

IOWA CONSERVATIONIST

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JUNE AND BASS "HIT THE TOP"

GEOLOGY IN RED HAW HILL STATE PARK

C. S. Gwynne
Professor of Geology
Iowa State College

Red Haw Hill State Park, on the headwaters of Little White Breast Creek a few miles east of Chariton in central Lucas County, is another of southern Iowa's "lake" parks.

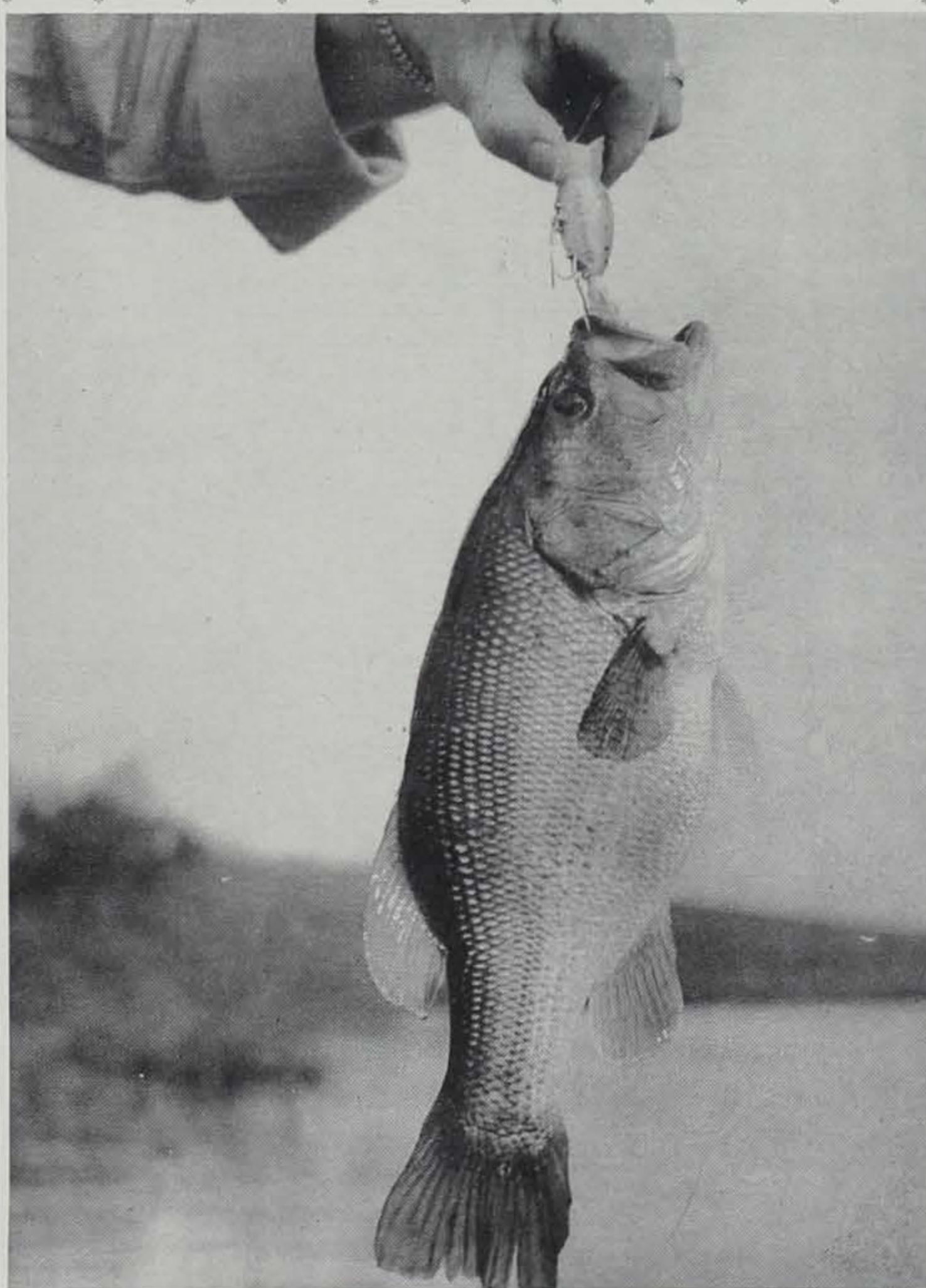
As in all of these, the lake basin was completed by placing a barrier and dam across a valley. Hence, the big job on the lake basin had already been taken care of by Mother Nature through the erosional work of the waters pouring down the valley in ages past. It really was a case of the water pouring down more than one valley, for the lake has a couple of prominent arms and many small recesses in the shoreline. All of these represent valleys drowned by the lake waters.

The watershed is relatively small—perhaps no more than 900 acres—so in a period of dry weather there might not be much water running into the lake. Possibly none at all. If the stream does continue to flow in such a dry period, it is, of course, coming from underground sources. It is rain that has soaked into the ground and then seeped out again along the banks of the stream.

There would also be some water seeping into the lake along the shores, from the zone of saturation below the water table in the surrounding land. The water table follows the general contour of the land, but has less relief. Thus it is farther from the surface beneath the upland country, and at, or closer to, the surface in the valleys. When a stream dries up, it is because the level of the water table has fallen below the channel bottom. Along the lake shore, the water table is at the lake level.

Of course, Mother Nature, with her streams, had a relatively easy time in excavating the valleys of

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This plump, Iowa largemouth took a popping-type lure and is on the way to a frying pan. Bass are top sport in June when they strike viciously at surface lures.

Keith C. Sutherland
Editor

It was one of those June days when the green of early summer seemed to close in and dominate the whole outdoors. A flaming rim of sun warmed the shoulders even at this early morning hour, and the smell of damp earth permeated the air. A coolness lifted from lush, wet grass underfoot and the air was filled with all the sounds of a world yawning and beginning to stir after a good night's sleep.

We crept Indian-like—my fishing partner and I—to the bank of a farm pond and peered into it. Bluegills skittered from the shore in front of us, rolling up bulging swirls on the glassy surface as they raced to deeper water.

Along a bed of lily pads on the far shore, a loud "whoosh" jerked us to singular attention. In a splashing thrust, a big bass boiled up to snatch a parcel of food from the surface. A large ring marked the place where he had breakfasted, and now all was silent. Ah! we surmised as we faced one another, this was to be one of those "topwater" days to remember!

Before the sun was very high that morning, we had reason to feel a mite self-satisfied for the forecasting we had done earlier. Shorn of lengthy detail about individual battles and catches, it will suffice to state that we caught bass with amazing regularity and ease that morning. We caught them on popping lures in red and white, yellow and black. We caught bass on splashing and plunking types and "snookered" them with paddling and sputtering lures.

Mostly for "kicks," and partly to see if he could do it, my fishing partner went to a spoon and pork chunk, moving and twitching the rig temptingly over the top of some lily pads. His reward was a swirling strike and the day's biggest bass. A moment later he switched to a paddling type lure and nailed a pretty good largemouth on the first cast.

"That" particular day has sort of a hallowed place in our memory

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Fred Kent Photo.
This Sandhill Crane was photographed in
eastern Iowa in April. While not uncom-
mon along Iowa's western borders, it is un-
common in the eastern part of the state.

IOWA HAS RARE SPRING VISITOR

A sandhill crane, considered by naturalists as "extremely rare" in eastern counties of the state, was seen and photographed at Muskrat Slough in Muscatine County May 9 by Fred Kent of the State University of Iowa.

The bird was first seen and identified at Muskrat Slough on April 28 by J. Harold Ennis of the Cornell College faculty. Professor Ennis relayed information about the crane to photographer-naturalist Kent—who was able to photograph it about a week later.

Sandhills migrate through Nebraska in large numbers and, since this is their established migratory route, any observation of them, particularly in eastern Iowa, is considered rare.

Single birds were recorded in Polk County in 1928 and again in 1929, but there have only been four or five records of sandhills anywhere in Iowa in the past 10 years, according to Jack Musgrove of the State Historical Department. The sandhill is classified by naturalists and ornithologists as a "rare migrant" in Iowa at the present time, Musgrove said.

IOWA DEER AND FAWNING

Arnold O. Haugen, Leader

Iowa Cooperative Wildlife Research Unit
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I still remember when, as a small farm boy, I heard of my first deer in Winneshiek County. This occurred at about the end of World War I.

If I recall correctly, not one but two deer were seen at a farm just north of Decorah. The animals promptly disappeared and none were reported again until in the late 1920's, when someone was reported to have illegally killed one in the county.

Although deer were present when this section of the state was settled in the 1850's, they apparently all disappeared well before the turn of the century. It is not known for certain whether a few white-tailed deer (*Odocoileus virginianus*) continued to exist along the wooded Mississippi River bottoms in neighboring Allamakee County, or whether they re-established themselves by moving back into the state from deer areas in Wisconsin or Minnesota. The latter possibility, however, seems the more reasonable.

During the 1958 deer hunting season, the fifth such season in Iowa in recent times, hunters in the three northeast counties bagged the most deer. Allamakee ranked first in numbers of deer harvested and was followed by Winneshiek and Clayton in that order as reported in the April CONSERVATIONIST. Pottawattamie County, in the southwest part of the state, ranked fourth in yield of deer.

Proper management of any species of game is dependent upon sound facts. In order to provide additional facts, a study of the productivity of deer in Iowa was started last fall at the Iowa Cooperative Wildlife Research Unit at

Iowa State College. The study is a cooperative one, with assistance from the Iowa Conservation Commission, the Bureau of Sport Fisheries and Wildlife, the Wildlife Management Institute, and Iowa State College. The project is under the direction of the author who previously has conducted investigations on deer in Michigan and Alabama. Progress reports on this project will be published in the IOWA CONSERVATIONIST from time to time.

Crop in the Making

The success of any seeding operation is a mighty important event in the welfare of a farmer. Similarly, the success of the breeding and fawning season is of utmost importance in the production of a crop of harvestable deer. A farmer knows that both the quality of his seed and the fertility of his land will influence his yield. Few people, however, realize that the fertility and quality of the range will influence the size of the fawn crop. Too many take it for granted that a doe will bear one or two fawns depending on chance alone. It is not the buck that determines the number of fawns a doe will bear, it is the physical condition and age of the doe that determines whether she will bear a single or twin fawns, or perhaps not breed at all.

Studies by game technicians in some eastern, southern and western states have shown that most deer on ranges of poor quality soil and overbrowsed food conditions do not come into breeding condition until at least one and one-half years of age, and on an average produce fewer fawns.

Since deer in Iowa have the good fortune to be raised on some of

the best and most fertile soil in the world, it was suspected that we might find Iowa deer to be highly productive of fawns. Preliminary information from does shot in the 1957 season, and from females killed by cars on Iowa's highways during the past winter supports this hunch.

As of this time, indications are that most female fawns breed the first fall and drop a single fawn when they are only one year old. Does examined that were one and one-half years old or older were found carrying twins, and in two cases triplets occurred. This precocial breeding at an early age, no doubt, gives Iowa deer high productivity.

In other sections of the country only about one-third of the fawn does were found to breed the first fall, even under the best food conditions. In other words, most of Iowa's deer will have produced three fawns by the time they are two years old, whereas deer on poor or over-populated ranges in some other states will have done well if they have produced one fawn by this age.

In general, this high production makes it possible for Iowans to enjoy a maximum of hunting and a generous harvest, with a moderate sized population of breeding animals. This is sort of like eating your cake and having it, too.

Most Mate in November

By examination of the female reproductive organs (ovaries and uterus) it has been found that most Iowa does breed in November. Since the gestation period of northern white-tailed deer is about 204 days, the peak of the fawning season should occur in June.

Iowa's conservation officers, game biologists, and some deer hunters have assisted in this study by saving and submitting the reproductive tracts of does for study. As a deer hunter, you, too, can become an important cooperator in the deer study. When the next deer hunting season approaches, call your local conservation officer and ask how you can help. In short, the extent of your help might consist of saving the ovaries, uterus, and the lower jaw of any doe you might kill this season, wrapping the parts in wax paper and freezing the "whole works" until you can deliver the parts to your local conservation officer or game biologist for transfer to the Research Unit.

Don't Molest Fawns

Fawns are about as cute young animals as can be found. During the first few weeks, they try to hide instead of resorting to flight when disturbed. However, even though a fawn may appear to be abandoned and can easily be captured until about two weeks of age, don't pick it up! It isn't lost, and it is against the law to place a fawn in confinement. Its mother is probably hiding in nearby cover

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These triplet fawns were recovered from a 22-month-old doe killed by a car in Iowa County on April 16. The average length of the fawns indicates they were 153 days along on their expected 204-day gestation period. Apparently the doe had mated in mid-November and should have fawned about June 6.



All photos by George Tovey.

Fisheries biologist Bob Cleary lectures on equipment used in biological survey work and electro-fishing during in-service training program for fish and game personnel.



The value of trees as game cover and in curtailing erosion is discussed by John Fish, assistant superintendent of federal aid for the Conservation Commission. Use of the tree planter was demonstrated to fish and game personnel as part of the lecture.

Three-Day Meeting At Springbrook

In-Service Training for Fish and Game Personnel

New advances in the field of conservation and recent developments in fish and game management were stressed during an in-service training program held for all fish and game employees of the State Conservation Commission May 19-22. The training period was held at Springbrook State Park near Guthrie Center.

Director Bruce Stiles and Assistant Director Lester Faber addressed the opening session, presided over by Ray Beckman, chief of the fish and game division.

Mrs. John Crabb of Jamaica and George Meyer of Elkader, members of the Commission, were introduced by Beckman, and each spoke briefly. H. W. Freed, chief of the division of administration,

presided over sessions dealing with the areas of public relations, engineering, internal auditing, licensing and equipment.

Fish and game employees were divided into groups for lecture and discussion sessions on fish and game on the second day of the training program. Stations which presented different areas of fish and game work were in operation throughout the day. Each group moved from station to station on signal. The same pattern of presentation was maintained at both fish and game sessions—a lecture followed by discussion between station leaders and group members.

Fisheries stations included catfish hatching, fishing clinics and

angling, biological surveys and electro-fishing equipment, weed and algae treatment in farm ponds, use of chemical sufficants, steps in the acquisition of state-owned fishing access areas and their maintenance; fish stocking, and use and repair of nets and seines used in fish hatching operations.

Game stations included discussions of the cottontail rabbit, squirrel and raccoon, pheasant nesting and cover, quail habitat and brooders, deer studies to determine age and number of fawns born and demonstration of removal of the uterus and ovaries which aid such studies, life of a marsh, tree planting and fox and coyote trapping demonstrations.

Ken Madden, superintendent of

fisheries, and Everett Speaker, superintendent of biology, presided over the fisheries sessions; Paul Leaverton, Speaker, and Glen Yates, superintendent of federal aid, presided over the game sessions.

Panel discussions of the Conservation Commission's fish and game programs were convened on May 21. Madden, Yates and Speaker were moderators of the fisheries panel; Leaverton, Yates and Speaker of the game panel. Dr. R. L. Morris, chief chemist and associate professor of hygiene and preventive medicine at the State University of Iowa, addressed the meeting during the afternoon session May 21.

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Weed and algae control and treatment in farm ponds was the lecture topic of Earl Rose, fisheries biologist for the State Conservation Commission. Here Rose demonstrates how the dosage of treatment chemicals is calculated.



One of the game section stations for fish and game personnel of the Conservation Commission was on the cottontail rabbit, squirrels and raccoon. Paul Kline, mammals biologist for the Commission, is the leader of this discussion group.

CUT HIGH



COMPOUND INTEREST... *from THE SOIL BANK*
IOWA STATE CONSERVATION COMMISSION

A margin of safety is given the nesting hen pheasant by clipping only the tops of oat nurse crops. Iowa farmers can do this under the Acreage Reserve practice of the 1958 Soil Bank.

MORE WILDLIFE FOR ACREAGE RESERVE

A million acres in the Acreage Reserve practice of the 1958 Soil Bank is a reality for Iowa and Iowans! And, with benefits to participating farmers, may come "compound interest" to all sportsmen in the form of better hunting next fall.

Additional funds from the federal government has meant that the State ASC Committee can now sign up the remainder of their Acreage Reserve contract commitments. This means that a million acres in Acreage Reserve is no longer speculation but a reality.

With this gigantic acreage in reserve, the benefits to wildlife could be just as vast. A major proportion of Acreage Reserve lands will be seeded down, with the seeding protected by a nurse crop of oats. State ASC regulations provide that this nurse crop must be clipped by June 25; however, a farmer, under his Acreage Reserve contract, may clip his nurse crop as high as he wishes. By clipping only the head of the oat nurse crop, a safe margin between the mower sickle-bar and nesting game birds is assured.

Farmers may also aid game birds and animals by planting wildlife food patches on their Acreage Reserve lands. This practice has received the approval of the State ASC committee and the federal

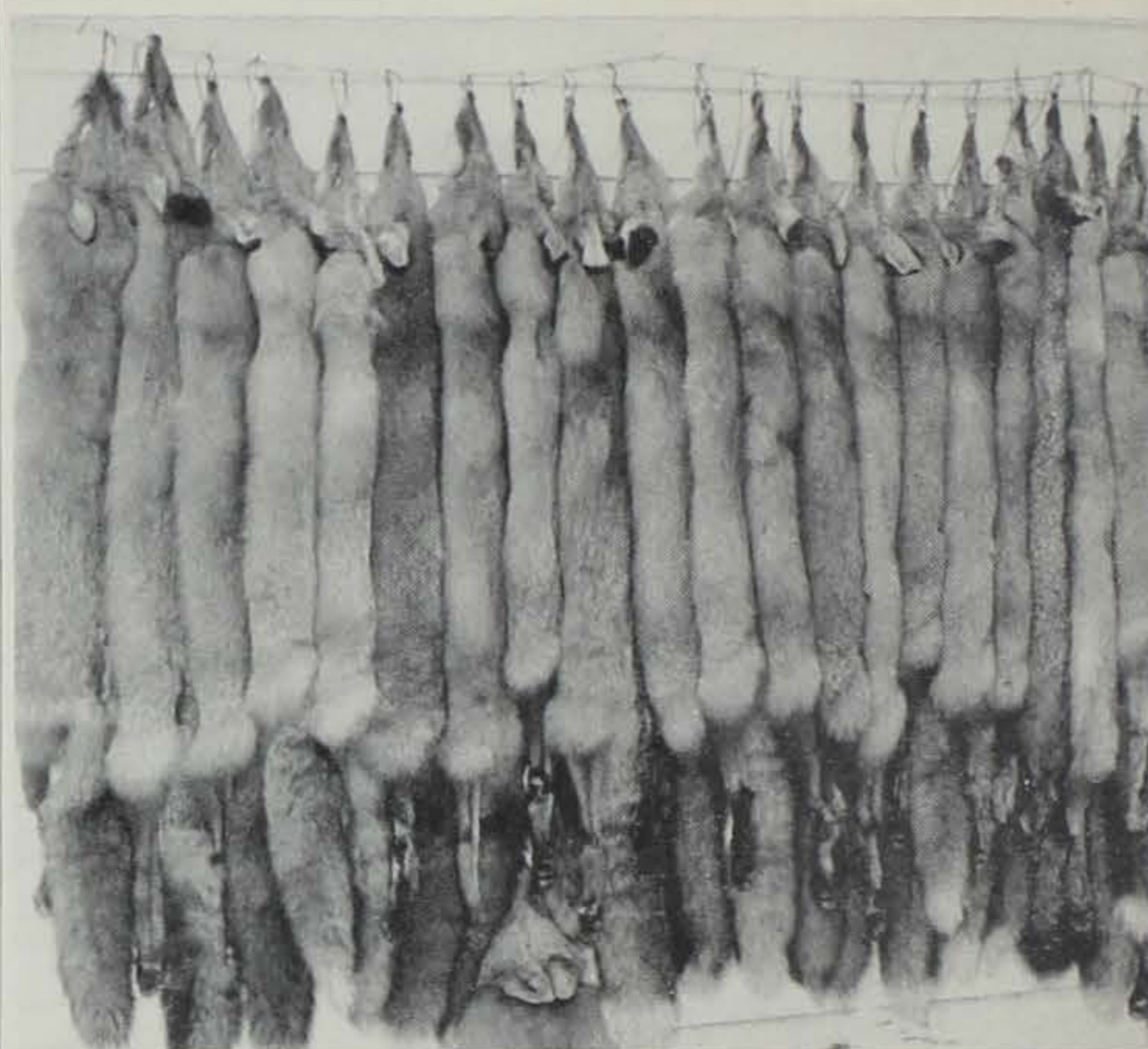
government. Also under this "food patch plan" farmers may leave strips of uncut oat nurse crops. Game technicians of the State Conservation Commission suggest that, wherever possible, such strips of standing nurse crops be left immediately adjacent to fencelines showing the most permanent cover.

Since up to 45 percent of nesting pheasants are destroyed by the mowing machine, this practice could greatly increase the nesting success of this game bird!

Recognizing that most Iowa farmers are either hunters or like to host hunters during the hunting season, they will want to participate in any program that benefits wildlife. "Compound interest" in wildlife from the 1958 Soil Bank can be profitably promoted by sportsman's groups calling on farmer friends in their area and urging them to clip their nurse crops "high." Sportsmen can also aid farmers in a financial way in establishing "wildlife food patches" on their Acreage Reserve lands.

Despite popular belief, weasels don't suck the blood of their prey. They do sometimes kill more than they can eat at once, but this surplus food is usually stored for future use.

The American black bear is a "black bear" though its color is brown or even tan. The so-called "cinnamon" bear is only a color variety of the black bear.



Iowans were paid a total of \$96,983.85 for red and grey fox during 1957. Wapello County hunters and trappers fared best, turning in 1,613 foxes for bounty payment.

1957 IOWA BOUNTY SUMMARY

Iowans were paid a total of \$125,256.90 in bounty payments during 1957 and, while the amount shows a decline from the 1956 payment of \$149,562.55, the current figure still amounts to a lot of money.

While less than the 1956 total, bounty payments on red and grey fox brought the most money for hunters and trappers during 1957. As in 1956, pocket gophers claimed second spot. Total bounty payments for various species in 1957 compared with 1956 totals:

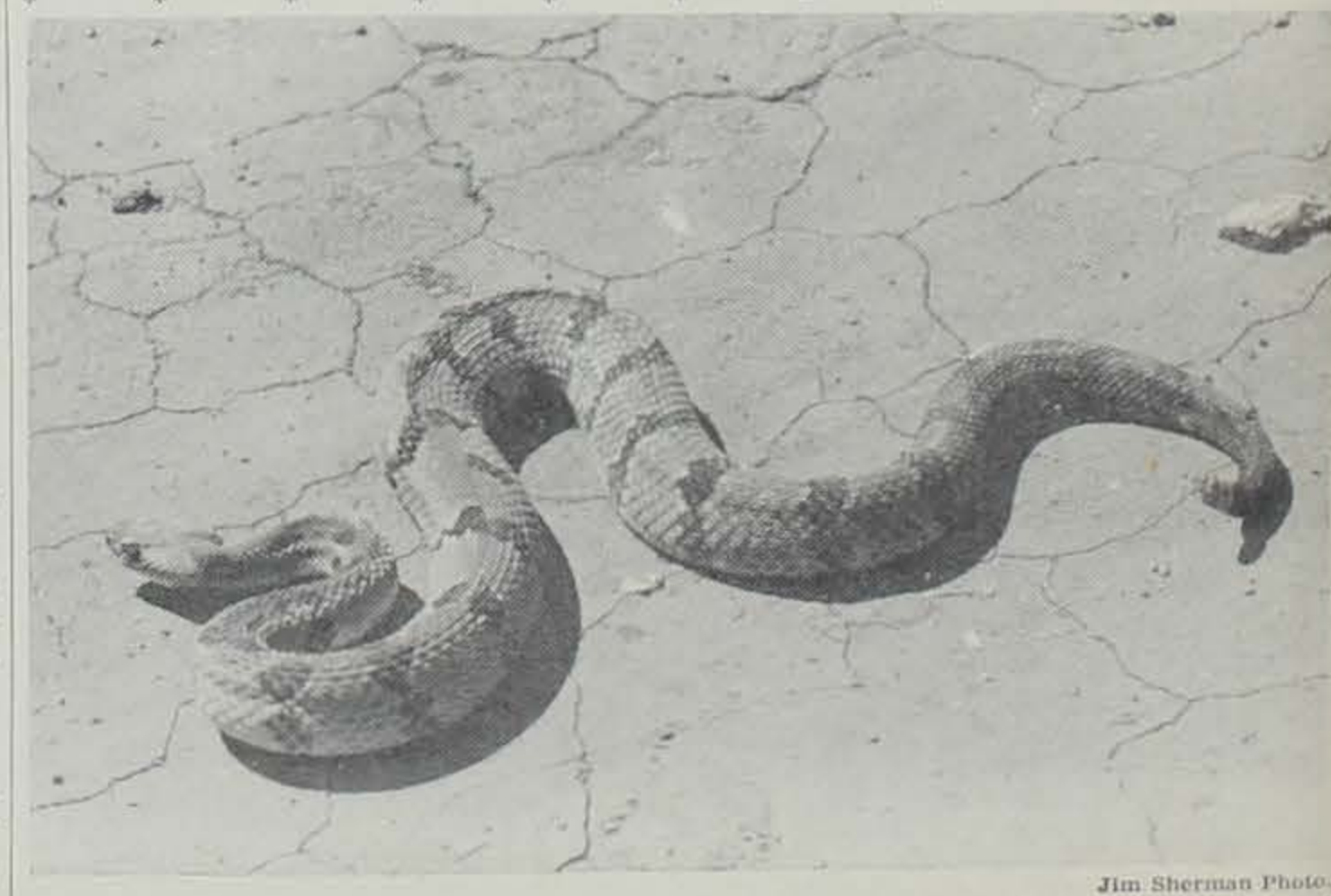
	1957	1956
Adult Wolf	\$ 8,194.00	\$ 11,780.00
Wolf Cub	1,853.00	1,679.00
Red and Grey Fox	96,983.85	117,893.00
Pocket Gopher	13,093.40	13,641.60
Groundhog	998.75	959.85
Crow	2,240.35	1,906.55
Starling	591.85	866.60
Rattlesnake	306.50	446.50
Miscellaneous	47.60	53.20

Total bounties, all counties ... \$125,256.90 \$149,562.55
 County auditors are required to

pay, under Iowa law, bounties from county treasuries for adult wolves, \$10; wolf cubs, \$4; wildcats, 50 cents; pocket gophers, five cents; and red and grey fox, \$2. If the county board of supervisors directs, the following bounties may be paid: crow, 10 cents; groundhog, 25 cents; rattlesnake, 50 cents; European starling, five cents; and for each pocket gopher, an additional bounty of five cents.

To collect such claims, the claimant must furnish: (1) the whole skin of each wolf, wildcat or fox; (2) both front feet and claws of each gopher; (3) the head and feet of each crow; (4) the head and scalp of each groundhog; and (5) two inches of the tail of each rattlesnake, with the rattles attached.

The following bounties, listed alphabetically by county, were paid during 1957:



A total of 642 rattlesnakes were reported for bounty payment during 1957. Rugged Allamakee County topped all others with 233 rattlers.

Jim Sherman Photo.

1957 BOUNTY REPORT BY COUNTY

County	Coyote or Wolf	Coyote, Wolf Cubs	Red and Grey Fox	Gopher	Groundhog (Woodchuck)	Crow	Starling	Rattlesnake
Adair	14	6	360	1201				
Adams	18	15	314	279		13		
Allamakee			1561	6197	360			233
Appanoose			822	23	5	21	1081	
Audubon	5	2	425	2250	2			
Benton			292	1124		91		
Black Hawk			407	580		623		
Boone			378	19		620		
Bremmer			272	660				
Buchanan			648	865		838		
Buena Vista	2		295	784		916		
Butler			231	1041		227		
Calhoun	1		348	107		262		
Carroll	4		489	2930		61		
Cass	5	6	450		2			
Cedar			463	858	75	229		
Cerro Gordo			276	782		3084		
Cherokee	9		350	1319	2	111		
Chickasaw	1		458	1610		211		52
Clarke	7	4	666	26	21			
Clay	1		244	562		92	804	
Clayton			1401	8473				5
Clinton			469	262	23	34		
Crawford	38	15	738	4405		24	1137	
Dallas	5		554	16				
Davis			613					
Decatur	28	40	740					
Delaware			859	5827				1
Des Moines	1		439	15				
Dickinson			178	210		64	505	
Dubuque			1382	5952	249	174		95
Emmet	2		137	100		115	826	
Fayette	1		836	7280				2
Floyd			206	754				
Franklin			205	1084	6	1225		
Fremont	24	20	677	317	1	567		
Greene	3		422	21	1	23	517	
Grundy			262	1006	9	792		
Guthrie	28	34	450	1753	55			
Hamilton			427	144		96		
Hancock			259	1178	1	175		
Hardin			394	332		212		
Harrison	73	107	547	2323	4			
Henry			400	31	64			
Howard			354	2233		524		
Humboldt			249	91		64		
Ida	7	15	387	2028	1	79	2197	
Iowa	1		345	471		14		
Jackson	1	7	976	402				
Jasper			572	388		8		
Jefferson			465	5	28	1		

1957 BOUNTY REPORT BY COUNTY

County	Coyote or Wolf	Coyote, Wolf Cubs	Red and Grey Fox	Gopher	Groundhog (Woodchuck)	Crow	Starling	Rattlesnake
Johnson			511	658		62		
Jones		8	698	2601		51		
Keokuk	1		415	299	201	21		
Kossuth			374	1803		484		
Lee	7	2	931	98	633			13
Linn			686	1219	152			
Louis			380	17	636			
Lucas	1	8	791	40		31		
Lyon	18		214	1842		153		
Madison	13	9	502	122				174
Mahaska			523					
Marion	2		579	100	44	7		
Marshall			307	1253				
Mills	34	5	319	34	163			
Mitchell			196	2143	28			
Monona	131	53	373	4250				1
Monroe	1	3	715	218				
Montgomery	9		447	51				
Muscatine			386	63	135	283		
O'Brien	5		324	2769		2284	2847	
Osceola	2		110	1309		633	1097	
Page	304		823	15	15	8		
Palo Alto			292	105		389		
Plymouth	19		359	5012		158		
Pocahontas			293	202		1791	1586	
Polk	1		511	201				
Pottawattamie	108	7	933	3997	5			
Poweshiek			325	937		18		
Ringgold	7	24	758	51				
Sac	2	1	277	931		616		
Scott			448	958		829		
Shelby	13	2	599	5207				
Sioux	5		250	4530		1279		
Story			428	56				
Tama			461	2282	118	791		
Taylor	19	3	694	4	30	9		
Union	10	23	577	212	41			
Van Buren			399					
Wapello	1		1613	122				
Warren		4	822		36			
Washington			502	223	493	52		
Wayne	7	10	883					
Webster			445	32				
Winnebago			127	588				
Winnesiek			1020	14551				66
Woodbury	93	26	457	798				
Worth			119	362				
Wright			202	347				
TOTALS	1093	459	50089	132930	4605	21616	12607	642
Miscellaneous—Des Moines, 1 Wildcat; Dickinson, 2 Horned Owls; Winneshiek, 473 Moles.								

ALAS! OWN IMAGE
FOILS MR. GROUSE

Like most swains in the spring-time, the ruffed grouse is a jealous pursuer of his lady's affections. So when he arrives on his drumming log and suddenly sees an inter-loper staring back, he rushes at him to drive him away.

And who is he fighting? His own image in a mirror!

The biologist has turned trickster, and set a camouflaged trap with a mirror in it on the drumming log. The partridge, attempting to drive "himself" away, gets caught in the trap, is eventually banded and released to resume his courtship—and perhaps he foiled again by his own reflection.

Thus the grouse researcher has a good method for trapping partridge in the spring to help him in his study of the bird's movements throughout the year.—*Wisconsin Conservation Bulletin.*

The Atlantic halibut is the largest fish of the flounder family. Like the winter flounder, it has the eyes and color on the right side.

The raccoon's sense of smell isn't as well developed as its sense of touch, which is especially good in its forepaws and nose.

Except in winter, otters eat far fewer fish than commonly believed and those eaten are mainly non-game species.

Deer—

(Continued from page 42)

and anxiously waiting for you to go away.

While a fawn looks cute and innocent, it is a different matter when it has lost its fear of man and has grown into a fully mature and belligerent buck equipped with a rack of sharp-tined antlers. It is during the rutting season that a "tame buck" is most likely to become belligerent and "turn" on its keeper. Each year someone in the United States is killed by a supposedly "tame" buck.

A buck I kept for experimental purposes at the Alabama Research Unit even showed a tendency to "hate" some people more than others. I, unfortunately, ranked as his "Number One" enemy. At times, when I came near his pen, the hair along his back and on his buttocks was raised on end like that of a "bristling" dog; his tail was clamped down "like a lid"; his back seemed bowed; his head was lowered; and his ears were laid back like those of an angry horse. He seemed veritably bristling with anger. As long as I remained nearby he retained this threatening mood. When I walked away from his pen, he reared up on his hind legs and gave a series of short snorts as if to dare me to come back.

Why did he single me out and not seem to mind most other folks who came near his pen? Perhaps it was because he challenged me

when I entered his pen one day during his first breeding season. He lost that first battle. After that he suffered the annual fate of having a half dozen students throw him forceably down while I sawed off his antlers. This, to be sure, did not rebuild any friendship for me!

I'm mighty glad he never knew how close he came to winning the first battle with me. His only reason for loss was that he failed to follow through during the one split-second of advantage that came his way.

When all is considered, it is a lot

safer to leave that cute fawn where nature intended it to be—in the wild. It will be better for the deer, too. Fawns in the wild are a crop in the making; in a pen they are little more than tenants of a slum.

The brook trout is technically a char and differs from the true trout in the form of the vomer, a bone in the roof of the mouth, which is somewhat boat-shaped, with teeth only at the elevated front end.

Chipmunks shed their coats twice a year, usually in June or July and in September and October.



Babes of the woods have universal appeal. The photo shows a 3-year-old boy and 3-day-old fawn. The fawn was not "kidnapped" from the wild, but was born to a captive experimental doe.

Trees for Iowa's Loess Hills

An experimental planting of 5,000 pine and spruce on a rolling, loess-heaped bluff south of Glenwood in Mills County may someday determine better land use and conservation for the steep, erosive soils of Iowa, particularly in western counties of the state.

A five-acre tract on the farm of Mrs. Edith Wiles was planted by State Conservation Commission foresters April 21. Included in the planting were 1,000 white, 1,000 Austrian, 1,000 Scotch and 1,000 Ponderosa Pine and 1,000 Norway Spruce. Mrs. Wiles, the State Conservation Commission and Mills County Conservation Board are co-operators in the project.

All seedling trees came from the State Conservation Commission nursery at Ames, but their real beginning is half a world away from central Iowa. The Scotch Pine seedlings, for example, began as seeds imported from Spain, Austria, Germany and Finland.

The Mills County planting is just the beginning of a 10-year program of research and investigation with objectives that could well have application on other Iowa lands:

- ... To determine species, variety, climatic and soil-type adaptability of trees and shrubs on rolling, erosive land of Iowa, particularly that along Iowa's western border.
- ... To establish whether or not on steeper, more erosive soils, trees and shrubs would provide more economical returns, better cover and also a means of conserving the soil and water along with multiple use areas for recreation.
- ... To determine whether on soils that are high in lime (calcareous) there is a limiting factor in tree growth and, if so, the extent of the factor.

An official agreement between the three cooperators sets out the responsibilities of each in the project. Mrs. Wiles, the landowner, provides the land at no charge to the other two cooperators for a period of 10 years, with option for renewal for a similar 10-year period remaining with the Commission and Conservation Board.

The landowner provides for entry to the experimental planting for research and investigations. The landowner also has a responsibility for reasonable precaution against fire and grazing in the planted area. The land cooperator provides for only those funds ordinarily required for the care, protection and cutting of trees planted on the tract.

If it is desirable, cuttings and thinnings of the trees will be made. Trees and products cut from the area remain the property of the landowner, as do all moneys derived from trees and products. Trees left standing at the end of the agreement between the cooperators become the property of the landowner.

Besides the actual planting operation, the Commission and Mills County Conservation Board provides personnel for the research connected with the project, provides and plants additional or replacement trees, and furnishes and maintains any additional fencing that may be required. As funds permit, the Board and Commission will assist in the care, cultivation and thinning of the trees planted on the tract.

The Commission and Board also will arrange for the gathering, reporting and publication of results of the project.

"If we can be relatively sure of species of trees that will grow on the drouthy soils that are high



This planting of Austrian Pine on a loess bluff in Mills County may give some important answers to the problem of how best to hold erosive soil of western Iowa.

in lime, many landowners will become interested in planting trees on the steeper, eroded areas of their farms and in odd corners," Mans Ellerhoff, superintendent of forestry for the Commission, said.

"Evergreen trees, as compared with native hardwood trees, grow better on poor soils, especially those that have been farmed. Trees planted on western Iowa hills can provide multiple uses. Besides providing wood products, they would tend to reduce erosion, help retain moisture, provide excellent wildlife cover and add gen-

eral scenic beauty," Ellerhoff said.

A similar project has been established in Crawford County on the Glen McCutcheon farm east of Dow City. This planting was made with cooperation of the landowner, Mills County Soil District, Mills County ASC Committee and the Conservation Commission.

"These two projects may hold the key to better, more productive use of eroded soils. Findings gained from study of these plantings could have real benefit for Iowa farmers, particularly those in the Missouri River Valley," Ellerhoff said.

Nature's Notebook

Events for July

- ... Birds begin to flock up.
- ... Molting period for many birds occurs during July.
- ... First return of migrating shore birds.
- ... Heavy crop of wild fruit comes on in July—gooseberry and raspberry are some of the most popular.
- ... Second nesting of birds occurs in July, as first nests are destroyed.
- ... Birds begin to assume the drab color of summer.
- ... Insect-eating birds such as night hawks, swallows and swifts will be prominent during July.
- ... Heavy population of such flying insects as night flying moths, etc.
- ... Frogs and toads enter tadpole stage of development.
- ... Deer will be noted in summer (red) pelt during the month of July.
- ... Mid-summer wild flowers will be in evidence.
- ... Mushrooms will take on rapid growth before infestation from insects in July. Field and meadow mushrooms and inkycaps will be observed during the month.
- ... "Clouds" of young bullheads may be observed in streams and ponds next month.

Training—

(Continued from page 43)

On the final day of the program, Frank Heidelbauer, pilot and special law enforcement officer, discussed the soil bank program. Wilbur Rush, chief of the division of lands and waters, also addressed the meetings on navigation. The final session of the in-service program was devoted to law enforcement. Presiding at this session were Beckman, Herb Eells, conservation officer supervisor for northeast and eastern Iowa; Basil

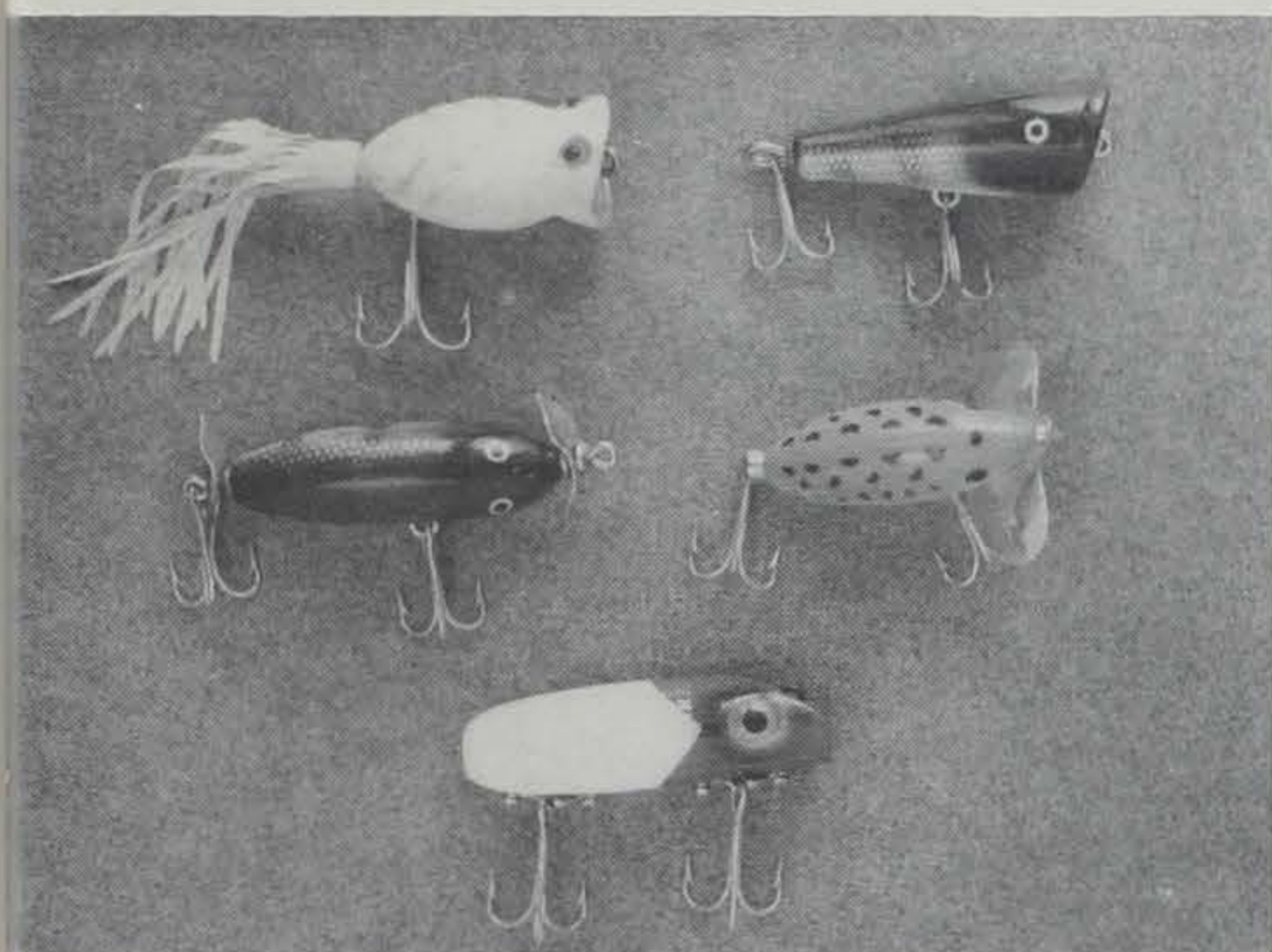
Downing, conservation officer supervisor for northwest and western Iowa; and Dwight Bramon, conservation officer supervisor for south and southwest Iowa.

It has been estimated that more than 3,000,000 deer live in national forests in the United States.

Adult walleye pike eat large quantities of fish, sometimes feeding on them almost wholly. Yellow perch make up a substantial part of the walleye's diet.



A State Conservation Commission district forester places a pine seedling on a Mills County hillside. He will return later to do research on the adaptability of the trees to the soil and obtain other data on tree growth and condition.



George Tovey Photo.

These examples of top-water lures are all productive. The angler who has slugged it out with a bass on a top-water lure will profess it is one of the top thrills in fishing.

Bass—

(Continued from page 41)

Since we lived it a couple of seasons ago. We talk about it every once in a while, remarking that we've never "had it so good" or been bass fishing when it was any hotter. When "that" day creeps into our conversation, it is always in the light of comparison with other days that have been less productive—days when we shed real blood, sweat and tears for what we got; days that tried our patience to the near-breaking point. We also recognize a basic fact or two: fast or slow, good or bad—bass fishing is at its best as sport when they are on top, slashing topwater lures. And what follower of angling who has ever had a snobbing, lure-rattling bass on the end of a line could soon forget it? We submit that none could!

If the seasoned bass fisherman were to list what he thought to be the most important elements in successful topwater fishing for bass, he would perhaps list: getting the lure in the right place in the right way; working the lure enticingly once the right spot is reached; and being discontent with the ordinary, experimenting until the right lure or bug, color and action is found and then sticking with it.

What the angler does once he attaches a topwater lure to a line is perhaps more important than the place, the day of the season, or the time of day he decides to fish. Of course, it goes without saying that certain of these elements are more important when fishing is slow than when it is a bonanza pitch.

It takes the right kind of tackle, properly rigged, to reach the right spots for bass. Spinning gear that has come on the fishing scene in recent years has been a boon to the bass fisherman since it enables him to cover more bass water with the least effort. Bait casting gear, while it won't reach bass water with the efficiency of spinning equipment, is still the choice of

many anglers. A good, light reel is essential to an efficient bait casting outfit. In either case—spinning or casting—line test should be kept light for top distance and accuracy. Ten pound test or less is best in casting gear—four or six pound test in monofilament or braided spinning line. Remember, that line of these tests is capable of landing fish many, many times heavier than the pound test printed on the spool.

When I rig casting equipment for bass, I like to tie on an eight or 10-foot piece of four or six-pound monofilament to the end of my regular casting line. I use a blood or barrel knot to make the connection, clipping the ends short to cut down on friction or drag. This makes a strong union and, because the knot is very near the same diameter as the casting line, there is little trouble in the knot shooting the rod guides easily. I check the knot often during the course of a day's fishing and re-tie it at first sign of weakness. The snap-swivel is tied at the end of the monofilament. Rigged this way, the lure is presented as an unattached, free agent which adds a little deception to it. Bass, like trout, are "spooked" by showy lines attached directly to a lure or swivel. Of course, spinning gear requires no such extra rigging, since it is leader material from one end to the other.

Areas that provide cover and food directly at or near shorelines are favorite haunts of largemouth bass. Even during the hottest days of summer when he seeks deeper water by day, bass move into shorelines in early morning and evening to forage for food. Big bass like to stake claim on a particular spot like a pocket under the roots of shoreline trees or undercuts in the bank itself. Submerged brushpiles and snags also are favorite spots as are the edges and open areas in emergent vegetation like moss and lily pad beds. Over-hanging trees along shorelines are good bets since a large

variety of insects and seeds drop into the water below.

Casting a topwater lure to the right spot does not necessarily mean the exact spot where you think a bass is lurking. If this sounds like contradiction, it can be explained. More often than not the racket of a lure cast directly to a likely looking spot will scare a bass away, rather than attract him. What is more desirable, then, to pick a spot beyond or to either side of the best spot and work the lure to the point where you suspect a bass to be. Present your lure as noiselessly as possible and let it rest before you start to move it.

Assuming you are working a lure to a more productive spot, slip up on it slowly and gently and then give it a good long rest. Give it a twitch or a little "blorp" now and then with long rests in between. If this doesn't produce a strike, do some experimenting. Try a little harder twitch, move the lure a little way, and twitch or "blorp" it a little harder. Remember a bass will sometimes watch a lure a long time before he is motivated to strike. It's up to you to entice him out with different moves and mannerisms. Of course, the extent of the bass's appetite or patience on a given day will determine the amount of experimenting required to catch him.

A little study of what bass are feeding on will help in the selection of a topwater lure or bass bug that will produce results. White pork rind or chunk, trailing a spoon and worked over tops of vegetation is one of the best and probably simulates frogs, a favorite bass food. Hair frogs and frog-finish lures with white undersides also are productive lures when the run on frogs is heavy. Bass bugs probably imitate hatching or falling insects. These are particularly effective under overhanging trees when insects are falling into the water and at anytime when bass are gorging on hatches. Lures that simulate wounded or distressed minnows are effective nearly anytime. The same can be said of lures fashioned to look like mice. Though I doubt if mice constitute much of a factor in the appetite of bass, he's just cussed enough to have a mania for them!

We might categorize some of the more popular types of topwater bass lures and our observations in working them:

Plunking lures—Seem to work best when plunked loudly to call attention and then worked slowly in a series of slow, easy "blorps." Dip them occasionally, trying not to move them very far. Strikes often come when the lure is motionless.

Popping types—Apparently imitate large bugs. Like all lures they are working every minute they are in the water. Those with rubber skirts need little movement to resemble moving, breathing morsels that really entice bass. Pop and

"blorp" them occasionally to attract attention.

Paddling types—Work best when worked slowly. Vary the speed of retrieve every once in awhile. Work it for a short distance, let it rest and twitch it before you start working it again. This type lure is best in three-eighths ounce or heavier. The quarter-ounce size does not seem to be big enough to really attract. Good lure in quiet water of early morning, evening and after dark.

Splashing types—Propellers fore and aft add flash and racket to this type. Effective when worked slowly, barely turning props which probably simulates fin and tail movement of injured or distressed minnow. Also, sometimes produces immediate strikes when worked the instant it hits the water.

Spoons and rind or chunk—If there is an aristocrat of topwater lures (not strictly, since it will work under in open water) it would probably be this combination. Reason for its acceptance is the fact that it can be worked in places others won't go without foul-up. Lure is designed to light with hook up in weedy spots. Hook is also protected by a weed guard and the trailing rind or chunk really has appeal for bass. Cast it directly on moss or lily pads and work it over the top. Let it rest occasionally and bring it off suddenly with a quick movement of the rod tip. Also effective when cast and brought off shorelines in the same way. Slithering and bouncing it off trees and tree roots also gets results.

Mouse types—Particularly productive along shores. Work them slowly with frequent rests between moves. Natural grey is good color. Phosphorescent or glowing types are productive at and after dark.

Experimenting is the key to success in bass fishing and the observations made of the lure types above are adaptable to all. The fact that they will produce better on given situations and at different times helps make bass fishing what it is. Mr. Largemouth may be temperamental, but, like we say, he's tops in topwater sport!

GASTROPOD

In the May issue of IOWA CONSERVATIONIST, cutlines describing a photograph at the bottom of page 36 incorrectly identify a fossil as a brachiopod. The fossil should have been identified as a gastropod.

Gastropods is another name for snails. Their name is derived from the root "gastro," or literally speaking, "an animal that walks on its stomach." The root "brachio" in brachiopod denotes arms, in the case of the immobile brachiopod, used to feed itself. This fossil is similar to a clam.

We regret the error.

Red Haw—

(Continued from page 41)

the park area and surrounding Lucas County. This is because they did not have to work on rock, as they did in northeastern Iowa. After the last glacier had melted away, they started flowing on the deposit left by the ice, the glacial drift. This was composed largely of silt and clay, with lesser amounts of sand, pebbles, and larger stones. It is relatively easy for running water to erode this material, so it is not surprising to find so much of southern Iowa a hilly country, all cut up by valleys. However, it does take time. How much time? Well, it may have been as little as 125,000 years, if we can accept the evidence presented by recent studies of the Ice Age. It used to be thought much longer ago than that.

Now, about this glacial drift. During what has been called the Great Ice Age, this part of Iowa and extending down into Missouri was covered twice by great sheets of glacial ice which spread from areas in Canada. Of course, it was much colder at that time. The first glacier, named from deposits in Nebraska, extended as far south as the Missouri River. So did the second glacier. This was named the Kansan, from deposits in that state.

The glaciers carried with them much of the soil, subsoil, and weathered rock of the country over which they moved. This was frozen in the bottom of the ice. The ice, you know, may have been a few thousand feet thick. It even wore

away some of the underlying bedrock in places. When the ice melted, all the debris at the bottom was left plastered over the area. In Lucas County it ranges up to 200 feet in thickness.

The drift is of two kinds. One kind, called till, is just a jumbled mass with no arrangement—clay, silt, sand, and stones all mixed up together—and is rocklike when dry, so water does not pass through it readily. The other kind is stratified drift and is composed of layers of sand and gravel, thus having an open texture which allows water to collect in it and pass through. Layers of stratified drift in the subsoil serve as sources of water supply.



This typical picnic scene at Red Haw Hill State Park gives a view of Red Haw Hill Lake in the background.

YOU WERE RIGHT, GEORGE, IT SHOULD HAVE BEEN TO THE REAR.



There are no good exposures of the drift, known to the writer, in the Red Haw Hill Park. There must be many places in the county, however, where it is exposed. These would be in road-cuts and on valley sides. The glacial drift at the park is probably about 100 feet thick, so none of the underlying bedrock is visible.

Fortunately, however, rock from bedrock exposures in nearby localities has been brought into the park. There it has been used as riprap to protect the lakeshore, and in the construction of buildings. The large monuments at the Highway 6 entrance to the park are of limestone. So is the park shelter, a fine building and a great credit to the men of the Civilian Conservation Corps who built it many years ago. A good guess would be that this limestone came from quarries in Monroe County to the east.

The limestone contains abundant fossils, relics of the sea life of ancient times. Very ancient times, we should say, for the limestone was formed as a deposit in a sea which covered much of the interior of the North American continent in the Mississippian period, some 250 million years ago. The writer noted that the fossils were weathering out from the surface of the blocks in the monuments. Crinoid stems and brachiopods were plainly visible. These can also be seen in the building stone of the shelter.

A rock which in a way is even more interesting has been used as riprap on the shore below the shelter and elsewhere around the lake. It is a conglomerate, a hardened gravel, and is also very ancient. It is from a formation called the Chariton Conglomerate. This is well-known from outcrops along streams in the northeastern part of the county. Many of the pebbles are limestone. Another phase of the Chariton Conglomerate is a reddish-brown sandstone. The gravel of the conglomerate and the sand of the sandstone were deposited in a large river which flowed through Iowa and Missouri during the Pennsylvanian period.

The Pennsylvanian period fol-

lowed the Mississippian, and is the one in which most of the coal of the world was formed. It was a time of low-lying land areas. The decaying vegetation which was to form coal accumulated in swamps. Rivers flowed over the land, carving out valleys. The valley in which the Chariton Conglomerate was to be deposited as gravel and sand was formed at this time. Then, with slow rise of the sea level, the land was invaded by the sea. This meant that the velocity of the river was gradually decreased. The sediment it was carrying, the sand and gravel, was dropped in the old channel. Later, these materials were cemented together by substances deposited by water seeping through.

Thus came the Chariton Conglomerate formation. It is known as a channel sandstone. It was first described from outcrops northeast of Centerville in neighboring Appanoose County, along a tributary of the Chariton River. Probably the rock of the riprap came from that locality. The pebbles of the conglomerate are from limestones formed earlier in Pennsylvanian times. They were worn away and rounded by the river and its tributaries. So this park, in these large riprap blocks, has something very unusual for an Iowa park. It has pebbles that were rounded, not by any present-day stream but one which flowed over Iowa some 250 million years ago. Look upon them with respect for their great age.

The park has an area of 420 acres, and the lake 72 acres. The dam was constructed in 1937, and even in the short span of 20 years, changes have taken place in the lake. Some sediment has been carried in. Also, the waves have cut into the shoreline in exposed places. The points tend to be cut away, and the bays to fill in with sediment.

Given time enough, the shoreline would become much more regular than it is. And in time, the lake, like all lakes, would disappear through filling in and even through cutting down of the outlet.