

IOWA CONSERVATION

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IOWA LAMPREYS—AND OTHERS

REGISTRATION OF SMALL BOATS

With the boating season almost here, Iowa boat owners are reminded that certain craft must be registered with the Conservation Commission, and that boats used in the state-owned waters must first undergo inspection.

State law requires that power boats capable of travelling 8 miles per hour or more must be registered for use on state-controlled waters. These waters include the Grand and meandered rivers, natural lakes, and the Mississippi and Missouri rivers to the centers of their channels.

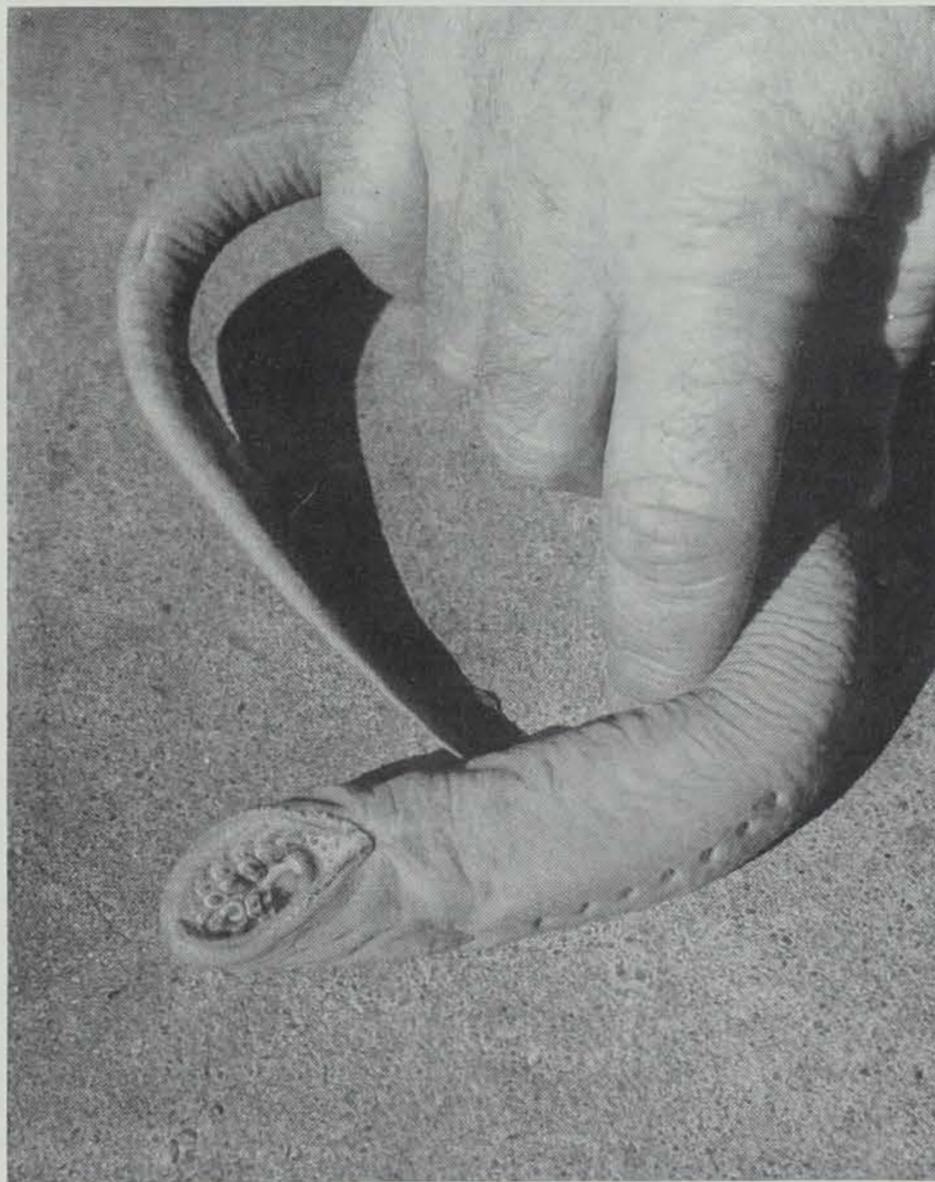
However, if boats are registered with the U. S. Coast Guard it is not necessary to register them with the state. Under federal law, boats longer than 16 feet that are used on the Mississippi or Missouri rivers must be registered with the Coast Guard. Boats of 16 feet or less—if capable of going 8 miles per hour—must be registered with the state for use on the Mississippi or Missouri.

In a recent letter, Rear Admiral T. Jewell of the Coast Guard stated: "The statute (providing for registration of boats by the Coast Guard-Ed.) exempts those vessels operated in whole or in part by machinery which are 16 feet or less in length and temporarily equipped with detachable motors. Congress has not seen fit to presently embrace outboard motorboats of 16 feet or less in length within the provisions of the statute, it would be entirely proper for the State of Iowa or any other state to regulate under police powers the numbering of such outboard motorboats."

Such state registration of boats is free of charge, and forms may be obtained from local state conservation officers or from the Commission offices in Des Moines. An owner must register any particular boat only once. That boat does not need to be re-registered unless it changes hands.

Power boats may also be used on state-owned artificial lakes of 100

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Jim Sherman Photo.

The mouth of the sea lamprey is a suction cup armed with horny teeth and a file-like tongue. The lamprey quickly cuts through fish scales and flesh to feed on blood, and resists efforts of the fish to dislodge it.

Mississippi Fishing Since The Nine-Foot Channel

Don Edlen
Fish Culturist
Sabula Fisheries Station

The fishing picture has changed a lot on the River since the building of the locks and dams on the Mississippi. Before the channel was built, there was some sport fishing enjoyed by a few people. Most of these lived near the river; some in cabins. They and their friends were about the only people that did any fishing.

In 1934, the U. S. Corps of Army Engineers began clearing the tim-

ber from the islands and all low bottom lands that would be inundated by the new nine-foot channel. This meant the cabins had to come down, too.

Fishing was then at a standstill; almost all the natives of the area sought fishing elsewhere where they could also camp. The nine-foot channel was completed and put in use in 1940 for river freight traffic.

Improved Angling

Some of the higher islands were

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John Madson

Early last winter, John Spinner of the Lansing Fish Hatchery rekindled some old fears along the Upper Mississippi.

He had been netting fish in Minnesota Slough near Lansing when he took a large carp that was dying and almost "bled white". Attached to it were three lampreys, parasitic hitch-hikers that may cling to a fish and feed on its blood until it perishes.

Two of John's lampreys were uncommonly large; one was 14 inches long. Native Mississippi lampreys of that size are rare, and the word filtered out that the River had finally been invaded by the scourge of freshwater fisheries: the marine lamprey.

Spinner gave the lampreys to fisheries biologist Bob Cleary of Independence, who allayed the fears of some rivermen by identifying the parasites as normal Iowa species. Two were chestnut lampreys; the third was a silver lamprey. All native Iowans, and not serious on a broad scale.

There are three lampreys within the state. The chestnut is the largest, running from 8 to 14 inches; Spinner's specimens were lunkers. This lamprey is parasitic, attaching itself to a fish with its suction-cup mouth, rasping away flesh, and feeding on blood and body juices of its living host. In Iowa, it evidently occurs only in the Upper Mississippi.

Then there's the silver lamprey, also found only in the Mississippi. A slender fish reaching a foot in length, and also parasitic.

Last—and least—there's the little brook lamprey that doesn't even feed as an adult. It reaches about 8 inches in length and is usually found in northeastern Iowa streams.

Easy Winter Targets

In the Upper Mississippi, lampreys may be fairly common in some areas; scanty in others. When they do turn up they may alarm fishermen because several of the parasites may be found in a small area attached to fish, particularly

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**MORE NOISE,
MORE FISH?**

By Marion Toole
Chief Aquatic Biologist
Texas Game & Fish Commission

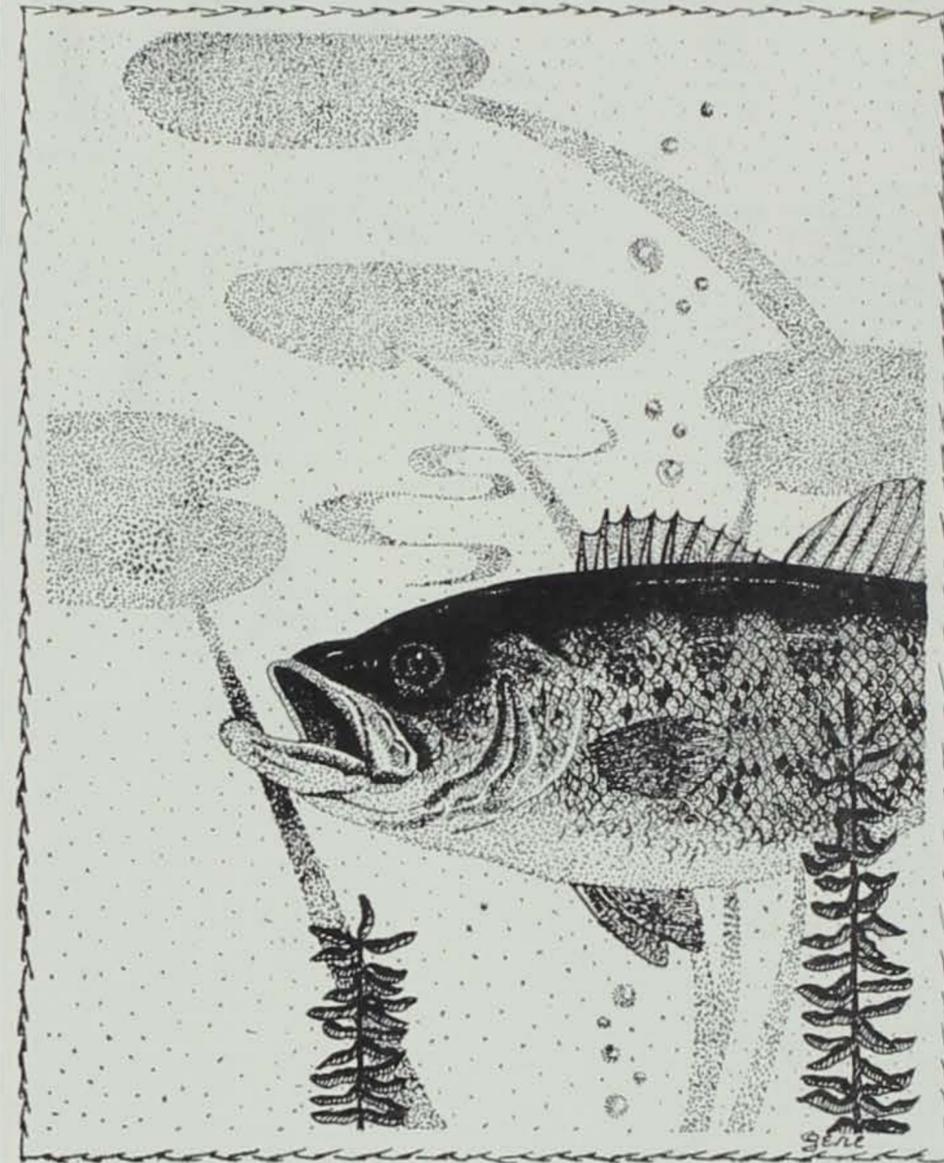
Gangland tactics of feeding black bass and immunity of fish to noise at shallow depths are reported by Texas Game and Fish aquatic divers in their studies to familiarize anglers with secrets of the deep and to improve fishing luck.

The Chief Aquatic Biologist for the Commission said the noise observations particularly as concerns the increasing popularity of motorboats, "may provoke some adjusted attitudes toward surface disturbances and their effect on fishing."

He suggested for "more entertaining reading" the reports made by Aquatic Biologist John E. Tilton, assistant project chief, on observations in Lake Travis of the Highland Lakes chain about one kind of fish preying on another.

Tilton wrote that black bass seemed to use organized gangster tactics in rounding up some elusive perch. He stated: "Two small black bass were seen feeding on a school of Rio Grande fry. Five or six of the fry became separated from the main schools and sought cover in a small patch of vegetation approximately one foot in diameter. The two bass took stations on opposite sides of the vegetation patch and waited. As the perch fry left the cover to rejoin the main group, they were instantly captured by one or another of the bass."

The diving technicians, who penetrate to depths of as much as one hundred feet, noted "It appears strange to see the predator and prey species sometimes existing so harmoniously together until some spark sets off a feeding splurge when many of the prey species are devoured." They added: "Other instances have shown small black bass slicing viciously through schools of Rio Grande perch fry, taking one or two with each dash. While the bass are actively feeding, the young are frantically seek-



Gene Murray Etching.

ing cover in moss or crevices. Suddenly, when the bass become gluttoned or stop feeding, the perch fry leave cover, congregate again into a compact group and move on, often side by side with the bass which had been feeding on the school."

Concerning surface noises, Tilton's crew wrote: "A ten-horsepower outboard motor is used frequently in the diving areas while observations are in progress. No difference in numbers of fish seen or general activity can be seen during periods of extensive use of the motor and periods when the motor is not in use. On one occasion the boat was run at full speed back and forth over a test area. The fish in the area completely ignored the motor noise and continued normal activities. . . . Other surface sounds are believed to have little effect on fish activity. The fish observed completely ignored common surface sounds such as movement in the boat, talking by helpers on the surface, and even low flying jet aircraft."

Below surface noises actually attract fish, noted the divers, who reported. "It was noticed that certain fish could be enticed within inches of the diving team by tapping two small rocks together. . . . Although most species appear curious only, the longear sunfish seems to be infuriated by the tapping sound and would often viciously and repeatedly attack the rocks . . ."

"In addition to the rocks, a small metal can containing steel bolts

was sealed and used as a noise producer. By shaking the can, a drumlike noise was produced which could be heard distinctly at a range of 100 feet. . . . Obvious interest was shown by bass, sunfish, and Rio Grande perch."

**MORE COLOR TESTS
INDICATE YELLOW IS
BEST SAFETY COLOR . . .**

Yellow has again received top rating in visibility tests for the safest color in hunting garb.

Ross Leonard, director of the Idaho Fish and Game department, said results reported from a series of tests in typical big game terrain at Fort Lewis, Washington, and on the Olympic peninsula favor yellow "even more decisively" than those on Fort Ord's brushy terrain last July. The report was issued in summary by the California Department of Fish and Game, one of the sponsors of the tests, he said. A final series of tests against a background of yellow and red foliage has been announced for next fall.

As in the earlier series, two groups of soldiers were used, one with normal vision and the other having varying degrees of color-blindness. Both squads went through five days of testing in which they tried to spot and identify the color of cloth-covered panels of different shapes at 25 to 300 yards in typical Douglas fir and brush terrain. Early morning, mid-day and twilight hours, and vari-

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**A NOTE ON COUNTY
CONSERVATION BOARDS**

Interest in County Conservation Boards is gathering momentum, although some counties seem to be awaiting the outcome of their neighbors' programs. Several counties will be ready to submit the question of a County Conservation Board to voters on their next ballot, but they shouldn't overlook an important point.

T. C. Poston, Wayne County Attorney, writes: "Wayne County attempted to get a petition to the Board of Supervisors in time for the past election, but failed to do so in time to give the required notice, much to our regret."

"It might be well to call the attention of your readers to Section 345.6 of the 1954 Code of Iowa which requires that the question to be submitted to the voters be published in the county newspaper once each week for at least four weeks. In other words, they should get their petitions signed and presented to the Board of Supervisors six to eight weeks before the date of the next regular election to allow them plenty of time, unless this law has been repealed."

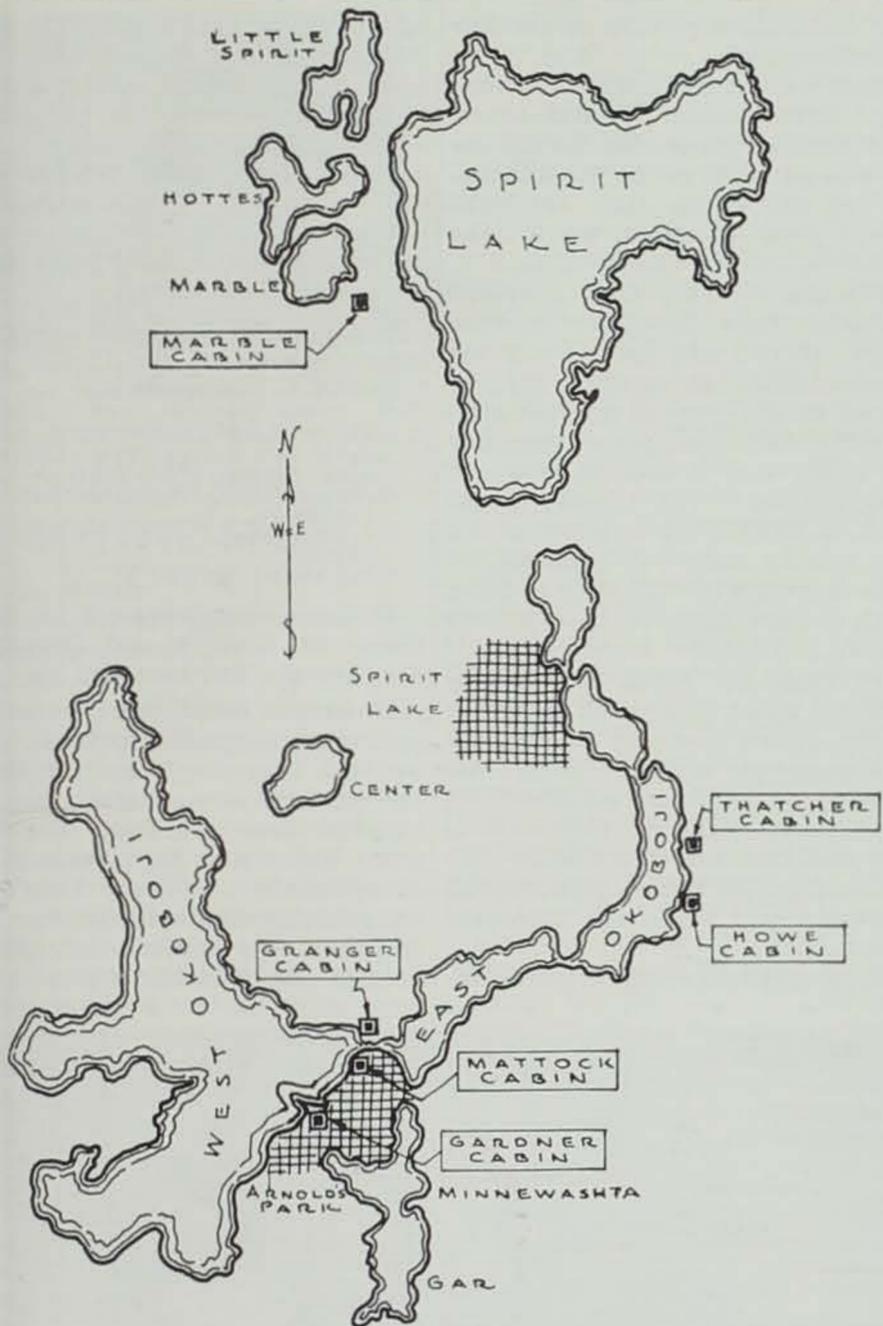
POLE, PADDLE AND OARS

Canoes were made to paddle, rowboats were made to row, and duckboats were made to pole. Unfortunately for the fisherman who wants to use manpower instead of gas, outboard boats were made for motors.

A boat built for a powerful motor doesn't lend itself too well to hand propulsion. It's too wide in the stern, too flat in the bottom. If you're going to row a fast outboard boat, you may as well give up any ideas of speed—but you can cast along a good shore line or troll slowly without back-breaking labor.

If you leave the choice of oar up to your dealer, make sure he has at some time or another rowed a boat. There's no set rule for oar length in relation to boat width. But oars that are too short won't reach both you and the water; oars that are too long knock together and get the best of you through sheer clumsiness.

Most rowing guides sit near the center and face toward the bow. They stroke the oars alternately. This won't give the speed of a good stiff pull on both oars at once but it is less work, involves only mild arm action, and gives the guides a chance to watch where the boat is going. If you have time, then turn your back to the bow and put your weight onto both blades at once.—*The Fisherman Magazine*



Map of Spirit Lake region and the approximate locations of the six doomed cabins.

MARCH: THE MONTH OF TERROR

John Madson

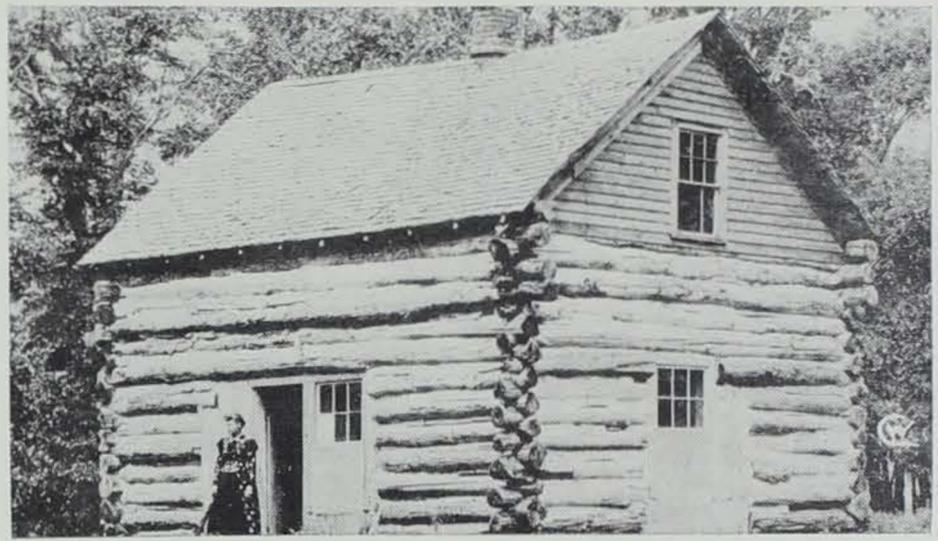
It was just one hundred years ago, and March was a bitter month even for frontier Iowa. Brilliant days alternated with cruel winds and freezing nights, and the three companies of men laboring across the open prairies of northwest Iowa were having a hard time of

There were a hundred of them, crumpled together by Major Billy

Williams of Fort Dodge for a desperate trek through spring snows to Spirit Lake. Pitifully equipped with scanty rations and supplies, they were in no shape for an emergency campaign. The heavy ox wagons bogged in thawing drifts and mud, and the thinly clad militia marched and counter-marched to pack roads for the transport wagons. During the day the men fought through drifts 15 feet deep, and hand-hauled wagons and ani-



An early painting depicting the massacre of the Gardner family. Abbie Gardner is being led away by Sioux warriors.



Abbie Gardner Sharp and the family cabin. Mrs. Sharp lived here again in later years, and died at Arnold's Park in 1921. The cabin is now a state historical monument.

mals through snow-choked ravines. At night they slept in the open, one blanket per man. There wasn't a tent in the entire command.

Bad Medicine

There had been word of an Indian massacre at Spirit Lake or thereabouts; of captured women and dead families. Major Williams and his Hungry Hundred were heading there as fast as they could, hoping to save some settlers, recapture some prisoners, or something. A matter of life and death. But they were a relief column with nothing to relieve; saviours with nothing left to save.

Far to the northwest, another party moved unencumbered by heavy equipment and supplies. They were Sioux guerillas, freshly blooded and with many coup. Behind them was a desolated Spirit Lake that they left with satisfaction, knowing that no white man now lived beside it or breathed its air.

It was a workmanlike crew with no squaws or dogs. At its head was a broad, powerful Sioux with reddish hair and a face deeply scarred by smallpox. This was Scarlet Point, or Inkpaduta, the renegade son of the renegade Black Eagle. Like his father he had been expelled from the clans of the Wahpekute Sioux. He sat in no councils, a hair-trigger killer shunned even by the dog soldiers. A real tough Indian.

Inkpaduta and his small band of warriors had pulled into the Spirit Lake area in a vile mood. In the previous December, 1856, they had entered Iowa near Sioux City and had loafed around Smithland until the settlers had kicked them out. It was a hard, hungry winter anyway, and the Smithland eviction didn't make it any happier for the Indians. As the winter wore on, Inkpaduta grew more ugly.

At Correctionville, he looted a cabin and beat the owner. At Pilot Rock he stole food. At Milford colony near Cherokee he looted more cabins, killed livestock, and drove away the owners.

An O'Brien County home was plundered and the protesting settler was hanged by his thumbs. Lucky settler.

At Peterson, in Clay county, he

terrorized families and held two white women over night.

At Gillette Grove, one of his braves insulted a white woman and was bushwhacked by the whites. Inkpaduta promptly killed a hundred head of cattle, drove the families away and destroyed everything in sight.

Even so, the Sioux renegade had restrained himself, limiting his hatred of all white men to minor violence. But when he reached Spirit Lake—the awesome *Miniwakon* of the Sioux—and found it actually settled by white men, he lost all restraint.

Bloody Sunday

It was Sunday afternoon, March 8, when Inkpaduta and his sullen braves appeared at the James Mattock cabin between West and East Okoboji lakes. They demanded hay which Mattock, who was feeding 40 cattle, couldn't provide.

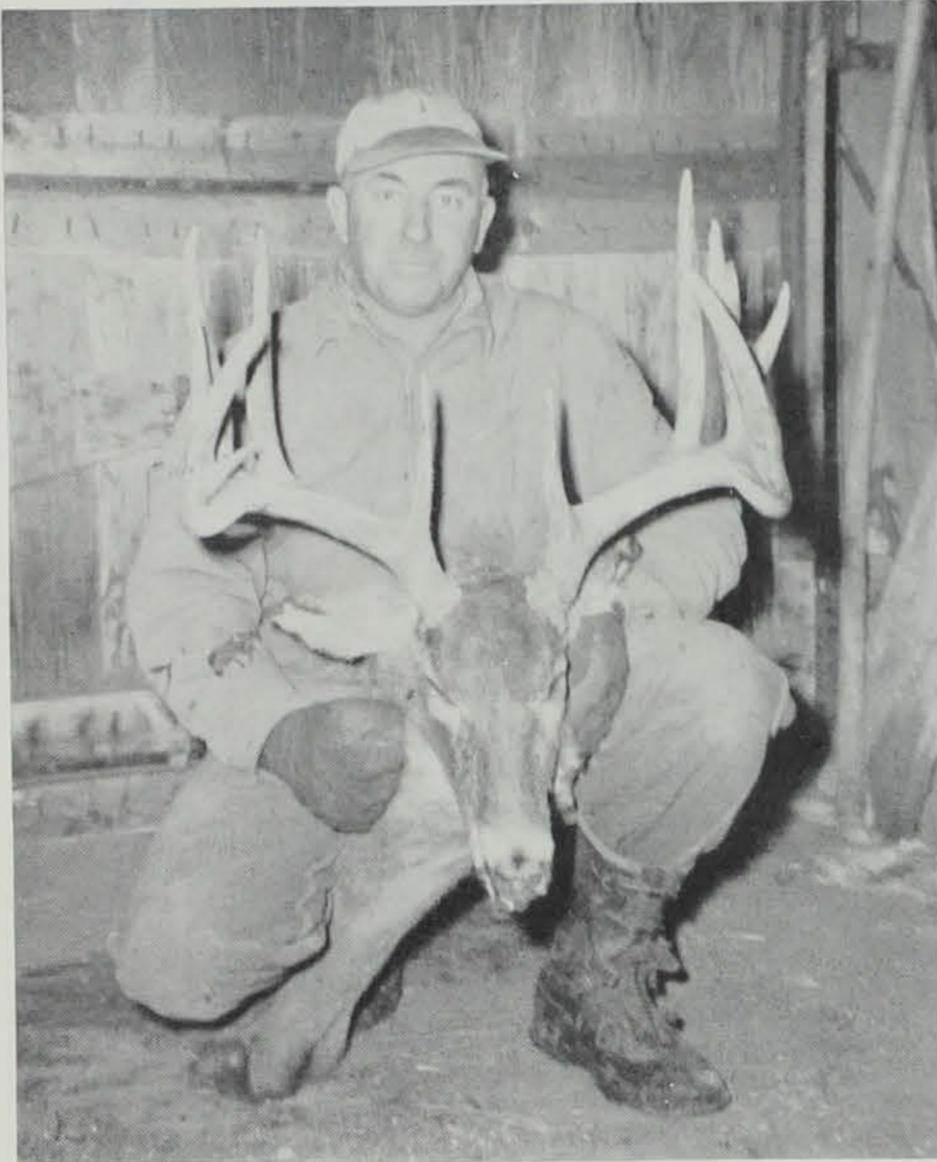
In mid-afternoon Mattock and his wife Mary decided on a desperate dash for the Carl Granger cabin just across the narrow inlet between the two lakes. They were probably slowed by their five children. They couldn't outrun the Sioux and the entire family was caught and killed before they could reach Granger's. The Indians returned to the Mattock cabin and put it to the torch.

They then padded across the little bay to the Granger home. Carl Granger and his bulldog met them in the doorway and died there. His cabin store was stripped of everything of value.

That evening nine warriors appeared at the Rowland Gardner cabin on the southeast shore of West Okoboji. They were let into the cabin and Gardner was shot in the back as he reached into the flour barrel. Then Mrs. Gardner and her married daughter, Mary Luce, were killed. Abigail Gardner, 14, tried to protect the Luce babies but they were torn from her arms and killed. Young Abbie was taken prisoner.

Early Monday morning, settler Joel Howe was caught on the ice of East Okoboji and beheaded by a small party of braves. At the home cabin, Mary Howe was busy with Monday morning chores when the Sioux arrived. Her eldest son,

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Brady and buck. "I hit him hard, but he just shook it off."

ANY RECORD DEER IN IOWA?

A couple of issues ago, in an unofficial recap of the last deer season, notice was made of a huge deer killed by Tony Schmitz of Maquoketa. The story was concluded with something like "if you know of any other big deer, let's hear about them—"

Several proud deer hunters subsequently sent in pictures of their trophies, all outstanding. Two of them were exceptional; whopping

great bucks with improbable antlers.

One hunter was Frank Brady of Guthrie Center who took his big buck in Guthrie County. A big, friendly guy, Frank has dropped in a couple of times to talk over his trophy and relive the season. The second time around he brought the antlers, and they looked even bigger than in his photograph.

Then, a few days later, a letter from Bernard Rank of Cedar Rap-



Bernie and buck. Strawberry Point again produced a giant.

ids, enclosing a picture of another massive rack.

This started some serious thinking. Conservation Commission field men see many deer during the year in all parts of the state. Some of the old bucks that are seen aren't even discussed, for no one would believe the descriptions.

It's not unlikely that a record whitetail buck has been shot in Iowa. Health and size of any big game animal is directly proportional to the general species size, climate, and quality and quantity of food. Our whitetails are the "big species." The climate is favorable, and there's no doubt of our soil quality and food quantity.

Is there a whitetail deer in Iowa with antlers larger than any ever before recorded?

In 1953, Dr. R. E. Stewart of Lamont killed a big buck in northeastern Iowa that was entered the following year in the national competition of the Boone and Crockett Club of New York. This club is the one that sets the trophy records—America's final authority on championship big game measurements.

In the 1954-55 competition, Stew-

record are made around the antler just above the "burr" near the head, along the full outside sweep of the main antler beam, and of the widest inside spread between the antlers. Each measurement, and other features, carries a certain number of quality points. Stewart's antlers won third place with a total of 184 5/8 points.

Bernie Rank has taken unofficial measurements of his trophy and lists the following data:

length, right antler: 28 inches
length, left antler: 27 3/4 inches
inside spread: 25 3/4 inches
circumference, right antler: 5 1/2 inches
circumference, left antler: 5 1/2 inches
total antler points: 16

Measurements have not yet been taken of Brady's and Schmitz's deer antlers, but soon will be.

However, sheer size of antlers isn't everything. For national competition, they should be beautifully formed and symmetrical for the "typical class" of deer. The trophies we've just seen seem to be exceptionally well-formed, and are undoubtedly contest calibre. The whitetail deer antlers that placed first in the 1954-55 national com-



Dr. and Mrs. Stewart and the third finest whitetail deer in North America, circa 1954.

art's trophy was judged the third finest in North America—a leetle ol' Iowa deer that made good in the big city. While in New York to receive his awards, Stewart received a jolt. If he had entered the antlers the year before when he had shot the deer, they would have been a record.

Stewart's trophy was a magnificent rack, but it may be shaded by some of the ones taken last season. His trophy had the following official dimensions:

length, right antler: 26 3/4 inches
length, left antler: 26 3/4 inches
inside spread: 27 inches
circumference, right antler: 5 1/2 inches
circumference, left antler: 5 1/2 inches
right antler points: 7
left antler points: 7

Measurements of deer antlers for

petition weren't the largest submitted; in fact, they were slightly smaller than the second place winner's.

The winning antlers had the following dimensions:

length, right antler: 29 1/4 inches
length, left antler: 29 1/4 inches
inside spread: 21 1/2 inches
circumference, right antler: 4 3/4 inches
circumference, left antler: 4 3/4 inches
right antler points: 5
left antler points: 6

With this article are picture of the two big racks that were taken last season. Examine them closely. Have you seen any that are better? Let us know. It would be a shame if the world's record whitetail antlers are hanging in someone's barn with harness draped over them.—J. M.



Charley liked to pack with neighborhood dogs, but sometimes played it solitaire. He teased local cats by nipping their tails, but never hurt them.

ANOTHER COYOTE STORY

The Editor
of the Conservationist
at Des Moines, Iowa
Dear Sir:

Was most interested in your January article, "Song Dogs" and their children.

Some twenty years ago we moved to western Nebraska where coyotes were numerous, and since our home seemed to be a haven for various and sundry 'pets', we eventually acquired one of these interesting rascals.

He barely had his eyes open when I first presented him, fleas and all, to our daughter, then eight, and there seemed to be an immediate wedding of affection between them. Like the stray dogs, rabbits, chipmunks and other benefactors of her hospitality, he was given a nest or "home" in one of the other closets.

His long back legs and peculiar gait as he moved about the house soon earned him the name of "Charley", reminding us of one of the village characters of the same name. Charley became housebroken and would open the kitchen screen and go out into our large garden where there was plenty of foliage and underbrush. He spent much of his puppy-days in this area and was never introduced to a collar or chain, and as he grew up he would be content to spend the early evening in the house, but at bedtime he wished to be turned outside.

Charley was a harmless fellow who would pack with the neighborhood dogs, or occasionally play solitaire. In this community of 100 souls, townfolk had learned to know and love him. No one



Portrait of Charley, a ham coyote who loved to pose for pictures.

seemed to be alarmed, as they walked home from the local movie house late at night, should Charley follow them at about 10 paces to the rear. Visitors were astounded that Charley was really a pet of the town.

Oddly enough, he evidenced some mother instincts! On a very cold Saturday evening we missed both Charley and Major, one of our six week old Collie puppies. The weather went into a zero period with about 12 inches of snow which continued until Wednesday night. We were certain the puppy had succumbed to the cold, and had our doubts about Charley since he had not been up for food.

Early the next morning we glanced out the window to see Major strutting down a tire-rut in the snow covered road, closely followed by the coyote. As I walked to work with a neighbor I remarked about Charley and Major returning home. The neighbor said, "Why they have been sleeping in my barn since the snow began, and what's more, the coyote has been bringing food to the pup."

Charley was a "tail-biter." He frequently teased the cats by nipping at the tip of their tails but never otherwise molesting them. We also had a large bullsnake that seemed to stick around the place. Customarily, we set out a bowl of milk each night for the coyote and one moonlight night I heard a scraping noise on the cement walk by the porch. Upon investigating here was the snake at the bowl of milk and Charley darting at its tail just as he did the cats.

I often took him with me fishing and he loved to roam the surrounding woods. He was an exceptional hunter! It was a sight to behold to see him belly through the underbrush or soap-weeds and the instant he would scent a covey of pheasants, his two ears would stand erect as two flag staffs, and that was the signal to pull the hammer and get ready to shoot. Needless to say, the game warden soon broke up this form of diversion at no little expense to me.

To our knowledge Charley only fathered two litters of pups. We were particularly interested in one litter from a Springer Spaniel, but the pups were none too healthy.

Many of our neighbors had chickens, and our boy had a ground pen of squabs, but the coyote never seemed interested in anything more than frightening them. We brought him up on dog food and like to think that prevented him from a return to the wild.

Charley would sleep out in the garden changing colors of his coat with the season, and when the larkspur turned a golden amber he could hardly be recognized among the stalks save for those two sharp, upright ever-listening ears.

A couple of years ago I made an effort to see a litter of "dogcotes" at the Cheyenne Mountain Zoo in Colorado Springs. The pups were almost perfect specimens of the

(Continued on page 120)



Good shotgunning is correct eye use, timing, and eternal practice. Here's a good way to keep your shooting eye sharp: a portable trap that can be carried in the car and set up anywhere.

SHOTGUNS AND EYES

In an interesting treatment of an old and much-chewed bone of contention, a Missouri trapshooter has made some pointed statements on the function of eyes in shotgunning.

He is Russ Elliott, a former skeet and trap champion who operates a shooting club at Raytown, Missouri, and has recently written "Your Shotgun vs. You," published by Brown-White-Lowell Press, Kansas City, at \$2.75.

Elliott, a shooter who has been powdering bluerocks since 1916, delivers a scathing indictment against the ironbound rule of "shooting with both eyes open." His reaction to both-eyes shooting under all circumstances is "pure bunk."

Master Eye

The author's main criticism is against the blanket advice given to beginners who are instructed to point their shotguns with both eyes open, using one eye and ignoring the other. But many right-handed gunners, Elliott says, may have "master" left eyes. So they fire from their right shoulders, actually aim with their left eyes, and spend years in consistent and consecutive missing.

Diehard Dub

One example cited by Elliott was a novice shooter who had worked on clay birds for years, but without any improvement in score. With thousands of rounds of shooting, he never got any better. Then one day a local "pro" showed up at the club with a new single-barrel trap gun. Only trouble was, no one could hit anything with it. When some of the club's shooters patterned the gun, they found that it shot up to 12 inches to the left due to a flaw in boring.

Somehow, the dub obtained this gun and brought it out to the gun club. Almost overnight, his shooting score improved tremendously,

and leaped 90 per cent.

Elliott later discovered that the man—a left-handed shooter—was "right-eyed." Which is just as bad as a right-handed shooter with a left master eye.

So when this particular shooter looked down the barrel—which shot to the left—his master eye caused him to subconsciously pull it to the right, compensating for the error in the gun and the error in the man's shooting. For the first time in years, he began breaking a respectable number of clay pigeons.

About this time some helpful soul (there's one in every club) told the happy shooter about the gun and that it "shot left." The poor gunner began compensating for this, got completely fouled up, finally gave up in disgust.

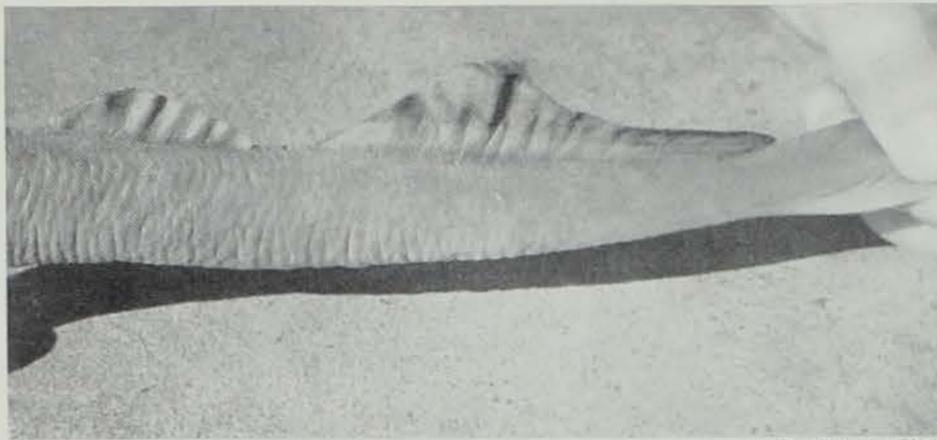
Right, Left and Wrong

Elliott maintains that if a right-handed shooter has a right master eye, fine. Shoot from the right shoulder. The same with a south-paw shooter with a left master eye, who should logically shoot from the left side. But when a righthanded shooter has a master left eye and follows the time-honored principle of shooting with both eyes open, the results are gunning tragedy.

He also maintains that there is absolutely no advantage in shooting with both eyes at a single target. He recommends two-eyed shooting only for the wider range off vision it gives for firing at double targets.

To determine your master eye, the author advises pointing your finger pistol-fashion at some small object at least fifteen feet away. Then close your left eye. If, while looking down your finger with your right eye, the finger is still pointing at the object, you have a master right eye. If your finger is not pointing at the object, close your right eye and look with your left. Depending on which is your

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The dorsal fin of the sea lamprey differs greatly from native Iowa lampreys. This fin is divided and appears to be two separate dorsals.

Lampreys . . .

(Continued from page 113)

in the winter. Carp and buffalo seem to be the most affected in winter when the fish are more sluggish and are easier targets for the slender, swift-swimming parasites. However, lampreys in the Upper River are not serious fish parasites and their minor nuisance can't hold a candle to the ravages of the sea lampreys of the Great Lakes.

Clary said recently that during his Mississippi survey last summer he checked over 21,000 fish, and found possible lamprey scars on only 17. He did find small living lampreys in the bottom of the boat, evidently brushed off fish as they were taken aboard. He found no lampreys attached to fish. And last summer was supposed to have been a "high year" for lamprey populations.

Dr. Bill Starrett of the Illinois Natural History Survey told us that native lampreys are fairly common in the Upper Mississippi as far south as Dubuque. Then they begin to peter out, and become scarce farther downstream. There are few lampreys, for example, in the Keokuk area. Down around Quincy, Illinois, their numbers begin to rise again as the habitat becomes more suitable.

Scourge Needs Cool Water

Starrett continued that studies by the Survey have "never shown sea lampreys in the Illinois or Mississippi rivers". If the sea lamprey was to move into the Mississippi, the logical path from Lake Michigan might be from the Chicago

Canal down the Illinois River. However, the Illinois evidently isn't good habitat for even native lampreys, and the marine lamprey requires cooler water than the native species. Most biologists believe that there's little danger of the sea lamprey becoming established in the Mississippi or similar inland waters. The sea lamprey may also require big water—virtual oceans of it. It also needs a good supply of clean, unsilted feeder streams for spawning. This is the weakest link in the sea lamprey's life chain, and the one that's being hammered by American and Canadian scientists.

Slow Start; Fast Finish

Every few years a sea lamprey scare flares up along the Mississippi, ignited by "eye witness reports" and fueled by barbershop biologists and premature news stories. So far, there's little basis for any of it.

It's a good thing, for the marine lamprey is the most thorough scourge to ever smite freshwater fisheries. Originally a native of the Atlantic Ocean, it has been found in the St. Lawrence River and Lake Ontario for years. Until 1829 it was kept out of the other Great Lakes by Niagara Falls, but the building of the Welland Ship Canal opened the door.

At first, the sea lamprey was slow in moving on. It wasn't seen in Lake Erie until 1921. Erie waters were warm and spawning conditions were poor, and the lamprey didn't do too well. But when it moved into the more suitable waters of Lake Huron it flourished,

and wiped out the lake trout. Then it swam through the Straits of Mackinac into Lake Michigan, its numbers skyrocketed, and it earned the name "vampire of the inland seas". It wiped out the lake trout there, too. Finally, it cleared the locks and dams at the head of Saint Mary's River and is now firmly established in Lake Superior.

Catastrophe

This sea lamprey—this primitive nightmare rising up out of Atlantic deeps—spelled catastrophe for the lake trout and the \$8 million annual fishery of the Great Lakes.

In 1939, the Lake Huron trout fishery was 5 million pounds. By 1953 it had dwindled to 344,000 pounds. In 1944 almost a million pounds of lake trout were taken from Lake Michigan. Two years later the sea lamprey came and in 1951, Lake Michigan produced only 11,000 pounds of lake trout.

In 1955, experimental fishing yielded only .002 lake trout per 1,000 feet of gill net, or only one trout per 100 miles of net!

Now Lake Superior is infected. In 1955 sea lampreys in that lake showed a 115 per cent increase over the previous year. Bob Olive, our old fishin' buddy at Independence, gets all misty-eyed when he talks about the Lake Superior steelheads that won't be swimming up the Baptism River this spring for spawning.

However, each year the lampreys face more hazards in their upstream spawning run in tributary streams. Scientists are blocking the major spawning streams with electrochemical barriers designed to halt adult lampreys, and the downstream exodus of their offspring. Progress is being made with electrical barriers and weirs, and in developing selective chemicals that will kill lampreys but no other fish. Such highly selective chemical controls of specific fishes is a bright hope for the Great Lakes.

Another happy thought is that the sea lamprey couldn't get along well in Iowa. Lake Michigan's bumper crop of finny vampires hasn't yet overflowed into the Mississippi, and probably never will.

SOME RECORDS OF FRESHWATER FISH

Following are a few fresh water records of fish caught on rod and reel, courtesy of Field and Stream weight given in pounds and ounces and length in feet and inches: Largemouth black bass 22:4 and 2:8½; Smallmouth black bass 10:3 and 1:10½; Bluegill 4:12 and 1:3; Channel Catfish 55 and 3:6; Blue Catfish 94:8 and 4:8; Muskellunge 69:11 and 5:3½; Northern Pike 46:2 and 4:4½; Walleye 22:4 and 3:¼; Brook trout 14:8 and no length listed; Brown trout 39:8; Lake trout 63:2 and 4:3½; Rainbow trout 37 and 3:4½.—J.S.

Through an act of the Virginia Assembly in 1699, the killing of deer was prohibited from January to July, the fine for violation being 500 pounds of tobacco.—J.S.

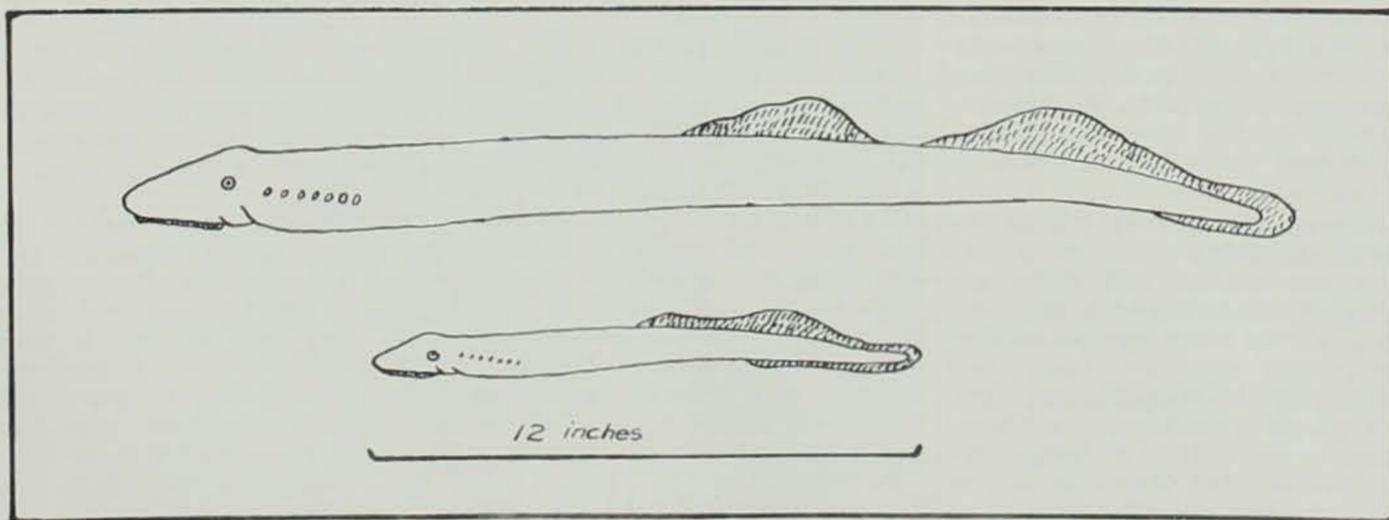
Fish can smell. A fish's nostrils open to blind sacs lined with sense organs of smell. These are better developed in some species than in others.—J.S.

It is impossible to depend entirely upon markings or coloration for distinguishing between pike, pickerel and muskellunge because there is a great deal of variation due to environment and other factors. In addition to that, there are three subspecies of muskies. The most reliable guide is the scales on the cheek and gill covers. A pickerel's cheek and gill covers are completely scaled. The Northern pike has a cheek completely scaled but only the top half of the gill cover has scales. A muskie has scales only on the top half of both the cheek and gill covers.—J.S.

Crickets sometimes make excellent bait but catching them is a slow and difficult chore. Here is a cricket trap that will do the job easily. Cut a loaf of bread in half and remove the soft inside of both halves. Put a hole about the size of a half dollar in one end and fasten the two parts together again with rubber bands. The day before you go fishing, place the hollowed out loaf in high grass where the crickets are most plentiful. The next morning you'll find all the crickets you need in the loaf. To get them out, you have only to place the end with the hole in it over a quart jar and shake.—J.S.

A strip of chamois skin makes a good substitute for pork rind. When wet, it is soft and will give good action, and it can be cut in the size and shape of a minnow.—J.S.

For the modern conservation officer, law enforcement is only one of many duties. The officer must also be a public speaker, teacher, biologist, fish and game manager, bookkeeper, safety expert, mechanic, forester.



The sea lamprey (top) may measure 25 inches in length in the Great Lakes, even longer in the Atlantic. Native Iowa species like the chestnut lamprey (bottom) have a continuous dorsal fin and are much smaller.



Trammel nets have long been favorite commercial fishing devices on the Mississippi. They are generally baited for catfish, which swim through the funnel-like throat and cannot escape.

Mississippi Fishing . . .

(Continued from page 113)
 . . . plotted and leased for cabin . . . This enabled the public to . . . and use the river more for . . . fishing and camping. Sport . . . fishing was rather slow for the first . . . or three years due to the in- . . . vaded area of the river and the . . . ulting underpopulation of fish in . . . large body of water. Now the . . . Mississippi is well-populated with . . . ctically all species of fish, and . . . usands of people enjoy the river, . . . a lot of the play from our . . . rual and artificial lakes.
 . . . Since the nine-foot channel the . . . water fluctuates very little, with . . . result that backwaters always . . . nish a place for the fish to . . . own without being trapped as . . . y were in previous years. Be- . . . the controlled channel, we had . . . h water in the spring and early . . . mmer with the water falling . . . er and leaving stranded fish to . . . or be rescued by state crews . . . at returned them to the river.

Increased Sport
 The backwaters furnish some of . . . the best sport fishing that can be . . . d anywhere, winter or summer. . . shing for panfish is becoming a . . . ular sport on the "river lakes", . . . d some of the best walleye and . . . ger pike fishing is found in sum- . . . er and winter below the locks and . . . nken wing dams in the river.
 The construction of the nine-foot . . . annel and resultant good sport- . . . hing created another business: . . . at liveries and bait dealers which . . . re unheard of before the channel . . . ange. Sport fishermen will con- . . . ue to increase as fast as ac- . . . modations can be made for . . . em, and there is room for thous- . . . ds more on this great body of . . . ater.

The Professionals
 Commercial fishing is one of the . . . best trades known. It is one that . . . nnot be learned from schooling . . . books; only by actually doing. . . xperience is gained from other . . . rmen who have been long in . . . e game, and some of our Mis-

issippi commercial fishermen are . . . descendants of men who made their . . . livings in this manner.

A commercial fisherman who . . . aims to be successful puts in long . . . hours of hard work, contrary to . . . the old belief that a fisherman's . . . life is a lazy man's life. Com- . . . mercial fishing has also undergone . . . extensive changes since the advent . . . of the nine-foot river channel, . . . especially the types of tackle used.

In other years, nearly every com- . . . mercial fisherman on the Missis- . . . sippi owned and floated trammel . . . nets for all types of commercial . . . fish, with the main catch being the . . . sand sturgeon. This sturgeon al- . . . most became extinct due to the . . . heavy fishing. Since there is not . . . now enough current to float tram-

mel nets, the sand sturgeon has . . . come back at least 100 per cent.

Gill nets are used exclusively for . . . side setting and driving. These . . . nets are built for a fraction of the . . . cost of trammel nets and a better . . . grade of fish is obtained with them. . . Gill nets have a 3 3/4 inch mesh as . . . compared with the 2-inch mesh of . . . the trammel net. Many of the com- . . . mercial fishermen were disgusted . . . with the nine-foot channel for sev- . . . eral reasons. The fish were scat- . . . tered and the population of fish per . . . acre was very low. Within three . . . years after the channel change, . . . however, the fish population was . . . built up to normal.

Little Northern Seining

Seining is no longer practiced . . . on the river between the Minnesota . . . line and Davenport, and only a few . . . seines are owned in this area. But . . . seining is carried on quite exten- . . . sively from Davenport to the . . . Missouri line. In this area the bars . . . are more numerous and seine hauls . . . are kept clean. It is the type of . . . fishing best suited for the more . . . southerly pools.

The commercial fisherman's . . . tackle also includes hoop nets, . . . basket traps, trot lines and pond . . . nets. The pond net is the one used . . . in Pool 13 near Clinton, and is the . . . best money maker for the fisher- . . . man. These nets are fished all . . . through the summer and are set . . . in the shallow backwaters with the . . . attached long lead nets toward the . . . shoreline. They are good for buf- . . . falo all season, which is the best . . . "money fish" on the river. Basket . . . traps are used by some of the fish- . . . ermen, but are not relied upon to . . . any great extent. Most of the . . . basket fishing done on the river . . . is by small commercial outfits and . . . people that have other jobs.



Since the channel change in River, buffalo have become the best "money fish." Last year one fisherman took nearly 45,000 pounds of commercial buffalo.

The trot line is used very little . . . by the big commercial fishermen, . . . for trot line fishing demands a lot . . . of time. Running the lines, getting . . . the bait and fishing them properly . . . is a full-time job and the return is . . . not as profitable as net fishing.

The Mississippi's commercial . . . fishermen are now making about . . . three times as much money since . . . the advent of the nine-foot chan- . . . nel. The following figures taken . . . from one such fisherman—before . . . and after the channel change—in- . . . dicate a decrease in carp and an . . . increase in the more valuable buf- . . . falo.

Year	Pounds of fish caught
1940	carp 12,800
	buffalo 5,764
	catfish 867
	sheepshead 748
1947	carp 10,614
	buffalo 10,371
	catfish 741
	sheepshead 741
1948	carp 5,399
	buffalo 15,954
	catfish 689
	sheepshead 689
1949	carp 6,966
	buffalo 18,174
	catfish 2,392
	sheepshead 2,392
1955	carp 6,895
	buffalo 36,495
	catfish 2,368
	sheepshead 2,368
1956	carp 7,285
	buffalo 44,860
	sheepshead 3,585
	catfish 745

So, since the new channel has be- . . . come well-stocked with fish and . . . their movements understood more . . . fully, the commercial fisherman is . . . doing better than in the days of the . . . old channel.

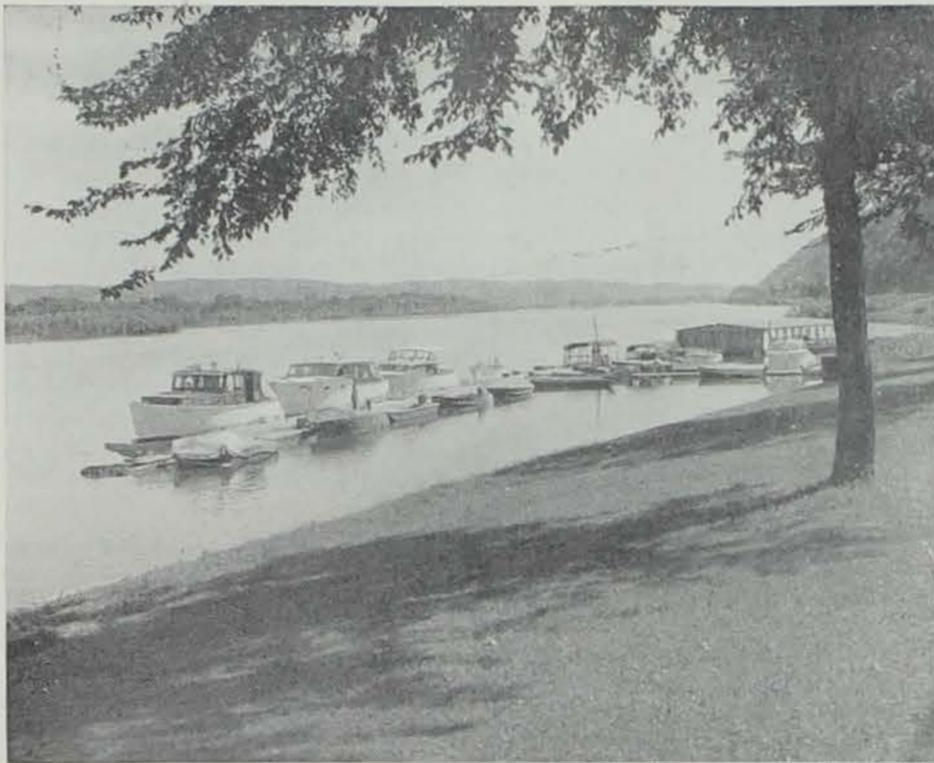
There is, and I suppose always . . . will be, a little friction between the . . . sport and commercial fisherman. . . But if the sport fisherman would . . . consider that the commercial fish- . . . erman is doing a species control . . . job the same as the state crews are . . . doing—a job vital to good fishing . . . —he'd take a more tolerant view . . . of the professional fisherman.

Color . . .

(Continued from page 114)
 ous kinds of typical hunting . . . weather were included.

Yellow was the color most . . . easily, quickly and correctly seen . . . by the test squads. Multi-colored . . . plaid, orange, blue, red and green . . . followed, in that order. The color- . . . deficient squad saw and recognized . . . yellow 80 times more easily and . . . correctly than any other color, the . . . report said. Leonard estimated that . . . about 14,000 Idaho hunters prob- . . . ably have comparable color-per- . . . ception deficiencies.

These tests are being conducted . . . jointly by the California Optomet- . . . ric Association, the National Rifle . . . Association, and the California De- . . . partment of Fish and Game to find . . . the safest color for the nation's . . . 25 million hunters to wear in the . . . field. Leonard said next fall's tests . . . will be particularly interesting to . . . Idaho in view of the prominence . . . of yellow aspen and larch in many . . . parts of the state during hunting . . . season.



Jim Sherman Photo.

In the past, private boat registration has not been strongly enforced on our large boundary rivers. The immense increase in boat traffic has now made such registration necessary to insure public safety.

Registration . . .

(Continued from page 113)

acres or more, but their motors may not exceed 5 horsepower. All private boats used on any state-owned artificial lake must be first inspected by the custodian or park officer in charge of that lake for a rating of seaworthiness and passenger capacity. A tag bearing the rated passenger capacity is then affixed to the boat. This inspection is free of charge.

The purpose of boat registration and inspection is one of safety. It is believed necessary to register faster boats and provide them with license numbers in an effort to control any speeding, reckless boating, or other misuse of the craft that might endanger public safety. Inspection of boats on state-owned artificial lakes is made in an effort to allow only sound, uncrowded craft on the little lakes. Such inspection is not possible on all state waters because of limited personnel.

Last year the Commission received registrations for 26,000 new boats in Iowa—an all-time record. In view of the greatly increased boat traffic it is thought that registration and inspection of boats is in the best interests of public safety and recreation.

Coyote . . .

(Continued from page 117)

average dog except they had a sharp "yap" instead of bark.

A story is told of "Old Ben," a veteran coyote in the Grand Junction area, who enjoyed a luscious living off the ranchers' sheep and calves and yet defied every known and tried means of exterminating him.

A reward of \$100 was offered which didn't seem to alter "Old Ben's" eating habits in the least. The amount was finally increased to \$300, and an aged, grisley, itinerant sheep-herder boasted he would bring in "Old Ben" and col-

lect the reward.

It was a very clear moonlight night when he staked-out his female dog at the bottom of a hill. Posting himself at the top of the knoll, leeward of the wind and somewhat hidden in a clump of scrub oak, he patiently waited for nature to take its course.

You can well imagine the chagrin of the deputies, would-be marksman and crack-shot ranchers when they viewed the battle-scarred body of "Old Ben" who was easily identified by the many previous "near misses" upon his life.

Perhaps our Charley fell for the age-old woman bait, for one day he failed to show, and no one has ever been known to see him since.

Right cordially yours,
FORREST F. HAMMES
Littleton, Colorado

Shotguns . . .

(Continued from page 117)

master eye Elliott advises shooting from that shoulder if you wish to shoot with both eyes open.

Some shooters, Elliott points out, have "equal" eyes with neither dominant over the other. In such a case, he recommends either squinting the "off-gun eye" or closing it altogether.

He also comments that glasses can cause quite a bit of difficulty, since they are often designed to make both eyes as equal and normal as possible. In some cases the shooter might be benefitted by taking his glasses off while shooting, particularly if the eye on the side from which he shoots is the stronger. Or, the bespectacled gunner might do well to hunt up an oculist or optometrist who understands shooting and who can help solve his problems.

A handy item for the sportsman is a pair of hip boot suspenders. With these, hip boots do not drag at the belt and are held high, snug and comfortable.

March . . .

(Continued from page 113)

Johnathan, 23, was shot in the face and Mrs. Howe was killed with a flatiron. The five Howe children were then disposed of.

Then north along the east shore of East Okoboji, to the cabin of the Joseph Thatchers. The Indians made short work of trapper Enoch Ryan, little Dora Thatcher, Alvin Noble and his son John. Lydia Noble and Elizabeth Thatcher were taken alive and dragged back down the trail to the Howe cabin. That night Inkpaduta and his warriors danced near the embers of the Mattock cabin, scene of their first coup.

On Tuesday the Indians and their four terrified prisoners moved across Okoboji, and on Wednesday they headed for Spirit Lake. On Thursday they rested.

The Red Rifle

Friday, March 13, was William Marble's most unlucky day. He and his wife Margaret had just finished breakfast in their snug cabin on the west shore of Spirit Lake when Sioux warriors stalked quietly in.

The surly Indians admired the red stock of Marble's new rifle, and in a vain attempt at appeasement Marble gave them the rifle and \$2.50. While he was setting up a target in the dooryard for the new gun, he was shot in the back. His screaming wife was taken prisoner, and joined Abbie Gardner, Lydia Noble and Elizabeth Thatcher.

The war party then headed north into Minnesota, and on March 26 they struck Springfield. The settlers there had been warned, and fortified up in a cabin, beating off the attack. Even so, seven whites were killed.

In late March, reports of the massacre had reached Fort Dodge and Fort Ridgely, Minnesota. Both dispatched men. Infantrymen headed southwest from Ridgely; volunteer militia headed northwest from Fort Dodge.

The half-frozen Fort Dodge contingent was about 80 miles from home when they met the 19 survivors of the Springfield attack. They were in poor condition, hungry, cold, and with three badly wounded men.

The Toll

The Fort Dodge column had almost reached Spirit Lake when it learned that Fort Ridgely troops had arrived earlier. Most of the Fort Dodge volunteers turned back, but a burial detail of 23 men was sent on to the lakes, headed by Captain J. C. Johnson. That was on April 2. Major Williams, commander of the Iowa force, reported on April 12 to Governor Grimes that "the burial detail found and buried 31 bodies, including the bones of those burned in the Mattock house. Seven men were also killed at Springfield, Minnesota. I may sum up the total number of casualties to the settlers as follows: 41 killed, 12 missing, 3 badly

wounded and 4 women captured."

But that wasn't all. In the relief force from Fort Dodge, 14 men had been badly frozen and several men were "deranged from their sufferings." Captain Johnson and William Burkholder attempted the return to Fort Dodge alone, and froze to death in an April blizzard. Prisoner Lydia Noble was later clubbed to death by Roaring Cloud, one of Inkpaduta's sons. Elizabeth Thatcher, ill and weak, was pushed into the Big Sioux River and shot when she attempted to save herself.

Only Margaret Marble and Abbie Gardner survived. Both were purchased by friendly Indians and later returned to their people. Mrs. Marble's subsequent life is hazy, but Abbie Gardner married and years later moved back into the family cabin. She lived there until it was converted to a private museum. She died in the lakes region in 1921, an old lady with strange red memories.

The Gardner cabin—the only remaining landmark of the massacre—was purchased by the state in 1943 and is now preserved as a historical monument by the State Conservation Commission.

And Inkpaduta? Shunned by his people in peace, he was embraced by them in war. He lent a hand in the Minnesota Uprising of '62 and was at the battles of Stone Mountain and the Dog's Den giving fits to Generals Sully, Sibley and the Sixth Iowa Cavalry. Always on the prod, he was reported at the Little Big Horn in 1871 where he scouted Reno's cavalry aroused the Sioux camp and led his Santee and Yankonais warrior against the troopers, preventing their junction with Custer.

He was never taken; a fierce savage old warrior to the finish. Like other tough—and smart—Sioux veterans, he died in peaceful Canadian exile, far from the medicine lake where he never dared return.

"Conservation" does not mean strict saving of natural resources. Rather, it means managing our natural resources as sensibly as possible, and harvesting the surplus when such harvests will not endanger the future of the resource.

Game animals can be no healthier than the soil that supports them. Missouri studies have shown that the bones of a rabbit take from a poor soil district break far more easily than those of rabbit taken where soil was rich.

The so-called "little 22 rifle" without a doubt the most dangerous of all guns. Printed on the flap of a carton of 22 long rifle shells are these words, "Range one mile be careful."—J.S.

Did you know that Clear Lake on top of a hill and is about level with the top of the tallest building in Mason City?—J.S.