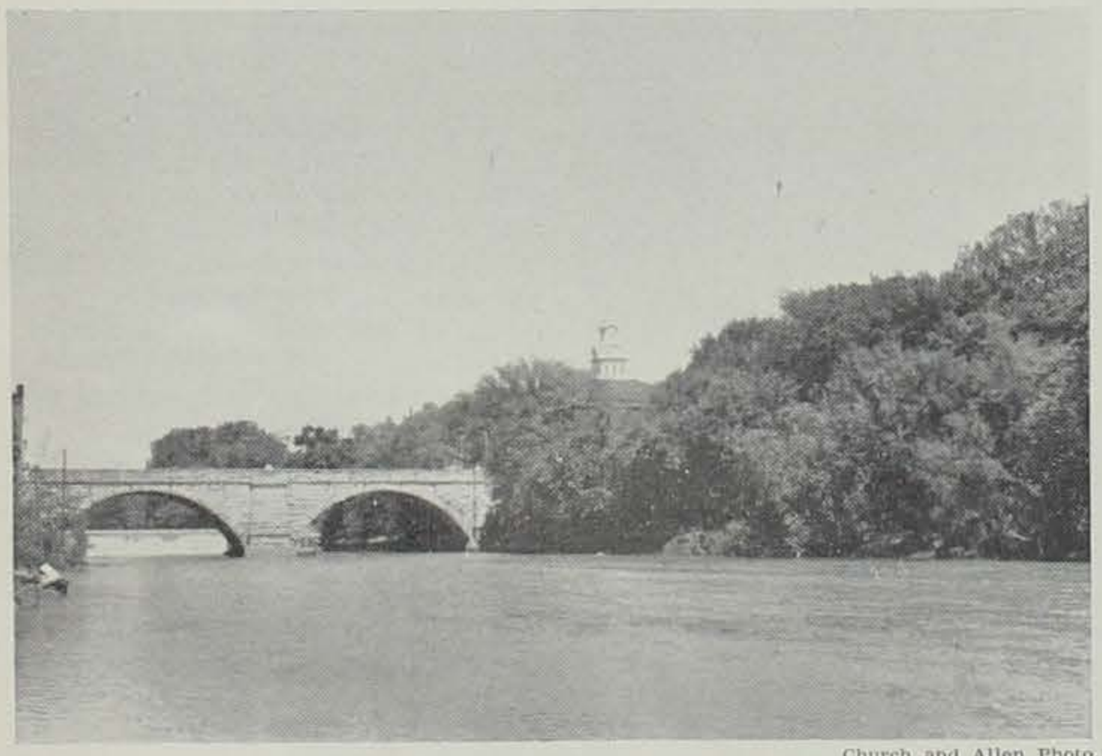
The stone building is one of the most picturesque of the old rustic mills still standing in Iowa. It was built of native limestone by John Thompson who, in 1864, spent a substantial fortune to establish what he hoped would be a thriving little community. The old mill, with its massive stone walls, worn mill stones and hand-hewn beams, is in an excellent state of preservation.

The current below Motor is swift, beginning with a rapids directly under the bridge. Steep, heavily wooded bluffs are close to the river on both sides. The river makes several sharp bends through these bluffs. One of these, 4½ miles (1 hour) below the Motor bridge is known as the Devil's Elbow. It is marked by two large pine trees in a prominent spot on the bluff on the right side of the stream at a turn. There is a long, fast, shallow rapids below here which can be run easily at normal water levels but which might necessitate wading in low water.

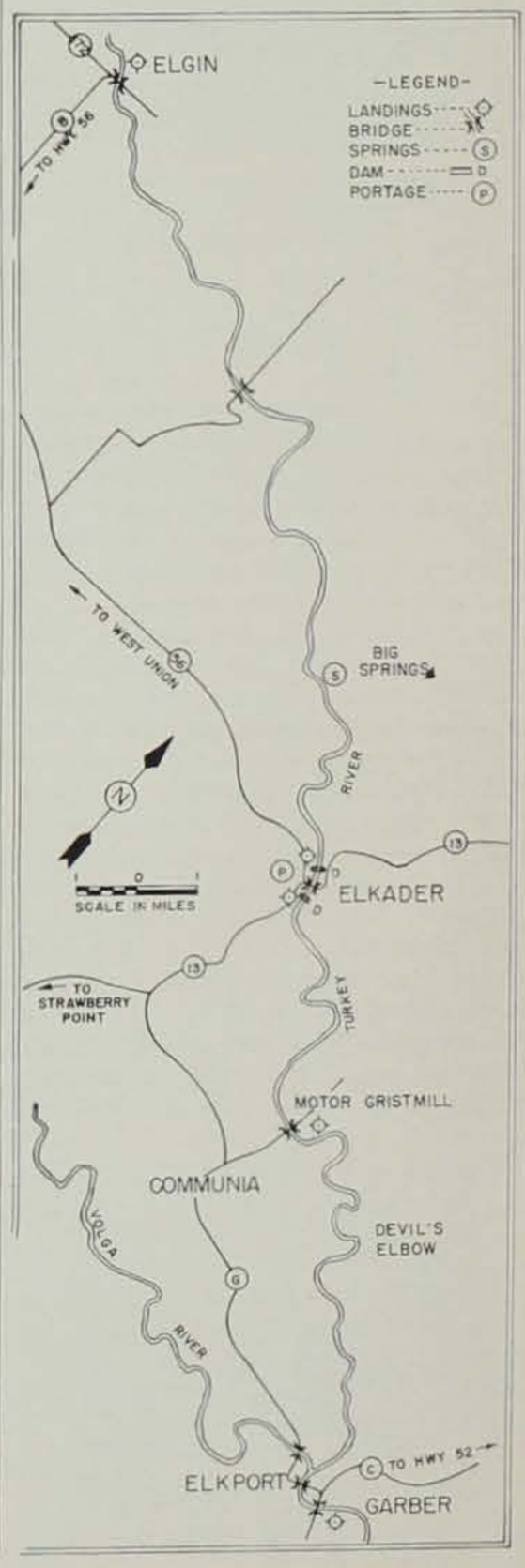
About 5 miles (2 hours) below Devil's Elbow the river leaves the hill country and enters the open farm lands. Shortly thereafter the Volga River will be seen entering from the right. One-half mile below the mouth of the Volga is the Elkport bridge and another half mile will bring the canoeist to the bridge at Garber. There is a good take out place on the right bank below the bridge.

The trip can be further extended if desired. It is 7 miles (2½ hours) from Garber to the bridge at Osterdock, 6½ miles (2 hours) more to Millville, and another 3½ miles (1¼ hours) to the mouth of the river where it joins the Mississippi. It is said to be possible to drive a car to the mouth of the river in dry weather, but this should be checked locally. The road from Turkey River to the discontinued Cassville ferry, shown on some maps is no longer passable.

The Turkey is a fine canoeing stream. A trip through its picturesque valley is both scenic and interesting. The valley is gorgeous in its fall colors.



Church and Allen Photo.
Workers in the Elkader City Hall are lucky. They have a good view of the Turkey River and the town's old stone bridge.

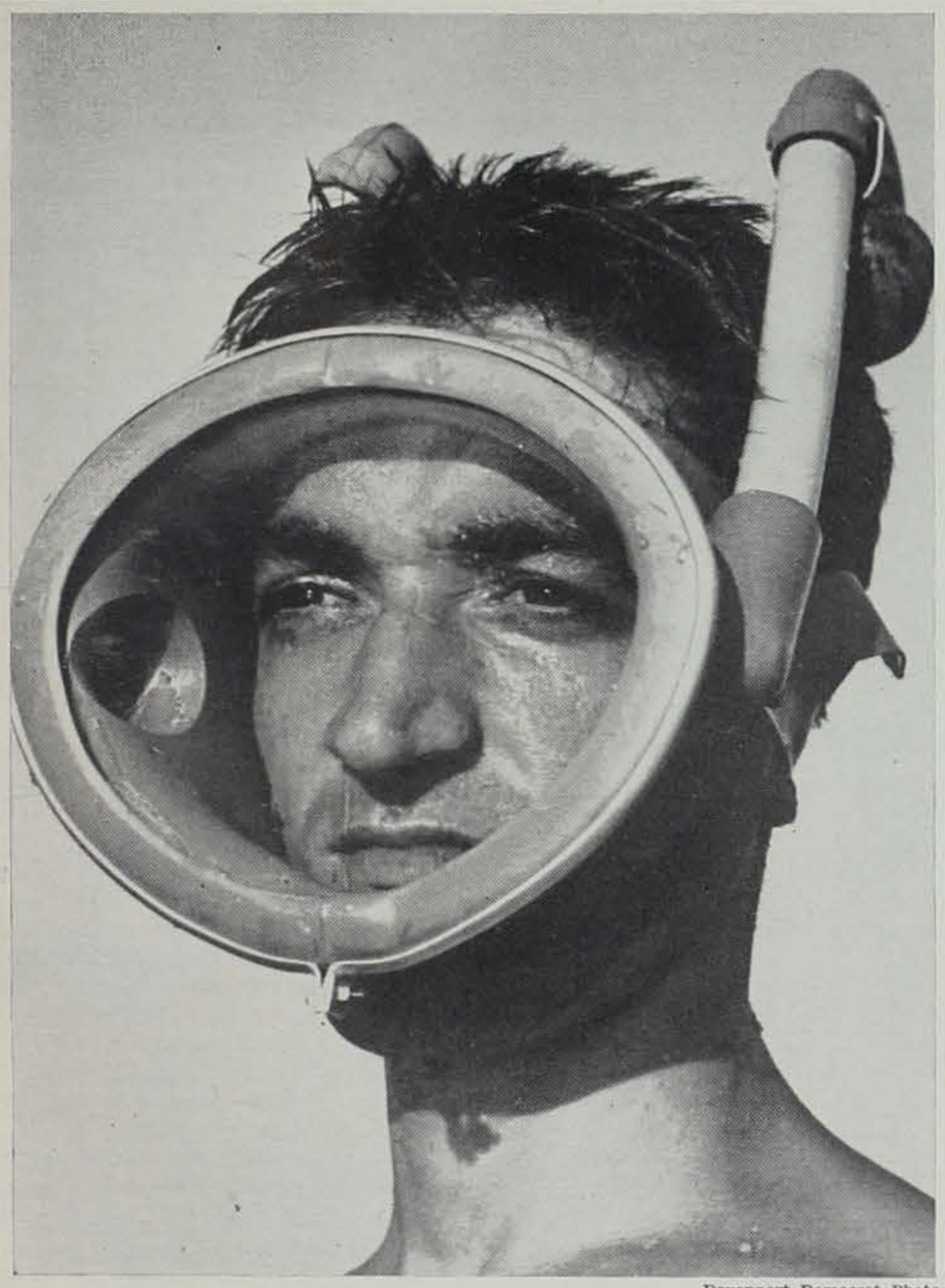


START YOUR PHEASANT HUNT NOW

It's a long time until November, but a few Iowa hunters are already laying the groundwork for some good pheasant hunting.

These are the sportsmen who realize that there is more to good farmer-sportsman relations than just asking permission to hunt once a year and letting it go at that. They are the hunters who keep in touch with the farmers, even if it is little more than dropping in to say hello. In some cases they are sportsmen who give the farmer a hand with fencing, wildlife plantings and other game-producing activities that are in their interests.

Most farmers are good guys when you get to know them. And if you are a farmer, the same thing goes for sportsmen. This is the time to get together, not on opening day. Get acquainted with your farmer host now—it will pave the way for a better pheasant season. And, who knows? Maybe you'll make a friend.



Davenport Democrat Photo.

Frogmen . . .

(Continued from page 57)

away. The carp didn't act too badly hurt, but Crews was finished for the day.

The skin-diver's methods are simple. His glass face mask covers most of his face and is equipped with a snorkel tube. The diver swims along the surface, looking downward, and the snorkel enables him to breathe without raising his head. Underwater vision with a face mask is about 70 per cent better than with naked eyes, and in the crystal water of a few sand pits the skin-diver can see well beyond the range of his spear gun. He swims slowly along, towing his weapon beside him until he sees a fish below. Then he dives, the valve of the snorkel closes, and he swims within shooting range of his prey.

Davenport Democrat Photo.

Big carp are often big because they're smart. But the carp in Muscatine's sand pits haven't learned the difference between men and other fish.

Davenport Democrat Photo.

Getting ready for deep water. Swim fins and face masks may increase a man's swimming power fourfold; his vision 70%.

"In midsummer the big carp are down deep," Crews explains. "They are lying below the warm layers of the upper water, and may be as much as 35 feet below the surface. With our swim fins and face masks, we can swim down to 25 feet or more." Dives may last a minute and a half, a long time for the average swimmer. However, rubber swim fins enable skin-divers to swim with far less effort and use of oxygen than the average swimmer. Then, too, the face mask affords excellent vision, and the underwater show helps take the swimmer's mind off any breathing troubles. With strict training, some swimmers are said to stay under water for nearly 5 minutes.

Pressure is no great problem, according to Crews. A swimmer becomes used to water pressure on his ear drums, and with a watertight face mask there is no pain in the sinuses. "I've dived with swimmers having sinus trouble," Crews remarked, "and without face masks they were miserable. With good masks, though, they could dive 25 feet with no discomfort at all."

The big problem of Iowa skin diving is where to go. Rivers are no good, because the current tires a diver, there are too many underwater obstructions, and rivers are too muddy. The best bets seem to be sand and gravel pits and stone quarries. Iowa lakes just aren't clear enough . . . even in Okoboji and Spirit the visibility is very limited. Some of the spring-fed sand pits around Muscatine are said to be 60 feet deep, and in the best of them Crews and his buddies can see 35 feet on a bright day.

Crews began skin diving in Italy while stationed there in the army. Skin diving is a major sport and occupation in the Mediterranean, and it was off southern France that aqualungs were first widely used for sport. These are face pieces and air tubes connected to light, portable, high-pressure oxygen bottles. With a complete (and expensive) outfit a swimmer can dive over 200 feet below the surface. "Frogmen" using aqualungs were active in World War II, when navy divers helped clear mines and ship barriers away from beaches. A complete aqualung and equipment may cost as much as $350, and according to Crews it has no practical value in Iowa. "An Italian

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Davenport Democrat Photo.

A fully equipped frogman. He can dive over 300 feet, and can stay under water for hours.

Clear Lake . . .

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Clear Lake by the biologists of the Cooperative Research Unit in 1948 and 1949 and only a few in 1947 and 1950. For some reason, as yet unknown, bullheads did not reproduce successfully for 4 years in a row.

The 1946 year class of bullheads thus provided most of the fishing from 1950 through 1953. The average size of the bullheads caught increased as this year class grew. In 1950 the average size was a little over 8 inches; in 1951, between 9 and 11 inches; in 1952 between 10 and 12 inches; and in 1953 between 11 and 12.5 inches. The growth was fairly rapid in 1951 and Forney found the average size to be 9 inches in June, 9.8 inches in July, and about 11 inches in August. The growth was more rapid in the lake itself than it was in Ventura Marsh at the west end of the lake. In Ventura Marsh these 5-year-old bullheads averaged about an inch shorter at the end of August than those in the lake, even though they had been about the same size in June.

The 1946 year class bullheads are 8 years old this summer. We don't know how old bullheads can get, but 8 years is beyond the average life span of most of our game fishes. On Lost Island Lake, the Conservation Commission Biologists Earl Rose and Tom Moen were able to follow the 1941 year class of bullheads until they were 9 years old. And at that age the bullheads were still fairly abundant. The average number caught per seine haul decreased about 50 per cent each year after the bullheads were 5 years old, however.

The growth of the Clear Lake bullheads was more rapid than that of the Lost Island bullheads which were known to be stunted. The Lost Island bullheads were only 10.4 inches long at 9 years of age while the Clear Lake bullheads average over 12 inches at 8 years.

Since there were no bullheads produced from 1947 through 1950, there is a gap in the size range below the 1946 year class. No smaller bullheads were replacing the larger bullheads which were caught or died from natural causes. Late last summer, however, the 1951 year class of bullheads began to take their place in the anglers' catch and this year these 3-year-old bullheads averaging about 8.5 inches, are a major part of the catch.

There appear to be plenty of replacements for the 1951 year class. Both 1952 and 1953 produced large numbers of bullheads and these fish now about 6 and 3 inches long respectively may be expected to sustain the bullhead fishing for several years. The greatest danger is that there may now be too many of these smaller bullheads in Clear Lake and that they may become stunted because of too much competition.

Ottumwa Courier Photo.

When Iowa's rivers went on a June rampage, many farmers unable to cultivate their fields philosophically went spear-fishing.

THE FLOODS BROUGHT GOOD SPEARFISHING

The only good thing about Iowa's record June floods is that it gave "inland" fishermen their first chance at spearing rough fish in overflow waters.

The Des Moines, Raccoon, Skunk, Cedar and other major rivers raged over their banks and turned lowlands into lakes. Carp, buffalo, and other rough fish moved up into these backwaters, and many were trapped there by the receding floods. Spear fishermen made the most of the situation. Tons of rough fish were taken from sloughs and flooded fields, and in the Twin Lake area alone, spear fishermen filled pickup trucks with carp.

The picture above was taken near Eddyville, where the Des Moines River had broken out over cornfields. Shortly after the picture was taken one of the fishermen speared a 25-pound carp. Many of the big fish in such fields were in water so shallow that their backs were above the surface.

While this is the second year of Iowa's rough fish spearing season, last year's season opened too late to take advantage of the spring floods. Under the new law, carp, buffalo, gar, dogfish, quillback and gizzard shad may be taken by spear or bow and arrow in any state waters opened to fishing. The season extends from May 1 to October 31, with spearing allowed daily between the hours of sunrise and sunset.

A FAST FISH SCALER

For anglers who are always so lucky that their arms get tired scaling fish, a simple and effective fish scaler can be rigged up using an electric drill and a half-inch pipe tap.

The pipe tap is spiny on one end, square on the other. All you have to do is round off the square end to fit the drill socket and then go catch some fish.

Bargain . . .

(Continued from page 60)

And it starts when the eight-year-old first steels his nerves to face the world's cold facts and threads a struggling worm on a waiting hook. — *Burlington Hawkeye-Gazette.*

Although otters are members of the weasel family they are extremely playful, gentle and affectionate.—*J. M.*

Frogmen . . .

(Continued from page 63)

diver with no oxygen equipment whatever, has dived 137 feet off Italy," Crews reports. That should be enough for anything in Iowa.

Gear used by the Davenport skin-divers has a total cost of about $50. A snorkel mask costs $10.95; a Piscetti spear gun, $25; swim fins for feet, $11.95, and a rubber swim fin for the free hand, $2.50.

Some skin-divers are also ardent fishermen who use the knowledge gained underwater to catch fish on pole and line. Crews recently fished one of the Muscatine sand pits with some Davenport anglers who tried for bass with plugs, spoons, and live bait. No strikes. To prove that there were bass in the pit, Crews put on his skin-diving gear and went down deep to take a look. During his excursion he saw 75 bass that averaged about 2 pounds, and finally spotted the grand-dad of them all—a lunker that weighed over 6 pounds. The diver swam down, the two looked each other over carefully, and then parted friends.

It's doubtful that skin diving with spear guns will ever take the place of rods and reels in Iowa. Such fishing is restricted to a few small, clear bodies of water, and it's a rigorous, sometimes dangerout sport. But even the most hidebound fisherman must admit one thing: it's different.

Fort Atkinson . . .

(Continued from page 58)

border of the Iowan drift, the deposit left by the glacier, in the Kansan area. This drift border extends generally north-south through Winneshiek County.

At the park and eastward, weathering and erosion have been at work since the Kansan glacier left, a matter of several hundred thousand years. Because of that, it is well drained country, one of ridges and valleys. Much of the glacial drift has been washed away. The Turkey River valley north and east of the park has been carved out of the bedrock by the river in postglacial times. The valley of Krum Creek at the south is another feature of postglacial erosion.

There is no evidence of glacial action right at the park site. The ground has, of course, been much disturbed over the years of white man and Indian occupancy. Practically all of the soil at the park may be the residue left by the weathering of the limestone. Certain it is, that it is not very thick. The well at the fort penetrated only a few feet before getting into the bedrock. Much of the subsoil of northeastern Iowa is similarly residual, formed in place by the weathering of the bedrock.

The wind also played a part in the pre-human history of northeastern Iowa. Deposits of loess are found almost everywhere. Loess is a silty material, free of sand and stones, and can be thus recognized in road-cuts. It was deposited after the glacier had withdrawn. The material was blown from the barren drift surfaces, most likely from the surface of the Iowan drift.

Probably the soldiers and the Indians thought little about what had been going on in the vicinity of Fort Atkinson before their coming. The visitor of today can plainly read the story in the bedrock, the subsoil, the streams, and the rolling hills and valleys of the area.

A PIKE THAT COULDN'T LEARN

Northern pike may be mighty fighters, but sometimes they aren't very smart.

Bob Thompson, custodian at the Dudgeon Lake Game Area north of Vinton, went down to the lake last month to do some plugging for pike and bass. While reeling in his plug after a cast, he saw that it was being followed by a good-sized northern. The fish didn't take Bob's offering, but it followed the plug close enough so that Bob had a good look at it. In the fish's jaw was a souvenir of some past battle —a jointed yellow plug.

Knowing that he had a similar plug back at the house, Bob hurried home, got his plug and returned to the lake. On the second cast he hooked and landed the six-pound northern, now with two yellow plugs of identical style and make hooked firmly in its jaw.