

TEXAS Game AND Fish

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THE LEGISLATIVE FRONT

Newsletter
for
May, 1947

FOR YOUR INFORMATION:

NEW GAME AND FISH LAWS

H.B.569. It is now unlawful to kill or catch wild turkey in Hardin County for a period of five years.

H.B.537. Empowers the State Health Officer to define areas where wild animals are infected with rabies; authorizes the State Health Officer to pay bounties for the destruction of such animals; and opens season on foxes and other wild animals in infected areas.

H.B.546. Closes the season on deer in Williamson County for a period of five years; and closes the season on wild turkey in Williamson County for a period of three years.

H.B.583. Now unlawful to fish in the fresh waters of Comanche County with any net, seine, snag line, or trap, or any device other than an ordinary pole and line, rod and reel, set line, throw line or trotline. Hooks on set line or throw line must be at least three feet apart. A minnow seine not more than 20 feet in length may be used to catch minnows only.

H.B.772. It is now lawful to kill fox in Lee and Burleson Counties at any time.

H.B.575. Closes the season on deer and wild turkey in Roberts and Hemphill Counties for a period of five years.

H.B.587. Prohibits the sale of fish taken from the waters of the Neches river in Anderson County.

H.B.646. Legalizes the use of seines and nets, the meshes of which are not less than one and one-half inches in size, in catching carp, buffalo, shad and sucker fish in any of the public waters of Wise County, including that portion of Lake Bridgeport and Eagle Mountain Lake which lie wholly within Wise County.

H.B.224. Closes the season on deer in Anderson County for a period of five years.

H.B.360. Prohibits the use of a seine, strike net, shrimp trawl, gill net or trammel net in any of the waters of Copano Bay, Mission Bay and connecting waters West of State Highway No. 35 in Aransas, Refugio and San Patricio Counties. A min-

Continued on inside back cover

TEXAS Game AND Fish

A MONTHLY MAGAZINE DEVOTED TO THE PROTECTION AND CONSERVATION OF OUR NATIVE GAME AND FISH; AND TO THE IMPROVEMENT OF HUNTING AND FISHING IN TEXAS.



TEXAS GAME AND FISH is published monthly by the Texas Game, Fish and Oyster Commission. Subscription price \$1.00 per year. Single copies 10 cents each.

TEXAS GAME AND FISH regrets that it cannot continue subscriptions beyond date of expiration. Checks and money orders should be made payable to STATE GAME, FISH AND OYSTER COMMISSION. Editorial and Advertising offices, Walton Building, Austin, Texas. Published at 3301 Buffalo Drive, Houston, Texas. Entered as second class matter May 19, 1943, at the postoffice at Austin, Texas, under the Act of March 3, 1879.

Postmaster: If undeliverable, please notify TEXAS GAME AND FISH on form 3578-P at the Walton Building, Austin, Texas.

Members of the Game, Fish and Oyster Commission: Murrell L. Buckner, Dallas, chairman; Gene Howe, Amarillo; Dr. Will E. Watt, Austin; A. T. McDannald, Houston; Gordon Stewart, Sonora; Frank Jones, Marfa; H. D. Dodgen, *Executive Secretary*; H. E. Faubion, *Assistant Executive Secretary and Director of Sand, Shell and Gravel Division*.

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Manuscripts should be addressed to Editor, TEXAS GAME AND FISH, Walton Building, Austin, Texas. All manuscripts should be accompanied by photographs. TEXAS GAME AND FISH always is interested in pictures of game and fish catches, unusual hunting and fishing scenes, bird dogs, and in group pictures of hunting and fishing organizations. Photographs used in TEXAS GAME AND FISH will be returned after publication.



COVER—By Orville O. Rice



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Vol. 5, No. 6

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ROGER M. BUSFIELD
Editor

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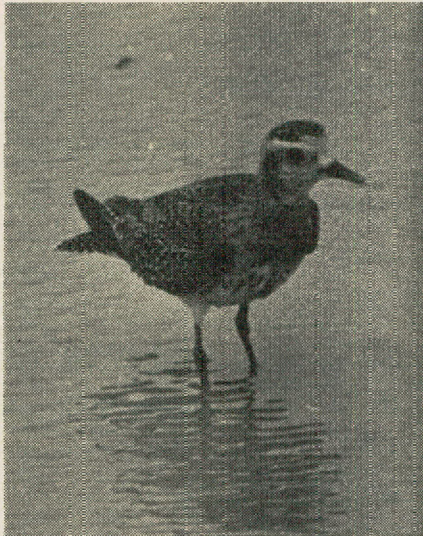


The Laguna Madre Sphinx

Man Could Very Easily Upset the Delicate Balance Maintained by Nature to Keep the Waters of Laguna Madre From Becoming too Salty to Sustain Fish Life

WILL the Laguna Madre become another Dead Sea? It is common knowledge that in *summer* poor circulation is responsible for periodical losses of fish, but little is known about what is happening during *winter* months. The use of a seaplane by Pilot Bob Tanner of Port Lavaca has made winter samples of water easily available for study from week to week. Also, this has been supplemented by occasional visits of the writer himself who took shoreline samples.

It is generally understood that the Laguna has no outlet except on rare occasions when winter winds from the north, plus unusually high tides, drive its waters southward over the sand flats, which bisect the Laguna, washing away some of the summer concentration of salt. As a poor substitute for an outlet of the upper area which is our present concern, there is the dilution which takes place with the interchange of waters between the Laguna Madre and Corpus Christi Bay. As the tides come and go there is a siphoning out of the high salt content of the Laguna. This tidal flow, as it returns northward, carries with it each time a small portion of the Laguna



THE GOLDEN PLOVER is one of the shore birds frequently seen wading in the shallow waters of the Laguna Madre.



By J. G. BURR

salt which it dumps into the fresher water of Corpus Christi Bay, until both bodies of water tend to approach a state of balance. This balancing process, which is never completed without the aid of rainfall, takes place mainly in the fall and winter, after which fishing again becomes good.

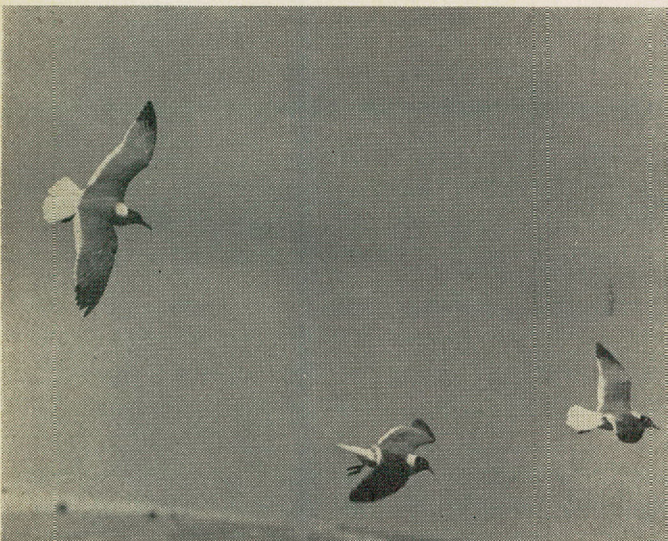
The highest salt content of the Laguna for the year occurred at the "dead end" near Murdoch Landing last August when the concentration reached 102.7 parts per thousand, three times that of the Gulf. At Riviera Beach it was 82.7. At Point of Rocks it was 80. By March of this year there was a general reduction of about 50 percent when Baffin Bay at Riviera Beach was down to 52.94, and to the interior of Baffin 46.34, while at Point of Rocks it was 39.22. At Redfish Bay below the Sand Flats the salt was 43.12 on March 14.

This winter reduction is the usual cycle and any serious interference with the dilution schedule could produce a dead sea. A much discussed causeway across the mouth of the upper Laguna contemplates an 18,000-foot hydraulic fill and 1435 feet of trestle. This, it is

★ *Continued on page 21*

THE SOARING GULL is a beautiful bird to watch in flight as it wheels, soars and dives for its food in the Laguna Madre, and the white pelican is a majestic bird as it floats serenely on the waters

of the Laguna Madre with its long beak ever on the alert to stab the waters for a choice tidbit.



Fisheries in Texas

Coastal Waters Produce Only Six-Tenths of a Pound Per Person and the Balance of Fish Consumed in Texas Is Imported From East and West Coasts

IN 1945-46 Texas fish production declined from 4,898,196 pounds for 1944-45 to 3,998,620 pounds, or (based on a 1940 population figure of 6,400,000) only 6/10 of a pound per person. The balance of Texas fish consumption was furnished by imports from New England, the West Coast and Mexico.

The most important fishery, exclusive of shrimp, is that based on trout, redfish and drum, the largest single producer being drum with a total of 1,216,069 pounds. Trout ran a close second producing 1,202,404 pounds. Redfish were a bad third, only 677,867 pounds being caught. The combined totals amount to slightly over 15% of the total catch of all types of sea foods, and the greater proportion of this was produced on the lower Texas coast, from Matagorda south.

This is an interesting contrast with the Texas fishery of the last century. At that time the great bulk of these species was produced in the Galveston area, and the Laguna Madre was practically non-existent, as far as any sizeable production went. A comparison of the catch for the year 1890 with that of 1944-45 might be interesting. In 1890 the Galveston area produced 387,350 pounds of trout, 418,000 pounds of redfish and little or no drum. In 1944-45 the catch from the same area was 600 pounds of redfish, 110 pounds of trout and 30 pounds of drum. The Matagorda area produced, in 1890, 39,850 pounds of trout and 28,500 pounds of redfish, while in 1944-45 it produced 71,973 pounds of trout and 61,946 pounds of redfish. The Aransas area produced, in 1890, 327,500 pounds of trout, and 389,000 pounds of reds against its 1944-45 production of 473,508 pounds of trout, 299,921 pounds of reds and 485,937 pounds of drum, while Corpus Christi Bay produced in the earlier period, 154,200 pounds of trout and 219,800 pounds of redfish.

This production in Corpus Christi Bay has diminished greatly within the last few years. If Galveston and Corpus Christi Bays have declined, however, the Laguna Madre has made up for it. Against an 1890 production of 10,000 pounds of trout, 9,000 pounds of red and no

drum, it climbed in 1944-45 to 677,180 pounds of trout, 315,400 pounds of redfish and 690,027 pounds of drum.

Thus, although the total annual catch of the period from 1890 to 1945 shows remarkably little overall difference in regard to redfish and trout, during the same period the fishery has shifted from the eastern and central portions of the state to the lower coast and the Laguna Madre, which now produces 50% of all the fish taken in the bays of the state,



By J. L. BAUGHMAN

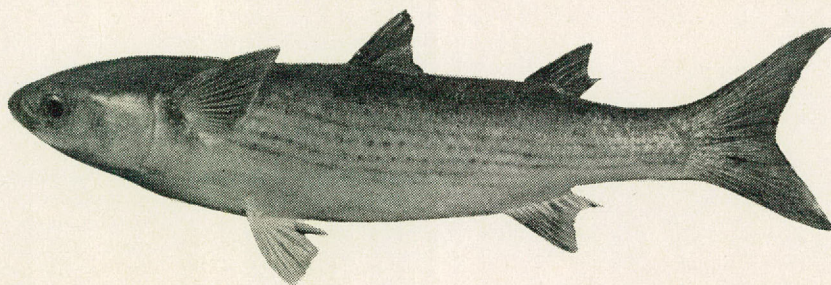


including drum, on which there was no production in the early portion of the time in question.

Part of a decline during 1937-1940 can probably be attributed to high salinities in the Laguna Madre, which killed great numbers of fish in that body of water, knocking out almost half the production of the state. On top of this, in 1940, one of the severest freezes on record struck the Texas coast, killing a tremendous quantity of fish in the shallow bays. However, the population has apparently returned to normal, and should continue at the present level.

The red snapper fishery, the third ranking fishery of the state, declined rapidly during the war, dropping from 1,444,403 pounds in 1940-41 to 893,262 pounds in 1941-42, a drop of over half a million pounds. However, the following year it climbed again to 919,726 pounds and has fluctuated since between

THE MULLET is a fine food fish and is in great demand in the southeastern states but Texans have resisted all efforts to popularize it for table use.



that figure and a low of 526,579 pounds for 1945-46. This latter figure is due in large part to the fact that the fishing fleet has not yet recuperated from the war years, and that there are fewer vessels capable of engaging in extensive offshore fishing.

As the Texas fishery is prosecuted in two zones, the first known as the local fishery, extending along the Texas and Mexican coasts to about Punta Jerez light, and the second, the Campeche Banks, off the coast of Yucatan, this means that fewer boats make the long Gulf voyage, and that most of the snappers are produced on the local grounds. Landings are made chiefly at Port Isabel, Aransas Pass and Galveston. September landings amounted to 32,952 pounds, while in the first 15 days of October Galveston landings amounted to 22,000 pounds. Despite the fact that W. T. Eldridge, III, of the Texas-Gulf Stream Industries, Inc., who recently formed a company at Aransas Pass, has indicated that he intends to put from 10 to 16 large snapper boats in commission in the near future, there appears no immediate prospect of any great increase in this fishery during the present year.

Flounder accounted for only about 98,000 pounds of the Texas production in 1944-45, but this placed them fifth in marine products of the state, ahead of whiting with 65,681 pounds, and gafftops, with 43,244 pounds.

Sheepshead were seventh, with a production of 28,323 pounds, and this is interesting, for in 1890 it was the third ranking fishery of the state, instead of red snapper, which at that time was far down the list. The total catch for 1890 was over 759,000 pounds, of which 306,000 pounds originated in the Galveston Bay area; 268,000 pounds were caught in Aransas Bay, and 154,200 in the Corpus Christi area. However, in 1941-42 the catch had dropped to less than 2,000 pounds and it is only recently that any appreciable catches of this fish have begun to be made.

Some of the decline can be attributed to the deterioration of Galveston and Corpus Christi Bays as a fish habitat, due to increased industrial pol-

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January Fish Freeze

By J. G. BURR

Lack of Sun and Resultant Increase of Carbonic Acid in Coastal Bays Proved Death Trap for Fish

J. L. BAUGHMAN has written an excellent account of the fish disaster of January to which it would seem that little could be added. But there was something very unusual that should be brought out to clear up some of the otherwise unexplainables. Beginning with the surface facts it appears that the 24 degrees temperature on the 4th in the Corpus Christi area caught many fish in the shallows where they were numbed and driven ashore by high winds and waves. Others escaped to deeper water where many of them later died and floated to the surface. It is with these later casualties that we are here concerned, both in the Corpus and Brownsville sectors.

At Brownsville there were only two days of light freezing temperature which did not harm the citrus fruit; 32 degrees on January 1 and 30 degrees on the 4th. The mean temperature along the coast was never excessively low. From the 4th to the 7th at Corpus Christi Weather Bureau the mean temperature jumped from 30 to 48, and from there it went to 70 by the 15th, and continued high for the rest of the month. At Brownsville the mean temperature on the 4th was 33 and by the 8th it was 57, and yet fish mortality continued over much of the areas until the end of the month and extended for 100 miles down the Mexican coast. These temperature records afford only a partial explanation of one of the most, if not the most, devastating fish disasters in the history of the coast.

In fresh water bodies of water there is nothing new about fish dying from asphyxiation in cloudy weather, but for this to happen to salt water fisheries means a most unusual combination of circumstances which I am herewith setting forth.

The reader may be a little stubborn about accepting some of the conclusions to be reached, but we are dealing with some mighty stubborn facts, and the dominating fact is the influence of the sun on the chemistry of the bays and other bodies of water.

During January there were only 83 hours of sunshine in the Corpus Christi area and in the Brownsville area 91.5 hours. Beginning December 29 at Corpus Christi there was virtually no sunshine for 25 days. At Brownsville the first ten days were cloudy, and there was little sunshine the rest of the month. How this could adversely affect fish is explained by the presence of factors that

lay hidden in the bottom of the bays. At all times certain heavy gases occur on the bay bottoms, the extent depending on the temperature of the water. The low temperature of the bay waters had dissolved about double the amount of carbonic acid and hydrogen sulfide to be found in normal temperatures. Decomposing organic matter reduces the sulfates of sea water to sulfides which by reaction with carbonic acid yield hydrogen sulfide (Murray and Irvine). A very small amount of this gas is deadly to fish if they remain in it long enough. Again quoting another authority, hydrogen sulfide is very abundant in salt lakes and arms of the sea. It results from putrefaction (fish were rotting in the bays) and from the reduction of sulfates through the action of the bacteria which prey upon organic sulfur (Lederer).

Add to these the fact of cloudy days in December and January when there was no photosynthesis, or very little sun action to take up the carbonic acid which was then and there at work producing hydrogen sulfide, and you have pretty good proof of an unwholesome condition. Many fish that went to the deeper water fell into the death trap. There they wallowed on the bottom sick and sucking up the gases, yet living for days before they died and floated to the top.

It might be assumed that with wind and wave action to scour the bottoms

fish would have been safe. Hydrogen sulfide is a persistent gas and does not vanish with ordinary aeration. Dr. F. W. Plummer (deceased) in a study of the Luling oil fields found 350 parts per million of hydrogen sulfide in the wells, and that after aeration at the surface there still remained in the long ditch much of the gas until it reached the river miles away.

The writer used the same kind of water in several laboratory tests. He diluted the water 20 to 30 times and gave it thorough aeration before placing fish in the aquaria. In most of the tests the fish died of fungus in eight to twenty-three days. Fish weakened by insufficient oxygen and an excess of carbon dioxide are easy victims of fungus. Quoting Ward and Whipple, "Excessive acidity due to carbon dioxide (they might have added hydrogen sulfide) favors the germination of Saprolegnias, some of which are very destructive to fish eggs and fishes." These fungi are to be found in all waters where decomposition occurs.

If it be urged that in the colder northern waters hydrogen sulfide can be found in the arms of the sea, such must be admitted, but there is less likelihood of a concentration of that gas. While on the Texas coast there is little or no tide to scour the bottoms of decomposition, of which there is a greater amount because of the warm climate, in the north there are four tides daily, two flood and two ebb tides, and these tides are four to six feet high in the upper Atlantic States. There is therefore small chance for accumulated gases in the bays and estuaries of those waters.

The January fish disaster was unique in the annals of fisheries. Cold waves that strike the Texas coast with killing effect are usually of short duration and cloudless. Such was the case in the January 1930 freeze when I appeared on the scene the following day, to take pictures of the dead fish which lay in windrows along the Corpus Christi Bay shore line. These pictures are shown in the annual report of that year with the following statement: "The severe freeze which occurred in January resulted in a great scarcity of fish along the entire coast for some time, not so much that fish were frozen as that they were driven into the deeper waters of the Gulf. In several shallow bays, however, including the Laguna and the shallow bays

LAB CONTRACT LET

A marine laboratory at Rockport came one step nearer realization on April 8 when the Game, Fish and Oyster Commission awarded W. D. Anderson, of Austin, the contract to construct the laboratory at a cost of \$77,000. This is considerably more than the Commission originally planned to spend on the laboratory but with the cost of labor and materials continuing to increase the architect in charge of the project recommended the acceptance of Anderson's bid. When completed the marine laboratory will be one of the finest in the country. It will house all of marine fish research activities.

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TEXAS GAME AND FISH



THERE IS NO 'UNIVERSAL' POND FISH

IN THE best eating place in the little Florida town where my headquarters have been located for several months, the menu tends to repeat itself. For dinner there are usually five choices if one reaches the counter early. With occasional modifications there are nearly always the following possibilities: vegetable plate, 50 cents; beef stew, 60 cents; chopped sirloin, 70 cents; baked ham, 80 cents; fish, 90 cents. This last item always intrigues me. No particular fish is mentioned. There is just one word, "fish." Yet, when it comes to prices, like the name of Abou ben Adhem, lo, it leads all the rest.

True, this is but a single instance. Perhaps, because I have had to face that menu so many times, I give it unmerited weight; but I do think it is suggestive of how the wind is blowing. As one who is interested in pondfish culture, I find myself continually speculating as to how this field of endeavor might reduce the cost of the fish item to the level of one of the meat dishes—perhaps not down to beef stew, but at least to that of the glorified hamburger, that is to say, the chopped sirloin.

Very, very slowly this country is becoming more fish conscious. Just study the menu in your own pet restaurant the next time you eat there. The chances are that fish will be one of the items any day of the week and that it will not be listed at the bottom. Also, in many parts of the country it is likely to be fresh-water fish when this is available. In New Orleans, recently, I was told that fillets of channel catfish had been selling for as much as \$1.19 a pound. Such a price places channel catfish in the luxury class. How many salt-water fishes ever command that price? But just try to buy some channel catfish these days! There are few areas where the supply can even begin to meet the demand. Also, you will find in our inland

communities people who believe that there is no adequate substitute for the channel catfish, certainly that no salt-water fish can take its place. These people are ready, when necessary, to pay more for their favorite food fish than for others. If the fresh-water commercial fisherman cannot meet the demand for this fish, the job would appear to be one for the fish-culturist.

The idea is not new, of course, but unquestionably fish-cultural thinking now is stronger in this general direction than ever before. Several states have research workers on the problem of fish as crops, to be raised by the farmer for the market as he might raise crops of turkeys or rabbits. The Fish and Wild-

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By

THOMAS K. CHAMBERLAIN

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life Service has not yet announced any formal program of research in this direction, but it is following all developments closely.

There is another factor. The various conservation agencies involved are a little weary of the farm pondfish balanced-population battles now on their hands. Probably the heart of the trouble is that at present very few farm ponds provide either revenue or food for the owners. Because the fish are merely a source of recreation for the pond owners, they invest as little time and money in their

ponds as possible. It is a true saying that that which costs nothing is worth nothing. Vigilance may be the price of liberty: it is also the price of other things, including good farm-pond fishing. Vigilance, followed by prompt and vigorous action as may be necessary. Good fishing can be had from farm ponds that have been built right, but they also need care, and too few owners seem ready to give their ponds the necessary care. Once the pond owner decides that he can obtain revenue from his pond, it is likely that his attitude toward his pond will change.

Many people feel that fish as crops can pay only when the individual fish under consideration becomes a luxury item. For some time trout of several species, obviously in this luxury category, have been raised for a limited market. When catfish bring more than a dollar a pound, they may be considered to fall into the same class. But all luxury markets are limited and uncertain.

There is a second approach to the problem of making a profit from raising food fish in ponds for the market. Where low-cost fish food is available, the necessary profit may be made by the quantity production (per unit of pond-surface area) of fish bringing only a medium or low price on the market. This is the approach that has been favored by most other nations interested in pondfish culture. If the United States will adopt this approach now, our pondfish-cultural vision for the first time may be said to have become world-wide—not, as at the present time, limited by the boundaries

★ Continued on page 26

**Fresh Water Fish Still Commands Top Billing
And Top Prices on Menus the Country Over**

Three Species of Wild Turkeys Are Being Restored
Through Proper Protection and Land Management

NEW HOMES FOR TURKEYS

W. C. GLAZENER

PIONEERS exploring Texas found wild turkeys well distributed over most of the state, although concentrations were frequently restricted to streams bordered by timber, and other wooded areas. Subsequently, three subspecies of turkey were determined to exist within the state. Of these, the eastern wild turkey (*Meleagris gallopavo silvestris*) was common to the pine forests and adjacent country of eastern Texas, Merriam's turkey (*Meleagris gallopavo merriami*) occurred in extreme western Texas, possibly only in the Guadalupe Mountains, and the Rio Grande turkey (*Meleagris gallopavo intermedia*) occupied most of the intervening range. For many years these flocks provided a great

amount of food for settlers in various localities, until they were gradually decimated by extended and intensified settlement and hunting over most of Texas.

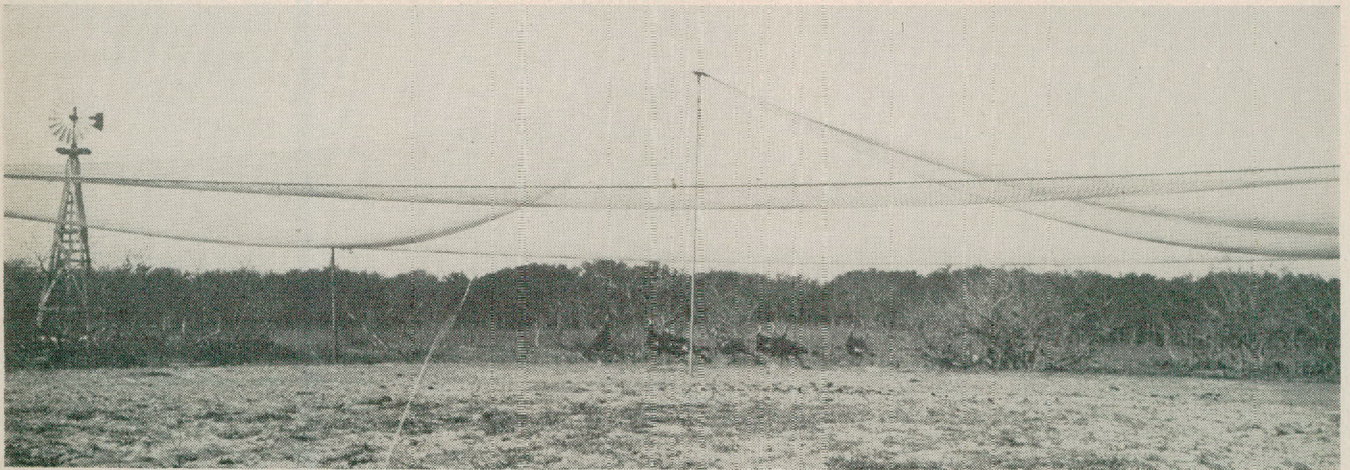
Today there are few survivors of the eastern subspecies, and these are found only in the most inaccessible spots of extreme southeastern Texas, probably only in Newton and Hardin counties. Merriam's turkey suffered similar extirpation in western Texas. Records from the Trans-Pecos indicate that these birds were gone from the region by about 1907. In 1928, Merriam's turkeys from

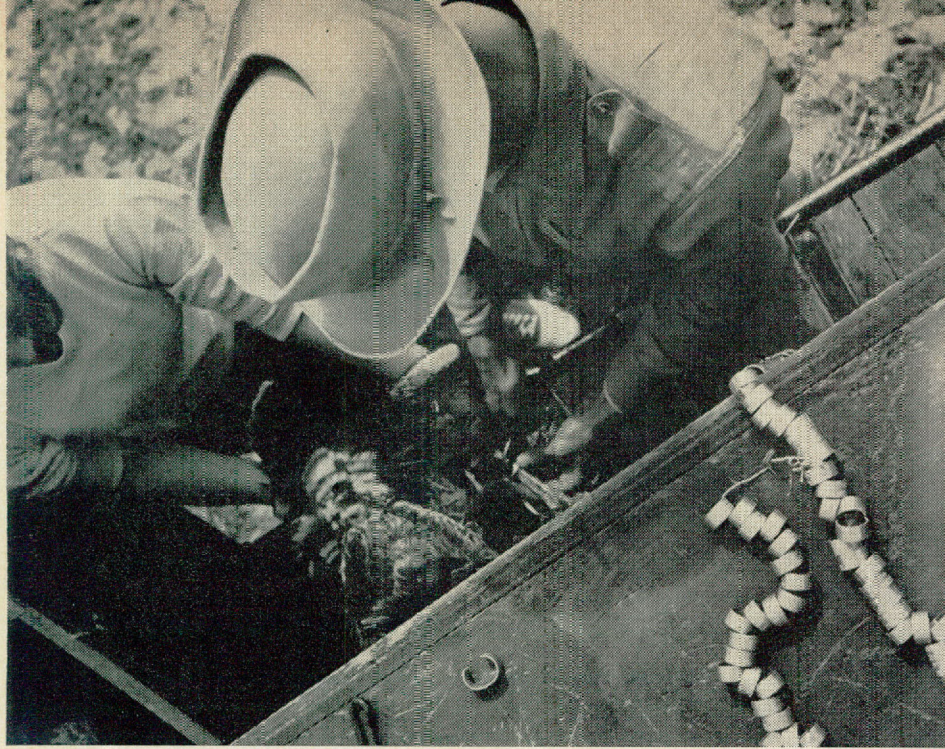
New Mexico were released in the Davis Mountains southwest of Fort Davis, and increase from this stock constitutes the current population of the subspecies in Texas. Through the range of the Rio Grande turkey, a different attitude toward land use and game protection allowed that subspecies to survive in a number of places. These survivors have afforded a source of birds for restocking depleted range on which restoration could be assured through protection and management.

In general, successful turkey restocking is dependent on the selection of an area containing naturally suitable turkey habitat. The area must be of sufficient size that released birds will be free from

In the upper picture turkey gobblers are feeding under the drop net trap. Cracked corn is used as bait to entice the wild gobblers

under the net. In the lower picture the trap has been sprung and several wild gobblers are hopelessly enmeshed in the netting.





A WILD GOBBLER is being banded with a metal band before being released. Note the string of metal bands in the right foreground.

disturbance, so that they can locate themselves with regard to roosting sites, feeding ranges, and watering places. Only when these adjustments have been made will nesting and reproduction be possible. Experience has shown that a minimum of approximately 25,000 to 30,000 acres, under complete protection against hunting for a period of five years, is essential to the success of such a program. In addition, it is highly desirable that surrounding lands consist of favorable range, permitting increase from the released birds to spread and populate adjacent acreage, thereby affording the widest possible benefits.

Potential turkey range must contain tall trees for roosts, a mixture of woods

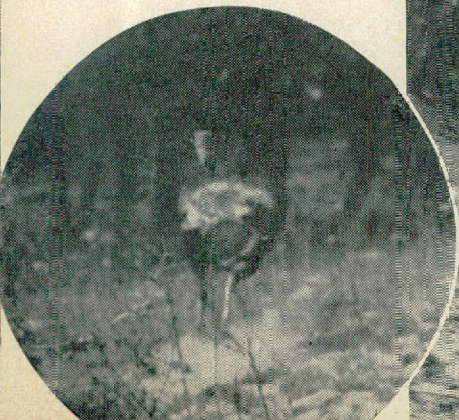
and small grassy openings for food and cover, and available surface water. Consequently, river bottoms and smaller streams frequently provide the features which will serve to hold birds within a general locality. By ranging in and out from a roosting center, turkeys can thus satisfy their seasonal needs for feeding, resting, nesting, and escape from enemies. Trees which are valuable in this respect include pecan, elm, hackberry, oaks, and sycamore. These, and a large number of shrubs, also produce important turkey food. Other plant food is secured from seeds and foliage of grasses and weeds. Grasshoppers are a favored item of diet. Young turkeys not only must have them, but will depend on

them entirely for many weeks. A further caution should be exercised in restocking turkeys, to avoid releasing them near domestic flocks. Such releases usually result in the loss of tame stock, and in contaminating wild blood.

Turkey restocking work under the Division of Wildlife Restoration (Pittman-Robertson or Federal Aid Program) must conform to certain specified requirements. Some of these are designated by the United States Fish and Wildlife Service, through which Federal Aid Funds pass, and others by the Game, Fish and Oyster Commission. All the specifications are designated for the purpose of assuring the best possible disposition of limited turkey brood stock available; the object being to select and restock those lands on which turkeys will have most favorable conditions for establishment and increase. When a landowner or a group of owners request turkeys for restocking purposes, a competent biologist is directed to make a careful inspection of the designated area. He determines to what extent the range offers favorable habitat requirements as mentioned in a preceding paragraph, including the amount, quality, and distribution of woods, grassland, water, and other essential factors. He also investigates ownership and acreages to make certain that they meet specifications. Upon acceptance of a block of land, each owner is required to execute a wildlife management license, agreeing to give the turkeys the best protection possible for five years, and to otherwise cooperate with the Game, Fish and

★ *Continued on page 20*

In the oval picture a wild gobbler is running for cover following his release and in the picture at the right a gobbler is shown in flight after leaving his crate in the right foreground.



PUMAS

By JACK BOWMAN

THE PUMA or mountain lion is the only one of the big cats native to Texas. Originally its range appears to have extended over most of the state. In the 60's it was common in Aransas County. In 1880, Cope, one of the early naturalists, said that it was found everywhere. In Young County there are records of it reaching from 1880 to the present. In 1890 it was found in the country west of San Antonio, and in the old days of the Mexican boundary survey (about 1859) it was found "from the coast to the Rio Grande" and also at El Paso del Norte. Moreover, the fertile valleys and tablelands of the lower Rio Bravo, Nueces and other Texas rivers formed at that time a rich support for a vast number of these cats. Numerous herds of wild cattle, mustangs, mules and horses, besides plentiful game, furnished their food supply.

Today the greatest population of these animals is found in and around Webb County, but they also occur in most of the counties along the Mexican border, from which they filter out through the stock raising portions of the state, and are rather abundant in the Chisos Mountains.

Few American animals have as great a mass of folklore surrounding them as do these great cats. Images and rock drawings in the southwestern United States are ample evidence that the Indians of this part of the world knew them long before the white man ever came to America. The Indians of southern California are known to have held mountain lions in superstitious awe and reverence, even as late as the founding of the Spanish Missions in that country. Some of the southwestern Indian tribes also shared this reverence. Both the Apaches and Hualpais of Arizona held the puma in especial awe, particularly its wailing, which was associated with death. Some Indians of the far west used the dried paws as medicine, dangling them over the head of the sick person to drive out the illness. Puma gall was also another remedy used in extreme cases. It was thought that it would increase the power of the patient to resist disease and that in a short time would cause him, or her, to assume the fierceness of the cat.

White men have almost as many legends about this cat as do the Indians. It has been called variously cougar, puma, deer tiger, panther, painter and catamount throughout North America, where it is widely distributed and in Mexico and South America, where it is quite common, it has almost as many names as there are Indian dialects.

Pumas may vary greatly in color. The young are usually a pale brown or fawn, marked with rows of black spots. These disappear as they mature, and the adult may display every variation from pale gray to "blue," and from tawny to a bright yellowish red. Occasional albino pumas have been seen also, and there are records of black pumas. However, these have all been reported from Central and South America, so far as is known, have not occurred in the United States.

Just as these cats vary considerably in coloration, so do they differ in size when full grown. Fourteen killed by Theodore Roosevelt in Colorado ran from a low of 47 lbs. to a high of 227. Seton speaks of an Arizona specimen 8 feet, 7¾ inches in length that weighed 276 pounds, the weight having been ascertained "after the intestines had been removed."



THE MOUNTAIN LION frequently eludes its foe by scampering up a tree.

Pumas sometimes reach an age of 18 years.

They are among the shyest of animals, largely nocturnal in their habits, and are rarely seen by man, except when hunted with dogs. Tireless in their wanderings, they cover immense stretches of country. Dr. E. W. Nelson, formerly of the old U. S. Biological Survey says: "It will often travel many miles in a single night, sometimes in search of game and again in search of new hunting grounds. I have repeatedly followed its tracks for long distances along trails, and in northern Chihuahua and once tracked one for a couple of miles from a bare, rocky hill straight across an open, grassy plain, towards a treeless desert mountain, to which it was heading, some 8 or 10 miles away."

Pumas do scream, although for many years a tremendous argument has raged, some men emphatically saying that they do not, while others just as emphatically state that they do. However, a number of times these cats have been caught in the act, so there is no longer any doubt.

Young and Goldman in their recent book, "The Puma, Mysterious American Cat," in this regard, tell a most interesting story of the early days on the Missouri River when the first steamboats ascended that river, when their loud alarms were sometimes thought to be the screams of pumas. They say:

"One day in early summer, Matthew Arbuckle rode into Papinsville. His horse was panting and flecked with foam.

★ Continued on page 23

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By **R. A. "DOC" JENKINS**

REMEMBER this when hooking minnows. All fish that feed on minnows swallow them head first. Turn point of hook towards minnow's head.

* * *

When you are casting hundreds of fish see your lure that do not strike. When no strikes occur after working a hundred yards of shore-line change your bait and give 'em something new. In hard fished waters fish are more apt to hit a strange, new lure than one of the same old baits they see day after day.

* * *

Dull hooks catch few fish. The points of hooks are easily dulled while fishing. Carry a small pocket hook-hone or look along the shallows for a smooth stone. Either will touch up the point of your hook in a jiffy.

* * *

A fisherman walks in to a sporting goods store and asks to see a reel. Hand him one and nine times out of ten he will give the handle a flip to see how long the spool will spin. A lot of reels are purchased on this test alone. It's all wrong. Heavy spools will spin longer than lighter ones but the heavy spool causes plenty of the "Three B's"—Birds-nests, Backlashes and Bad language.

* * *

More fish get off treble hooks than they do singles. This is because a fighting fish caught on a treble hook can obtain more leverage than is possible with one hook.

* * *

From a fish's viewpoint below looking upward at the light a white line is less noticeable than a dark line.

* * *

A thin piece of sheet lead or an old shaving cream or tooth paste tube cut into small strips is handier to use for sinkers than split shot. The lead strips can be quickly wound around a leader or line and they can be removed more easily than shot or any similar sinkers.

* * *

Here is a bait that will catch more crappies than minnows in some lakes. Try tadpoles (pollywogs) about an inch

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long. The larger wogs make excellent bass and channel cat bait.

* * *

An everlasting porkrind lure that soaks soft in a jiffy and never spoils can be cut from the skin used on drum-heads. Scraps of skin are obtainable at any musical repair shop that repairs drums.

* * *

You can prevent breaking the agate guides of your pet rod by plugging each guide with a small perfume vial cork.

* * *

Whether you use a fly rod or a bait rod the whippier it is the better chance you have of landing a fish after you hook it.

* * *

Change your speed when retrieving plugs for black bass until they start striking. Maybe you have noticed that on one day bass seem to prefer a fast

★ Continued on Page 29

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Antelope Hunt

By
**O. F. ETHEREDGE and
W. C. GLAZENER**

FOUR hundred and forty-eight hunters participated in the third controlled Trans-Pecos antelope hunt, and killed 391 legal bucks. The hunt was conducted in three periods, October 1-3, 5-7, and 9-11, and although rains interfered somewhat with the second period activities, the three-day provision afforded most hunters numerous opportunities to shoot at antelope.

Utilizing both airplanes and automobiles, field personnel of the State Game Commission made close counts of antelope herds on all ranches considered in the hunting program. Tentative recommendations were made after counts in March and April, and confirmation followed rechecks in August. The recommended take was 503 antelope, on ranches where operators were willing for hunting to occur, and landowners were allocated twenty percent of these permits for assignment. The general policy on recommending a harvest on antelope was to provide for killing approximately 75 percent of the adult bucks. Since antelope trapping was impending on a number of the ranches scheduled for the 1946 hunt, a higher take was recommended in those cases, particularly where removal of all antelope was to follow shortly after the hunting season.

There were 463 applications on file for the 402 places to be filled by the Game, Fish and Oyster Commission. Of these, about 93 had participated in the 1945 hunt. Consequently, all new applicants were first placed, then 32 "old applicants" placed by an impartial drawing. Subsequently, the remaining 61 applicants were placed on an alternate list, also by drawing, and all vacancies that developed were filled from this list. Before the hunt closed, all applicants had an opportunity to secure permits.

Regulations governing the 1946 hunt underwent no significant changes, except that landowners were permitted to charge each hunter a sum of \$40.00 and each hunting period was for three days, instead of two. Hunters were checked in and out of the respective ranches by game wardens, and their hunting was supervised as much as was considered necessary and desirable, to safeguard each other, livestock, and the antelope herds.

Representatives of the Division of Wildlife Restoration set up checking stations at ice houses in Alpine and Marfa, to secure data on age, weight,

TABLE I

ANTELOPE POPULATIONS ON RANCHES INCLUDED IN 1946 HUNT

Ranch	1946 COUNT			Recommended Kill for 1946
	Male	Female	Young	
Cartwright	6	51	a	10 b
Kimball	42	125	a	10 b
McIntyre	11	34	a	10 b
Morris	19	70	a	15
Ponder	37	53	a	20
Kennedy	27	58	a	20
Kokernot	66	184	a	50
Fletcher	18	71	a	12
Gillette, Coffield, and Jones	142	277	a	95
Love	20	87	a	15
Means and Means	56	127	a	40
Mims	56	96	a	15
Smith	50	149	a	45
Brite	62	164	a	45
Everett-Moore	9	31		5
Moor	52	100	50	30
Moseley	17	36	30	10
Baylor	53	55	57	35
Rounsaville	16	30	63	25 c

a - Counts made prior to fawning season

b - Ranches adjacent, and so fenced that antelope drift back and forth from one to other.

c - Antelope drift from this ranch in summer and return in September, as a rule.

TABLE III

1946 ANTELOPE KILL BY RANCHES

Ranch	Hunters Assigned	Hunters		Kill	Percent
		Checked In			
HUNT I					
Cartwright	10	10		8	80
Kennedy	20	19		18	95.2
Kimball	10	10		10	100
Kokernot	50	45		41	91.1
McIntyre	10	8		7	87.5
Morris	15	13		12	92.3
Ponder	20	20		20	100
HUNT II					
Brite	45	45		42	93.3
Coffield	45	41		29	70.7
Everett-Moore	5	5		4	80
Fletcher	12	10		6	60
Gillett	25	21		18	85.7
Jones	26	22		18	81.4
Love	15	12		9	64.2
C. A. Means	10	9		5	55.5
M. O. Means	25	18		12	66.6
Mims	15	13		13	100
Smith Brothers	45	41		41	100
HUNT III					
Baylor	35	27		27	100
Moor	30	30		24	80
Moseley	10	9		9	100
Rounsaville	25	20		18	90

TABLE II
SEASON SUCCESS

Hunt	Hunters Assigned	Checked In	Kill	Percent Success
I	135	125	116	92.8
II	268	237	197	83.0
III	100	86	78	90.5
TOTALS	503	448	391	87.2

TABLE IV

SUMMARY OF AGE CLASSES FOR THREE-YEAR PERIOD *

Age	NUMBER			PERCENT		
	1944	1945	1946	1944	1945	1946
Young	78	40	63	45.1	21.62	25.6
Prime	64	56	114	36.9	30.27	46.3
Old	31	89	69	18.0	48.10	28.0
TOTALS	173	185	246			

* Includes only those weighed and aged at checking stations.

TABLE V

ANTELOPE AGE-WEIGHT DATA

AGE CLASS	WEIGHT *					
	MINIMUM		MAXIMUM		AVERAGE	
	Hunt I	Hunt II	Hunt I	Hunt II	Hunt I	Hunt II
Young	31.5	46.5	76.0	78.0	60.9	61.85
Prime	50.0	51.5	83.0	84.0	65.4	69.4
Old	58.0	57.0	84.5	83.5	69.5	72.0

* Weighed at ice house, after being drawn in field

TABLE VI

RIFLES USED ON 1946 ANTELOPE HUNT #

CALIBER	NUMBER USED		
	HUNT I	HUNT II	TOTAL
.300	26	25 *	51 *
.30-06	19	30	49
.270	10	20	30
.30-30	11	12	23
.35	4	11	15
.250-3000	5	9	14
.30-40	3	3	6
.257	3	2	5
.348	1	2	3
.30R	0	2	2
7 mm.	0	2	2
8 mm.	0	1	1
.25	1	0	1
.219B	0	1	1
.220 Swift	0	1	1
.303	0	1	1
.401	0	1	1
TOTAL	83	123	206

No data secured for Hunt III.

* Includes 1 - 300 magnum

and condition of antelope, along with hunter reactions to their experiences and current method of conducting the hunt. The average weight of 246 antelope was 67 pounds, with the largest animal registering 84.5 pounds. Record animals for 1944 and 1945 weighed 94 and 87 pounds, respectively, and average weights were 72.1 and 68.44 pounds.

Data compiled with regard to the 1946 hunt are included in Table I to VI.

Restrictive Rifle Bills in Hopper

Sportsmen and target-shooters who desire to purchase rifles larger than a .22 rimfire will have to get a Federal Permit and be fingerprinted by the FBI if pending Congressional legislation becomes law. Two bills seeking to register firearms, having the endorsement of Attorney-General Clark, have been presented to the 80th Congress. Both proposed the same needless folderol, a permit (which can be denied) and provisions for search and seizure, with penalties up to a \$500 fine and a year in prison.

Senator Wiley, who introduced one of the bills, recently asked unanimous consent to discharge the Finance Committee from further consideration of the bill, and the bill itself was indefinitely postponed. He gave, among other reasons for withdrawing his bill, that he is "opposed to nuisance restrictions on our citizenry. I am opposed to needless controls on outdoor sports, which are, of course, so wholesome and well-loved by countless Americans, particularly by the scores of thousands of sportsmen in my own state (Wisconsin)—a hunting paradise."

The other bill, H. R. 1061, presented by Congressman Carson of Ohio is still pending in the House, it was stated, and remains as a threat to the law-abiding sportsmen who use firearms for healthful recreation.

☆

Most hunting accidents are not caused by the new and inexperienced hunter for, believe it or not, it's the "old-timer" who causes most of the accidents, according to the records. It's the "old-timer" who long ago forgot the meaning of the word "caution" . . .

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ARMS AND AMMUNITION

by ADAM WILSON III

The Ol' .30-.30

I JUST as soon convert a Democrat to a Republican as to try to change the gun notions of an old, seasoned hunter who has "for forty years" used the .30-30 caliber rifle. To him there will never be another shootin' iron which can compare with his one and only "thurty-thurty." For two reasons I would not even suggest a change of arms to the old shooter. (1) He can do with his .30-30 what many of the comparatively new riflemen, and week-end hunters, wish they could do with a super-accurate .300 Magnum. (2) There is an ancient saying "You can't teach an old dog new tricks"—a proverbial statement in which exists a trace of truth.

The Winchester lever-action rifle, Models 94 and 64—the latter being a newer and refined version of the older model—has done more toward popularizing the .30-30 caliber than other firearms, even though there is a great number of satisfied gunners who own lever-action Savages and Marlins chambered for the .30-30 cartridge. Bolt-action rifles manufactured by Winchester, Remington and Savage in this caliber have never received much attention from the hunting crowd. Too much time is normally required to manipulate their actions; they are more susceptible to jams with a rimmed cartridge. In addition, they do not slip in and out of a saddle scabbard as smoothly and easily, and as the old-timers say, "They don't look like a huntin' gun." Automatic and pump-action fans get duplicate ballistics with Remington's .30 caliber, or "rimless .30-30," but the lever-action is generally favored for cartridges of this class and type. The rimmed .30 caliber became Winchester's long suit, and they played it well. The .30-30 and Winchester

combination is as familiar to us as chicken and dumplins.

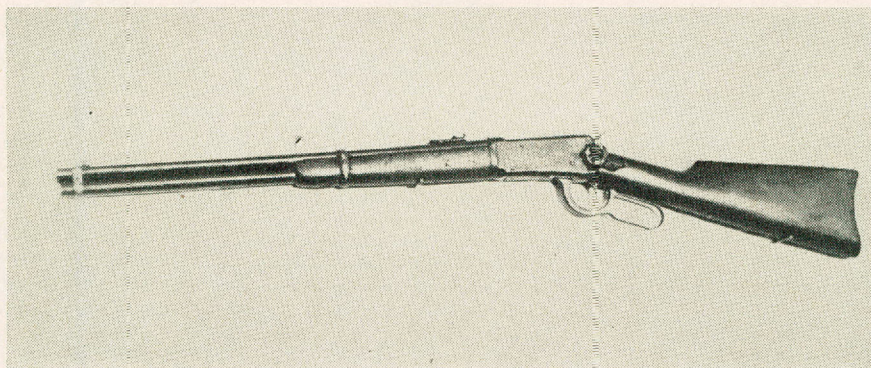
With the exception of the older .44 calibers, the .30-30 has enjoyed more fame and popularity as a deer rifle and saddle gun than any other sporting fire-

.30-30) for "that long shot" at the escaping villain; and how inexperienced we would consider a fictional writer if he did not permit his leading male character to plug or wing his target with a .30-30 caliber bullet.

I have been accused on numerous occasions of condemning the .30-30 rifle. As I have stated on these pages in previous issues of Texas Game and Fish in regard to this renowned sporting piece (and other rifles in its class), "it is neither the best nor the worst" for game the size of deer.

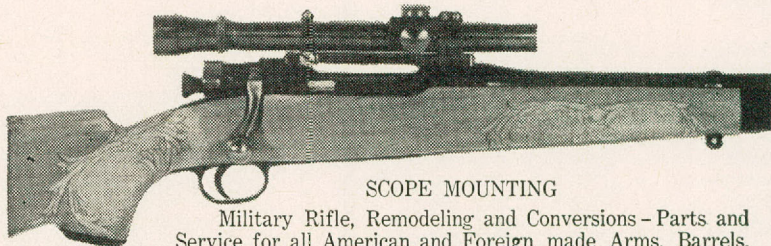
The rifle is not the best for reasons which are obvious to any rifle-

man who has had a taste of flatter trajectory, higher velocity, more accuracy and killing power. True, it has probably killed more wild game and predatory animals than any other weapon in North America, and there are only a few, if any, countries in the world where it has not drawn blood. But, we must remember that during the time when the rifle's popularity was near its peak, game



THE FAMOUS MODEL 1894 .30-30 Winchester. This particular rifle has killed its share of deer and turkey in the United States and Mexico, and has sunk crocodiles in South America.

arm in history. The terms "thirty-thirty" and "deer rifle" are practically synonymous to many present day hunters. Its fame has been perpetuated in almost every "two-gun" movie and wild-west fiction story. How disappointed we would be if we saw our dashing cowboy hero blaze away with a rifle other than the lever-action type (assumed, in cases when we aren't told, to a



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RIFLES having muzzle velocities of 2200 f. p. s., or less, generally give a poor performance on antelope. The author witnessed the shooting of the pronghorn at left which absorbed at least 1000 grains of lead before it allowed its pursuer, Oscar B. Clark, to pose for this picture. The rifle used, a .300 Sav. Remington, is not the best of antelope rifles, but is much more effective than the .30-30 caliber.

roamed the ranges in much greater numbers than they do today. There were no laws (if there were, they were extremely difficult to enforce in the earlier days) to prevent one man from killing a wagon load of deer, turkeys, and other game during a one- or two-day hunt. The arm found its way into foreign* ports because it was one of the first repeating rifles designed to handle a smokeless "high-powered" cartridge successfully. Its creation was considered an outstanding achievement. Today, however, we have rifles available to us which are as far ahead of the .30-30 as it was ahead of the black powder numbers. In Alaska, where our largest and most dangerous North American game is found, the .30-30 has retained its manifest approval of the natives—not because of its efficiency, but because .30-30 ammunition is always available in the most out-of-the-way trading posts.

The celebrated .30-30 is not the worst rifle, as I am sure over 2,000,000 buyers in North America—many of whom yet sing its praises to high Heaven—can not be wrong. I will readily agree that the lever-action carbine is one of the handiest short rifles ever placed on the market for the mounted hunter and law enforcement officer, range rider, and woodsman. Another appealing feature to many of its owners, the piece can withstand more use and abuse than the average sporting arm without cleaning or repair. I have seen the stocks of saddle rifles which have been chewed and battered from regular beating by brush, while the barrel and other metal parts showed dents and scars received when the rifles were used as hammers, staple pullers, and pry-poles; yet, the arms were always ready to make smoke for their masters. Still another attrac-

tion, especially to the man who wants a good reliable firearm but who is of the economical nature, the standard grade carbine has always been comparatively low in price. Although the .30-30 is dubbed "the poor man's gun," it has many rich friends. Fancy grade carbines and rifles, with stocks beautifully carved and all metal parts elaborately engraved, are not rare.

Rabid detractors of the .30-30 should keep in mind that it releases approximately the same killing power at 100 yards as a .30-06 delivers at 200 yards. In view of this fact, fellows who know of the '06's deadliness at 200 yards, will be forced to admit that the rifle of lesser power is a highly capable killer at the shorter distance.

Campfire discussions will invariably lead to "the longest dang shot I ever made." Thirty-thirty's are always among those involved in the tall-but-true stor-

ies. I will relate a couple of these which I happen to know to be true.

I saw this once-in-a-lifetime shot executed one bright morning as my father and I were riding over to one of our favorite hunting territories. We were saddling along up a cattle trail when a big buck jumped out of a live-oak thicket and started "carrying the mail" toward taller timber. Dad jerked his .30-30 Savage carbine out of the scabbard as he peeled off to the ground. I remained on my mount to watch the performance. The deer ran around us in a widening half circle, keeping well out of our sight except for an occasional glimpse. At last we saw him heading for a brief opening. He flashed through; the little Savage barked. The bullet "plunked." Four hundred full 36-inch steps from where the shot was fired, a ten-point buck lay in a heap—about twenty feet from the small opening he shouldn't have crossed. A wound at the base of his head explained the sudden death.

An uncle of mine, who has the reputation of missing all standing and broad-side shots then dropping 'em every time on the run, demonstrated his unusual shooting skill one evening when a red-tail hawk came sailing lazily overhead. Appearing to be no larger than a purple martin, it must have been almost a quarter of a mile high. Squinting up over the barrel of his rifle, Unk followed the maneuvering bird as it glided and turned at an altitude it thought safe from all dangers originating from the ground (I'm not too sure that the hawk was the only one think-

★ Continued on page 18

The Game Warden's Lament

By Gilbert Russell Brackett

If the game warden asks to see your license, he's insulting
 If he takes your word for having one, he's corrupt.
 If he arrests a violator, he's showing how rough he can be.
 If he gives the culprit another chance, he's showing favoritism.
 If he labors day and night to enforce the law, he's a tyrant.
 If he relaxes at all, he's a shirker and a crook.
 If he talks fish and game conservation, he's maudlin.
 If he keeps quiet, he's not interested in his work.
 If he accepts suggestions or advice, he's incompetent.
 If he works out problems for himself, he's a know-all.
 If he acts like a gentleman, he's too easy.
 If he acts firm, he's unfair and a rascal.

Ashes to ashes,
 Dust to dust,
 If the sportsmen don't do it,
 The Game Warden must!

(Reprinted from Rod and Gun in Canada, January, 1947.)

* In Germany the .30-30 was known as a 7.62x51-R.

Pointers and Setters Show
Championship Form at Tyler

World-Over Trials

Jo Anne's Betty, a setter owned by K. C. Miller of Tyler and handled by Frank G. Hill, won the open all-age event in the World Over Field Trials at Tyler in March. The setter showed real championship form in winning the judges' nod. Hawkins Texas Sport, owned by F. S. Hawkins, and handled by Heck Lonon, was runner-up to Jo Anne's Betty. Third place went to Proctor Boy's Jimmie, owned and handled by Dr. P. T. Killman.

Happy Go Lucky, an outstanding pointer owned and handled by Emory Wright of Tyler, won the World-Over Gun Dog Stakes. Second place went to Pinewood Snow, a setter owned and handled by E. E. Martindale of Jacksonville. Third place went to Pittman's Pat, owned and handled by Homer Pittman of Tyler.

In the Amateur All-Age running, Roscoe Texas, a liver and white pointer owned by K. C. Miller of Tyler, and handled by F. S. Hawkins, copped first place. Happy Go Lucky took second place with one find, Talley's Wayside Flirt, owned by Dave Talley of Tyler,

took third place, and Jo Anne's Betty, owned by K. C. Miller, won fourth.

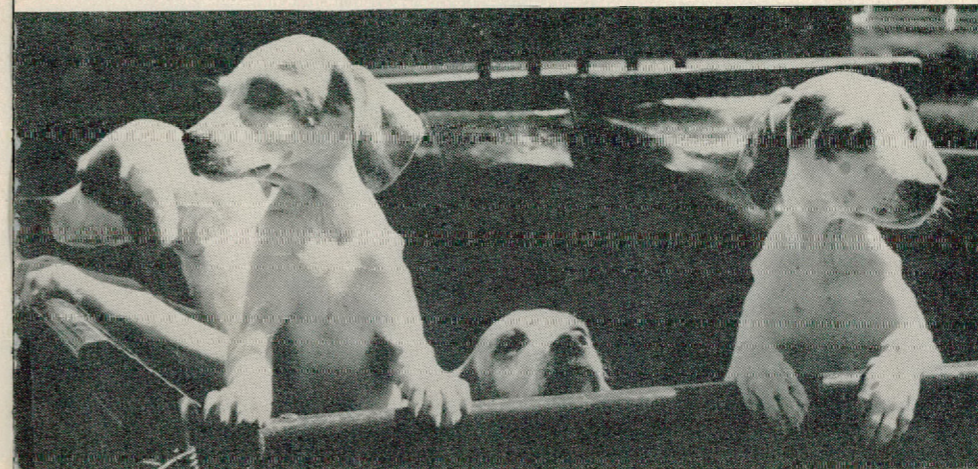
Commander's Hightone Beau, owned and handled by Carl Duffield of Tyler, dominated the puppy stakes. Second place went to Taylor's Happy Jack, owned by Archie Taylor and handled by Pat Daniels. This dog was very impressive, not as big as the winner, nor handling as well, but he worked with fire and courage. Third place went to Sholes' Village Brownie, owned and handled by C. K. Holcomb, a man new to field trials but who showed the small dog well.

Chaney's Ranger Tad, owned by C. C. Chaney and handled by Heck Lonon, won the open derby. Second place went to Luminary Bell Hop, owned by T. O. Cannon and handled by Heck Lonon. Third place went to Master Sergeant, owned by J. E. Ray and handled by Pat Daniels.

The field trials drew a record crowd of bird dog men from all sections of Texas. Weather was ideal for the trials. The dogs worked well and many creditable races were turned in.



It's a tense moment when dogs, handlers and owners line up for the start of a field trial. Here two dogs are leaving the starting line with handlers and owners ready to follow on horseback.



The pups on the left are a bit too young to be taking part in the World-Over Field Trials but they are showing real interest in the job they will be called upon to do next year. The lower photos show the start of another trial and cars parked along the pasture in which the Tyler field trials were held.



The pointer in the upper left photo is Miller's Roscoe Tex, winner of the amateur all-age, and owned by K. C. Miller and handled by F. S. Hawkins.

Winner of the Open all-age trial was Jo Anne's Betty, a setter owned by K. C. Miller and handled by F. G. Hill.

Three real field trial performers. From left to right: Emory Wright with Happy Go Lucky; W. E. Martindale with Pinewood Snow and Homer Pittman with Pittman's Ghost.



BLAME THE WEATHER

Why Your Gun Won't Shoot the Same Under Widely Differing Weather Conditions Without Changing or Correcting the Sight Setting

IT'S ninety degrees in the shade and a storm is brewing. Your rifle is shooting in at the point of aim at 500 yards, but your summer's vacation is over.

The next chance you get to do any real shooting is in January, the temperature is ten degrees above zero and the weather is clear and beautiful. You draw a careful bead on your target, squeeze the trigger . . . and your bullet plows a furrow one foot BELOW your point of aim! Don't blame your gun, your ammunition or your eyesight. Blame the weather!

This fanciful situation serves as the background for the frequently asked question, "Will my gun shoot the same under widely differing weather conditions without changing the sight setting?"

Unfortunately, the answer to this question is not simple, according to Dr. C. S. Cummings, supervisor of ballistics standardization at Remington Arms Company. "It would first be necessary to define what we mean by 'shoot the same' and 'widely differing weather conditions,'" says Dr. Cummings.

"The question is, however, a good one and illustrates an interesting angle to exterior ballistics that is probably not too generally appreciated, namely, that the trajectory of the bullet is appreciably affected by the density of the air.

"An exact answer can be given only when the specific atmospheric conditions in question, along with the nature of the gun and ammunition, are known for any particular case. However, a brief discussion of the principles involved and a numerical example may be of interest in giving the shooter, especially the man who shoots at long ranges in both very hot and very cold weather, some idea of the order of difference to be expected in the performance of his ammunition under these conditions.

"As stated above, the trajectory is affected by the density of the air. The density of the air is, of course, dependent on the temperature and barometric pressure. The 'atmospheric density' (weight per cubic foot of air) is one of several factors making up what is called the 'ballistic coefficient' of the bullet. This quantity, usually designated by the letter 'C,' is simply a measure of the bullet's ability to retain its velocity in the face of air resistance. In other words, bullets with a large value of 'C' do not shed velocity as rapidly as bullets with smaller values of the ballistic coefficient. Now the importance of the air density lies in the fact that it directly affects the value of the ballistic coefficient, the

more 'dense' the air, the smaller the effective value of this coefficient.

"Let us consider what the effect would be on the drop of a typical hunting bullet at 500 yards, assuming a muzzle velocity of 2,700 feet per second, when similar bullets are fired at a temperature of ten degrees Fahrenheit, barometer 31 inches, and a temperature of 90 degrees Fahrenheit, barometer 29 inches. In the first case the effective value of the ballistic coefficient is decreased by roughly 15 percent from standard conditions. In the second case, it is increased by approximately 10 percent, both changes being referred to its value at standard conditions of 55 degrees Fahrenheit, barometer 29.5 inches.

"A little calculating tells us that if the gun is held to strike the point of aim at 500 yards under 'standard' conditions (55 degrees Fahrenheit, barometer 29.5 inches), it will shoot approximately seven inches BELOW the point of aim on the cold day and three inches ABOVE the point of aim on the hot day. The sum of these differences, ten inches, could conceivably represent a clean miss.

"Unfortunately, no very simple rule can be given for estimating these effects. In most instances of shooting at fairly short range the effect can be disregarded. The existence of such factors should be recognized, however, and if your gun and ammunition are expected to perform under very hot and very cold conditions, it is advisable to 'sight in' under conditions most nearly approximating those that are expected to be encountered.

"Just one more consideration; 'hot' cartridges have a higher muzzle velocity than 'cold' cartridges, so expect a little more drop from cartridges kept in the magazine of your rifle at ten degrees above zero than at ninety degrees.

"So you see," concluded Dr. Cummings, "the weather DOES have an effect. The next time you score a clean miss, think back to the conditions under which your rifle was sighted in. Maybe THEN you can blame the weather!"

WIND EFFECT UPON SHOT

The extent of the effect of wind upon a shot charge has long been the subject of much speculation among sportsmen, especially wild-fowlers.

Wind does have an effect upon a charge of shot, but not so much as one might suppose. Naturally, it affects the target to a much greater degree, as the target is larger and traveling at a much slower rate of speed. Gunners should, however, take the wind into considera-

tion when estimating necessary leads.

The drift of a shot charge due to a cross wind equals the product of the wind velocity times the difference between the ACTUAL time of flight and the time of flight in a VACUUM. Take a duck load, for instance; the effect of a 20-mile cross wind on a charge of Number Sixes would be approximately 1½ feet at 50 yards.

In a 30-mile cross wind, the drift would amount to about 2½ feet at 50 yards, while at 30 yards, the shot charge would be affected only about ½ foot. These figures are, of course, only approximate, but show the necessity of taking the wind into consideration whether your "swing" is against it or with it. When swinging against the wind, the gunner should take particular care to avoid stopping the swing of his gun. Under these conditions the follow through takes on added importance.

The 01' .30-.30

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ing along those lines). Finally, the hammer fell which sent a .30 Winchester bullet on its way into a big blue sky. Another brief delay was endured, then feathers splashed. The Red-Tail spun earthward like a Jap Zero that had received a blast from a P-47 "fifties."

If the truth were known in all cases, when a bullet finds its mark at distances that seem unbelievably long, I would like to bet that the game (or other target, as the case may be) is no more surprised than the gunner. I have turned loose quite a few bullets that did strange things which caused me to mutter to myself, "Well, whattaya know!"

In the hands of a cool, crack shot, the .30-30 will give splendid results on deer and similar sized game. A man with a keen eye who has the ability to "shoot where he looks" can place the 170-grain** bullet where a 300-grain, .375 Magnum slug could not do a better job of putting 'em down for keeps. But, here's the trouble. The majority of our present day nimrods handles a rifle twice, maybe three times, each year; therefore, it is impossible for him to be an exceptionally good marksman. Consequently, he should by all means use a rifle which is capable of producing more shock to an animals nervous

**The 170-grain has become the most popular bullet weight for the .30-30 cartridge. Before the war, commercial companies offered bullets in six weights: 110, 125, 160, 165, 170, and 180 grain.

BLUE-WINGED TEAL

In the early autumn, when the first traces of frost appear on the northern breeding grounds, the Blue-Winged Teal begin to gather for the fall migration to the inland marshes, swamps and rice fields of the South where they spend the winter dabbling in the shallow, muddy pools and feeding upon the ripened grains that fall upon the water.

The Blue-Winged Teal is the first of the migratory waterfowl to move southward and the last to migrate northward in the spring.

Hunters look for the Bluewing because no duck decoys more willingly than the Blue-Winged Teal. It will drop in as readily to wooden decoys as live ones.

The Bluewing flies in large, closely-bunched flocks. They are an easy target despite their great speed as they circle and twist in passing and re-passing the decoys before splashing in.

Even in the dusk or early twilight, flocks of Blue-Winged Teal are easily recognized by their erratic flight, the sibilant sounds of their wings, and by the softly whistled twitters of the birds as they fly by. When startled, they spring vertically into the air from land or water.

On the water they swim in closely bunched groups. At times they appear to be touching as they rise and fall on the wind-whipped water.

GREEN-WINGED TEAL

Many sportsmen say the drake Green-Winged Teal is second only in charm and beauty to the gorgeous Wood Duck. It certainly is the smallest of our ducks and their small size will distinguish them from all except other Teals and the little Buffle-heads. Like the Bluewing, the Green-Winged Teal is an early visitor to the South and likes to spend the winter in the inland marshes and streams. It feeds by reaching down to sift its food from the muddy bottom or to pluck the weeds which are found in shallow water. The Greenwing is a tipping duck. That is, it tips when it feeds and often it can be seen kicking its feet in the air to help maintain its balance as it tugs on some stubborn morsel in the muddy bottom.

The Greenwing flies in large, closely-bunched flocks. The wings make an audible whistling sound in flight. When startled from ground or water, they spring vertically into the air to a considerable height before levelling off.

The Greenwing is reputed to be the fastest bird in the air—Its cruising speed is estimated at 100 miles per hour.

Blue-Winged Teal

FEMALE AND MALE

Green-Winged Teal

MALE AND FEMALE





system, or causing more destruction to, or near, said animal's vital tissues. For this reason alone, I have advised fellows who are buying their first deer rifle, not to invest in a .30-30—especially if they expect to find their buck beyond 150 yards.

During the '46 Texas deer season, I visited a camp of hunters all who were pretty new at the game. Their shooting equipment consisted of .30-30's, .30's, and a .32-40. Before they departed from their hometown, they consulted a veteran deer-slayer as to the kind of rifle best suited for white-tails. His recommendation was obvious. In all probability, rifles of that class were good enough—for him, but he forgot to consider one important point when giving advice to these amateur hunters. Not one of them possessed the ability to place his bullet, except by accident, near a neck, heart, or spine. Instead, they did well to yank the trigger when the muzzle was pointed in the general direction of the whole animal. For two weeks after the vacated camp, buzzards circled over the area where these men had hunted. We found plenty of evidence that showed if more powerful rifles had been used, or had the rifles used been aimed more accurately, several fat bucks would not have contributed toward a fatter buzzard crop.

In recent years, particularly, I have observed the waste of wild game brought on by the use of low-powered arms lacking "wallop" for the *average hunter*. I have seen "America's Favorite Deer Rifle" fail disgustingly on the fleet-footed antelope. When the animals were *reached*, too often, they would only fall a few yards behind the herd but manage to disappear over a distant ridge—running on three legs, or trotting with a hump in their backs. It was interesting to notice the absence of rifles having muzzle velocities under 2500 f.p.s. the next year following Texas' first controlled antelope hunt. Open season on pronghorn in the Lone Star State really boosted the sales of .270's and .30-06's in this section of the county. Last year in Colorado I talked with some Eastern hunters who were losing a great deal of confidence in their .30-30's after seeing their meat-getters (back home) fall short in giving the desired effect on mule deer and elk. They were "getting blood sometimes," but that was far from all they wanted after making a 2,000-mile trip to get a buck or bull to show the boys at the office.

While on this particular hunting trip in the Colorado mountains, I crossed the path of one hunter who I thought qualified to use a .30-30 on nearly any kind of game he might let his sights settle on. My hunting companion, O. P. Couch of Kerrville, Texas,—one of Texas' most popular gunsmiths—and I met him coming out of the foothills with a fat mule deer, drilled squarely through the heart, strapped across his saddle. While our mounts "blowed for a spell," we enjoyed a chat with the old gentleman. Appropriate enough, our conversation drifted

to guns. After the customary exchange of opinions we, more or less, let him have the "floor." He caressed the barrel of his Model 94 with tender affection as he told us, "Ah been a-git'n my deer nigh on to thurty year with this here gun, and it hardly ever takes but one cart'idge, neither." "Ever wound any?" we asked. "Nope," he answered, then recollected, "Wella ah take it back, reckon as ah did onest when I spied a whopper of buck a-making fur Powder Mountain over thar," he indicated the direction with a bloody thumb. "He wuz too fur off fur this lit'l gun, but ah jest couldn't hep but take a pop at 'im—gol, he wuz a buster. I knowed by the way he done though, I wanged 'im in the laig. Sorta made me sick to see that ol' scamp git away. Wasted a lotta good meat, too—lobos got 'im course. Ah don' try fur 'em like 'at no more—ah druther sneak up close, then make shore I gotta good bead 'fore ah touch'er off." The interesting old character tamped a pinch of rough-cut into a battered and caked cob pipe as he cast an inquiring glance in the direction of our rifles. "Whatchew fellers tottin'?" We told him we were carrying a .30-06 Springfield and a souped-up 8 m/m Mauser, and offered them to him for inspection. "There're mighty purty, and with these glass sights a man can kill'm half mile off—I've seen my boy do it with his'n. He spots 'em first with a po'erful field glass that he has, then if they're big 'nough fur 'im, he lets 'em have it. His gun's sumpin like 'is on—a thurty-ought-six, but 'is lit'l thurty is goo'n nough fur gittin' meat fur me and the old lady."

As we rode on up the trail toward the timberline, we agreed that the .30-30 was "good'n 'nough" for this old hunter from the old school. He realized that the arm which he regarded so highly was not the best in the world, and that the far-away buck would have to be taken care of another day, or with a rifle having more power than his M-94. He was a good shot and an able stalker.

Generally speaking, men who have shot the .30-30 for a long period of years, during which time they have become accustomed to its limitations, are as loyal to the arm as a Texan is to Texas. Actually, some of them will become offended when someone refers to their rifle as a "peashooter," or if they are told that his beloved fowling piece can be outdone. Compared to many of our more potent sporting rifles, it definitely is not a powerhouse. He who implies that "the .30-30 can kill a deer as far away as any of 'em," evidently, has never seen a good .270 or .30-06 really 'shine." I like to see a man who thinks in terms of his rifle—be it a .22 rim-fire or a .600 Express—as being *among* the best. That is usually a strong indication that he is capable with it. But, I truly dislike seeing one sold to the point "there's no other better than mine."

I am sure my conscience would keep me awake at night if I made a very slashing remark about the ol' .30-30. You see, my first "big gun"—my first love

larger than a .22 caliber—was a Featherweight Savage M-99, chambered for the .30 W.C.F. cartridge. With this little streamlined job, I, at the tender age of nine, wobbled its 20-inch barrel around into small enough circles (yep, I had a touch of 'buck-fever" on that memorable morning) to finally squeeze off a shot which brought down my first white-tail buck—a big 13-pointer. Until such time that I became acquainted with the merits of the .300 Savage caliber for hunting in brush, and .30-06 caliber for shooting across wide canyons, the six-pound Savage filled by every requirement for a deer rifle in the Hill Country.

The .30-30 was brand-new fifty-three years ago. For a remarkably long period of time, it served in a capacity that was difficult to duplicate. Today.

* * *

Before you attach just any scope sight on to that lightweight .22 caliber rifle, drop down to your favorite sporting goods store and take a squint through, and handle, the new Bear Cub sight.

There is nothing highly unusual about its 2½ power, minimum field of 35 feet at 100 yards, coated and sealed moisture-proof lenses, 4-inch eye relief, positive elevation adjustment (windage adjustment accomplished by screws in mount), and high luminosity; but do not miss these outstanding features: Weight 5½ ounces; tube size, ⅞-inch. It is 11¾ inches long, and as one might guess, it is made of the high strength aluminum alloy—duralumin.

Many of our good optical sights, which are usually larger and slightly heavier, when mounted on a light, small rifle, cause the piece to appear out of balance and feel top-heavy. Of course, the sturdy Kollmoregen product is not confined to being a desirable "glass" sight for a particular caliber, weight, or make of arm.

The Bear Cub was developed by the Kollmoregen Optical Corporation in collaboration with the makers of Stith Mounts.

Fish Freeze

★ Continued from page 6

around Galveston, many fish were destroyed, though the greater loss was of fish of no commercial value, mullet and sand trout. In Copano Bay, which is quite shallow, the fish were so numbed that fishermen gathered them in with their hands. In this condition at many places those near the shore were washed upon the beach, by wind and tide, and perished. Generally speaking, however, the coast yield of both fish and shrimp was equal to that of the previous year and adequate to the demands of the market."

In the 1947 disaster the loss of commercial fish, trout, redfish and drum, was stupendous. The loss of mullet, which school at the surface, was small. By leaping from the water they gathered oxygen and escaped the noxious gases of the bottom.



MARKING A BIRD with brightly colored enamel for future identification.

Turkeys

★ Continued from page 9

Oyster Commission in their management. If at all possible, the approved area is stocked with turkeys the following trapping season.

Through the past years, turkey brood stock has come from a number of sources. Eastern birds have been secured in Alabama and Mississippi for release in East Texas, and Merriam's turkey from New Mexico for restocking in the Trans-Pecos. However, the greater portion of brood stock has consisted of Rio Grande turkeys, and most of these have been supplied through courtesy of various ranchmen over the range of this subspecies. Recent contributors include Gus Schreiner and Mrs. Myrtle Schreiner in Kerr County, Gordon Stewart in Kimble County, Caesar Kleberg, Robert J. Kleberg, Jr., John Kenedy, and McGill Brothers in Kenedy County, Richard Cage in Brooks County, and Watt Matthews in Shackelford County. In addition, the Fish and Wildlife Service has permitted removal of some turkeys from the Arkansas National Wildlife Refuge at Austwell.

Turkey trapping operations are conducted during the late fall and winter months. This is partly to take advantage of the winter flocking habit of turkeys, and also to have cooler weather so that the birds will suffer less in being handled and transported. It is desirable to terminate trapping before mating and nesting begin. However, birds released following the close of the regular hunting season (November 16-December 31) possibly have better chances of establishing themselves on an area. Any hunting or shooting in the vicinity of recently released turkeys is almost certain

to drive them away from the area.

In advance of actual trapping, field men select and bait prospective trapping sites long enough to draw flocks for daily visits. The most effective bait for turkeys is grain sorghum or shelled corn. However, good results are frequently secured by using wheat, oats,

peanuts, pea-sized cottonseed cake, or other stock feed. Once turkeys are feeding regularly at a site, trapping may be done at will. Since hens and gobblers normally flock separately during the fall and winter, it is usually necessary to make separate catches of each sex.

When the trapper is ready to move turkeys to a new area, he erects a trap at one of the established feeding sites. Then he settles down in a blind alongside the trap to wait for a flock to arrive. Birds usually feed beneath the trap at their first visit after its erection, so that no time is lost in getting them accustomed to it. As soon as enough birds are under the trap, the operator pulls a trip cord and the net falls over the entire flock. The turkeys are then placed in special hauling crates and transported to the restocking area. Before releasing birds, the field man places a numbered aluminum leg band on each. He records this number, together with data on source of the bird, and the time and place of its release. The bands also bear the words, "Notify Game Commission, Austin, Texas." Therefore, when a band number is reported, along with information about the bird from which it came, additional light is thrown on the subject of turkey restocking. Releases are made near good cover and water, so that the turkeys have a better chance of locating favorably. Operators attempt to release an entire load of birds at once, so that there will be less scattering, and they can find each other more readily. If a second year release is made on an area, or if movement studies are conducted on a research area, field men frequently mark birds with brightly colored enamel so that they may be identified at sight. Birds so marked during the winter may be readily distinguished until they go in to a summer molt, ordinarily from late June to early August.

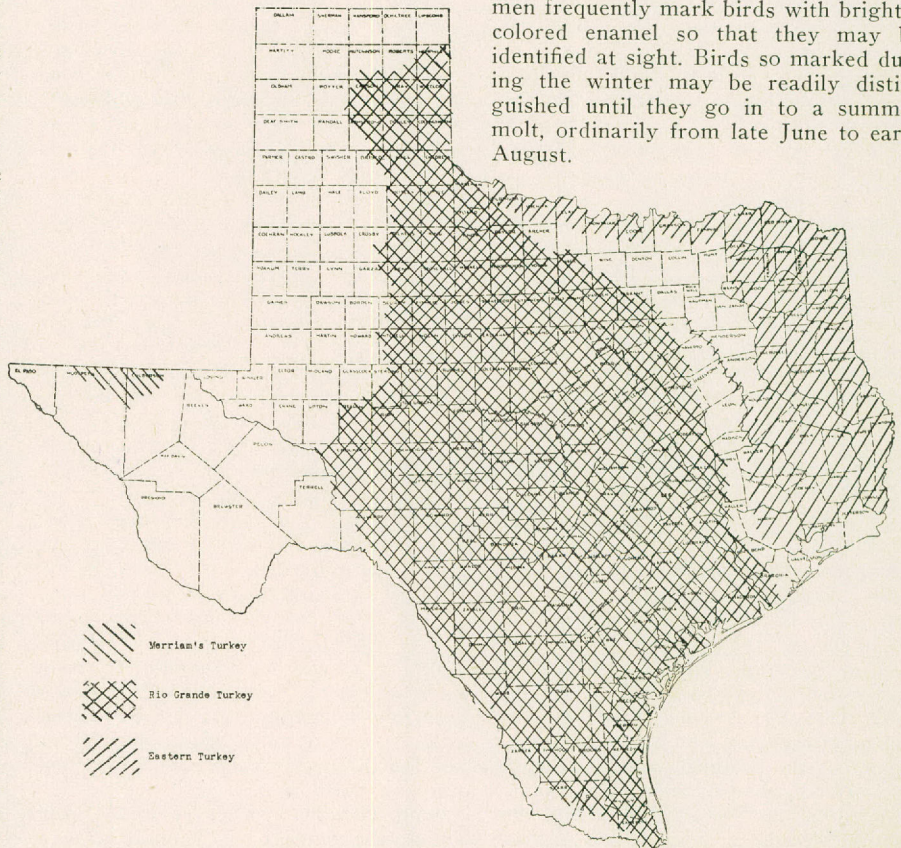


Figure 1. Former range of wild turkey in Texas

The Laguna Madre Sphinx

★ Continued from page 4

said, would mean that "Only about 8 percent of the width formerly available for salinity exchange at mean low water is to be left."

What might happen in such an event is a question free to all who have the curiosity to inquire. There is a saying that fools rush in where angels fear to tread. The writer makes no boast of exceptional courage but is willing to dare an invasion of the sacrosanct. The subject has been ably discussed but not exhausted. Therefore it seems proper to examine further the likelihood that a hydraulic fill, such as described above, would produce a brine pool or a dead sea.

While the Dead Sea of Palestine was caused by slow accumulations of salts so long ago that the time could not be calculated with certainty, the increasing salinity of the Laguna is of quite recent origin, dating from the times when tropical storms pushed the sands of a section of Padre Island into the Laguna, effectively stopping the flow of water between the upper and lower divisions. However, not all the sand flats were built by tropical storms. Mainland drainage from a slough extending northwesterly through the Kenedy Ranch had a part in building up the shallows which observers have described as being boggy. Such were the decrees of nature which all too often have baffled the ingenuity of man.

The high salinity of the Laguna, of which we have heard much, is due to the great evaporation that takes place, particularly during summer months. The average annual evaporation, according to Weather Bureau records, amounts to approximately five feet of water, enough to dry up the entire Laguna in the course of a year if there were no rainfall or tidal flow to replace the water. A few puddles might be left in the deeper parts of Baffin Bay. In the case of a complete dry-up in the late summer the precipitated salt crystals would whiten the lake bottom with a layer of salt nearly half a foot thick in much of the area above Point of Rocks, and a foot deep in the middle of Baffin Bay. There would be enough salt to supply all the ranches of Texas for a number of years. But such complete evaporation is prevented by an average rainfall of some two and a half feet plus at least that much more from the drainage basin, and the tidal flow from Corpus Christi Bay. This flow is so variable that no precise computation is possible. What the flow would be with a hydraulic fill that cuts off approximately 90 percent of the entrance at the upper Laguna, poses a question still more difficult to answer.

The upper Laguna surface has at least 250 square miles and an average water depth of perhaps three feet. By conversion this would be 480,000 acre feet of water. As stated above, the annual evaporation in dry years is equivalent to the

total contents of the Laguna or 480,000 acre feet. Likewise the same acreage of fresh water enters annually, an average of five feet. As evaporation and rainfall are in balance they cancel each other out, and the Laguna with its 480,000 acre feet capacity is kept full by the flow from Corpus Christi Bay. In order to fill this basin, the net flow or increment must average 663 second feet for the year. The terms "net flow" and "gross flow" should be clarified. The gross flow is all the water that enters the Laguna at flood tide. The net flow, or increment, is that portion which remains in the Laguna when the ebb tide is passing out of the Laguna.

As the tides rock back and forth the gross flow must be very much greater than the net flow of 663 second feet but no estimate of the amount is available. A hydraulic fill, as specified, would reduce the gross flow from Corpus Christi Bay to perhaps 10 percent of the present gross flow. But the net flow is what counts. Ten percent of the net flow would be about 66 second feet or about one third the size of the San Marcos River. If at present it required the net 663 second feet to keep the Laguna full, one might suspect that with only 10 percent of that, the Laguna would dry up. However, the flow would not be reduced that much. As soon as the Laguna water level began to fall, a fairly constant gravity flow would set in. This flow would be almost irrespective of wind and tide, which now controls the flow from Corpus Christi Bay. The ebb tide, then, in the Laguna would be negligible and probably entirely absent during the summer evaporation. What the Laguna level would be, no one can tell, but there would be little or no exchange at either end of the Laguna, and the salt would continue to pile up to the point of saturation.

The Dead Sea of Palestine is a small affair in comparison with what the Laguna might become as a storehouse of chemicals. As such, it might have more value than the millions of pounds of drum, redfish and trout harvested there annually. Stock salt, magnesium, bromine, potash, and other chemicals could be extracted in great quantities. The relative concentrations in the Dead Sea, as derived from the River Jordan and other tributaries, is a very good picture of the possible Laguna concentrations, as derived from the waters of the Gulf of Mexico. The percentages given below do not mean parts per thousand in sea water but the relative percentages of minerals occurring in the group of compounds analyzed. The analyses were taken from Bulletin 70, of the U. S. Geological Survey, on Geochemistry by Clarke:

Gulf of Mexico:

Chlorine	55.24 percent
Bromine17 "
Sulfates	7.54 "

Carbonates	34 "
Sodium	30.80 "
Potassium	1.10 "
Calcium	1.22 "
Magnesium	3.59 "

The Dead Sea:

Chlorine	65.81 percent
Bromine	2.37 "
Sulfates31 "
Sodium	11.65 "
Potassium	1.85 "
Calcium	4.73 "
Magnesium	13.28 "

The sulfates were abundant in the Jordan, about the same as in the Gulf of Mexico, but they were mostly precipitated in the Dead Sea, and that might possibly be the case in a concentrated Laguna. Sodium chloride would, of course, be the dominant compound. The Great Salt Lake of Utah is completely saturated much of the time but has no bromine and less calcium and magnesium than ordinary sea water, its main constituent being sodium chloride.

However, to utilize the salts of the Laguna would be no simple matter. Location of a chemical plant there would be hazardous because periodical floods of fresh water would dilute the salt and put the plant out of operation. Also, disposal of the salt waste water or effluent would be difficult and expensive. But it should be remembered that engineers have a way of meeting and overcoming difficulties and the time may come, etc., etc.

Unfortunately, if the Laguna, as a dead sea, could not cash in on its chemicals, there would be nothing left, not even its picturesqueness. It could not compete in horrors with its archetypal rival, the symbol of death, which is indeed a doleful place. A traveler once described the Dead Sea: "It lies deeply embedded between lofty cliffs of naked limestone, its shores presenting a scene of indescribable desolation and solitude, encompassed by desert sands and bleak, stony, salt hills."

Who would want a chemically rich Laguna in that style? Though it has been called the land that God forgot, it still has a wild enchantment. It is a proper home for wild animals. Not infrequently a coyote swims from the mainland to Padre Island, and to other islands. The Bird Islands of the Laguna are famous rookeries, and at the north and south Bird Islands in the spring I have seen hundreds of baby pelicans streaming along a pathway, without enough feathers to be able to fly. If the Laguna were a dead sea with no life in the water and no fish, sea birds would leave, going to inland lakes near by, or to other parts of the coast. If the Laguna can continue as at present, regrettable as it may be, the periodical loss of fish is favorable to bird life in that the weak and enfeebled fish are more easily caught by the sea birds.

Brine usually begins to develop early in the summer at the lower end of the upper Laguna, and the prevailing summer winds from the south drive the salty water northward until sometimes

Fisheries in Texas

★ Continued from page 5

the density becomes uniform over the entire body of water. A uniformity of 83 parts per thousand over most of the Laguna had taken place on July 19, 1945, and fish mortality had begun to set in, but this was promptly checked by rainfall and high tides that followed. The same condition was developing by July 19, 1946, but was again checked by rising tides. The drop in salinity continued until late January, when the Laguna could be considered a wholesome place for fish, with salinities around 50 parts per thousand and less.

Other years have been less fortunate. In 1938 when the rainfall was only 21.5 inches and the evaporation 63.7 inches, the south wind blew for ten months, pushing the water northward until it evidently choked off any tides from Corpus Christi Bay, and fish died in appalling numbers. There is no record of what the salinity then was, but the annual report for that year tells the story: "Once again the Upper Laguna Marde has proved to be a death trap for fish. Due to high salinity in this body of water some fish die there every year. In July this year a series of factors united to destroy thousands of pounds of very fine salt water fish, mainly redfish and speckled trout. No such disaster as this, it was said by old-timers who live in the vicinity, had occurred since the year 1914. Lack of rainfall on the watershed of the Laguna for the previous six months, unusually low tides for the preceding two months and the closure of Corpus Christi Pass, which formerly connected the upper part of Laguna Madre with the Gulf of Mexico, had combined to produce the heaviest fish mortality in this body of water in a quarter of a century."

The prevailing wind of that year as mentioned above, was from the south, every month except December and January, this wind driving the water, and holding it against the tides that might have entered from Corpus Christi Bay. It must be perfectly clear to anyone that the stoppage of the tide was the major factor in producing the fish disaster, and it should be equally clear that a stoppage of the tide, or nearly so, by a dirt fill, will produce a like disaster to the Laguna.

Biologists are puzzled as to why fish enter the Laguna in such prodigious numbers, as evidenced by the enormous catch which is usually equal to half the entire littoral production. A plausible guess is that the Laguna is a superior feeding ground. A few miles east of Padre Island there is a red snapper bank. Along the Padre beach are shell banks washed up from the Gulf, and along these beaches is said to be the finest fishing to be found anywhere on the Texas coast. There the surf is clear, indicating the presence of shell bottoms. Fish are attracted by this molluskan menu and is it any wonder that migrating fish turn in at the first entrance in search of the Laguna larder?

lution. However, it does not appear plausible to accept this as the sole explanation. From experience in other places, namely, Chesapeake Bay and North Carolina, it is evident that sheepshead have suffered a very serious depletion. Its probable cause has been suggested by Dr. Hildebrand of the U. S. Bureau of Fisheries, who stated that "a slow rate of growth and late maturity would explain, in part at least, why sheepshead diminish rapidly under heavy fishing, while other, presumably faster growing, species have stood it without a serious decline." It seems probable that if the species were to be taken from the list of commercial fishes and afforded full protection for a time, it might once again support a commercial fishery.

Next to the sheepshead in poundage were warsaw, with 23,785 pounds. Jewfish, another member of the grouper family accounted for only 3,165 pounds, while miscellaneous smaller groupers amounted to 12,304 pounds, some of them undoubtedly coming in from the Campeche Banks with the snapper catches.

The two fisheries in Texas most affected by the war were the shark and mullet fisheries. From none in 1941-42 sharks produced 7,400 pounds the following year, and reached a high of 108,647 pounds in 1943-44. In 1944-45, 97,439 pounds were produced, but in 1945-46 only 1,071 pounds were caught and there is every indication that the catch will be far less than that for the present season. This entire production was the result of the efforts of one company in the Port Isabel section, which was unable to continue production once the war-induced market collapsed.

A similar situation applied to mullet. The Crawford Packing of Palacios early made an intensive effort to utilize this species. From 6570 pounds in 1941-42 production rose to 50,000 pounds in 1942-43, then to 61,521 pounds following year, and in 1944-45 to an all time high of over 95,000 pounds. In 1945-46 the mullet catch again dropped to 2,359 pounds, the market refusing to absorb them, although they have a ready sale in the southeastern states. This is unfortunate, for if a market could be developed, it has been estimated that Texas waters alone contain a potential production of not less than 4,000,000 pounds per year.

Spanish mackerel is another fish occupying somewhat the same position as the mullet inasmuch as the total production of 4,846 pounds for 1945-46 is only a slender indication of an estimated potential production of several million. Each year vast schools of Spanish mackerel swing up the western shore of the Gulf of Mexico striking the Texas coast at Port Isabel in March or April, and moving slowly northward. These schools may be four or five miles long, and two or three miles wide, and evidently mil-

lions of individuals. At such times hook and line fishermen in small boats may catch a barrel or so in a few hours, but no effort has ever been made on this coast to utilize nets in their capture as is done in Florida. Here it is not a case of shortage of markets, or buyer's resistance, but lack of efficient methods of production that keeps the fishery small.

Menhaden is also undeveloped. Twenty years or so ago, purse seine boats from the east coast annually caught 4,000,000 pounds of these fish in Texan waters. However, the comparatively low oil content, combined with the long run caused the cessation of the fishery. Recent successful establishment in Louisiana of a factory for handling these fish has pointed the way towards a resumption of the Gulf fishery, and as the Texas menhaden supply is a large one it would appear a profitable field for operation.

One other fish appears to offer some possibility for the establishment of a Texan fishery. This is tuna. Several of these fish have been caught off Port Isabel. Those caught have proved to be Lesson's Black-finned tuna, and most of them have been taken by Stuart Adkins. He says, "Those caught here have run from 18 to 100 pounds, and not many of them have been caught, for as a rule they run far offshore. I have seen the Gulf covered with them, some of which I think would go over 200 pounds. They are always headed south and traveling plenty fast."

It is improbable that these larger fish are Lesson's tuna, as this form rarely exceeds 60 pounds. The question is of course what these larger fish are, and whether there are enough of them to make a commercial fishery profitable.



ALL ON THE SAME LINE. These three catfish weighing 12, 35 and 45 pounds were caught on the same line by A. W. Sipe of Corpus Christi in Corpus Christi Lake.

Pumas

★ Continued from page 10

Matt told the group which gathered about him that, while plowing on his claim about a mile from the Osage, he had heard a terrible noise. He said it was something like the scream of a 'painter,' only ten times as long and loud.

"Uncle John Whitley, who had 'fit with Jackson' at New Orleans, and who was the acknowledged leader in that pioneer community, was sent for. He listened to Arbuckle and said the only thing to do was to get the hounds together, take the guns, and go after the varmint, which he reckoned must have wandered down from the Rocky Range, as they called the Rocky Mountains in those days. Uncle Jimmie Breckinridge seconded Captain Whitley, and the settlers got ready. As the posse was about to start for the trail a faint repetition of what Arbuckle had reported was heard. It was sure enough a new and terrifying sound. Uncle John at once remembered that his pretty daughter, Mattie, had gone on her pony to the river that morning.

"'Ride, men!' he shouted. 'Ride! Matt went down to the river, and I expect she's dead by this time.'

"There was mounting in hot haste, but before the start was fairly under way here came Mattie with her hair flying. She had heard the monster. Uncle John bade her get to the house and tell all of the women-folk to keep within doors.

"Darkness and storm came on together. Captain John Whitley led his party to Rock House, a cave forming a room twenty feet high, thirty feet wide, and forty feet deep. There was no disturbance in the night, but at daybreak that nerve-racking sound brought every man to his feet and set the hounds howling. The noise seemed to show that the monster was coming up the river and was near.

"Uncle John posted his men for the encounter, every one behind a big tree. Four were told off with orders to have their knives ready and to wade in if the lead failed to stop the beast. Near Rock House was one of the sharpest of the scores of curves and bends of the Osage. Around the point and into view of the amazed settlers came slowly the 'Flora Jones,' the first steamboat to ascend the Upper Osage."

Similarly, with the very first approach of a steam locomotive on the completion of the Northern Railroad in New York State, the Frontier Palladium, of Malone, New York, states editorially on August 1, 1850: "Some of our gray-haired fathers, who had heard the scream of the panther when the site of our village was a wilderness wild, came out to see whether that animal was coming to regain his dominions."

Pumas are fierce and inveterate enemies of livestock and deer, as well as smaller game. They usually secure their prey by a silent, cautious stalk, taking

advantage of every cover within striking distance of the intended victim, and then, with one or more powerful leaps, crushing it to the ground by the force of the blow, and the impact of their weight. The speed and power of such a charge are evidently enormous. It has been known to jump a distance of 13 feet from a standing position, when frightened, and leaps to 20 feet are apparently not uncommon. In one instance a leap of 40 feet was recorded, while in another a leap panther jumped from a ledge of rocks about 20 feet above the level."

Dr. Nelson says, of the stunning force of such leaps:

"In a beautiful live oak forest on the mountains of San Luis Potosi I once trailed one of these great cats to the spot where it had killed a deer a short time before, and could plainly read in the trail the story of the admirable skill with which it had moved from cover to cover until it reached a knoll at one side of the little glade where the deer was feeding. Then a great leap carried it to the deer's back and struck the victim to the ground with such violence that it slid 10 to 12 feet across the sloping ground, apparently having been killed on the instant.

"Another trail followed in the snow on the high mountains of New Mexico led to the top of a projecting ledge from which the lion had leaped out and down over 20 feet, landing on the back of a deer and sliding with it 50 feet or more down the snowy slope."

The mountain lion lives largely on deer, but often kills calves and is especially fond of young horses. In fact, in many range districts of the Western States and on the table lands of Mexico, owing to the depredations of this animal, it was once impossible to raise horses, although within recent years the operations of government trappers have abated this nuisance somewhat. However, it does not confine its diet to these animals alone. Remains of elk, moose, mountain sheep, beaver, mice, mountain beaver, javelinas, porcupines, coyotes, martin, skunk, turkey, fish, snails and other pumas have all been found in their stomachs, while in addition to calves and horses, they will kill an occasional pig, sheep or goat.

Moreover, they will occasionally attack and devour a man. Such instances are rare, however, and the almost universal fear of the puma is based mainly on its mysterious ways and its size and power to do harm, for, as a rule, it is extremely timid in its relations with man, even permitting one to climb a tree where it has taken refuge from dogs and place a rope around its neck.

However, Young and Goldman list a number of instances of such attacks in their book, and even show, in one of their plates, the indubitable remains of a

man taken from the stomach of a puma shot in Okanogan County, Washington. They say:

"An uncontrovertible modern instance occurred in 1924 in the vicinity of Malott, Okanogan County, Washington. On December 17, at 11:30 a.m., a boy 13 years old was sent on an errand to a neighboring ranch. He took a short-cut along a trail through a coulee, and when he failed to return a search revealed his remains. Tracks of the boy and of a puma in the light snow told the story. It was apparent that the cat had been following the boy, keeping to one side of the trail in the brush. When the boy saw the animal he had become frightened and ran to the base of a small tree with the apparent intent of climbing it to avoid the animal. However, at this point he was struck down and partly devoured. The opinion formed by those inspecting the scene of the attack was that the puma had leaped at least 10 feet in its attack on the boy. A general hunt followed but without success, owing to the obliteration of the tracks and other signs by the large number of persons who took up the pursuit, seeking the liberal bounty that was offered. About a month later a full grown female puma about 3 years old was taken in a coyote trap by a local rancher, some 4½ miles from the point where the boy was killed. Its stomach contained a small undigested mass, which upon examination in the Food Habits Research laboratory of the Biological Survey proved to consist of hair from the boy's head, two bits of blue jeans, and a part of a pocket from his overalls, containing an empty brass cartridge shell which he was known to have carried as a pocket-piece. It is probable that if the boy had not run no attack would have been made, as these animals have often been known to follow people, as previously mentioned, apparently out of curiosity."

They list a number of other attacks also, in each of which the attack can be laid at the door of a panther.

So shy, and so difficult to trail are these cats, that it is almost useless to hunt them without dogs. One such hunt I made on the King Ranch sticks in my memory.

A pair of these cats were reported one morning from the Santa Gertrudis, and I accompanied Valgene Lehman, the ranch biologist, on an expedition to rid the county of these stock killers. Arriving at the "cinderero" where they had been seen we searched for 3 hours without discovering any sign of a track, and were on the point of returning to headquarters when the dogs arrived. For 2 hours more we followed their every move, waiting for them to pick up the trail. At last the strike came, the dogs opening up in a crashing chorus, and we were certain we had our lions. Jumping into cars, we tore madly after the pack, coming up with them just at the psychological moment.

In ten more jumps they would have had the biggest jack rabbit you ever saw in your life.

Letters to the Editors

Rockport Fish Bowl

I am afraid you "over-did-it" in the article "Rockport Fish Bowl." We fishermen can forgive a man for just a little extension of lengths, and even forgetting (in his excitement) that 16 ounces make a pound, but when they county 'em THREE times, that's a little beyond the extreme. See your pictures on Pages 9, 10 and 11, March issue.

HENRY W. FLAGG,
Galveston, Texas.

* * *

I have just finished reading the March issue showing several strings of fish at the Rockport Fish Bowl. You wouldn't kid your readers would you? They look strangely like the same string from different angles.

GROVER MORRELL,
Dallas, Texas.

* * *

Who are you kidding, Brother—the string of fish on Page 9 is the same string as appears on Page 10 and probably is the same string which appears on Page 11 of the March issue.

LOUIS M. BOURNE,
Dallas, Texas.

* * *

Look again and count 'em. There are 14 fish in the string on Page 9, including one drum, two reds and 11 trout. The string of fish on Page 10 includes 10 fish, one drum, one big and one little red, and the rest trout. The string of fish on Page 11 contains nothing but trout. However, you all missed the pictures in which the same string appears. The lone fisherman on Page 11 is holding the same string of fish as his wife is holding on Page 12.—Ed. Note.

* * *

Wants Camps Advertised

I am a disabled veteran of World War I and a lover of outdoor life. But I can't take it in the rough, so I began to look up ads of camps with cabins in Texas. I don't seem to be able to locate one. Could you give me any information about such camps? I find a lot of camps advertised out of the state, but Texas suits me best. Do your lakes have cabins? There are lots of people in Texas who can't take a long trip. As a suggestion, get some of these Texas camp owners to run ads in Texas Game and Fish and help us out.

BEN F. LYNCH,
Eastland, Texas.

* * *

Here is my renewal for Texas Game and Fish. It's doing a grand job to help the sportsman and the game. Keep her going.

BOBBY GENE FERGUSON.

Wildlife Is Hobby

I enjoy listening to your weekly broadcast very much. I also feel that you are doing a great service to the citizens of our good state.

I have been wondering if there was some way one could get copies of the talks you make.

The foxhunters of this neighborhood have organized an association that is of a different nature to any I know of. The primary object being that of informing our neighbors of the true advantages as well as disadvantages, or merits and demerits, of all kinds of wild animal life found in our neighborhood.

I do not know whether or not you were raised in this country, and are acquainted with the appalling ignorance of the average farmer in this respect. If it were possible to show the tracks of the ten (10) most abundant animals of this region in one place, I am sure there would not be one farmer out of each twenty that could identify each of the tracks. I seriously doubt that one out of fifty of my neighbors could correctly identify the separate tracks of a bobcat, fox, large house cat, and small cur dog.

I am past fifty years old. The lore of wild life has always been a hobby with me. I own my own farm and operate the local dairy for Rising Star. Have spent most of my life in the country, twenty-five years in West Texas and New Mexico and the remainder here in Central Texas. But, before this should become boresome, I shall get back to my subject.

We do not care to publish anything on the ignorant prejudice of some misinformed or simple-minded person, as has been practiced by some sources through the columns of our local papers. We feel that you will be fair enough to abstain from such things, and let your reference be based on sound sources of information.

We would like to have everything we put before our neighbors to be of authentic origin: for instance, from the facts gathered by our State Game Departments, the different Federal bureaus, Audubon Society, etc.

I do not feel that the talk you made last night on taking that little son fishing would be amiss. Of course, many sportsmen heard you, but many radios were tuned in on other programs. Also, if a fellow is a thinker and not a fisherman, I believe it would do him good.

A portion of my family have lived in this neighborhood for sixty years. About ten or twelve years ago the gray fox started migrating in. For fifteen or twenty years prior to that the wharf rats made it almost impossible to raise chickens on the farm to any extent. In some seasons there would be hordes of them, even in the woods and fields.

The rabbits swarmed the country and we farmers would have rabbit drives every season to try to thin them out. It

was a problem to raise a melon patch and our peanut fields would be eaten clean around the edges for a distance of from fifty to one hundred fifty yards.

Since the advent of the fox, one seldom hears a complaint of the rats molesting anyone, our fields produce peanuts up to the area sapped by the timber line, and as you have probably heard, the watermelon carnival is held in Rising Star. We have many more quail than we had in the days of the rat.

At first the average farmer was alarmed at the appearance of the fox. Now, almost every neighbor I have is heartily in favor of his protection. I will someday, if Providence permits, send substantiations of these facts signed by my non-fox hunting neighbors.

I have heard of very few fox raids made on poultry. Of course, we do not know what the consequences may be, if nature should get out of balance and there should be a dearth of their natural food.

Very few of the farmers about me will go to the trouble to kill an opossum on account of the few cents his pelt might bring someone, not realizing he is the worst enemy of the song bird of all wild animals. Not one in a hundred that I talk to, realize the part the old "darkey" superstition about killing a cat has played in the destruction of our song birds and the infestation of insects that is costing the farmer millions annually in poison.

Armadillos are becoming numerous here. I have heard they were pretty bad to destroy quail eggs. I am not familiar with its general habits. Would appreciate any information you might be able to furnish. If the armadillo's good qualities out-balance the bad ones, then why destroy him—or vice versa. If my cow furnishes me milk through the winter and breaks the fence and destroys a few dollars worth of crop in the spring, I do not kill her.

I do not hunt for birds because when I shoot one and see it lying lifeless in its innocence, I feel so much like a heel; but I do not condemn the other fellow for enjoying the sport and my place is always open to the clean bird hunter. And by the way, isn't there a vast difference of opinion amongst the boys who call themselves sportsmen, as to just what the meaning of the word implies? I will be happy when we can each be a true sport in respect to the other fellow's enjoyment, the rights of the property owners who so graciously allow us the privilege, and the preservation of the game that furnishes us the pleasure.

Among the foxhunting members of our association, which is local, there are several bird and deer hunters and quite a number of fishermen. At our monthly meeting, these topics will be discussed from time to time.

We are not just interested in the animals that furnish us our sport, but in all the wild life about us, especially as to its benefits as well as disadvantages

to our neighbors. Through their generosity we enjoy our sport.

The membership fees paid in this vicinity by the foxhunters will amount to about one hundred dollars annually. Every dollar not used for correspondence, etc., goes for the above mentioned purpose.

Our local newspaper editors have shown an enthusiasm in this respect, and graciously offered to print from time to time articles or extracts from articles which we may furnish them. It is through this medium and the distribution of pamphlets to boxholders that we wish to accomplish what we can. We would be grateful to you for any information you may have at any time, and as to the proper sources of which you may know to which we might apply.

We are just a bunch of old country boys who wish to do something, not so much for ourselves as for our posterity. When we look back to our youth and then at the present, sometimes we think we can see the "handwriting on the wall."

C. E. (Ed) WATKINS,
Rising Star, Texas.

* * *

Opposed to Season on Does

Dear Sir: Enclosed is check for the renewal to your magazine. And please put me down as opposed to any doe season on deer. Where does are too numerous, they should be trapped for stocking other areas. I am afraid to open the season on them would be the wrong thing.

J. D. DILLINGHAM, JR.,
Hood Village,
Camp Hood, Texas.

An Ounce of Prevention

IN SOME sections of the country foxes and skunks make poultry keeping unprofitable. To eliminate all such predatory animals cut the tall grass and weeds from several yards around the poultry house and fenced yard and sprinkle the space with used crank case oil. No fox or other animal will cross the oil.

Moles that dig up the lawn can be driven away by opening up their tunnels in several different places and dropping in a few moth balls. Moth balls dropped into gopher holes or ground squirrel holes will cause them to vacate. Woodchucks (ground hogs) can be gotten rid of by soaking a ball-sided piece of cotton in high-test gasoline, placing it down into the animal's hole and then plugging the entrance. The vapor of the gasoline will cause them to leave.

Mice often cause much damage by gnawing holes around the baseboards and in the flooring of summer cot-

Store Your Shells Carefully

NOW that the hunting seasons are over, many of us are prone to lay away our surplus sporting ammunition in boxes, corners or on shelves without any consideration for the temperatures or degrees of humidity under which it is stored.

More care in storage should be exercised. Loaded shotgun shells will keep and perform satisfactorily after a great many years if stored under conditions suitable for the keeping of books and other paper articles for indefinite periods.

Such constant climatic conditions are represented by a temperature of 70 degrees F. at a relative humidity of 70 per cent. Conditions meeting these specifications are difficult to maintain but the normal atmospheric variations in a temperate climate will not affect the ballistic qualities of loaded ammunition. Under extreme conditions, however, the loaded shotshell may become permanently injured, not to the extent as to render it useless, but to the extent of impairing its performance.

Paper cases that are allowed to become alternately damp and dry may develop a loose crimp which, in turn, loosens the shot charge and has the effect of lowering both the velocity and pressure. Also a paper shell which has become too dry shrinks in diameter and the crimp offers more resistance.

If one will exercise a little judgment in storing ammunition, however, by keeping it in a cool, dry place, away from excessive heat and heavy moisture, it will maintain its quality over a long period of time.

tages. To prevent them doing so give the wood a coat of mixture of two ounces of ground red pepper in a pint of raw linseed oil. The same linseed oil-red pepper mixture painted around the base of young fruit trees and ornamental shrubs will discourage rabbits and other gnawing animals from damaging them.

Any spray containing nicotine will make your summer garden deer and rabbit proof. Bright pie tins hung from stakes or limbs with cord or wire will protect berries and fruit from damage by birds. Wasps, hornets and ants are the three principal summer insect pests. The first two can be eliminated by spraying their nests at night with a mixture of two ounces of glycerine and ½-ounce spirits of camphor. They won't return. Ants can be permanently kept from cupboards by spreading either ground red or black pepper over the shelves.

—R. A. Jenkins.

Dog Tips

WHEN IT'S PUPPY WEANING TIME—When a female is weaning her puppies provide an old army cot for her to lay on up off the ground where her hungry offspring can't reach her. When it is desired to wean puppies in a hurry one of the best "discouragers" is to mix a little powdered alum in some camphorated oil and rub the mother's teats with it several times a day. This not only stops the puppies from nursing but the camphorated oil helps to dry up the flow of milk and shrinks the udders.

SORE EYES—One of the old true and tried remedies for your dog's sore eyes is simply warm milk. Bathe the dog's eyes with it several times daily. Milk is also an excellent remedy for eye trouble caused by skunk perfume.

LICK PROOF—To prevent dogs from licking off any salve or dope applied to a sore or wound, mix a little alum in it before using. The bitter taste does the trick when nothing else will.

FLEAS VAMOOSE PRONTO—Want to get rid of the fleas in your dog's sleeping quarters? It's easy. Just line the kennel, including the floor, with tar building paper. It keeps out drafts and dampness as well as vermin. Where puppies occupy the kennel tack on the paper well to prevent them from chewing it and tearing it loose. Cedar shavings, used during the hot summer months is more comfortable and cooler than straw bedding and also helps to keep the dog's kennel free from "bugs."

GETTING RID OF TICKS—In some tick infested areas these pests make a dog's life almost unbearable. To remove each tick separately in the usual way by touching it with a feather dipped in gasoline or turpentine would be a full time job. A quicker and better method is to make a solution of two (2) tablespoonfuls of kerosene (coal oil) and a quart of milk, and rub this into the dog's coat. Leave the mixture on for a half hour then give the dog a bath with warm water and yellow naphtha soap.

WHEN YOU DOG'S DOGS ARE SORE—About the best home-spun remedy for a foot-sore dog is: a mixture of one-third tannic acid and two-thirds pine tar. Heat the tar until soft and stir in the tannic acid. Wash the dog's feet in warm water using a mild soap. Obtain some very fine sand. Put the tar-tannic acid mixture in one pie tin and the sand in another. Dip each of the dog's feet in the warm (not hot) tar and then into the sand. This gives the foot pads a protective sole. Remember that two soles are better than one. A treatment of this kind given before the dog is taken hunting will keep him hunting when he would give up otherwise.

No 'Universal' Pondfish

★ Continued from page 7

of our own country. Foreign students in pondfish culture will find us working on problems that for the first time will have real significance for them. We shall then take world leadership in this fishery field as in so many others.

In the past, foreign students in pondfish culture who have come here to take home words of wisdom may have done so, but the words of wisdom have applied in large measure to our own domestic problems and interests. When applied to their conditions, our recommendations have sometimes given serious trouble. From Cuba, for example, have come expressions of regret that our black bass has been introduced there.

A particularly striking example comes from Mexico. Lake Patzcuaro is an isolated body of fresh water. A few years ago it seemed to have no fish population. The only animal that lived in it was the axolotl form of salamander, *Bathysiredon dumerili*, a close relative of the tiger salamander found over much of the United States. *B. dumerili*, however, has not been reported outside of Lake Patzcuaro. This salamander was used by the natives for food and was one of at least four species of salamanders that appeared in the fish market. Presumably through the influence of American farm-pond literature, black bass and sunfish were introduced into Lake Patzcuaro. The native salamander could not compete with the exotic and predaceous fish; instead, the salamander has disappeared from the lake, and this seems to mean that it has become extinct. Now the natives regret the exchange. They neither like the fish meat so well as the salamander meat nor obtain the poundage of fish meat that they did of salamander meat. But the error has been made and apparently can never be corrected.

The mistake of planting bass in this water is understandable. All our pondfish literature, Federal and State, praises the fish to the sky. The bass has been represented as the king of the warm-water pond. So it is—for the American pond owner who seeks recreation by fishing. But how many pounds of black bass meat as food can the owner get per surface acre of pond? Perhaps two or three hundred pounds per year.

Ask a Chinese fish-pond owner near Canton how many pounds of fish he gets from his own acre pond. If he says he is obtaining average production, that means that for each surface acre of his fish pond he is getting 3,990 pounds of fish meat per year. He will have reference to five species of Cyprinidae, with which he stocks his pond according to some favorite of 11 recognized stocking formulae which include three to five of these species. With this formula the owner hopes to obtain the maximum



THAT FELLOW at the left is a pretty sad looking sack as he poses for his picture but just watch him go when the dinner gong sounds. That's him on the left of the upper photo with the two black spots on his back, and is he going after his grub. The litter, including Sad Sack, is owned by State Representative Bill Wood of Tyler and is of the fine Phil Essig strain.

one of the fish species will feed upon and turn into fish flesh.

A German, Polish, or Hungarian pond owner may tell you that for each surface acre of pond he expects to obtain more than 2 tons of carp, a fish that in those countries commands a price almost comparable to that of channel catfish in this country. The European pond owner also has to feed his fish to raise such a crop, but here again it is a case of feeding cheaper vegetable material in order to obtain higher-priced meat.

There is little question but that our farm-pond owners would make some real money if they knew how to raise 2 tons of channel catfish per acre of pond surface, even if the price of 1 ton went into feed and operations. Just how much assurance of success are we now in a position to offer an American pond

★ Continued on page 32

weight of fish, every ounce of which (including heads and entrails) will be eaten. The pond owner will think of his fish entirely as a crop, a crop that he will feed all the cheap or refuse organic matter on which he can lay his hands, organic matter that he hopes at least

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GERALD M. CLOPTON and the seven pounder that answered his prayer.

Dinner-Time Fish

JUST let me catch this one fish, if I never catch another!" was the plaintive but sincere prayer sent heavenward by Gerald M. Clopton of Austin, Texas, one Sunday morn, March 9, 1947, to be exact.

The prayer was sent forth not from the usual church pew but from a sturdy fishing boat in the middle of Lake Travis. Its sincerity was, however, not lessened by its environment.

"Please, oh, please, let me catch this fish!" Clopton reiterated, as he continued to reel in his elusive prey, steadily and cautiously.

Silent prayers of encouragement and hope were no doubt likewise offered by Clopton's sole fishing companion of the day, Glenn Cooke, Jr., who had a ring-side seat at the bout between wary but not weary Mr. Fish and nervous but persistent Mr. Clopton.

Both of these obstinate fishermen were perhaps simultaneously thinking over the day's routine up to that point. They were pondering over their hard efforts since early dawn at trolling and casting. They were begrudging their three-hour stretch of non-profit casting plus one lost strike. But they were thankful and grateful for the relief of Cooke's nailing a most welcomed five-pounder. Yes, that definitely rushed up their spirits to the proverbial 100 per cent, as the fish came plunging into the boat from a hard but quickly fought battle.

But then it had gotten to be dinner-time! Well, that is most people's dinner-time, but not for such headstrong fishermen as these Cooke and Clopton fellows. Being real dyed-in-the-wool

sportsmen of the nth degree, both had said, "Let's chuck that old eating-deal! We can eat any time! Perhaps this is an omen of good will!"

Cooke proved the worth of their decision by soon yanking out a likely pocket near an old stump in the lake another beautiful addition to any man's fishing stringer.

Clopton couldn't help remembering that he had to his credit at this time only one lost strike. Then a further, even more vivid, picture of a sudden lunge at his line with a fish tugging vigorously, and then an upward arc and bait thrown clean as any whistle was sticking in Clopton's fishing memory. Then, in only a few minutes practically a repetition of the same procedure, with the result of "just another fish that got away."

Cooke finally and fortunately made a most worthwhile suggestion that Clopton should definitely add another hook to the bait he was using. It was getting to be quite apparent that the fish were biting said bait but not getting hung properly. Taking his advice well under advisement, Clopton had put a small treble hook near the center of his home-made monstrosity, which seemed to be having all kinds of luck, both good and bad. After about six casts, Clopton landed and kept to show the folks back home a nice five-pounder, similar to Cooke's bass.

But still none of the fish to date were those huge record-breaking fish that all true fishermen pray for, cuss for, wait for, and usually never get. That's why this prayer of Clopton's which we started off telling you about was so earnest and so apropos.

Clopton had especially selected the present spot of the fishing site as the most likely looking place in that vicinity. He had picked out an old cedar tree and had made a cast into the most beautiful pocket among the tree branches. He had only been retrieving his plug about two feet when Clopton felt that unmistakable feeling, that zenith of all fishermen's desires—a big tug on a real home-made plug.

"He was on! He was a big one!" Clopton knew without any doubt whatsoever. "He was also in the midst of

numerous, yes, quite numerous, dead branches in that cedar tree."

"The situation looked quite hopeless," Clopton admitted later, "when the fish decided to take a tuck around one of the limbs. However, he soon gave up this tactic, and a couple of feet of line were gained. He came near the surface, and upon seeing the boat, he made a grand power dive for the bottom of the lake. His tail wash resembled that churned up by my little 1½ H.P. out-board."

"Needless to say, a ten-pound test line with an eight-pound leader was too frail a tackle to do much horsing with, so he had to be allowed to run. In a little, he came clear of the brush and was possibly three feet from its edge when he made his last desperate effort to reach the safety of the brush pile. This time the last ounce of strain was placed upon the tackle, and the fish was turned before reaching the brush.

"When he slowly turned his head toward the boat, I realized that although the worst might be over that considerable difficulty remained, as by now, I fully realized and was convinced that he was no ordinary fish.

"That's when the praying must have really come in handy," Cooke joked, as he thought over the day's activities later on.

"Finally I got the fish close enough to get into a net," Clopton continued. "Glenn made a dip at him with the net, but we soon saw it would be a hard job landing him. He was too large to go in the net. On top of all this, just as Glenn was trying to pull in the net, with so-called prize catch inside, the handle to the net broke. Luckily, the fish fell clear and the hooks didn't get tangled in the net.

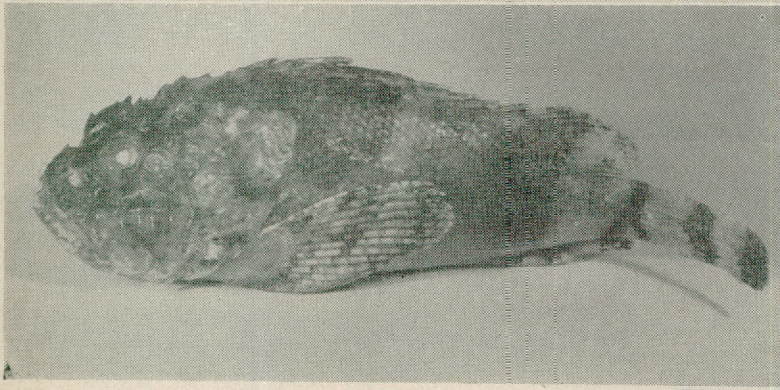
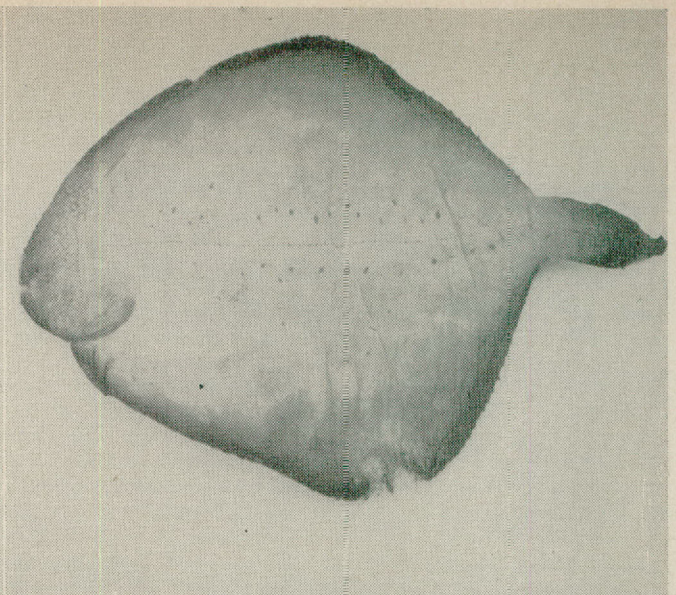
"With landing net broken and fish too big for the net anyway and with said fish still full of plenty of vim, vigor, and the rest of those vitally 'v's,' we told each other with those well-understood glances and groans that this would be one more fight to the finish," Clopton went on to describe.

"Mr. Fish circled and circled, and then the struggle diminished, and he

★ Continued on page 33

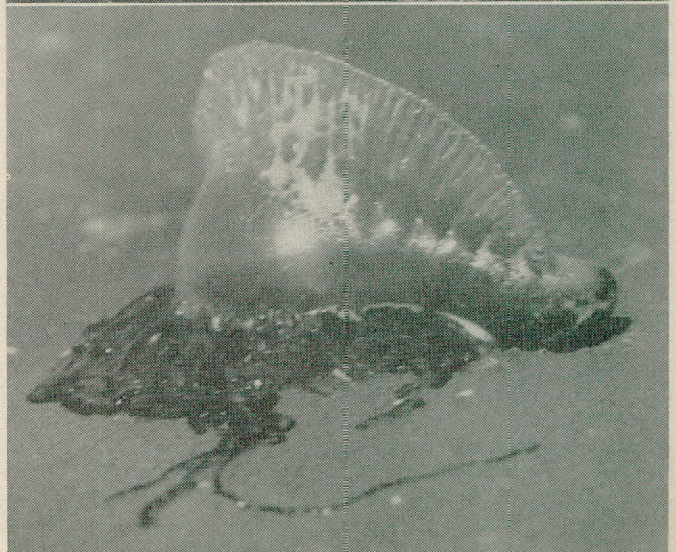
This fine string of fish was caught on March 22nd at the Circle D Ranch, Angleton, Texas, by B. B. Fox (left) and B. A. Boswell (right). The string was caught in three hours of fishing on a spoon.





A Few Oddities

NOT all fish found in the fresh and salt waters of Texas are objects of beauty. Some of them are downright ugly. Take the Naked Sole pictured at the top. It looks more like a beaten up old hot water bottle than a fish, but a fish it is, and it is a resident of the Texas coastal waters. Then there is the Scorpion Fish whose head is reminiscent of some prehistoric monster. The Scorpion Fish also is found in the Gulf. That's a fresh water shrimp in the right center although it looks more like a small Maine lobster than a cocktail shrimp. Everyone who has gone into the Gulf for a dip knows the fish in the lower right photo. It's the Portuguese Man o' War shunned by bathers and fishermen alike.



Hints for the Angler

★ Continued from page 11

moving bait and the next day they go only for slow moving plugs.

* * *

A few assorted sized bottle corks can be used to slip over the hooks of your baits which will prevent scratched baits, dull hooks and snagged fingers. Slice the larger corks ¼-inch thick and cut a narrow V-notch at the side to slip over the shank of treble hooks. Small perfume vial corks can be used to protect the points of single hooks.

* * *

Since the story "leaked out" in a nationally circulated publication I have answered hundreds of letters about my method of "Baitless Catfishing." Those who tried it last summer and fall report record catches of channel cats. It's the only method I know where the same "bait" can be cast for days or weeks without changing.

* * *

This bait saver costs only a quarter or so to make and may save you dollars in lost baits. It is easily made by fastening an ordinary small tackle snap to the eye of a 3-oz. dipsey sinker. Should your bait become snagged on any object beneath the water snap the sinker on the line and let the sinker slide down to the snagged bait. By maneuvering and gently jerking the line the weight of the sinker will loosen the snagged bait nine times out of ten.

* * *

Landing one of those ninety or hundred pound catfish isn't a job where you can afford to get careless even though excited. Don't attempt to touch a big catfish or he may give you "dish-pan hands." Use a gaff made of the largest hook you can find wired to the end of a stout sapling or a four-foot length of rake handle. Last summer I saw one excited catfisherman trying to land a ninety-six pound cat with his bare hands. After the fray his hands looked like they had been run through a sausage grinder.

* * *

Carry two spring-clip clothespins in your tackle box then when you are through fishing snap them on your rod about 18 inches apart down near the reel seat and wind the wet line off your reel around the pins. The line can be as easily rewound from the pins back onto your reel when dry.

* * *

A sure way of protecting your fishing and hunting license from damage by perspiration, an accidental ducking or a sudden storm is to carry it in a small glass vial or bottle. If there is room

carry several matches in the bottle and a postage stamp sized piece of sandpaper to scratch them on. These matches and the scratcher may come in pretty handy when all the country is rain-soaked and you need a fire.

* * *

REEL ACTION

Should the level-wind mechanism of your pet reel show signs of wear better look around for a new pawl or whatever needs replacing. Most tackle sellers have supplies of pawls and parts now and it is easy to do the work yourself at home. Use a small screwdriver for removing the screws. If these stick do not force them or you may damage the heads. Instead apply a drop or two of carbon tetrachloride which usually dissolves the cause of the screw sticking in a short time. Clean the reel thoroughly using gasoline or "tet" to wash the parts in (away from flame). A handy tool for removing gummed oil and dirt from reel parts is an old toothbrush. Hard to get at places can be reached with a pipe-cleaner. Many oils and greases gum up and slow down the action of a reel so use a lubricant made especially for reels. It won't run or gum in hot weather or stiffen in cold weather.

College Starts Gunsmith Course

A two-year course in gunsmith training, believed by school authorities to be the first of its kind in the nation, is soon to open at Trinidad Junior College, Trinidad, Colorado.

In announcing the new course, Dwight C. Baird, president, said the college had received inquiries and applications from twenty-two states. Many of these came from former service men whose interest in firearms had been awakened during the war and who wanted to make a life's work as gunsmiths.

The idea for the new course came from P. O. Ackley, nationally known gunsmith and operator of a Trinidad gunshop. He received many inquiries from men wanting to learn his trade and, not wishing to undertake the training of apprentices himself, he referred the applicants to the college.

☆

Contract for a lake warden's house at Lake Texoma was awarded by the Game, Fish and Oyster Commission at its April meeting. The house will cost \$11,995.

THINGS YOU MAY NOT KNOW

The young elk is called a calf; the young deer a fawn and the young antelope a kid.

* * *

Without eyes and living underground, the earthworm senses the fall of night and wriggles to the surface of the earth.

* * *

Under present housing shortages it's a good thing humans don't have the habits of squirrels. Missouri has discovered that each pair of squirrels needs three den trees. Before the young are born, the female evicts her mate. He will remain in the vicinity if he can find another apartment. After the young are weaned the old lady kicks them out and dad may return until the second litter is on its way. Then a hunting he must go again . . . for a house.

* * *

Diamond-back terrapins do not occur on the Pacific Coast and their introduction there, so far as known, has not been attempted.

* * *

Ducks use their webbed feet not only as a plane does its landing gear when coming down, but also as rudders for flight maneuvering.

* * *

Sponges are classed as animals.

* * *

The cutting teeth of beavers continue to grow throughout their lives.

Jack rabbits in Ontario, Canada, grow to weigh as much as 25 pounds.

* * *

Korean hunting licenses carry the following: "Hunting in public streets, shrines and temples is not permitted. Firing at buildings, people, cattle and street cars is not permitted."

* * *

The Northern Sea Otter cracks shell fish on a stone held against its chest.

* * *

The iridescent color of a duck's wing patches is not due to pigment, but to submicroscopic prisms breaking the light on the surface of the feathers.

* * *

Shark's teeth originate in the rear of the mouth and work forward until reaching the outer edge, where they are discarded. New rows move up continuously to replace the discarded ones.

* * *

The common house rat is a native of Southern Asia.

* * *

While there are 500 species of humming birds, not a single member is found in any part of the Old World. All are residents of the Western Hemisphere.

Take Your Choice

TEXAS offers some of the most varied and interesting fishing in the United States, and a list of fishes taken there amounts to a roster of most of the salt water game fishes of the Atlantic.

Among the more common shore dwelling species are the speckled trout or spotted weakfish, redfish or channel bass, black drum, sand trouts and croakers, all first cousins, and all excellent food fishes which furnish a world of sport for the angler up and down our coast. Sheepshead is another favorite, being found around piling and oyster reefs, while pike or robalo are caught during the summer as far north as Port Aransas and on light tackle often furnish a spectacular leaping sight.

Tarpon are common, sometimes entering the lower part of the Laguna Madra, and in the spring they run far up into the mouth of the Rio Grande, forming the basis of the famous Rio Grande tarpon rodeo, which furnishes bank anglers with a great deal of fun and excitement, as well as a world of smashed tackle. Another spot, Port Aransas is one of the famous tarpon fishing grounds of the world. Numbers of these great fish are also caught at Port O'Connor, Galveston and Port Arthur.

Along the jetties of the coast jewfish as large as 400 or 500 pounds are occasionally taken, while jackfish or "tourist tarpon" are nearly always present, either around wharves and old piling when they are little, or offshore in deeper waters around the mouths of rivers and passes. Pompanos, smaller members of the same family, are found in the surf.

Offshore great schools of King and Spanish mackerel are common summer inhabitants of our waters, while on the coral banks are red snapper, various kinds of groupers, dog snapper as large as 100 pounds, and warsaw (that look like giant black bass) that may exceed 150 pounds. On the reefs, too, are found amberjack, cobia or ling, and barracuda, while dolphins occasionally occur in large schools, not on the reefs, but around some floating object, such as a log, an old crate, or even a piece of sargassum weed.

Wahoo, bonito, and sailfish are found from the Mexican border to Sabine Pass and at Port Isabel, tuna, blue marlin and mako shark have been caught, while

striped and white marlin have both been hooked.

A little below Port Isabel, but reached through Brownsville, Texas, lies one of the great fishing grounds of America, the famous Eighth Pass district of the Mexican Laguna Madre, where the fishing is out of this world, a dream.

For the hunter, Texas also offers unparalleled opportunities, in the duck and goose shooting on our lower coast.

The main fishing ports of Texas are seven, Port Arthur, Galveston, Freeport, Port O'Connor, Rockport, Port Aransas and Port Isabel.

At Galveston the winter fishing is mostly for spotted weakfish or trout, channel bass or redfish, and sheepshead. In the summer large catches of Spanish mackerel, king mackerel and red snapper are common, while the jetty fishing occasionally produces huge jewfish, as well as a variety of others. A summer resort city, it has ample hotel and tourist court accommodations to fit almost any pocketbook. A large fleet of charter boats may be found there, some of them very fine ones, comfortable, and with competent skippers. The world's record sawfish (1300 pounds) was caught at Galveston, tarpon are plentiful during the summer, and offshore bonito, sailfish and ling or lemon fish are among those commonly caught.

Port Arthur offers both jetty and offshore fishing, and has some boats for charter, while Freeport is one of the fine places on the coast for king mackerel in the summer, as well as sailfish, bonito and dolphin, and the winter snapper fishing, if you don't mind a little cool weather, is something to write home about. Charter boats, hotel and tourist cabin accommodations are available.

Port O'Connor has some of the finest winter fishing for spotted weakfish and redfish or channel bass that is to be found anywhere. A boat basin has recently been dredged, and there are some tourist courts available as well as a big dormitory for unattached males. Rockport has ample accommodations, excellent guides, fine fishing, good duck hunting, and is a favorite summer and winter resort.

Just across the bay from Rockport is Port Aransas, one of the world's most famous tarpon grounds. Recently sail-

fishing has become more popular than tarpon, and in the spring and early summer it is exceptionally good. Forty or fifty charter boats with competent skippers are available, and the ordinary offshore species are there in abundance. Snapper fishing may be arranged for, the surf fishing is good, and the jetties also provide large catches. Hotels and tourist accommodations are adequate.

Port Isabel, the southernmost port, offers the greatest variety of fish, and this is one of the places where blue, white and striped marlin are found, as well as tuna and mako shark. Hotels and tourist cabins are available, and it is only 30 miles to Matamoros, Mexico, where the tourist will find much of interest.

The Port Arthur Chamber of Commerce, The Galveston Chamber of Commerce, Freeport Chamber of Commerce, Ronnie Luster at Port O'Connor, the Rockport Chamber of Commerce, Captain Henry Studeman at Port Aransas, or the Port Aransas Boatmen's Association, and Stuart Adkins or Dr. J. A. Hockaday at Port Isabel, are all reliable, and can furnish additional information on local conditions. For fishing at the Eighth Pass in Mexico, B. G. Eubanks at Brownsville, Texas, is the man to contact.

All places listed have adequate docking facilities for private boats, and it is possible to go from the Louisiana line far down into the Upper Laguna Madre by boat without entering outside waters.

For the bird lover and the nature enthusiast the Aransas Wildlife Refuge at Austwell offers unique opportunities to observe birds, deer, javelinas and other wildlife, and in the nesting season, both the Refuge and the bird islands on the Upper Laguna Madre offer magnificent opportunities to observe great numbers of wading birds in their natural habitat.

On the next page is given a table of the salt water game fishes of the state, where they are found, and the seasons they may be expected.

When and Where to Catch 'Em

SALT WATER FISHING IN TEXAS

NAME	Season	Best Months (Inclusive)	Bait	Where Caught	How Caught	Average Weight	Food Value
Tarpon	May-Nov.	July-Sept.	Spoons, Jigs, Mullet, Shrimp	Off Jetties, Near shore, beyond Breakers	Trolling, Still fishing	75-125 lbs.	Poor
Kingfish	May-Sept.	June-Aug.	Spoons, Plugs, Shrimp, Mullet	Snapper Banks	Trolling, Still Fishing, Bait Casting	10-30 lbs.	Excellent
Ling (Cabio)	May-Sept.	June-Sept.	Spoons, Shrimp, Plugs	Snapper Banks	Trolling, Still Fishing, Bait Casting	10-50 lbs.	Excellent
Jackfish (Jack Crevalle)	April-Sept.	May-Aug.	Spoons, Shrimp, Plugs	Jetties, Open Gulf	Trolling, Still Fishing, Bait Casting	10-40 lbs.	Fair
Shark (Black Fin-very sporty)	May-Aug.	July-Nov.	Cut shark, Cut fish, Mullet	Jetties, Surf, Open Gulf, Snapper Banks	Drift fishing, "Chumming", Surf Fishing	10-500 lbs.	None
Bluefish	March-Sept.	April-July	Spoons, Shrimp, Plugs	Gulf	Bait Casting, Trolling, Still Fishing	1-5 lbs.	Excellent
Pompano	April-Sept.	June-Aug.	Shrimp, Lures	Jetties, Surf	Surf Casting, Bait Casting, Still Fishing	1-4 lbs.	Excellent
Mackerel	May-Oct.	June-Sept.	Shrimp, Lures	Jetties, Gulf	Trolling, Bait Casting	1-7 lbs.	Excellent
Dolphin	May-Sept.	June-Sept.	Spoons, Shrimp, Strip Bait	Offshore water	Trolling, Bait Casting, Still Fishing	1-16 lbs.	Good
Spotted Weakfish	All Year	All Year	Shrimp, Plugs, Spoons	Surf, Jetties, Bays	Bait Casting, "Pop" Fishing	1-5 lbs.	Excellent
Drum	All Year	Spring-Fall, Early Winter	Shrimp	Same as Redfish	Still Fishing	3-10 lbs.	Fair
Rayfish	May-Nov.	July-Nov.	Shrimp, Mullet, Cut Fish	Surf, Jetties, Open Gulf	Still Fishing, Harpoon	10-200 lbs.	None
Jewfish (Sea Bass)	June-Oct.	June-Oct.	Small Fish, Mullet, Crabs, Mackerel	Jetties, Lighthouse, Snapper Banks	Still Fishing on bottom	25-200 lbs.	Fair
Snapper	All Year	June-Sept.	Shrimp, Cutbait, Squid	Snapper Banks	Still Fishing on bottom	2-15 lbs.	Excellent
Sheepshead	All Year	All Year	Shrimp, Fiddler Crabs	Jetties, Wharves, Oyster Reefs	Still Fishing	1-10 lbs.	Excellent
Flounder	All Year	All Year	Shrimp	Shallow Water	Still Fishing, Night Giggling	1-6 lbs.	Excellent
Bonito	April-Sept.	May-Aug.	Spoons, Jigs	Offshore	Trolling	2-15 lbs.	Fair
Ladyfish	May-Oct.	June-Sept.	Shrimp, Lures	Bays, Surf	Trolling, Casting, Still Fishing	2-4 lbs.	Poor
Sand Trout, Whiting	All Year	All Year	Shrimp	Jetties, Surf, Bays	Still Fishing	½-2 lbs.	Excellent
Croaker	Mar.-Nov.	April-Sept.	Shrimp	Jetties, Surf, Bays	Still Fishing	1-4 lbs.	Good
Gafftop	May-Nov.	July-Nov.	Cut Shark, Cut Fish	Open Gulf	Drift Fishing	10-1500 lbs.	None
Marlin	Summer		Mullet, Balao, Mackerel	Offshore, Port Isabel, Port Aransas	Trolling	75-350 lbs. up	Fair
Sailfish	Spring Summer	Spring	Cut Bait, Mullet, Feather Jig	Offshore, Entire Coast	Trolling	½-85 lbs.	Fair
Tuna	Summer		Feather Jig, Cut Bait	Port Isabel, Off Shore	Trolling	60 lbs.	Fair
Mako Shark	Summer		Mullet, Balao, Mackerel	Port Isabel, Port Aransas, Offshore	Trolling	100 lbs.	Fair

FRESH WATER FISHING IN TEXAS

NAME	Season	Best Months (Inclusive)	Bait	Where Caught	How Caught	Average Weight	Food Value
Black Bass	All Year		Usual Bait	Eastern Half of State	Casting, Fly-Fishing, Still Fishing	2-10 lbs.	Excellent
Crappie or White Perch	All Year		Live Minnow, Flies	Same as Bass	Same as Bass	1-3 lbs.	Excellent
Sun Perch Various Kinds	All Year		Usual Bait	Same as Bass	Same as Bass	½-1 lb.	Excellent
Rock Bass	All Year		Usual Bait	Same as Bass	Same as Bass		Excellent

Besides these there are White Bass and several species of Catfish, big Alligator gars which may weight as much as 150 pounds, and species too numerous to mention.

No Universal Pondfish

★ Continued from page 26

owner if he is interested, as we know many are? Or is the channel catfish really the fish he should work with if he is interested in the market for the larger-growing fresh-water catfish? Perhaps he could do better with the yellow or flathead catfish, or maybe the white catfish, or the Pecos River catfish. Or maybe he and a few hundred associated pond owners might repeat the work of the European and Chinese pond owners and make as much money per unit of surface area by raising just carp, hundreds of tons of them. These associated owners might operate a cooperative fish cannery, where carp could be cooked under pressure cookers that softened the bones and where there might be added oils that would permit placing upon the market as acceptable and tasty a food product as that made from commercially taken carp in Minnesota during the war.

The story of the salamander of Lake Patzcuaro suggests that the future of pond culture may include more than the various fish species mentioned. Anyone who is familiar with the stock-watering ponds or "tanks" of our Southwest knows that even the most isolated pond soon has a population of fish or of the axolotl of the tiger salamander. To a limited extent, these axolotls are used as food by Mexicans and Indians. Apparently axolotl production per unit of pond-surface area is considerable, but we do not yet know what to do with this animal when we have it. Perhaps it would make good fish or dog food. Meantime, the American fish-culturist will do well to keep it in mind.

Recently a Chinese hydraulic engineer visiting in this country and interested in full utilization of proposed impounded waters in his country, inquired whether I did not consider it desirable that China introduce the largemouth black bass. He was obviously not convinced when I replied in the negative. He seemed sure that I was being facetious when I added that if tests ever showed that American aquatic fauna could be introduced to advantage in China, I believed salamanders, one or two species of fresh-water mollusks, and possibly a crustacean or two would probably be most useful. I said that if fish were introduced, the species would probably be one or more suckers, a group that would appear to fit into the Chinese picture, yet a group of which China has but one native representative. The engineer smiled politely, but it was evident that the question had been intended only as a courteous remark: he had the answer in the first place; for, as he stated, he had read our farm-pond publications and knew already that according to the best American thought on the subject the black bass and the bluegill sunfish were the species par excellence for warmer impounded fresh waters. If he had his way

in the matter, modern China was going to have those fish species that Americans had scientifically determined to be the best.

Yes, other nations look to the United States for pondfish-culture leadership, more literally and perhaps more seriously than we realize. I am informed that the Office of Foreign Activities of the Fish and Wildlife Service is continually receiving requests for help along this line. To adjust ourselves to living consciously in a pondfish-cultural "One World," would require some re-evaluation of fishery values and terms. Has the American interest in recreational fishing for pond-fish anything in common with the European and Asiatic interest in pondfish as crops? If so, where can we get together? What "common denominator" can we find for our differing problems in pondfish culture? Research in this field may be greatly simplified if we can find definite answers to these questions.

Stepping from secure footing to uncertain and speculative ground, I wonder whether a start toward the answer might not be made if an "efficiency rating" could be worked out for each fish species of pond-culture interest, this rating to be based upon (among other things) ability of the species to turn available organic material into fish flesh. This might give one yardstick for comparison of species. For example, from Dr. H. F. Prytherch's preliminary work with mullet at Fisheries Laboratory, Beaufort, North Carolina, it would appear that the mullet could be given a high rating. Let us say 80 percent on this particular basis of grading, as, according to Dr. Prytherch, the amount of mullet that can be raised on a unit of pond area is several times the best figure given by Mr. H. S. Swingle (Agricultural Experiment Station, Alabama Polytechnic Institute, Auburn, Alabama) for the "All-American fish team," black bass

and blue-gills. Carp and certain suckers might rate at 40, as their omnivorous feeding habits and ability to digest a wide variety of foods put them well above a predaceous fish like the black bass with its more limited food tastes. It is uncertain that the black bass could earn an efficiency rating of more than 10. For warm-water game-fish purposes, of course, we would still call for the black bass. On the other hand, even those species having marked ability to produce considerable poundage of fish meat per unit area would have to be considered further for flavor of meat, market demand, availability of stock fish, and costs of available food for growth. Still, other factors being equal, a crop of fish "A" at 20 cents a pound would outvalue a crop of fish "B" at 40 cents a pound if, for a given overhead, three times the poundage of "A" could be raised in the place of "B."

In helping foreign countries to improve their pondfish-culture practices, a yardstick of this sort would be invaluable in the preliminary studies of the relative merits of native fish species. It would mean experimental fish hatcheries to be built where the work could be done, but the determinations should establish the position of these species in relation to all foreign and American species previously studied. It should then be possible to advise a government that, because its species were substandard, it should introduce exotic species for the ponds of particular areas, that certain previously studied foreign species appeared most promising, and where these might be found.

This foreign use of the yardstick does arrest the attention first, but its value would be in its universal application. It would place all pondfish culture in one understandable pattern. This might be the carp culture of Poland, the eel culture of Denmark, the tench culture of Italy, even the milkfish culture of the Philippines and the mullet culture of Hawaii. Also, there could be determined the theoretical place of potentially important cultures of one aquatic form or another, such as the axolotl of the tiger salamander, or Mexican, Central or South American species of the Cichlidae (including our unpopular Rio Grande perch, which offers such promising pond-culture possibilities).

Yes, if someone can work out some such yardstick, it will prove very useful. But whether or not this is done, let no pondfish-culturist forget that we now live in a "One World" relationship to each other and this includes our own field of activity. When you put in writing some glowing tribute to a particular fish, just bear in mind that your enthusiasm may be contagious. That may be fine or it may be embarrassing if your enthusiasm is unbounded. I plan a fishing expedition all over the world when I retire. If I pull out black bass, each followed by exactly 10 or 15 sunfish, from every fresh water in every nation where I cast my line, I am going to be annoyed.—Progressive Fish-Culturist.

How Big Is a Catfish?

The largest catfish on record has been reported in several cartoon oddity strips as weighing 150 pounds but there have been many larger fish of this species caught. One catfish found dead recently in a southern river weighed 165 pounds. The books of several southern fish companies list catfish bought by weight that have tipped the buyer's scales at from 150 to 180 pounds. As far as the writer knows that all-time heavy-weight championship is held by a monster cat caught in a cottonfield near the Mississippi River. It weighed in at 201 pounds. The fish was left wedged in a drainage ditch by high water and was killed with a pitch fork.—Outdoor Guide.

SAINT or SINNER

THE American Game Association advocates a nationwide hunt upon the worst gangster of the air, the bold, bad crow. Yet unlike the activities of the United States Government and other police forces that are trying to wipe out the human gangster, officials of the American Game Association do not desire to exterminate the bandit crow. They desire to bring him within control.

Perhaps not one out of the thousands of members of this Association would desire the extermination of any species of wildlife, even including the rattlesnake. But if the rattlesnake, deadly as he is to humanity, should ever become anything like as numerous as the crow is today, certainly millions of sportsmen would have to get out and hunt him down for the preservation of humanity.

Much the same situation has developed between the crow and the preservation of many desirable species of wildlife. It so happens that the crow, in addition to his great cunning, has a peculiar protection from other forms of nature. His carcass is so unsavory that only the great-horned owl will kill him for food.

The crow in both the United States and Canada has increased so rapidly within the last ten years that he is not only a menace to wildlife, but domestic birds of the farm and the crops of the farmer. We could give you literally hundreds of instances where this is true.

Not wishing to overwhelm you with boring figures, let us make a composite statement to the effect that approximately 90 per cent of the farmers of the United States, as indicated by their complaints, are against the crow, and are begging relief from his depredations. The logical person to aid the farmer is the sportsman, for he is not only aiding the farmer, but himself.

Reports come from Canada in an even greater percentage of condemnation of the crow. Farmers and sportsmen alike agree that the crow has multiplied many fold, perhaps a hundred fold, within the last ten years on the wildfowl breeding grounds of Canada.

Mr. Crow is a smart fellow; make no mistake about that. Millions of them wintering in the United States have learned that the wildfowl breeding grounds of Canada furnish a banquet through the spring, summer and fall, for his legions. Observations of wildfowl nests by farmers, sportsmen, government officials and even school children, show that practically five out of ten of the wildfowl nests on the breed-

Half of the waterfowl nests on the breeding grounds in Canada are destroyed by crows who will follow a female duck to her nest and fight her off of it to eat the eggs.

ing grounds in Canada are destroyed by crows. A number of these gangsters will gang together, following a female duck to her nest and fight her off of it.

Carefully organized and supervised local efforts by responsible adults are commendable.

Any campaigns that sportsmen and others inaugurate against the crow should be under strict supervision.

There are various ways of accomplishing this effectively. Perhaps the most generally used is the system of calling crows to the shooter by means of an effective crow call. This is best done by climbing into an automobile and rolling out through the back country, preferably through farm land in which there are numerous patches of woodland.

When a good patch of woodland is reached, the car is parked in as inconspicuous a place as possible. Occasionally it is not possible to find such a place, and the car will have to be left in the open. This should not deter one from making a stand here, however, as crows are frequently called directly over the car, many times coming from the opposite direction, where they are unable to see the car until it is too late.

When the crows do come over and a shot is fired, whether effective or not the calling should be renewed doubly hard with no breaks, in order to keep the crows in the vicinity. Frequently many shots can be had at the same flock of crows circling back to find out the cause of the ruckas. It is useless to stay at this point after the crows have left, and no stand should be attempted less than a mile from that point.

In this way good shooting may be had, and a good job done in reducing the number of crows. Once the crows have been shot over in this manner, it should not be attempted for several weeks at the same place, because they quickly get the idea and any amount of calling will be fruitless.

The use of the stuffed owl is another method which proves very effective, particularly early in the morning when the crows are just breaking up and scattering over the country. A conspicuous point on a hill should be selected for the stand and either the branches of a dead tree or a post can be utilized for placing the owl in a natural position where it can be viewed by any crows passing within some distance. The shooter in this case as in every case must be absolutely hidden. If he is not, the crows will not come anywhere within gun range.

Occasionally a single crow will come over first, and sometimes it is wise to let him leave in peace, as he will frequently return immediately with his gang and attack the decoy fiercely. Once they become thoroughly aroused over this owl, good shooting at close range may be had. A crow call used with discretion is of advantage here, too.

Dinner-Time Fish

★ Continued from page 27

was hauled along side the boat bottom-up," Clopton proudly related.

That Clopton's prayer had been well answered was evidenced by the weight of Mr. Fish. He weighed a nice seven pounds twelve ounces, and made as nice a memento as any large mouth black bass could.

He was such a nice young fellow that his now rightfully proud owner entered him in a local contest in Austin, only to have his record topped that same day by another lucky fisherman whose catch from the same body of water weighed an even better nine pounds.

There were not many regrets, however, on this Clopton-Cooke fishing deal,

as the day's catch showed by the record: seven large mouth black bass, weighing collectively 29 pounds.

So Clopton and Cooke's religious convictions were only emphasized by this Sunday's fishing bout, and furthermore they are likewise convinced that that noon meal at 12 o'clock, especially on a fishing day, is definitely unnecessary, immaterial, useless, and yes—postponed.

Dinner-time fish on the other end of a line are much more fun than dinner-time fish on the other end of a fork! So state Messrs. Cooke and Clopton, and they intend to stick by it!

—MILDRED COOKE CLOPTON



BOOKS



HUNTING BIG GAME—Edited by Townsend Whelen. In two volumes: Vol. I—In Africa and Asia, 339 pp.; Vol. II—In the Americas, 282 pp. Published by The Military Service Publishing Company, Harrisburg, Pa. Price \$4.00 per volume, \$8.00 the set.

Townsend Whelen, himself a hunter of considerable reknown, has been collecting the true big game hunting adventures that go into these two volumes, one composed of African and Asiatic big game narratives, and the other an anthology of experiences in the New World.

The authors of the various tales in these superb collections are names to conjure with—Theodore Roosevelt, Charles Sheldon, George W. Sears, Vilhjalmur Stefansson, Frederick Courtney Selous, F. Vaughan Kirby and others whose names are synonymous with skill and daring in the pursuit of dangerous and difficult wildlife.

Not only do these anthologies present stark drama to thrill both the casual reader and the confirmed hunter, but they convey a wealth of practical information on guns, ammunition, equipment and methods. Whelen has picked what he believes to be the outstanding hunting stories of all time, and the results of his efforts are highly satisfactory, to say the least.

THE PUMA, MYSTERIOUS AMERICAN CAT—By Stanley P. Young and Edward A. Goldman; 358 + xiv pages; 1 color plate, 89 halftones, 3 maps, 3 figures. Available from the Wildlife Management Institute, 822 Investment Building, Washington 5, D. C. Buckram bound. Price \$4.00.

Here is a unique and fascinating book. While depicting many of the hair-raising experiences of our forefathers, it is the first monographic study of this distinctly American animal. This book concludes that the puma is essential in the scheme of nature and suggests wise conservation of the rapidly diminishing remnant of the species. The text defines the former range of the puma, commonly called mountain lion, cougar, panther and other local names, over a greater part of two continents and explains that this nocturnal animal is still common and widely distributed in unsettled sections. The habits and characteristics of this unsurpassed killer of large game, especially deer, are depicted in an intriguing manner. The mystery of its ways, a salient characteristic, has

aroused human interest and a vague, lurking fear of the beast, since its mention by Columbus.

The authors with many years of experience in puma country as field men in the U. S. Fish and Wildlife Service (formerly U. S. Biological Survey) have in this book qualified themselves as the leading authorities on this animal.

THE LAND RENEWED—The Story of Soil Conservation — By William R. Van Dersal and Edward H. Graham, 109 pages. Illustrated completely with halftones from photographs. Published by the Oxford University Press, New York. Price \$2.00.

In this book the authors have succeeded in telling the whole story of soil conservation in a clear, concise and extremely impressive manner. By picture and in few words you come to realize the true principles of sound land use, things generations of people have not learned. This book was designed for busy individuals and should be read and studied by every American.

The soil, like Freedom, is not appreciated until it is endangered. In this country there are nearly two billion acres of land that can be used until it is exhausted, or can be cared for so that it will yield more and better food. We will either learn to use the limited resources wisely, or perish.

The effects of water and wind erosion, little gullies, big gullies, floods, The Dust Bowl, on this continent and in ancient times, are vividly depicted. Ways and means for good land use are clearly defined, and the authors, experts in the employ of the Soil Conservation Service, furnish a "Design for Living."

THE WOLVES OF NORTH AMERICA—By Stanley P. Young and Edward A. Goldman, 636 pages. Six full-color, 137 halftone illustrations and 10 maps. Available from the Wildlife Management Institute, 822 Investment Building, Washington 5, D. C. Buckram bound. Price \$6.00.

This is the first complete treatise on the wolf, it is a classic monograph. The history, life habits, economic status, and control of wolves on this continent affords fascinating reading, and you need not look further for authoritative data on these intriguing marauders.

No other species of animal has had greater influence on the lives of men. No other creature has so gained or deserved the respect of man. Their ability to match wits with any adversary is legendary, and the accounts of phantom-like wolves will hold your interest.

In America the wolf has been driven back to the last remaining frontiers and their numbers are relatively small. The men who lived with them, feared them and fought them, are also disappearing. None who have not matched cunning and stamina with wolves can fully appreciate them, but the authors take you close to these large carnivora.



TWO MOUNTAIN LIONS caught by State Game Warden Herbert Ward in the Losa pasture of the Chu Padero ranch. The cat in the upper photo was caught on March 26 and measured 7 feet long. The female lion in the lower photo was caught on February 19 and measured 5 feet 10 inches.

now seine not over 20 feet long may be used to catch bait. This new law does not prohibit the use of a bait shrimp trawl of not over 10 feet in length equipped with trawl boards 18 inches wide and 36 inches long.

H.B.817. Limits the number of fish, regardless of species, which can be taken or caught any one day from Devils River, or the lakes situated thereon in Val Verde County, to 20. Possession limit is 20 fish, regardless of species, per day.

H.B.330. This law requires any person hunting quail outside of the county of his residence upon the private lands of another person in Van Zandt County to first obtain a written permit from the land owner.

H.B.411. It is now lawful to kill fox at any time in Newton and Jasper Counties and the hides and pelts of any wild fox killed in these two counties may be sold during the trapping season.

H.B.367. The general state law on deer now prevails in Panola County except that dogs may be used to hunt and trail deer during the open season.

H.B.267. Restricts the use of tackle in Fort Phantom Hill Lake in Jones and Taylor Counties to pole and line, rod and reel, fly rod or throw line with not more than two hooks. Only one trotline per person, or not more than two trotlines per party of two or more. Limits hooks on any one trotline to 25. Minnows may be seined for bait but may not be sold.

H.B.368. Closes the season on deer and wild turkey in Hopkins, Franklin and Delta Counties for a period of three years.

H.B.423. Opens season on squirrels in Hopkins, Franklin and Delta Counties from June 1 to July 31 and from Nov. 1 to Dec. 31, both dates inclusive. Bag limit is 8 squirrels per day.

H.B.366. Limits the number of minnows which can be taken from the public waters of Panola County in any one day to 100.

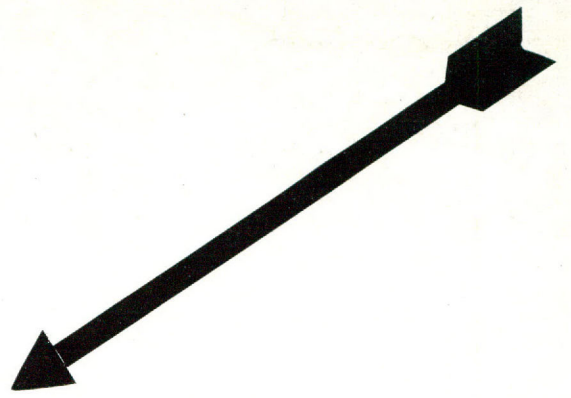
H.B.389. Closes the season on deer and wild turkey in Palo Pinto, Stephens, Jones, Shackelford, Erath and Eastland Counties for a period of 2 years.

H.B.474. Opens the season on wild fox in Panola, Sabine, San Augustine and Shelby Counties for a period of three years when laws regulating the killing of fox in these counties, repealed by this new law, again will become effective.

H.B.128. Now lawful to kill wild fox at any time in Henderson County and hides and pelts may be sold during the trapping season.

BILL INTRODUCED

H.B.417. By Crawford. Would make it unlawful to construct, maintain, or operate a bridge, causeway, pier, dock or other structure on or across any tidewaters without a permit from the Game, Fish and Oyster Commission.



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