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Bunnies Abundant—Season Liberal

By Paul D. Kline
Game Biologist

Harken ye bunny hunters, pursuers of the fluffy tails: The season is on! Gather your beagles, oil those boots, and pray for snow. Rabbits are numerous, the season liberal.

If the 68 July roadside counts conducted by conservation officers and biologists are indicative (we believe they are) there are almost as many cottontails available this season as last. And, the counts show more cottontails in Iowa than during each of eight seasons immediately prior to 1958-59. Indices of rabbits seen per ten miles of survey route were 6.2 as compared to 6.9 in 1958. For 1957 the index was 4.9. Both the 1957-58 and 1958-59 seasons presented bunny hunters with top-notch sport.

Of course some areas in Iowa have more rabbits than others. If you are a pheasant hunter you may go north, but if cottontails are your desire, better go south because the primary rabbit range lies in southern Iowa. Take the southern third of Iowa; eliminate the Mississippi River counties, and you will have located much of our best cottontail range. For example, the rabbit index for part of southern Iowa was 10.9 in 1959. Northeast Iowa produced an index of 1.5; and north central Iowa gave an index of 3.6. Go south, young man!

But don't be shy and do your rabbit hunting *this* year. Procrastinators will be lost because, if history repeats (and it almost always does), we will have lean years again. It's impossible to say when the decline will start, but it could be next season. We can't stockpile them this season, hoping for more next season. Many hunters reminisce of rabbit hunting during the thirties. Rabbits were super-abundant during some years at that time, but they crashed. Skinny years followed abundance and hunting did not cause the crash; disease did.

Hunting is one of the lesser controls of rabbit abundance. A much more important control is

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FORESTRY— ITS MEANING

Part I

What Is Forestry?

This oft used and seldom understood term has a myriad of meanings. "Forestry" is the scientific management of woodlands for continuous production of goods and services. One can call it a science, an art, a business and a public policy occupied with continuous production and management of trees on suitable lands and promotion of their beneficial use for mankind. If you doubt the blessings of a tree, picture what our recreation areas would be without them.

Important in Iowa?

Those who are interested in the wise use of land think it is. About one-seventh of the state is forested; the yield from these lands is about 110 million board feet per year, but they have been judged capable of producing two to three times this amount if managed scientifically.

Is the Conservation Department the Only Agency Concerned with Forestry in Iowa?

No, although the Department is designated to carry on the program with individual landowners and timber operators, a number of state and federal agencies have a helpful interest in furthering forestry. Iowa State University, its extension service and particularly the extension forester carry on educational work. The U. S. Department of Agriculture, through its Forest Service and Soil Conservation Service, has responsibilities; and the Agricultural Stabilization and Conservation office has an interest in forestry because it encourages conservation practices on forest land.

The Department began a forestry program by employing a State Forester in 1937. Funds for this work are from two sources as follows: 30 per cent from federal reimbursement by the U. S. Forest Service and 70 per cent from general revenue funds of the state.



Jim Sherman Photo.

For real sport leave the rifle and shotgun at home. Picking off a bounding "fuzz-tail" with this equipment marks you as an archer to be reckoned with.

More Than Just Boards

Forests serve man in many ways besides producing timber. The most noticeable can be seen in the clear water that flows from well forested areas; trees reduce the amount of run-off and erosion by breaking the impact of individual rain drops and allowing them to be absorbed into the soil kept porous by decaying leaves and roots. It slows down the melting of snow, making it gradual and thus reduces flooding. Forests provide scenic beauty and increase recreational use. They provide a crop of wood from land too poor or hilly to raise food crops or pas-

ture. Further, forests provide beneficial environment for many species of wildlife.

Hardly Small Potatoes

The Conservation Department owns about 14,000 acres of timber land which serves as demonstrations of forest management, tree planting and the production of timber crops. These lands are open to hunting and fishing. Plans are now being made to incorporate picnicking, camping, nature trails and other outdoor recreational activities on some of these areas.

The Department's fire program includes the protection of forests

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RABIES AND ROVER

By **Eldie W. Mustard**
Game Biologist

Mad dog!! Mad dog!! Through the ages, from antiquity to present day, this cry has struck terror into the hearts of men. This was the sentinel-cry which signaled mothers to snatch their offspring from play and take them to safety. To the ancients and to the moderns, the cry of mad dog meant and means only one thing—rabies.

Rabies is a disease, caused by a minute microorganism (a virus), which affects the central nervous system, causing paralysis and eventual death to the victim. Once the symptoms of the disease are visible nothing can be done to save the victim, whether it be animal or man. The virus causing the disease is usually transmitted to the victim through the bite of a rabid animal.

Any animal suffering from the disease can transmit rabies. Rabies has been reported in man, dog, skunk, fox, cat, cow, horse, hog, sheep, bat, deer, badger, squirrel, gopher, raccoon, owl, pigeon, and hawks to name a few. In short almost all of our animals and birds seem able to contract the disease and, once contracted, to spread it, through biting, to other animals.

In Iowa, rabies has been reported in the skunk, cow, cat, dog, raccoon, fox, hog, horse, squirrel, civet cat, ground hog, badger, sheep, rabbit, mink, gopher, muskrat, and coyote. Skunks have been most numerous reported, followed by cattle, cats, dogs, and foxes in that order.

Man is probably exposed to the disease more often through the bite of a dog than any other single source. This is logical because the dog, more than most other animals, has close contacts with both man and the wildlife which may originally infect the dog.

U. S. Public Health Service officials have stated that the vaccination of all dogs, accompanied by the destruction of all unvaccinated

Editorially Speaking

By **Malcolm K. Johnson**
INSTANT CONSERVATION

In our present era of mass produced fast action, it's so easy to fall into the pattern of believing that any problem can be solved by introducing more men and more money.

No longer is it necessary to start your morning coffee the night before, or to boil potatoes a half-hour before they can be mashed for Sunday dinner—science and hot water have reduced the time element to seconds.

Buy a house, car or any of the innumerable home appliances with out adequate preparation? Sure, why plan—we can get it on "time" with no money down and a lifetime to pay. Planning, saving, and working toward a goal (in essence, a reward for some sacrifice) is old stuff—"use it now, wear it out and pay later"—sound familiar? Maybe it's too close to home for some believers, who've stretched their financial resources beyond recovery, and even these people appear to be as successful as the next man. But are they really?

Success has such pliable meanings, but it boils down to what you have left when the game is over and what we, as a people, will be able to tally up looks pretty skimpy where natural resources are concerned. Because it's so easy to say "let George do it," or "I'll really get after it tomorrow," our stock of nature's renewable resources has been going downhill like a fast freight to the final goal of no fish, no game, no scenery, NO NUTHIN'.

Ducks (or rather the lack of them) is a current topic of con-

versation—and for good reason. Draining natural wetlands to provide more rat food in overflowing storage bins seems to be a national mania. Perhaps a meal of roast rat would help to convince those few, who graciously allow the taxpayer to contribute in excess of a million dollars a day for mere storage, that our vermin crop isn't the best investment.

Here again this instant business comes up. We can hatch ducks like chickens and let hunters knock 'em down within the confines of a shooting preserve, but what about the people who drive a hundred miles to see the spring migration? Well, movies might help them a little when all the birds are gone.

Another interesting aspect to our national tale of woe lies in the efforts of the Federal Fish and Wildlife Service trying to buy up some of the remaining wetlands while another government agency spends much more money paying landowners to drain them. Many more illustrations of the same type are available to those who will look. Upland forests are removed and suddenly new dams are needed to stem the additional run-off to the rivers. Irrigation from our streams during the low period and pollution go hand in hand to make a fisherman work all day for one bullhead.

That's our story—dried, canned or frozen. Instant coffee, instant tea and maybe even instant people (if we have it right from the cannibals), but instant conservation? There just ain't no such thing.



George Tovey Photo.
What is that thing Doc? A moment later with her curiosity satisfied, this Pointer had achieved the best possible protection against rabies. A "man's best friend" can be his worst enemy unless such precautions are taken.

dogs, would go a long way toward eradicating the disease in the United States. It is too bad that

more dog owners do not have the consideration, if not for their dogs, then their fellowman, to have

STAFF CHANGES

The State Conservation Commission has approved the following staff changes:

EARL ROSE, Chief of the Division of Fish and Game.

(a former fish biologist, Rose has been Acting Chief of Fish and Game since the resignation of R. W. Beckman in August.)

DARREL M. HILL, Superintendent of Construction Engineering (was an Engineer's Aid and Glen Powers was made Acting Director in July. Has been Acting Superintendent of Construction since that time.)

PAUL LEAVERTON, Superintendent of Land Management.

(was Superintendent of Game.)
BILL BRABHAM, Superintendent of Game.

(was assistant Superintendent of Federal Aid.)

LESTER FLEMING, Assistant Superintendent of Land Acquisition.

(was Unit Game Manager of Bays Branch Unit.)

ROY DOWNING, Exhibits Manager, Public Relations Section (formerly Conservation Officer, Appanoose and Monroe Counties.)

SUPERSTITIOUS?

According to the ancient tribal customs of our red-skinned forebears, devouring the heart and brains of the game taken is good insurance if you believe that the courage and sagacity of the victim would be transferred to the hunter for his future success.

their dogs vaccinated. It almost seems that people are unwilling to do something unless there is law which says they must comply.

Men who own and use hunting dogs are especially urged to take it upon themselves to have the dogs vaccinated against rabies. These dogs stand more chance of meeting with a rabid skunk or fox than does the ordinary "house pet" variety of dog which may seldom venture from the yard. This is not meant to be construed that house pets shouldn't be vaccinated to.

Rabies vaccines are available which will protect your pet—and maybe you and your children—for up to three years after the shot, and the price of the shot is well within the means of every dog owner.

We've all heard that the hot days in July and August (called dog days) are the worst time for rabies. This isn't so in Iowa where more cases are reported in late winter and early spring than at any other time of the year.

Some countries have completely eradicated rabies, and we can do it here also if we follow the advice of those who are studying the disease. A good place to start is with old Rover—get him vaccinated for your protection and for his.

FORESTRY—

(Continued from page 185)

and grasslands. It is primarily educational and is tied directly to schools and rural fire departments. In addition, it cooperates with volunteer groups of landowners who have a protection program for their neighborhood. This educational service has resulted in reducing the fire problem in our state.

Trees and Shrubs Are Available

Tree seedlings and wildlife shrubs are sold at cost by the State Nursery at Ames and beginning January 1, each county extension director, soil conservation service technician and conservation officer will receive tree order blanks. All orders should be made prior to March 1 because supplies are limited. Deliveries start in southern Iowa about the middle of May.

Hardwood trees and shrubs are sold at \$12.50 per thousand excepting multiflora rose which is \$20.00 per thousand. All evergreen seedlings cost \$22.00 per thousand. Prices are F.O.B. nursery.

The Man to See

District foresters, sometimes called farm foresters, are employed by the Conservation Department to work with timberland owners and timber operators. Their job is to encourage better management of privately owned woodland and to promote tree planting on non-agricultural land. All district foresters are graduates of a four-year forestry college or university, equipping them with the needed technical background.

The services of these men are available free of charge to all woodland owners who want to increase the productivity of their timber through improved management. The Department at the



More than just woods, forests are an essential part of conservation. Restful and relaxing, productive and protective—you just can't beat the Iowa woods! Jim Sherman Photo.

present time has six farm forestry projects covering 48 counties. Headquarters for these projects are in McGregor, Anamosa, Fairfield, Farmington, Chariton and Adel.

The first step in improving an area is to make an inventory of the owner's woodland to find out what is available. This is called a cruise. From it the forester can tell how much merchantable timber and how many young trees are on the land; how fast the trees are growing; which trees should be harvested and which should remain for future growth; the kind of products that can be harvested; the areas that need to be planted and the amount of work needed to get the woodland in the best grow-

ing condition. The forester can provide a management plan and also advise on possible markets and assist in preparing bids and timber sale contracts.

The timber operator is the third member of the woodland management team; without his co-operation and interest a good forest management job cannot be done. Farm foresters advise operators on markets and timber for sale. It is just as important to work with the operator as it is with the owner.

What About the Game

Proper timber management is an asset to game production. Browse comes in where openings are created by cutting operations. Den trees are preserved and the repro-

duction that comes in after harvesting provides good food and cover for animals.

Tree programs recognize owners who have dedicated their forest land to the growing of wood crops. Before an owner is certified, the woodland is inspected by a forester who reports its condition and possibilities to the local sponsoring organization. This program is sponsored nationally by the American Forest Products Industries, Inc., and locally by the Iowa Retail Lumbermen's Association with the cooperation of the Iowa Bankers Association, the State Conservation Department and other organizations interested in the best development of Iowa's forest resources.

JOCK RETIRES AFTER 35 YEARS



J. C. (Jock) Graham, known to more trap shooters, quail hunters and dog trainers in the middle west than perhaps any other one man, has announced his retirement from the State Conservation department effective December 1. Actually this is Jock's second "retirement." He joined the de-

partment in 1925 as a Deputy Game Warden. As such he served in Wayne, Decatur, Ringgold, Davis, Wapello, Monroe, Lucas and other counties from time to time until 1931 when he was appointed Deputy Fish and Game Warden of Wapello County. He held that office for four years until the State Conservation Commission made him a State Conservation Officer. From 1935 to 1949 he covered Appanoose, Monroe, Wayne and Lucas Counties, and was assigned, for awhile in 1944, to Decatur. Then, on July 1, 1949, Jock retired. He fully intended to go to Centerville and live the life of a retired sportsman and dog trainer and, in so doing, add to his collection of trophies and medals as one of the state's leading trap shooters and quail experts. It was not to be. That same day, July 1, he was persuaded to be re-hired as custodian of the Hooper Area where he has been every since.

This new assignment was a challenge to Jock, for which his love of wildlife and quail in particular was responsible. There had been no quail at all and very

IN THE GOOD OLD DAYS

Break out your diaries, hunters, and see how you compare with a nimrod from Merry England. This gentleman, Lord Malmesbury, was quite precise and kept a complete record of his days in the field for forty seasons, extending from 1798 to 1840. Discounting the greater population of game in his era by remembering the kind of arms and ammunition available at that time would make him quite a hunter in anybody's book. Not only the numbers and kinds of game killed were written in his journal, but also the quantity of powder and shot used, time in the field, the day's weather and even

little other game at Hooper. Fish ponds were going to be built and stocked and the cover for wildlife had yet to be planted. Jock delighted in such work and the fact that his ponds and game cover are now bountifully populated (especially with quail) attests to the skill of this conservationist, par excellence, Jock Graham.

the approximate distance walked.

The grand total amounts to:

Partridges	10,744
Rabbits	7,417
Pheasants	6,320
Hares	5,211
Snipes	4,694
Other fowl	2,756
Woodcocks	1,080
Landrails	95
Black game	81
Quail	50
Bitterns	50
Wild geese	8
Golden plover	6
Wild swans	3

His summary of shots for forty seasons:

Shots	54,987
Killed	38,221
Missed	16,766
Days out	3,645

By walking two and one-half miles per hour, this fellow would have traveled 36,200 miles; around the world and then some! He fired some 750 pounds of powder and four tons of shot and, to top it off, never spent a day sick in bed during the forty years of hunting.

How about that, any runners-up?

SOLUTION FROM DOWN UNDER



Lending a helping hand to nature, the 500 gallon per minute flow of water is so far considered successful in solving Lake Cornelia's problem.

By Malcom K. Johnson

"Pump a lake full of water? You're nuts!"

We were driving around Lake Cornelia at the time and I had just told my friend why we were there—to see a lake being filled by pump. I'll have to admit to some doubts of my own in spite of the assurance of the engineers of the State Conservation Department that it was really working.

And then I saw it. "You don't believe it?" I said, "look over there."

And so it was. Emanating from a long "L" shaped pipe about a foot in diameter was a steady stream of Iowa's liquid gold. Gushing straight down onto a mound of rocks which prevents bottom erosion and extreme turbidity near the flow, came this lake-saving engineering phenomenon. On and on at the rate of 500 gallons per minute, water roars down into Lake Cornelia, replenishing from subterranean depths the liquid that life is dependent upon.

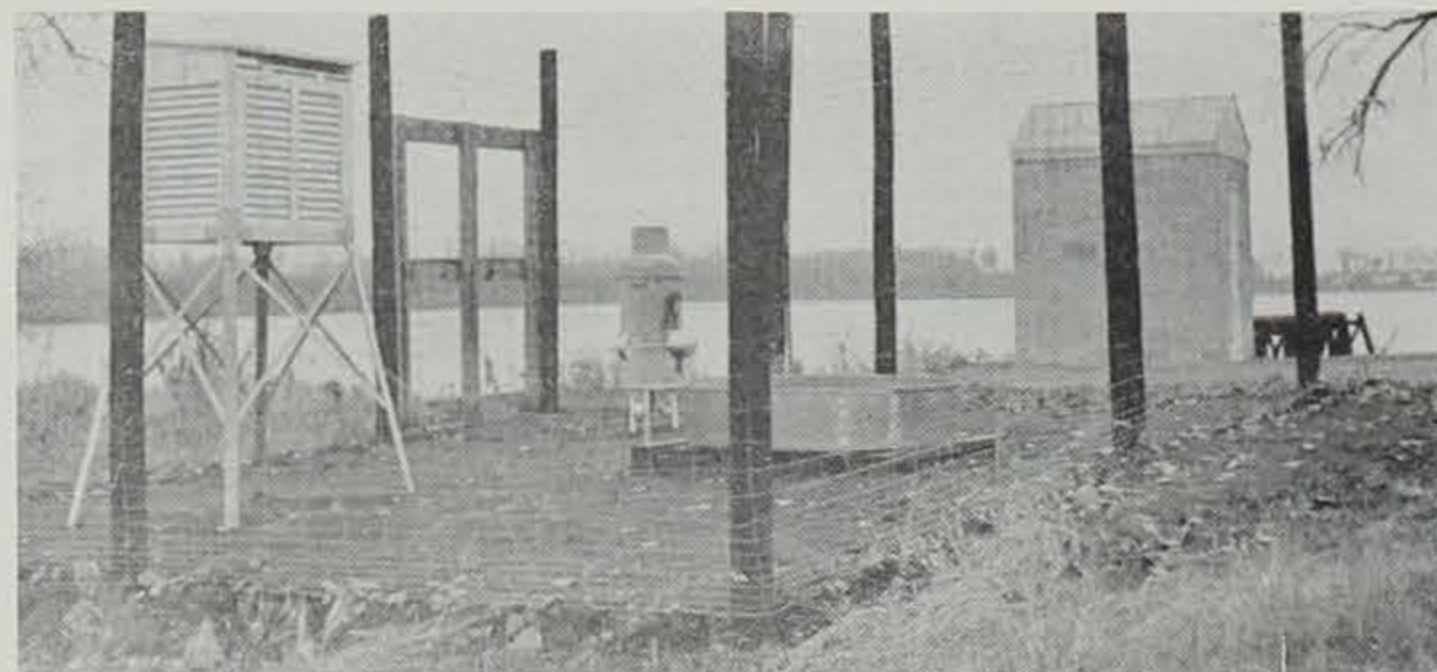
Not too long ago, this shallow depression in Iowa's glaciated surface was producing good crops of corn and hay, the result of too little rain and too many emaciating warm winds. Hydraulics experts tell us that a hot dry wind can evaporate as much as an inch of water from the whole surface of a lake in one day. That much in just 24 hours, mind you, and think of all such days we see in a normal summer and fall.

Without Mother Nature's sprinkles, drizzles and genuine frog-strangling showers, our favorite summertime recreation spots wouldn't last much longer than a match in a whirlwind, if that long.

Without the natural replenishment from an adequate watershed, lakes not fed by rivers or underground streams are highly susceptible to minor changes in rainfall and are then called marginal lakes.

Lake Cornelia is an example of this and there are many others. Though usually, relatively small water bodies, larger ones also, demonstrate their precarious positions when annual rainfall figures drop for an extended period. As lakes are naturally excellent silt traps, the problem is thereby compounded by the bottom rising to meet the lowered top surface. The "Save the Lake" group at Storm Lake is acutely aware of this difficulty. And the disheartening part of the story is that lakes are only a transient phase of the land's natural progression from uneven ridges and depressions to a near perfect plane. In other words, both physical and biological processes tend to level the whole land surface of the earth. The time involved in accomplishing this feat is beyond comprehension, but if there's one thing this earth has plenty of, it's time.

Are we then shovelling against the tide by attempting to circumvent a natural process? Again, time is the important point and whether we slow the general trend by a hundred or a thousand years, in the end it makes no difference. Our top soil is moving ever downstream and this soil was once hard rock such as we find in limestone quarries or down deep in the earth's crust. The length of



Complementing the gauging station this weather unit assists in making a complete record of moisture gained by natural means at the lake site.

time required to fill a lake with sediment is great and while it is usable for recreational purposes and economically feasible to even extend its useful life, then for the well-being of the people it should be done.

Pumping water into Lake Cornelia is an experimental project which should help to determine whether the practice is wise or not for other troubled lakes. The lake area is 285 acres and it has a limited watershed. The ledger shows that the yearly loss is about four feet and only 2½ feet are replaced by natural means. So in order to maintain its level, a deficit of 285 acres of water 1½ feet deep must be made up from another source.

The State Conservation Department, cooperating with the State Geological Survey and the Water Resources Council, has established a pumping station and weather recording instruments to find out if the procedure is advisable. The cost of operations is paid by the local citizens and not only will the lake level and weather be recorded but also the effect of the well on the water table all around the well. An aquifer (water carrying stratum) below those normally used is supplying water for the pump.

The capacity of the aquifer has been established at 1500 gallons per minute and the well is constructed so that a pump of this size can be substituted for the smaller one if need be.

In any case, the residents around Lake Cornelia are fortunate that the experiment appears to be successful. Much more time and recorded data are needed before the whole story will be known, but for the moment, at least, it's reassuring to know that the lake may be stabilized. Now overpopulated with perch and sun fish, it should be fished hard this winter to give the recently stocked bass and wall-eyes plenty of elbow room. Restoring the lake is only half of the problem—making use if it is up to you.

The feet of the parrot are "yoked," with the first and fourth toes extending backward. They are used like a hand for holding food.

COMMISSION MINUTES

The Commission was welcomed to Muscatine November 4 by Mayor Walter Conway who presented a petition from that city asking for the dredging of Muscatine Slough. The Commission inspected the area and discussed the petition, and made recommendations on procedure for achieving this project.

Muscatine parks commissioner Ollie Bently, asked the Commission to change its policy to allow the city park to acquire wild animals out of season for display in the city zoo. No action.

Mr. Charles H. Young of Muscatine, chairman of the National Executive Board of the Mississippi River Parkway Planning Commission, gave a summary of the planning for the Great River Road, which will follow the entire length of the Mississippi River.

A report was given by Acting Director Glen Powers concerning planning for an in-service training school for the Conservation Department.

Earl Rose was approved as Chief of the Fish and Game Division.

Mike Hill was approved as Superintendent of Construction Engineering.

H. W. Freed asked the Commission to consider approval of a policy to automatically retire all employees at age 65. No action.

A fish control program for Storm Lake was approved.

Buchanan County Conservation Board received approval for transfer of six acres of land in the Hazelton Area to a cemetery association.

City of Iowa City requested introduction of *Gambusia minnows* to control mosquitoes in the Coralville Reservoir. Action was postponed for one year to allow further study of the problem.

Travel authorization was approved for seven employees to attend the Midwest Wildlife Conference, December 7-9 at Minneapolis.

Bob Russell, of the Iowa City Izaak Walton League, informed the Commission about the "Save Our Shorelines" program of the national Waltonians. He also recommended acquisition of more river access areas located near bridges and reported on and recommended farm ponds created by highway fills.

The Commission accepted a 60 day option for purchase of 52 acres of land adjacent to Geode Park at \$150 per acre. They also requested release of the funds for this purchase by the Budget and Control Committee.

Request of Glen Severson to construct a dock on state shoreline adjacent to Shorewood Acres on the north shore of Clear Lake was approved.

Request for transfer of funds from spillway account at Lake

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INTRODUCTION TO ODESSA GAME MANAGEMENT UNIT

By William H. Aspelmeier
Manager

(Editor's Note: Words of description are awfully cold and dead compared to the beauty of Lake Odessa's features. You must see it to believe; to really feel its power. Formerly cultivated, this land has been returned to its own and here nature's pleasure in herself is expressed simply and well. Conservationists should take pride in these areas made possible through their own efforts.)

Odessa is the responsibility of William Aspelmeier, Unit Game Manager. Bill came to the Department on January 1, 1953 as a laborer at the Colyn Area, and was promoted to foreman three months later. On March 1, 1955, he became Unit Game Manager and remained at Colyn until July 1, 1958, when he was moved to Odessa. He is 30 years of age and, like all of the Department's Unit Managers, very much dedicated to his job. Here he describes the largest of the Federal Aid Section's Units.)

The Odessa Game and Fish Management Unit is located in Iowa's southeastern corner with the headquarters at Lake Odessa. It is probably the most intensively used fish and game area in eastern Iowa during spring, summer and fall with a full range of water sports, picnicking and camping to lure the leisure minded folks of our state. The Unit has 17 areas for a total of 12,036 acres and they vary in size from a sprawling 3,200 acre multiple use area to a tiny fishing access containing less than two acres. Each has a primary objective in its management with secondary purposes also kept in mind. The Unit is managed generally for waterfowl hunting and/or fishing, in particular, with some emphasis placed on upland game.

Lake Odessa, in the fork of the Iowa and Mississippi Rivers in Louisa County, is a 3,200 acre multiple use area. One of the few areas in Iowa with positive water level control, the lake is raised or lowered by means of an inlet above and an outlet below the dam on the nearby Mississippi River. It has approximately 2,000 water acres and 1,200 of land. The area's location with the proximity of Louisa National Refuge, desirable marsh vegetation and many good ponds and sloughs nearby all contribute to hunting success on this area as witnessed by Iowans from all over the state and residents of many other states who take their luck hunting seriously and spend their annual vacation where shooting is the finest. By raising the water level 18 inches this fall, a great deal of shallow water passage was afforded hunters in addi-

tion to luring many, many ducks onto the sheltered surface. One couldn't be very far off by saying that ducks can be seen flying around here every minute of the day during the season. It's no wonder that Lake Odessa is a treasure trove of waterfowl.

The many chutes and ditches provide excellent fishing for crappie, bluegill, catfish, walleye, silver bass, and black bass. Crappies of the 18 inch size are commonly taken from Odessa every year. During the summer months, thousands of people come to enjoy picnicking, camping, boating and water skiing. The area is also rich in Indian lore which attracts both professional and amateur archaeologists.

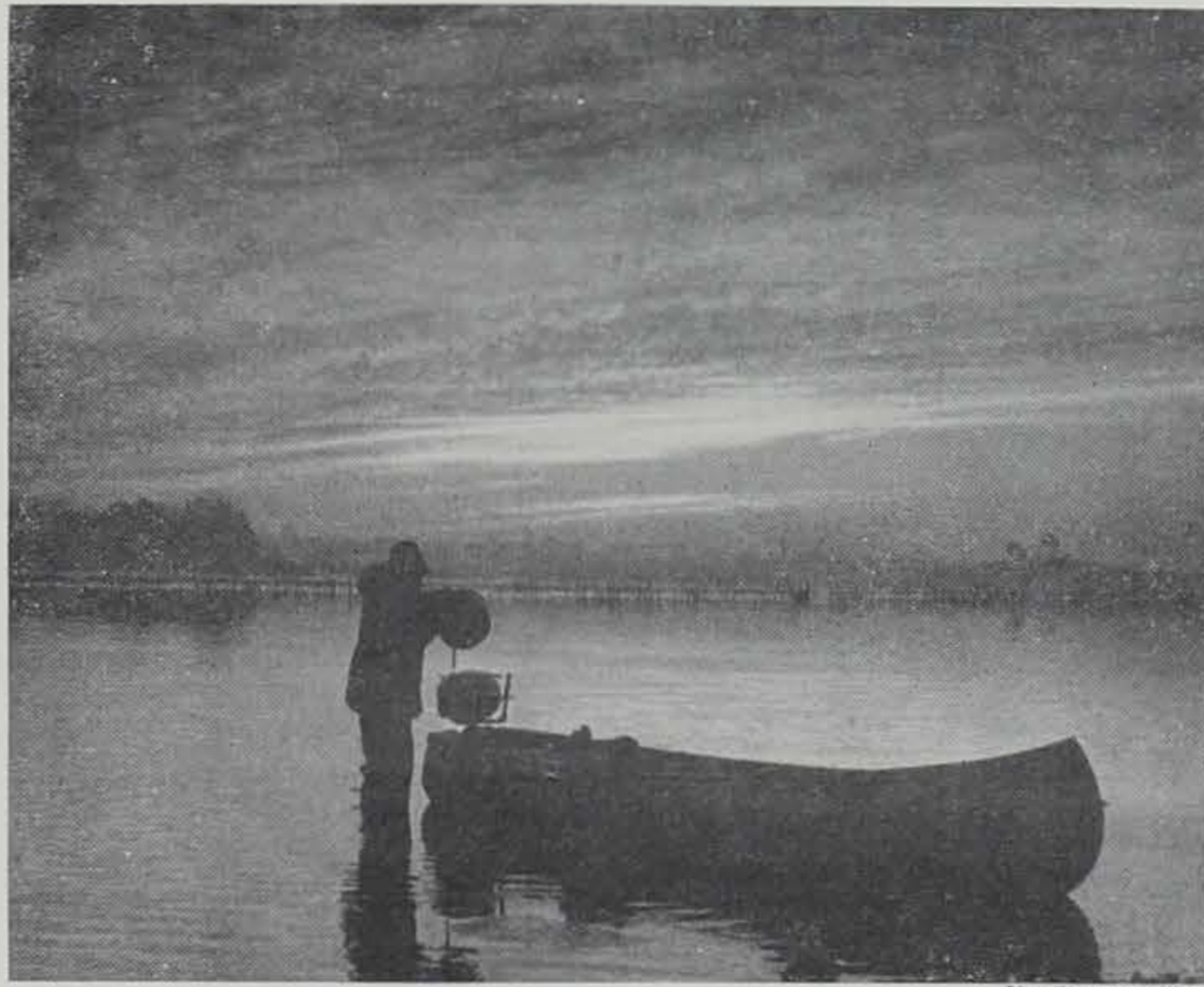
Goose Lake in Clinton County is a natural marsh containing 464 acres. A lush growth of aquatic

ter level.

The Skunk River Access Area lies in two separate segments in Des Moines County. It contains a total of 63 acres and provides access to approximately 1.2 miles of shoreline on the Skunk River. Long rows of multiflora rose hedge, patches of native grasses and thick stands of bottom land timber offer food and cover to all upland game species.

Oakland Mills Access is located in Henry County. This 27-acre tract provides access to approximately .6 miles of Skunk River shoreline. A wooded bluff rises sharply from the river bank providing habitat for squirrel, rabbits, quail and songbirds.

Tama and Edgewater Access contains three and one-half acres, and is located in Des Moines County. A foot crossing is pro-



Day breaks over Odessa. The lake's 2,000 acres necessitate a plentiful fuel supply to carry a hunter to his secret place where whistling wings sing his favorite tune.

vegetation, makes it ideal for waterfowl and other marsh inhabitants. Several broods of waterfowl are hatched and reared on the area each year. A large population of muskrats is evident by the numbers of huts and feeders each fall. The upland portion of the area which surrounds the marsh offers excellent habitat to rabbits and pheasants.

Allen Green Refuge in Des Moines County is a natural slough containing 120 acres. This has been managed as a refuge for many years and is well known by migratory waterfowl and bird watchers alike as many thousands of birds rest on this small refuge each spring and fall. Bird watchers and wild fowl enthusiasts flock in during migration peaks to observe species of ducks. The upland fringes of the refuge provide good habitat for squirrels, rabbits and song birds. The watershed of the area is supplemented each fall by pumping water into the impoundment from a drainage ditch, done to insure a satisfactory wa-

vided over the Mississippi River levee to an emerged wing dam which juts across Otter Chute. This wing dam furnishes good fishing along its rocky edge during certain times of the year. Development is underway at the present time for a parking lot and boat launching ramp and it is expected to be completed some time this fall.

The Green Island Area in Jackson County is 2,721 acres of sloughs, timber, large flats of native and domestic grasses and many scattered fields of agricultural land. It lies along the Mississippi River between the mouth of the Maquoketa River and Smith Creek. The area is primarily managed for waterfowl hunting, but also provides excellent habitat for deer, squirrel, and aquatic fur bearers. Large numbers of wood ducks nest here annually and it is also heavily used by migrating "woodies." Limited water control is possible on the impoundment by the use of a water diversion structure on Smith Creek and an outlet

structure to the Mississippi River.

Klum Lake is a natural marsh in Louisa County containing approximately 200 water acres, and 300 land acres. Like Allen Green Refuge, this water area also receives supplemental pumping each fall. The marsh is heavily vegetated with cattail, river bulrush, and other aquatic plants in smaller numbers. It makes a convenient stopover for feeding waterfowl, being located just three miles from Louisa National Refuge which attracts many waterfowl each fall. Good quail, squirrel, and deer habitat surround the marsh. Approximately 79 acres of the area are leased for farming each year.

Weise Slough, located in Muscatine County, and containing approximately 850 acres, is a semi-artificial marsh managed primarily for waterfowl hunting. Several scattered patches of agricultural land on the area provide food and some cover for upland game and the remainder is taken up with large stands of timber, and heavy growth of native grasses. Wildlife species present on the area and in substantial numbers include deer, squirrel, rabbits, pheasant, and quail.

The 875 acre Princeton Area of Scott County is a semi-artificial marsh which lies adjacent to the Mississippi River at the mouth of the Wapsie. Prior to the waterfowl season each year, the marsh is augmented by pumping from the Mississippi River. Fishing is limited to several small ponds stocked with bullheads. The upland portion is river bottom timber and thick stands of native grasses. One of the access roads also provides access to the Mississippi River where a parking lot and boat launching ramp are available.

Port Louisa and Toolsboro Accesses are at either end of Lake Odessa in Louisa County. They provide access to the Mississippi River and facilities include parking lots and boat launching ramps at each area.

Other areas of the Unit, but which receive little or no management, are Green Bay, Muscatine Slough, and Keokuk Lake.

From the standpoint of eastern Iowa's growing troop of outdoor-living families, the recreation provided by Lake Odessa and nearby areas is second to none.

Things You May Not Know

The pigmy shrews are the smallest shrews, weighing only ¼ ounce—less than a dime. Because of their activity and small size, they consume several times their weight in food every day.

* * *

Bucks drop their antlers every year. The new ones start to grow immediately after the old ones fall away. They are true bone and while developing, are the fastest growing bone found in mammals.

MONEY DOES GROW ON TREES



Of all the trees in Iowa, the white pine seems to respond best for reforestation. This man isn't looking for dollars, but they're there.

Jim Sherman Photo.

By Keith D. Henley

Although there are idealistic reasons for managing woodland, it's not just a matter of leaving something for posterity. It can also pay off in cash now!

The value of woodlands from the standpoint of the products and services they furnish—lumber and pulpwood, wildlife, water, and recreation—has long been recognized as of prime importance in our everyday lives. But what does this mean to you as an average woodland owner?

Just the other day, a landowner who owns 46 acres of woodland said to me, "So you're one of those conservationists, eh? Well, conservation never paid me anything, so I don't think I'm interested in any woodland conservation program." Everybody is interested in making more money and this owner proved to be no exception.

The skeptic overlooked something. Woodland management is conservation with dollar signs. It is a business, and like other well-managed businesses it should yield a profit.

If your woodland is being neglected, there is a good chance that it isn't earning you much. Poorly-managed money socked away in an old mattress earns nothing and pays no dividends.

Likewise, forgotten trees or unattended woodlands can fail to grow, earning little or nothing.

Fifty-four good-growing acres of woodland, however, could be producing up to 200 board feet on each acre each year, a total of 10,800 board feet each year for the entire woodland. With present standing timber prices at \$25 per thousand board feet, your annual growth alone would be worth \$270.

Woodland management is conservation which pays dividends. Forget the old adage, "Money doesn't grow on trees," because it does. If you're a woodland owner, building up your woodland could mean a more profitable future for you and your family. Let's look at it this way. . . .

Your woods is a savings bank and your trees are your deposits. Money deposited in a bank—like trees in a woods—earns interest and pays dividends. The growth of trees can earn you more money than you probably think—more than a savings account or savings bonds, and more than the average stock market investment.

As a woodland owner you are lucky, for you already have the deposits invested—the trees. There is another saying that "it takes money to make money." But you already own the land and

the trees. Many other investments require a considerable outlay of cash.

Each year your woods can grow enough lumber to build an average sized home! And don't forget, the 10,800 board feet is only the NEW growth each year on the trees in your woods.

Let this growth accumulate for five years and by just removing or harvesting the trees representing this growth you could expect to earn \$1,350 in standing timber value. Log the timber yourself, selling the logs at the roadside or at a mill, and your earnings should more than double. If your home needs remodeling or new outbuildings could be used on the farm, use of home-grown lumber might mean a savings of thousands of dollars to you.

You are probably wondering just what this woodland management and improvement involves. Improving and building up your woods requires a few days of your spare time. The work done in your woods can be scheduled during slack periods. In most cases, your time rather than money is needed to start your management program. The more time you work, the faster your woods will increase its growth.

An improved, good, growing woods adds lumber through growth. Harvesting or cutting trees in your woods without regard to sound forest management practices—like withdrawing a savings account from a bank—throws the entire woods out of production and ruins its ability to earn money through growth. Good management practices can guarantee sustained growth, which represents continuous income to the woodland owner.

Woodland improvement consists of one or several cultural practices. This varies according to the type and nature of the woods. Your Conservation Department forester can be of great help to you in planning your management program—designed to fit your work schedule and your needs. Participation in the Agricultural Conservation Program's timber stand improvement practice provides cost-sharing assistance. In addition, forest tax laws are available to woodland owners who practice sound management of their woodlands.

Woodlands, wisely managed and treated as a crop, can become one of the most productive areas on your farm. Investigate the possibilities. Contact your nearest forester. A well-managed woods means dollars to you, increased economic wealth and stability to your community, and a stronger America. The opportunity is yours. Try it.—*Wisconsin Conservation Bulletin*.

Fishes are scaleless when hatched.

COMMISSION MINUTES—

(Continued from page 188)

Darling to be used for a water line at that lake. Approved.

Request from Hawkeye boat livery at Clear Lake for permission to dredge an area 50 by 400 feet long and six feet deep was approved.

Request from the city of Iowa City to build a bridge over the Iowa River to replace the existing city park bridge was approved.

It was proposed by Doctor Humiston, commissioner from Cedar Rapids, that data be compiled on the value of a bridge over the Coralville Reservoir at the Mahafey bridge location and a representative to be sent to Washington, D. C. if and when a hearing is held relative to this bridge; approved.

Commissioner George Meyers of Elkader and Acting Director Powers were authorized to go to New Orleans November 29, to attend a meeting of the Great River Road Development Committee.

Commissioner Mrs. John Crabbe of Jamaica reported on a survey of the California plan of Commission organization.

Printing of 500 copies of the County Conservation Board Plan was authorized.

Franklin County Conservation Board was given permission to accept a gift of one acre of land from the town of Latimer, also granted permission to purchase one acre of land for a roadside park.

Buena Vista County Conservation Board was authorized to buy and develop 20 acres of land for a winter sports area.

Cherokee County Conservation Board was authorized to develop a roadside park near Meriden.

Floyd County Conservation Board was authorized to repair a dam and make other improvements near Rockford.

Permission was granted to request the release of \$8,000 for various improvements at Mill Creek State Park.

Request was granted for the allocation of \$2,000 for construction of toilets and shelters at Gitchie Manitou State Park.

Superintendent of Forestry, Mans Ellerhoff, reported on a multiple use program for the Yellow River Forest area.

It was decided to maintain the prices of nursery stock at the Ames Forest Nursery at the same level as last year.

Acting Director Glen Powers was instructed to ask for a joint meeting with the Highway Commission on December 2.

Commissioner Clyde Frudden of Greene asked for a recommendation to be presented by the staff at the next Commission meeting on how to handle competitive bids for construction projects.

Assistant Attorney General James Gritten explained the status of public lands along the Missouri River.

THE HOMING INSTINCT

By Thompson and Mann

We share with our dogs, cats and other domestic animals an attachment to a place we both regard as home. If one of these animals strays, or is sold to a new owner, or is carried away and abandoned, it acts lost and homesick as it struggles to grope its way back. This is easy to see in pets and among livestock on farms. Surprisingly, many such displaced animals do find their way home, often through miles of strange country.

Less commonly known is the remarkable ability of a wide variety of wild creatures to navigate unknown territory with pinpoint accuracy—birds, bats, mice, turtles, fish, insects, and many others.

How do they do it? Many of us carelessly say that they have "an instinct to go home," but these are empty words and explain nothing. Experiments and careful observations have thrown some light on the guides used by a few kinds in their homing behavior and on their seasonal migrations. Different ones steer by landmarks, the sun, wind direction, shore lines, valleys, echoes, scent trails, water qualities, a sense of time and distance, or by combinations of these navigating aids.

Seasonal migration of wild animals has been going on for ages. Mysterious as it seems, there is some indication that many of them have developed inherited responses to outside conditions which help guide them in their travels. Still more puzzling is how an animal can find its way home after having been carried away and released in a strange place.

Homing pigeons have been trained since ancient times to carry messages. The training starts by taking a young bird a short distance away from its loft and allowing it to fly back, then farther and farther in the same direction as it gradually learns a

certain strip of country. Many of them rely entirely on visible landmarks and get lost in bad weather or fog. They differ so widely in their homing ability that only a few, toward the end of their training, can make jumps of 100 or 150 miles over unfamiliar territory.

The cowbird, because it lays its eggs in other birds' nests, may not seem to be a homebody. However, years ago, a backyard bird bander at Waukegan often carried cowbirds to Chicago, released them in the evening, and then found them back in his cage traps the next morning—thirty miles away. Even one shipped to eastern Pennsylvania flew into Waukegan two weeks later.

The smallmouth black bass, one of Iowa's most prized game fish, also has a distinct homing behavior. By catching, marking and releasing dozens of adult bass in a creek broken into many alternate pools and riffles, the Illinois Natural History Survey has shown that each fish tends to remain in its own favorite pool year after year. Furthermore, when dozens of other tagged bass were hauled in tanks and released in distant parts of the same creek, some upstream and some downstream, over half of them soon found their way back to their own home pools. At least one smallmouth swam home from miles away in another creek in the same river system.

No animal carries a built-in compass or electronic device such as we *intelligent* human beings need to find our way home.—Cook County Forest Preserve.

The smallest long-distance traveler on this continent, the ruby-throated hummingbird migrates from the United States as far south as Guatemala and Panama.

Because the sloth spends most of its time upside down, its fur lies in the opposite direction to that of other animals, towards its back instead of down from it. When torrential rains fall, the moisture merely drops off instead of soaking through.

BUNNIES—

(Continued from page 185)

the breeding potential. Some years, for reasons yet unexplained, rabbits produce more litters than during others. And the litters themselves are larger. When this occurs, rabbits may be numerous. Other controls are weather and cover conditions, and, as mentioned previously, disease.

Anyway, February is a likely month for snow.

Now someone's bound to say, "I'm not a-goin' rabbit hunting when they're a 'carrying young.'" But we're ready for that one. The rabbit season was extended into February only after intensive research by the writer revealed that hunting would not conflict with the mating season.



Perhaps easier than with bow and arrow, the pistol still has much to offer where fun and Br'er Rabbit are concerned (don't forget to take plenty of ammo).

Rabbit abundance or scarcity is a temporary thing. Mortality is high. Our aging studies reveal that only about one-fourth of the cottontails ever live beyond the first year. Chaw on that awhile! It simply means this, abundance depends upon how strenuously the rabbits endeavor to reproduce themselves (they're famous for trying) and how successful their attempts are. For these reasons we say, hunt this year, and enjoy yourself. Next season may be different—at least the rabbits will be different.

We know that many more cottontails die every year from so-called "natural causes" than from hunters' bullets. The problem is: Can this harvest be increased? Our answer to that is the three week extension of the season into February. By prolonging the season, we hope that many rabbits normally wasted by "natural" mortality will provide extra recreation and fried rabbit during late winter when there is normally little to hunt except crows and foxes.

In the writer's belief the cottontail harvest may be increased by 25 per cent with the February season. Much depends upon snow conditions. It seems our Iowa nimrods regard bunnies as mere hohum game until snowfall, but when snow covers the landscape ol' br'er rabbit better discard his carrot and summer capers, 'cause someone will have the double barrel or "22" out looking for him.

During the past two years the writer has examined 63 female cottontails killed during February, March, and April. Most of these were victims of highway traffic and all were subjected to careful examination for evidence of pregnancy. When embryos (young rabbits) were found, they were carefully measured and the measurements used to calculate age. With this information it was easy to determine dates of mating, and consequently, the mating season. Of the 63 females, only six had mated earlier than March. The earliest for the entire group was February 23. Our season closes February 21.

Probably mating activity will depend upon weather conditions. Cottontails will not get amorous during cold and snow. During extremely early springs when we have continued warm weather and no snow, a very few rabbits may mate earlier than February 21. If they did, their young would be born March 21 or before. Young rabbits in the nest at that time have little chance of surviving, because, as everyone knows, March and early April are noted for lousy weather. And a little cold snap or snowstorm will exterminate all nestling cottontails.

Well, shucks, the whole story is this: If you like rabbit hunting, be sure to go this year while they're still here. And don't be afraid of the February season—we know it'll be all right.



Who's LOST?

SO YOUR BOY WANTS A GUN

By Bob Chaddock

When I ran into Bill on a downtown street the other day, the first thing we started talking about was the upcoming hunting seasons and what the prospects were for good game. When I inquired about his family, Bill told me everyone was fine, but he had a problem and didn't know quite what to do about it.

"What is it, Bill?" I asked.

"Well," he said, "Jimmy wants a gun. Not just a plaything, but a real gun, one that shoots. And frankly, Bob, I don't want him to have one."

I had heard this same opinion expressed time and time again. Perhaps you too feel this same apprehension. Several reasons sometimes are offered for not giving the child a gun. The boy is too young. He should learn not to kill, or I don't believe in shooting in any form. But the longing for a gun by a youngster is as normal as his desire for ice cream or candy. It's a rare individual, especially a young boy, who doesn't want a gun at sometime in his growing years. It's up to the parent, of course, whether that child ever gets a gun.

Bill didn't know himself just why he didn't want his son to have a gun. He did confess, however, that the main reason was the fear he held that Jimmy might have an accident, or maybe even be killed. Other parents, of course, have other fears, while many others can hardly wait until their children are old enough to learn to shoot.

Many parents always ask, "Why do youngsters want to shoot in the first place? Why not encourage my boy to take up some other sport?"

Remember your history books when you were in school? You heard the tales of Daniel Boone, Davy Crockett, the soldiers in war and many other attention-holding stories. Each one of them told about shooting. In fact, shooting is a part of the American tradition. And too, the average boy will someday want to answer his hunting instincts and join with millions of others each year who take to the fields, the duck blinds, on deer trails, or just across the woods in search of rabbits. And really, it's fun . . . good, clean, honest fun enjoyed not only by boys and men, but by girls and women, too.

Shooting is a sport that can be enjoyed for a lifetime and better still, it is a sport one may take part in as an individual or as a member of a team. To be sure, some boys and girls just can't participate in certain rugged sports, either because of frail build or physical condition. But shooting requires no special strength or physical fitness. It makes no dif-

ference whether the boy or girl is weak or strong. He or she can participate on equal footing with everyone else.

Probably the most oft asked question is: How old should he be, before he is allowed a gun?

There is no cut and dried answer to this question because the child's age generally cannot be used as a yardstick. Some youngsters are ready when they are only 8 or 9 years of age, while others may not be ready until they are much older or into their teen years. The real yardstick to follow is that of responsibility. Do you leave your youngster alone at home for two or three hours, or maybe longer? Do you trust him to get the correct change, without supervision, when he goes to the drug or grocery store? If the answers are "Yes," then he is more than likely ready for a gun, but under proper supervision.

Isn't shooting expensive?

No, not at all. Most boys start shooting with a .22 caliber rifle, which is a bargain among sports. Ammunition costs about a penny a shot. While special rifles are available, the beginner usually starts with a single-shot .22 rifle, costing \$15-\$25. But if your child wants a gun and you intend to let him have one, why not let him earn the money or save from his allowance for his very own shooting equipment?

Is shooting safe?



Unbridled joy—and it makes no difference whether the first gun is old or new. With dad to give some pointers, young nimrod here should be supplying the rabbit for stew.

Very definitely, if the boy or girl has been instructed properly. Such instruction can be had readily. The Department of Conservation conducts gun safety courses the year 'round. Other competent instruction can be obtained from your local YMCA, Boy Scouts, 4-H clubs and from many sportsman's clubs. In addition, some schools have junior rifle clubs where expert instruction is given.

WINTER BOARDERS

Winter scenes in Iowa can be beautiful, when sunrises or sunsets paint the skies in splendor; a new-fallen snow cloaks the landscape with virgin purity—or—when our yards are covered with feeding birds! Birds of all sizes, shapes and colors, hopping, walking; noisy or calm. This grace and beauty can be enjoyed with luck and a little labor on our part.

As with all animals, the problem of the birds in winter are those of food, shelter and warmth. We solve the problems easily with our modern homes and markets, but it's a tough adjustment for the birds. Those that go south for the winter have it made, of course, but some stay here or come to us from their summer homes farther north. We don't know why. They just do, and they are our problem.

Keeping warm is no trouble for the bird if it has adequate food. The feathers are better insulation than fur. When properly fed, a winter bird can easily maintain body heat—but when the insects are all dead or hidden away, seeds have been harvested or buried under the snow, a bird has much too large an area to search for food. It will find it hard to keep flying strength up to par; much less the energy needed to form a necessary shield of feathers.

More than anything else, a food supply will draw birds to your home. However, the supply must



Mr. Titmouse at the fueling station.

be constant to get the birds to form the habit of coming to your feeding station. You can place the food in almost any accessible spot and some birds will find it, but to draw the shyer ones, you'll need a more sheltered place.

A feeding station should offer shelter for birds and keep the snow and rain off the food. It should be safe from marauding cats, dogs, squirrels and raccoons, unless you want to feed them too. Natural shelter, such as a clump of trees, should be nearby for the birds to escape if necessary. It may be a shelf attached to a window, a box on a post, a box hung on a wire from a tree, or just a cleared space on the ground. The deeper the snow, the greater will be the patronage of your feeding spot.

Food depends to some extent on the birds you wish to attract. Seeds, grain, fruit, insects, earthworms or other animal material are their natural foods. Corn is too large for most of the birds but the cardinals like it and many other species will go for it if it is cracked. Most feed dealers stock cracked corn especially for bird feeders, as well as all kinds of grain, bird seed for pets, and chicken feed. The cardinals like an ear of corn hung on a wire or nailed to a tree so that they can pull the grains off themselves.

As for the insect eaters, the best substitute is suet. Most meat counters still supply suet free of charge or at very little cost to bird feeders. Make sure you fasten it down by some means, otherwise the squirrels may carry off the whole supply. Try fastening a piece of large mesh hardware cloth over the piece of suet or put it in a wire soap container and fasten that to a tree or feeding station. Chickadees like this.

A pan of water, kept free of ice, will also do much to attract birds. You may even find them tempted to take a bath on a warm day.

Place your feeding station where you can see it from a window and be ready to get your share of the pleasure that comes from "doin' right by God's chillun." Among the visitors you may expect besides the cardinals and chickadees, are the nuthatch, downy and hairy woodpeckers, brown creeper, pheasant, blue jay, cedar waxwing, evening grosbeak, goldfinch, slate-colored junco, tree sparrow, and of course the pigeon, English sparrow and starling.

After our talk, Bill and I bid each other goodbye.

I watched him as he walked down the street and stopped at the window of a sporting goods store. A display of guns had caught his eye. Within a few moments, he entered the store and I started my walk home, knowing that a surprise was probably in line for Jimmy that evening.—*Oklahoma Wildlife.*