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OCTOBER 1944

TEXAS Game AND Fish

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TEN
CENTS

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Water is man's greatest natural resource. It serves him in hundreds of ways and every man is dependent upon it.

Yet—on August 19, the Goose Creek Sun carried this report:

"Thousands of fish, including reds, flounder, catfish, specs, sheephead, mullet and crabs, were dying along the shores of the ship channel at Hog Island and Morgan's Point early today.

"Scores of residents of the area were along the shore line picking up the still alive fish that apparently wanted to leave the water because of some deadly chemical dumped into the channel upstream.

"M. P. Rogers, engineer on the graveyard shift on the state ferry at Morgan's Point, said he first noticed mullet trying to climb out of the water around the ferry slips at 2 a.m.

"At dawn today he saw the reds, trout, and sheephead trying to climb out on the bank.

"The fish would be struggling in the shallow water, Rogers said, and spectators would fling them back out into deeper water, but the stricken fish would turn around and come right back to shore.

"The water was clear and the only evidence of something wrong," he said, "was a white powdery stuff on top of the water. It looked as though it blinded the fish somehow and they didn't know what to do except to crawl out on the shore as if committing suicide.

"The shore line of the ship channel along Hog Island and Morgan's Point was lined with the dead fish and crabs, and others were coming in from the deeper water."

These fish and crabs were killed by pollution, inexcusable pollution.

Game Department officials are investigating this pollution which killed thousands and thousands of edible fish. The source will be determined and the person or persons responsible will pay a fine. But paying a fine will not end pollution. Many times the amount of the fine is a small price to pay for

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WILDLIFE IN THE BIG BEND



By **WALTER P. TAYLOR**

*Texas Cooperative Wildlife Research Unit**

NEWEST member of the American National Park system is Texas' own Big Bend National Park. Located in southern Brewster County in the big bend of the Rio Grande from which it takes its name, the park comprises an area some 708,000 acres in size, and includes not only the low country along the river, but also a number of mountain ranges the most important of which is the Chisos Mountains.

Among all the national parks in the United States the Big Bend National Park is unique in making up a complete biological unit, with high country and low country so that mammals, or birds, which move from the heights to the lowlands in winter, have a place to go. Many of the national parks, as for example Yellowstone, Mount Rainier and others of that type, include merely the mountain tops, the land surrounding being in National Forests and in private ownership, and frequently subject to uses in competition with wildlife.

The Big Bend National Park is primarily a great outdoor geological museum. Many of the processes of mountain making, erosion, vulcanism, and geological history are shown within its boundaries, but it is not primarily with

the geological side that we are here concerned.

A few months ago the National Park Service requested the Fish and Wildlife Service and the Texas A. and M. College to conduct an ecological survey of the area. In this survey, which was initiated in March of this year and in which Dr. W. B. McDougal of the National Park Service and Dr. W. B. Davis of the A. and M. College cooperated, the Texas Game, Fish and Oyster Commission has participated through its organic connections with the Texas Cooperative Wildlife Research Unit at College Station. As a matter of fact, The Texas Game, Fish and Oyster Commission has taken a pioneer interest in the Big Bend area through many of its officials, among them, Captain A. R. Williams of Alpine, who has long been known as one of the overseers of its wildlife resources.

Wildlife resources of the Big Bend, both plant and animal, are substantial and worthy of careful attention. Space is lacking for considering the more than 900 plants occurring in the Park except as they relate to some of the animal life.

Five principal plant formations provide habitats for the game and other birds and mammals of the Park. From lowest to highest there are the river bottom formation along the Rio Grande itself, with mesquite, wild tobacco, burro brush (*Hymenoclea*) with various reeds, and water-loving plants as its principal constituents; the desert-shrub formation, made up principally of creosote bush, lecheguilla, desert pineapple, and tar bush; the sotol-grass formation, occupying the foothills of the Chisos Mountains and embracing almost all of the other hills and mountains in the area (including the Dead Horse Range, Chilicotal Mountain, Tally Mountain, and the Mesa de Anguila) of which the principal constituents are various grasses, including gama grass, chino grass, and the sotol; the woodland formation, which is found higher on the foothills of the Chisos Mountains than the sotol-grass, and which includes a considerable variety of oaks, mountain mahogany, ash, and other brush; and the forest formation, which is confined to the cool canyons in the very highest portion of the Chisos Mountains, and which is marked by the Ponderosa pine, Douglas fir, Arizona cypress, and quaking aspen.

The game resources of the Big Bend

Mule Deer and Black Bear Making Last Stand For Survival in Mountainous Big Bend Area

are of outstanding significance and interest. Perhaps the most noteworthy of the animals is the mule deer, which while confined very largely to the desert-shrub type, invades also the river bottom types along the Rio Grande in one direction, and the grass-sotol formation in the lower foothills in the other. Over a good many years the mule deer has had to bear the brunt of competition from considerable numbers of livestock, including cattle, horses, sheep and goats. The setting up of the Park will mean that the mule deer will have a chance to increase its numbers and become much less timid and more in evidence than is the case at present. Borell regards the mule deer as the most important game animal in the Park.

I do not know whether I would quite agree with him on this, as my own preference must be given to the flag-tailed deer, the so-called Carmen Mountains white-tailed deer, which occurs above the range of the mule deer in the Chisos Mountains proper. This little deer, with its conspicuous white tail, is the neatest of all the white-tailed deer found in the State of Texas. As it dashes out of sight in the brush of the higher Chisos Mountains, or grazes and browses in the flats, it is certainly one

of the most fascinating of all possible sights and scenes within the Big Bend National Park.

The peccary, or javelina, is found in a limited area north of the Chisos Mountains and in the direction of Cooper's Store along the Tornillo Creek and its tributaries. For some reason this species is restricted in distribution. Perhaps as it receives the full benefit of protection the peccary will increase.

Another game species of unusual importance is the black bear, which is still to be found in the higher portions of the Chisos Mountains, especially in the vicinity of the Laguna, Boot Canyon, and Panther Creek. As hard pressed as the black bear is in the Davis Mountains and other portions of its former habitat, its occurrence in the Big Bend National Park may well save it as a game species in Texas. Here at least it will have asylum from its pursuers and will be enabled to carry on its life without doing any harm to anybody or without persecution from others or its enemies.

The area is noteworthy as a home and habitat for predatory animals, including the coyote, which dwells commonly on the flats; the bobcat, which may be found almost anywhere; the gray wolf which comes in occasionally across the Rio Grande from Mexico; and the mountain lion which is a characteristic denizen of all suitable rough territory within the Park. It also possesses a whole complement of fur animals, including the ring-tailed cat, swift fox, gray fox, badger, and three kinds of skunks.

Among the game birds of the Big Bend are to be included a number of species of ducks and other water birds which occur along the Rio Grande in small numbers; mourning doves, which are fairly common all over the Park; the Western white-winged dove (a different subspecies from that occurring in the Lower Rio Grande Valley), which is of general distribution in summer; the band-tailed pigeon, which is to be found in Boot Canyon and sometimes in The

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FEATHERED FLIGHT

By HILBERT R. SIEGLER

PERHAPS no subject comes in for more discussion among duck hunters than that of the hunting season. There are as many opinions in regard to the time at which the season "ought to be open" as there are hunters. All, however, have one wish in common: they want the season open when the most ducks are here. From there on out opinions begin to differ, for very few hunters know when the greatest number of ducks are present.

During the past six years the writer has made a study of waterfowl migrations through eastern Texas. The results of these studies are presented herewith so that sportsmen might have data to back up their arguments.

It is necessary first of all to know that several types of waterfowl migrations occur through the inland part of Texas. There are the big fall and spring flights most of us think of in connection with the term "migration." During these two periods of the year a vast multitude of ducks and geese pass over the State on their way to the Coast or farther, and then back again to their nesting grounds in the North. At this time numerous ducks, geese, and non-game waterfowl species use the many small lakes of inland Texas for intervals of several hours to several weeks as resting and feeding places. Their ultimate objective is however a goal beyond this region. For this reason this flight is of transient importance only to the sportsmen of this region in so far that it offers a limited amount of hunting on many of the lakes, particularly during the early part of the season. Another type of migration occurs in this region when some species of waterfowl have inland Texas as their ultimate goal. They come to this region to stay for the winter. Although some individuals of all duck species which pass over Texas spend much of the winter in the State, the common mallard, the ring-necked duck, and the lesser scaup are the most common winter residents in eastern Texas. This type of migration is most important to the inland waterfowl hunter. It produces most of the river bottom hunting during the latter part of the season; it brings on the greatest duck concentrations; and finally, it is that part of the waterfowl population which will stay with us until spring.

It is not surprising that the average sportsman does not have a clear picture of what takes place during these migrations. His observations are generally made in one locality. He is not in a position to gather data from numerous localities at the same time and over a long period of time. Consequently his picture of migration is quite incomplete. In fact, so complicated is the migration picture in Texas that it can not be described in a few simple paragraphs. Every month, with the exception of

June and July presents a different picture. Populations and species ratios are in a constant state of flux, rising and falling as the ocean waves. The only resemblance to regularity occurs in the order in which duck and goose species put in their fall appearance. In spring the picture becomes complicated due to the fact that some individuals of most species are prone to lag while the greater number of their kind leave for the North.

A thumb-nail sketch of the waterfowl picture in inland eastern Texas is as follows: In June and July wood ducks and occasional pairs of mallards are the only ducks present—some blue-winged teal appear the first part of August and thereafter quickly increase—pintails, pied-billed grebe and American coots appear the last part of August—pintails top the list by the end of September while blue-winged teal populations decline—in October the American coot population abruptly rises to first place—between the middle of October and the first week in December at least twenty different species of ducks and geese can be seen in eastern Texas—scaups, ring-necked ducks, and pintails are the most numerous migrants during

this period, although a spectacular goose flight takes place the last two weeks in October—the peak of these duck migrations is reached between November 1 and 15—mallards, which first appear around October 15 show only a slight increase until the first cold spell around Thanksgiving time when their numbers show an abrupt rise to surpass in numbers all other species combined during December and January, while the ring-necked duck ranks second in numbers—pintails again become numerous toward the end of February while mallard flocks begin to decline—the greatest variety of waterfowl species passes northward through eastern Texas during March—by the end of April most species have left while the American coot again leads the list, although blue-winged teal and shovelers are still common—thereafter wood ducks once more reign supreme with only an occasional pair of mallards to keep them company.

With these statistics in mind let us get back to the question of the hunting season. There are two major issues at stake: waterfowl conservation and good waterfowl hunting. We shall let the United States Fish and Wildlife Service tend to the conservation end of it, since this is the only organization which has an over-all bird's-eye view of waterfowl conditions on this Continent. Our only concern in this article is good

hunting in the inland portion of northern and eastern Texas.

Let us assume that hunters were allowed only thirty days of hunting during the year, but had their choice as to the month in which to hunt. I believe in the inland part of the State January would be their best choice. Each fall and winter month will of course have some advantage over other months. In October the greatest number of pintails and geese pass over on their way to the Coast. Quite a few blue-winged are also still here. However, all of these are passing through and offer only transient hunting. If they were hunted they would probably hurry on to the Coast just a little sooner.

In November we have the greatest variety and greatest number of ducks passing through. For this reason November is better than October. Most of these ducks and geese are however also transient. Not until December do large flocks of resident ducks, in particular mallards, begin to show up. It is during this time that the expert duck hunter begins to bring in his bag limit. Strangely enough, the amateur hunter will have made his several hunts in the beginning of November during the warm weather, will have found hunting poor, and will then have put up his gun thinking that all the ducks have already passed on to the Coast. It is still a mystery why hunters should flock to our lakes by the thousands on the opening day of the

Best Time to Quickly Get Your Bag Limit of Ducks in Inland Texas Is During January

duck season, and then when the greatest number of ducks are here toward the end of the season, one can find but few hunters.

There are as many resident ducks in eastern Texas during January as there are in December. Oftentimes the winter rains do not start until January. This month would therefore offer the advantage of more ducks and also flooded river bottoms. I would consequently select January as the best all around month for duck hunters.

Many ducks are here in February. In fact, many pintails are then again on their way north. However, numerous mallards begin to drift northward at this time. If they were hunted they might simply be induced to leave sooner. At the same time, many ducks are then already mated. Too many hunters would consider it unsportsmanlike to shoot at mated ducks in spring when they are generally tamer than ordinarily.

On the basis of migration and waterfowl population studies I would consequently advise the amateur hunter to try some hunting in December and January. This advice is unnecessary for the good hunter. You will generally find him doing his best hunting at this time. At the same time, let us hope that the Fish and Wildlife Service will eventually see fit to extend our present season.

1944 Migratory Waterfowl Hunting Regulations



DUCK hunters get a break this year. The season has been extended 10 days and an extra five ducks await the hunter who knows his ducks.

The duck and goose season opens on November 2 and ends on January 20. Last year the season ended on January 10.

The daily bag limit on ducks is 10, but there is a clause in the new regulations which permits a hunter who knows his ducks to get an extra five ducks per day. The regulations permit a hunter to take an additional five mallards, pintails or wigeons, or an additional five in the aggregate of all of these species.

Mallards, pintails and wigeons are the principal grain eating ducks. They feed in the grain fields and rice fields. Their numbers have increased so much during the past few years that the daily bag limit regulations have been liberalized to give protection to farmers and rice growers.

The regulations also permit a reduction of the heavy population of so-called fish eating ducks. The regulations provide that a person may take 25 of American or red breasted mergansers, all of both such species in one day.

The limit for coot remains the same—25 in one day. This limit on coot has been in effect for a number of years but the hunters apparently have been passing up the coot for the other species of ducks because the 25 per day bag limit has not reduced the number of coot. Coot are a menace to the ducks in some portions of the Texas coast because they compete with ducks for food.

The regulations also have been liberalized in regard to the take of geese. Last year a person was permitted to kill two geese and four additional blue geese. This year the regulations are liberalized to provide for two geese and four additional blue geese and snow geese. In other words, if your bag contains as many as four of snow or blue geese, or of both these species, you may possess a total of six geese. The inclusion of lesser snow geese was provided because of the great increase in these birds and their destructiveness in some sections of the rice country.

The dove season is underway in the North Zone. It opened on Sept. 1 and ends on October 25. In the South Zone, the season opens on Oct. 20 and ends on

Dec. 14. This 55-day season this year is 13 days longer than the 1943 season.

The whitewing dove season is over. The whitewings were taken on the afternoons of Sept. 15, 17, 19, 21 and 24 in Cameron, Hidalgo, Starr, Zapata, Maverick, Webb, Dimmit, LaSalle, Jim Hogg, Brooks, Kenedy and Willacy counties. The mourning dove season in these counties will be from Oct. 20 to Dec. 9.

The bag limit on mourning doves is the same as last year with not more than ten of either species or more than ten of both species. Possession is limited to one day's kill.

The North Zone in Texas this year was extended by including Henderson, Smith, Gregg, Harrison, Marion, Upshur, Wood, Rains, Van Zandt, Camp, Franklin, Titus, Morris, Cass, Bowie and Red River counties.

Antelope become legal prey for the first time this year in certain counties of West of the Pecos river. A special hunting permit is required to hunt antelope. The permit is issued by the Game Department and costs \$5. The season opens on October 2 and ends on October 11. The bag and possession limit is one buck antelope.

Answering Your Questions

GAME BIRDS AND GAME ANIMALS

Property of State. All wild birds and wild animals belong to the people of this State.

Game Animals. Deer, elk, antelope, wild sheep, bear, squirrels and peccary or javelina.

Game Birds. Turkeys, ducks, geese, brant, snipe, grouse, prairie chickens, pheasants, quail or partridges, wild pigeons, doves, chachalaca, plover and shore birds of all varieties.

Non-Game Birds. Unlawful to kill or have in possession either dead or alive.

Unprotected Birds. English sparrows, golden eagles, or Mexican brown eagles, crows, ravens, vultures or buzzards, rice-birds, road-runners, goshawks, Cooper's hawk or blue darter, sharpshinned hawk, duckhawk, jay-birds, sapsuckers, blackbirds, starling, woodpeckers, butcher birds or shrike, and the great horned owl. Canaries and parrots as domestic pets are unprotected.

MOURNING DOVES AND WHITE-WINGED DOVES

Daily bag limit—10 a day either or both species in the aggregate. Not more than one day's kill in possession.

OPEN SEASON FOR MOURNING DOVES

North Zone—Sept. 1 to Oct. 25, both days inclusive. (North Zone is composed of Kinney, Uvalde, Medina, Bexar, Comal, Hays, Travis, Williamson, Bell, Falls, McLennan, Hill, Navarro, Henderson, Gregg and Harrison counties and all counties north and west of the counties named.)

South Zone—Oct. 20 to Dec. 14, both days inclusive. (South Zone includes remainder of the State with the exception of Cameron, Hidalgo, Starr, Zapata, Webb, Jim Hogg, Maverick, Brooks, Dimmit, LaSalle, Kenedy and Willacy counties.)

Mourning doves may be hunted in Cameron, Hidalgo, Starr, Zapata, Webb, Jim Hogg, Maverick, Brooks, Dimmit, LaSalle, Kenedy and Willacy counties only on Sept. 15, 17, 19, 21 and 24, from 12 o'clock noon until sunset, and from Oct. 20 to Dec. 9, from one-half hour before sunrise to sunset.

OPEN SEASON FOR WHITE-WINGED DOVES

Sept. 15, 17, 19, 21 and 24. White-winged doves may be hunted only in Cameron, Hidalgo, Starr, Zapata, Webb, Maverick, Dimmit, LaSalle, Jim Hogg, Brooks, Kenedy and Willacy counties from 12 o'clock noon until sunset.

Means of Taking—Mourning doves and white-winged doves may be taken only with a shotgun. No repeating or auto-loading shotgun that is capable of holding more than three shells in the chamber and the magazine may be used. No shotgun larger than 10 gauge may be used.

Protected Area—Unlawful to shoot white-winged doves or chachalacas between Rio Grande River and U. S. Highway 83 from the Zapata-Starr County line to the west boundary of the City Limits of Brownsville.

DUCKS, GEESE AND COOT

Open Season—Nov. 2 to Jan. 20, both days inclusive.

Shooting hours—Half-hour before sunrise to sunset.

BAG LIMIT

Ducks—10 a day, including not more than one wood duck, and in addition, five singly, or in the aggregate of mallards, pintails, or widgeons. Possession limited to two-day's kill.

Coot—25 a day or in possession.
Geese—2 a day, not including blue or snow geese, and in addition, four singly, or in the aggregate of blue or snow geese. Possession limited to two day's kill.

Warning—Not more than one day's limit of ducks and/or geese may be possessed on opening day of season.

Ducks, geese and coot may be possessed for only 45 days after the close of the season.

RAILS AND GALLINULES

Open Season—Sept. 1 to Nov. 30, both days inclusive.

Bag Limit—15 in the aggregate of all kinds and a possession limit of not more than 15.

AMERICAN AND RED BREASTED MERGANSERS

Open Season—Nov. 2 to Jan. 20, both days inclusive.

Bag Limit—25 per day. Possession limit 25. No person over the age of 16 may hunt ducks, geese or coot without a Federal duck stamp (procurable at post offices) and a hunting license wherever required.

Means of Taking—No baiting or live decoys permitted, or the taking of waterfowl by means, aid or use of cattle, horses or mules.

May not use shotgun larger than 10 gauge. May not use auto-loading or repeating shotgun capable of holding more than three shells, including those in the magazine and chamber.

May not take waterfowl from any power-driven boat or boat under sail.

“HOW many ducks can I shoot this fall?” inquires a hunter. “Yes, I’ve read the regulations but I’m still puzzled by some of the legal terms. I want to clear up a few points.”

The duty of seeing to it that these regulations are enforced falls on the game management division of the U. S. Fish and Wildlife Service. W. E. Crouch, chief of the division, answers the following questions:

Question: Does the daily bag limit on ducks remain at 10?

Answer: Yes, except that you may take an additional bag only of 5 mallards, widgeons or pintails, or any combination of these three ducks.

Question: But suppose my first 10 ducks were all mallards—Can I shoot 5 more mallards for a total of 15?

Answer: Yes. And the answer would be the same if you had asked about pintails or widgeons.

Question: Can I kill 5 more black ducks if I have a bag limit of 10?

Answer: No. The black duck is not a mallard although often erroneously called a black mallard.

Question: Why the extra bag on these particular ducks?

Answer: Because they are now the most abundant species. They are the species most often concerned with crop damages. Frankly, we hope to control their depredations as much as possible by allowing hunters a larger bag. Bear in mind this is only a temporary relaxation. The extra bag might be cut off at any time. It certainly will be when they cease to be a problem in crop damage.

Question: What about canvasbacks, redheads and buffleheads?

Answer: This year you may take a full daily bag of 10 canvasbacks, 10 redheads, or 10 buffleheads. But not more than 10 in the aggregate of the three kinds.

Question: What’s the law on wood ducks?

Answer: You are permitted to take daily 1 wood duck and to have not more than 1 wood duck in your possession, except in Massachusetts and North Dakota where no open season is provided.

Question: Does this 1 wood duck count in my daily bag limit?

Answer: Yes, it must be included.

Question: What is the possession limit on ducks?

Answer: 20, and in addition you may possess 10 mallards, widgeons or pintails, singly or in combination.

Question: Why has the daily bag limit on American and red-breasted mergansers been boosted to 25?

Answer: They have become so numerous that trout waters are being depleted by them. In some places they are now a real menace to fish propagation. Incidentally, there is no possession limit on them.

Question: The daily limit on coots is also 25, isn't it?

Answer: Correct. Coots compete with the ducks for food. Hunters ought to take more coots; learn to cook them. We have a number of interesting recipes which will be mailed free on request. Just address U. S. Fish and Wildlife Service, Merchandise Mart, Chicago 54, Illinois.

Question: What about goose limits?

Answer: There is no change from last year on Canada geese and brant. The daily limit is 2, possession limit 4. These may be all Canada geese, all brant, or any combination of the two.

Question: May I legally shoot a Ross' goose, swan or crane?

Answer: No open season at any time.

Question: How about snows, blues and white-fronted geese?

Answer: In Texas the new daily bag may include 4 snow geese, 4 blue geese, but not more than 4 in the aggregate of both kinds plus 2 of Canada and white-fronted geese and brant singly or in the aggregate. Possession limit, two daily bag limits.

Question: What time in each day of the open season is waterfowl shooting allowed?

Answer: From half an hour before sunrise to sunset.

Question: What else do I need to know about the regulations before I go duck hunting this fall?

Answer: Don't forget to have with you, when required, a State Hunting License and a Federal Duck Stamp. These are the first two things the enforcement officer will want to see.

Question: When is a Federal Duck Stamp required?

Answer: Every waterfowl hunter over 16 years of age must have on his or her person while hunting a properly signed migratory bird hunting-stamp of current issue.

Question: When is a state hunting license required?

Answer: Duck hunters in Texas must have hunting licenses.



May not take ducks or geese on any State or Federal refuge or preserve, or take them from any enclosed private property without the consent of the owner or agent of said property.

Harrison and Marion Counties: License required for operation of commercial blinds for use in hunting ducks, geese or other waterfowl. Price \$5 for each blind. Such license is not required of sportsman hunting in private blinds. All blinds, whether commercial or private, must be spaced at least 300 yards apart.

Shooting allowed only with shotgun and bow and arrow. Shotgun larger than 10 gauge prohibited. Repeating or automatic shotguns must be permanently plugged to three shell capacity.

WILDLIFE SANCTUARY

Vingt et Un Islands in Galveston Bay are a wild-life sanctuary. It is unlawful to enter upon these islands for any purpose without permission of the Game, Fish and Oyster Commission.

Rockport Wildlife Sanctuary. Unlawful to take any birds or animals (Boundaries described by suitable markers in Rockport area.)

Lake Corpus Christi (except that part of the lake located in Jim Wells and Nueces Counties). Unlawful to enter with gun or rifle, or to attempt to shoot any bird or animal.

Wichita County. Hunting, except for ducks and geese, prohibited in certain marked areas in and near Wichita Falls. For boundaries consult local Game Warden.

Hunting prohibited at all times in public parks under control of State Parks Board.

Hunting doves, ducks, geese or other migratory birds prohibited at all times on military reservations, except Matagorda Island.

PRAIRIE CHICKENS OR PINNATED GROUSE

No open season.

QUAIL

Open Season. Both North and South Zones—December 1st to January 16th, inclusive. If shotguns are used they must not be larger than 10 gauge and must be permanently plugged so that they will hold no more than three shells.

Bag Limit: 12 a day and not more than 36 a week.

Possession Limit: 36.

The following counties have no open sea-

son: Andrews, Duval, Scurry (in Precinct No. 3).

West of Pecos River: Wild quail, except Mearns quail or Fool quail for which there is no open season, November 16 to December 31, both days inclusive. Daily bag limit 12; possession limit 24.

Andrews County. Unlawful to take quail until December 1, 1948.

Camp County. Unlawful to take quail except on Friday of each week and legal holidays during the period December 1st to January 16th, inclusive.

Delta County. Unlawful to take quail except on Mondays, Wednesdays and Fridays of each week during period December 1 to January 16, inclusive.

Duval County. Unlawful to take quail until December 1, 1946.

Franklin County. Unlawful to take quail except on Mondays, Wednesdays and Fridays of each week during the period December 1 to January 16, inclusive.

Guadalupe County. Unlawful to take quail except on Sundays and Wednesdays of each week during the period December 1 to January 16, inclusive.

Hopkins County. Unlawful to take quail except on Mondays, Wednesdays and Fridays of each week during the period December 1 to January 16, inclusive.

Kaufman County. Unlawful to take quail except on Mondays, Wednesdays and Saturdays of each week during the period December 1 to January 16, inclusive.

Scurry, Precinct No. 3. Unlawful to take quail until December 1, 1948.

Smith County. Unlawful to take quail except on Mondays, Wednesdays and Saturdays of each week during the period December 1 to January 16, inclusive.

Van Zandt County. Unlawful to take quail except on Mondays, Wednesdays and Fridays of each week during the period December 1 to January 16, inclusive.

Wood County. Unlawful to take quail except on Mondays, Wednesdays and Fridays of each week during the period December 1 to January 16. May not hunt quail on premises of another without written consent or oral consent given in presence of two witnesses.

Comanche, Erath, Henderson, Hood, Montague and Panola Counties: Unlawful to hunt quail on land of another without written permission from owner except when in company of owner. Applies only to persons who are not residents of these counties.

CHACHALACA

Open Season: December 1 to January 16, inclusive. If shotguns are used they must not be larger than 10 gauge, and must be permanently plugged so that they will hold no more than three shells.

Bag Limit: Five per day, not more than 10 in any seven-day period.

Possession Limit: 10.

PILOVERS

No open season.

WILD SHEEP AND ELK

No open season.

ANTELOPE

Open Season: October 2, through 11 in certain localities west of the Pecos River. No hunting permitted except on permit issued by Game, Fish and Oyster Commission. Cost of permit \$5.

Bag and Possession Limit: One buck antelope per season.

BEAR

Open Season: November 16 to December 31, both days inclusive.

Bag Limit: One a season.

Hardin County. No open season.

Liberty County. No open season.

West of Pecos River: Open season, November 20 to November 25, both days inclusive. Limit, 1 bear per person per season.

DEER (Bucks with Pronged Antlers)

Open Season: East of Pecos River, November 16 to December 31, both days inclusive. West of Pecos River: November 20 to November 25, both days inclusive.

Bag Limit: East of Pecos River, two bucks a season. West of Pecos River: one white-tail deer per season; one blacktail or mule deer per season.

SPECIAL LAWS ON DEER

The following counties have no open season: Borden, Bowie, Brazos, Briscoe, Burleson, Calhoun, Camp, Cass, Childress, Cottle, Dickens, Duval, Fannin, Fayette, Floyd, Garza, Glasscock, Grimes, Hall, Haskell, Hemphill, Irion, Kent, Lamar, Lee, Liberty, Marion, Montgomery, Motley, Palo Pinto, Reagan, Red River, Roberts, San Jacinto, Schleicher, Scurry, Shackelford, Shelby, Stephens, Sterling, Stonewall, Throckmorton,

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ABOUT KEEPING DEER IN A PEN

By DANIEL W. LAY

Director, Wildlife Restoration

A PET whitetail fawn being raised on a bottle endears itself to all who see it. But what about its future?

A few adult does remain gentle; but as a rule the "pet" value of captive deer disappears with the spots as the fawns pass their first summer. After that it is a lifetime behind an eight-foot fence, on display for the occasional visitor. And the bucks are violent and dangerous during the breeding season.

Some think these deer in pens are well cared for. They are protected from danger. They are fed "better" (cow feed) than they get in the wild where they are forced to eat coarse browse. They even have shelters (which they don't often need) to protect them from inclement weather.

But are they well nourished? If they are, why are the coats of most captive deer dull and ragged? One man having deer in a pen told me this couldn't be for lack of proper food because his pen was knee-high in broomsedge grass. What he didn't consider is that deer don't eat much grass. They are essentially browsing animals. If he had looked at his pen closely, he would have discovered that the deer had shown such strong preference for blackberry briars, green briars, sweetgum sprouts, and oak leaves and buds that these plants had been killed by excessive browsing.

The daily task of hauling in enough native browse to keep a herd of deer satisfied is prohibitive. The only alternative is to feed commercial livestock feeds. So far as we know, none of the feeds developed for domestic animals constitutes a balanced and proper ration for deer. This does not mean they won't live on cow feed. Even wild deer will eat grain, corn and the Game, Fish and Oyster Commission uses cottonseed cake as bait in trapping operations. But these feeds fail to give the proper balance deer get in the wild.

Even large pens with some native feed are unsatisfactory. We have observed pens with more than 100 acres of native brush in which deer did well temporarily but eventually became overcrowded. There is no suitable way to keep the population in balance with the native feed in a pen, because this would mitigate the purpose of the pen. A hundred-acre pen with ideal native range might carry ten deer, year around. But if the pen contained no more than ten deer, the owner would rarely have the pleasure of seeing his captives.

The same 100-acre pen with more than ten deer requires artificial feeding, at least in winter. The herd may increase to 40 or 50 but the feed bill will be terrific and the animals will look rough and unhealthy.

The surplus animals in a pen are not satisfactory for use in restocking native range. They are pets and such animals

when released have repeatedly gone to the nearest house or the nearest vegetable garden immediately. House noises such as the barking of dogs attract them instead of frightening them. So they can hardly be placed in the wild with any hopes of their helping to restock the range.

Although it is legal for the owner to kill the bucks in a pen during the regular open hunting season, few if any ever do. This leaves the sex ratio approximately half and half, which is an undesirable condition. Only one buck to four or five does is needed. The surplus bucks fight viciously and readily attack anyone who enters the pen.

Some will say that if they hadn't picked up the "orphaned" fawns that

started the penned herd, the fawns would have died. The truth is the fawns probably were not orphans. Does regularly leave their fawns for short periods while they are feeding and watering; but they don't forget where they left them. And they won't return while a person is with the fawn.

If a doe is known to have been killed leaving a real orphaned fawn, perhaps the most humane procedure is to raise it in a rural place close to its native range and permit it to go wild when it is old enough and has the urge. This seems to be the only condition under which deer should be kept captive.

Zoos must, of course, keep captives to serve their purpose of education. But private individuals rarely serve this purpose enough to outweigh the poor living conditions they force upon deer in pens.

Get the Law On Your Side BEFORE YOU SHOOT

By J. G. BURR

GAME and other forms of wildlife were property of the State by statutory enactment for quite a while before any appreciable law enforcement took place and most people were not much concerned with what seemed to be an empty claim of ownership.

But when game wardens in numbers began to fan out over the State, which really got well started in 1923, the law then became a living thing and no longer a dead letter. But it took some time before an awakening to the fact that a man could not go on his own land and kill game without observing bag limits and closed seasons. Thus were the prerogatives of a free people somewhat reduced, offending the discriminating taste of many people who had been accustomed to the use of large quantities of the native rights of man. It looked like the liberty that had been made famous by Patrick Henry was going out of fashion. However, when it became understood that restrictive laws were altruistic and served a common good, compliance with the laws became more acceptable.

Thus, when the game warden began to mingle with the people and ceased to be a myth and in the opinion of some, became an awful reality, many people saw a game warden for the first time. On closer inspection they found him to be human and in all essentials a type of the genus homo.

The warden personnel of that time was made up largely of men who were

experienced in the law, peace officers, ex-sheriffs and ex-rangers with a sprinkling of others who wouldn't know a "change of venue" if they met it in the road.

Numbered among these wardens was a former ranger captain who had pioneered as an Indian fighter in the early days and had been a peace officer most of his life. He had fought Indians at the age of 15, so he claimed. At the age of 70 he was as fine a specimen of manhood as the best of them and asked no odds of any man in any undertaking. His name was Drew K. Taylor and he was assigned a station in one of the far western counties. It looked like he would fit into such an environment and this proved to be abundantly true, but before further recital of happenings in the game fields permit this bit of history.

In his later years Taylor published a story of his life entitled "Taylor's Thrilling Tales of Texas." When his wife first saw the manuscript she rebelled saying that she did not want it known that she was living with a man who had killed so many people. How much of the history was deleted is not known but he yielded to the wishes of Mrs. Taylor. Said he one day, "They say that I killed some people that I ought not to have killed but those were the days when we shot first and investigated later."

So that is the man who took his station in a far western county "where the deer and the antelope play" and

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HOW *Pittman-Robertson* ACT WORKS

By C. S. BEDELL

Director, Sportsmen's Service Bureau,
Sporting Arms and Ammunition Institute

ALTHOUGH the Federal Aid in Wildlife Restoration Act, commonly called the Pittman-Robertson Act, is now nearly seven years old and has received considerable publicity, recent inquiries from sportsmen and others indicate that there still exists some uncertainty as to just what it is and how it operates. The following is an attempt to repeat in brief from some of the information already released on the broad purpose and more important provisions of the Act, and to give some idea of its scope.

On September 2, 1937, the President signed this bill, defined as an Act to provide that the United States shall aid the States in wildlife restoration projects and for other purposes. This act authorized the setting apart in the Treasury of an amount equal to the annual total excise tax on sporting arms and ammunition in a special fund to be known as "The Federal Aid to Wildlife Restoration Fund" and further authorized annual appropriations from this fund for the use of the various States for approved wildlife projects. At the time the bill was passed a 10% excise tax on sporting arms and ammunition was in force. Subsequently (July 1, 1940) this tax was increased to 11%.

The annual appropriations made by Congress each year under this act are subject to a deduction of not more than 80% for the use of the Fish and Wildlife Service in administering the act. The remainder is then allocated to the States, half in the ratio that the area of all the States, and half in the ratio that the number of paid hunting-license holders of each State in the preceding fiscal year bears to the total hunting-license holders of all the States.

Since 1939, when the first Pittman-Robertson appropriation was made, Congress has appropriated a total of \$10,000,000 from the Federal Aid to Wildlife Restoration Fund. Deduction of administration expenses from this total left \$9,158,000 actually apportioned for the use of the States, and \$72,600 for the use of Alaska, Puerto Rico and the Virgin Islands. As each State must also put up 25% of the total cost of projects approved by the Fish and Wildlife Service (an amount equal to 33 1/3% of the federal funds allocated to the States), the \$9,230,600 apportioned for the fiscal years 1939-1944 inclusive (see table) has been supplemented by \$3,052,666.67 in additional obligations assumed by the States, bringing the total funds available for wildlife restoration over this period to \$12,283,266.67.

Before a State may qualify to receive the benefits of Federal Aid in Wildlife Restoration, it must pass enabling legislation assenting to the provisions of the Act and, to quote the Act, "shall have passed laws for the

conservation of wildlife which shall include a prohibition against the diversion of license fees paid by hunters for any other purpose than the administration of said State Fish and Game Department."

A State must also give notice of its desire to participate within 60 days after receiving certification of apportionment of funds, or forfeit its right to money earmarked for its use. Likewise, it must expend or obligate the full amount of funds apportioned for its use for a given fiscal year by the end of the fiscal year following or lose the right to use the unobligated amount.

The Act specifically limits use of Pittman-Robertson funds to three general groups of projects as follows:

1. Land purchase for wildlife restoration.
2. Land developed to make public-owned areas more suitable for wild mammals and birds.
3. Research aimed toward the solution of problems in wildlife management.

It is interesting to note that the development of public shooting grounds or controlled hunting as a means of harvesting game crops must be a secondary consideration, merely incidental to the main purposes of any project. The object of the Act is to

use arms and ammunition taxes to provide better sport by producing more game, and not merely to provide places from which it may be taken by the hunter.

No permanent improvements may be made on privately owned lands. Temporary structures, fences, trees and shrubs, may be placed on lands leased or otherwise controlled by the state game department for sufficiently long periods to insure material benefit to wildlife. Likewise, use of Pittman-Robertson funds may not be employed for establishment of nurseries and game farms, the output of which might be used over wide areas not controlled or managed by the State. Purchase of shrubs, trees, and other plants for use on project areas, or of game birds or other animals for seed stock, may be approved where need of such action is evident.

There now exists, in the Federal Aid to Wildlife Restoration Fund, a substantial accumulation of unappropriated sporting arms and ammunition taxes. This will serve as a reservoir from which Federal Aid appropriations may be made during these war-time years when sales of sporting arms and ammunition (hence taxes upon them) are very much smaller than in normal years. It will also provide a source of revenue to help finance such postwar game restoration activities as may be necessary to improve recreational facilities and to help create employment for our boys upon their return.

Federal Aid funds apportioned to States	1939	\$ 890,000.00	
Territories and Islands from Federal appropriations	1940	1,400,000.00	
	1941	2,300,000.00	
	1942	2,570,600.00	
	1943	1,150,000.00	
	1944	920,000.00	\$9,230,600.00
Plus State obligation (33 1/3% of \$9,158,000)			3,052,666.67
Total made available for Wildlife Projects in States, Territories and Islands			\$12,283,266.67

PARASITES IN WILDLIFE

Sportsmen are sometimes surprised to find that fish or game they are handling is "wormy." Various worm-like animals are occasionally found in the lungs, intestines, or other parts of an animal's body. Sometimes they may be seen emerging from the mouth of fish awhile after the fish has been caught. Others appear as small, white sac-like bodies, called cysts, in the flesh of fish and other animals. The majority of wild birds and mammals are infected with some of these organisms. These also give rise to some of the most trying problems in veterinary medicine.

These organisms are parasitic worms of two major groups; the Platyhelminthes, consisting of the flukes and tape-worms, and the Nematelminthes, consisting of the roundworms and the thorny-headed worms. Both groups contain forms which live in the water, or on land. These are called 'free-living.' That is, live outside of animal host and are non-parasitic. A good example is to be found in the garden nematode which attacks the roots of some vegetables. The parasitic forms are by far the more important to man. While

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Big Bend

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Basin in the higher Chisos Mountains, but seemingly never becomes common; and the Arizona scaled quail, which is the most important game bird in the Park. This scaled or blue quail is quite generally represented in parts of the Park, but may be expected to become considerably more numerous and widely distributed as competition from livestock decreases and the grasses, weeds, and other vegetation which are so necessary to its existence become more abundant.

The status of the Mearns quail, or fool quail, is uncertain. Formerly known to occur in the higher portions of the Park, our party did not succeed in finding a single one during the present season. Possibly overgrazing by goats has had a very detrimental effect upon it. It is to be earnestly hoped that this strongly marked game bird—one of the rarest and most attractive in the entire State—may be rehabilitated, but we cannot tell as yet whether this will be possible.

The original Big Bend project contemplated an international park, with portions on both sides of the Rio Grande. It is earnestly to be desired that the international phase of this project may be completed at an early date, and that an area, at least comparable with that on the United States side of the line, may be set aside in Mexico. Such an area would embrace a large portion of the Sierra del Carmen Mountains, including the high country in the Fronteriza range, and a large scope of country opposite the present Big Bend National Park. This area on the Mexican side of the line should then be counted on to furnish an additional amount of wildlife to our own Big Bend National Park, as there is reported to be considerably more favorable habitat on the Mexican side of the boundary than we have on the American side. For example, in the Fronteriza range there is said to be a considerably greater scope of forest country than is present in the Chisos. Suitable rough country for such species as bighorn sheep is even more obvious on the Mexican side than on the American side, and of course the Rio Grande affords no barrier at all to the passage of either man, beast, or wild game to and from Mexico.

There is every reason for the citizens of Texas to be more than proud of the Big Bend National Park. The setting aside and development of this park ultimately should afford Texans for all time the opportunity of viewing natural conditions as they were many years ago in the arid and semi-arid portions of the great southwestern country of which the Big Bend National Park is so interesting a sample.

*Fish and Wildlife Service, United States Department of the Interior; Agricultural and Mechanical College of Texas (Research, Education, Extension); the Texas Game, Fish and Oyster Commission; and the American Wildlife Institute, cooperating.

Pollution

■ Continued from page 3

disposing of poisonous waste by simply dumping it into the nearest stream of water.

Most of the industries in Texas are cooperating with the Game Department in curbing pollution of the State's streams and lakes. But every now and then some workman, unknown to the management, takes the easy way out—he dumps his poisonous waste into the water.

The fish in the streams and lakes of Texas belong to the State and consequently every citizen of the State has an interest in them. And they can help the Game Department curb pollution. It is their problem as much as it is the Game Department's problem. They can insist that industries dispose of their poisonous waste by safe methods. Strong pressure by local groups frequently will do the trick.

There is no excuse for pollution. Let's end it now!

Get the Law

■ Continued from page 10

where men are men of sometimes careless conduct. It was soon noised about that a game warden was in the county and that game was to be protected. As no game law had ever been enforced in the area it was quite evident that deer and other kinds of game were scarce if not entirely shot out.

In the face of all this there came a letter to the office stating that deer were depredated on the property of a certain landowner of the aforesaid county and would the Department issue a permit to kill the offending deer?

The executive officer sent his chief deputy, Howard Wells to the county to make an investigation of the damage alleged to have been done. I have only the story of Mr. Wells as to what happened. Apparently he did not receive a cordial welcome for the landowner appeared to have been in a sour mood. He said:

"If the State claims the game let the Department come and get it. There are the deer and the antelope and the racy blue quails; you are welcome to come and get them all. And as for your game warden, come and get him too—we don't want him around and if you don't take him out of the county I'll put him out myself," said the irate land owner.

Little did that man know how much hell-fire there was in the steel blue eyes of the fearless Captain Taylor. He had not seen Taylor and had overlooked the importance of sizing up the man he was to jump onto. Taylor, who was within earshot of the conversation, made his way deliberately toward the men. It was his time to speak and he did speak with a degree of emphasis and authority.

"My friend," said he, "you have not been very courteous to the gentleman from Austin who is visiting you and is entitled to more respect than you have shown the State official. Also, you are not polite about the game warden who, as you say, must leave the county or you will put him out."

Taylor, with eyes raining something like brimstone, and drawing nearer to the land owner, said: "Now it happens that I am the game warden and I am going to stay here as long as I am on the pay roll or until they carry me away in a wooden box. If you think you can put me out of the county now is a good time to start. If you think you are lucky you can begin right now."

The spring of volubility of the land owner had been dried up by the commanding presence of Capt. Taylor.

"Go ahead if you are going to do anything," said Taylor, "God hates a coward, and if you're not going to do anything, keep your ——— mouth shut from here on."

The man was on his way before the last words were uttered and nobody wanted the job of putting Taylor out of the county.

Taylor was not there very long as game wardens were still relatively scarce and had to be located where they were most needed. But in less than five years the conservationists of that county were petitioning the Department to send a game warden to the county to protect the remnant of game.

One of Taylor's rules in a fight was to get as much law on his side as was possible before he pulled the trigger. The same holds true in hunting. Get the law on your side before you shoot.

10% Duck Increase

A release just in from Ducks Unlimited, Canada, flatly predicts "at least a 10% increase in Canadian ducks this year as compared to 1943," this increase to take place "in spite of the fact that crow and magpie losses were 'the heaviest ever,' flooding losses 'very great' and fire losses 'above normal'."

Chief reasons advanced for the increase are that drought losses were kept at a low figure as a result of unusually heavy summer rains over most of the duck range, plus the help of the Canadian people and Ducks Unlimited projects.



THE PERSIMMON AND THE POSSUM

The persimmon, mellow, enticing, yellow,
Is ripe in the leaf-losing wood.
As high it should rate as the high-priced date,
For it is just as good.

The clumsy gray possum, whose brain failed to blossom

By nature's own decree,
Hangs by his tail, as night skies pale,
In the persimmon tree.

Daylight breaks; the fruit he takes
In his slender little paws.

He finds it good (and so I should)

Through the length of his sharp-toothed jaws.

—Julia Beazley

Letters

To the Editor:

It is my desire to compliment you on Texas Game and Fish. I enjoy it more and get more out of it than any wildlife magazine I receive. I suppose we like it for the reason that it stresses the things in hunting and fishing that are close to home. If a suggestion is in line, the writer would like to see a hunters' and fishermen's open forum and gab column in this fine magazine. Interchange of thought and suggestion is always a help. The sport fishermen are going to support this magazine. So please talk a little about the old, sore, and ticklish subject, "netting in closed bay waters." Or I should say that too much of the closed bays have been opened to netting, on the excuse of "Fish For War Food." The whole depredation is now ruining a lot of future for Texas coastal fishing and is resulting in profit, only to a few. Best of luck to Texas Game and Fish, and we hope it grows each month, and that Texas sportsmen will always have this fine publication with them.

A. E. Ivey, Houston, Texas.

☆

To the Editor:

I am proud of your monthly. It has already grown into the hearts and affection of all sportsmen who have scanned its pages. It "hits" the spot with me.

Dr. W. F. Hayes,
Farmersville, Texas.

Eight Carp on Hook

A release from Iowa tells of a catch of eight carp with one cast. It seems that a small boy lost a stringer to which the eight carp were attached. Several days later the hook of an angler five miles down stream caught in the stringer and he landed the eight fish, all still alive.

Wild Life and Indian

The concept that the American Indian has of wildlife differs from that possessed by the Caucasian. We regard its pursuit as a sport and a recreation, while the Indian regards it as a utility, a meal ticket that he does not want to lose.

Clifford C. Presnall, of the Fish and Wildlife Service, has written an article on the subject which appeared on a recent issue of *The Journal of Mammalogy*.

According to the author and other writers on the subject, whom he quotes, the Indian is not the great conservator of game that he has been pictured. In the days when the buffalo roamed the plains the Indians killed them in great numbers. Only the tongues—a rare Indian delicacy—and the flat sides of meat were preserved.

Three years ago the Fish and Wild-

life Service, the Office of Indian Affairs, and the Indian tribes adopted an inter-office agreement for better conservation on Indian reservations. It has not up to date produced any spectacular results. The white man must understand and appreciate the attitude of the Indian toward wildlife. The author concludes with the observation that "to the Indian the pursuit of game is a vocation, to us it is an avocation. * * *

Parasites

Continued from page 11

commonly called 'worms,' they really are not true worms, but occupy a place in the animal kingdom below the true earthworms. These organisms often have a complicated life cycle; for example, certain forms live during an adult stage in the digestive tract of water birds and in an immature stage in a fish. They thus reach maturity only after the fish is eaten by a suitable bird.

One of the flukes, sometimes found in the lungs of the mink, passes part of its life cycle in the crayfish. In many cases the parasites pass through a larger number of animals before maturity is reached. Many animals carry a considerable number of parasites without evident harm, but in other cases they are seriously affected, death often resulting.

When the flesh of animals is well-cooked, these parasites are rendered entirely harmless to man. Very few would attack man even if the flesh were uncooked. We are fortunate in having relatively few parasites in this country which attack man. Some helminth parasites of tropical countries, however, cause very serious and painful human diseases. These may play an important part in post-war medicine, both in this country and abroad.

Young Quail Predominate

"Under normal conditions, more than four-fifths of the quail killed by Missouri hunters in November and December are young birds hatched during the previous summer, and less than one-fifth are adults." This announcement by the Missouri Conservation Commission is based on bobwhite population studies being conducted by the Missouri Cooperative Wildlife Unit and the State Conservation Commission. Young quail are distinguished from older birds by the presence of certain juvenile feathers in the wing.

According to the commission, the preponderance of young birds emphasizes the importance of the current crop of young quail to the hunter. It also indicates the value of game management practices which directly benefit nesting success, such as building of good farm ponds, fenced and planted for wildlife. These provide nesting cover, food and water when quail are young and especially dependent on good habitat conditions.

Your WILDLIFE Primer

In the mountainous regions of Tennessee is found one of the strangest of all goats. A yell or sudden clap of hands will cause these goats to collapse in a faint. They will lay this way for several minutes before recovering from the shock. They seem to be frozen to the spot, but when they regain their composure they cannot be frightened again for some time. Scientists have never solved the origin of these goats, but it is thought that they are victims of hereditary nervous abnormalities, and that they were at some time in past history segregated from the other goats of this territory.

☆

The Golden Shiner is considered the only real vegetarian fish in the United States. It is found in almost every state. Ninety-five per cent of its food is plant life.

☆

'Fish Do Not Drink the Water They Live In'—That may sound confusing, especially since they never leave the water, but they receive the necessary moisture from their food.

☆

Eagles mate for life and are very affectionate in their home life. They return year after year to the same nest.

☆

'Alligators With Gold-Lined Stomachs'—Alligators captured in Panama frequently have what might be called 'gold-lined stomachs,' due to the particles of gold picked up in the lime on the bottom of the rivers.

☆

The woodchuck, or groundhog, is a vegetarian.

☆

Most people recognize the call of the whippoorwill, but few persons actually have seen the bird, which rarely flies about in daytime.

☆

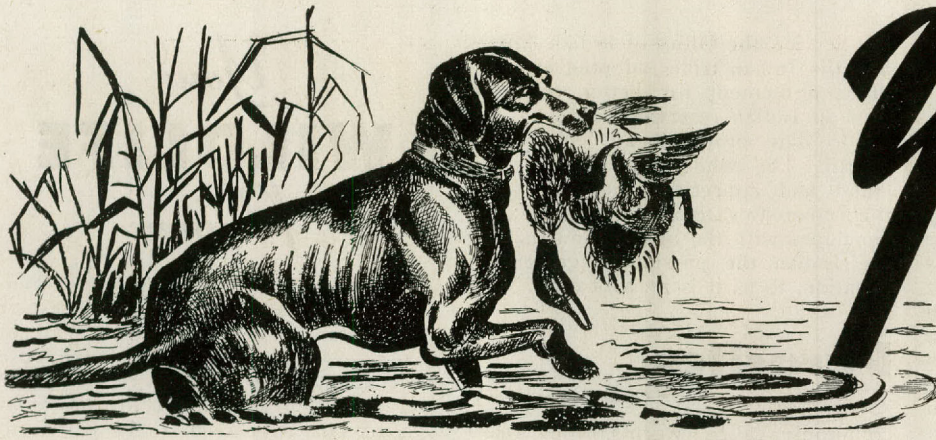
Woodpeckers are the only birds in the United States that can dig holes in solid trees.

☆

The lightest of the common birds in the United States is the hummingbird, which weighs about one-twelfth of an ounce, while the wild turkey, trumpeter swan, and Canada goose probably are the heaviest, weighing from 15 to 31 pounds.

☆

Some parts of the skin of certain species of sharks when dried and hardened take a polish equal to that of stone, and bear a strong resemblance to the fossil coral porites.



Your DOG

RATIONS AND RATIONING

By H. L. VAN VOLKENBERG

THE dog digests and utilizes the same food as man. However, there are differences in the physiology and habits of man and the dog. Vitamin C must be present in the diet or man will develop scurvy. The dog synthesizes vitamin C in the body. The saliva of the dog, unlike that of man lacks ptyalin, and thus starch digestion does not start until the food comes in contact with the pancreatic juice in the small intestine. The dog often prefers raw meat, ripe meat, entrails, blood, lard, beef tallow and other foods not relished by civilized man. Also, the dog is not prejudiced against such foods as gland meat, tripe, horse meat and rabbit. In fact the dog in the field may balance his diet better than man by eating an entire rabbit including the plant food in the stomach and intestine. The bolting of food is not a vice in the dog. Adult man eats three meals a day whereas the dog is usually satisfied with one.

Meat proteins provide all the essential protein-building materials necessary for the dog, whereas there is no cereal or vegetable which by itself provides all these elements. The most complete proteins other than meat are from milk, soy beans, peanuts and yeast. The dog can be raised on a ration composed solely of plant products, if proper selection is made. The plant proteins should be well cooked for the dog.

A dog can be kept alive and healthy a long time on meat alone. However muscle meat is low in fat soluble vitamins and bones should be fed to prevent a calcium deficiency. The working dog should receive a ration which provides more energy. Meat either in chunks or finely ground is well digested. The cooking of meat is unnecessary and tends to destroy vitamins. However pork, if fed, should be cooked to destroy the trichina larvae, a parasite which attacks dogs as well as man. A 20-pound dog on a meat diet should receive about one pound per day.

For reasons of economy one-half the diet should consist of carbohydrates. Such foods as stale bread, corn and oat

products, corn syrup, potatoes and rice are suitable for the dog. The cereals and foods containing starch should be well cooked.

Dogs are fond of and make good use of fats and the diet may consist of 10 per cent or more of fat. However, the amount fed to an obese dog or one under conditions of little or moderate exercise should be restricted. Rancid fats should not be fed as they destroy vitamins.

Several of the minerals required by the dog are present in sufficient amounts in ordinary palatable food. However, the diet may need supplements of salt, iodine, iron, magnesium, calcium and phosphorus. The feeding of table scraps usually provides iodized salt while the inclusion in the diet of fresh meat or meat meals and bones usually supplies the other minerals. The liquor from cooking vegetables is a rich and readily available source of minerals that can be added to the ration.

With the exception of vitamin C, which is manufactured in the body, the dog requires most of the other recognized vitamins of which A, D, thiamin and niacin are the most important. The lack of vitamins may cause such conditions as sore eyes, impaired hearing, loss of appetite, paralyzed hind legs, rickets, running fits, black tongue and susceptibility to infections. Vitamins can be supplied by feeding such foods as fish oils, yeast, fresh milk, canned salmon, liver, glandular meat, fresh fish, egg yolk, carrots, tomatoes and corn meal. Exposure to sunlight enables the dog to manufacture vitamin D in the skin. Usually a well balanced ration of sufficient variety contains all the necessary vitamins. At present, however, the diet may be biologically deficient because of wartime shortages.

Prior to food rationing the dog owner had a choice of food sources. Many owners feed meat, meat trimmings and glands with bone. This meat diet was often supplemented with dog biscuits, vegetables and cereals. Other owners depended upon table scraps. The re-

mainder purchased either canned dog food or dry dog meals or both. The following data indicates the extent to which the manufactured food products were used. In 1941 approximately 150,000 tons of dry dog foods were produced in the United States. Prior to the Government's Tin Conservation Order of March 1, 1942, approximately 700,000,000 pounds of canned dog food was consumed yearly.

The feeding of table scraps without supplements does not provide an adequate ration for the dog. The family table may lack variety and balanced nutrients. Even though the food on the table is satisfactory, the bulk of the scraps is quite apt to consist largely of starchy material. The addition of fresh meat or milk or both often balances an otherwise inadequate ration.

During the present war emergency the dog owner is having difficulty in obtaining suitable food. The dry dog food industry has taken up a portion of the deficit caused by the elimination of the canned food industry. Some of the manufacturers of canned dog food have overcome the technical difficulties and are producing a dehydrated product based on the same formulas which were successful in canned food.

Because of a shortage of protein-rich feedstuffs in this country, the Government has set for the dog food manufacturer a total protein maximum at 24% of which one-third or 8% on a total food basis is permitted to be pro-

Continued on page 17

FOR SALE

Lemon pointer bitch, untrained and unspoiled. This 3 months old dog is just right to train now. She will range o. k. right now. She is not registered but comes from good pointers that are proven hunters. Inoculated for distemper (Laidlaw-Duncan method) and rabies. I don't have time, due to my work, to train her. Price \$25. Address

Leslie Melbern

311 Waterman, Texarkana, Texas



ARMS AND AMMUNITION

Edited by A. S. JACKSON

FEW BOYS REALLY KNOW FIREARMS

FREQUENTLY I have seen statements by military authorities, who should know, to the effect that only two percent of the inductees in the army knew anything about rifles and shooting before entering the service. This may or may not be true; I am not prepared to argue the point. I like to think, however, that the figure would be higher for the inductees from the Southwest and West.

On the other hand I am convinced that America is far from being the nation of rifleman we have liked to call it. Perhaps it never was. Research I have done to determine the status of wildlife and hunting in the early settlement of Texas has tended to make me believe that the expert riflemen were a class apart, even on the frontier. That is to say, they were not the settlers, but the adventurers who more often than not preceded the settler, and drifted on to new frontiers when the country became too tame for their liking.

Certainly, by and large the present public is less well informed about rifles and shooting than the rifle cranks assume. In my own case, I find myself reluctant to impart what information I have on the grounds that everybody else must know it too. Yet the questions one gets, and the things one sees refutes this as reason for being reticent about passing on information generally well known to the two percent (?) referred to above.

There was the soldier who rode with me recently who was going home on furlough, carrying to his brother a few rounds of ".30-30" service ammunition for use the coming season in a rifle ascertained by questioning to be a lever-action tubular-magazine model, obviously not capable (and fortunately) of firing the .30-06 Springfield cartridge.

And the rancher I met in a West Texas store buying two boxes of .30-'06 cartridges for the Krag he carried, because, as both he and the salesman

showed me, the Krag had Springfield stamped on the receiver.

Two incidents in my memory out of a multitude extending back to the time when my school books were little more than excellent camouflage for gun catalogs.

Last week a pioneer rancher brought an argument to my attention: Would or wouldn't a Kentucky muzzle loader "stack its bullets in one hole" when fired clamped in a vise? My reply was that certain match muzzle-loaders certainly would have shot in one hole, since the distance was not specified, but from a vise, and only when loaded and fired by an expert familiar with the exactness and attention to detail required for such shooting, and experienced at the techniques for getting a very high degree of uniformity in the entire operation.

While it might seem that clamping a rifle in a vise would be the perfect way to insure its shooting to the same point of impact, actually this is about the surest way to insure that it will not. The reason? Chiefly vibration. Rifle barrels vibrate in that infinitesimal period of time in which the bullet is passing through the bore. Anything which tends to hold them rigidly at some point accentuates this vibration. Clamp a ruler anywhere along its length in a vise, and a "twang" will set it vibrating; hold it loosely in the hands and it loses its springy tendency. The vibration is dampened. No vise or hard rigid support permits a rifle barrel to vibrate uniformly, or to come to rest at the same point time after time. The results are bullets leaving the muzzle at different phases in barrel vibration, and erratic shooting.

The rifle barrel also vibrates when the arm is fired from the shoulder, but here the demands for "bullet stacking" accuracy do not exist, and ordinarily vibration is of no concern to the hunter. Sights are simply set to get the desired results, the bullet leaves the muzzle each time at approximately the

same point in the movement, and all is well. However, there are a few mistakes the hunter will avoid if he is to miss trouble with old man vibration. One of these, particularly, concerns light barrel rifles in take-down models. Not long ago I witnessed a very fine off-hand shot attempt to kill a hawk with one of the early Model '99 Savages in .250-3000 caliber. These rifles had when first introduced a feather weight barrel on a take-down action. They are remarkably accurate when sighted for and shot from one position. This hunter was anxious not to miss before "company" and rested his rifle muzzle on a post. Knowing the rifle, I could have called the shot several feet high, and sure enough it was.

Moral for deer hunters: sight your rifle in for the position you are going to shoot it from. Then, if a rest seems desirable, be sure that the hand is between the rest and the barrel. A folded coat, cap, or any pad is O.K. but don't place the rifle barrel against a solid object. The same thing applies to resting the rifle barrel against a tree. Place your hand against the tree and rest the rifle barrel against the hand. The hold will be as steady, and you will not have changed the vibration rate of the barrel.

Vibration will sometime get you when loads are changed for a given sight setting. Few rifles will shoot bullets of different weights to the same point of impact. This is important to remember in times like these when your favorite load may be unavailable. It is wise to check your sight setting even when changing makes of cartridges. These are things known and practiced by target shooters, but infrequently so by the casual shooter who may once annually stake time and money on a long anticipated deer hunt.

More deer would be killed, fewer annual hunts would prove disappointments, and fewer wounded deer left to die slow deaths, if the average hunter would shoot **most** of his ammunition

■ Continued on page 17



Vitamins in the Rough

By DORRIS

NOTE: During childhood in Northeast Texas; foods, particular to that region, were both bountiful and appetizing. Green onions, sweet milk, cornpone, hickory-smoked ham, pumpkin pie, sugar cane syrup, chitterlings, channel catfish, and muscadine jelly were some of the more common delicacies. Since married life (with a Wildlife Biologist in South Texas), a bewildering array of culinary concoctions have been revealed.

Proteins, carbohydrates, fats, minerals, enzymes, and vitamins parade endlessly through the following recipes I have learned to prepare. If you feel that your favorite recipe is overworked, and your family is crying for variety—try your skill on these for a change.

At first serving, some of these dishes may require an appetizer of rum, rye, "corn squeezings," or whatever your particular constitution may dictate to disorganize the flight of "butterflies in your stomach." Second helpings, however, are the general rule.

Mt. Lion Steaks

Serves 6.
4 pounds lion, round or loin steaks (loin preferred)
3 eggs
flour
salt and pepper
garlic
fat

Rub meat with clove garlic, batter with eggs, flour, salt and pepper. Fry fast in deep fat.

Coon and Rice

Serves 6.
2 pounds young coon
1 cup rice
1 onion
1 green pepper
2 cloves garlic
2 tablespoons fat
½ teaspoon chili powder
salt
black pepper
1 can tomato puree
Fry washed rice in fat (in iron skillet) to a golden brown. Add chopped pepper, onions, garlic, seasoning, puree, par-boiled meat cubes, and water to cover. Simmer slowly until rice is dry—do not stir.

Rattlesnake Steaks

Serves 6.
5 pounds meat

flour
salt and pepper
Louisiana Red Hot
fat
vinegar

Soak steaks 10 minutes in vinegar, remove and sprinkle with hot sauce, salt and pepper, roll in flour. Fry in deep fat. Serve immediately.

To prepare snake steaks: Use only healthy large rattlesnakes (3 to 5 pounds live weight preferred), decapitate with single clean stroke of axe. Leave at least 6 inches of body with head, do not use this portion which contains the poison glands. Remove the skin and viscera, cut the remaining body section diagonally into one inch thick steaks.

It is to be remembered that rattlesnake venom if eaten will cause only minor gastric disturbances.

Calavasa Con Conejo (Pumpkin and Rabbit)

Serves 6.
2 young cottontail rabbits
3 pounds tender pumpkin
flour
salt
pepper
fat
1 onion
1 green pepper
1 can tomatoes

Clean rabbits and parboil. Cut into small sections. Place meat in hot fat and brown. Add diced pumpkin, chopped onion, pepper, tomatoes, 2 cups water, and seasoning. Simmer 1 hour, add thickening (if needed) to make paste consistency. Serve hot.

Nopalitos (Prickly Pear)

Serves 6.
2 dozen prickly pear leaves
1 tablespoon chili powder
6 eggs
salt and pepper
5 ounces dried shrimp
2 tablespoons fat

Gather during season 2 dozen tender (¾ inch thick) pear leaves, carefully dethorn with knife, wash and boil furiously 25 minutes. Remove and dice to small cubes. Place in frying pan with hot fat and chili powder, add seasoning, boiled shrimp, and beaten eggs. Cook until eggs are medium scrambled. Serve hot.

Ground Squirrel Stew

Serves 6.
10 ground squirrels
1 large can tomatoes
2 onions
1 green pepper
3 diced potatoes
6 diced carrots
1 small can corn
1 small can peas
salt and pepper
chili powder

Clean and parboil squirrels. Cut into small sections, mix ingredients, add water to cover. Cook slowly ½ hour.

Barbecued White Wings

Serves 6.
1 dozen white wings
sauce

Prepare sauce by simmering 3 tablespoons shortening, 2 cloves garlic, 2 onions, 2 cans tomato puree, 1 green pepper, salt and pepper, 2 tablespoons hot sauce, dash paprika, 2 tablespoons worcestershire sauce, pinch dry mustard, 1 cup vinegar.

Place cleaned whole white wings on barbecue rack or suitable container in oven. Cook at low temperature for 30 minutes, turn and baste with sauce while cooking.

Fried Bobcat

Serves 6.
3 pounds young bobcat loin
salt and pepper
flour
garlic
fat

Slice meat to thin chops, rub meat and pan with garlic. Flour, salt and pepper steaks and fry in bacon drippings, add worcestershire sauce while frying. Serve with onion rings.

Flores De Pita (Spanish Dagger Flowers)

Serves 6.
1½ quarts flower petals
8 eggs
salt and pepper
chili powder
fat

Collect during flowering season 1½ quarts spanish dagger flower petals and wash. Heat fat, add flower petals and chili powder, fry till petals wilt, add beaten eggs and salt and pepper, stir till done. Cook slowly.

Venison

Serves 6.
My favorite recipe. Butcher and give to friends all portions of deer carcass except liver and loin.

Fried Liver:

Remove liver from freshly killed deer, slice into thin slices, fry with onions in bacon drippings. Serve with eggs, toast and coffee.

Venison Loin Steaks:

Remove loin, freeze 36 hours. Slice medium thin, fry with bacon drippings, add tablespoon vinegar per pound meat, salt and pepper. Cover while frying slowly.

Regulations

■ Continued from page 9

Tom Green, Upshur, Walker, Washington, and Williamson.

Unlawful for any person to make use of a dog or dogs in the hunting, pursuing, or taking of any deer in Texas, except as follows:

(1) Lawful to use dogs during open season in hunting, pursuing or taking deer in Brazoria, Fort Bend, Hardin, Jackson, Liberty, Matagorda, Orange and Wharton counties.

(2) Lawful to use one dog during open season for purpose of trailing wounded deer in following counties: Atascosa, Bandera, Baylor, Bexar, Blanco, Brewster, Burnet, Caldwell, Cameron, Comal, Concho, Crockett, Denton, DeWitt, Dimmit, Edwards, Frio, Gillespie, Gonzales, Guadalupe, Hardin, Haskell, Hays, Hidalgo, Jack, Jackson, Jones, Karnes, Kaufman, Kendall, Kerr, Kimble, Llano, Mason, Medina, Real, San Saba, Schleicher, Shackelford, Sutton, Tom Green, Uvalde, Wharton, Wilson and Zavala.

TURKEY (Gobblers)

Open Season: November 16 to December 31, inclusive, except Robertson County, which has a March and April open season.

The following counties have no open season: Anderson, Angelina, Archer, Austin, Bastrop, Bowie, Brazos, Brewster, Burleson, Calhoun, Camp, Cass, Cherokee, Chambers, Colorado, Cooke, Culberson, El Paso, Falls, Fannin, Fayette, Fort Bend, Freestone, Galveston, Grayson, Gregg, Grimes, Guadalupe, Hardin, Harris, Harrison, Haskell, Hemphill, Henderson, Houston, Hudspeth, Jackson, Jasper, Jeff Davis, Jefferson, Kaufman, Lamar, Lavaca, Lee, Liberty, Limestone, McLennan, Madison, Marion, Milam, Montgomery, Nacogdoches, Navarro, Newton, Orange, Palo Pinto, Panola, Pecos, Polk, Presidio, Red River, Reeves, Roberts, Rusk, Sabine, San Augustine, San Jacinto, Schleicher, Shackelford, Shelby, Smith, Stephens, Terrell, Throckmorton, Trinity, Tyler, Upshur, Van Zandt, Walker, Waller, Washington, Wharton and Wood.

Bag Limit: Three gobblers a season.

Bag Limit Exception: Only two turkey gobblers may be taken in the counties of Blanco, Crockett, Edwards, Gillespie, Kendall, Kerr, Kimble, Kinney, Llano, Mason, Medina, Menard, Real, Schleicher, Sutton, and Val Verde.

If shotguns are used they must not be larger than 10 gauge and must be permanently plugged so that they will hold no more than three shells.

PECCARY OR JAVELINA

Open Season: November 16 to December 31, inclusive.

Bag Limit: Two per season.

West of Pecos River: Open season, November 1 to December 31, both days inclusive. Bag limit, 2 per season.

Sale of javelinas or their hides prohibited, but this provision does not apply to javelinas or their hides imported from another state or foreign country.

Exception: Lawful to kill javelinas in Starr, Webb and Zapata counties, at any time. Unlawful to sell or possess for purpose of sale any javelinas or part thereof in those counties.

SQUIRRELS

Open Season: (General Law)—May, June, July, October, November and December.

Open Season: (Special Laws)—

Angelina, Cherokee, Nacogdoches, Polk, Sabine, San Augustine, and Trinity counties: October, November and December.

Brazos, Grimes, Leon, Madison, Robertson, and San Jacinto: May 16 through July; October through December.

Brewster, Culberson, El Paso, Hudspeth, Jeff Davis, Pecos, Presidio, Reeves, Terrell, no open season, on gray, cat and fox squirrel. In Brewster county, south of the Southern Pacific railroad tracks, unlawful to kill, take or have in possession for sale rock squirrel.

Hardin and Liberty Counties: November and December.

Jasper and Newton Counties: November 10 to January 10.

Jefferson County: June, July, November, December and January.

Shelby and Tyler Counties: November, December and January.

Wharton County: April through December.

No closed season in the following counties: Bandera, Bastrop, Bell, Blanco, Bosque, Brown, Burnet, Caldwell, Callahan, Coleman, Comal, Comanche, Concho, Cooke, Coryell, DeWitt, Dimmit, Eastland, Edwards, Erath, Fayette, Gillespie, Goliad, Gonzales, Guadalupe, Hamilton, Hays, Hill, Hood, Irion, Jack, Jackson, Karnes, Kendall, Kerr, Kimble, Kinney, Lampasas, Lavaca, Llano, McCulloch, Mason, Medina, Menard, Mills, Montague, Palo Pinto, Parker, Real, San Saba, Schleicher, Stephens, Sterling, Sutton, Tarrant, Throck-

morton, Tom Green, Travis, Uvalde, Victoria, Young, Williamson, Wilson, Wise and Zavala. Bag Limit: (General Law)—10 squirrels in any one day and not more than 20 in possession at any one time.

Exceptions: Brazos, Grimes, Leon, Madison, Robertson, San Jacinto, 5 per day and not more than 15 per week.

Shelby County, not more than 10 per day or in possession at one time.

Wood County, not more than 6 per day and 20 per week.

Daily bag or possession limit not restricted in the following counties: Aransas, Atascosa, Austin, Bandera, Bastrop, Bee, Blanco, Bosque, Brazoria, Brown, Burnet, Caldwell, Calhoun, Callahan, Chambers, Colorado, Comanche, Comal, Concho, Cooke, Coryell, Delta, DeWitt, Dimmit, Eastland, Edwards, Erath, Fayette, Fort Bend, Franklin, Galveston, Gillespie, Goliad, Gonzales, Guadalupe, Hamilton, Hays, Hill, Hopkins, Jackson, Karnes, Kendall, Kerr, Kimble, Lamar, Lampasas, Lavaca, Live Oak, Llano, McCulloch, Mason, Matagorda, Medina, Menard, Mills, Montague, Real, Red River, Refugio, San Patricio, San Saba, Schleicher, Stephens, Tarrant, Throckmorton, Travis, Uvalde, Victoria, Waller, Wharton, Wilson, Wise and Zavala.

LICENSES

Resident Hunting: Price \$2.00. Required of every Texas citizen over 17 years of age who hunts out of the county of his residence. A citizen is any person who has been for more than six months immediately preceding application for license a bona fide resident of Texas. (Note: Unlawful to hunt in Blanco, Brewster, Crockett, Culberson, Edwards, El Paso, Gillespie, Hudspeth, Kendall, Kerr, Kimble, Kinney, Llano, Mason, Medina, Menard, Real, Schleicher, Sutton, Terrell and Val Verde counties without a hunting license, the only exceptions being persons under 17 and persons hunting on their own property or property on which they reside. Resident hunting licenses bought in counties other than those above named are valid in those above named counties.)

Non-Resident: Price \$25.00. Required of every person above the age of seventeen years, who is not a citizen of this state, or who is an alien.

Hunting Boat License: Price \$2.00. Required of every person owning or navigating a sail boat or power boat for accommodating hunters for pay.

Shooting Preserve License: Price \$5.00. Required of every person who acts as manager for any club, or the owner of any club or shooting resort, or lessor of premises leased for hunting purposes, who accommodates hunters for pay.

Game Breeder's License: Price \$2.00. Required of every person who holds in captivity any game animals or game birds for the purpose of propagation for sale. Apply to Game, Fish and Oyster Commission for detailed information.

STORAGE OF WILD GAME

No limit to the time game birds or game animals may be kept in storage if placed in storage within three days after the end of the season, except as follows:

Migratory birds and waterfowl may be possessed for only 45 days after close of the season.

Any person accepting game for storage must keep a record giving time of storage, name and address of person placing game on storage, and kind and amount of game stored by each individual.

Your Dog

■ Continued from page 14

tein of animal origin. Previously, the better quality of dry dog foods contained from 23 to 26% of total protein, of which about one-half was of animal origin. The canned dog foods contained about 34 to 39% protein of which 75% was of animal origin. This Government maximum of 24 per cent is probably sufficient for the mature dog. It may be necessary to supplement this food for pregnant and lactating females and for growing pups. However, the breeding of dogs for the duration should be discouraged.

To protect the public from unscrupulous manufacturers, the American Veterinary Medical Association, under the

leadership of Dr. M. L. Morris, has established a committee on foods. The dog owner lacks the protection which covers the feeds for livestock. If a manufactured dog food can pass certain chemical, biological and controlled feeding tests, it is placed on an approved list by the committee. This list can be obtained by writing Joint Committee on Foods, Box 641, New Brunswick, New Jersey.

This committee also makes certain recommendations concerning home-made food mixtures for dogs. The following is a temporary wartime formula to make one pound of dog food: Dried bread, 6 ounces; boiled potatoes, 2-4 ounces; ground tripe, fish products, or other meat by-products, or milk by-products, 2-4 ounces; bone—veal or other soft ground bone, 2-3 ounces; fat, ½-1 ounce; animal feeding fish oils, 1 tablespoonful.

Every dog owner should read the book entitled, "Nutrition of the Dog," by Clive M. McCoy, published in 1944. Also Bulletin No. 251, "Practical Dog Feeding" (1942), by C. J. Koehn, Agricultural Experiment Station, Auburn, Alabama, contains valuable information.

Arms

■ Continued from page 15

checking his sight settings before going hunting.

Perhaps the idea of using a vise for proving the accuracy of a rifle lives on because most people have heard of but never seen a machine rest, a piece of equipment used by some small arms factories for testing rifles and ammunition. In operation the machine rest is very different from a vise. It is a precision instrument, bolted to a heavy base, and so constructed that the rifle is allowed to recoil in a very uniform manner each time it is fired. Provision is built in for returning it to the same position each time, under identical stresses. Sometimes even this device is not as efficient a means of determining how the rifle will perform in the hands of the shooter as is the bench rest, which is a far more useful and less expensive piece of equipment.

The bench rest is a muzzle and elbow rest, in construction no more than a heavy table, preferably mounted on a concrete block or bolted firmly to posts in the ground. It carries an adjustable support for the rifle barrel on the forward or target side. At the rear is a chair or stool, built on and facing a semi-circular for the body of the shooter. When being used, the rifle barrel is supported solely by the notched and padded upright. The shooter's elbows rest on the table, and the arm normally extended under the fore-end of rifle is folded back under the stock. Such rests are within the means of any rifle club, and are valuable equipment for getting information about rifle accuracy, ammunition, and sights.



BOOKS



On Your Own, How to Take Care of Yourself in Wild Country. A Manual for Field and Service Men by Samuel A. Graham and Earl C. O'Roke. viii 150 pp., 52 fig. Price \$2.00. The University of Minnesota Press, Minneapolis, Minnesota. 1943. Reviewed by Gordon Gunter, Game Fish and Oyster Commission.

The authors are professors of economic and forest zoology in the University of Michigan. They are both experienced woodsmen and have spent weeks and months at a time on their own far from human habitation.

In former years people who spent time in the woods were usually reared in the country and learned from childhood how to take care of themselves. Today thousands of people who have scarcely ever been out of hearing of bus lines and street car tracks are venturing out on the deserts, plains, jungles and high seas. Usually they go as members of the Armed forces, but occasionally they get lost and are completely on their own. Such a volume could scarcely have been written at a more appropriate time.

The authors have not only drawn from their own large fund of knowledge and experience, but have sought the advice of a number of experts, as is shown by their acknowledgments, following the preface.

The style of writing is to give very terse, clear statements. The book is divided into fourteen numbered sections with shorter sub headings. They are: 1. How to Meet Physical Extremes, 2. Preventing and Treating Minor Injuries and Infections, 3. Quicksand, Quagmire, and Water Hazards, 4. Your Food in the Field, 5. Wild Plants You Can Eat, 6. Wild Animals You Can Catch for Food, 7. How to Protect Yourself from Poisonous Plants, 8. What to Do About Annoying or Dangerous Animals, 9. What to Do About Insects and Other Irritating Pests, 10. How to Avoid Animal Diseases, 11. Disease Carriers, 12. Parasites That Attack Man, 13. Equipment You Will Need in the Field, 14. General Advice.

Certain of the subheadings are: FINDING YOUR WAY WHEN LOST; DRINKING WATER; In dry country, In desert areas, On coral islands, When adrift at sea, Animals you should avoid eating, Venomous Animals, Field Emergency Kit. In this book you will find out what to do in quicksand, quagmire, and on thin ice, what to eat when your food runs out and how to ac-

quire it and how to deal with all common emergencies.

Under the last section, the writers give ten Do's to Remember and a list of twelve Don'ts to Remember. Important among these are don't be afraid. Don't lose your head and don't ever give up when you get in a tight spot. There is usually a way out.



The Outdoorsman's Cookbook by Arthur H. Carhart. 211 pp. The Macmillan Company. New York. 1943. Price \$1.95. Reviewed by Gordon Gunter, Game Fish and Oyster Commission.

The author is coordinator of Federal Aid in Wildlife Restoration in Colorado. In the first chapter he says that living outdoors should not be an endurance contest and that a pleasant trip can only be had by meeting two fundamental needs. He says that a person who tears out without taking care of these two matters is a tenderfoot, *i.e.*, ignorant, suffers from illusions, or is trying to outrun the sheriff. In this book the writer discusses the food problem. He says that formerly the outdoor camper had to live like an explorer, but that modern transportation, dehydrated foods, and other improvements make it unnecessary to live on pemmican and fresh air.

The author's first general advice is to play down the skillet. Use it mostly to beat on to call the others to dinner. Use the boiling pots all you can. In chapter two, Mapping Your Meal, the author says that the amount of grub to buy should be decided after every meal is planned out for the whole trip. The way he does it looks simple. Packing the food is an important item and the author gives some good advice. Lists of the amount of food needed per man for several days are given. These vary from the plentiful to the rawhide rations of the old Army and the Hudson Bay trappers ration. The reader can take his choice.

In the second chapter, Your Fire, the author tells practically all you will need to know about how to start fires and the various types needed, as well as how to use the various utensils with them. Several good diagrammatic drawings are given with the explanation. The best fire is the small one, not over 1½ feet across. It cooks just as well and does not burn the food or the cook, as the three alarm affair does. Fuel gathering is easier and the fire hazard is less. The kind of wood to use is discussed. The

kinds of utensils needed, those easiest to pack, etc., are described along with common sense advice about their use.

The writer has some firm opinions about the care of wild meats, chapter iv. He says he helped check hunters with 18,000 carcasses of big game during two seasons and the loss from spoilage was stunning. He tells how to avoid loss in easy sentences with diagrams to go with the explanation. Deer should be bled, gutted and skinned, if at all possible, immediately. Quick cooling is essential and the meat is always better if prepared immediately after killing. Handling game is not easy, but as the author says, if game is worth taking it is worth taking care of. He gives much advice on the handling of both large and small game, which the conscientious sportsman will do well to learn, if he does not already know it. He tells how to clean or filet fish and how to cure meats. Ways to can and smoke meat are explained and he tells how to construct a meat box for the camp.

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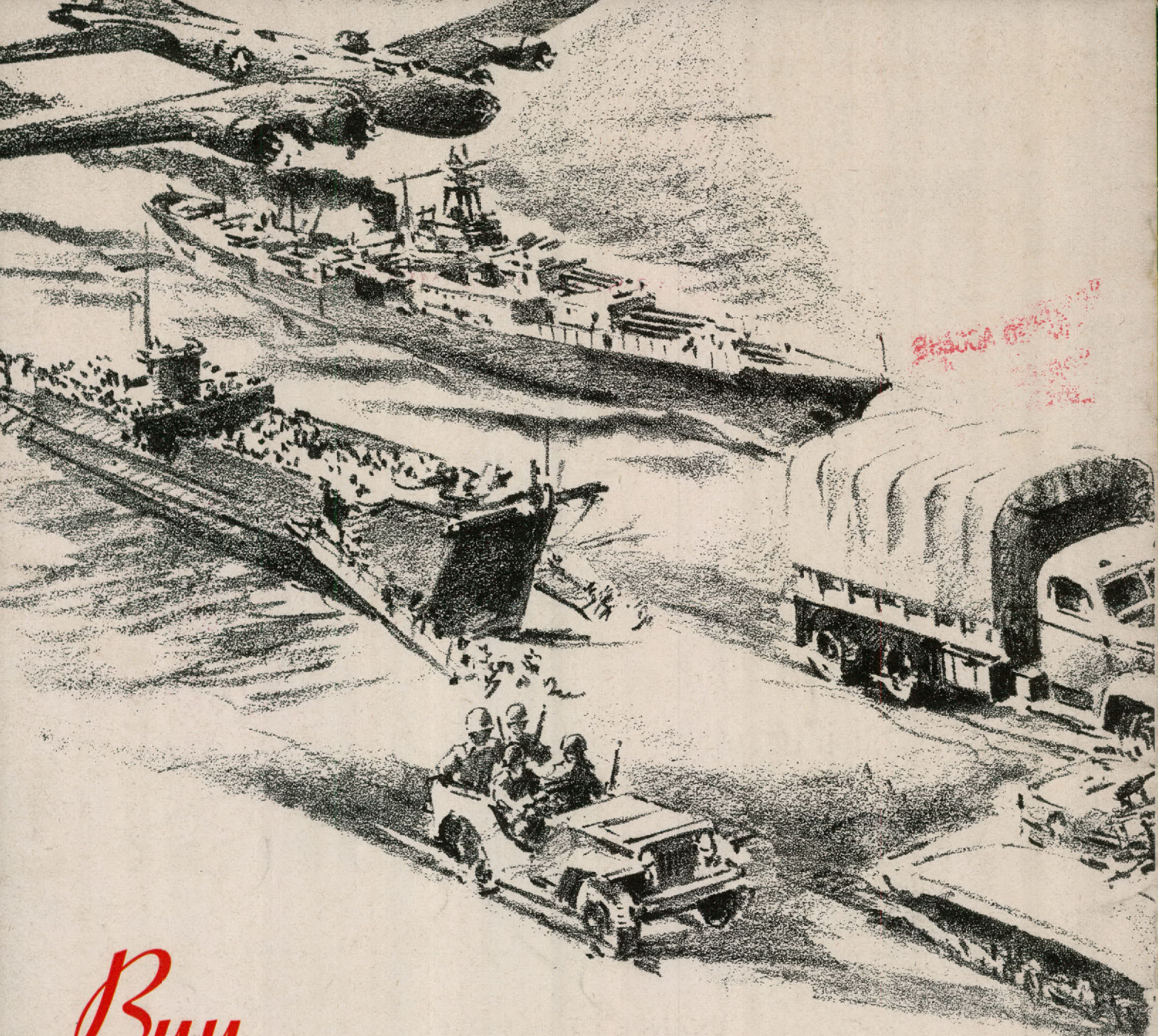
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