

TEXAS Game AND Fish

AUGUST 1946 TEN CENTS

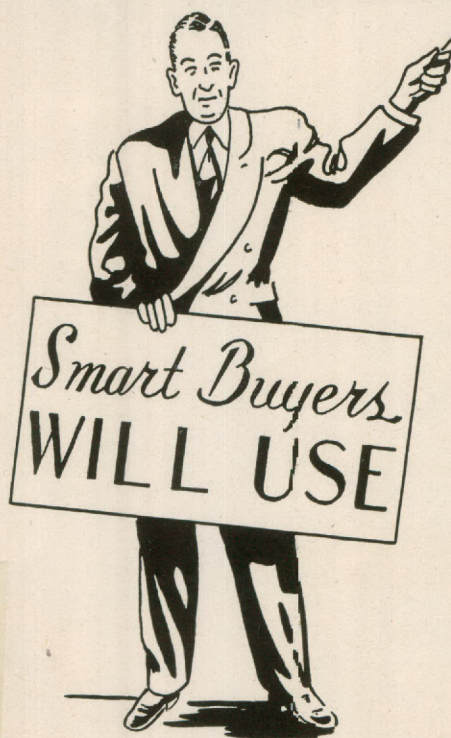
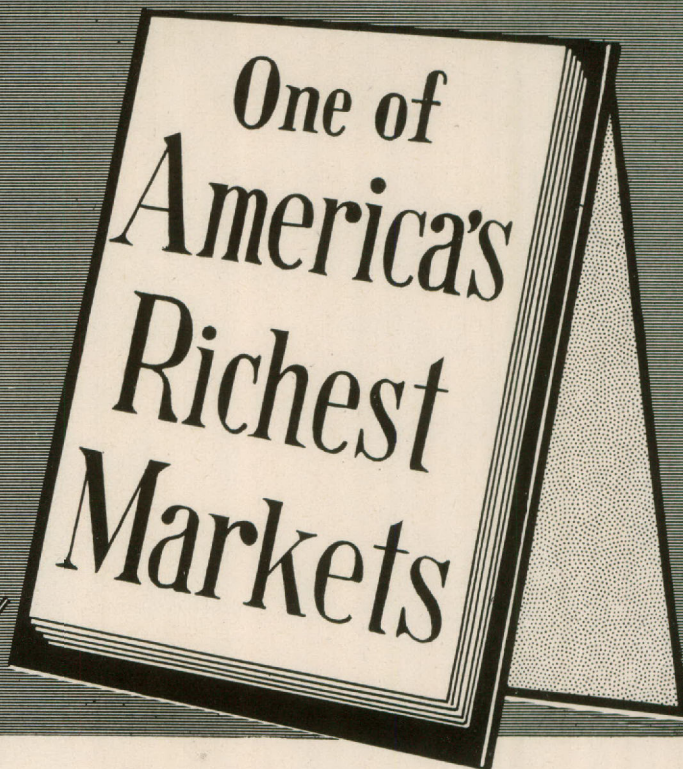
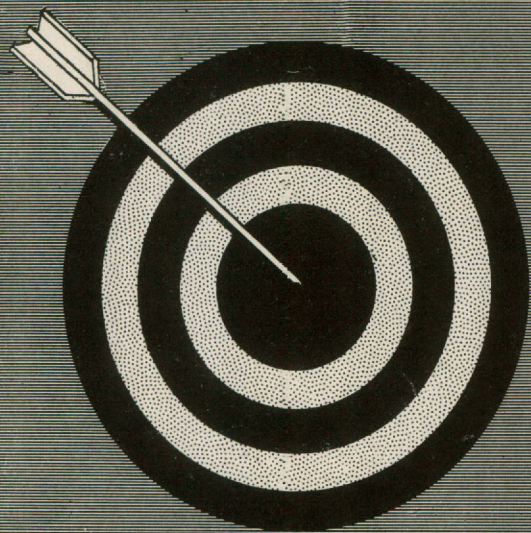
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TEXAS Game AND Fish

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.



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★ In This Issue ★

August, 1946 . Vol. 4, No. 9

CONTENTS

Game Restoration in Texas	4
By A. J. NICHOLSON <i>More than 7,000 deer have been trapped and transplanted by the State Game Department to make hunting better for more hunters.</i>	
Texas Sailfish	6
By J. L. BAUGHMAN <i>Royal game of the sea keeps its secrets of life well hidden from the prying eyes of curious scientists.</i>	
This Bass Posed for Us	8
By WINFRED (GUS) GUSTAFSON <i>Old Man Black Bass gives amateur photographer the thrill of his life with a breath taking pose to break in a new camera.</i>	
Gulf Holiday	9
Photos by J. P. CROWE <i>The mackerel had just started running when Texas Game and Fish photographer hove to for a little lens snapping.</i>	
Strange Fish	14
By J. L. BAUGHMAN <i>Did you know there are fish that walk, crawl, run and climb; that fly, sail, fish and even hunt. One even has a headlight.</i>	
When Fishing Is Poor	16
By J. G. BURR <i>Wherein a biologist suggests that you count your plankton if you find fishing is poor in your favorite lake or pool.</i>	
Those Were the Days	17
By R. J. (Bob) EDWARDS <i>Sportsman finds that 50 years make a big difference in type of game and class of dogs.</i>	
Sidelights on the Bighorn	19
Illustrated by ARCHIE PENDERGRAFT <i>A few interesting facts about a species of big game that is rapidly vanishing from the mountainous areas of Texas.</i>	
Arms and Ammunition	23
By ADAM WILSON III <i>Odds and ends about ammunition, the care of your gun, and what the best dressed gal hunter will wear next fall.</i>	
Hints for the Angler	28
Follow these few suggestions and you will find you will catch more fish and have more fun doing it.	
Books	32

ROGER M. BUSFIELD
Editor

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Game Restoration In Texas

By A. J. NICHOLSON

THE Texas Game, Fish and Oyster Commission has been making every effort to restore various species of game to suitable habitat for a number of years now, but since 1938, restoration has gone ahead at a much faster rate than previously because of the monies made available for this type of work under the Federal Aid to Wildlife Program.

Since 1938, the Texas Game, Fish and Oyster Commission has transplanted deer, antelope, beaver, raccoon, muskrat, javelina, wild turkey, scaled quail, bobwhite quail, prairie chicken, and chachalaca. Special emphasis has been placed on deer, antelope and turkey, with minor attention to such species as beaver, raccoon, and quail. The other species have been transplanted only on an experimental basis.

A total of 7,007 deer have been trapped and transplanted on 85 restoration sites. These restoration sites are located in 82 different counties of the state, representing over three million acres. Most of these 7,007 deer came from the Federal Aransas Refuge in Aransas County,

DEER TRAP. This is the type trap used to catch the 7,007 deer caught since 1939-40. This trap contained a deer when the photograph was taken.

although a few does have been trapped in Llano and Mason Counties.

In general, it can be said that efforts to restore deer have been extremely successful, although there have been a few failures due to placing these animals on marginal range. A few areas, protected and stocked over a five-year period, now have populations of deer, over acreages much larger than originally stocked, which offer limited hunting. Continued hunting, and at the same time a further increase and spread of these populations, is now up to the various landowners involved in the restocked and surrounding area. If these people will

control the harvest and not allow too large a kill, deer hunting will improve in the years to come.

A total of 1,446 antelope have been restored to 60 areas since 1939-40. These areas are located in 41 counties and represent over 1,500,000 acres. All of the 1,446 antelope were trapped in the Trans-Pecos section.

Efforts to restock antelope have not been as successful as we would like to have them. We have had complete failure in but a very few instances. On the other hand, there have not been the increases on most of the restoration areas that was expected. Failure to attain ex-

ONE CATCH OF ANTELOPE. Antelope are rested in a rope net holding pen between actual trapping and loading operations.



More than 7,000 deer have been trapped since 1938 for restocking 3,000,000 acres in 82 counties in the state



pected success is not necessarily attributable to anything in the actual trapping operation, but rather to something that our biologists do not yet understand. There is some indication that the problem is psychological in nature. Even though we have not had the success we anticipated, we nevertheless have had an increase over the initial number of animals stocked in most instances, and expect that the antelope born and reared on the restoration areas will form the nucleus of herds which will eventually be large enough to warrant controlled hunting. However, complete cooperation of all landowners having antelope on their lands is essential to this.

A total of 2,414 wild turkey have been placed on 73 areas in 65 counties repre-

senting over a million acres since 1938-39. All these were wild trapped birds of the Rio Grande variety, except 285 pen-raised Eastern wild turkey. The wild trapped birds were taken at various sites in South Texas, the Hill Country, and the Panhandle.

Turkey restocking efforts have been generally more successful than our efforts to restock antelope, but not quite as successful as our deer stocking efforts. This can be attributed in part to the difficulty of getting turkey to stay put, and partly to the susceptibility of turkeys to extremes in weather conditions and predation. We feel, however, that if landowners will continue to protect the seed stock present on their lands after the agreement with the Game Department has run out, our efforts will eventually prove fertile. In some instances, a limited amount of controlled hunting can be allowed immediately after the agreements run out, providing the hunting is carefully controlled.

One hundred and twenty-four beaver have been transplanted to 24 areas in 25 counties. The 24 areas involve over 345,000 acres. These beaver were taken in the Panhandle and the Hill Country, and, for the most part, the releases were in Eastern Texas.

In general, transplanted beaver have become established and have increased. Although there are not yet enough beaver present in the restocked areas to warrant trapping, with the colonies now established and increasing, beaver should eventually become an economic asset over much more of Texas than at the present.

We transplanted 170 raccoon to 12 areas in 13 counties on over 74,000 acres between 1940 and 1943. Most of the raccoon were secured on the Federal Arkansas Refuge.

As far as we have been able to determine, these transplants have been successful but trapping these animals for restocking has been discontinued since there are very few places in Texas suitable for raccoon that do not already have a seed stock. To increase raccoon on suitable areas, it is generally only necessary to protect the seed stock against excessive trapping or hunting, and to see that den trees are left.

A total of 610 scaled quail have been transplanted to 14 areas in 10 counties on approximately 39,500 acres and 3,026 bob-white quail were placed on 48 areas in 35 counties on approximately 97,500 acres.

Both these species were stocked on an experimental basis but investigation and

★ Continued on page 20



REMOVING A DOE deer from a deer trap. It is a good idea to keep those hind feet off the ground or someone might lose some clothes.

Royal Game of the Sea Keeps Life
Secrets Well Hidden from Eyes
of Prying Fish Scientists

TEXAS Sailfish

By J. L. BAUGHMAN

SAILFISH have a great variety of names, given them in all the seas of the world. Various species have been reported from Japan, Hawaii, Panama, the West Indies, Florida, the Indian Ocean, the entire tropical Atlantic and the Mediterranean. The Portuguese of Brazil call it "bicuda" or snipe, because of its bill. The French "voilier," the Dutch "zeyl fisch," the Cuban "ycladora" and the Sumatran "ikan jegan." All mean sailfish. The tamils of India say "mylmeen" or peacock fish, and the Malays of Amboina call it "ikan-layer" or fan fish, from the movements of its sail.

Sir Stamford Raffles, the first European to see one of the East Indian species, writing in 1822, says: "The only amusing discovery we have made recently is that of a sailing fish, called by the natives "ikan-layer," of about 10 or 12 feet long, which hoists a mainsail and often sails in the manner of a native boat, and with considerable swiftness.

"I have sent a set of the sails home as they are beautifully cut and form a model for a fast sailing boat. When a school of these are under sail together they are frequently mistaken for a fleet of native boats."

The first American fish was reported from Brazil in 1648, under the name of "Guebucu." The first specimen to be caught on rod and line was taken off Palm Beach, Fla., in 1893, but they were not regularly fished for until about 1911, when anglers at Long Key, Fla., began to catch them.

The first caught in Texas was taken by a 15-year-old boy at Port Isabel in 1934, although some of the snapper fishermen at Galveston who used to run to Campeche Banks say they saw them offshore 30 years ago, and that at that time they were known as "gafftops."

The same year that the first fish was taken at Port Isabel a second fish was boated at Freeport, and the third for the coast was taken between Galveston and Freeport in 1935. In 1936 Port Isabel accounted for another fish and several were reported from Galveston and Freeport, but it was not till the following year that any great number were taken.

Sixteen were taken at Port Isabel in 1937, 15 in 1938, and 10 in 1939. During the same years Galveston and Freeport continued to report the species, but not so consistently or in such large numbers.

At Aransas Pass seven were caught in 1938 and eight in 1939. In 1940 there was a heavy increase in catches along the entire coast, and captures at all these places were far in excess of any previous year. The area covered by these occurrences roughly coincides with the line of coral reefs which parallels the entire Texas coast, but lying a little inside these, between the reefs and the coast.

At Port Isabel sailfish are more common than on any portion of the coast, probably because of the proximity of the Gulf Stream to the shore. In this area they have been seen and taken all the way from the Twenty-Four-Ten Bank, about 140 miles southeast of the port, to the snapper banks that lie about 40 miles to the northeast of the city. Several have been taken within sight of the shore, while others have come from as far out as 40 or 50 miles. During the 140 rodeo nearly all fish were taken inside the 18 fathom line, or not over 12 miles out.

At Aransas Pass, the fish have been taken less frequently, probably because prior to this year there have been few boats that fished the offshore waters.

However, they have been reported from between these reefs and the sea bouy, about four miles from the end of the jetties on the island. Between Galveston and Freeport fish are occasionally encountered, Freeport fish generally come from around the snapper banks, and those at Galveston have showed up around the Heald Bank. From Port Arthur only one fish has been recorded. This came from the Sabine Bank.

There has been a large range in size of Texas sailfish. The smallest one of 25 inches, was taken at Freeport, and the largest, a 96½-inch specimen that weighed 94 pounds, came from Port Isabel. This 25-inch specimen is one of the smallest ever taken. Florida occasionally reports seven to nine inchers, but none has ever been available for

scientific examination. Likewise, Ocean City, Maryland, once reported 14 ranging from nine to 24 ounces in weight, but they never reached a collection.

In all the world's museums the number of small sailfishes could probably be counted on the fingers of your two hands, and those of less than six inches long are so rare that they are considered a great find.

Dr. Lutken, a professor at the University of Copenhagen in the last century, described several from 3/14 of an inch to 9/10 of an inch long; and Doctor Gunther, of the British Museum, had three, one 1/3 inch, one 1/2 inch, and a third 2¼ inches, and these were all that were known until recently, when Doctor Beebe secured two of the Pacific species, and a scientist in Ceylon was lucky enough to find one of the Indian species in the stomach of a fish that he was examining. There were none known of the size of the 25-inch one.

Houston, however, has three more, a 37-inch, a 40-inch, and a 49-inch specimen, while there is one of 30 inches at Freeport.

As a rule, sailfish arrive here early in June, although they have been reported in May, and from then on they are present throughout the summer. They apparently come up from the south, around the Campeche Banks off Yucatan, or perhaps even farther.

In a letter from Mr. Hofius, of Belize, British Honduras, he states that they are present on that coast during some seasons, while J. H. Martinez of Merida, Yucatan, says they are plentiful on the banks at times, being liked as food by the local commercial fishermen, who catch and dry them. Martinez says that the flesh has "grease in layers."

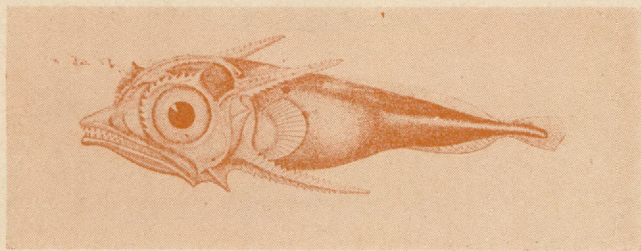
A curious fact about the species is that upon death their bodies may become phosphorescent. Mr. Yanks, the taxidermist, says that he brought one up from Freeport this past year, putting it in the trunk of his car. On opening the trunk he was amazed to see the body of the fish glowing with greenish fire wherever the slime had not been scraped off.

Females have been caught late in the year with the eggs running out of them, so they must spawn in these waters, but no very tiny fish have ever been taken. It is probable that if it was possible to examine the stomachs of dolphin or bonito taken in December, January or February some babies might be found for these fish feed upon them.

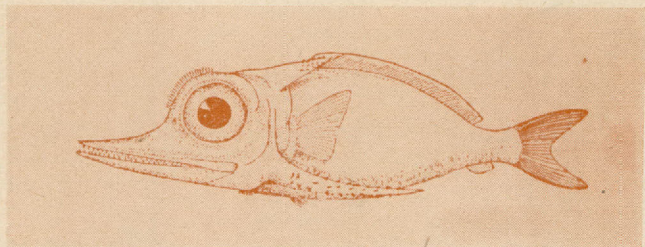
During the past summer a number of sailfish stomachs were examined and they were found to have been feeding on shrimp, mullet, and menhaden, as well as some fishes that could not be identified. The Pacific Coast species, which is a longer and heavier fish than ours, feeds on mackerel, sierra, sardines, mullet and squid.

Biography of a Sailfish

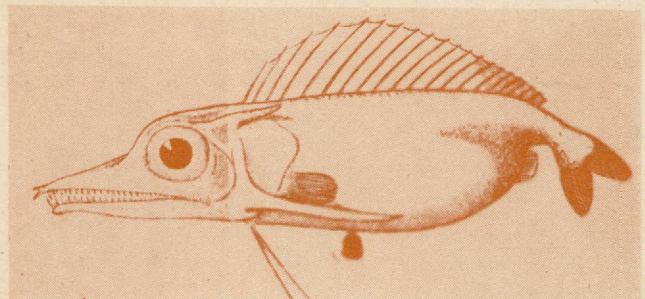
If man's stature grew in accordance with that of the sailfish, it is estimated, at six months he would be 250 feet tall and weigh 7500 pounds, while at a year or so he would tower over 500 feet, and weigh 7½ tons. Starting life from an egg about the size of a pinhead, the tiny sailfish finally grows to over 300 times its original size. Strangely enough, its breeding grounds have never been discovered. A cousin, the broadtail swordfish, grows from an egg about the same size to a weight of 500 to 600 pounds in a single season, but the young grow so fast and travel so far that it has not been possible to locate their spawning ground. The small sailfish in these pictures presents a good idea of the steps in the development of the adult fish.



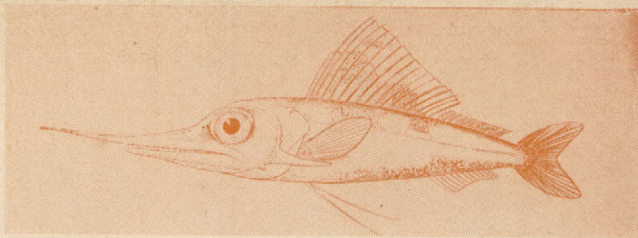
This baby is evidently not long hatched. Note the jaws of even length, the teeth, the rounded end of the tail and the spiny armature of the head and gill covers.



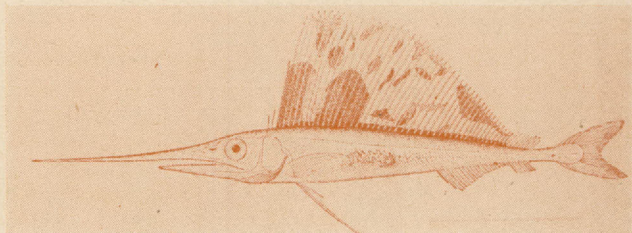
... Here the dorsal fin is enlarged, the tail has forked, and the youngster looks more like a fish.



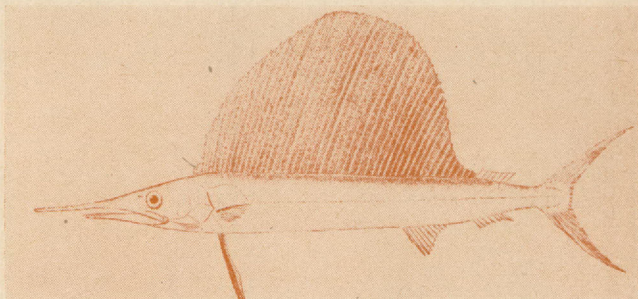
... even though he is still somewhat pot-bellied. In this ¾ inch fish the upper jaw has begun to lengthen, giving promise of the bill to come, and the dorsal fin has started the growth



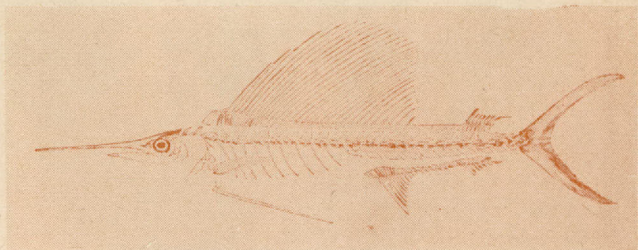
... that has almost become a sail in this two-incher. The bill is a bill in this picture, and the shape is almost that of the parent, until at last



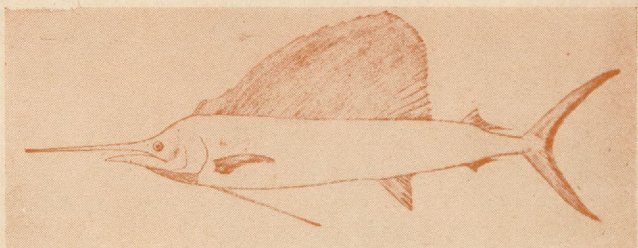
... the sailfish looks like this, nearly grown up. The spotting of the sail is still that of a younger fish, and all the teeth do not disappear until



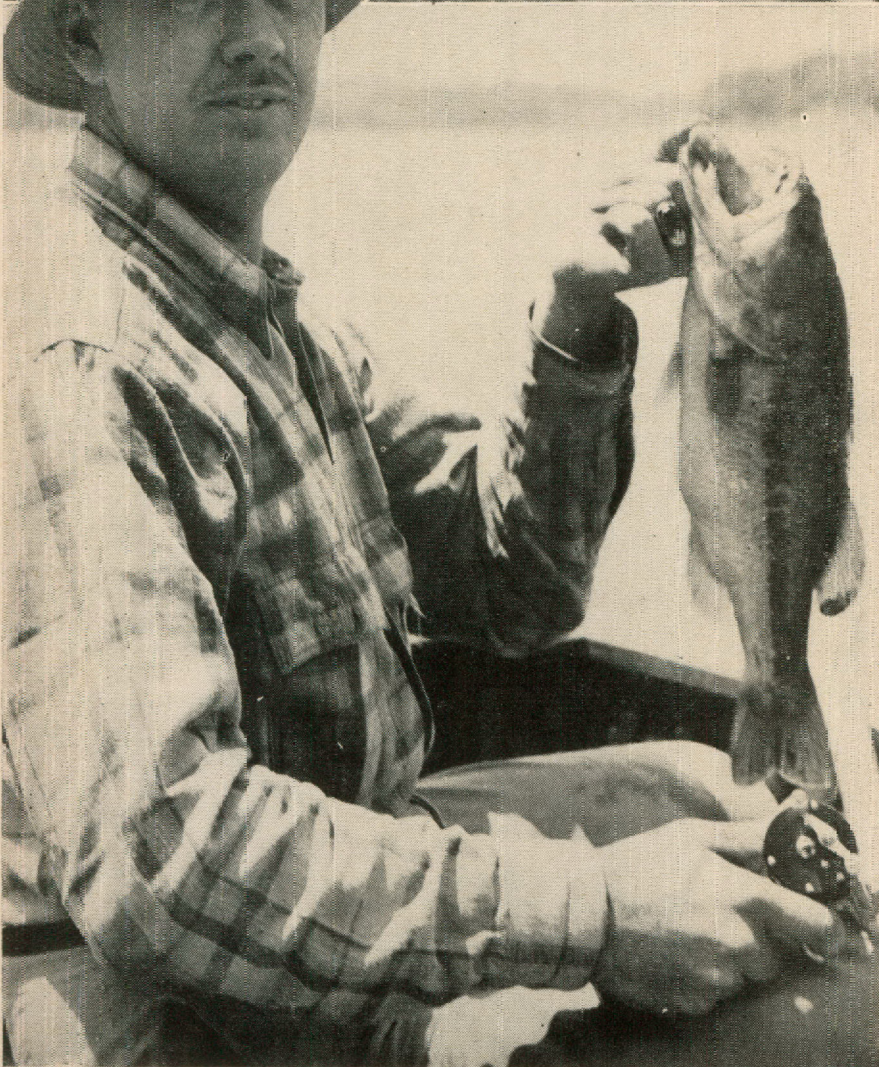
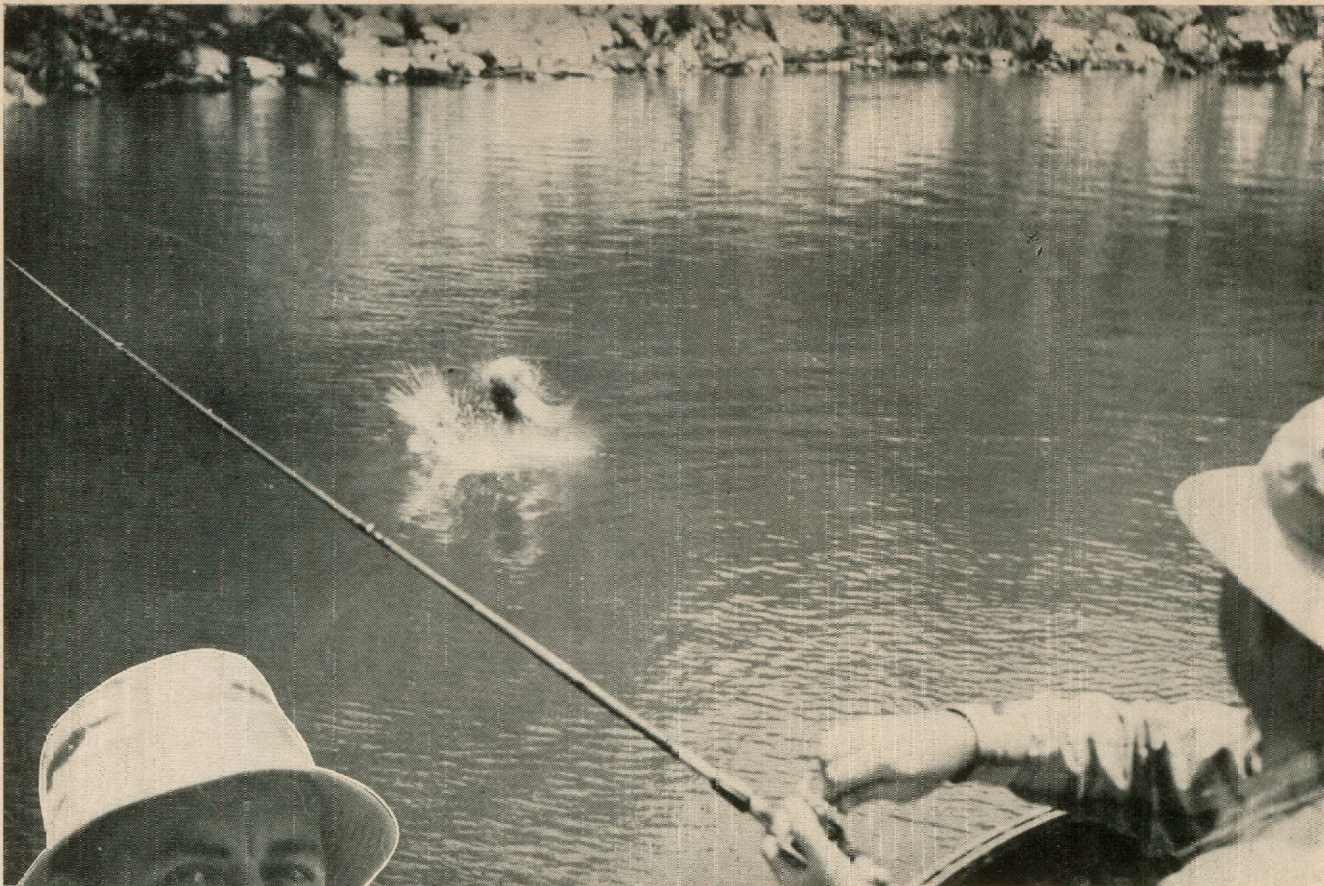
... if reaches this size, which at last presents most of the characteristics of the grown fish, and



... whose skeleton looks like this. Not the long rays which form the basis of the sail on



... the adult, whose bitter, leaping, skyrocketing fight has earned him the name of the royal game of the sea.



This Bass Posed For Us

By WINFRED (GUS) GUSTAFSON

It was a hot afternoon, and old Sol was really bearing down. Ralph Campbell and I were lying around camp waiting for the temperature to go down a little so that we could do a little fishing. But Campbell had a new camera he wanted to try out, and it wasn't long until he suggested that we go out while the sun was up and try to get some pictures of bass jumping.

We crossed the lake to the shady side, hoping that we would find "Old Toke" under a big rock, and lure him out. We used plunkers, so that if one did strike, he would have to come out of the water to get the bait.

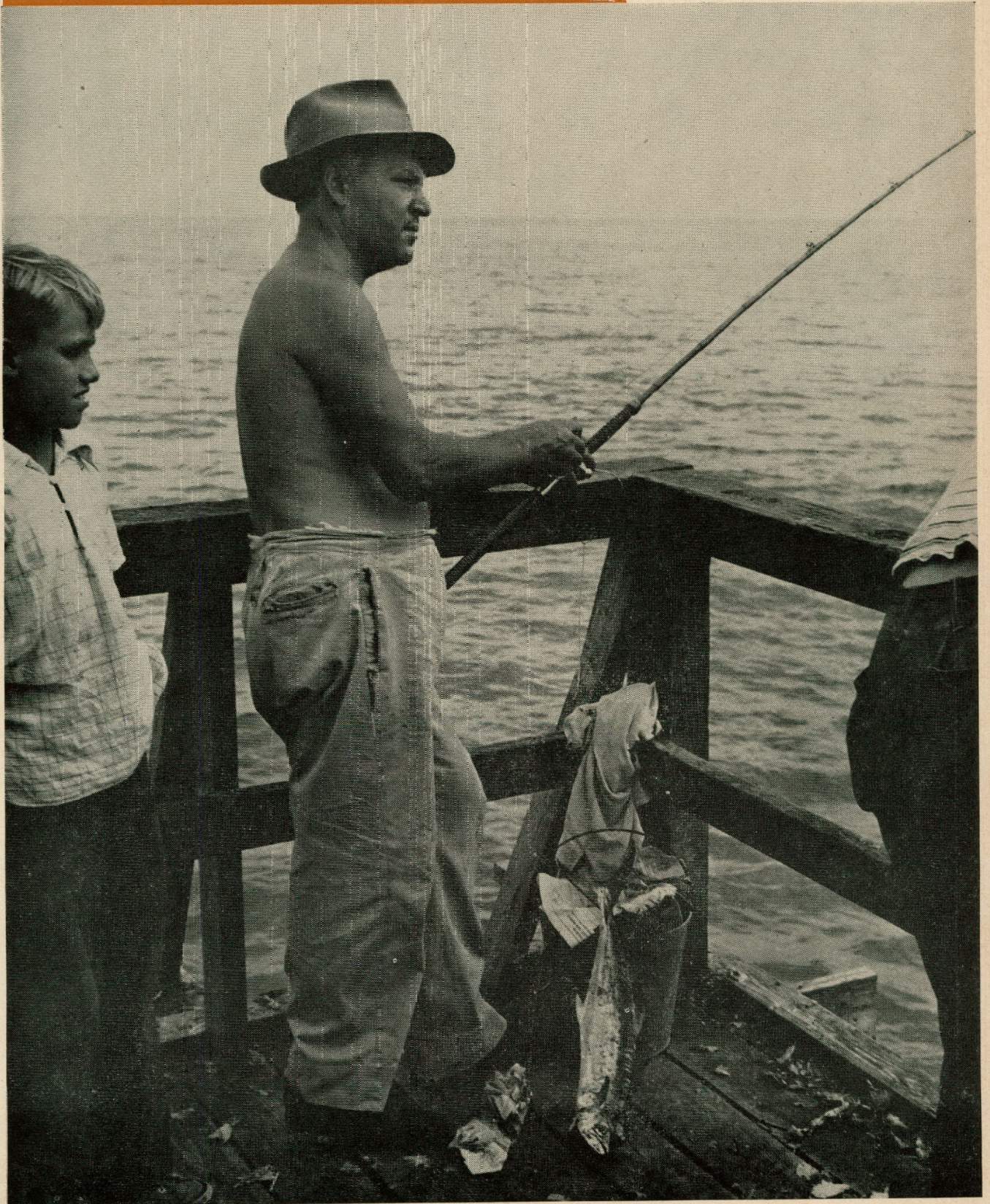
Sure enough, we hadn't made very many casts until the water exploded. I set the hook and hoped that this would be the chance we had been waiting for.

The old bass made a couple of runs for deep water, so I played him until he decided to come to the top. The water was clear and blue, and I could see that he was a fair-sized black bass. I could tell by the tension of the line that he was making for the surface, so I motioned for Campbell to get his camera ready. A second later, the bass, fighting mad, broke water, and Campbell's camera clicked.

Ed. Note: The author is the fellow holding the bass which posed for the action picture at the top of the page.

Gulf Holiday

The mackerel were running when Joseph Paris, of Galveston, dropped his hook into the water off the municipal pier





ELBOW ROOM on the fishing piers at Galveston is at a premium when the fish are biting. The couple below got their fish the hard way. They are Mr. and Mrs. Fred Oidway. She's from New Zealand and he's from North Carolina. Yep. They're honeymooning.



☆

Fay
Baker,
of
Coronado,
Texas,
is all
set
to net
a crab
on the
line
she's
running
beneath
a
Galveston
pier.

☆

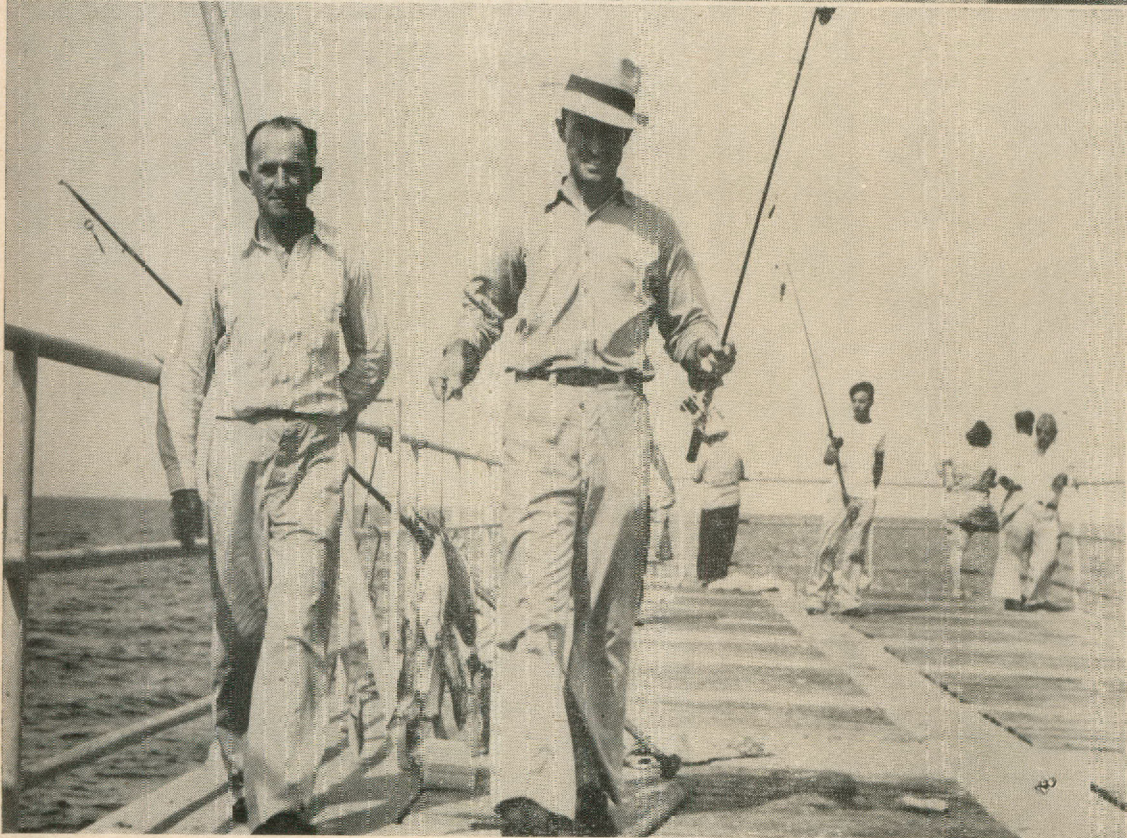
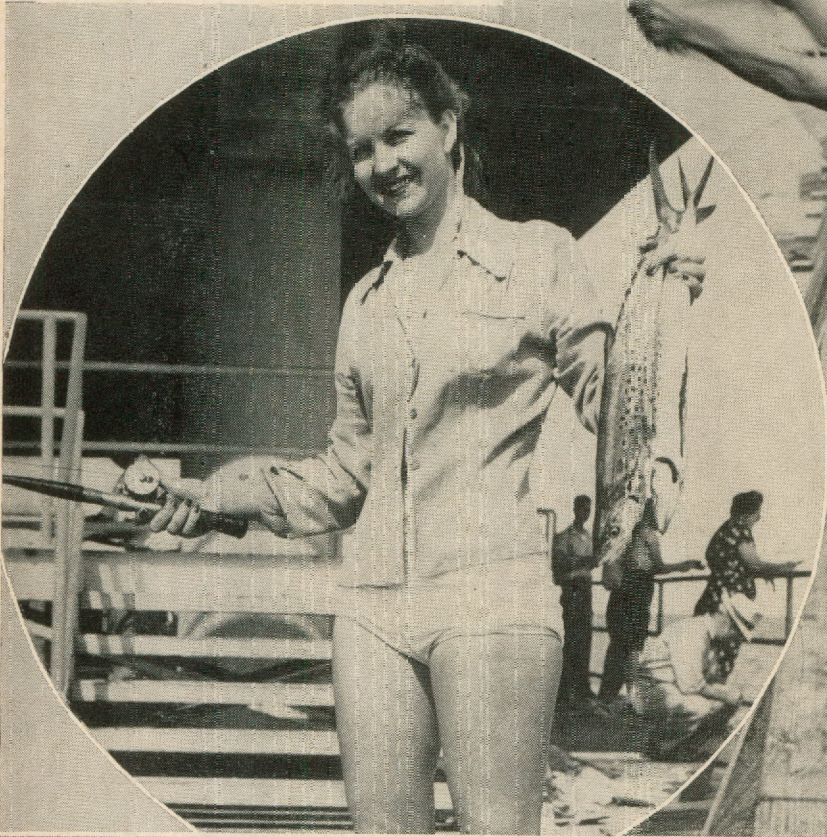


☆

This
youngster
who
was so
occupied
with his
first catch
that he
didn't
have time
to
tell the
photographer
who he
was.

☆

THE YOUNGSTERS at the right wanted their catch all at once so they used a hand net. But Mrs. Peggy Cheeshbrought, of Galveston, got her two speckled beauties with pole and line off the end of a fishing pier and from her smile it's easy to see that she's real proud of them.



☆
Arthur Fant (left) and Dave Rosenberg (right) got their Sunday dinner from the Gulf in less than an hour.

☆



☆

The days of depredation are over for these young sharks caught in net by these two commercial fishermen.

☆

☆

A commercial catch of sheepshead and speckled trout that brought looks of envy from fishermen on the piers.

☆

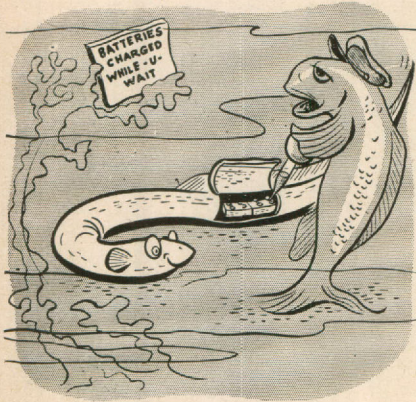


STRANGE FISH

By J. L. BAUGHMAN

OUT OF the twenty-six thousand named varieties of fishes (to say nothing of all those remaining to be discovered) there are many which, either because of their habits, their uses, their names, or their adaptations to life are of extreme interest to everyone who has occasion to come into contact with them.

There are fish that walk, and fish that crawl. There are fish that run, and others that climb; fish that fly and fish that sail. There are fish that fish, and fish that hunt, killing their prey with a shot on the wing. There are fish that



almost have their skeletons on the outside, and there are fish that have no skeletons at all. There are fish with storage batteries, others that carry headlights, and still others that carry swords and saws. There are fish that build nests; fish that kings used to poison their enemies, and fish hitch-hikers.

And, if these are not enough, there are wolf fish and mutton fish; trumpet fish and drum fish; there are sea horses and cow fish; parrot fish and butterfly fish; star-fish and eaters-of-stars.

There is even one that carries a crucifix in its head, a catfish that abounds throughout the West Indies and South and Central America. In this an outline in the skull and backbone bears a remarkable resemblance to the conventional pictures of Christ nailed to the cross. On each side of the main outline are figures faintly suggesting two weeping women present at the Crucifixion. The small bones known as the Weberian ossicles form what appears to be a halo. Many devout people in the regions where these fishes are found hold them in a sort of reverential awe, and employ them as charms against danger and sickness.

In the Catholic religion the fish is a symbol often used in connection with

the name and likeness of St. Peter, and a signet ring bearing the papal seal and used for stamping official Vatican documents is known as the Fisherman's Ring, because the device represents St. Peter drawing a net full of fish. The device is one of the emblems of the Papal investiture. When a pope dies the Cardinal Camerlengo, or High Chamberlain of the Holy See, turns the ring over to the sacred college of cardinals, under whose supervision it is broken and destroyed. A new signet ring with the same device is provided for the new Pope. "The Fisherman" is one of the titles of the Pope and it alludes to the profession of St. Peter, who is accounted the first head of the church by Catholics.

The archer fish of the East Indies obtains its food by knocking insects into the water with a jet of water which it squirts at them. When one of these fish sees an insect resting on a plant or other article over the water, it cautiously approaches within several feet of the insect, and ejecting from its mouth a tiny stream of water, which wets the victim, causing it to fall into the water where it is quickly seized. It is said that the species, which attains a length of only six or seven inches, can throw water five or six feet and can aim it accurately for a distance of three.

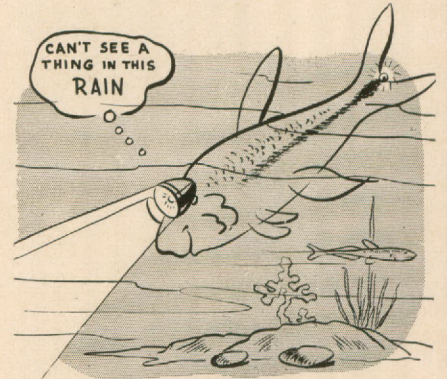
At least one species of fish is known to shed its skin like a snake. This is the horsefish, curious species found nowhere but in South America. The brightly colored new skin develops under the old one, which is cast off in patches, while in ordinary fishes the skin is worn away and replaced gradually as it is in man.

One species, the eulachon, from the region of the northwest Pacific, is so fat and so oily that, when dried, it can

be used as a candle. These fish, which average about a foot in length, ascend the rivers of the Northwest in such great numbers that the streams are choked by them, and the Flathead and Alaskan Indians use them throughout the winter for lighting purposes, merely threading a wick of rusk pith or dried cypress bark through their body.

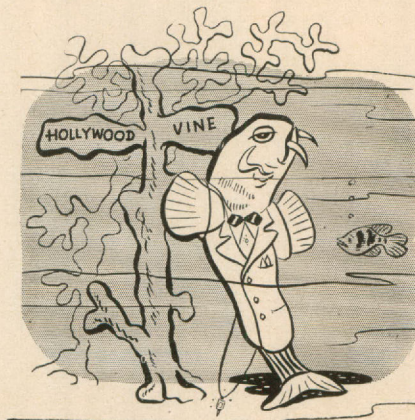
Washington Irving, on a trip to the Northwest, was so interested in them that he wrote as follows: "Toward spring the fishing season commenced, the season of plenty on the Columbia. About the beginning of February, a small kind of fish, about six inches long, called by the natives the uthlecan, and resembling the smelt, made its appearance at the mouth of the river. It is said to be of delicious flavor, and so fat as to burn like a candle, for which it is often used by the natives. It enters the river in immense shoals, like solid columns, often extending to a depth of five or more feet, and is scooped up by the natives with small nets at the ends of poles."

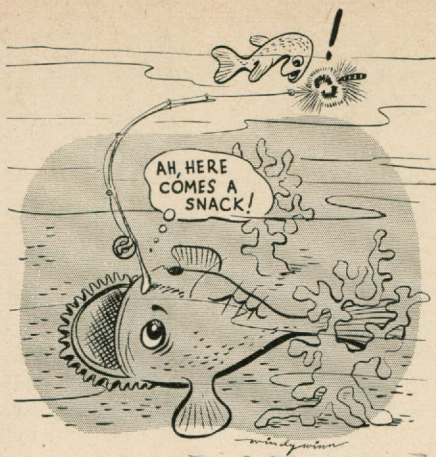
One species, common to the Nile, and



to certain other African rivers, swims upside down. No other fish assumes this posture in the water for any length of time unless it is sick or dead. Puffers or globe-fishes and the porcupine fishes sometimes float upside down when inflated and the shrimp fishes or needle fishes of the Indian Ocean do so occasionally. The globe fish often inflates itself and swims upside down when frightened, and common gold fish have been known to swim on their backs.

Another African species, a catfish, is remarkable for its power to shock any fisherman who might pick it up, and this power is also extended to the star gazers of the Texas coast, and the torpedoes, as well as to a family of fresh water fishes in South America which





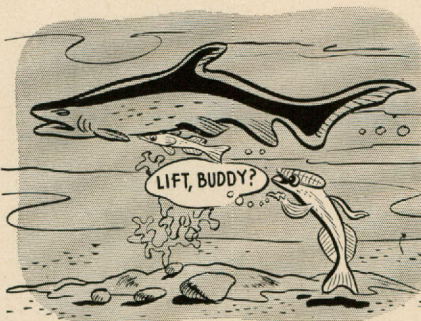
are commonly known as electric eels. These eels have the power of voluntarily discharging electric shocks strong enough to kill or paralyze small fish and to stun human beings, and large animals like horses and cattle that happen to come into contact with them. These fishes, some species of which may attain a length of seven or eight feet, are not related to the true eels, but are long sinuous cousins of the catfishes, carps and suckers.

The living batteries or electric organs, although differing somewhat in different species of electric fishes, consist essentially of modified muscular tissue, abundantly supplied with nerves. Apparently the purpose of emitting the shocks is not only to defend the electric fish from its enemies but also to render helpless the swift-swimming fishes on which it feeds, by benumbing them. This is borne out by the fact that a large fish, showing no external signs of injury was found in the stomach of an electric ray captured on the coast of Great Britain, indicating that the electric shock deprived it of its ability of escape. More than one traveler in Brazil and the Guianas has reported that his horse was knocked down by an electric eel while fording a river or bayou, although such stories are likely to exaggerate the intensity of the shock and should be accepted with reservations. Baron Von Humbolt, the German traveler and naturalist, related that the natives of Brazil, who prize electric eels as food fish, were in the habit of exhausting their electric powers before

catching them by driving horses through the water. The intensity of the shock, according to Humbolt, sometimes causes the horses to drown. A person who steps on one of these fish in the sand or mud is likely to receive a very painful shock if he is not actually stunned. Even the mere touching of a boat by an electric eel has been known to make the nerves of the occupants tingle for an hour, and a perceptible shock from the fish can sometimes be felt some distance away.

In all species of electric fishes the power to generate electricity is soon exhausted and a short rest is required to restore it. The ancients were familiar with the marbled electric ray, which frequents the Mediterranean Sea, and the Atlantic and Indian Oceans, and employed it in giving treatments to persons with rheumatism, gout and other physical ailments. Certain deep sea fish are equipped with similar organs, which generate cold light. Even plants have been found that give a slight electric shock to anyone who touches them.

Primitive natives throughout the world have utilized various poisons for the taking of their food from the rivers and lakes. Natives of India use one known as Cocculus to stupefy fish, the active agent picrotoxin contained in



these berries bringing the prey to the top of the water in such a condition that it is easily picked up by hand. American Indians employed poisons derived from the buckeye soaproot, walnut bark, devils shoe string and other plant products in this type of fishing, while pulped cubé, obtained from a plant native to South and Central America, is still used by the natives of that country to render fish helpless and cause them to rise to the surface where they may easily be caught.

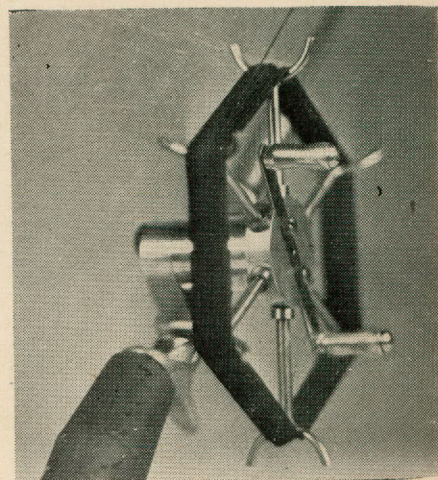
Fish do not sleep, according to the Bureau of Fisheries, although at times they may remain quiet at the bottom of a pool. They can distinguish many colors, and bite both by the sense of smell and the sense of sight. However, they bite most frequently through the sense of smell, for this is the most keenly developed. Apparently they do not suffer much when hooked or caught, for the same trout have been caught two or three times in one day, by a fisherman using the same type of bait. The circulation of a fish is practically the same as that of any of the higher animals, except that the lungs are replaced as gills. In some fish, in addition, there are rudi-

mentary lungs, a supplementary circulation.

Fishes are found in every portion of the ocean, at all depths, and even on the ocean floor, at the deepest places known to man, although the number of marine animals and plants diminishes as the water gets deeper and farther from shore. Species that live in the greatest depths of the ocean away from the coasts are known as "abyssal fishes." They are especially adapted to withstand the great pressure encountered at the bottom of the sea. This does not mean that their bodies are especially strong. On the contrary the bones and muscles of such species are poorly developed. Their tissues are so uniformly permeated with fluids that the pressure is the same from all directions, both inside and out. When such fishes are brought up from great depths it often happens that their air bladders burst and their tissues rupture, because the pressure of the air and gases within them is greater than the pressure without.

The question is often asked, how fast can fish swim, and with the medium sized fresh water species, it has been determined that their maximum speed approaches seven miles an hour, with the possibility of a bound at nearly three times this rate. Among the salt water fishes, the swordfish is known to attain a speed of nearly sixty miles an hour, while the Bureau of Fisheries say that the dolphin and carp can out-swim the fastest vessels.

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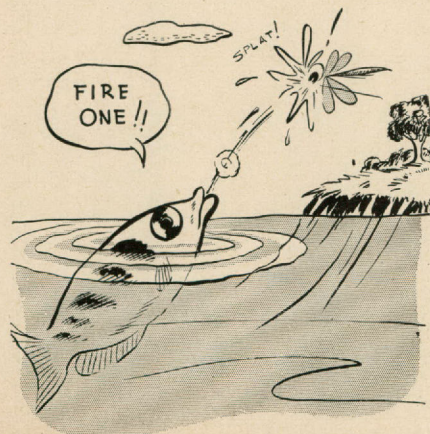
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When Fishing Is Poor

By J. G. BURR

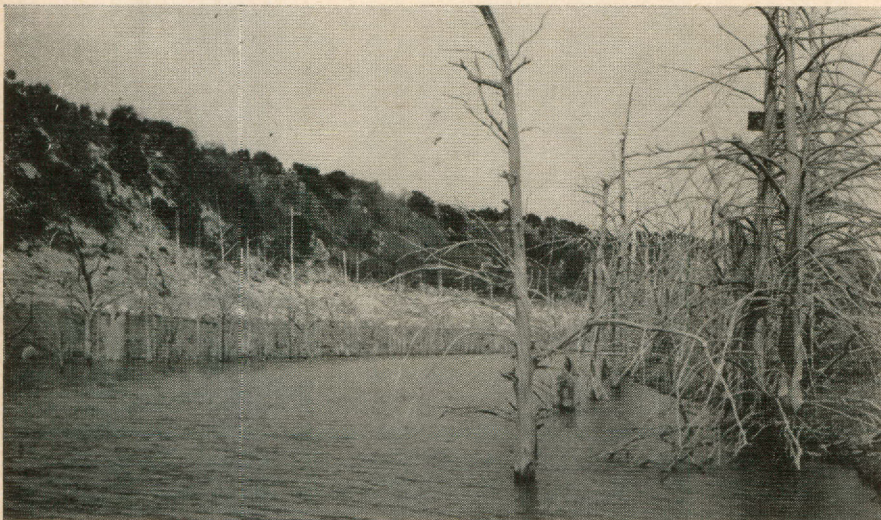
ON THE trampled shore of a body of water, perhaps a seashore, you might come upon a parchment half buried in the sand, idly perhaps to pick it up and throw away. But if on closer examination you discovered some hieroglyphics which might have a secret meaning—like, for example, the secret of where pirates had buried some treasures which they had looted from the sea (apologies to Poe), you would take immediate steps to decode the mysterious characters and try to locate the hidden treasure.

Not in the sands of the shore but in the water itself is the treasure of valuable information so necessary for the successful maintenance of good fishing.

ures of the snow? or hast thou seen the treasures of the hail?" In any event it was something to look into deeply.

Suppose we take a drop of water and put it under a microscope with 100 magnifications. Little if anything will be seen. The density of animal and vegetable life in the water is not such that you can get much of a show without a concentration of the organisms. This concentration is achieved by the use of a plankton net through which the water is strained or filtered, or by the use of a centrifuge.

If twelve gallons of water are filtered through the net, one can get a fair concentration of organisms caught and held in a small container attached to the net.



For such studies the water, if not always fine, is at least always interesting, so come on in with a boat and the gadgets needed in order to pry open some of the sealed secrets of hydrography, or in plain words, the secrets of a fish pond.

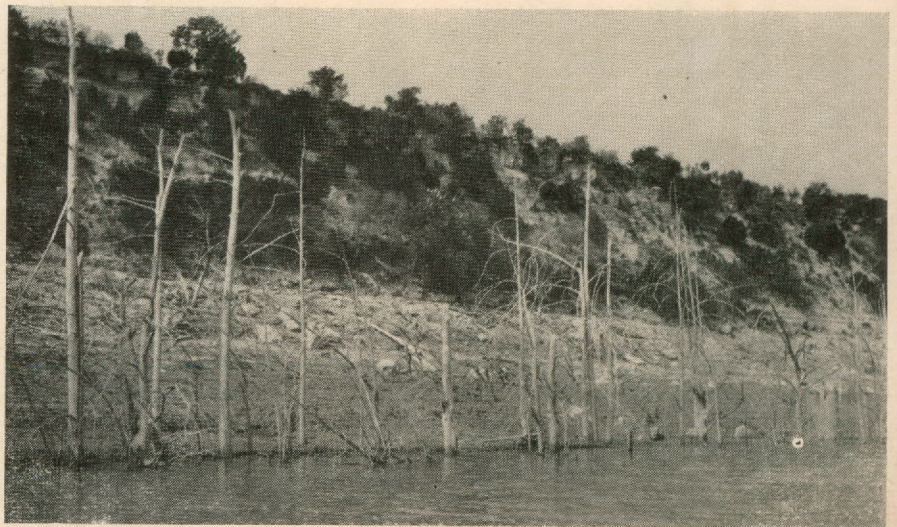
Ordinarily the imagination is kindled by the obvious glory of the firmament, and the splendor of the constellations which were known and studied long before the telescope was invented. But the study of a tiny drop of water, which is a universe in itself, had to await the development of the microscope. No, that is not exactly true: in fact, it is unscriptural, for in the book of Job we find that a question had already been asked: "Hast thou entered into the treas-

A CLOSE-UP view of the limestone formation which borders part of Medina Lake.

Count the plankton in the water of your pond or lake if the fish aren't biting

In a normal sample of water the quantity of organisms will be such that you can hold the bottle up to the light and see with the naked eye many of the little animals jumping about, having the appearance of water fleas. If these organisms are abundant, and the lake has not been fished out, there should be plenty of fish in it; for those little organisms are the food of young fish for the first few weeks of their existence. Without that baby food the fry can not survive. If the water of a lake is sterile it can not produce the food for young fish. Why, then, are some lakes sterile which have been called biological deserts? The sterility of a body of water may be a temporary or a permanent condition. The fertility of a body of water depends largely on the soil nutrients in the drainage from the surrounding terrain. A long drouth starves a lake of its minerals which are constantly used up to sustain the growth of planktonic foods. A plankton drama is enacted almost yearly in the rise and fall of these organisms with the changing seasons of wet and dry weather. This has been particularly noticeable in Medina Lake, due to the limestone borders and bottoms which are scant of soil until new soil is washed in from the tributaries. The overflow of a lake is its means of regeneration. The best fishing in Caddo Lake is to be found in the summer following spring rises, and the bigger the rise the better the fishing. An authority has said that the potential abundance of fish in a body of water is in the same

HEADWATERS of Medina Lake and the wall of limestone on the western side of the lake.



Those Were the Days

By R. J. (Bob) EDWARDS

HUNTING is still hunting in Denton County, as it was in the days fifty years ago. However, there is a difference in the amount of game to be found, and too, there is a difference in the dogs we now follow. There is no question in this writer's belief that the bird dogs of fifty years ago were better than we have today. That is not particularly due to the breeding, but entirely to the fact that there was more game in those days and consequently the dogs had more to train on. There were covies of birds then where there are singles today, and that's how dogs get experience and training on birds.

The hunters, too, of that day were better marksmen than they are at this time, as they, too, had more experience in shooting. Now, if a hunter gets as many as twelve shots in a hunt, he's lucky. In the days of yore, it wasn't anything unusual for a hunter to waste or use as many as three or four boxes of shells.

Hunting grounds were better. Then the hunter did not go to the thickest woods in the county to find birds. Near small branches and creeks, where blue stem grass was to be found on both sides of the streams and small timber, birds were plentiful. It was open shooting in the main, unlike the blackjack and post oak, where most of the quail are to be found these days.

This scribe is not quite old enough to recall the best hunting days in Denton County, but can recall where there was much more game than now. In the early days there were deer, even bear, turkey,

prairie chicken, lots of geese and ducks, thousands of plover, doves and quail. Bear, deer and turkey have long since gone from these parts, and one might say that only dove, quail, and waterfowl are left here for the sportsman in the way of birds. The bigger game has shifted to other parts of the state.

Truman Stroud, the dean of Denton's hunters, recalls the days when he had no

50 years make big difference in game and class of dogs

trouble bagging as many as twenty prairie chickens in a morning's hunt. He hunted then in what is now part of the City of Denton, known as the old aviation field and the Scripture place. Even Jum Forrester, living near Slidell at the time, recounts the days when his father's barnyard lot was filled with prairie chickens, feeding with the tame chicks. Personally, I never saw but one prairie chicken in this county, and I didn't get a shot at that one. The only prairie chickens I ever did shoot at were in Wheeler County.

I don't remember about the first hunting club organized in Denton, but I have read about it. That was in the days when all kinds of game were to be found here. This particular club chose two captains, and each captain chose

the members for his side. One of the captains was my father, Dr. James R. Edwards, and John B. Schmitz headed the other team. The losers were to pay for the dinners. Points were allowed for deer, turkey, geese, ducks, quail, squirrel and other wild game. I never heard the results of this competition.

Denton County, even in my early hunting days, offered real sport on quail. I recall one day when Bill McGintie, now of Dallas, and I went out west of Denton to what is known as the "three-mile" stock farm. We were in a buggy and as we hitched the horse to a fence, Stubby Fairman, then just a kid, approached us. He was living near there at the time. When asked if there were any quail in the neighborhood, he said, "you bet; there are lots of 'em." I had a brace of setters and Bill had borrowed Rex, a pointer, from Dick Smith. We put the dogs out and they had not gone 50 yards from the buggy till all three dogs froze. From that time on, it was "looking for singles," and finding covies. I bagged 48 birds that day and now if I get three or four I feel lucky.

The hunters of early Denton included men of various professions and businesses. Among some that I recall: Dr. J. M. Inge, Emory C. Smith, Dr. Cuvier Lipscomb, Dr. Charlie Saunders, Dr. P. Lipscomb, C. F. Witherspoon, Prof. Keyte, Capt. E. F. Comegys, Price Anderson, W. J. Austin, William B. Gregg, Charlie Smoot, Dr. Ed. Hann, Alex Hann, Dr. J. P. Blount and the others already mentioned, including John B. Schmitz, Dr. James R. Edwards and Truman Stroud.

It was a time of real sportsmen in Denton County and all those men believed in good hunting dogs and protection of game life.

ratio as the productivity of the surrounding soil.

Now we are getting down to an explanation of why there are no fish in some bodies of water. On farms where there is no rotation of crops the land wears out and will produce almost nothing. The minerals essential to plant growth have become exhausted. If all the drainage is from such farms there can be little hope of lake regeneration.

What, then, shall we do about the matter? Fertilize the lake. In some lakes the limiting factors are nitrates and phosphorus and, in East Texas, sometimes calcium. Manure will supply nitrates, and bone meal or meat scraps will furnish the phosphorus and calcium. There are many other kinds that can be used, but the above nutrients are easily procured and can always be depended on for good results. Only small amounts are needed and they should be placed along the edges of the pond. Avoid the use of too much manure which, when used in excess, produces a scum on the

surface of the water, and reduces the dissolved oxygen content. Treated ponds are richer in vegetation and insect life. The value of fertilization has been proved at our fish hatcheries, where ponds produced more and better plankton and a larger yield of fish.

The futility of words becomes doubly apparent when one would speak of the hidden and partly hidden forms that spring into view under a microscope. There is in them the enchantment of a veritable fairy land which can not be translated into words. A rapidly flowing stream holds less of this organic life than still water; and the ordinary lake holds less than is found in the fertilized ponds of a fish hatchery. A quantitative test gives the ratio of organisms found in these waters. Beginning with flowing water we have in counts per liter:

The Frio River near Concan which is just above Uvalde:

46 copepods
36 keratella, per liter.

The Nueces River seven miles below

Uvalde:

18 copepods
9 zygnuma
34 spirogyra
27 filamentous algae.

Next is the quiet lake water which carries on a more abundant production of organisms than is possible in rapidly flowing water. This sample was taken from Lake Travis, a few miles above Austin on the Colorado River:

101 cladocera
103 copepods
300 nauplii
206 ceratium
90 uroglena
401 coelosphaerium.

This is more than four times as much

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When It Rains Fishes

IS IT true or untrue that fishes sometimes fall from the sky? We have an answer by E. W. Gudger of the American Museum of Natural History who has looked into the subject in a global manner and the answer is yes, that fishes are sometimes rained from the sky. How this can happen is explained by a quotation from his letter to *Science* of June 7.

"The explanation is to be found in the action of whirlwinds and waterspouts and possibly of strong typhoon and monsoon winds. A "twister" or whirlwind starts in front of an approaching storm, and as it gains in size the "snout" elongates and approaches the water. This, caught by the whirling wind, rises up in a cone. The two unite, and the swirling column moves along, picking up water, fishes, and any other fairly light objects at or near the surface of the water.

"I have seen waterspouts off Beaufort, North Carolina, and numerous ones in the Florida Keys west of Key West. In these latter, on a day in July, 1914, at the Marquesas Atoll, a huge waterspout was seemingly headed for the yacht on which I had been left as shipkeeper, but when near at hand it fortunately sheered off and passed by about 100 yards away. To this day I have a vivid recollection of the irresistible power of this whirling wind and water. A natural history correspondent in Louisiana (E. A. McIlhenny of Avery Island) once wrote me of a small waterspout on a fresh water distributary in the Mississippi delta, which broke just in front of his fishing boats and then filled boats with water and fishes. He knew of other like phenomena in that region. Such a waterspout might pick up dead fish (if such were present) as well as live ones. Everything movable would be sucked up in the whirling vortex. Furthermore, whirlwinds, originating inland, will not only progress over land, picking up various objects, but over ponds and lakes—becoming waterspouts. As such, they will there pick up frogs, fresh water fishes, snails, etc., and carry these away over the land. Sometimes the fishes are found in a long, narrow, fairly straight row over some distance, evidently having been dropped as the waterspout progressed over the country with lessening speed and carrying power.

"When the waterspout or whirlwind, with its load of fishes, breaks, or when these and the typhoon and monsoon winds lose their velocity to a point where their carrying power is less than the pull of gravity on the fishes, water and fishes will fall as "a rain of fishes."—J. G. B.

plankton as we found in the rivers. You will observe in the table below that in the fish hatcheries, where fertilization is practiced, there is a five or six times as much crustacea plankton as we find in ordinary lake water. See the four top items.

Fertilized pond No. 20 near Tyler:

- 560 cladocera
- 600 copepods
- 400 nauplii
- 160 ostracods
- 200 keratella
- 200 ceratium
- 190 filamentous algae.

These forms are seasonal. Sometimes they are very abundant, and at others very scarce, but there is usually a good supply on hand in the spring when young fish come off the nest. It would seem that so many organisms could not be found in so small a quantity as a liter or a quart of water. There are, indeed, freak occurrences of the smaller forms numbering as high as 200,000 individuals taken in a plankton net, using, of course, the efficiency factor. Needless to say, the water was rather soupy. In one case the density was so great as to defy all efforts to make a count.

This quantitative study of plankton has been practiced in some of the Northern states for a quarter of a century or more, but so far as known no quantitative studies had been made in Texas until 1932. In that year the writer visited ten colleges and universities to engage their interest in the subject. Personnel were contacted in the following schools: Leo J. Banck, Biology, St. Mary's University, San Antonio; C. S. Smith, Biology, State Teachers College, San Marcos; H. R. Arrant, Chemistry, Simmons University, Abilene; Geo. E. Potter, Zoology, Baylor University, Waco; J. D. English, Biology, John Tarleton Agricultural College, Stephenville; B. B. Harris, Biology (now dean of the school), State Teachers College, Denton; J. C. Henderson, Chemistry and Biology, Junior College, Tyler; E. W. Steele, Engineering, A. and M. College, College Station; C. C. Johnson, Chemistry (deceased), and Mr. Adams, Biology, State Teachers College, Nacogdoches; and Edwin S. Hayes, Biology, Junior College, Edinburg.

In the intervening fourteen years studies of the plankton and the chemistry of lake waters have been greatly enlarged, outstanding work having been done by Drs. Harris and Silvey at the State Teachers College, Denton, and Dr. E. P. Cheatum of Southern Methodist University, Dallas.

Calls from individuals and from schools have come to the writer asking just how plankton counts are made. To mitigate the drudgery of letter writing it has seemed proper to print the procedure herewith even at the risk of boring some persons who would not be interested in such technicalities. Indeed, the more I think about going into these details, the more advisable it seems to

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me to make it a misdemeanor for any one to read or attempt to read the ensuing lines. There is no green light for any one but those who have that morbid curiosity to pry into the private affairs of the modest creatures whose veiled countenances are averted from the glance of men.

The procedure: The net heretofore mentioned for the filtering of the water is made of a fine mesh, number 20 bolting silk. The net is attached to a brass ring about nine or ten inches in diameter, and tapers some two feet to a narrowed end, at the bottom of which is tied a small jar holding about 50 cubic centimeters of water. Into this net is poured 12 gallons of the water to be tested. The net filters the water, retaining and concentrating the organisms which lodge in the little jar at the bottom. From the twelve gallons of water, which is 48 quarts or approximately 48 liters, the organisms are lodged in the 50 c.c. jar which retains perhaps 48 of the cubic centimeters of water. Thus the organisms condensed in one cubic centimeter represents what is in any one of the 48 liters of water before it was filtered.

All we have to do then is to count the number of organisms in one of the cubic centimeters of the filtrate, in order to determine the number of organisms in a liter of water. So far as the writer

★ Continued on page 22

TEXAS GAME AND FISH

Sidelights on the

BIG HORN

THE Big Horn sheep is a creature of extreme shyness, and in the common retreat of all game animals before advancing settlement, the sheep went the farthest, locating in the highest, most rugged terrain at timberline or above.

The habits of the Big Horn are extremely interesting. To see a band "spook" in single file down the precipitous face of a rocky cliff is an amazing exhibition of agility and sure footedness. Very young lambs exhibit all the playfulness of domestic lambs, frisking about, playing follow the leader, whose bounds and jumps are copied by each group.

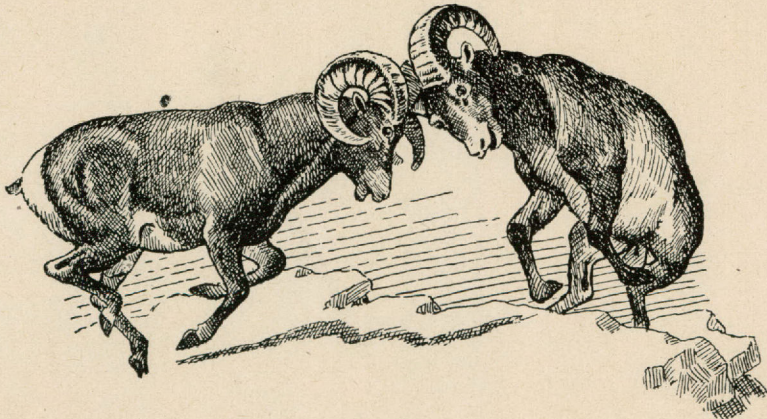
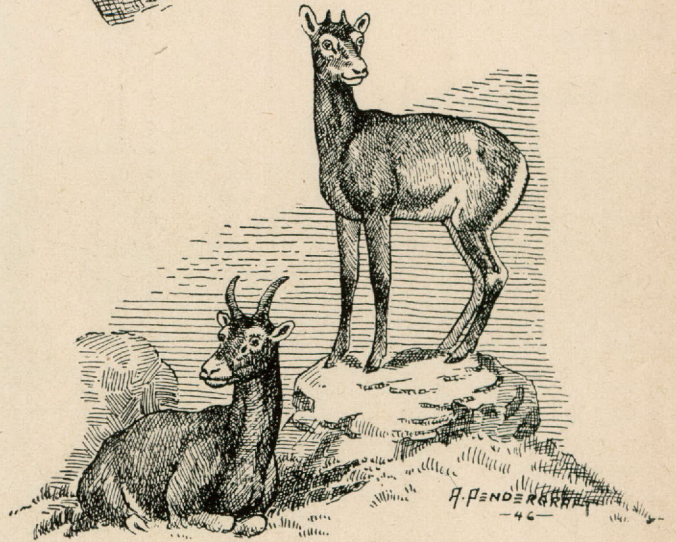
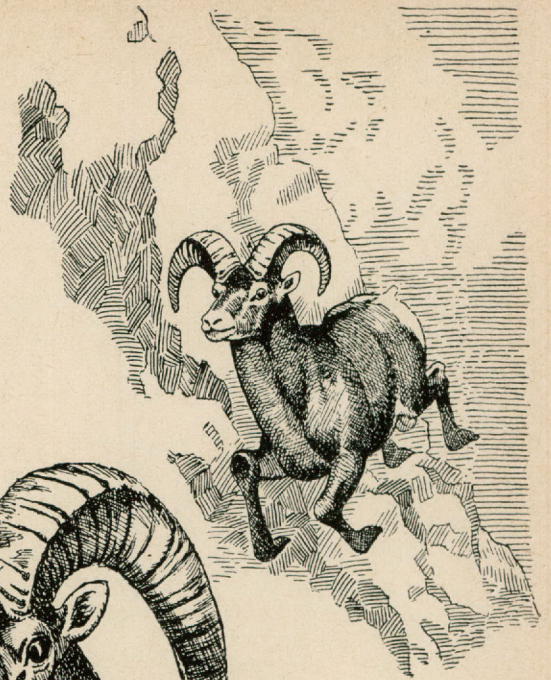
Protective coloration of Big Horns is the perfect camouflage. In summer the dun color with touches of white blends to perfection with the rock rubble, the brownish soil and dead vegetation. One can stare at a band of sheep lying in an open, boulder strewn slope for an hour, and never see them until movement is seen, or the angle of the sun changes to cast a shadow. In winter, the coat is paler, blending with frosty scrub timber.

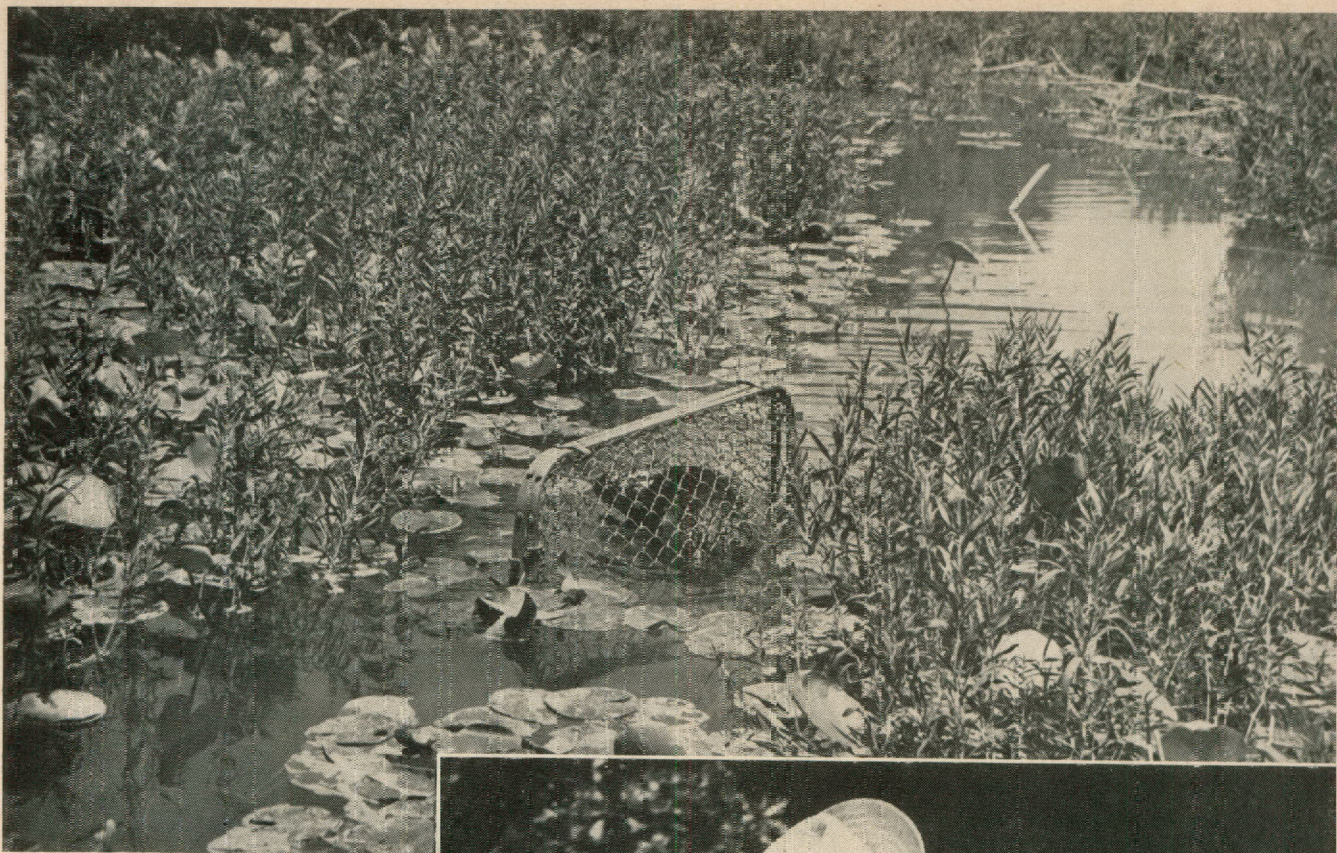
The Big Horn sheep is under rigid protection in Texas. Once they were numerous but their numbers declined rapidly as the railroads pushed farther west and meat hunters slaughtered them to provide meat for the railroad builders.

Recently the Game Department acquired land in Culberson County for a Big Horn sheep refuge and the few remaining monarchs of the timberline are now in the refuge where it is hoped they will stage a comeback.



Illustration by
ARCHIE PENDERGRAFT
in Wyoming Wildlife





BEAVER caught in a "Bailey" Trap. Beaver traps are set in runways, channels, or breaks in the dam.

Game Restoration

★ Continued from page 5

subsequent data indicate that there would have been just as many quail on the areas and acreage involved if no quail had been stocked, since there is a limit to the carrying capacity of any piece of land in most instances, the seed stock necessary to build the population back to that carrying capacity is present. Some of the above stocking efforts were attempts to introduce one species or the other into territory in which that species did not previously exist. These efforts failed for both species, primarily because the habitat was not suitable.

Only a few of the other species, listed above as having been restocked, have actually been moved, and for the most part, the results of our efforts are as yet unknown. These efforts were on a purely experimental basis. We simply report that 18 inland muskrat have been placed on 3 areas in 2 counties; 120 fox squirrels were placed on 8 areas in 7 counties (mostly public parks); and one plan each of 6 javelina, 30 prairie chicken, and 11 chachalaca have been made.

The Game Commission feels that there is still considerable acreage in Texas



CARRYING RACCOON from the trap to the holding pen, or to the truck for transportation. Animals are kept in such small quarters only for the purpose of transferring animals from trap to larger holding pens.



QUAIL TRAP. Operators are urging quail into gunny sack from which the birds can easily be caught for necessary handling and banding. All animals trapped and released are banded or tagged.

suitable for various wildlife species and we hope to continue our efforts to restore at least deer, turkey and antelope at an increasing rate. Some other species, such as quail, raccoon, etc., probably will not be considered for restocking at the present time, as experience has shown in the inadvisability of attempting to restock such species. Although we anticipate stepping up our program, we do not wish to suggest that anyone can secure game by merely asking for it, for we now have a tremendous backlog of requests and obligations on hand as a result of the curtailment of our activities during the war. Further, because we wish to assure the greatest possible success, the Game Commission has adopted a policy of having a competent Wildlife Biologist inspect each proposed restocking area to determine its suitability from all angles. Such inspections take a great deal of time.

It is well known that different species have different habitat requirements. For instance, deer require a brushy or wooded type of habitat while antelope require open plains type of country. While turkey frequently do well in the same type of habitat as deer, these birds must have certain essential elements in the environment which may be present in otherwise suitable deer territory. Other species, likewise, have specific habitat requirements. Also, game can sometimes cause considerable damage; thus care should be exercised in selecting release sites from this point of view. Deer sometimes do a great deal of damage to crops where they have access to farm lands. Turkey will entice tame turkey into the wild and therefore should not be introduced where tame turkey are raised commercially. Antelope com-

pete directly with sheep and other livestock for food and water where these items are sometimes critical. Beaver frequently flood roads and crops, and damage pecan trees. It is evident, then, that release sites should be carefully selected.

Since some of the money for wildlife restoration in Texas comes from the



JUST ABOUT ALL that Gregory Nuckles can hold is this plump bass caught by B. B. Willis of Brady. The bass was caught on a seven and one half foot, three ounce fly rod in a small lake about ten miles west of Bryan. Willis attended the Game Warden school at Texas A & M and Gregory is the son of Lawrence D. Nuckles, of Bryan, also a student at the last game warden school.

Federal Aid to Wildlife Program, there are certain policies stipulated by the U. S. Fish and Wildlife Service to which the Game Commission must adhere. Consequently, it is required that any landowner desiring game to be placed on his land must grant the Texas Game, Fish and Oyster Commission the wildlife rights on the species concerned for a period of five years. Five years is required for such species as deer, antelope, and turkey. In some instances, agreements of lesser duration are accepted for other species. In order to assure establishment of the initial stock on protected lands, acreage of from 10,000 to 30,000 acres are required for deer, turkey, and antelope. Smaller acreages are accepted for other species. Of course, several adjoining landowners can enter into agreement with the Game Department to assure prescribed acreages.

The Game Commission feels that it has made considerable progress in the restoration of game to the various parts of Texas during the last eight years.

Things You May Not Know

The swan has more than three times as many neck vertebrae as the giraffe. Most animals have seven vertebrae but there seems to be no definite standard. Swans have 25, ducks about 16 and the tiny hummingbird 14.

* * *

The mullet has a gizzard like a chicken.

* * *

The national bird of Guatemala is the quetzal. It was chosen because it is a bird of freedom . . . it will die in captivity, retaining the beautiful color of its plumage even after death.

* * *

The eyes of a whale are set far back and look in opposite directions. They cannot be moved to look straight ahead or behind. If Master Whale wants to see what's on the horizon, he must stand up in the water and slowly turn around.

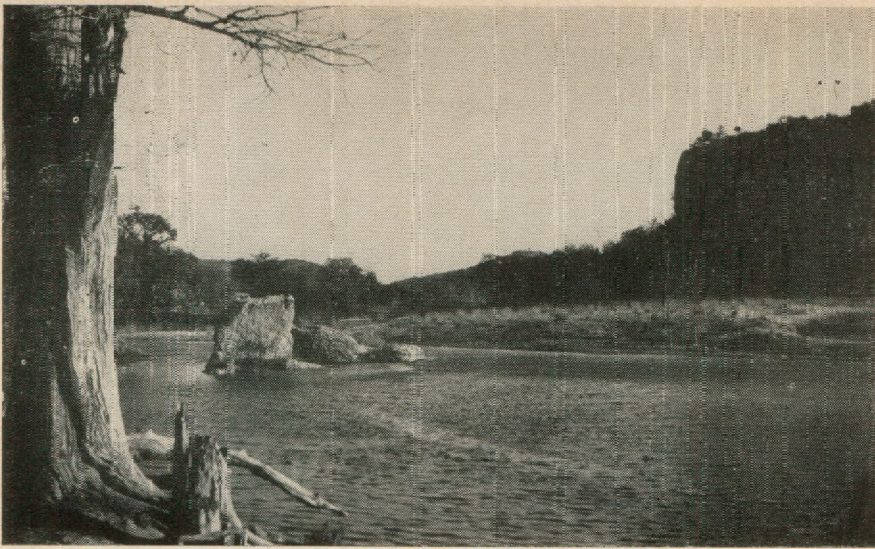
* * *

The musk ox is NOT an ox. It does NOT secrete musk. It has the tail of a sheep, kidneys of a goat, spleen of a donkey, bones of an ox, ribs of a bison, hoofs of a caribou. And it has hair on the BOTTOM of its feet!

* * *

Government experts estimate the annual value of a single bull snake to be \$3.75 in rodent control.

* * *



SWIMMING POOL on the Frio River at Concan next to bluff.

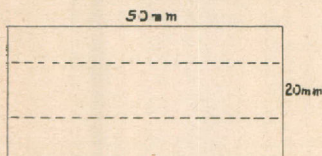
When Fishing Is Poor

★ Continued from page 18

knows, this method of making counts is not followed by other workers, most of whom have their own approach to the subject, which may differ from my own methods in some particulars. However, it is the belief of the writer that his plan for making plankton counts is the simplest that has yet been devised.

Now, the microscope and the counting cell are next in order. The counting cell holds exactly one cubic centimeter (1 ml) of the filtrate which, as stated above, is all that you have to count. Stir up the organisms in the little jar, so as to produce an even distribution, and with a one c.c. dropper deposit the contents into the counting cell and put on the cover glass. The cell, which is 50 by 20 millimeters, has a depth of one millimeter, thus making the total contents 1,000 cubic millimeters. When the score is properly calibrated for plankton counts, using a 16 mm objective with a 7.5x eyepiece, there will be 1,000 fields in the counting cell each having a square millimeter. (A micrometer in the eyepiece would aid in measuring the field and the size of the organisms).

In order to visualize the process, a figure of the counting cell is here drawn:



The length being 50 mms, let us make two trips (see broken lines) across from end to end—and we will have covered 100 fields, counting the organisms as we went along. As there was a total of 1,000 fields we have counted one tenth of the contents of the counting cell. Suppose that in the 100 fields we counted 10 cope-

pods, in one tenth of the counting cell. Clearly the total number in the cell would be ten times as much, or 100 copepods. Then there are 100 copepods in a liter of water because, as stated above, the c.c. corresponds to the liter. In like manner other organisms are counted.

But that is only a part of the story. In the little jar we caught only about 48 cubic centimeters of water, while the rest of the twelve gallons or 48 liters passed through the meshes of the net together with large numbers of the organisms. We counted only the organisms found in our possession but we must now make an estimate of the number that got away, if we arrive at the probable number of organisms to be found in a liter of the open waters. In order to arrive at the probable efficiency of the net we used 20 liters in a centrifuge which is believed to give exact findings on what is in the water. A similar quantity of water was strained through the net and the organisms counted. It was found that the efficiency of net ranged from 5% to 50%, depending on the size of the organisms. With crustacea, such as copepods and cladocera, the net efficiency may be from 20 to 50%, according to the size of the animals.

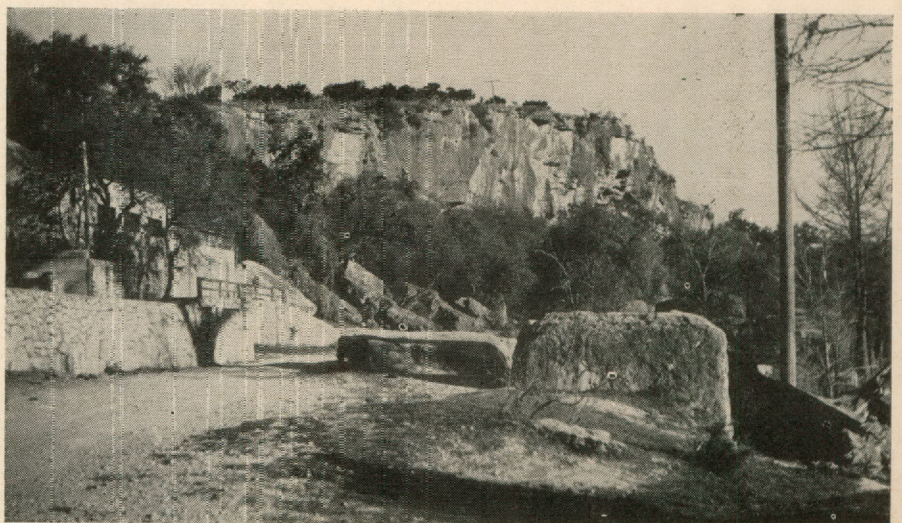
In the smaller organisms, such as protozoans or rotifers, the catch may be only five or ten per cent. In the case of very small organisms, called nannoplankton, very little, if any, are held by the net and the use of a centrifuge is recommended. The above ratios were reached only after repeated tests, *but no infallibility is claimed.* Nevertheless, to determine how many organisms per liter are in the open water, multiply the number of organisms you have counted by your probable efficiency factor; that is, if 20% of the copepods were retained, judging by their size, multiply the count by five. In a similar manner the abundance of all other forms can be computed. However, at best your findings can be only an approximation. It is said that no perfectly satisfactory conclusion has been reached as to what is the relative efficiency of a plankton net. See *Fresh Water Biology* by Ward and Whipple.

Record Marine Game Fishes

The 1946 official chart of the World Record Marine Game Fishes has just been made available by the International Game Fish Association, which plans to issue these charts annually and at approximately the same time each year.

Forty species or sub-species are listed in the records, which include weight, length, girth, place, date and angler in the following classifications: all tackle, three-thread, six-thread, nine-thread, fifteen-thread, twenty-four-thread and thirty-nine-thread.

Information concerning the procuring of the charts, which are of deep interest to every angler, can be obtained by writing Francesca LaMonte, Secretary, International Game Fish Association, the American Museum of Natural History, New York 24, New York.



ROCK BLUFF on Frio River next to the swimming pool at Concan.

THE San Antonio Bird Dog and Quail Club staged one of the best pointer and setter shows in the history of the club on June 23rd. The show was held under canvas on a small island in Woodlawn Lake, a real beauty spot of one of the inner-city parks for which San Antonio is noted.

The show brought out nearly a hundred pointers and setters of far above average quality and competition was kept in all classes.

The judging was in the able hands of Bob Henderson of Houston, nationally known as a sportsman of many interests, but especially as one who over the course of years has owned and campaigned many fine setters and foxhounds. Bob is a young and virile man, and he needed his full share of stamina before the five hours of steady judging was completed. Henderson handled his judging assignment superbly and frequently was called upon to use the mental calipers set in their finest graduations of the scales in making his selections. Particularly was this true in placing Best of Breed in pointers.

This class brought together two splendid individuals of opposite sex, Laguna Jake, the defending champion, and Hight's Ichaway Queen.

Owned and shown by E. A. Elliott of San Antonio, Jake is a fine up-stand-

Ichaway Queen

CAPTURES S. A. SHOW

ing dog of excellent type and conformation, sound as a dollar and with the look of a bird dog all over him. In placing him BIS at the show last year, that veteran show and field trial judge, Frank L. Dennison, was heard to remark: "That is a fine bird dog if I ever saw one."

Ichaway Queen, owned and shown by S. H. High of San Antonio, is a beautiful bitch of ample substance, with unusual balance and finish. Ichaway Queen had started her bid for fame in the Senior Puppy Bitch Class, for Bitches under 16 months of age, to go on to take Winners Bitches, and finally to meet Laguna Jake for Best of Breed.

Fully 30 minutes were spent by the judge in going over these two splendid pointers. Backwards and forwards, time and again, Laguna Jake and Ichaway Queen were sent up and down the ring, brought back each time to stand side

by side for another going over by hand and eye.

The bitch was fresh as a daisy, on her toes every second, in perfect bloom of health and condition; a great shower. The dog, strong, rugged, bold and of excellent type, sound all over, perhaps suffered in his showing due to the fact that being the defending champion he was called to the grounds at 10:30 in the morning and held constantly on display until the final judging six hours later. Obviously, Jake was tired and somewhat bored with the whole thing so that he did not constantly display the verve and springiness of step of his morning hours or of the show last year.

Perhaps in the final analysis, it was a weighing of a somewhat more rugged constitution and perhaps a slight superiority in the mold of the head and in expression the dog against a superior bloom and dash of the bitch, perhaps

How to Treat Ivy and Sumac Poisoning

DURING the summer and early fall thousands of people will get more or less severely poisoned by poison ivy and sumac, and it's unfortunate that there is such a widespread lack of knowledge about a surprisingly simple method of treating such poisoning. It is not only beneficial in retarding the spreading of the eruption and hastening recovery, but it is the only one that gives immediate and more or less lasting relief to the intolerable and incessant itching (which scratching only makes worse) that makes even a light case of poisoning a nuisance and a severe case a period of prolonged misery that only those who have experienced it can begin to realize.

This treatment is by the application of a moderate degree of heat. In more or less severe cases it is usually best effected by immersing or bathing the affected parts for a few minutes in water hot enough to be slightly uncomfortable at first. Usually repeated brief immersions in water a little too hot for long continued immersion to be tolerable will be most effective.

Water that is merely lukewarm or comfortably warm will not do the slightest good and may merely aggravate the itching, but somewhat hotter water will bring relief with a rapidity and, in most cases, a completeness that is astonishing and delightful to the sufferer, and usually lasts for some time, often several

hours. If and when the itching returns, it is only necessary to repeat the treatment.

The patient himself will generally be the best judge of the exact temperature needed, which will vary in different cases. Normal care must, of course, be used to avoid scalding or burning the skin. If running hot water is available, holding the affected part under a faucet, or a hot shower bath may be convenient methods. In the case of children or those afraid to try water hot enough, start with quite warm water and raise the temperature gradually by pouring in hotter water.

Now it will be asked why, if heat is the effective factor, is not dry heat also applicable. It is; and this is important to know, for hot water in quantity is not always promptly and easily obtainable. For many light cases the only treatment required is to hold the poisoned surface for a few minutes near some source of heat such as a stove, an electric bulb, or a hot radiator, or simply hold a lighted cigarette half an inch, more or less, from the skin and move it slowly back and forth until the poisoned area has been covered.

This heat treatment in one form or another has been used with good effect by many people for a great many years, and why it is entirely unknown to the majority of people, not only in the cities,

but in the country districts, and to practically all medical practitioners (including army doctors, though many soldiers in training and in maneuvers in the eastern United States get terribly poisoned) is a mystery; possibly it is because it is so simple that people either scoff at it and refuse to try it, or forget it before an occasion comes to test it. It is not mentioned in first aid manuals, in Boy Scout handbooks, in books on camping and outdoor life, nor is there word about it in a special pamphlet on poison ivy issued by one of our large eastern universities. The remedies that such works usually recommend are the time-honored solutions such as Epsom salts, permanganate of potash, acetate of lead, calamine lotion, etc. Most people susceptible to ivy poison have tried these in vain many times. They have too little penetrating power to reach the seat of the poisoning, and they do little to relieve the itching, but heat can and does penetrate.

If the heat treatment were better known and understood, an immense amount of severe suffering would be avoided. It is especially important that those in the charge of summer camps for city children should know of it and how to use it. Information from readers concerning their own experience with the treatment will be appreciated.—Willard G. Van Name, in *Natural History*.



COMPETITION was keen in all classes at the first bird dog show held by the San Antonio Quail and Bird Dog Club since the start of the war. Judging was done under a canvass top. The top photo shows one of the judging rings and part of the huge crowd which thronged the tent. Best in the show was Ichaway Queen (left), owned and shown by S. H. Hight, of San Antonio. Turn the page for other pictures of this highly successful bird dog show.



dimmed slightly by the faint suggestion of a lisp in the movements of her hind-quarters, particularly on the turns. But a decision had to be made no matter how slight the difference. Finally, it went to the bitch, Hight's Ichaway Queen, who after winning the top of her breed seemed a certainty to go on to Best in Show honors, which she did, beating a sound setter dog, King, by Ten Pat out of Lady Lou, owned and shown by H. R. Edwards of San Antonio. King previously had won in the setter classes, Open Dogs, Winners Dogs, and Best of Breed.

Another very unusual class of the show was that of Senior Puppy Dogs, in the pointer division. In this class, three litter brothers of Hight's Ichaway Queen, the EIS, were awarded first, second, and fourth places.

The outstanding individual class of the show was brought out in the Open Dogs class, pointer division, with an entry of 20 dogs; most of them very high class individuals in every particular and as fine a class of mature pointers as one may see in years.

The setter classes, too, were well filled with good entries of sound and attractive dogs and bitches. While not considered up to the pointer show in its

unusual quality, yet the display of setters was a good one.

The program of the San Antonio Bird Dog and Quail Club is a pioneering venture in every sense of the word. From the beginning it has faced problems that may be attacked only from the grass roots.

The most advanced program of the club has been the establishment of a permanent quail sanctuary. Working in close cooperation with the State Game, Fish and Oyster Commission, whose biologists will have complete direction of the game management program, a nucleus tract of around 8,000 acres has been leased in a natural quail country near Pandora, some 50 miles east of San Antonio.

The over-all program provides for the running of field trials on the sanctuary grounds, with all eyes firmly fixed on development of a permanent venue where, under constant and competent game management, field trials of the highest order may be run annually under satisfactory ground, cover and game conditions built and maintained by man from the very grass roots and which there seems every reason to expect will permanently persist despite any change in natural conditions which future years may bring to other sections of the country.

Other objects of the club are: to promote better and closer association among sportsmen and bird dog owners; to encourage and foster conservation of game birds through a restocking program; to promote better understanding and cooperation between landowners and sportsmen; to take an active interest in the extermination of vermin detrimental to game birds; to encourage the breeding of bird dogs of better shooting types; to exchange ideas and assist one another in the handling and care of dogs; and to foster and support such legislation as would be to the best interests of the wildlife of Texas and the nation.

At the right is Richardson's Dot, the best setter in the show. A litter entered by W. A. Layman copped first prize in that class. The proud mamma and her youngsters are shown in the lower left photo. The pup that stole the show was Peppy Queen (lower right). Betty Lee Smith is holding the leash and the judge, E. G. Smith, of Houston is showing off Peppy Queen's good points. Peppy Queen was entered in special puppy class under 6 months.





LADY SET SUMMAN (upper left) owned by Haywood McDaniel of San Antonio, nosed out Lady Altimeter, owned by Tom Publis, for the judge's nod in the junior pointer bitch class. In the upper right photo is Laguna Jake, best pointer in the show. Laguna Jake is owned and handled by E. A. Elliott, of San Antonio. Winners in the all age setter bitch class are shown below. From left to right they are: Richardson's Dot, first; Lady Ray, second, and Fearless Little Miss, third.



HERE are three suggestions for you catfishermen. They come from R. A. "Doc" Jenkins, of St. Louis, Mo., publisher of the Catfishermen's Bible and conceded to be one of the most expert catfishermen in the country. Here they are:

SPECIAL CATFISH HOOK. Quite a number of articles have been written by other writers about my "special" method of making hooks for catfish. I receive many letters from catfishermen asking me the price of the hooks. I do not make them for sale but almost anyone can make them as I do. There is no secret to it. The "special" hooks prevent a cat from getting off or pulling loose. I use a brand of hook known to the trade as the "spearhead." It has a curved-in point and two small barbs on the shank. The latter help to keep any soft bait on the hook. As far as I know these "spearhead" hooks are not made in treble style so I snip the eyes from two of them and bind three hooks together with fine bronze wire, making a regular gang style hook. A drop or two of solder to "anchor" the wire to the hook shanks completes the job. The hooks can be obtained through your local sporting goods dealer in any size desired for channel cats up to a hundred pounder."

CATFISH BANK LINE RIG. This method of fishing for catfish is used with best results on dark days, at dusk or at night. Tie a heavy line to a tough, limber tree limb that hangs out over a deep bank or over a pool below fast running water. Where no trees grow handy use a green-cut spring pole 12 or more feet in length. Set the butt of the pole firmly into the bank with the tip reaching as far out over the water as possible. Anchor the pole securely or the first big cat that gets hooked will "go yonder" with your rig. To anchor the bank pole, drive a stout stake into the ground a foot behind the spot where the butt of the pole is set into the bank and tie the pole-butt to the stake with a heavy cord or wire. I prefer the live tree limb rig to the bank pole for the reason that the slightest breeze will keep the tree limb and the bait in motion.

CATFISH GAFF. Don't take any chances trying to land or boat a big catfish with your hands. One of the big cats can mangle your hand and I am not fooling. A cat gaff is easily made and costs only fifty cents or less, which is pretty cheap insurance against accidents. Obtain a large tarpon hook with a long shank and nail or screw the eye of the hook to the end of a stout, four-foot, hardwood pole. Wrap the shank to the pole with rust-proof braided picture wire. The biggest catfish can be safely handled with this gaff.

To measure the width of a stream which you cannot conveniently cross, select some prominent object (stone, tree, etc.) on the far side of the stream directly opposite to where you stand. Put a stake in the bank at your position

—walk at right angles for a number of paces (say five paces) and put another stake in the ground. Continue for an equal number of paces and place another stake upright in the ground. Now, turn at right angles and move away from the stream until the prominent object on the far bank of the stream, the center stake and you, are in line. If you measure the distance from your position to the last of the three stakes it will equal the distance across the river.

When catfishing, don't set your hook too quickly. When the catfish takes the bait he usually turns and swims several feet with it in his mouth, working the bait back toward the throat. If the hook is set too quickly he is apt to drop the bait when he feels the resistance. Most strikes are lost by the fisherman being in too much of a hurry. So, have a little patience and curb that desire to pull on the first indication of a bite. It will pay dividends.

And don't use too heavy tackle. The lighter the tackle the greater the sport. Tests have proven that a fish gives a steady pull of about one-eighth of its weight. Consequently, a fish weighing eight pounds gives a one pound steady pull. Of course, this does not take into consideration a sudden jerk or pull made either by the fish or the fisherman. However, the fish seldom breaks the line. It is the fisherman who is responsible through trying to "horse" in his fish or by allowing the fish slack line.

According to Jack Kytile in "Fish Are Fighters in Alabama," this is how artificial lures were first introduced:

"There is an old story about how artificial lures came to be invented; like many of the gadgets that enhance the pleasure of fishing they were first envisioned by a country boy.

"He was the driver of a six-mule team, and was an expert at handling the long bull-whip which he carried over his shoulder. One afternoon the mules stopped at a creek to drink, and the boy noticed that trout were leaping hungrily a few yards away.

"He thought, 'Gosh, one would taste good for supper!' He climbed off the wagon and began cracking his whip against the surface of the water. Suddenly a fine trout leaped and struck the red tip, or tassel, of the bull-whip. He landed it, and then stood in his tracks to catch a good mess. And that, they say, was the beginning of the rod and reel, flies and plugs."

Now are the days of fishing time when the angler is in his glory and bivisibles, hackles, streamers and solunar tables are the topics of the day. There is another subject which is close to the experienced angler just now. That is "Stream Etiquette," the proper practice of which makes the sport of fishing all the more enjoyable.

Bob Wilson, experienced angler whose column, "Up the Stream," is greatly enjoyed by readers of the Washington Times-Herald, has a bit of solid advice to novice anglers on "How to Make Friends Among Fishermen." Says Bob:

"The young angler who is just taking up the sport would do well, on his first few trips on the stream, to stand back and watch how the more experi-



Wildlife Service Reorganizing

Reorganization of the U. S. Fish and Wildlife Service "to bring about a more efficient functioning of this agency and to improve its services to the public" has just been announced by Secretary of the Interior Krug. Functions of the reorganized agency will be concentrated in four branches instead of being scattered among twelve. The new branches will be concerned with administration, research, commercial fisheries and management of fish and game resources.

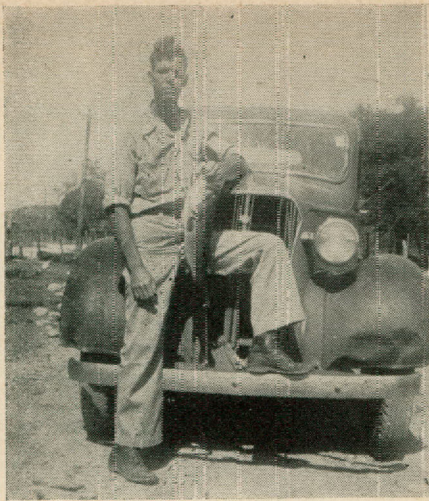
Under administration, all activities relating to budget, finance and personnel will be concentrated.

Research will cover all scientific studies of fish, birds and mammals which will be consolidated under a single head, who will administer the formerly independent divisions relating to fishery biology and wildlife research.

Management will include such diversified functions as Federal aid in wildlife restoration; control of predatory animals and rodents; administration of wildlife refuges; game management; game fish management, and hatchery operations.

The branch dealing with commercial fisheries will be given greatly increased attention. It will include the former Divisions of Commercial Fisheries and Alaska Fisheries.

The reorganization, according to Secretary Krug, has become necessary because of the great growth of the Service's functions, which extend far beyond those of its two parent organizations—the Bureau of Biological Survey and the Bureau of Fisheries—which were consolidated to form the Fish and Wildlife Service in 1940.



LLOYD BROOKS, of Leakey, Texas, says that after looking at all the beauties in Texas Game and Fish, his little one seems a little small but he's proud of it just the same. It weighed 4½ pounds dressed. He caught it near Leakey with a pole and line and the pole was a green sycamore. As Lloyd puts it: "A live minnow for bait, a rock for a seat, a frog band for music, a golden moon for light, and my wife for company. Could a man ask for anything better. But gosh, I am a farmer and not a poet."

enced work the waters. He can learn much this way, and catch on to a few valuable wrinkles which at first might puzzle him but the effectiveness of which he will soon come to realize.

"If you are on a trout stream always wear drab-colored clothes and never come duked out in white apparel. This will immediately brand you as a tenderfoot.

"If you will just sit and watch an angler fishing a pool, nine times out of ten he will engage you in conversation. This is the time to admit that you are new to the game. Ask him to check over your tackle and see if you are properly equipped. He'll be glad to make whatever suggestions he deems necessary and explain why certain flies are better under certain conditions. The average angler is susceptible to flattery and, if given the opportunity, he'll be glad to give you some tips which will start you off right.

"Ask him about the etiquette of the stream and get him to give you some coaching. Act as if you feel that he is a fountain of knowledge. More often than not you will be correct in this assumption, too.

"Never fish in a pool which is already being fished by another angler.

"If you pass an angler fishing upstream or down, never start fishing just above or below him. Always put at least two people between you before you wet a line.

"It's all right to ask him what luck he is having and what flies he is using . . . but never, never ask him where the best pools are. He won't tell you anyway and you'll only be exposing your ignorance.

"It is best to learn fly-fishing or bait-casting on a large or wide stream. Back-

yard practice will prove of much value.

"Identify yourself with some progressive sportsmen's organization . . . and work at it. Don't try to take leadership right off the bat but listen to others and make yourself useful.

"Don't be a fish-hog. Take only a fair share and leave some for the other fellow. Never gripe about your own hard luck but brag on the creels of the others. Admit your shortcomings and praise the ability of the anglers with whom you come in contact.

"Practice a few of these suggestions and you'll soon become a mighty popular guy on any lake or stream."

TRY IT AND SEE

Although earthworms may be marketed or used freshly dug from the ground, they are much more desirable, will live longer on the hook, and will take more fish if well "scoured" before use. This fact is well known to all skilled bait fishermen, and it is probable the knowing ones would be willing to pay a premium for such worms. This scouring process has been known for hundreds of years and was well described by Izaak Walton in 1653. To carry out this "scouring" process a quantity of sphagnum moss such as used by nurserymen in packing plants for shipment is put into a stoneware crock or tight wooden box. This moss, which grows in shady, swampy woods, should be well moistened, but the excess water should be wrung out before the moss is placed in the container. The worms should be placed in the moss for at least two days, and preferably three or four, and kept in a cool place. At the end of this period, they should be almost transparent, tough and lively.

CATFISH FAT USES

Some commercial fishermen find several uses for the fat that is attached to the viscera in the body cavity of the

catfish, especially the flathead catfish. During the wartime scarcity of lard and vegetable fats, the catfish fat sometimes was used as the frying agent in cooking fish.

The fat also may be used to remove tar from the hands. A piece of the raw fresh fat is placed on the tarry spot and rubbed until the tar is removed. Some fishermen add this fat to the tar in the vat when tarring nets. They claim that tar, thus treated, hardens soon after cooling and does not stick to the hands.

Some fishermen use catfish fat in the treatment of chapped hands, a common disorder among men whose occupation requires frequent immersion of the hands in cold, muddy water. A small amount of the fresh fat rubbed on the hands soon makes the skin soft and pliable.—H. J. Fisher.

B. A. BOSWELL, Helen Hock and B. B. Fox of the Houston Anglers Club with a few bass caught at the Texas Long Leaf Lumber Company's supply lake at Trinity, Texas. The fish were caught on creek chubs and Hawaiian Wiggler No. 3.



Open Season on Does ?

The Texas game commission's proposal to lift the ban against the shooting of does for a limited time with controlled hunting will sound good to many ranchers and farmers and to some hunters we know who aren't quite skillful enough to get the wily bucks.

So many years' protection of female deer has resulted not only in the replenishment of the game, but in the multiplication of does to such an extent that they have become a nuisance and a menace to farmers and stockmen. Their destruction of crops in some sections is comparable to that of insect pests in others. They cause some ranchmen a greater economic loss than sheep-killing wolves. Moreover, the increasing herds of deer, grazing in pastures, cut down the supply of grass for cattle and sheep, and force the ranchmen to run fewer livestock per acre.

New York State declared an open season on does a couple of years ago, to reduce the surplus, and the results were gratifying. More than 25,000 deer reported killed in the Empire State that season.

By permitting the killing of one doe per hunter for a season, the Texas Legislature would make thousands of Nimrods happy, and save big money for crop growers and livestock raisers. And there still would be plenty of does left to propagate.

In fact, some well informed hunters have suggested the advisability of reversing the present law for a while, so as to permit the shooting of "spikes" or yearlings, instead of antlered bucks only. They say that under the present system the big bucks are kept killed out to such an extent that reproduction is left largely to the young, small deer, which tends to breed down the size of the stock. The lawmakers might well consider this problem along with the game, fish and oyster commission's recommendation of an open season on does.

—Houston Post.



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also

A Survey of Hunting Prospects for 1946

These Two **BIG** Features
In the September Issue of



TEXAS GAME and FISH

"Women are usually easier to teach than men because they make no pretense of knowing 'all about it' which is frequently the case with most men," Mrs. Lind says. "Women will follow instructions better than men. They have natural patience and will stick to it where many men will call it quits when their progress appears to come to a standstill."

Mrs. Lind scotched the theory that guns are too heavy for the average woman to hold.

"Even a light woman can hold a heavy gun if it fits her properly and she learns to shoot it as soon as she throws it to her shoulder," Mrs. Lind says. "It takes practice to learn this, but that's where a woman's patience comes in. Start with a 22 rifle and after you have mastered it, graduation to heavy shot-guns is relatively simple," says Mrs. Lind.

DEFINITION OF BALLISTICS

Ballistics is an all-embracing term that designates the science of motion and impact of projectiles. In the small arms or sporting ammunition field it relates to the science of a bullet or shot in flight and those things starting and affecting it. Analysis of bullet effect is also included.

The study of ballistics from the technical standpoint is divided into two categories: interior and exterior ballistics. Interior ballistics covers bullet or shot travel within the barrel and includes the study of subjects such as primer ignition, breech pressure, types of powder, rifling, twist, lands and grooves.

Exterior ballistics covers the flight of the bullet or shot after leaving the barrel. This includes energy of the projectile, velocity, trajectory, penetration and accuracy.

The total energy of an ordinary 22 caliber rimfire cartridge will lift a 150-pound man one foot. While the tiny bullet is picking up speed down the gun barrel, it develops energy at the rate of 180 horsepower, approximately twice that of an automobile.

The fastest factory-made bullet in the world is the .220 Swift. Actually only a 22, and with its bullet weighing little more than the 22 long rifle bullet, the Swift has a speed at the muzzle (muzzle velocity) of 4,140 feet per second against 1,395 for the 22 high power long rifle and 2,800 for the standard military

ANSWERS TO YOUR GUN IQ

1. Bullet Breach Cap.
2. The device in the lock of a fire-arm which holds the hammer or firing pin in its cocked position.
3. The .220 Swift with a muzzle velocity of 4,140 f.p.s.
4. The groove around a bullet into which the case is crimped.
5. A double barreled gun in which the barrels are placed one upon the other instead of side-by-side.
6. The caliber .30 Army cartridge which was adapted to the Krag-Jorgenson rifle, standard service rifle prior to the Springfield.
7. A cartridge used in the Model 94 Winchester rifle.
8. Standard Army ammunition for the Springfield Garand, and light machine guns.
9. In the United States this is a term used to designate any rifle of .25 caliber or over.

service cartridge which you may also call a 30-06.

One of the greatest trap shooting records ever made was shot by the late Mrs. Elizabeth Toepperwein of Winchester who broke 1,952 out of 2,000 clay targets in three hours and fifteen minutes of actual shooting time. The greatest record ever made anywhere in the world at aerial targets was made with a 22 rifle by Mrs. Toepperwein's husband, Ad, who is now 76 years old. In twelve days of shooting, Toepperwein broke 72,491 out of 72,500 targets. He had only nine misses in twelve days!

G. I.'s should beware of souvenir weapons. No American ammunition is made for Jap arms. Many other foreign weapons are not safe for use with the generally more powerful similar American ammunition. The German semi-automatic Gewehr 41M particularly is a potential postwar booby trap. Unless its bolt is securely locked into position, it will fly back and tear into a shooter's face.

The Nazis had a good junior marksmanship training plan, according to Walter H. B. Smith's *Manual of Military Small Arms*, a best-seller you have probably never heard about, but which sold a quarter of a million copies last year. The Germans made a military model air rifle and a 22 exactly like their regular service rifle and graduated their juvenile supermen from one rifle to another.

The biggest attendances in the history of match shooting are expected during the coming summer season.

Record crowds have been normal for all shooting events already held this year, but they are nothing to what we can expect as the season progresses.

This prediction was made by M. B. Allen, noted shooting authority of the Western-Winchester divisions of Olin Industries, Inc.

The millions of men returned from the armed services insure a pent-up interest that is now materializing everywhere, and more plans are now under way for modernizing old clubs and building new clubs than ever before in the history of the sport.

Thousands of young Americans who learned to handle firearms during the war are now impatiently awaiting the time when they can use their new skills with sporting arms, Allen said.

Due to the tremendous backlog of orders for sporting arms, and the present shortage of lead, it is impossible to predict when the pipe line from factory to sporting goods stores will be filled and when anyone can purchase any type of gun and ammunition he wishes.

Since the halt of civilian production at the start of the war every gun, shot-shell, and cartridge on dealers' shelves was sold. Until these empty shelves can be refilled and the cycle from the factory to the stores has been re-established, new sporting arms and ammunition will be relatively scarce, Allen said.

Check Your Gun Capacity

Duck and geese hunters will do well to check the capacity of their gun magazines before going wildfowling this season.

Some types of guns, particularly those manufactured several years ago, have magazines which, even when plugged, will just barely accommodate three shells of a certain type. The fit is a tight one, it is true, but an extra shell can be shoved in if it is of a certain type. This is, of course, in violation of the federal law and a number of hunters were arrested last season and fined for this practice.

The three-shot law is originally a federal regulation and applies to the hunting of ducks and geese. However, a number of states have incorporated the three-shot clause in their upland game hunting regulations, and hunters are warned to check the capacity of their gun magazines before going afield this season.

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Hunters Do the Darndest Things

By DUKE LAMSTER

HUNTERS are a sub-species of the two legged mammals which inhabit this earth and are called men. They come in assorted sizes and colors. Their range is from the South to the North Pole and back again. They are good and bad, big and little, thin and fat, rich and poor and their skins are red, white, black and yellow. In certain respects they resemble ordinary human beings, but don't let that throw you, there is a difference, a big difference.

When a man grumbles and mumbles at buying a car license, but happily digs down in his jeans and deposits a fistful of greenbacks on the counter for a hunting license, he is a hunter. His dress suit may be a little tight and somewhat frayed and threadbare here and there, but his hunting clothes? Ah, they are the best, the very best. Five dollars for a white dress shirt is downright robbery, but ten bucks for a hunting shirt? Well, that is different, that's all just different.

Getting up at 6 o'clock in the morning to mow the lawn or hoe in the garden is ridiculous. Didn't Lincoln free the slaves? But rolling out at 4 a.m. on a frosty morning to go duck hunting, now there is some sense to that.

He picks up a little sparrow with a broken wing and tenderly nurses it back to health. Florence Nightingale had nothing on him. Then he grabs his terrible instrument of destruction, the 12 gauge shotgun, and goes utterly berserk, murdering pheasants, ducks and geese and what-have-you that is unlucky enough to get within range of his weapon. It isn't Dr. Jerkyl and Mr. Hyde, it is just Mr. Hunter.

The little woman's washing machine is in pretty bad shape. Should have a new one by all means. However a little welding here and there and a new part or two puts it in fairly good shape again. At least she can use it for a while yet. But when the old shotgun begins to go haywire, plunking down \$75.00 for a new one is just a matter of course. A fellow has to have a gun doesn't he?

Mr. Hunter, you rave and tear your hair at the sight of the meat bill. Those butchers should carry blackjacks and wear masks. Just think of the saving on the meat bill when you bring home game birds to eat! Beefsteak at the local market is fifty cents a pound, but, brother, those ducks cost you at least five dollars a pound and you know it!!!

The little wife has to beg you on bended knees to go down to the corner grocery store, it is only four blocks, and get a loaf of bread. Yet you tramp through a jungle of weeds, in mud and snow, rain or shine, out hunting and think nothing of it. In fact it was great

sport, and you had a swell time. Why? Because you're a hunter.

Fixing a flat tire on the highway in the rain is a swell way to catch double pneumonia and you mutter a lot of things you didn't learn in Sunday school while doing it. Yet you sit for hours on end in a cold, damp duck blind with a raw northwest wind blowing down your neck and call it sport.

Your better half brings home a silly little hat with a five dollar price tag on it and you voice your disapproval in no uncertain terms. Something about people who go around throwing away hard earned money for such doodads. But when you return from a two day hunting trip that set you back twenty-five dollars and proudly lay two little wet, bedraggled Blue Winged Teal at her feet, you expect her blue eyes to open wide and words of praise and flattery to pour forth upon your waiting ears.

The children really have a job on their hands when they try to get you out of your easy chair for a walk through the park on a nice sunny Sunday afternoon. But you yell with delight and skip madly over a couple dozen mountains hunting for deer. Shucks, nothing to it!

See what I mean? Hunters do the darndest things. God bless 'em!—*South Dakota Conservation Digest.*

License Sales Show Increase

America's hunters and anglers spent more than twenty-six million dollars for the mere privilege to enjoy their favorite sports during the fiscal year ending June 30, 1945. The amount, which totalled \$26,092,563, represents the purchase of 8,190,901 hunting licenses and 8,280,232 fishing licenses in the 48 states.

This does not necessarily mean that 16,471,133 different sportsmen bought licenses to hunt or fish, for many of these individuals purchased both. Nor

does it mean that only 16,471,133 sportsmen wet lines or fired guns, for in some states it is not necessary for a landowner to procure a license to hunt or fish on his own property.

It does mean, however, that a total of 1,135,398 more hunting and fishing licenses were sold in the various states than in the fiscal year ending June 30, 1944. Hunting licenses increased 685,643 for an additional revenue of \$1,965,100, while the number of fishing licenses bounced upward 449,755 to the tune of \$740,238.

The number of hunting and fishing licenses are much closer together than usual, for almost every year the angling population outranks the number of hunters by a considerable margin. The figures for last year show the anglers leading by 89,331 licenses.

Foxhunters Discuss Plans

The officers and directors of the Central Texas Foxhunters' Association recently met at Fort Parker State Park Clubhouse, between Groesbeck and Mexia, to discuss plans for their fall meet. Representatives from Austin, Palestine, Fort Worth, Goldthwaite, and other sections of Central Texas were present, and interest centered around having a three-day field trial for foxhounds in connection with the foxhound bench show. The bench show is to be held on Monday night, October 21, and the first cast of the three day field trial will be at daybreak on October 22.

Newly elected president, T. R. Thornton of Waco, appointed Elbert Brown of Groesbeck as chairman of the field trial committee. Serving with Brown on this committee are W. J. Easterling and Douglas Woods of Groesbeck, and Jack Jenkins of Waco. This committee is at work in selecting the site for the field trials as well as making other preliminary plans and arrangements for this fall meet.

☆

According to Ray Brown, Editor of Outdoor Life magazine, the average deer hunter in the United States has a one to three chance of bagging his game. The Utah hunter has an 80% chance of success—greater than in any other state—while in Minnesota, Texas, and Maine the chances are at least 50-50.

DO YOU HAVE A
Dipsy-Doodle?

Redfish Rank High as Food

THE redfish is one of the four ranking food fishes of Texas littoral waters. It lures many sportsmen to the pounding surf of the Gulf beaches, and done up brown is worth the effort.

The redfish begins its life in the waters along the beaches and around the passes whence it is carried into its nursery grounds on the bottoms of inland bays and bayous. During its first two years of life it grows rapidly, but later grows more slowly. At the end of its first year it reaches a length of about 14 inches, by the end of the second about 21 inches, and in contrast by the end of the third year it is only 25 inches long. To reach a maximum growth of 33 inches, a redfish must be five years old. It provides a good marketable fish by the end of the first year and a half, the older and larger ones not being so desirable on the market as the more moderate sizes.

This species is one of those enjoying good legal protection because of the size limits that are set. It is illegal to sell a redfish under 14 inches or over 32 inches in length. This means that the young

fish are taken care of, and the older, sexually mature fish are protected. The redfish does not reach sexual maturity until the fifth year; obviously if the larger fish were not protected the spawning stock would soon be reduced to a dangerous level.

Almost any sportsman is interested in the food habits of such a desirable fish as this because such knowledge may assist him in the selection of bait. Shrimp is the bait used nearly universally and is probably the first choice of the redfish, but second in his choice are small crabs and soft-shelled crabs which might be used for bait if shrimp are not available. There are two common species of anchovy, and the silverside, which also are food items for the redfish. The above mentioned foods are sought mostly by the smaller specimens of fish; the larger individuals add to their diets such fish as small mullet, and it is these that provide a good bait for surf fishing. According to Pearson (who is our chief authority on Texas redfish) our fish may pursue its prey, but also it may adopt a semi-bottom feeding habit.



Dear Editor: I am somewhat concerned about rumors that it is contemplated to have a law passed to legally kill doe deer in TEXAS.

I for one think it unwise to do this for the reason that deer are not too plentiful now, and killing does would further deplete the stock.

I have hunted deer in the hills around Comfort, Kerrville and Medina since 1931 and it is my opinion that the herds are not only less but are getting smaller, I do favor a one buck law, that is one buck per season per person as an experiment for say two to four years, this I believe would improve the situation, as there would be more older bucks left each year.

I love to hunt as well as any one especially in the hill country, but I do not get pleasure to keep on killing bucks as long as they show up, I would like to hear from you regarding the doe-law, and should you feel like I do about it, I will do all I can towards getting the proposed measure defeated.

I am enclosing \$1.00 for another year subscription to a fine magazine, I think it's great.—J. A. KITZMANN.

☆

Feathered anglers have different methods of catching fish. The osprey hovers over the water, plummets down, hits the water with a splash and catches his quarry in his talons. The kingfisher sits in a tree and patiently watches, catches it in his long, pointed bill. The loon swims underwater to catch his prey, while the eagle robs the osprey of his captured fish by forcing him to drop it in flight. The eagle then swoops upon the falling fish and catches it in his talons, sailing away to enjoy his stolen morsel on some secluded crag.

☆

In Ohio the *Dayton Journal-Herald* last spring made a survey that changed their policy of giving fishing a minor place on the sports page. They found on a Sunday when 9,000 persons were watching the Cincinnati Reds play baseball that 90,000 persons were fishing on nearby Indian Lake and that there were 65,000, 22,000 and 48,000 at other lakes in the Miami Valley.

☆

Enough wood to build a new home grows in America every 12 seconds.

Greyhounds Grow Wiser

THE greyhound, though often referred to as one of the achievements of animal breeding, never has been noted for intelligence. In developing a dog for coursing, sense was sacrificed for speed. Then it was found that a certain lack of perspicacity made the breed ideally adaptable to racing.

The greyhounds would go after an electric hare as eagerly as a real one. Hardly a greyhound saw through the fraud. When a mechanical rat was tried with foxterriers, these little dogs, which are slower of foot but more nimble of wit, gave chase just once. The next time they waited at the finish while the rat raced around the course and then they wrecked it.

For twenty years greyhounds fell for this swindle at Manchester, England, with only a few seeing through it. Lately there has been something of an epidemic of disillusionment, with more and more dogs refusing to dash after the bogus bunny. Trainers say the dogs are growing wiser. But there is no indication of this in the cure that has been found. It is to send a disillusioned racer to a farm where he can chase real rabbits. After a spell of hunting he returns to the races as eager as ever to catch the electric hare.

☆

The brook trout is not a trout. It is a charr. So is the Dolly Warden.

The storms that clear the air of insects frequently bring starvation to chimney swifts as the bird feeds only on the wing.

☆

The porcupine, contrary to the belief of many, cannot throw his quills. The tail quills, however, become loose in their sheaths and the slightest contact will release them.

Flowers Make Good Bass Bait

H. Lee Smith of McAllen is catching bass with flowers.

He uses shrimptail shrub blossoms. They appear by the hundreds on plants growing in the Rio Grande Valley. They are light brown in color with a small white petal at the lower end resembling a tail. Their shape is much like that of a shrimp.

Smith plucked several of them and placed them in the refrigerator overnight.

The next day when he went fly rod fishing he took them along. The blossoms can be fastened onto a bare hook, he found. On one of his first casts with the bloom he got a strike. It worked so well he kept at it.

That evening Smith returned home with a string of five fat bass.



BOOKS



UPSTREAM AND DOWN: By Howard T. Walden II. 368 pages. Illustrated with pencil drawings by Milton C. Weiler. Buckram cover. Published by the Macmillan Company, 60 Fifth Ave., New York 11, N. Y. Price \$3.00.

This excellent work on the art and philosophy of trout fishing is not a new book. Originally published in a limited edition by the The De-rydale Press at a price of \$10.00, it is now available at a popular price.

This anthology is not in the how-to category, nor is it narrative of piscatorial accomplishment. Rather it is a collection of delightful essays, brimming with the atmosphere of the sport, of which the actual taking of fish is only a part.

From the start, the book establishes the author as a true member of the trout-ing fraternity. The opening essay deals with his introduction to the sport. "The Spark Is Kindled" traces the circumstances and events leading up to his first trout, and the metamorphosis of the youthful roach, catfish and sunny fisherman into a proud angler for Fontinalis.

Ten other equally gripping chapters present the highlights of thirty years of trout-ing, as the youthful fisherman matures and accumulates experience in his favorite sport. It is a book all real trout anglers will appreciate and enjoy.

NOW LISTEN WARDEN: By Ray P. Holland. 130 plus xii pages, buckram cover. Illustrated by Wesley. Dennis. A Countryman Press Book, published by A. S. Barnes & Company, 67 West 44th St., New York 18, N. Y. Price \$1.75.

Ray Holland is well qualified to write on game warden tales. He was one of the first District Inspectors after the Federal Government took over the protection of migratory birds, and has long been connected with many organizations that have brought him into repeated contact with both State and Federal game protectors.

"Now Listen Warden" is a collection of eighteen tales—humorous and otherwise—most of them dealing with the type of lies which the warden comes to expect from the game law violator. The book will serve to acquaint the reader with some of the more interesting and amusing episodes in the lives of those whose job it is to safeguard our wildlife.

TACKLE TINKERING: By H. G. Tapply. 214 plus ix pages. Illus-

trated with numerous photographs by the author and line drawings by Jack Murray. Introduction by O. H. P. Rodman. Published by A. S. Barnes and Company, 67 West 44th Street, New York 18, N. Y. Price \$2.50.

This book is a veritable gold mine for the angler seeking useful information on the care and repair of fishing tackle, the manufacture of flies, lures and other equipment and information on many practical problems that confront him.

"Tap" is an enthusiastic angler, whose long experience in fishing for many species, in making and repairing tackle, in testing and developing fish-getting kinks and techniques, have combined to make him a real authority.

"Tackle Tinkering" contains the following chapters: How to Tie Flies—With 100 Popular Fly Patterns; Knots—Hitches and Splices the Angler Should Know; Rods—How to Repair and Take Care of Them; Lines—Splicing and Re-finishing; Hooks—For Every Kind of Fishing; Accessories—The Angler's Kit and Equipment; Bait—How to Get It, Keep It and Use It, and Some Angling Notions—Mostly Personal.

It is a book the average angler will have occasion to consult again and again.

THE SPORTSMAN'S DIGEST OF FISHING AND HUNTING: Edited by Joe Godfrey, Jr. 1946 Edition. 128 pages size 6 x 9 inches. Paper cover. Illustrated with photographs and drawings. Published by The Sportsman's Club of America, Inc. 422 S. Dearborn St., Chicago 5, Ill. Price 50 cents.

This interesting annual has a dual purpose—to inform and entertain its sportsman readers and at the same time to help make it possible for patients of our Army and Navy Hospitals to realize the benefits of hunting and fishing. All profits from the sale of this book will be donated to the Veterans' Hospital Fund of the Sportsman's Club of America, and will be employed to purchase hunting and fishing gear for the use of veterans of World War II. This is a continuation of the wartime program of the club, through which 1,600 complete salt water fishing outfits, valued at more than \$100,000, were distributed to our boys located near good fishing grounds.

The book contains a wide range of stories, articles and cartoons on various phases of fishing and hunting. Also presented are rules governing record fish

catches, world's record fresh and salt water game fish, predictions for 1946 in the field of hunting, fishing and conservation, analysis of new outdoor magazines and books, and similar material.

The roster of contributors is an impressive one, including names of such authors as Herbert Hoover, Rex Beach, John Alden Knight, Arthur H. Carhart, Lee Wulff, Charley Gillham, Arthur Bartlett and Frank Dufresne. There are cartoons by Lichty, Huffine, George Wolfe, Bo Brown, Jefferson Machamer, Gregory d'Alessio, Dave Gerard, Gordon Erty and others, and an etching by R. H. Palenske. A lengthy roster of members is also carried in recognition of services rendered to sports and to the country.

Joe Godfrey, Jr., well-known outdoor writer and Secretary-Treasurer of the Sportsman's Club of America, who edits this book, was recently presented with a scroll by the directors, officers and members of the Club in appreciation of his devotion to the objectives of the Club and his leadership in its successful efforts to provide equipment to men in the armed services.



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