

VOL. IV. NOVEMBER NO. VI.

MONTANA Wild Life



Monarch
of
Montana
Forests

OFFICIAL PUBLICATION MONTANA STATE FISH & GAME DEPT.

Cowboy, Ride 'Em Rough

By Robert H. Fletcher of Helena, Montana

Montana's Rhyme Roper of the Open Range

LONG HENRY and I had been discussing the well known known Depression. This Long Henry person is an old-timer of considerable experience and acumen. He isn't what you might term neurotic or given to inhibitions. It takes more than waving a yellow slicker to stampede him. He allows that he doesn't like having people refer to him as a poet and he reckons that if the poets ever heard about it they wouldn't like it either. But in commenting on the alleged tough breaks we all are getting, he opined:

*WHEN they hand you out the rough string, pard,
Don't think you're out of luck
Rope the toughest bronc and top him off first crack.
Cinch your cactus on and crawl him
An' if he starts to buck
Jest clinch yer knees and lean a little back.*

*IF the cards all run agin yuh
Till yuh think yu'd best adjourn,
Cause the jacks wins when you're copperin' jacks
If the game is on the square, don't quit—
Perhaps you'll call the turn—
Just clinch yer knees and lean a little back.*

*THOSE you've crosscut all the summer,
Haven't hit that rich pay ground,
And you wish you'd never seen a double jack—
Why, just stay on with it, pardner,
You might fetch her, one more round—
Just clinch yer knees and lean a little back.*

*FOR it can't always be summer—
Got to have a little snow,
Sunshine can't be always peekin' in your shack.
Never mind though it is winter,
That chinook is bound to blow—
Just clinch yer knees and lean a little back.*



MONTANA WILD LIFE

The Official Publication of The State Fish and Game Commission

VOL. IV.

HELENA, MONTANA, NOVEMBER, 1931.

No. 6

Commission Cuts Fish and Game Staff



BECAUSE heavy demands being made by sportsmen of the state on Fish and Game department funds have brought about a financial condition necessitating curtailment of activities, the State Fish and Game Commission, at its last meeting at Helena, adopted a temporary retrenchment which will mean losing the services of several deputy game wardens and fish hatchery workers until more adequate funds are available. The meeting at headquarters at the state capitol on October 22 was attended by T. N. Marlowe, chairman; E. A. Wilson, W. K. Moore, W. A. Brown, and J. L. Kelly, commissioners; Robert H. Hill, secretary; K. F. MacDonald, state superintendent of fisheries; and Floyd L. Smith, editor of MONTANA WILD LIFE.

Mr. MacDonald advised that experiments at Lake Helena have shown that it will be possible to seine carp for fish food for canning to be distributed among the hatcheries, but it was decided, in view of the condition of finances, that he should have fish meal made of what carp have been taken, using the dryer, and then discontinue operations for the time being.

Mr. MacDonald said he would like to keep 16 men, including himself, in the fisheries department, to carry two million fish through the winter, in addition to the salmon and Eastern brook trout eggs which will be coming in in December. Game Warden Hill advised that he would like to keep all deputies which he has at the present time, at least through the middle of December. The necessity for economizing was recognized.

Motion by Mr. Kelly: "I move that, owing to the lack of funds in the department, K. F. MacDonald, superintendent of fisheries, be allowed \$1,900, exclusive of his own salary, per month, to carry on all salaries pertaining to the Fisheries department, until further notice; that J. F. Hendricks, superintendent of the State Game Farm, be allowed \$125 per month, exclusive of his own salary, for all labor at the State Game Farm, until further notice; and that Robert H. Hill, state fish and game warden, be allowed \$4,350 per month, exclusive of his own salary, for all salaries pertaining to the operations of the Game department and his office; the above budget for the Fisheries department and the State Game Farm to be effective November 1, 1931, the budget for the Game department and office to be effective December 1, 1931." Seconded by Mr. Moore. A poll of the

vote disclosed that Mr. Brown and Mr. Wilson voted "no"; the other three commissioners voted "yes." Motion carried.

Mr. Hill read a request from the Plains Rod and Gun Club asking fishing in the Clarks Fork river during the entire year for all varieties of fish, in Sanders county. The request was denied, inasmuch as this river is already open to fishing through the ice for whitefish and the regular open season has been suspended, in Sanders and Mineral counties.

The Plains Club and the Thompson Falls Rod and Gun Club requested an open season on elk in Sanders county, November 21 to 25, inclusive. The commission decided that if an open season for elk in this county was declared, it must be sometime during the regular open season fixed by the statutes, October 15 to November 15; and Mr. Marlowe expressed the belief that if an open season was declared on elk at any other time, it would cause a slaughter by hunters from other counties. The application was granted, the dates of the open season to be November 11 to November 15, both dates inclusive, for 1931, the limit to be one elk of either sex to each person.

Mr. Hill read a request from the

Troy Rod and Gun Club for an open season on blue grouse and native pheasants in Lincoln county, during the deer season, but the application was denied.

Chairman Marlowe suggested that an hour should be set to open and close the shooting of Chinese and Mongolian pheasants and Hungarian partridges each day during the open season, inasmuch as, during the early morning and late evening hours, many birds are illegally killed because the hunters can not distinguish females from males. No action was taken, but it was decided to make such a ruling next year for the open season.

Commissioner Moore asked that the area opened to Chinese and Mongolian pheasant and Hungarian partridge shooting in Yellowstone county be changed, inasmuch as a hailstorm had killed many birds in the Lockwood Irrigation Project district, and the few remaining need protection. The following motion by Commissioner Moore prevailed: "I move that the action of the commission with reference to the opening of Yellowstone county to the shooting of male Chinese and Mongolian pheasants and Hungarian partridges of either sex be rescinded, and that in lieu thereof, the following territory be opened: All of Yellowstone county, except the Lockwood Irrigation Project, south and east of the Yellowstone river, making the north boundary line due west from Huntley bridge to Alexander road, then due south into Billings, the open season to be November 8 to 12, 1931, both dates inclusive; the bag limit to be five birds per day, no more than three of which may be male Chinese and Mongolian pheasants; the possession limit to be 10 birds, no more than six of which may be male Chinese and Mongolian pheasants." Seconded by Mr. Kelly. Carried.

Ex-Governor S. V. Stewart, Helena attorney, appeared on behalf of L. R. Donaldson, who was formerly employed by the Fisheries department at the Lake Francis and Lewistown hatcheries. Mr. Stewart asked the commission to withdraw a letter written by Mr. MacDonald, superintendent of fisheries, relative to Mr. Donaldson's services with the department. Mr. MacDonald stated that he was willing to withdraw this letter.

Motion by Mr. Marlowe: "Mr. MacDonald, superintendent of fisheries, having made application to withdraw his letter written September 28 to L. R. Donaldson, I move that he be given permission to withdraw the same." Seconded by Mr. Kelly. Carried.

Paul W. Smith, Helena attorney, and L. J. Borgstede appeared with a request

Open Season Nov. 8-12



Hungarian Partridge



that Hale lake, at the head of Lump Gulch, be left open to fishing during the regular open season. Mr. Borgstede is lessee of the lands surrounding the lake, and Mr. Smith appeared as attorney for the Hale estate. Mr. Borgstede explained that he had taken an interest in restocking this lake with federal and state fish. As no request for the closing of this lake has been received by the commission, no action was necessary. It was agreed that if such a request was received, Mr. Smith would be notified.

Mr. Marlowe presented petitions from sportsmen of Whitefish and vicinity for an open season on Rocky Mountain goats, October 15 to November 15, on the Middle Fork of Flathead river and its tributaries. Inasmuch as the territory which the sportsmen wish open is close to Glacier park, the request was denied.

Mr. Hill read a letter from Dr. H. J. Huene, of Forsyth. Dr. Huene advised therein that there had been two wells drilled in the Porcupine Dome district (about 45 miles north of Forsyth) by oil companies, wherein water had been encountered. These wells have not yet been plugged, and Dr. Huene suggested that the department could probably get the 5,000 or 6,000 acres surrounding these two wells, flood them, and make migratory bird refuges. He also submitted analyses of the water from these wells, made by the State Board of Health and the Agricultural Experiment Station at Bozeman. Dr. Huene explained that, where there is a flow of water from one of these wells, there is vegetable growth. Commissioner Moore was authorized and instructed to investigate as soon as possible, and report his findings at the next meeting, and the secretary was authorized to write Dr. Huene, thanking him for calling the matter to the attention of the commission.

Deputy John Plank and Mr. Holliday, of Meagher county, appeared before the commission. They requested, as did the Rotary club of White Sulphur Springs (by letter and by delegation), that the commission rescind the action at their last meeting, declaring an open season on elk in a portion of Meagher county, and changing the territory to be opened. Mr. Plank explained that if the present open territory is not changed, several small herds of elk will be obliterated.

Motion by Mr. Kelly: "I move that the former order of the commission, declaring an open season on elk in a portion of Meagher county, be rescinded and that in lieu thereof, there be an open season for elk of either sex in Meagher county in that territory drained by Spring creek, Cooper creek, Trail creek, Flagstaff creek, and their tributaries; the open season to be November 11 to November 15, 1931, both dates inclusive; and the limit to be one elk of either sex." Seconded by Mr. Moore. Carried. Mr. Holliday thanked the commission.

Mr. Hill read a request from the White Sulphur Springs Rotary Club for the closing of Eight Mile creek, and its tributaries, in Meagher county, as this small stream makes an excellent rear-

Cabin City Prizes



MARTHA Jeffrey, daughter of Mr. and Mrs. R. M. Jeffrey, proprietors of the Cabin City mountain camp at the foot of the Camel's Hump, is shown in the picture above, between two splendid buck deer brought in by Harry Haines of Missoula and two hunting pals. Cabin City is one of the delightful hunting camps in the western portion of the state. Deer are within gunshot of camp. The camp is on the Yellowstone trail, 85 miles west of Missoula and 40 miles east of Wallace, Idaho.

ing place for trout to feed the larger streams, and the commission ordered the stream closed to all fishing until further order of the commission.

Mr. Hill read a letter from Dr. F. L. Anderson on behalf of the Custer Rod and Gun Club of Miles City, asking the commission if they have any objections to the club starting work on the proposed rearing pond at Miles City. Mr. MacDonald reported having investigated the proposed pond, finding it feasible. He stated that Miles City sportsmen have enough funds to start the work, and that the commission will probably not be called upon to give financial aid for some time. Deeds for this land have been made to the Fish and Game Commission, and deeds and easements have been secured for land, except eight acres.

Motion by Mr. Kelly: "I move that the Fish and Game Commission start condemnation proceedings to secure the eight acres, more or less, necessary to begin the work on the proposed pond in the old bed of the Tongue river, at Miles City." Seconded by Mr. Moore. Carried.

Mr. Hill presented letters from H. E. Smith and Ed Hamel and Mrs. Mary Smith, of Hot Springs, Mont., requesting the commission to create bird pre-

serves on their property for limited periods of time. The matter was referred to Deputy Game Warden Larsen, of Sanders county, for his investigation and report.

In view of lack of funds, no action was taken in the request of the Hamilton Sportsmen's Club for financial aid in screening irrigation ditches in Ravalli county.

Mr. Hill read correspondence from C. J. Kusler of Bear Creek. He had been arrested by Deputy Warden Holmes, his license revoked for one year, and a .22 rifle confiscated, for killing a sage hen out of season and from an automobile on a public highway. Mr. Kusler asked for the remission of one of the fines imposed against him, the return of the rifle and restoration of his license. Mr. Hill also read Deputy Holmes' report on the case. Motion by Mr. Kelly: "I move that the request of Mr. Kusler for the remission of the fine, return of the rifle and restoration of his license, be denied." Seconded by Mr. Moore. Carried. Mr. Hill also presented a letter from George Sucker, of Bear Creek, whose gun had been used by Mr. Kusler, wherein Mr. Kusler asked for the return of his gun.

Motion by Mr. Marlowe: "I move that Mr. Sucker's request for the return of his gun, confiscated from Mr. Kusler, be denied." Seconded by Mr. Wilson. Carried.

Mr. Hill presented letters from parties wishing to rent or borrow the department-owned moving picture films of wild life in Montana. Mr. Marlowe advised that the Dupont Company has asked if they could have copies of the films, to show in other states. He explained that he had written Earl A. Fry of the Dupont Company, asking if they would be willing to have copies made at their own expense. He also advised that at the present time, the films are not in condition to be copied. Mr. Marlowe was instructed to interview Paul J. Fair, with a view to getting in shape the films which he made, so that they may be shown at any time.

Mr. Hill presented a claim from William A. Van Scoy for \$136.90, for development work done for Mr. Fair in making the films for the department. The claim was approved.

Mr. Hill presented a letter from the Educational Conservation Society of New York, asking that the Montana Fish and Game Commission become a member of their organization. No action was taken.

Ross Hargrave of the Penwell hotel, Missoula, reported that the Government dam in Tamarack creek, about 35 miles north of Hot Springs, had been closed, to store water for the Camas Irrigation Project, and Tamarack creek, below the dam, is almost entirely dry. The matter was referred to Mr. Marlowe.

Commissioner Moore advised that Bowdoin sportsmen would like to have Nelson Reservoir, in Phillips county, opened to ice fishing. There are many large pike in the reservoir.

Motion by Mr. Moore: "I move that we open Nelson reservoir, in Phillips county, to ice fishing for all varieties



of fish during the winter of 1931-32." Seconded by Mr. Kelly. Carried.

Mr. Moore advised that an incorrect description had been given to the commission of the territory which should be included in the Pioneer Park Song and Upland Bird Preserve, in Yellowstone county, created by the commission at the last meeting, and the following order was made:

Motion by Mr. Moore: "I move that the legal description of the Pioneer Park Song and Upland Bird Preserve, in Yellowstone county, be as follows:

"All of Sections 35 and 36, in Township One (1), North of Range Twenty-five East; the Southwest Quarter (SW $\frac{1}{4}$) of Section Twenty-nine (29), the South Half (S $\frac{1}{2}$) of Section Thirty (30), the West Half (W $\frac{1}{2}$) of Section Thirty-two (32), all of Section Thirty-one (31), with the exception of the West Half (W $\frac{1}{2}$) of the Southeast Quarter (SE $\frac{1}{4}$) of the Southeast Quarter (SE $\frac{1}{4}$) of Section 31, or 20 acres running north from Grand Avenue, in Billings, Montana, to the north line of the Holliday property, in Township One (1), North of Range Twenty-six East, all of which is in Yellowstone county, Montana."

Seconded by Mr. Kelly. Carried.

The question of correcting the lines of the Gallatin Game Preserve Addition description was discussed, but no action taken.

Mr. Wilson advised that he had received many requests for the commission to allow the sale of whitefish. No action was taken.

Mr. Brown presented a letter from W. H. Hoover, chairman of Park Commissioners of Great Falls, wherein he advised that the city of Great Falls plans improvements at the Giant Springs Park. A pump will be necessary for this work, and inasmuch as the City of Great Falls paid half the cost of installing the larger pump at the Great Falls hatchery, and has never used it, the Park Board asks the commission to reimburse them for the amount paid for their half of the pump—\$592.78—so that they may install a pump for use at the Giant Springs Park.

Motion by Mr. Wilson: "I move that we pay the City of Great Falls for one-half the cost of the pump at the Great Falls hatchery, between the present time and the 31st of July, 1932." Seconded by Mr. Moore. Carried.

The request of the Great Falls Park commissioners for assistance from the commission in making certain improvements at Giant Springs was not acted upon.

K. F. MacDonald, superintendent of fisheries, presented a letter from F. J. Foster, of the U. S. Bureau of Fisheries. Mr. MacDonald advised that he had asked the Bureau of Fisheries for 5,000,000 Loch Leven eggs from the Madison Federal Station, and that Mr. Foster had replied that possibly the Bureau could furnish the department with this many eggs if one-half was planted in the Upper Madison and the remainder planted in waters of Montana. Mr. Foster stated in his letter to Mr. MacDonald that the "Bureau of

He's a Beauty



HERE'S a splendid specimen, killed under Montana's buck law, of which Ranger Bailey, stationed at the Buffalo Fork forest service station, is justly proud. The eight-point buck is an enviable prize.

Fisheries considers its activity in the Madison Valley field an exclusive operation of the Bureau of Fisheries and not a joint operation with the Montana department."

Motion by Mr. Kelly: "I move that the secretary advise the Bureau of Fisheries that, by reason of their arbitrary attitude in attempting to instruct this department as to the manner in which their Loch Leven planting shall be done, also their indicated attitude concerning the disposition of any eggs received from the Madison field, this department will establish and install their own traps at O'Dell creek or any other locations on the Madison river which we may desire, for spawning purposes." Seconded by Mr. Moore. Carried.

Motion by Mr. Kelly: "I move that Mr. MacDonald be instructed to install traps on O'Dell creek in the Madison, or any other location in that vicinity which he deems advisable, for spawning purposes." Seconded by Mr. Moore. Carried.

Mr. MacDonald advised that Dale Edwards would like the department to sell him 50,000 brook trout, hatch them at the Somers hatchery, and he will pay the department \$3 per thousand. It was decided not to make this sale.

Motion by Mr. Brown: "On account of the financial condition of the Fish and Game Department at the present time, it being necessary to curtail our operations, I move that, after the next issue of MONTANA WILD LIFE, the publication be discontinued, and that we dispense with the services of Floyd L. Smith." Seconded by Mr. Wilson. A poll of the vote disclosed that Mr. Brown and Mr. Wilson voted "yes";

the other three commissioners voted "no." Motion lost.

A discussion of the value of MONTANA WILD LIFE followed. The editor made a report of subscriptions received for September, and the number of subscribers at the present time.

The question of cost of supplies for the department followed, and the following motion was made by Mr. Kelly:

"I move that all purchases of supplies made by the department in the future, other than in emergency cases, be submitted to the commission for requisition." Seconded by Mr. Wilson. Carried.

It was suggested that Mr. MacDonald close down some of the hatcheries this winter, if possible, carrying the eggs at fewer hatcheries.

Decision was made not to take eggs at the present time on the Indian Reservation in Glacier county.

Hunting Licenses Have Novel Use

MONTANA hunting and fishing licenses have a value far greater than that contained in the privilege of shooting and angling, according to the application of Dr. and Mrs. David T. Berg of Helena for the issuance of duplicates. The affidavits on file at State Fish and Game headquarters set forth that Dr. Berg and his wife purchased their licenses on the opening day of the fishing season, May 21. The documents were utilized for fishing purposes but only a short time ago were brought into play for humanitarian causes and went up in smoke.

The story is an interesting sidelight of the vicissitudes of a sportsman and his wife. The mysterious disappearance of Dr. and Mrs. Berg a short time ago set Helena agog. Their car was found on the shore of Lake Hauser, where their motorboat had been tethered. Anxious friends assumed that they had shoved off in the speedy boat, become trapped in a storm on the lake and disappeared. They were found next morning, huddled beneath scowling rock cliffs on the lake shore, where the boat had sheared the propeller on a sandbar. All night they fought the cold wind and rain, huddled in the shelter of gnarled tree roots, hemmed in by precipitous cliffs that prevented them from finding help.

"We had not a scrap of paper with which to start a fire with the exception of our hunting and fishing licenses," said Dr. Berg, "hence the official documents were carefully lighted beneath a pile of dry sticks, and started the fire that aided us in fighting off the cold."

"Your Honor, I was not intoxicated." "But this officer says you were trying to climb a lamp post."

"I was, your Honor. A couple of crocodiles had been following me around, and I don't mind telling you they were getting on my nerves."



Fighting Salmon for Montana Anglers

Photos By Courtesy of the Division of Fish and Game of California.



MONTANA'S crystal cold mountain waters, famed throughout the nation for scrappy trout and grayling, have attained merited esteem among game fish anglers. Activities of the State

Fish and Game Department in keeping these waters well stocked to keep pace with inroads have been successful in maintaining this renown. But Montana's commission is stepping out even farther to keep the state in the forefront as a sportsman's paradise and it will be but a comparatively short time until piscatorial honors will be shared by the trout with fighting salmon brought to the state for the benefit of sportsmen and planted in lakes whose waters have been tested and found ideal for salmon propagation.

Incidentally, this salmon business has for years been the subject of controversial debate where anglers gather. For the time being the affirmative and the negative have declared an armed truce, for when fishermen argue the courage of their convictions, they are hesitant to retreat despite the presentation of scientific findings. Anglers who have whipped a fly into Lake Ronan, gleaming little gem of the mountains, are almost universally of the opinion that the salmon landed in that little lake are peculiar to Montana. Salmon of several varieties have been planted in the lake annually. Opponents insist that the salmon is a salt water fish, that it journeys up the streams to spawn, dies after spawning and does not thrive in landlocked lakes. Then comes the argument. It has likewise been argued that salmon spawn can not be artificially taken. But sockeye salmon spawn has been artificially taken in Montana and more than 200,000 baby salmon have been reared successfully from the artificially taken eggs produced from the waters of Flathead lake. And another thing—salmon from Pacific coast waters have produced spawn that is now thriving in many Montana landlocked lakes.

Eli Melton, fish culturist in charge of one of the hatchery stations oper-



Silver Salmon (*Oncorhynchus kisutch*)

ated by the State Fish and Game Department, recently dissipated the theory that salmon spawn can not be artificially taken, when he seined enough sockeye salmon from a bay in Flathead lake to produce more than 200,000 eggs. These eggs were placed in the hatchery troughs and as a result of the experiment, 200,000 salmon fingerlings were produced for liberation in Montana lakes.

The silver salmon, known also as silversides and coho salmon, is the most popular member of the Salmonidae family with Montana anglers, and especial efforts are being put forth by the department to provide this fighting fool room enough in which to battle the lure of the fishermen.

Old Silversides is easily distinguished from other varieties of salmon by the round head, small eyes and loosely attached scales. The scale count is from 125-135 along the lateral line. Scientists assert that it seldom reproduces in fresh water. When the fortunate angler grasps Old Silversides to chuck him into the boat, a handful of the glimmering scales comes off in his hand. The battle between angler and salmon, however, requires some few minutes before the prize permits his scales to decorate the hand of the captor. There is much churning of water and whirring of line preceding the finale.

The silver salmon attains a weight

of about 15 pounds and a length of about 30 inches. It is bluish green above, shading into silver on the sides and under-surface. The males turn red on sides and belly during the spawning season and other changes in the male are similar to those of the King Salmon. During the spawning season all members of the salmon family are marked by the body becoming deeper and one or both jaws of the male becoming prolonged or hooked. The trend toward the hunchback is often noted.

The King Salmon, otherwise known as the Chinook, quinnat, Columbia river and spring salmon, has not attained the popularity among Montana anglers reached by the Silver salmon. In salt waters the King Salmon sometimes attains a weight of 75 pounds. It is identified by the numerous black spots, round or x-shaped spots on the back and lower portion of the tail. The scale count is 135-155 along the lateral line. It is dark grey, tinged with bluish above, becoming silvery on the sides and below, with back and fins adorned with spots.

Montana's Fish and Game Department is distributing about 500,000 salmon annually among selected waters. The consignment of half a million eggs this year comes from Oregon and when received within a short time after November 1 will be distributed in the state hatcheries at Somers, Hamilton, Anaconda, Big Timber and Great Falls.

Records of the department show that during the last year silver salmon have been planted in the following waters: Glacier county—Mission lake and Merchants lake.

Pondera county—Mad Plume lake and Horn lake.

Lewis and Clark county—Bear's lake. Hill county—Cowan's reservoir.

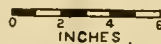
Ravalli county—Daly's lake. Flathead county—Lake Blaine, Spencer lake and Skyles lake.

Lincoln county—Loon lake, Murphy lake, and Dudley lake.

Park county—Dailey lake and Meeker lake.

Sweet Grass county—Glass Lindsey lake and Rein lake.

Powell county—Brown's lake.



Chinook or King Salmon (*Oncorhynchus tshawytscha*)



Black Bass Thrive In Montana Waters

Photos by Courtesy of the Division of Fish and Game of California



TRIDES made by Montana's State Fish and Game Department to provide fishing that will appeal to the bare-foot boy as well as to the epicurean angler, by stocking lakes and

ponds with sunfish, "pumpkin seeds," crappies and bass, have taken definite form with the distribution of thousands of "boy fish" from the great warm water pond cultural station at Fort Keogh. This station, operated jointly by the state department and the federal bureau of fisheries, is one of the largest of its kind in the world.

These warm water fish spawn in the ponds under natural conditions and the little fellows are then seined, placed in tanks in the federal fish car and distributed by trained crews. The car, which has made a tour of Helena, Great Falls, Billings and northeastern Montana, has a capacity of 60,000 on each trip. Tanks are arranged on each side of the aisle in the specially constructed car and the cans are removed to trucks at railway stations where it is parked.

Near Great Falls the sunfish, bass and crappies were planted in the lower Missouri river, in reservoirs near Bole, Shelby, Fort Benton, Fairfield, and in other selected lakes and ponds. In the Helena territory plants were made in Gravelly Range lake, while the consignment for the Billings area was placed in Hollings lake.

Applications filed with the State Fish and Game Department at Helena during the season were filled and Montana lads who delight in basking barelegged under smiling skies, alongside their cans of wiggle worms and a package of lunch, are assured that their piscatorial playgrounds will remain attractive.

In connection with this work of rearing warm water fish at the great Fort Keogh station, for the stocking of



Small-Mouthed Black Bass (*Micropterus dolomieu*)

streams and reservoirs unsuited to the fickle fancies of trout, King Bass himself promises to play an important part. The bass has become a popular game fish in the eastern and western portions of the state, particularly in the Flat-head district where plants have been made in reservoirs and lakes. Large and small-mouthed fighters are winning a name for themselves and while thousands of anglers have regarded Montana as the land of gamey trout, Old Man Bass is gaining in popularity.

Black bass eggs are adhesive and therefore, according to many fish culturists, can not be stripped from the fish, as can those of trout. The eggs become glued to the pebbles or stocks at the bottom of the nest when deposited by the female fish. After the milt is spilled over the eggs by the male bass they are guarded faithfully by the fish until hatched. Intruders of all kinds are fought off by the wily male bass and the eggs protected day and night. At this period the fish does not take any food, but will strike viciously

at a stick, frog or anything cast near the nest in the belief that it is some form of enemy after the eggs. According to a recent discussion in Outdoor America, bass have been known to attack muskrats in their effort to save the newly deposited eggs.

Regardless of whether the season is open, black bass should not be molested when on the spawning bed. Anyone can easily capture the proud male bass when guarding the nest, as he will dash madly after any color or shaped plug cast near him. Sometimes he may make a wild dash toward the plug in an effort to frighten the intruder away, but the second time he sees the plug his mighty jaws usually are closed over it with the intention of killing the annoyer. Black bass have been seen to grasp a hookless wooden plug when cast over its nest and swim a short distance with it, then open its jaws and let it go. Evidently the fish was satisfied in merely carrying away the intruder from the nest. Anyone that has watched a gallant bass protect the nest and witnessed the true fighting heart of the bass in fighting off intruders could never molest one when guarding its young.

Some claim the female stays on the nest until the eggs are hatched and that the male bass leaves immediately after the process of spawning is finished. The general belief of fish culturists, however, is that the male bass is the one that stands guard. It is not impossible that the female takes a turn with the male bass in guarding the nest.

Black bass eggs hatch in from one to two weeks, depending largely upon the temperature of the water. The baby fish are almost perfectly formed and little less than one-half inch in length. The small fry usually stay over the bed for about five days, when they leave for deeper waters, hiding under submerged logs and among water plant.

(Please turn to page 14)

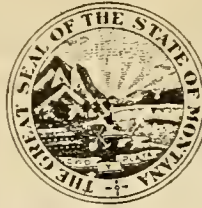


Large-Mouthed Black Bass (*Micropterus salmoides*)

Montana Fish and

W. A. BROWN, Great Falls...Commissioner

JOS. L. KELLY, Anaconda...Commissioner



Game Commission

W. K. MOORE, Billings...Commissioner

E.A. WILSON, Livingston...Commissioner

T. N. MARLOWE, Missoula, *Chairman*

R. H. HILL, Helena, *State Fish and Game Warden, Secretary*

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NOVEMBER, 1931.

No. VI

DEMAND FOR LICENSES HITS RECORD

WHILE hundreds of Montana sportsmen are in the hills on the trail of deer and elk, other hundreds are lining up to purchase their big game licenses or assembling their outfits—all entering into what is perhaps the greatest exodus of big game hunters in the history of the Treasure State. The constant stream of demands for additional big game licenses reaching State Fish and Game headquarters at Helena during the last several weeks has necessitated extreme efforts. As rapidly as the licenses bearing the tags are rolled off the press and bound, they are being rushed by mail, express, stage and airplane to the 900 dealers. Orders are being received by telegraph and long distance telephone and the total number issued has reached nearly 30,000.

The law requires that residents of Montana must first acquire the \$2 fishing and bird hunting licenses before they are eligible to purchase the \$1 resident big game license. The \$5 Sportsman's License covers the entire field. Caution should be used by big game hunters in observing the law which requires that the tag shall be detached from the license and attached to the carcass of the deer or elk immediately after it is taken. The tag then is required to remain on the carcass until the major portion has been consumed. If the tag is not attached, the meat is regarded as illegally taken. In like manner, a hunter in the field with the tag already torn from his license, or in possession of an untagged carcass, is violating the precepts of the statute. The report card providing spaces for information regarding elk and deer killed, which is attached to each license, must be returned to the department before January 1, 1932.

A fawn found in the woods is not lost; the doe deer knows where it is and will take proper care of it if you do not interfere with her schedule.

DON'T SHOOT THE CALIFORNIA QUAIL

THROUGH activities of the State Fish and Game Department, several coveys of California Valley quail have been liberated in desirable spots throughout the state and a warning to sportsmen has been issued by Robert H. Hill, state fish and game warden.

"The season on male Chinese pheasants and Hungarian partridges of either sex opens in selected Montana counties November 8 and closes November 12, and sportsmen in the field hunting these gamey birds should use extreme care in protecting the California quail," said Warden Hill. "Caution should be used in counties where experiments are being made with these top-knotted game birds reared at the state game farm at Warm Springs. California quail of both sexes are adorned with a beautiful plumed crest, the top-knot making a graceful arch near the end. They are ashy

brown above and slaty blue below in color and sportsmen should hesitate and look their birds over carefully before firing."

Experiments conducted at the state game farm thus far indicate that the California quail thrive in valleys in Montana's high altitudes and within a few years, if left to propagate properly, they will become prolific. They rear two and three broods each season and in one instance it has been shown that one pair hatched 75 in three batches, bringing the entire brood trooping behind them when they answered the calls of other quail at the state game farm.

Many a man thinks he has an open mind when as a matter of fact it is merely vacant.

MATES FOR LONE HEATH HEN

THE world's safest bachelor, the last heath hen on earth, may not be so safe after all. An expedition of five harum-scarum young female prairie chickens is being organized by the happily married game officials of Oklahoma to carry lightness and gayety into the sequestered life of the heath hen. The prairie chickens are closely akin to the eastern heath hen species, now extinct except for this last bird, which has lived alone since 1928 on Martha's Vineyard Island, Massachusetts. Scientists have maintained, however, that the confirmed bachelor is not likely to "fall" for any western beauties. In similar attempts in the past, the imported prairie chickens failed to adjust themselves to their new surroundings and quickly died.

It doesn't take a domestic science course to enable a girl to make a traffic jam.

FISH AND FEEL FIT

(By James Oliver Curwood.)

THE world loves the man who loves to fish. You don't find him in jail. You don't find him in the hospital. You don't find him dying young. He is the man, who, without flaunting his religion from the housetops, sees God forever in the blue skies, in the forests, in the glimmer of the stars and the rising of the moon—in everything that is a part of his beloved streams and lakes. Fishing is not only a pastime which man has created for himself. It is the greatest character-building activity under the sun for human hearts and souls. It is the man who loves to fish who helps to keep the world at its best, who is the greatest fighter for its beauties and its ideals, and all because he has come to realize and understand the great and glorious thrill of that intimate contact with nature which one finds when he has a rod in his hand. I am a fisherman.

A bathing suit that you saved to wear again this year makes a fine cloth to wipe the dust off the fenders.

WAR WAGED ON FISH 'LEGGERS

BOOTLEGGING from Canada is not confined to liquor, officials of the Michigan conservation department have informed the American Game Association. "Fish-running" across the border into Detroit and other Great Lakes cities is now the object of a drive by conservation officers. Perch may be taken legally on the Ontario side of Detroit river, but the American side is closed to perch fishing and the sale or importation of these fish. As a result the price received for smuggled perch has leaped to a relatively attractive figure. Fishing regulations of Wisconsin, Ohio and Michigan are also said to be so much at variance that a fish which is safe in Michigan waters may swim directly across the lake and be taken legally, then make the trip back to Michigan on ice and be confiscated because its length is 8½ inches instead of nine.



THE GAME WARDEN

Too long have too many of us regarded the game and fish laws as something to make hunting and fishing more difficult. Too long have we considered the game warden as an officer to be circumvented and outwitted, if possible. The tide is turning. Sportsmen everywhere are awakening to the realization that game and fish laws are designed to make hunting and fishing more pleasant and that the game warden is their best friend.

Game wardens are officers of the state, selected and sworn to do duty that is none too pleasant. In other walks of life peace officers usually have to do with humans because of their short-comings with other humans. The game warden makes an arrest because a man armed with a gun commits a crime against a bird or an animal. He hunts out of season, he exceeds the bag limit, he trespasses on forbidden property, he shoots at night or does any one of the things that are forbidden by the statutes.

Without these laws there would be no game. Without the services of the warden, game would live a precarious life, and in time cease to exist.

The average game warden of today is a sincere sort of fellow, serious minded in his work and generally willing to overlook an innocent mistake. His job is thankless, his hours never cease, once he has taken the oath of office.

Laws that the game wardens are instructed to enforce insure an equal right to every sportsman. They do not favor the rich and take away from the poor—they aim to give a square deal. The average warden does not make arrests except when necessary. He has no desire to put obstacles in the way of the gunner who is properly conducting himself. The average warden moves about a great deal over his territory. He knows where the game is and he will impart this information gladly and freely if there is no reason why he should not do so. The average warden is a gentleman, ready and willing to render a worth-while service to sportsmen. The average warden is a sportsman and as such enjoys the thrills of a good clean show as well as anyone else, but his duties seldom permit him a day in the field for pleasure.

The only modernistic furniture that's really practical is a corkscrew.

LEAVE TROUT IN TINY BROOKS

Tiny brooks, tributary to larger fishing streams, should never be fished at all, but should be maintained as permanent sanctuaries for the breeding and growing of baby trout. Fishing them is like "killing the goose that laid the golden egg." For every "legal" fish taken from them, two or more smaller ones are generally caught, and due to the fact that such fishing is almost invariably done with bait, the mortality of the returned undersized fish approaches the hundred per cent mark. Yet these tiny runs are often the favorite haunts of some of our "heroes" who pride themselves with getting their "legal limit"—and in doing so they frequently kill twice that number of baby fish that might otherwise grow to sizeable proportion and furnish real sport in the main stream.—National Sportsman.

Dante's Inferno could hold no more disheartening punishment for a boy than the digging of bait for a fishing trip to which he is not invited.

DID IT EVER OCCUR TO YOU?

A HUNTER will spend anywhere from \$100 to \$250 for guns, dogs, and equipment, and will spend from five to 15 days away from his work for the sole purpose of hunting and killing game. As sportsman to sportsman, just how much time and money do you spend in replacing the game that you kill? What arrangements are you making to insure hunting for our future generations?

Besides being a business proposition, hunting is one of the greatest sports we have. We earnestly anticipate the cooperation of every sportsman and sportswoman in our endeavor to restore wild life to the fields and streams. Success in this undertaking spells pleasure for you. Think it over! Do your part!

A good guide will add zest to any fishing trip even if no fish are caught.

EAST COAST DENIED LONGER DUCK SHOOT

ALTHOUGH nature has apparently played favorites with the east coast in the waterfowl crisis, the migratory bird advisory board of the U. S. Department of Agriculture refused to, when in a special meeting at Washington, it failed to grant a longer shooting season to the Atlantic seaboard states.

The request was made through the More Game Birds of America Foundation, the Atlantic Coast Sportsmen's Association, the officials of New Jersey, Maryland, Virginia, North Carolina and South Carolina, and duck club owners. They suggested a ten weeks' season with three shooting days each week, instead of the one-month season announced by the federal agency as an emergency conservation measure.

The delegation held that the longer season would help the unemployment situation and keep old-time poachers, many of whom are now guides to sportsmen, from reverting to their past practices.

The board, composed of leading game experts of the country, decided that apart from the lateness of the request, the fact that this coastal region can expect a great concentration of ducks does not justify a heavy concentration of shooting in that region, which would result from the attraction of a longer season.

While ordinarily the majority of east coast ducks do not originate in the drought-devastated breeding grounds of the Canadian lowlands and the northwest, the board said that lack of water and feeding places inland is expected to force more ducks eastward.

Black bass when struck and played will always head down stream.

LADY DEER WEARS ANTLERS

IT LOOKS like the females of the animal world are on the up and up toward achieving "equal rights." The deer hunting season in Pennsylvania this fall, from December 1 to 15, will be the first time since does were first placed on a pedestal in 1906 that both sexes have been hunted in the same season. It is reported that the does so thoroughly took advantage of sportsmanlike protection that they have not only far outnumbered the bucks but are cleaning the range of food. In California members of the division of fish and game have captured the first female deer so far known to have been taken alive while wearing a regal adornment of masculine antlers. She is being detained.

When the wind's in the south it blows the bait into their mouth.

"PERFECT GENTLEMAN" FOUND

THE "perfect gentleman" has at last been found, but not among the human species, says a bulletin of the American Game Association. This remarkable discovery is reported to have been made by H. L. Stoddard, wild-life expert, during his study of the bobwhite quail. According to the naturalist, the cock quail is a model of deferential behavior when in the company of his mate. He will seldom or never eat an insect without first offering it to her. He first pounds it in a vigorous manner, then dances about on tiptoe with puffed out plumage and drooping wings, inviting her to partake—which she usually does in a most matter of fact way.

It is not difficult to learn how to cast; but it is difficult to learn not to snap the flies off at every throw.

THE HUNTER AND THE SPORTSMAN

THERE is a great difference between the legal bag limit and the sportsman's bag limit. The law sets a maximum limit but the sportsman never takes the limit, unless conditions warrant it. While there is no law against a hunter taking all of his birds out of one covey, the sportsman takes a few from one covey and a few from another, and if he flushes a small covey he leaves it alone, thereby doing his part to keep ample brooding stock. A sportsman is one who counts the hours, a hunter counts the ducks.

Confidence in an unfaithful man in time of trouble is like a broken tooth, and a foot out of joint.—Proverbs of Solomon.



Flushing Bar

WHEN an enterprising conservation field officer uses his ingenuity in the development of devices to save nesting game birds he deserves acclaim. All too often these men, the backbone of every conservation organization, fail to get recognition to which they are entitled. Last spring when R. E. Yeatter, a scientific worker studying European grey partridges in Wisconsin through funds made available by the Arms and Ammunition Manufacturers' Institute, enlisted the aid of field officers in the principal partridge sections of the state to ascertain how the terrific losses among nesting birds might be avoided.

At first they tried dragging hay fields with long ropes to flush them, then staked the location of the nests so that patches of hay might be left around them. The big difficulty was to get the farmers themselves to do this work. Then Warden A. J. Peterson struck upon an innovation. He developed a "flushing bar," which consists of a three-eighths inch bar of steel fastened to the end of the cutting bar of the mowing machine and running to the harness of the nearest horse. This simple little device flushed the partridges far enough in advance of the knives to enable the operator to investigate, and then jump the bar over a patch of grass, thereby saving dozens of nests without difficulty or loss of time.

Wisconsin Conservation Department was so pleased with the results of the experiment that it has arranged to have several hundred of these flushing bars made up for distribution to the farmers in southeastern Wisconsin next spring.

SALT ON ROADS ATTRACT DEER

THE fiction that salt on the tail will catch a bird has been slightly changed by game experts and applied seriously to deer. That "salt on the trail is fatal to deer" is a fact which is giving Pennsylvania game officials much concern. This is not alone because 42 deer have been killed in that state in seven months by trains and automobiles, but chiefly because the highway collisions between automobiles and deer resulted in accidents which severely injured two women and killed another. A study of the situation has revealed that deer are attracted to highways by salt dumped from ice cream trucks, and to railroads by salt leaking from refrigerator cars.

FISH PLANTING PAYS

Senator James L. McNair, of North Carolina, stocked a "wet weather pond" having no inlet or outlet, with 15 to 20 top minnows, about the same number of sun perch, about 50 yellow perch, and a thousand large-mouth bass fry. At the end of the third year the pond was drawn and produced several thousand bass, thousands of perch, and hundreds of thousands of minnows.—Hunting and Fishing.

Successful Luring

By F. M. Shillaker—The Northwest Farmer

IT WAS a casual remark passed by a friend of mine one day that gave me the clue. The vexed question of baits and scents had bothered me for some time and although I was soaked with theory and snowed under with clippings from newspapers, and recipes, I was no forrader when it came to real work in the woods. I was unable to do any very successful decoying. Then when talking the matter over with one or two other interested trappers someone remarked that an old trapper of his acquaintance was expert at catching coyotes and used some stuff out of a glass jar. Furthermore, it transpired that he had actually caught one using as a decoy a piece of broken glass from a jar previously used to contain the dope. His catches amounted to dozens of coyotes a season, I gleaned.

My friend made every effort to obtain the recipe but failed. The old man was quite reticent. A close cross-examination revealed nothing but a predilection on the part of the old man for cow's brains.

The solution was simple. Cow's brains in a jar and probably rotted. To this may have been added some additional decoy. My first attempt was a grisly failure. I obtained some cow's brains, no difficult task in a cow country, placed them in a syrup tin and left them to cure in the sun. Armed with this dope I set out convinced of my ability to kill all and sundry coyotes that happened along. The coyotes happened along all right and kept on happening. I kept on splashing the vicinity of the sets with my own particular brand of sure-catch scent until the remaining brains eventually ate right through the metal and not until then did I take a tumble that the container used was a glass jar. Cow's brains, however rotten and stinkified, are of no use when intermixed with a liberal allowance of iron scent. The coyotes were scared from the commencement. My second attempt was a great success and nowadays I can catch coyotes quite well.

Take a wide-mouth glass jar and fill with fresh cow's brains. Leave them to rot in the sun. The jar mouth should be uncovered sufficiently to let in air. To this add about half an ounce of powdered gum asafoetida and use this as a decoy. Coyotes are crazy for it and, given properly made sets and decent conditions, I will guarantee success. This decoy is just as efficient in zero weather as in warm. It is an all-weather scent. A useful bait to use in conjunction is dried and smoked fish if you can get it. Always remember—a scent is used to decoy an animal and a bait is placed as food in such a position as to insure catching the animal attracted.

FLY FISHING OLD SPORT

Aelian, a Greek military writer who lived at Rome in the second century, A. D., is among the earliest writers to mention fly-fishing.

One For the Book

THE editor at times receives some of the most humorous stories related by hunters and anglers regarding their experiences while afield and astream, but the following from Fred C. Dreyer, of Cumberland, Md., is worthy of some sort of prize:

"As the season is on for fish and snake stories, I want to tell you what happened to me trout fishing in Garrett county.

"I was fishing the head of a pool, used every kind of bait I had, without results. I happened to glance down at my feet and there was a water snake trying to swallow a toad. I took the toad from the snake and dropped it in the pool. I felt sorry for depriving the snake of a meal so I picked up the snake and poured down its throat a good drink of "licker." The snake looked at me and wiggled off. I got a strike and pulled in a 14-inch rainbow, and while pulling in the trout I felt something rubbing my leg. I looked down and there was my snake friend coiled up and sticking his head toward me with another toad."

IS WATER A NECESSITY?

How long can animals go without water? The answer to such a question is sometimes invaluable aid to the science of game management. Water is a necessity like food, shelter and safe retreats from enemies. It is a factor of major importance in the selection of a game refuge. There is reliable evidence, however, that animals can go without water for long periods when green deserts have been found many miles from water holes and apparently have satisfied their thirst by eating succulent plants. The same may be applied to deer. Sheep resemble deer in many respects. Recently in the Lassen National forest a band of 1,500 ewes and lambs went for 26 days without water. This sustained period was undoubtedly possible because of the succulent forage consumed.—Fur Farmer Magazine.

MOVIE SUBJECTS REALLY WILD

HOLDING that to give a taste of "canned" nature in the class room is the best way to interest children in the real outdoors, the Michigan Conservation Department recently increased the importance of its motion picture work by inaugurating a loan service for distributing films among the school systems. Fifteen reels of the educational pictures to be loaned, telling the story of wild life, forest fires, forestry and other conservation subjects were taken up in Michigan under the direction of the educational division of the department.

HIS APPRECIATION

"Mercy Sakes!" astonishedly ejaculated Mrs. Johnson in the midst of her reading. "Here is an item telling about a painting worth \$100,000 being stole!"

"As the feller said when he seen the hippopotamus, 'Aw, hell! There ain't no such animal!'" skeptically returned Gap Johnson of Rumpus Ridge.



Montana Cow Elk Is Cunning Mother

By W. M. Rush, In Charge of Elk Study in Yellowstone National Park



ONTANA'S grazing animals are usually classed as inferior in intelligence when compared with the carnivores, and the elk often is rated as the dumbest of all our wild mammals. Close study, however, shows that the elk are not as stupid as they sometimes seem to be. Elk probably rank as high in intelligence as any other member of the antlered family. Nature has evidently intended that the grass eating animals should be food for flesh eating ones and endowed them with just enough protection and intelligence to propagate themselves but not enough to out-strip the predators. Or, stated another way, Nature has given the predators enough advantages for them to subsist but not enough for them to exterminate the grass eaters. Each class is dependent upon the other. If there were no herbivorous mammals to convert grass into flesh, the carnivorous mammals could not survive, and without the carnivores the herbivores would soon increase to such numbers that they would consume all of the herbaceous growth and succumb to starvation and disease.

The advantages that elk have over the carnivores are, chiefly: protective coloration for the young, lack of odor of young, speed of travel, greater range of vision and effective defense in their front feet. The carnivores have: speed, teeth for flesh tearing, and greater intelligence, so the constant struggle between the two classes wages fairly

even wherever mankind has not taken sides.

The elk calving season is from May 15 to June 10 in the Yellowstone region. Some few are born outside these dates. If they were born earlier in the season the weather would be too severe for them to live and the mothers would not have the fresh, succulent forage necessary to nourish the young. If born at a much later date the young ones would not be sufficiently matured to endure the first winter, so we see that the elk have scientifically adjusted their breeding date to the food supply.

For the first several weeks the calves are dependent on their protective coloration, lack of odor, and their mother's defense against the attacks of coyotes and bears. Of a nearly russet brown color, with many white spots, the little fellows rest most of the first days of their life absolutely still in a clump of bushes, stones, grass or old logs, blending almost perfectly with their surroundings, the mother grazing unconcernedly perhaps a quarter of a mile away.

When returning to her young for nursing, the mother approaches the concealed calf cautiously, stopping many times to nibble a few bits of forage, and carefully looking over the country for possible enemies. Not until she is fully assured that no harmful animals are in the vicinity does she go to the spot where the calf is lying and allow it to nurse.

Whenever the calf is in danger of being molested by a bear, the mother seeks to attract the danger to herself by trotting around in an aimless manner and uttering loud, guttural cries. If a coyote gets too close to the calf the mother elk madly chases the coyote away, striking viciously at the marauder with her front feet. I have seen a mother elk run madly at a magpie and chase it away from her calf.

While the calf is very young both bear and coyotes find it difficult to locate. A number of times I have watched coyotes and bear search the sagebrush systematically for calves but never have I seen them successful. We have plenty of evidence that both bear and coyotes do devour young elk but it is not an easy matter for them to find the calves. The coyotes and black bear are at a great disadvantage in that they have such a limited range of vision, carrying, as they do, their eyes so close to the ground. The grizzly, however, is wise enough frequently to stand on his hind legs and carefully look around while hunting for calves.

A calf usually utters a loud, plaintive cry when a person takes hold of it, and struggles to get on its feet. If successful in escaping it will run a hundred yards or so and hide in another place. Several times I have known a calf to return to the original place where the mother left it, an hour

or so after it had been frightened away.

They will dash without hesitation into a stream and swim across if the stream is not too swift or the banks too high to climb out. Sometimes they will flop down amongst the rocks along the edge of the water and lie perfectly quiet.

The mother will come running swiftly towards the calf whenever it is disturbed by a person but never comes nearer than 30 or 40 feet before she turns and runs away, seeking to divert attention from the calf to herself.

Oftentimes the calves are quite friendly, not being in the least frightened. They will follow one about and seem to enjoy being handled. On these occasions the mother elk does not seem worried.

On just one occasion in my experience did a calf show a pugnacious disposition. He was a little fellow, weighing only 23 pounds and less than one day old, but he stamped the ground with his front feet and twisted his mouth like he was a grown bull making a bluff for his life.

Later in the season there is an abundance of other feed for the bears and coyotes in the form of gophers, mice, grasshoppers, fish and certain vegetation, which allows the calves a respite. The calves' running abilities develop early in their lives and they are able to keep pace with the adults in running away from enemies. By the middle of July the calves are able to eat grass and are weaned in the late fall but they usually run with

(Please turn to page 14)



Open-Eyed and Alert



Hidden In the Grass



How To Attract Ringneck Pheasants

Written for MONTANA WILD LIFE by Clyde B. Terrell, Oshkosh, Wisconsin.



THE ringneck pheasant is a wonderful bird for stocking fields of northern states. It may be artificially propagated in almost any number. No handsomer bird can be found than a male ringneck pheasant. His plumage includes every hue of the rainbow. Mother pheasant's plumage is a soft mixture of browns and blacks that blends with the grasses and shadows and protects her from the sharp eyes of enemies when she is on the nest. Although of the size of a barnyard chicken, their long, 18 to 24-inch tails make the ringneck pheasant seem larger.

Thousands of these beautiful birds are being liberated. Often the birds do not "stay put," but stray to other localities. Banded pheasants are sometimes found 15 to 20 miles from where they were liberated. How then shall we keep them where we want them?

My first experience with ringneck pheasants was in 1918 while making investigations for the Department of Game and Fish of South Dakota, in the vicinity of Redfield. Some 7,000 birds liberated in South Dakota have since so increased that O. H. Johnson, state game warden, reports a kill of approximately 2,000,000 birds annually in that state. Since then I have seen them abundantly in parts of New York state. During the last six years I have been actively engaged in the production and liberation of the ringneck pheasants for the Oshkosh Chapter of Izaak Walton League of America. By this fall we will have liberated more than 1,000 in the Fox River Valley of Central Wisconsin during the last three years.

What are the conditions the ringneck pheasant prefers? We find in Wisconsin and in South Dakota that they like weedy, grassy cover such as is found around marshy places and swamps. One particular lot liberated by Julius Dreger of Oshkosh, near Medina, Wisconsin, go to a nearby cedar swamp to roost every night during the winter. The white cedar or American arbor-vitae, the Norway spruce and the Scotch pine as well as some of the other varieties of evergreens make good winter shelter. Weedy fields are attractive, because they not only produce cover, but also because the ringnecks feed on many of the weed seeds.

The pheasants thrive in rather heavily populated areas as is shown by the fact that they are abundant on the outskirts of Chicago, where over-zealous real estate promoters have laid out streets and lots beyond present needs. The unused lots have grown up with weeds and harbor many pheasants.

E. J. Derber has liberated many pheasants on an area some 40 miles west of Oshkosh, Wis., in a sandy country where there are many abandoned farms through which run trout brooks

But He Got Away

Some mourn the fish that gets away
And boast his size and weight,
They stop their friends at night to say
How sorry was their fate.
Almost unto the net they'd brought
This beauty superfine,
It seemed to them they had him caught,
And then he snapped the line.

Oh yes, they had some fish to show
For all the time they'd spent;
Some luck they'd been allowed to know,
But they were not content.
The ones they'd caught seemed rather small
When put upon display,
And could not be compared at all
With that which got away.

He broke but once where sunbeams dance
Upon the waters blue,
And though at him they'd but a glance
His weight and size they knew.
Not one in all their splendid catch
Which came to them that day
For beauty could begin to match
The fish that got away.

bordered by shrubs and evergreen growth. This produces cover for birds all winter.

Birds are more abundant where the fence rows are left grown up with vines, shrubs and bushes, many of which, like the wild rose and wolfberry, furnish food. We find a good many pheasants in the abandoned sections of gravel and sand pits on my farm near Oshkosh, where they are sheltered from the wind and find grit during the winter time. Ringnecks like the food and cover in weedy corn fields. When the corn is cut, pheasants often move to other places.

In general, the ringneck pheasant likes for its habitat some areas of tall grass such as are found around marshes and swamps. Evergreen trees are acceptable as are brushy fence growths, weedy fields, weedy cornfields and unused fields and gravel pits. Water, grit and scattered cover are important, but most important of all is an abundance of food.

In the summertime the food problems of the pheasants are easily solved. Their food habits are much like that of the tame turkey. When insects are available, ringneck pheasants make up the majority of their diet on grasshoppers, potato bugs, cutworms, army worms, caterpillars, seed corn beetles and other insects.

During the summer, especially during hot dry weather, when no water is available, you may get occasional reports of the pheasants pecking tomatoes or melons. It is my opinion that they do this largely to secure water. A

few days ago a man telephoned to me that the pheasants were eating his tomatoes. I told him to bring the tomatoes to me. On inquiring the market price on tomatoes, I paid him 30c for his tomatoes and gave him four pans to be filled with water and scattered about his tomato patch. He went away friendly and I have heard no further complaints.

Sam Kisow of Lake Mills, Wis., raised young pheasants in his garden. They gave no trouble but kept the garden free of insect pests. Many ringneck pheasants have been liberated on the property of N. A. Rasmussen, a large fruit grower and market gardener operating near Oshkosh. Part of his land is a refuge where winter feeding of pheasants, quail and prairie chicken is carried on. The birds may peck an occasional tomato, but Mr. Rasmussen says that in his opinion, the destruction of injurious insects by the pheasants offsets many times any damage.

A good many pheasants are killed by automobiles when the birds go to the graveled highway to pick up grit. This may be avoided by scattering piles of gravel or grit in places accessible to the birds.

After the insects have disappeared, after the frosts, and winter comes on, ringnecks turn to weed seeds, some cultivated grains and wild berries as a source of food. During the fall hunting season in South Dakota, the pheasant is found in weedy corn fields and along brushy fence rows, marshes or swamps.

The South Dakota state game warden, O. H. Johnson, has had an investigation made of the food habits of the ringneck pheasants. In an examination of 285 pheasants, they found "corn in 126, wheat in 106, oats in 86, barley in 113, green foxtail seed in 139, yellow foxtail in 138, wild buckwheat in 107, wild sunflower in 38, giant ragweed in 15, little ragweed in 45, Russian thistle in 16, wild oats in 21, smartweed in 28, bindweed in 42, and wild rose in 116." The berries of the western snowberry or wolfberry (*symphoricarpos occidentalis*) are also used in large quantities by the South Dakota pheasants.

It is in the wintertime, during periods of deep snow that the ringneck pheasant and all wild birds are hardest pressed for food. At that time the berries of the wolfberry or western snowberry (*symphoricarpos occidentalis*) and the wild meadow rose, standing above the snow, furnish the pheasants with much food.

The wild meadow rose (*rosa blanda*), grows to a height of about 4 feet. It produces rose hips or fruit abundantly. These red fruits and the striking red bark of the wild meadow rose makes it attractive against the gleaming snow. The wild rose and wolfberry should be planted more frequently along the fence rows. Clumps of evergreens also furnish good shelter. These shrubs and evergreens may be planted in scattered clumps of five to 10 shrubs or trees in a clump.



WHOPPERS



ANGLEWORMS DOTE ON BREAD

ANGLEWORMS have a sweet tooth, according to Richard B. Bilkoski, "angleworm king of California," who has shipped live bait this summer from his address at Alhambra to fishermen in many parts of the country. His and other methods used on modern worm farms were compiled recently by the U. S. Department of Agriculture for the benefit of anglers wishing to raise worms for "home consumption." A successful diet for the earthworms was found to include molasses as well as powdered bread crumbs and crumbled hard-boiled eggs. A gunny sack smeared with the molasses is placed sticky side down on the surface of the worm bed, then sprinkled with water. An ordinary wooden box about 18 inches deep makes a good unit for the worm crop. It should have a hinged or removable lid and should be buried in shaded ground two or three inches below the surrounding level, and almost filled with rich, dark loam. "Wild" worms placed in the box will prove to be prolific if properly treated. The worms lay a large number of eggs in tiny capsules in the soil. The young become fully grown in four or five months. Amateur worm raisers are warned that while the worm beds should be kept quite moist at all times, they should never be wet. Earthworms seen on top of the ground after a heavy rain do not come up because they like water but because they do not, the findings indicated.

HOW FAR DO QUAIL MIGRATE?

IT IS the popular belief of many sportsmen that bob-white quail which are imported from Mexico migrate great distances. From the 39 bands which have been returned to State Game Warden E. Lee LeCompte of Maryland, that were taken from Mexican bob-white quail that were shot during the 1930 hunting season, it was found that the greatest distance any bird had migrated from where it was released was about three miles.

"I Wish"

I WISH I had been grandpa's child,
That I could have had the joy
Of fishing in those good old days
When father was boy.
For then the fish grew bigger far
Than they do nowadays,
And literally packed the streams—
At least, so father says.

THEY never caught a sucker then
That didn't weigh a ton,
And pickerel were longer than
A modern naval twelve-inch gun.
They used to yank out halibut
In hundreds from our bays,
And perch ran up the banks to bite—
At least, so father says.

THEY never thought of using bait
To lure the wily trout;
They reached a bushel basket down
And simply yanked them out.
And in about an hour or two
They'd fill up several drays
And show them through the neighbor-
hood—
At least, so father says.

IN short, they caught so many fish
That 'fore their sport was through
The stream where they were fishing
would
Go down a yard or two.
And not an angler failed to come
Home loaded in those days—
A habit father still pursues—
At least, so mother says.

BUFFALOES GIVEN AWAY

YOU can have for the asking a real buffalo, same model as the ones that used to roam the western plains. But don't get one for the youngsters to play with. That buffaloes do not make ideal pets for children was the warning included in the recently announced offer of Acting Director Demaray of the National Park Service to give away 100 of the animals in the famous Yellowstone National Park herd. Even the year-old buffalo youngsters weigh around 900 pounds and their parents a ton or more, yet in the past families have wanted them to place in their back yards, he said. Buffaloes are given away yearly to keep the herd within bounds, but the recipient must pay all the charges of shipping.

NEW FIRE SLOGAN

A MATCH has a head but cannot think, so don't let a match go out alone. This sound advice to sportsmen in the United States is particularly appropriate in view of the drought which has made forest fires a menace. Austin Wilkins of the Maine Forest Service found this unusual forest fire sign in Holland. It's one that must be heeded at this time, and campers, fishermen, automobilists and other outdoorsmen are urged to use special care when in the field or forests, because of fire hazards.

BEAVERS GO HOUSE HUNTING

THE highest known pinnacle of restless discontent is apparently not reached in the big cities as some may suppose, but between natural walls even more imposing—those of the Grand Canyon. The epitome of thwarted beings is the beaver of the Colorado. Although his kind stand among animals as the greatest lovers of home and community life, these canyon beavers spend their days forever wandering like lost souls between the tempestuous river and the rocky cliffs in search of the Promised Land. The often-encountered fragments of a lodge or dam on some side stream disclose that the home-loving wanderers occasionally believe they have at last found peace, only to have it turn into greater disappointment with the arrival of spring freshets or a storm. Only the old beavers, burdened with the wisdom of a final disillusionment, content themselves with crude dens burrowed in the bank.

ALLIGATORS GOOD POLICEMEN

THAT those ugly, indolent alligators of the southern swamps are really efficient "policemen" controlling the vicious underwater element of aquatic life, and invaluable guardians of game fish, is a fact reported to be rising slowly out of reams of data being assembled by the Bureau of Biological Survey of the Department of Agriculture. Circumstantial evidence and proof furnished by a study of stomach content indicate that alligators protect game fish indirectly by eating turtles and gars, the two worst enemies of the game species because of their habit of destroying fish eggs and young. The almost complete extinction of the alligator in many sections of their habitat is said to be coincident with a heavy increase in turtles and "rough" fish and a steady decline of game fish, which even artificial propagation by hatcheries has not been able to offset.

PHEASANT CHASES BULL

SWANKY, swaggering ring-necked swains have in many a witnessed clash with domestic roosters and even cats, won the reputation of being the boldest "cock of the walk" among game birds. But the prize story of this imported bird's daring is told in a report from Norman Wood of Coatesville, Pa. According to Wood, a cock pheasant was seen to resent intrusion upon his section of a field by a bull and his admiring retinue. The game bird flew against the cattle time after time, until the astonished bull followed his herd in a dignified retreat. A brood of pheasant chicks was believed to have been in the vicinity.

TAKE YOUR HOUSE ALONG

THANKS to modern enterprise, the hunter today can not only pack along with him ready-made bed, tinned foods, music on tap, and other luxuries, but even a portable log cabin, of size to order. A northern firm is advertising the new back-to-nature feature, portable, completely equipped, and made to be assembled on short notice.



Thousands In Field For Big Game



OST of Montana has become wild-mutton minded, if the unprecedented demand for big game hunting licenses may be taken as a criterion. With the deer and elk season

opening October 15 in the majority of areas throughout the state, sportsmen are trooping to secure big game licenses and tags and headquarters of

Montana Cow Elk

(Continued from page 11)

their mothers until they are nearly one year old.

To the casual observer cow elk are indifferent and careless with their young, in other words they are not considered good mothers. As a matter of fact they are, in their own peculiar way, most excellent mothers. To make a comparison: the grizzly female usually has three cubs to a litter and is probably the ablest and most aggressive of all our wild animals in protecting her young. The grizzly is also considered the most intelligent of all our wild mammals. Yet the grizzlies do not show a rapid increase in numbers even under favorable conditions while the elk increase rapidly if not too greatly handicapped. The mother elk deserves at least some credit for the rapid increase in numbers of her species.

I have never observed a case of twins in elk, although reliable observers have reported two calves nursing the same cow. Twins occur very rarely, if at all, as I have examined several hundred cows that were killed by hunters and dozens of diseased specimens without finding a case of twin pregnancy.

The breeding season is Sept. 15 to Oct. 15, with some few matings outside these dates. Fetuses collected in December are fully formed and weigh about two ounces. Some collected in January weigh about one pound. One collected on Feb. 27 weighed six pounds two ounces and measured 20½ inches in total length. The smallest live calf measured and weighed was on June 1. It was 36 inches in total length, 20 inches tall at the shoulder and weighed 23 pounds. The largest calf measured and weighed was on June 2 and it was 42 inches in length, 30 inches shoulder height and weighed 45 pounds.

From data collected during the hunting season I find that yearlings are not pregnant. Two-year-olds are usually pregnant but have not been nursing a calf. Older cows are nearly always pregnant and usually show that they have nursed a calf during the summer. Extremely old cows are apt to be non-pregnant and dry.

the State Fish and Game Department have been flooded with requests for additional licenses.

"Under the law passed by the last legislature, Montana adopted the big game tagging system and sportsmen generally are responding to the educational campaign conducted by the department instructing them in the manner to use the tags," said Robert H. Hill, state fish and game warden, today. "In May a total of 15,000 resident big game licenses was distributed among 900 license dealers of the state. These have been exhausted and hurry-up calls for an additional thousand were answered by the department. The additional thousand went like hot cakes and 2,000 more were rushed through the print shop and distributed. Demands are continuing to reach the department.

"Sportsmen are evidently familiar with the law which requires that the tags must be attached to each elk or deer immediately after it is killed and must remain attached to the carcass

until a major portion of it is consumed.

"The \$5 Montana Sportsmen's License carries both elk and deer tags and covers the entire hunting and fishing field in the one license. Residents must purchase the \$2 fishing and bird license before they are permitted to purchase the \$1 big game license, under the new law."

Montana's newly adopted system of deer and elk tagging is functioning. The first postal card which the law requires to be filled out by all license holders before January 1, 1932, showing elk and deer killed, has been received at headquarters at Helena—and it comes from a resident of California holding a \$30 nonresident big game license.

W. E. Hand of Los Angeles has the honor of being the first sportsman to make the return to the state department. His card certifies that he killed a bull elk in Ravalli county September 24. The animal was killed on a forest reserve where the range was good. He holds nonresident big game license No. 304. Mr. Hand is a taxidermist at Los Angeles and selected the bull elk for a specimen.

Under the state law these return postal cards, which are attached and form a part of all big game licenses, must be returned by license holders whether they hag deer and elk or not. Failure to return the cards by January 1, 1932, makes the license holder guilty of a misdemeanor. When the cards are filed a complete check will be made and the state fish and game commission will, for the first time in its history, be enabled to ascertain the exact number of big game animals killed in every county and on every forest reserve.

Black Bass

(Continued from page 7)

Any hostile fish that appears upon the scene after the fry is hatched with the intention of securing a meal of tender baby bass soon forgets his mission, as the adult bass is still on guard and in a more pugnacious mood than when merely guarding the eggs. The belief that carp, suckers or redhorse can successfully molest and destroy a bass bed is not correct, as the adult can easily battle off several young fish without any great trouble. The one thing possible is this: A school of rough fish can divide in numbers and while the bass is fighting off other members of the school the remaining fish might manage to destroy some of the eggs, but not all. The nature of the egg itself helps to save it from destruction in many instances. Being adhesive, the eggs are not easily scattered around.

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MONTANA WILD LIFE



Montana's Licensed Guides Aid Hunters



LICENSED guides of Montana, who are thoroughly acquainted with the big woods, the areas in which big game thrives and the trails and roads leading to and from the

shooting grounds, are in unusual demand with the opening of the deer and elk seasons. These men, who have fulfilled the requirements of the state law and acquired their licenses from the State Fish and Game Department, are qualified to inform the big game hunter where to go, what to take and how to make the hunting and fishing trip an eventful success. Sportsmen of Montana and east and west who intend making a trip into the state are urged to communicate with these out-of-doors authorities in planning their jaunts.

Guide licenses are issued by the State Fish and Game Department to men who have become qualified and, according to the state law: "No person shall engage in the business of guiding * * * without having first secured a license."

The guides listed below have secured licenses up to Oct. 26 for the 1931 season, the permits being good for one year. In this list is found the name of one woman, Margaret Skoda of Jardine, Park county.

Cascade County

Henry E. Bryant, Great Falls.

Flathead County

Leo P. Opalka, Columbia Falls.
Jacob Motichka, Columbia Falls.
Charles L. Stopher, Kalispell.
Josiah Rogers, Columbia Falls.
James Lozeau, Kalispell.
Guy Clutterbuck, Kalispell.
Thomas L. Gardner, Coram.

Lake County

John O. Heath, Arlee.
Harry Owen, Poison.

Lincoln County

M. H. Bakker, Libby.

Lewis and Clark County

Lawrence A. Chamberlain, Augusta.
John F. Arps, Augusta.
Ralph Allan, Augusta.
John P. Krebs, Augusta.
John A. Walrich, Lincoln.
Frank T. Slater, Augusta.
Bruce Neal, Augusta.
W. H. Stecker, Augusta.
Emmett Shaw, Gilman.
William Arthur Goss, Augusta.
H. J. Reissing, Augusta.
Norman N. White, Augusta.

C. G. Slaughter, Augusta.
Rudolph Dwight, Augusta.
Wilhelm Hjalmsen, Augusta.
Henry Buckert, Augusta.
Charles E. White, Augusta.

Missonla County

Capt. Eli Laird, Seeley Lake.
Lester Jay Perro, Seeley Lake.
Ora P. Dishman, Missoula.
Walter Hamilton, Lolo Hot Springs.
Wesley E. Binko, Clearwater.

Gallatin County

Fred Kerzenmacher, Grayling.

Pondera County

John Rappold, Dupuyer.
H. C. Arbuckle, Dupuyer.
Edgar Fay Chenault, Valier.

Park County

Paul Hoppe, Gardiner.
Clyde Gilbert, Gardiner.
Leonard D. Lee, Gardiner.
Milton J. Shipman, Gardiner.
S. K. Rose, Jardine.
Margaret Skoda, Jardine.
Dick Randall, Corwin Springs.

Powell County

George L. Lawrence, Ovando.
Joseph B. Murphy, Ovando.
W. S. Steel, Helmsville.
Frank Ezra Reinvehl, Ovando.
Wilber Vaughn, Ovando.
Edward Geary, Ovando.

Judith Basin

C. E. Hartsock, Utica.
Peter Setter, Utica.
John William Stone, Utica.

Mineral County

Vital Cyr, Alberton.
T. Garcia, Rivulet.

Teton County

James B. Baker, Choteau.
Frank Ramberg, Choteau.

Ray C. Gibler, Choteau.
Howard Allum, Choteau.
Chick Grimsby, Pendroy.
Iver C. Lestrud, Choteau.
Stillwater County
B. L. Kratz, Absarokee.

THRIFTY SANDY

A Scot was engaged in an argument with a conductor as to whether the fare was 5 or 10 cents. Finally the disgusted conductor picked up the Scotchman's suitcase and tossed it off the train, just as they passed over a bridge. It landed with a splash.

"Mon," screamed Sandy, "isn't it enough to try and overcharge me, but now you try to drown my little boy?"

CHANNEL BASS POPULAR

The channel bass is perhaps the most prized game fish along the Virginia, Maryland, and New Jersey coasts, according to the U. S. Bureau of Fisheries. It is essentially a fish of the sandy beaches and is usually caught by surf fishing. Its reputation among anglers is high, and stout tackle is required, as the fish are generally large.

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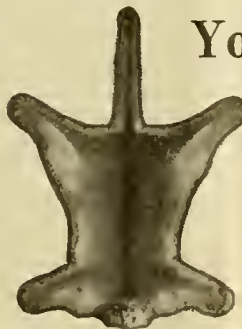
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MONTANA WILD LIFE

Pheasant Liberation Hits New High Mark



J. F. Hendricks

MONTANA'S State Fish and Game Department has established another record on behalf of sportsmen of the state by liberating 8,550 Chinese pheasants thus far in 1931 from the State Game farm at Warm Springs in stocking fields and coverts of the Treasure State where these rugged, gamey birds have proved their ability to thrive and multiply. Under the

leadership of Joe F. Hendricks, superintendent of the game farm, the output has reached the high mark. In 1930, less than one year after the state commission made possible the creation and operation of the farm, a total of 6,146 Chinese pheasants was liberated in 55 counties of the state. None were liberated in Mineral county because of the heavily timbered area, which is deemed undesirable for the birds. Sportsmen of that county acquiesced with the commission in its decision.

The open season on male Chinese pheasants and Hungarian partridges of either sex opens on Sunday, November 8, and closes the evening of November 12, giving Montana sportsmen five full days in which the birds may be taken. Reports to departmental headquarters at Helena are to the effect that because of a satisfactory nesting season, the birds of both varieties are plentiful. The bag limit is five birds per day, three of which may be Chinese pheasant cocks. The female Chinese pheasants are protected.

Montana's first game farm at Warm Springs was made possible by action of the commission at a meeting at Anaconda, October 12, 1929. Construction of the original pens was started in November and they were completed during the winter in February. The original area was covered by 280 pens, 24x24 feet, seven feet high. During the chilly winter months construction was rushed in order that sportsmen of the state might be provided with birds for liberation.

Under the guidance of Superintendent Hendricks, schooled in game bird breeding, the crew at work at the game farm then turned attention to the construction of 225 brood coops, 100 sections of setting hen nests, feed boards for all the pens and 30 shipping crates. These chores were completed before the start of the breeding season.

With this original equipment the work was started that brought forth the liberation of 6,146 Chinese pheasants less than one year after the farm was established.

Pheasants Liberated In Counties

	1931	1930
Beaverhead	180	244
Big Horn	144	168
Blaine	144	84
Broadwater	192	84
Carbon	168	140
Carter	144	108
Cascade	408	144
Chouteau	144	120
Custer	168	96
Daniels	120	72
Dawson	144	96
Deer Lodge	202	155
Fallon	144	72
Fergus	192	162
Flathead	168	168
Gallatin	144	68
Garfield	120	72
Glacier	36
Golden Valley	144	96
Granite	96	48
Hill	168	144
Jefferson	120	124
Judith Basin	168	92
Lake	360	120
Lewis and Clark	288	250
Liberty	144	72
Lincoln	48	96
Madison	180	374
McCone	72
Meagher	144	96
Mineral
Missoula	202	96
Musselshell	144	96
Park	192	120
Petroleum	144	82
Phillips	144	96
Pondera	144	120
Powder River	144	48
Powell	178	150
Prairie	144	96
Ravalli	192	216
Richland	120	96
Roosevelt	144	87
Rosebud	144	96
Sanders	240	48
Sheridan	120	88
Silver Bow	24
Stillwater	168	116
Sweet Grass	144	120
Teton	144	96
Toole	168	72
Treasure	144	96
Valley	120	108
Wheatland	144	72
Wibaux	144	96
Yellowstone	192	138
	8,550	6,146

During the year this equipment has been enlarged, additional pens have been provided and the liberation of 8,550 pheasants thus far in 1931 has been the result. In this work the State Fish and Game Department has invested funds made available by sportsmen of

Montana and the sportsmen are now deriving the direct benefits.

Following the close of the open season this year, areas which have been heavily hunted will be restocked with additional male birds to insure an adequate natural supply for 1932.

While making the unusual record for Chinese pheasant distribution, Superintendent Hendricks and his crew of trained assistants at the State Game farm, have been conducting many experiments with other game birds, particularly the propagation of California quail, the rearing of Hungarian partridges in captivity, the crossing of the Lady Amherst and Melanistic Mutant, tests with the bobwhite and other foresighted activities.

Winter Cafes Are Ready For Game

RANCHER deluxe—that's Uncle Sam. He's getting ready to feed in Yellowstone National Park 2,000 animals this winter. Unlike most ranchers, however, Uncle Sam's animals are all wild. Buffalo, elk, antelope and deer rely on him to provide food for them when deep crusted snow makes it impossible for them to forage for themselves.

To provide for these animals, haying activity has occupied a large staff of government employees during the fall. Approximately 715 tons of hay will be stacked in the park before the work is done. Most of this is taken from the Buffalo ranch and the Slough Creek ranches, although Yancey's ranch, the Gardiner ranch and the Game Preservation ranch furnish considerable food also.

Last year 739 tons of hay were fed to wild animals of the park. This was supplemented by 40 tons of cottonseed cake, which because of its large protein content makes a good food for game. Much of the cottonseed cake is fed to buffalo calves, although the adult bison utilize some of it. Cottonseed cake feeding was an innovation in the park last winter, and its success warrants its continuation this year, the chief ranger's office reports. For the first time last year mountain sheep were also fed a mixture of hay and cottonseed cake.

Feeding usually begins in December after the heavy snows set in. Last year about 1,000 buffalo were regular fed, between 600 and 700 elk daily, about 200 antelope and the same number of deer. Approximately the same number will be in the government "breadline" again this winter, the rangers believe.

It's all right to tell one girl she's the eighth wonder of the world, if she doesn't catch you out with the other seven.