

VOLUME 2

MONTANA

NUMBER 8

WILD LIFE

January



OFFICIAL PUBLICATION OF THE
MONTANA STATE FISH AND GAME DEPARTMENT

Good Fellowship



***H**O, BROTHER, it's the handclasp and the
good word and the smile
That does the most and helps the most to make
the world worth while!
It's all of us together, or it's only you and I—
A ringing song of friendship, and the heart
beats high.
A ringing song of friendship, and a word or two
of cheer,
Then all the world is gladder and the bending
sky is clear!
It's you and I together—and we're brothers one
and all
Whenever through good fellowship we hear the
subtle call,
Whenever in the ruck of things we feel the help-
ing hand
Or see the deeper glow that none but we may
understand—
Then all the world is good to us and all is worth
the while;
Ho, brother, it's the handclasp and the good
word and the smile.*



MONTANA WILD LIFE

The Official Publication of The State Fish and Game Commission

VOL. II.

HELENA, MONTANA, JANUARY, 1930.

NO. 8.

Fishing Licenses Hit New Mark

Licenses Hit Record

DEMANDS being made upon Montana's fish and game resources are reflected in convincing manner in the increased demand for hunting and fishing licenses among residents and particularly among tourists. Resident licenses for 1928 established the new high mark of 75,063, the greatest number ever purchased by sportsmen of the state in any year since the department was created, and then comes 1929 with another new record. Increased demands for licenses means that additional courageous vigilance must be maintained in law enforcement and in restocking the streams and forests. Last year was likewise the heaviest tourist travel year, there being 4,745 non-resident fishing licenses sold. The total is not yet complete, many stubs being in the hands of dealers. Figures gleaned from official reports follow:

	Resident Licenses	Non-resident Fishing
1916	69,466	1,082
1917	72,113	1,012
1918	42,744	741
1919	70,429	252
1920	52,751	1,305
1921	59,348	1,879
1922	50,508	1,620
1923	64,202	2,193
1924	56,113	2,064
1925	73,042	3,369
1926	71,249	1,133
1927	67,083	3,320
1928	75,063	4,335
1929	82,792	4,745

MONTANA has again established a new high record mark for fishing and hunting licenses among residents as well as eastern neighbors who annually turn the noses of their cars toward the Land of Shining Mountains. According to the compilation of figures for 1929, by Department statisticians, the 1929 mark for resident fishing licenses totaled 82,792 as against the former record mark of 1928 of 75,063. And this in the face of the fact that extreme dry weather and the drying up of streams caused the Commission to close these waters two months earlier and put on the ban November 1 except in lakes where adequate water was provided.

While resident fishing licenses have been gaining, as shown in the accompanying table, the increase of tourist licenses has also emphatically brought home to Montana people the necessity of adequate restocking of streams and the apparent need for meeting the cash demand required to support this heritage of woods and waters for future generations.

When Montana was in its formative stages, trapping came before the lure of gold as an incentive to intrepid explorers, and figures of the Department show that the industry still thrives. During the year 813 trappers' licenses were issued, 74 guides were licensed and 534 beaver-taking permits issued. There were licenses issued to 112 fur dealers and 29 fur dealers' agents. Four non-resident dealers paid for permits to operate within the state.

One of the interesting facts displayed by the tabulation are figures showing the growth of the fur farming industry in the state. Licenses were issued to 163 game farms. These farms are bringing new wealth to Montana. They are producing valuable products and the industry is making remarkable strides.

In this connection it might be well to call attention of fur dealers of the state to the following opinion which has just been handed down to the De-

partment from the attorney general. The decision reads as follows:

"You have requested the opinion of this office upon the following state of facts:

"A licensed fur dealer in Great Falls desires to open up a place of business at Fort Benton and to place in charge there one of his fur buyers and the question is whether he shall be required to take out a license.

"Chapter 42 of the Session Laws of 1929 provides for fur dealers' licenses and also provides for a license by fur dealers' agents. A fur dealer's agent is defined as any person who is employed by a resident or non-resident fur dealer as a fur buyer. There would appear to be no question that one who goes out from the fur dealer's place of business and engages in the business of fur buying for the dealer would come within this definition and be required to pay the \$10.00 fur dealer's license."

Department Figures on Licenses for 1929

Cash Receipts from All Sources—January 1 to December 31, 1929

Resident Hunting and Fishing Licenses (82,792)	\$165,584.00
Non-Resident Fishing Licenses (4,745)	16,607.50
Non-Resident General Hunting and Fishing (1,070)	3,210.00
Non-Resident Limited Hunting and Fishing (102)	1,020.00
Alien General Hunting and Fishing Licenses (3)	150.00
Alien Fishing Licenses (289)	2,890.00
	\$189,461.50
Less Agents' Commission	8,698.60
	\$180,762.90
Licenses for 1928 and Prior Years—Net	1,372.31
	\$182,135.21

Licenses Other Than Hunting and Fishing

Trappers (813)	\$ 8,130.00
Guides (74)	740.00
Seining in Public Waters (19)	95.00
Game Farm (168)	840.00
Taxidermists (12)	180.00
Beaver (534)	5,340.00
Fur Dealers (112)	112.00
Fur Dealers' Agents (29)	290.00
Non-Resident Fur Dealers' Agents (4)	100.00
	\$197,962.21

Other Income

Fish Eggs	\$ 2,052.63
Beaver Tags (8,155)	4,077.50
Shipping Permits (2,512)	1,256.00
Alien Guns	25.00
Refunds	57.44
Fur Sales	5,883.25
Fines	12,286.43
Confiscations	6,943.73
Fish Royalties	122.61
Montana Wild Life	734.50
Sale of Capital Assets	1.50
Shipping Permits for 1928 and Prior Years	80.50
Interest	71.82
Miscellaneous Income	94.50
	\$231,649.62
Less Biological Income	22,170.75
Total Net Income—Fish and Game Fund Income	\$209,478.87

Montana Center of U. S. Elk Study

By W. M. RUSH, in Charge of Elk Study, U. S. Dept. of Interior, Yellowstone National Park, with Photos on Next Page by the Author

DETAILED information on many species of our big game animals is sadly lacking. Some of the smaller species of wild life, as mice, moles, muskrats, gophers, etc., have been the subjects of many pages of detailed writing, but as for moose, elk, deer, mountain sheep, goats, antelope and bear our data are fragmentary and incomplete. With our elk herds, for instance, such questions as the following have frequently arisen the past few years since the elk problem has developed to the important place it holds: What are the food requirements of our elk? Do they eat the same kinds of forage as other big game animals or domestic sheep and cattle? How much range does an elk require? What are the limits of altitude and snow depths that elk can subsist in? What are the mineral requirements in an elk's food? What sanitation requirements are necessary on the range or feeding grounds? At what age do the young breed? To what extent are they polygamous? Just what purpose do the antlers serve? What and when is the period of gestation? Of lactation? Seasonal variation of breeding? What is the normal birth rate? Death rate? Why do the elk migrate from one part of the range to another and what is the extent of these migrations? Can these migrations be controlled, and if so, how? Just what are the losses from predatory animals, drowning of calves, starvation and other causes? What diseases are elk susceptible to? Do wood ticks cause a heavy loss in the herds? To what extent do elk compete with domestic stock for range and to what extent is the state and government justified in excluding domestic sheep and cattle from the public ranges to provide for elk herds? Are the elk carriers of disease or parasites to or from domestic stock? What balance should be sought in our mountain ranges between elk, moose, mountain sheep, goats, deer, buffalo and bear? Should complete extermination of predatory animals be sought on our game ranges? Should the herds be allowed to develop to such sizes that hay must be fed? The hows, whys, wheres and whats could be carried out to almost any degree of detail without many well authenticated answers being received.

Funds for such investigative work are difficult to receive and it was not until 1928 that Horace Albright, present director of the National Park Service, secured from private sources funds to carry on an elk study for one year in the Yellowstone Park and the area north of the Park used by the elk for winter range. The work was begun in December, 1928, and is being carried on now by the different government and state agencies concerned with game protection, on a cooperative basis.

The very pertinent question of "How is the work being done?" is worthy of some explanation. More than two-thirds of the time of the investigator is spent in the field with the elk, ob-

serving their food habits, movements with changes of weather, snow conditions, forage, and their general habits, collecting forage specimens, securing data on breeding, weaning, birth of calves, size and weight of calves, losses from bear and other animals. Investigating diseased and parasitical animals. Taking photographs, both motion and still. Counting bunch after bunch to secure the proportion of mature males, cows, spikes and calves in the total herd. Traveling is done with saddle and pack horses usually, although considerable work is done with auto and foot travel near the roads. Some snowshoe work is necessary in the winter. Last year the entire elk range from Thoroughfare Creek to Yankee Jim Canyon was covered more or less thoroughly.

About one-third of the time of the investigator is spent in the laboratory and dark room. Dissections of diseased animals are made, specimens prepared for diagnosis, botanical specimens identified and preserved for reference, stomach contents examined, parasites collected, and photo work done. A card record is kept of notes secured in the field under 34 main headings and 120 subheadings which cover most of the important details connected with the elk's life history and its place in wild life management.

The Park Service has equipped two special rooms with about everything necessary to carry on this work successfully.

A brief history of the Northern Yellowstone elk herd is necessary to explain the extent of the problem. The elk were pretty well exterminated over most of its range at about the same time as the buffalo were. Some few hundred head of elk were crowded into the mountainous region of the Yellowstone Park. Here under complete protection and an ample supply of forage they increased rapidly until the food supply was insufficient for them during severe winters. In 1911 they left the Park, migrating down the Yellowstone River for the foothill and plains country they had wintered in previous to the settlement of the country by the white man. In the spring they migrated back in the Park, minus, of course, a few hundred of their number that had been killed by hunters and a few hundred more that succumbed to starvation. These migrations have occurred since 1911 a number of times, the largest and most disastrous being that of 1919. Several thousands were killed by hunters and several thousands more died of starvation, the total loss amounting to about half the herd, which was estimated to contain about 17,000 elk at that time.

To provide winter range for these elk our Congress passed on May 26, 1926, an act which authorized an appropriation of \$150,000 to purchase land for additional winter range, provided such governmental funds were matched

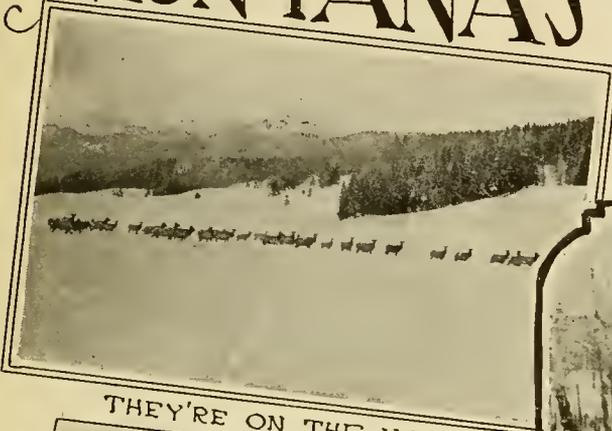
by an equal amount of money from other sources. The Game Preservation Company of New York City had already been formed by prominent conservationists, and had purchased some land. At the present time some fifteen tracts of land have been purchased at a cost of about \$80,000 and further purchase will be made as fast as reasonable offers are made. Some of these lands are improved ranches with considerable areas of hay meadows which produce a large quantity of forage each year. The acquisition of these ranches of course eliminates a large number of cattle and horses from the range, thus further augmenting the winter supply of forage for the elk.

An argument often heard is: "Why not reduce the elk herd to the number the winter range in the Park will support?" This would be about 5,000 or 6,000 head and as the herd now numbers 12,000 or 13,000 it would mean a cut of more than one-half. Now should our great and wealthy government deliberately reduce one of the two greatest elk herds in the world to one-half its present size or should it expend a relatively small sum to keep it up, and provide for the increase from the larger herd to be taken each year by hunters or to be taken for shipment to stock other areas? (It might be mentioned that this herd has furnished the nucleus for more than 20 herds of elk in other parts of the United States.) Without exception large game preserves build up large herds of game animals with serious problems to solve in time as to food supply. Some examples are: Sun River elk, Bison Range elk and buffalo, Kaibab deer and Yellowstone Park elk. These problems in some cases must be met with a cut in the number of game animals but with the large unique and distinctive elk herds it seems justifiable to provide the additional range necessary.

Heavy calf losses occurred here in the elk herd in the winter and spring of 1926-27 due to calf diphtheria (necrotic stomatitis). Investigations to date seem to prove that foxtail grass (*Hordeum julatem*) is the mechanical agent that allows the bacteria of this disease to gain a foothold in the animals' mouths. Abnormal bone growths in many of the older animals have been found which would indicate that the disease is not confined to calves. Our studies to date indicate that this grass should be exterminated from the elks' winter range if such a thing is practicable. Another grass commonly known as cheat grass (*bromus tectorum*) is spiked and barbed very much the same as foxtail and probably accentuates the damage done by the foxtail.

Ergot is a fungus that infests some range plants, chiefly tall rye grass on the elk range, and may be the cause of some loss in game animals. Other fungi has been found on the range plants from which diseases may result.

MONTANA'S ELK PROBLEM



THEY'RE ON THE WAY



HERD OF ELK MIGRATING



BULL AT BAY



ELK MIGRATING



PREGNANT COW



BULL ELK FEEDING



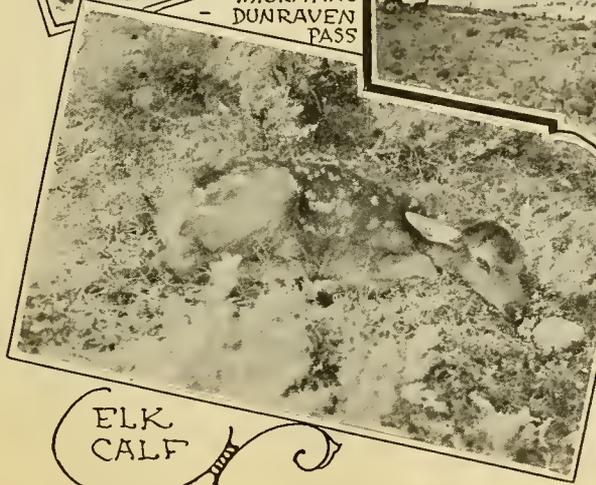
ELK MIGRATING - DUNRAVEN PASS



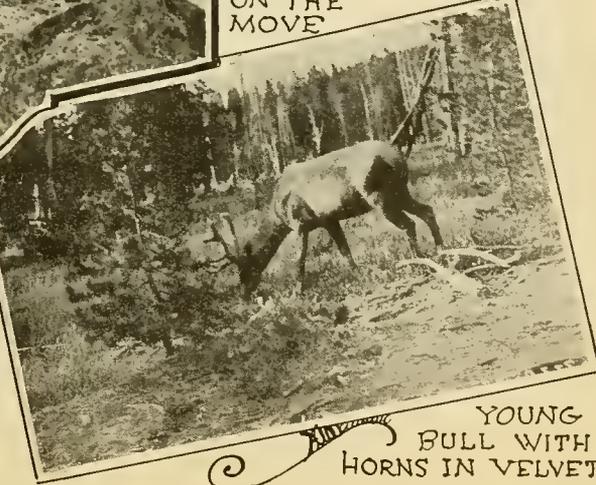
BAND OF ELK ON THE MOVE



A YEARLING BULL



ELK CALF



YOUNG BULL WITH HORNS IN VELVET

Huns and Chinks In The Making

By J. F. HENDRICKS, Superintendent Montana State Game Farm at Warm Springs, with Photos by the Author

DESPITE the fact that Montana is mantled by a snow blanket that serves to make some folks forget fishin' and huntin', it will be but a jiffy until it'll be necessary to check over the tackle and fight down the urge to get away from business. Then come the days when a wh-i-r-r-r in the woods sends things running up and down one's spine. Montana's State Fish and Game Department, too, is looking forward to those days in the woods and waters. The fish hatcheries are operating full blast in order that streams may be restocked with fish to meet the growing demand. The state game farm at Warm Springs, one of the latest forward steps of the Commission, is nearing completion and at this time of year is an extremely interesting place. Heavy snows may take their toll of the Hungarians and hardy Chinese pheasants, hence it's a mighty fine thing for farmers to feed the birds. Especial care is being taken at the game farm to protect the limited supply of brood stock from harm. Photographs showing strides being made at the game farm are shown on the adjoining page. They are taken from snapshots prepared by J. F. Hendricks, veteran superintendent of the farm. They demonstrate that the dollar of the Montana sportsman is going farther, despite the heavy drains on the self-supported fish and game fund.

The home built for the superintendent has five rooms, one an office, is modern and has full basement. To the north is a small lake, the highway is east and the Northern Pacific runs north and south back of the farm.

Construction of the farm is progressing rapidly. Workmen have constructed 280 pens 24x24 feet, but not all the wire has been placed on them yet. During this stormy weather men are working on equipment for use next summer. There are 300 ringneck pheasants and 22 Mongolians at the farm and they will begin mating some time the first part of March.

Six hens and a cock are placed in a pen. Then attendants begin feeding them laying food, which consists of meal one day and on alternate days ground raw liver mixed with corn meal and bran.

During the laying season the eggs are gathered at 11 and 4 o'clock. Then they are incubated under domestic hens. It requires 22 days to incubate ringneck eggs and 23 days for the Mongolians.

When hatched 25 chicks are given to each hen and they are put in one of the pens till time for liberation, which will be about ten weeks, but in warmer climates at seven weeks, and the birds will do well.

The Hungarian partridge trap shown in the accompanying picture has been made by Mr. Hendricks. He is preparing the traps for catching Huns for breeding purposes on the state farm,

for it is hard to purchase good brood stock of Huns. He is trapping them in Deer Lodge county while the ground is covered with snow.

Experts say it is impossible to force-mate the Hungarian partridge as they are non-polygamous. All of them are placed in a large enclosure and allowed to take their own mates. When mated they will leave the bunch. Then they are placed in a private pen. After mating another Hun finds no welcome with them, as they will kill the intruder regardless of sex. They mate much sooner than the pheasants but won't start laying till a month after the pheasants. The Hun makes a nest by making a hole in the ground about the size of the palm of a hand, and will lay 18 or 20 eggs in three or four layers. Both male and female help with the duty of incubation.

Here's A Bouquet

Portland, Ore.

Editor MONTANA WILD LIFE:

I am much pleased with the material appearing monthly in your excellent publication. It is just the kind of matter people ought to read. The pity of it is that publications like MONTANA WILD LIFE cannot be put in the hands of ALL citizens and not be confined merely to a limited number of those who already are more or less "sold" on your ideas. In a sense, you are "wasting your sweetness on the desert air."

I presume that, like Western Out-of-Doors, MONTANA WILD LIFE is sent only to those who subscribe and pay for it. It seems to me that your Fish and Game Commission could do no better thing than to provide funds for supplying it to every person who buys a hunting or angling license in the state even though it might be necessary to add a dollar to the annual license fee. Education is the answer to most of our fish and game problems.

In the August issue of Western Out-of-Doors, under the title "Science and Game," I mentioned, editorially, the fine work your state has been doing on Flathead and Georgetown Lakes. I want to "lift" some of your stuff for my next issue if you don't mind.

Fraternally yours,

R. J. KIRKWOOD,
Editor Western Out-of-Doors.

LISTENS TO ORDERS

The editor of a newspaper wheeled his chair around and pressed a button on his desk. The office boy entered.

"Here," said the editor, "are a number of directions from outsiders telling us how to run our paper. See that every one is carried out."

And the office boy, gathering them all in a large waste basket, did so.

Duck Limit Is Cut

MONTANA'S limit on migratory waterfowl is due to be reduced next season. Secretary Hyde of the U. S. Department of Agriculture at Washington, D. C., has announced that upon his recommendation the daily bag limits of ducks and geese allowed gunners will be reduced for the next season, 1930-31, by changes in the federal regulations under the Migratory Bird Treaty Act. The necessity for this reduction has become evident from exhaustive field investigation by the Department of Agriculture, which has disclosed that waterfowl have not been holding their own in the last year. The unusual drouth that prevailed during the last season, and the reclamation of large former breeding grounds in the northwest states and Canada, have resulted in cumulative losses of great areas of marsh and water.

This reduction has been vigorously insisted upon by the principal game associations, the Western Association of State Game Commissioners, the Association of North Central States Game and Fish Departments, and several others.

At its annual meeting the American Game Conference, attended by representative sportsmen and conservationists from all parts of the continent, adopted resolutions to this end. At its annual meeting in Washington in December, the Migratory Bird Treaty Act advisory board, made up of representative sportsmen and game conservationists from all parts of the country, passed a resolution by an almost unanimous vote urging that this action be taken.

Thirty states have passed legislation reducing the bag below the federal standards, and many of them have protested at the holding of federal standards above their state limits because of the difficulties created in enforcement.

The regulations will go in force after the present season, and the bag will be reduced from present limit on ducks of 25 to 15 a day and on geese from 8 to 4 a day and a possession limit of 30 ducks and 8 geese is also prescribed.

YES, YES—GO ON

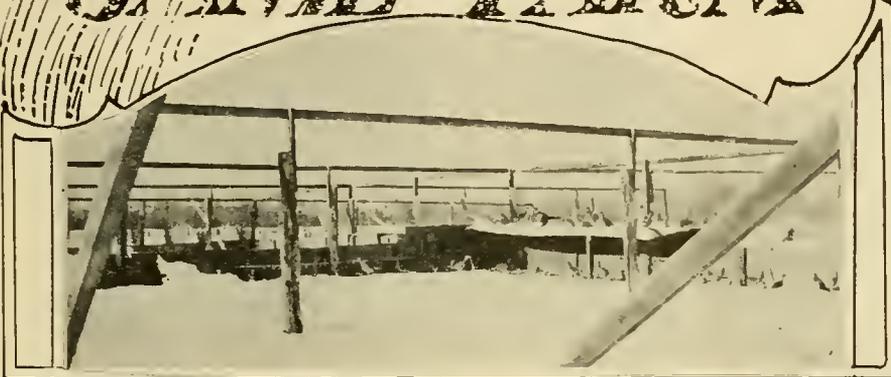
"I don't want any callers this afternoon," said the business man to the office boy. "If they say their business is important, just tell them that's what they all say."

That afternoon a lady called and insisted on seeing him. "I am his wife," she explained.

"That's what they all say," said the office boy.

Fishing saves the nerves, saves the brain and saves the doctor bill.

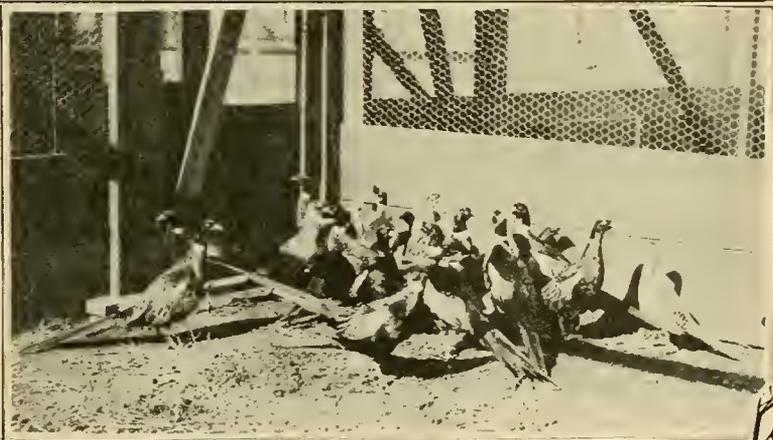
WINTER at MONTANA'S GAME FARM



ONE OF THE PENS OF BIRDS



MR. HENDRICKS PREPARING TRAPS TO CATCH HENS



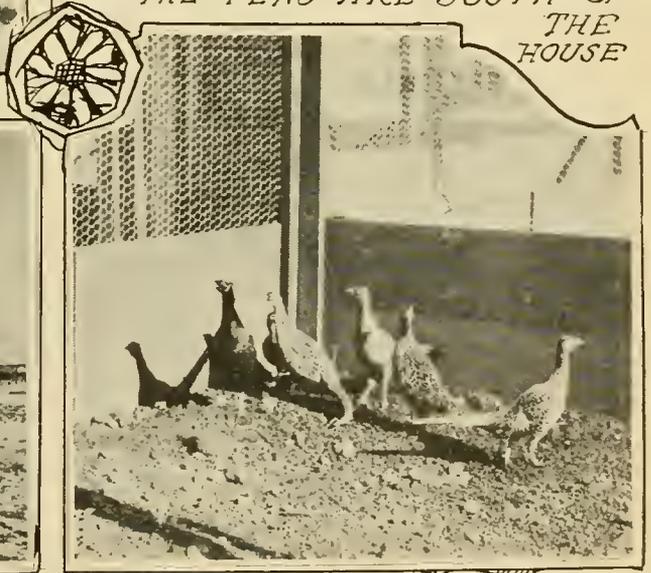
PEN of MONGOLIANS



THE PENS ARE SOUTH OF THE HOUSE



GARAGE AND FEED ROOM COMBINE WITH THE PENS IN THE BACKGROUND



PEN OF ENGLISH BLACK NECK PHEASANTS

MONTANA STATE FISH AND GAME COMMISSION

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State Fish and Game Warden
Secretary.

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WORTH OF MONTANA'S FISH AND GAME

WHILE Montana sportsmen may be pondering over the worth of fish and game of the state, it might be well to consider the case of Kansas. Montana's mountains and streams are veritable gathering grounds for wild life as compared to the rolling hills and conditions prevailing in that state, yet Kansas fish and game authorities estimate that the state gets ten million dollars' worth of good out of its fish, game and birds every year. Here's a significant statement from "Kansas Fish and Game":

Ducks, geese and other migratory birds shot every year would sell on the market for \$1,000,000, and quail for \$50,000. The 60,000 rabbits sent away every year bring around \$50,000, counting jackrabbits. The prairie chicken bag will sell for \$25,000. All other game, including rabbits shot for eating purposes, doves, etc., will bring \$20,000. The actual business done by Kansas fur dealers exceeds \$1,250,000 a year. A million dollars' worth of fish is eaten every year. The birds which are not shot but are protected by the hunters are worth five or six million dollars every year in taking care of noxious weeds and harmful insects, as it is estimated by the Biological Survey at Washington, D. C., that each bird is worth a dime a year to agriculture and that the average bird population is two to the acre. This estimate is probably too low.

Just add these figures to see what you think about it. Is it worth while to carry on with game protection and propagation and the culture of fish?

If you think these figures do not convince you, it is worth while to calculate a little on the value of recreation afforded citizens because of fishing, hunting and trapping.

Kansas spends from twenty to twenty-five million dollars a year going outside its borders for recreation. It might spend as much trying to develop recreation within its borders.

One person out of ten is paying the cost of maintaining something paying the state \$10,000,000 a year in dividends. That one person in ten is either a hunter, fisherman or trapper who is buying a license.

If you want your boy to travel the right road, you must travel it with him.

For ordinary climbing here are some hints: Be careful not to start a boulder or rotten log if anyone is below you. Avoid deep draws and creek beds. Angle upwards where possible. Keep your balance and don't trust to branches or brush. It is easier to get up a difficult place than down it.

LET US TEACH CONSERVATION

WITH Montana's boys and girls back in school again, thoughts turn to wild life conservation education in the schools. Although no provision is made for conservation in the state course of study, the time is not far distant when such provision will be made. Delay is dangerous in consideration of what is happening to our natural resources, depletion of our forests, entailing high taxes and unstable water supplies, continuous lessening of game and fish, and other problems. If conservation is practiced at once, by everybody, with our woods, waters, and wild life, Montana as a whole will immeasurably benefit. However, since before conservation will be practiced by the mass of people education is necessary, it is high time that such education is under way, especially in our schools.

Since conservation cannot, at present, be taught as one of the fundamental school subjects, lacking legal authorization, it can be taught by our teachers and studied and practiced by our school children. The conservation idea can be developed in schools by means of demonstration teams on the subjects of forestry, fire prevention, propagation of fish and game, and kindred subjects. It can be studied and practiced in opening exercises, field trips, and school picnics. It can be made real to the children by poster-making, and by correlating it with other regular subjects.

Conservation provides the golden opportunity to make school work intensely practical and worth while. It provides material necessary to arouse and keep up the interest of children in schools. The program provides something definite towards insuring a good country and good citizens to live in it. "Teach the youth the way he shall go and he will not depart from it."

Just when a man commences to think he is a big gun, some one comes along and fires him.

GAME KILL DOUBLED

THE New York Department of Conservation has recently completed checking of the reports on the kill of game in 1927 and found that the kill had doubled in seven years. Allowing for more complete reports than in 1920 the result indicates that the system of propagation and stocking, control of predators and law enforcement is producing results. The propagation of pheasants has been more than doubled, the state now operating four game farms and considerable game has been imported and planted. The law enforcement division reports punishment of 6,311 violators of the conservation law during the past year.

An optimist is one who makes the best of it even when he is getting the worst of it.

SIX THOUSAND DEER A YEAR

FOR the last three years deer hunters of New York have bagged over 6,000 antlered animals a year, the tags returned for the 1929 season, just closed, numbering 6,620. Most of the deer of New York are in the Adirondack and Catskill Mountains and 22 counties are open to deer hunting of the 62 counties of the state. The total legal kill for the last three years has been 19,977. There has been no open season on does and fawns in New York for ten years and it is estimated by the conservation commission that there are twice as many does in the state as bucks. As the deer of the state appear from the annual kill to be maintaining their numbers, that proportion does not seem to be too great.

THIS MONTH'S COVER

MEMORIES of the days of wagon trains, Indian raids, and the visits of intrepid explorers to the wilds of Montana are recalled by the splendid photograph of King Buffalo at rest, presented by MONTANA WILD LIFE as the cover design of the January edition. This splendid picture was taken by W. M. Rush of the Department of the Interior, stationed in Yellowstone National Park, who is engaged in making a study of the elk situation and its manifold problems. Other pictures of elk taken by Mr. Rush and an article of keen interest will be found elsewhere in this edition.

No limit to what you can accomplish if you don't care who gets credit.

NATURAL HISTORY FIELD SCHOOL

TO MEET a growing demand for instruction in nature study and to train field naturalists for the National Park Service, a school of field natural history will be opened in Yellowstone National Park on July 1, 1930. The Yellowstone Park is exceptionally well suited for the location of such a school owing to its great variety and abundance of wild animal life, its interesting geological problems and its varied flora. The work offered will be of university standard and the teaching staff is drawn from the ranger naturalists who serve as guides and lecturers in the Yellowstone Park during the summer months. Each is a scientist of standing and the staff includes nationally known men. The headquarters of the school will be at Roosevelt Lodge. Each student will be expected to furnish his own automobile as the work of the school will take students to all parts of the park for study in the field. Students will be enrolled between the ages of 20 and 50 who have the necessary educational qualifications. The number in the 1930 class will be limited to 35. The curriculum includes lectures, field trips and laboratory work in the study of botany, zoology, geology and geography as manifested in various parts of the park. There will be no charge for tuition but each student will be expected to maintain himself and to pay a nominal fee for equipment and supplies.

Not the number of boys to the square mile—but the number of square boys to the mile.

PREVENT HUNTING ACCIDENTS

REGARDLESS of the amount of campaigning and warning against them the number of serious or fatal accidents occurring during the hunting season seems to increase in much the same proportion as the increase of gunners. Most state game commissioners, many newspapers and other agencies circulate printed warnings intended to decrease the number of such accidents. Each licensed hunter in New York receives the following instructions for preventing hunting accidents, which is printed on the back of his license:

Never carry loaded guns in automobiles or other vehicles.

When afield hunting birds, keep abreast of and know the exact location of your companion.

In loading never point a gun in the direction of your companion.

In climbing over stone walls and fences, first break or unload your gun.

A bird quartering to the right in the vicinity of your hunting companion should never be fired on by a hunter on the extreme left and vice versa.

Never leave a loaded gun standing against a tree or lying on the ground where a dog may get at it.

Always keep your gun pointed away from your companions when you stop to talk.

In handing a gun to a person for inspection be sure it is unloaded.

Never shoot in the direction of your companions because you consider yourself a good marksman. You are taking a dangerous chance.

Carry a gun pointed down to the left. If you shoot left handed, walk at the extreme right of the party.

At all times be careful.

A pathetic little thing—a horsefly sitting on the radiator of an automobile.

SPORTSMEN MEET IN SPRING

MEMBERS of the Montana Sportsmen's Association will hold their annual meeting at Helena in March or April, according to word received from Glen A. Smith, chairman of the board. Mr. Smith, who is assistant district forester stationed at Missoula, will be in the east until March, hence the gathering of club representatives has been delayed. Another reason given by Chairman Smith for delaying the meeting is that John C. Frolicher of Missoula, new secretary of the association, has not yet had the time to become acquainted with the task and the territory.

When everything is against you and the world looks black, remember the tea-kettle—though up to its neck in hot water it continues to sing.

VITALITY OF THE GOOSE

VITALITY displayed by members of animal and bird life is remarkable. No human could possibly endure some of the suffering experienced by nature's inhabitants without losing life itself. Among the many records that come to attention is found an exceptional occurrence relative to the vitality of a Canadian goose. The following episode was enacted by a farmer named H. N. Clement, living near Lowell, Indiana.

This gentleman was gunning in the once famous waterfowl shooting grounds of the Kankakee marsh and came upon a flock of geese. He succeeded in bagging several nice birds, one of which astonished him by having as a breastpin an arrow nine inches long. That goose became the wonder of the neighborhood and the study of scientists, the only conclusion reached being that wherever the wild bird came from, there he got the arrow, so unique in formation that it could be assigned to no tribe of Indians in the United States or any other known country. Finally a member of the National Museum said that the bird and arrow could have come from no other place on the globe than the Yukon Valley, for except in that region no such arrows are made.

Science does not pretend to say how long the goose carried the arrow of a Yukon tribesman until it met its death from a shot fired by a civilized gunner down on an Indiana marsh. The bird disdained the weapon of a savage, but turned up its toes to the marksmanship of the Hoosier farmer years afterward, and thousands of miles from its summer home in the arctic desolation, as it was journeying southward.

Athletes may come, athletes may go
And fade as in a dream.
The horsefly is the best of all;
He's always on the team.

SAVING OUR HERITAGE

A DETROIT girl, aged 17, has won the Mrs. John D. Rockefeller, Jr., prize for a slogan which would inspire the preservation of the countryside. The young lady wrote merely, "This is your country, preserve it." Public parks and beauty spots have suffered much from vandalism. There is a wanton spirit of destruction, especially in the younger boys and girls, which is hard to analyze. One can understand a boy baseball player smashing a window as he knocks a homer, but it is rather hard to figure out the psychology of the youngsters who smash a drinking fountain, tear the arms off a statue or girdle trees with a knife or hatchet.

Montana has such a wealth of natural scenery that even a little vandalism is scarcely noticed. One smiles indulgently as some enthusiast suggests beautifying our scenic spots like Nine Mile, the Skalkaho or the Morrison Cave. As well talk of beautifying Glacier or Yellowstone Park. Such efforts are similar to attempts to gild refined gold, to paint the lily, to add color to the rainbow, or with a taper, to seek to garnish the rays of the sun.

One does not improve very much on God's handiwork, though we may preserve it. Even the vandals can only slightly scar it. The little lady who won the slogan prize with "preserve it" had the right idea.—The Montana Standard, Butte.

The early bird not only catches the worm but gets first whack at the morning newspaper.

History of Game Guardians For 65 Years



Robert H. Hill

SIXTY-FIVE years ago when Montana was in swaddling territorial clothes, when bronzed chevaliers squandered all the gold dust in their pokes in the hurdy-gurdy hangouts of soiled doves, when millions were being washed out of virgin sands and no such thing was known as a bag limit on game, the first territorial legislature of Montana passed a bill which became a law on February 2, 1865.

It provided that fishing tackle, consisting of a rod or pole, line and hook, should be the only way that trout could be taken in any of the streams of the territory. The bill also prohibited the baiting of the hook with any drug or poisonous substance and the using of seines or nets.

In 1869 a closed season was placed on partridge and quail for a period of three years. Grouse, prairie chicken, pheasant and fool hen were protected from March 1 to August 15 of each year. The first protection on mountain goats, buffalo, moose, elk, deer, mountain sheep, antelope and hare was a closed season between the dates of February 1 and August 15 of each year. Under a law passed in 1876 beaver, otter, marten and fisher were protected from April 1 to October 1. Geese and ducks were protected between the dates of May 15 and August 10.

A law which became effective in 1877 prohibited the sale of game animals and birds.

Under an act approved March 14, 1895, it became unlawful for any one person to shoot or kill any bison, buffalo, quail or Chinese pheasants, or any female moose, female elk, otter, or beaver, or to kill more than two bull moose, three bull elk, eight deer, eight mountain sheep, eight mountain goats, eight antelope, or one hundred grouse or prairie chickens.

In an article appearing in the *MON-TANA RECORD-HERALD* of Helena of May 29, 1895, Col. Huntley (W. B.) suggested that a test case be made to determine whether, during inhibited periods, lakes or streams could be lawfully exploited by sportsmen. The article, with a concluding remark from a member of a Helena sporting group, alleges that "a justice of the supreme court, an ardent, enthusiastic fisherman, will presently return from a trouting trip, and the president of the rod and gun club will proceed to the limit of an interview, with the purpose in view of obtaining a semi-judicial opinion from the highest source on the sufficiency of the game and fish law."

Mr. Hill's Address

ONE of the most interesting compilations of Montana fish and game history was prepared and delivered in an address to some 300 sportsmen at the tenth annual banquet of the Musselshell Valley Sportsmen's Association at Harlowton, January 16. The author and speaker was Robert H. Hill, Montana's State Fish and Game Warden. After spending weeks in the state historical library perusing state records and old minutes of department meetings, Mr. Hill combined the facts into an informative article such as has never before been delivered or printed. Hence *MON-TANA WILD LIFE* takes justifiable pride in presenting these facts to its many readers.

One of the first articles telling of convictions I found in reading old papers, was where a bunch of Indians from Canada crossed the line into Flathead county, June 10, 1895, and killed three deer. Officers arrested the Indians who did the killing and took them to Kalispell, where they were fined \$222.15.

In 1901 a law was passed requiring non-residents, who were not taxpayers of the state, to procure hunting licenses to kill large or small game. The fee for the big game license was \$25 and the fee for the small game license was \$15.

The bill requiring male residents to have a license for fishing or hunting in Montana became a law in March, 1905, without the approval of the governor, the bill not having been returned to the house in which it originated within the time prescribed by the constitution. The fee to be collected for each license was one dollar. The law provided, however, that a license issued to the head of the family should include therein all female members of the family as well as all male members under the age of 21 years. An act approved March 7, 1907, permitted residents to fish without a license. A bill passed and approved March 9, 1909, required every person who desired to hunt or fish in Montana to have a license. In 1913 the law was amended to the effect that no female or boys under the age of 14 years were required to have a license. In 1917 the fee for a resident license was raised to \$1.50, one-third of which was to be used for the propagation of game birds and animals. Females under the age of 18 years and males under the age of 14 years were not required to have a license. In 1921 the resident license fee was increased to \$2.00, with the provision that 25 cents out of each license fee was to be set aside as a fund to be used for the destruction of predatory animals. This fund is now called the Biological Survey Fund.

Now, if you fellows are standing up well under this barrage of historical shrapnel, let's take a glimpse into some

more of Montana's early history regarding the commission. In some cases it has been impossible to find names of appointees after the acts had been passed by the legislature, yet this thorough search has brought many to light and revived golden memories.

On March 14, 1895, a law was passed by the Montana legislature creating a Board of Game and Fish Commissioners, said board to be composed of three members, appointed by the governor. One member was to serve until February, 1896; one until February, 1897; and one until February, 1898. The three appointed members were, immediately upon their appointment, to assemble at the state capitol and, by lots, decide among themselves as to their respective terms of office.

This same law provided that it should be the duty of the Board of Game and Fish Commissioners to secure, through their agents and subordinates, the enforcement of all the laws of the state pertaining to the preservation, propagation and protection of the game and fish of the state. They were to appoint some resident of the state as State Game Warden, whose duties it would be to act as secretary and business agent of the board. The appointed game warden was to hold office for a period of two years; and his compensation was to be fixed by the board, with the stipulation that in no case should it exceed the amount remitted to the state treasury by the collections of fines, which was one-half the fines collected for violations of the fish and game laws.

In this same law the appointments of deputy state game wardens were made possible. Upon petition made to county commissioners throughout the state, from not less than 100 resident taxpayers of that county, requesting the appointment of a game and fish warden for the county, the Commissioners were compelled to appoint a deputy warden for the county, his compensation to not exceed \$100 per month and one-half the fines imposed and collected through him in all prosecutions under the game and fish laws of Montana. I find that out of the 24 counties at that time only four appointed a game warden during the following five years. These counties were Silver Bow, Gallatin, Lewis and Clark and Fergus.

Governor Rickard appointed W. B. Green of Flathead county, John F. Cowan of Silver Bow, and John O'Connor of Lewis and Clark, as the first members of the first Commission. Several changes in the personnel of the Commission were made during the following four-year period. M. J. Elrod, who is now with the State University as business manager, was appointed in place of one of the first three appointees, and he served as chairman. This Commission did not appoint a game warden until better than three years after the law was enacted, when

R. A. Wagner was appointed to fill the office. The entire law was short-lived, however, and this first Commission was abolished by repeal of the act in 1901.

In 1901 the law of 1905, providing for the appointment of a Game and Fish Commission and the appointment of county wardens, was repealed, and a law enacted providing for the appointment of a State Game and Fish Warden by the governor, the Game and Fish Warden to appoint not less than five, nor more than eight, deputy game and fish wardens throughout the state. W. F. Scott was the first State Game and Fish Warden appointed under this law of 1901, and the first warden appointed with a fixed salary. The deputy state game and fish wardens appointed by Warden Scott were: U. H. Boucher, Altyn, Teton county; Taylor B. Green, Malta, Valley county; A. E. Higgins, Missoula, Missoula county; Samuel Scott, Deer Lodge, Powell county; John H. Hall, Great Falls, Cascade county; Henry Avare, Butte, Silver Bow county; Henry Ferguson, Bozeman, Gallatin county; and Thomas T. Thompson, Miles City, Custer county. A bill approved March 8, 1907, provided for the appointment of a Montana State Fish and Game Commission, consisting of two members and the State Game Warden, who were to be appointed by the governor to hold office for a term of four years, with the exception of one of the first appointed two members, who was to hold office for only two years. The Commissioners appointed were George E. Doll, Pleasant Valley, Flathead county, and J. C. Cotlier, Great Falls, Cascade county. Henry Avare of Butte was appointed Game Warden December 31, 1908. An act to increase the Montana Fish Commission to five members was approved February 11, 1911. The appointed members were: E. P. Mathewson of Anaconda, M. D. Baldwin of Kalispell, George E. Doll of Helena, W. M. Bickford of Missoula, and Henry Avare, State Game Warden.

In 1921 the present law was passed, creating our present Fish and Game Commission, consisting of five members, appointed by the governor. The law provides that the State Game Warden be appointed by the Fish and Game Commission instead of by the governor. The law also states that not more than three members can belong to the same political party.

One of the most interesting documents I have found during research work for the preparation of this information is the annual report of the Commission, dated December 1, 1900, a little more than 30 years ago. Morton J. Elrod of the University of Montana was then chairman. At that time a questionnaire was sent throughout the state, published in the papers, and responses are interesting. With your permission I will read this questionnaire and a few of the comments:

1. Do you endorse the present game law as it stands?
2. If not, state your objection.
3. Do you believe in confining the killing of big game to males only?
4. If so, state your reasons.
5. Do you believe private individuals should be permitted to capture game animals for domestication and sale for

parks without restraint or compensation to the state?

6. Do you believe that game animals, birds or fish should be sold under any circumstances? Give your reasons.

7. Do you endorse the dates of the present open and closed season?

8. If not, what changes do you suggest, with reasons?

9. Are you in favor of requiring residents to pay for permit to hunt?

10. Are you in favor of requiring non-residents to pay for a permit to hunt?

11. If not, what do you recommend to secure funds to pay wardens, remembering there has not been a dollar of appropriation yet.

12. Should guides be licensed and registered?

13. Should taxidermists be taxed?

14. Should taxidermists be required to make report of game mounted or brought in for mounting?

15. Should the state permit shipment of game out of the state, whether with or without a tax, when killed legally?

16. What is the limit of game that should be allowed one individual in a season? Answer in detail.

17. How many game birds and pounds of fish should be the limit per man per day?

18. Would you put a limit to the bag one can make of ducks per day?

19. Would you favor spring shooting for ducks?

20. Are you in favor of a closed season for trout or other fish? If so, state when.

21. What kind of game should be perpetually protected?

22. Do you favor protecting the antelope for a period of years?

23. What are the proper legal limitations of the size of trout allowed to be taken?

24. Are you in favor of one-half of the fine going to the informer? If not, what would you have done with the fine?

25. Are you in favor of establishing a state fish hatchery?

26. Whose business do you think it is to protect game? Is it a state or county affair?

27. Give in full your idea of game wardenship, how they should be appointed, how many, salaries they should have, and other ideas you may have.

28. What would be the result if game protection were placed in the hands of sheriffs and their deputies, and made a part of their duties?

The comment of 1900 goes on to say that there are but very few endorsements of the law. In regard to killing males only in big game, sentiment was divided, with the slight majority opposed to it. The principal objection was the difficulty in distinguishing one from the other in the field. Apparently no one is in favor of capturing game animals for sale or domestication without compensation to the state. The idea prevails that the state should receive a stated sum for every animal taken.

The great majority is opposed to the sale of game animals, game birds, or game fish, under any circumstances, the consensus of opinion being that when sale is permitted it presents a stimulus for the pot hunter, for whom detection is all but impossible.

The present open season comes in for varied comment. For birds the season opens before they can fly. The sentiment is strong for a later date, very few approving the present date, which is August 15. For large game the majority is in favor of closing the season December 1, thus protecting the game during deep snow, when the slaughter is great.

In regard to the question of requiring a permit in order to hunt the sentiment is divided. Many are strenuously opposed to this, usually giving no reasons. Some are opposed to it, but offer no suggestions for raising revenue, or for protection. They demand protection, but suggest no ways for doing it, and oppose the method proposed. On the other hand, good, strong majority are in favor of requiring a permit for hunters. Those favoring this are people who have given the question much thought, and the reasons are that those who hunt should help protect the game, and it will be easier to locate law breakers, because the list of hunters is always accessible. It will

A Pair of Pets



DEPUTY Warden W. J. Dorrington, a keen student of wild life, has taught his youngsters to love the open. While Dad Dorrington is out making coyotes scarce and protecting the game birds, this little Dorrington fondles his coyote pup, his dearest pet.

also put a check on depredations by Indians.

The sentiment in favor of requiring non-residents to take out a permit to hunt is unanimous. Some put it high, the majority making it about double that required for residents. A large number favor a gun license. The majority are also in favor of licensing and registering guides.

The limit of game that should be allowed by law receives special attention from each correspondent. Most of them are emphatic in their opinions, but the opinions are exceedingly variable. Few agree to the present limit, most of them considering it by far too high.

The answers on limit of game birds are likewise varied. One writer thinks a man should be permitted to shoot all he is able to kill in a day. Another thinks about fifty the correct number. A few hold to the present number. The majority think it too high.

As to limit on catch of fish, some oppose any limit. "Catch all you can," is their motto. Some put the limit in pounds, others in inches. One man thinks 50 pounds a day is about right. Others say 20, 15 and even 10 pounds. One writer thinks no fish under nine inches should be taken; another thinks eight is about right; but the majority expressing it in length say none over five or six inches should be taken. One brilliant follower of Izaak Walton says any fish big enough to nibble should go into the skillet. But the sentiment is strongly in favor of a limit to the fish one may take.

Very few oppose a limit to the bag of ducks. Those opposing it do so on the ground that they are migratory, going north in summer where there is no protection, and south in winter where they claim there is no protection. Since they are ours only while they rest on their journey, knock them over as fast as possible before the other fellow gets a chance. Pop them day and night, for tomorrow they fly! The great majority say "By all means put a limit on ducks." The man with such greed as to slaughter for the fun of it needs a tight check rein. For the sake of decency no man should kill more than he can use, for he cannot sell them, and those hunters who are not naturally decent should, by law, be compelled to be so. The bag of ducks is stated usually as about the same as for other birds.

Concerning closed season for trout, sentiment or opinion is about evenly divided, about as many holding the opinion for as against. The following birds or animals are named by more than one person for perpetual protection: Buffalo, mountain sheep, mountain goat, quail, antelope, elk, moose, beaver, Chinese pheasant.

The answers relative to the protection of antelope for a period of years is decidedly in the affirmative.

Many correspondents failed to answer the question concerning the fine, whether one-half should go to the informer or not, but those who did so answer say it should. Some of the best informed men think this a very pernicious clause, appealing to the worse rather than to the better nature of men.

Old Man Bill Himself



HERE'S an unusual photograph of a mountain goat taken and copyrighted by Charles I. Rice, selected from the collection of Deputy Warden W. J. Dorrington.

Almost unanimously the answers are in favor of a state fish hatchery.

The question concerning ownership of game was asked out of curiosity, to find out the opinions people held. The courts have already ruled that it is the property of the people of the state.

It is impossible to give a summary of the opinions regarding wardens, their number, compensation, and appointment. To do so would be to quote from most of their letters.

The question in regard to making protection of game and fish a part of the duty of the sheriff and his deputies was asked out of curiosity to see what people thought. The majority of the replies show the writers are already acquainted with the situation. It is now one of the duties of the sheriff, but little protection from this source is received. The sheriff has, already, as much as he can attend to, and to do this work would require his entire time, which it is impossible to expect.

Records of the Commission show that way back 15 years ago—in 1915—E. P. Mathewson of the Washoe smelter of Anaconda was chairman of the board, working with such men as Nelson Story, Jr., J. L. DeHart, as secretary; Major M. D. Baldwin, Judge Bickford and Anna Dunne, the clerk employed at the munificent salary of \$300 per year. Two hatcheries were then operated and under the greatest of difficulties.

Let's browse along a little further into the musty records, for they have an enchanting interest to sportsmen. On December 29, 1916, our good Joe L. Kelly of Anaconda was appointed to succeed Mr. Mathewson as chairman. That meeting marked the first purchase by the State Department of a shipment of ringnecked pheasants the feathered foxes who gave you fellows so much sport last November. Two dozen were brought from Murray, Utah, at a cost of \$100 and released in Lincoln county near Eureka on the Tobacco plains.

Here are a few high points of Department history that bring to memory the names and achievements of many men who are still in harness:

On March 21, 1919, J. H. Bronson was

employed as superintendent of hatcheries.

On April 10, 1919, Joe Kelly was re-elected chairman with J. L. DeHart as secretary and warden.

One of the most significant dates in the history of the Commission's work came on January 5, 1920—ten years ago—when a mighty atom entered our midst and Thomas N. Martowe, perhaps the best-known sportsman of the Treasure State and the northwest, attended his first meeting; April 20, 1921, Tom Martowe was named chairman of the board and has served gallantly, firmly, graciously and eminently fair since that date. You know the words that tell of his achievement as well as the music.

On February 11, 1926, E. C. Carruth and W. K. Moore became members of the Commission, the other members being Tom Martowe, Joe Kelly and E. A. Wilson. Gilbert T. Boyd became a member April 8, 1927, when Mr. Carruth resigned, and these gentlemen now constitute the board which is striving diligently and conscientiously to do what you want them to do in conserving Montana's wild life heritage for your sons and mine.

It has been well said that "History is essentially biography." The history of the personnel and achievements of Montana's Fish and Game Department—YOUR Department—the Department which you are aiding in sustaining through moral and financial cooperation, is in like manner made up of the biographies of leaders who have given time, attention and business judgment that Montana's reputation as a fish and game paradise may be maintained.

Get these facts indelibly impressed on your minds:

Montana has 56 counties, some of them larger than an eastern state, yet Montana has but 27 deputy game wardens to cover these 56 counties.

Montana has an area of 90,000,000 acres to be patrolled in fish and game conservation work.

We have 33 game preserves covering 2,000,000 acres.

More than 240,000 acres are set aside for the grazing of game on national forests adjacent to the northern boundary of Yellowstone Park.

We have 14 fish hatcheries, the largest spawn-taking station in the world at Georgetown Lake, and 12 of these hatcheries have been established since 1920—only a decade.

Thousands of eastern tourists plan to turn the noses of their cars toward Montana next season to enjoy the sport your work is making possible. We extend our hospitable arms toward our eastern neighbors, but the drain on fish and game must be met. If conservation ceases, our fields and streams will become barren. Your continued cooperation is a vital factor needed to make Montana—our Treasure State—a better state in which to live.

A KNOCKOUT, ANYWAY

"And then," said the teacher, describing her encounter with a tramp, "I fainted."

Little Willie gazed at her with awe.

"Gee!" said he, "with your right or with your left?"

Montana Elk Bag Is Less Than 1000

MONTANA'S kill of elk during the open season of 1929 has been held below 1,000, or less than the natural increase. For the first time in the history of the state, cooperation of three important departments was brought about in the season just closed to bring about the checking of the kill, organized patrol and adequate protection. This wholesome movement was made possible through cooperation of leaders of the State Fish and Game Department, the Forestry Service and the management of Yellowstone National Park. The checking station was established at Carbella during the open season, near Yellowstone, with the general camp established some 15 miles from the station "on the firing line."

Montana's latest elk season prevails in the Yellowstone district where it opens September 15 and closes December 20. These dates have been set because of the fact that the northern herd of elk declines to leave the park until wintry blasts force them out in search of forage. Out of the herd of something like 17,000 the kill this year was but 265, according to the check of the combined forces on patrol duty. The kill in the Sun River herd, the Highwood and Gallatin was in like manner less than in former years because of continued warm weather and lack of snowfall except during a few days of the open season. When the season closed Old Man Winter began his annual parade and the elk are now well scattered and protected.

At a joint meeting of the three departments at Livingston arrangements for the patrol were worked out by representatives. It was agreed that the work in the Yellowstone sector should be placed in the hands of Robert H. Hill, State Fish and Game Warden. Among those who participated in checking the number of elk killed and protecting the herd from malicious killing were W. M. Rush of the Department of the Interior; Chief Park Ranger Bagley, Rangers Harry Trishman, Scotty Brown, Grier, Dudley Hayden, Jimmy DePree, Roy Brown, Deputy Wardens Tom Danaher, Tom Peasley, Jim Weaver, Frank Beller, Forest Rangers Eric P. White, Wetzel, Harry Coffman of the Absarokee forest, and Arnold at the game preserve ranch on the west side of the Yellowstone.

At the organization meeting at Livingston it was pointed out that, originally, the patrol contemplated the state game wardens handling the area at that time outside the national forest in the vicinity of Gardiner; the park service the area inside the park; and the Forest Service the high country in back. The placing of Forest Service men in the back country was primarily for the purpose of observing winter conditions, presence of game, depth of snow, availability of forage, and, to a great extent, the prevention of poaching.

Time proved that there was com-

paratively little poaching being done in late years except for sporadic outbreaks, such as occurred in August, 1929, on Daly and Specimen Creeks.

On the whole it had proved more advantageous to concentrate the major patrol effort along the "firing line." It was the consensus of opinion that the chief problem develops during the hunting season.

Tooth hunting has been practically eliminated, but it was felt that a patrol would be needed this season.

Previous plans for handling unusual seasons, such as 1927, worked fairly well. It was suggested it would be advisable to have all men assigned to the work act under the direction of the State Game Warden.

The park service agreed to furnish camp equipment and eight or ten horses. The Forest Service could, if needed, furnish ample camp equipment.

W. M. Rush gave a discussion of problems encountered in his work. He stated that although the necessary legislation had been enacted providing for the acquisition of winter elk range, which has been estimated to involve a total expenditure of approximately \$300,000, numerous problems affecting the whole game program such as the size of the elk herd that should be maintained, necessity of acquiring agricultural land, pasturage capacity of

land to be acquired in terms of game, losses from disease and other causes, remain to be solved. It has been found possible to determine with reasonable accuracy the carrying capacity of range in terms of cattle and sheep, but as yet no satisfactory basis for determining the pasturage requirements of elk has been figured out. Elk feed much like cattle, although they are far more nocturnal in their habits, and eat a much larger proportion of browse.

Mr. Rush explained that there is very little information as to the elk birth rate. In the summer period the elk scatter over some 3,000,000 acres; although it is thought true, it is not known definitely whether the elk return to the same winter range.

Study indicates that the drift of elk, partially if not wholly, appears to be governed by the crusting of the snow. Loose snow, regardless of temperature, apparently does not cause drift to any great extent. Elk stayed high last winter, even at temperatures of 47 degrees below, evidently owing to the fact that they could readily paw away the snow and get ample feed.

Storms may start elk, but if they can reach the forage by pawing they will drift back. The elk herd stayed lower during the summer of 1929 than usual, great numbers of elk remaining around Hayden Valley, Elk Park, and Specimen



HERE'S a portion of the group of wardens, park rangers and foresters stationed at the Yellowstone patrol camp, just before starting the morning's work. In the group, from left to right are Thomas O. Peasley, deputy state game warden at large;

James A. Weaver, deputy warden; Harry Coffman; Robert H. Hill, State Game and Fish Warden; Walter W. Wetzel, of the park service; Dudley Hayden; Deputy Warden Thomas A. Danaher; G. W. Breden, the cook; and Deputy Warden Frank Beller.

Ridge, and on the country usually grazed in the fall, spring, and winter.

The calf crop some years possibly reaches 60 per cent of breeding cows. Increase in the Sun River elk herd, it was brought out by Glen Smith, has been greater than appears to be the case with the park elk. The Sun River herd, with 200 in 1913, approximates 4,000 now. He said this increase no doubt is accounted for principally as the result of a smaller winter kill and better winter range.

On the bison range the elk increase has been about 35 per cent. This is due to a larger proportion of breeding stock, no loss from hunting, and a range under fence. In counting for breeding stock among elk it is necessary to omit old cows and old bulls. This means that the percentage of cows capable of bearing calves is necessarily a much smaller proportion than with domestic cattle. There is need for better figures on breeding ages, proportion of bulls necessary, and like figures. It was suggested that the elk kill in the northern Yellowstone herd, exclusive of the Gallatin herd, should be limited to 500 head for the 1929 season.

It was argued that it was better to have even a greater kill than that if there is any likelihood of a "starvation winter" this year.

It was pointed out that there is more feed available than in 1919, and several of those present estimated that the present winter range normally would carry around 9,000 head. In 1928 the feed was much better than usual; 1929 only an average year for feed. The best figures available show a total of 13,000 to 14,000 head of elk in the northern elk herd. There was a limited kill in 1928.

Smile

Nothing on earth can smile hut man. Gems may flash reflected light, but what is a diamond-flash compared to an eye-flash and a mirth-flash?

Flowers cannot smile; this is a charm that even they cannot claim.

It is the prerogative of man; it is the color which love wears, and cheerfulness and joy—these three.

It is the light in the windows of the face by which the heart signifies it is at home and waiting.

A face that cannot smile is like a bud that cannot blossom, and dries up on the stalk.

Laughter is day and sobriety is night, and a smile is the twilight that hovers gently between them—more bewitching than either.

—Henry Ward Beecher.

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Box 16 Detroit, Minnesota

Jackrabbits, Not Antelope

Deputy Game Warden John E. Plank of Harlowton, in company with Sheriff P. J. Anderson of Petroleum county, investigated recent published reports of the damage purported to have been done to hay and pasture on the Gray ranch between Flatwillow and Yellow Water Creeks, in Petroleum county. This particular herd numbers about 200 and makes its headquarters on the old Jack Rowley ranch in the Yellow Water district, where the snow piles unusually deep. After a heavy snow and thaw a sudden cold snap froze everything and a heavy crust formed on the snow. The antelope drifted from their headquarters seeking feed, and it is said wound up on Pike Creek some two and a half miles north of the Berkin ranch, and roamed on and about the Gray ranch.

Upon investigation by Deputy Plank and Mr. Anderson of the reported damage done by the antelope, examination of the hay stacks showed that the stacks the antelope had been near were intact, and the only one the herd had not been near plainly showed damage done by jackrabbits, and was the only damage that could be noticed. It was claimed that about 14 inches of snow covered the pasture on the ranch at the time the antelope took possession. If this condition existed and was covered with a heavy crust as claimed, the antelope could not feed on the alfalfa pastures, but went out on the ridges and fed on the green twigs of the sage brush. It was evident they

COULDN'T HAVE HEARD

Neighbor: "Did you hear that terrible row in the street right after 12 o'clock last night?"

Jones: "Can't say I did. Got home just about that time and my wife had expected me in at ten."

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FOXES

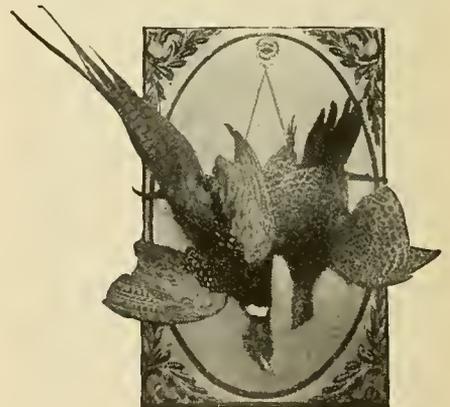
Pen-Raised Alaskan Blues and Pedigreed Silvers. Order Now—Early Delivery more satisfactory. We guarantee, in Your hands or Ours, 100% increase under ranching contract on adult Blues. 6 Bank Ref. for 25 yrs. and Satisfied customers. Breeder-Agents wanted—Your real opportunity, "One of the World's largest"—Free booklet tells all. CLEARY BROS., Fox Farms, Empire Bldg. 504 TUL. U.S.A.

had come back at night and bedded down along the creek, out of the way of the storm as much as possible. The day before the storm the band of antelope started back to their range. This same herd had previously been seen by ranchers in the Yellow Water section, who reported them to be in fine condition.

Compassion's Loving Cup

When you're feeling sort o' blue like
And you think you're out of luck,
Did you ever stop to ponder
On some other fellow's pluck?
There are heaps of folks around you
Who have found the way up hill,
Who have kissed the cross o' failure
And come up a-smiling still.
There are those who toil and suffer
That another's hope may live,
Who have buried self forever
In the effort just to give.
Yours are not the only troubles;
Count the other fellow's up,
And you'll drown that germ of blueness
In compassion's loving cup!

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Grab A Glimpse of Montana Mountain Sheep



IT'S ONLY occasionally that sportsmen catch a glimpse of mountain sheep high up above timber line in the crags of Montana. They are wily creatures and their sense of smell has caused them to be extremely wary of

anything human. Among the wind-swept snags, in patches of snow high in the mountains, the sheep thrive in their natural habitat. On the crest of the hill stands wise old Billy, head up and alert, watching over his little band.

That Man Is Rich-

Who gives the world the best he has
From day to day;
Who sees the good in every class
On life's highway;
Who never tries his wealth to mass
But gives away;
Who never robs another's heart
Of any joy;
Who never tries good friends to part
Or to destroy
The hope that's groping for a start
In every boy;
Who finds a joy in birds and flowers
And babbling brooks;
Who loves the sunshine and the
showers—
The shady nooks;
Whose soul within him never cowers
But upwards looks;
Who values most the priceless things
Not bought with gold;
Whose voice with kindness ever rings
To young and old;
Who, with his sunshine, ever brings
A joy untold.

JUST ONE FIRESIDE HERO

Proud Parent (who served in the A. E. F.): "And that which I have just told you, son, is the story of my experiences in the World War."

His Son: "But, papa, what did they need the rest of the army for?"

OH, SAY, CAN YOU SEE—?

She: "So you kissed that painted creature?"

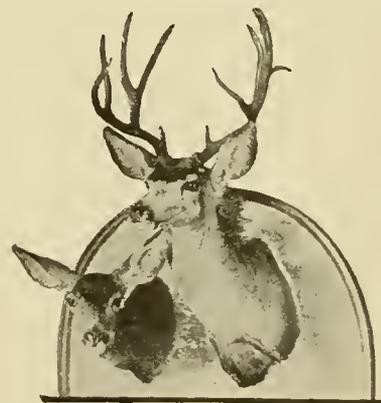
He: "Yes, I saluted the colors."

State Trap Leaders

FOLLOWING is a numerical list of temporary leaders of the various states who have shot at 1,000 clay (As Figured by Breidy, A. T. A. Office) targets or over, enough to qualify for the yearly honors, as shown in the preliminary checkup of the American Trap-shooting Association of America, subject, however, to changes when the final averages are released. Ted Renfro of Montana is third:

New Jersey—T. D. Hackett, Atlantic City.....	.9818
California—Lou Reed, Los Angeles.....	.9800
Montana—E. W. Renfro, Dell.....	.9784
Pennsylvania—S. Crothers, Chestnut Hill.....	.9776
Illinois—Frank Hughes, Chicago.....	.9761
Oregon—Frank M. Troeh, Portland.....	.9757
Kansas—Fred Etchen, Coffeyville.....	.9729
Iowa—F. J. Lightner, Cedar Rapids.....	.9719
Ohio—P. F. Cabbut, Massillon.....	.9717
Utah—E. L. Ford, Ogden.....	.9715
Colorado—Fred Vertrees, Denver.....	.9705
Washington—J. L. Coffey, Port Angeles.....	.9704
Arizona—George T. Peter, Phoenix.....	.9691
Oklahoma—Gus Payne, Oklahoma City.....	.9685
Indiana—M. E. DeWire, Hamilton.....	.9682
Wyoming—C. F. Nelson, Green River.....	.9661
Texas—H. A. Hausman, La Grange.....	.9660
Connecticut—E. H. Raymond, Danbury.....	.9655
Michigan—Karl Maust, Detroit.....	.9634

Wisconsin—C. W. Olney, West Allis.....	.9631
Georgia—W. H. Lanier, Augusta.....	.9626
Nebraska—John A. Nelson, Boelus.....	.9626
South Carolina—Paul Earle, Starr.....	.9613
West Virginia—Wm. Beury, Algoma.....	.9600
Kentucky—D. R. Blackburn, Covington.....	.9586
North Dakota—A. R. Chezik, Portal.....	.9578
Mississippi—R. B. Heddon, Friar's Point.....	.9576
New York—George Dickhont, Albany.....	.9555
Idaho—Guy Chlesman, Lewiston.....	.9549
Vermont—L. L. Lane, Chester.....	.9545
Massachusetts—G. L. Osborn, Brookline.....	.9540
Alabama—E. D. Flynn, Mobile.....	.9534
Tennessee—Tom D. Snowden, Memphis.....	.9525
South Dakota—Albert Wallace, Canton.....	.9514
Virginia—C. B. Stickley, Vaucluse.....	.9510
Delaware—Jas. L. Luke, Wilmington.....	.9495
Minnesota—J. E. Dickey.....	.9575
Florida—Harry E. Johnson, Haines City.....	.9480
North Carolina—D. H. McCullough, Charlotte.....	.9463
Missouri—E. S. Stofer, Kansas City.....	.9290
Dist. of Col.—F. P. Williams, Washington.....	.9235
Maryland—L. W. Abrams, Port Deposit.....	.9288
Louisiana—W. F. Taylor, Shreveport.....	.9252
Maine—W. N. Seavey—Lovett.....	.9241
Rhode Island—E. C. Griffith, Pascoag New Hampshire—C. S. Henry, Nashua.....	.9023
Arkansas—W. P. Smead, Osceola.....	.8833
CANADA	
Ontario—Sam Vance, Tillsonburg.....	.9528
Saskatchewan—E. M. Roush, Shaunovan.....	.9457
Quebec—Clifford Goodhue, Sherbrooke.....	.9121



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Big Fish In Suicide

Almost with tears in their eyes travelers report that one of the huge pet fish on exhibit in the Imperial hotel in Grangeville has committed involuntary suicide. The big fish, a brook trout raised from infancy by Charles R. Campbell, proprietor of the hotel, dashed his head against one of the rocks projecting out into the glassed pool in which he had frolicked for so many years. The fish, weighing probably five pounds, was one of a number which Campbell raised as pets at the hotel and which he removes into natural streams again once the boys get too big and rough for his glass pool. The fish are a constant source of delight to guests of the hotel who watch with apparent disinterest while some initiated guest carelessly rests his hand on the side of the pool. With a grand splashing of waters the fish make a wild charge at the hand with all the fury of untamed trout fighting a spinner.

IRISH WIT

Two Irishmen were excavating for a building, when a spectator inquired: "How is it, Pat, although you and Mike started work together, he has a bigger pile of dirt than you?" "Shure," was the quick retort, "he's digging a bigger hole."

PINTS AND QUARTS

Teacher: "Johnny, what is it called when four persons are singing?" Johnny: "A quartette."
Teacher: "And William, what is it called when two persons are singing?" William (after a brief hesitation): "A pintette."

Long Wounded Elk Lives

AN ELK that once refused to die though shot squarely between the eyes by some straight shooting hunter, has met his doom and today is in a taxidermist shop at Livingston for mounting. A Hysham, Mont., man journeyed to the regions surrounding Gardiner and after a search in the highlands spotted an elk. He brought down his game and, loading it on the train, headed for home. After reaching Hysham the man decided to have the fine specimen mounted. It was while preparing the elk for mounting that the discovery was made that the elk had survived a shot from a high powered rifle and lived to again roam the wilds of Park county.

Clayton L. Skillman, who made the discovery, said that there was a hole in the skull approximately an inch around where the bullet pierced the elk's skull. He said that in his opinion the wound was made more than two years ago, verifying his statement by showing that the skin had completely grown over the hole made by the bullet and that outwardly there was no sign of the wound.

New Lake Francis Hatchery and Spawning Station

SOME years ago Lake Francis, near Valier, in Pondera county, attracted the attention of the Fish and Game Commission as being ideal for a future spawning station. As Georgetown Lake was supplying all of the cut-throat or black spotted trout eggs for the hatcheries throughout the state it was decided to make a rainbow field at Lake Francis.

Several plants of sturdy rainbow fingerlings were made in the lake. They thrived well and in 1925 temporary traps were installed in the "feeder canal" which enters the west end of the lake. These traps were installed to enable the Department to secure such data as would be needed in the construction of permanent traps, such as to the volume of water in the canal at the spawning season, the number of fish to be handled, the weather and road conditions at that time of the year.

This proved a wise course to follow as it proved conclusively that a substantial structure would be needed to hold up against the great volume of water entering the lake at this season. It also proved that the only successful way of handling the eggs from the spawning station would be to erect a hatchery or eyeing station at that site on account of the road conditions making it impossible to transfer the eggs from the traps to the railway for shipment to the other hatcheries throughout the state as is done at the Georgetown field.

Construction work was started last

September. Traps, patterned much after those at Georgetown, were installed. Across the main canal is a structure known as a down stream trap which permits any volume of water to go over and down to the lake and at the same time stopping the fish and forcing them into the stripping pens on their journey upstream.

The stripping pens are built adjacent to the canal, the water entering the pens being regulated by dam boards at the two entries. A circular ripening pen 75 feet in diameter was built adjacent to the stripping pens in which the green fish are held until ready to strip.

The entire structure is built of concrete—the walls extending three feet and a half above the creek bottom and aprons installed where there is to be any action of the water which might cut out the bottom of the traps which are of gravel.

A building 70x40 feet was erected for the hatchery and living quarters for the employees. The hatchery unit consists of 40 troughs of a capacity of from ten to thirteen million eggs. The water supply for the building was secured from the canal and brought into the hatchery through a pipe line 2500 feet long.

BUT THE WIDOW PROFITED

"An undertaker was run over by an auto and died."
"He didn't make much on that funeral, did he?"
"No. In fact, he went in the hole."

Four-Footed Neck Pieces In Montana's Wilds



HOW'D you like to get into this splendid bunch of blue foxes and select a nice comfy fur for the sister, wife or sweetheart? This unusual picture, with all its winter

beauty, was taken at the Paramount Fox and Fur Farm, near Polson, while the blue boys were getting their morning repast.