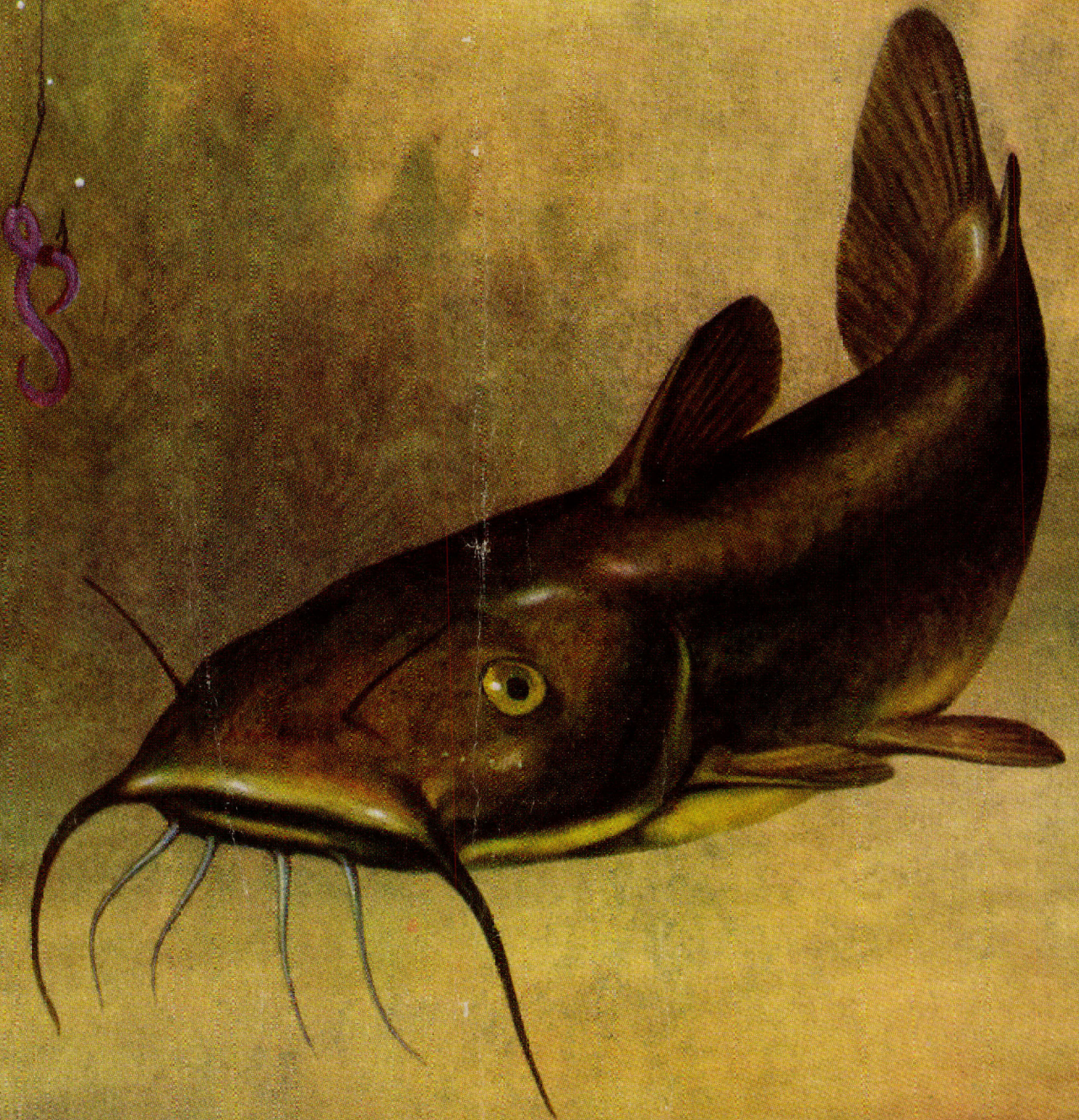


Texas
Game and Fish

MARCH

1950

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

TEXAS GAME AND FISH regrets that it cannot continue subscriptions beyond date of expiration. Checks and money orders should be made payable to STATE GAME, FISH and OYSTER COMMISSION. Editorial and Advertising offices, Walton Building, Austin, Texas. Published at 1818 S. Ervay St., Dallas, Texas. Entered as second-class matter May 19, 1943, at the post-office at Austin, Texas, under the Act of March 3, 1879.

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

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ROBERT G. MAUERMANN
Editor



The Cover

On this month's cover, Orville Rice has painted a unique portrait of the Yellow Bullhead Cat. The largest of the Bullhead Cats, the Polliwog or Chucklehead Cat, as the Yellow Bullhead is often called, reaches a maximum size of four pounds. This member of the catfish family is at home in many farm ponds and sluggish streams of Texas and has supplied many an angler with his first boyhood fishing thrills.

By W. C. Glazener

BARTER and trade were established customs on the part of American Indians when the white man came to this country, and still occur in many lands. They result from respective ownership of various items by two or more parties, each being interested in exchanging the commodities concerned. In recent years, game species have been involved in similar negotiations between different states. Texas is currently participating in such a proposition, designed to improve quail hunting, and to produce more of certain valuable fur bearing animals. This article presents the development of the "exchange," as arranged through the Game, Fish & Oyster Commissioner's Division of Wildlife Restoration.*

After ten years of extensive deer trapping and transplanting in Texas, the pressing need for deer stock on high quality ranges began to decline. In the same period, more active and positive quail management became increasingly urgent. Along with that situation, there was growing interest in beaver as a water conserving instrument, and freshwater muskrats as a source of cash income. Termination of the war in 1945 was soon followed by concentrated attention to a partial solution of those problems.

Among new developments in the Texas game management picture was a keen interest in *Lespedeza bicolor*. This species was introduced into some southeastern states twenty-five to thirty years ago and originally utilized as an ornamental plant. Somewhat later, bicolor hedges and strips were observed to attract and hold quail.

*Operated through the Federal Aid to Wildlife Restoration Act.

Trading For

OVERSUPPLIES EXCHANGED FOR

Consequently, it soon became popular on areas managed for quail, particularly in South Carolina and Georgia.

Up to 1945, Texas wildlife biologists were unable to secure either bicolor seed or seedlings for trial and observation. Sportsmen, meanwhile, were making more frequent requests for planting stocks. Being unable to secure supplies themselves, they looked to the Game, Fish and Oyster Commission for help. Thorough search finally uncovered small amounts of the desired materials for our use. Even so, Texas still continues far behind the two above states in bicolor supplies. One big factor in this is the lack of a commercial source of seed. Also, strains adapted to Texas conditions need to be developed. That will require several years of plant selection and planting.

The December 1949 issue of TEXAS GAME AND FISH carried an account of the status of our bicolor plantings. Except for a small original supply from the Soil Conservation Service, all of the bicolor stocks used by the Game, Fish and Oyster Commission came from the states of Georgia and Florida, through their respective game commissions. In each case, an exchange arrangement involving Texas white-tailed deer was responsible for our securing the materials.

Louisiana, in the meantime, became interested in bolstering its declining

deer populations by stocking Texas deer on selected refuge areas. As exchange items, they offered surplus muskrat and beaver from soil and vegetative types similar to and relatively near inland creek marshes scattered over East Texas. Our access to the beaver stock was important because surplus West Texas beaver were not numerous enough to fill restocking needs in that part of the state, following drouth years when water conservation became a recognized necessity on many stock ranches. At the same time, several East Texas landowners were soliciting freshwater muskrat stock not available from habitat comparable to that present in Wood, Smith, Henderson and Anderson Counties. Mutual advantages of the proposed exchange were obvious.

After careful analysis of Texas' deer stocking requirements, evaluation of bicolor lespedeza for quail food production, and selection of the most promising fur producing marshes and creeks, arrangements were finally consummated. Through cooperation of the Fish and Wildlife Service, special permits were provided for "exchange" deer to be trapped from the Aransas National Wildlife Refuge near Austwell, Texas. It is only through trapping and transplanting that surplus deer on the refuge are available to hunters.

In 1947-48, we supplied Georgia



Left: Six months' growth of transplanted *Lespedeza thunbergii* on Newton County Quail Area. Right: *Lespedeza bicolor* seedlings three months old. Best growth is on ridges; plants in low spots did not survive. Plants were obtained from Georgia and Florida in exchange for deer trapped in Texas. Photos by D. W. Lay.

Game

NEEDED SPECIES



Beaver were brought into Texas to aid in conservation of water by the damming of streams. Left: beaver cut on willow tree. Trunk is fifteen inches in diameter at base of cut. Photo by Tom D. Moore. Upper right: West Texas beaver at edge of grass on North Llano River, Photo by E. P. Hadson. Lower right: Beaver dam on Steele Creek, Limestone County. Willows supplied most of the structural materials. Photo by Tom D. Moore.

with 150 deer. The next year, they shipped us 60,000 bicolor seedlings. For the 1949-EC season, Georgia was allotted up to 135 deer, depending on our trapping success and local needs for stock. In return, they consigned us 300,000 bicolor plants. Half of these were delivered late in January, and the others in mid-February.

From Florida we received 4,500 *Lespedeza thunbergii* plants and 100 pounds of *Lespedeza bicolor*, Strain 101, seeds in 1948-49. In the same season we sent them seventeen deer. For the current season, Florida is supplying 10,000 bicolor seedlings and some partridge pea seed stock which is not available in Texas. They are scheduled to receive up to 135 deer, again contingent upon our rate of catch.

Up to this time, our negotiations with Louisiana have resulted in the delivery of twenty-eight muskrats and

twenty-four beaver for release in East Texas. In 1948-49, Louisiana was able to make a release of forty Texas deer, and they should receive eighty-five additional animals this season. Their plans are to trap and deliver more muskrat and beaver in February and March, 1950.

An area along Saline Creek, Smith County, was selected for our first muskrat release site. Following liberation of the stock there in April 1948, they have spread over considerable acreage and constructed numerous den houses. Indications of their successful establishment are quite promising, but no trapping will be authorized until a definite surplus develops.

Beaver releases were made in Anderson, Henderson and Polk Counties. Since they did not occur until late in 1949, it is not yet possible to determine results. However, previous

beaver releases in East Texas have done well, although considerable movement usually took place. Since the current stock comes from range quite similar to that on the release sites, less shifting of animals is anticipated.

Lespedeza stocks secured through the above program have been distributed rather widely, with most of them going to interested parties at strategic points throughout East Texas. A part of them went to experimental management areas being operated by biologists of the Game, Fish and Oyster Commission. Game Commission personnel are keeping the plantings under observation to ascertain where species will grow satisfactorily. If growth and survival are good, and if seed production proves beneficial to quail, the Commission will encourage expanded plantings over as much of the state as appears feasible.

NEW MOTION PICTURE TO BE RELEASED SOON

Master Whitetail

With increasing demands from sports organizations, schools, and civic clubs, the Texas Game, Fish and Oyster Commission is rushing com-

pletion on its latest motion picture production—"Master Whitetail."

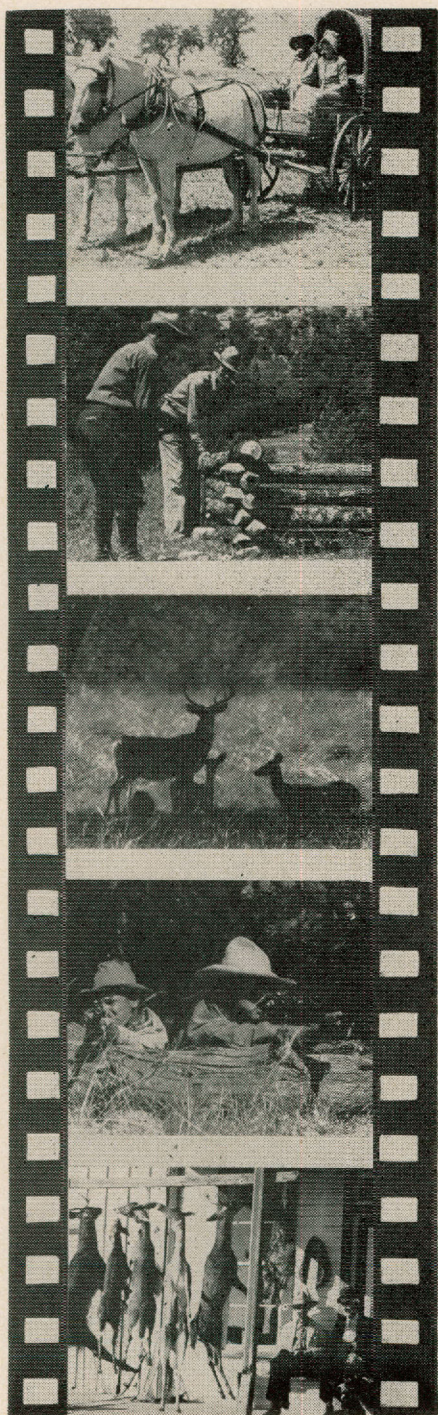
The first picture of its kind ever attempted by the Commission, "Master Whitetail" will tell the life story of the white-tailed deer, beginning with a fawn only a few days old. Different stages of growth will be shown in full color, carrying "Master Whitetail" from his early childhood to a fully grown, mature buck. Early Texas history scenes have been recreated to give a more complete understanding of the problems which affect today's game management program.

Present management and restoration procedures will show pictorially, what the Texas Game, Fish and Oyster Commission does toward habitat improvement and restoration. One sequence will give the inside story on deer trapping, transporting, and transplanting. Many scenes created took the combined efforts of specialists in game management, law enforcement and photography. When final scenes are arranged, sound will be added, and "Master Whitetail" will take its place in an expand-



ing Game Department motion picture film library.

The movie will be available, free of charge, to all groups interested in wildlife. Bookings, however, will not be made until the picture is completed. Watch "TEXAS GAME AND FISH" for an announcement of its availability.



So You Want to Catch a Turtle?

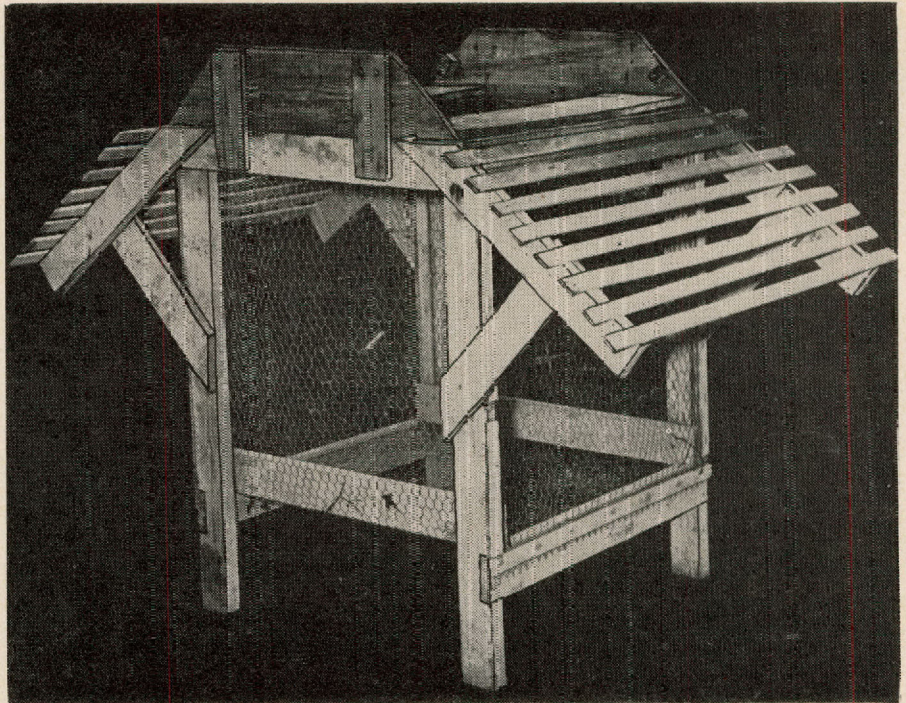
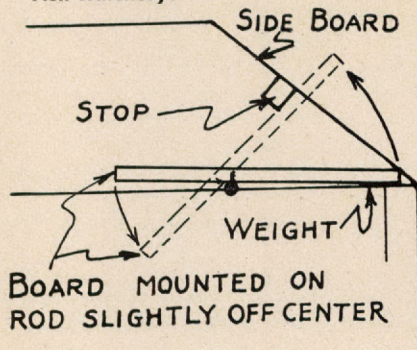
By Marion Toole

HUNDREDS of letters have been received by this writer desiring information on how to construct a trap that will really catch turtles.

Over a period of time the boys at the Ingram Fish Hatchery have been working out improvements on an idea for turtle traps that one of them once saw. The trap that is shown in the illustration is very simple to construct and this particular trap was constructed from scrap lumber.

The height of the trap is immaterial since the four uprights forming the legs can be from four to six feet in length. The other dimensions can be flexible, too. For the sake of clarity, we will designate the four sides as being the sides and the ends. The sides open to the two ramps and the ends have sideboards attached to them. The ends can be from thirty to thirty-six inches long and what we are designating as the sides can be from thirty-six to forty inches long. The ramps are constructed from slats that might once have been plaster slats or an old picket fence. These slats should be about two inches wide and spaced two inches apart. The sideboards are built out of eight inch boxing or shiplap. It will be noted that the illustrated trap is covered with one-half inch chicken wire. This material will serve the purpose, but after putting the trap into use so many turtles were caught, they broke out the wire mesh with their weight and subsequent traps were constructed with one-by-four inch slats nailed across the bottom and down each side with about an inch space left between slats. By using slats instead of the wire mesh, you will have a longer-lived trap.

Detail showing how the turtle trap is put together. The idea for this trap came from men at the Ingram Fish Hatchery.



Here is a picture of the turtle trap described in the accompanying article. Constructed of scrap lumber, it is very effective and simple to operate. Many sportsmen have asked for directions on making a trap to help in removing excess turtles from their favorite fishing waters.

A line drawing has been prepared to show the mechanism of the trap. A one-by-eight inch board is mounted on a rod, which in this case was a piece of re-inforcing steel rod, by screwing some eye screws into the board and then running the rod through the eye screws. The rod is long enough so that it can be mounted to the framework of the trap on each side under the side boards. The board that is mounted on the rod should be sufficiently shortened to permit it to tilt up and down inside the trap. An important detail in mounting the board on the rod is to mount the board slightly off center. When the rod with the board is fastened to the trap, the widest width from off center should be towards the ramp. Now all that remains is to nail a strip of lead along the underside of the ramp side of the board that is mounted on the rod. Stops, which are small blocks of wood, are attached to the side board on one side far enough up to allow the rod-board to tilt at a steep angle towards the interior of the trap, but still down enough to cause the board to fall back into place. Two tilt boards are needed. One should be mounted on each side.

The trap can now be set out in your lake where the bottom is level and in water deep enough to cover the first four slats of the ramps.

The mechanics of the trap is that a turtle swims up to the ramp of your trap, crawls out to sun itself on the tilt board and in moving about places enough weight on the unsupported side of the tilt board to offset the extra weight of the lead and weight of the off center board which causes the board to tilt up. This slides the turtle into the trap. The side board stops catch the tilt board and the weight drops it back on the ramp so it is re-set and ready for the next victim.

Another thing that has been observed is that the trap does not need to be run until it is filled with turtles. In fact, after a few turtles are trapped, the trap becomes more attractive to other turtles.

One variation of the trap can be mentioned. If it is desirable for the trap to float, then floats can be attached under the ramps on either side so that it can float. The floats should be made so the water level on the trap will be the same as was previously described.

Quiet! Eager Beavers at

RESTOCKING PROGRAM PAYS OFF IN EAST TEXAS

By J. G. Burr

ABOUT NINE YEARS ago beaver trapping and distribution over much of the state was in full swing.

The Game, Fish and Oyster Commission sent ten beavers to the Navasota River in Robertson County where, in subsequent years, they surveyed tributaries in search of dam

sites, as evidenced by the gnawing and cutting of trees.

Beavers are seldom seen at their work. Therefore, results are not likely to be observed until a dam has been thrown across a small creek by felled trees and small sticks, or by the presence of back water of a small lake or by the flooding of farm lands or pastures.

Some of these things are actually happening in the Navasota River tributaries. A farmer in Leon County, just east of the Navasota, has appealed to the game department to have the beavers trapped and moved because water impounded by a beaver dam is flooding his meadow. Simultaneously, in San Angelo there is a call for beavers to be sent into the dry lands to impound water. Similar requests come from several counties in East Texas.

Up the Navasota River, beavers have gone into action in Limestone County. They located an excellent site for a dam in Chambers Creek near Personville. The creek is known locally as Chambers Creek but a nearby creek is listed on the map as Lake Creek which may be a more accurate name. It is an east tributary of the Navasota River. The beaver's skill in the construction of dams and in the choosing of sites are corroborated by the following story which is taken from the Mexia Daily News of January 3, as written by John Moss:

"Twenty years ago a Mexia business man decided to have a dam constructed to form a lake on Chambers Creek in the southeast part of Limestone County.

"It was in 1930 that the late Blake Smith, Sr., called in a surveyor to mark the selected site for the dam on the farm of Claude Brown near Personville. Brown says Smith wanted the lake for fishing, but he didn't go through with his plans.

"At that site today, there is a seventy-foot dam across the small creek. It was constructed by beavers from twigs and branches. Water of the creek, which is about five feet wide, has been backed up until about ten or twelve acres are covered.

"The lake, as much as five feet in



Upper left: Dam where beavers are plentiful. Lower left: Picture shows manner in which beavers are caught.

Work

depth in some places, abounds in perch, catfish, bass, and other native fish.

"The activity of the beavers in the densely wooded area was first noted by Brown a year ago. They had just begun their work on the dam. He refrained from doing anything that might scare the animals, but kept a constant watch on their work.

"Brown has never seen the beavers, but he and his son Gerald located their home some months back. Built around an old dead tree on the center of the lake, the beaver home is perhaps six feet above the water level. The water at that point is five feet deep.

"Brown thinks the beavers might have served a purpose besides forming a lake. In the past he saw water moccasins in the creek, but since the beavers started their construction, he hasn't seen any sign of the snakes.

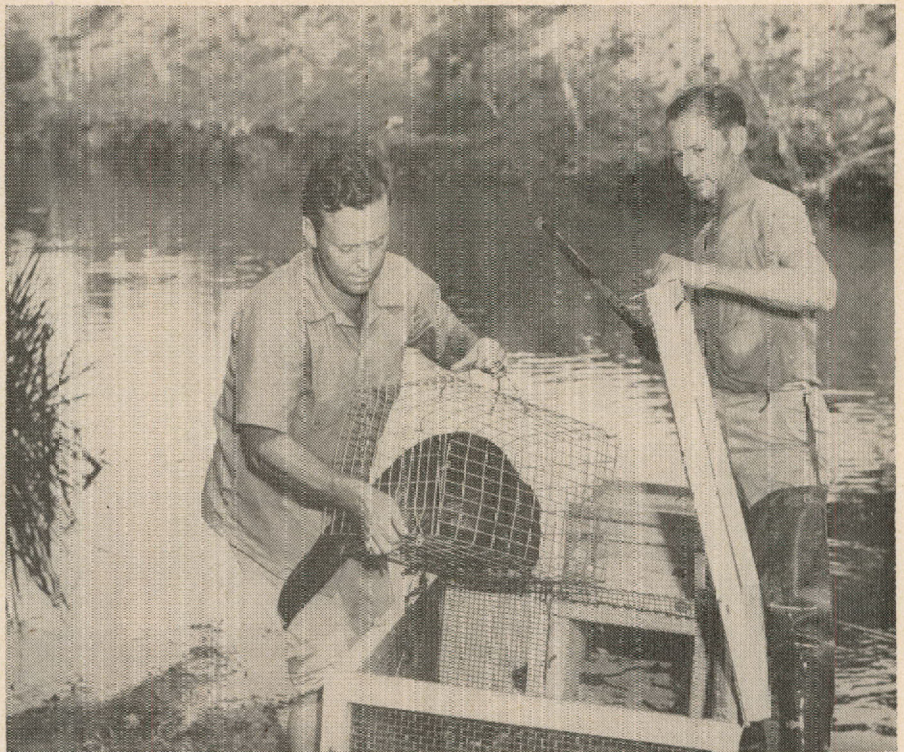
"Brown believes, too, that the beavers may offer some sort of protection to ducks. Several times, he says, 'I have seen ducks circle over the lake and light near the beavers' lodge. Never do they land at the dam or at the other end of the lake.'"

The narrator continued to say that "If the beavers have completed their work by next summer, Brown plans to clean out the lake with a dragline to remove all the tree stumps and numerous bushes. After that it should be a fisherman's paradise." The beavers, however, will not like it as well.

The full extent of beaver activity along the Navasota is yet to be learned, but the heavily wooded tributaries are highly favorable to dam construction, and such creeks are preferred rather than rivers where floods may easily wreck the handiwork of the beavers.

A few years ago near Groesbeck a cottonwood tree more than a foot in diameter was gnawed into and fell into the river, but not in such position as to serve in building a dam. There are records of the cutting of cottonwoods fourteen, twenty-four, thirty and even forty-two inches in diameter. It is said that two beavers can fell a three-inch sapling in three minutes, and a six-inch tree in an hour or two.

One observer declares that when two are engaged, they work by turns, and alternately stand on watch. When the tree begins to crackle they desist from cutting, which they afterward



Upper right: The beaver is being packed for traveling and, in the bottom photo, he is being freed in new surroundings where he is needed for conservation purposes.

continue with caution until the tree begins to fall; then they plunge into the pond, usually to wait concealed for a time as if fearful that the crashing noise of the tree-fall might attract some enemy to the place.

Similar stories occur in accounts of Long's Expedition of the Rocky Mountains and one is quoted here:

"Three beavers were seen cutting

down a large cottonwood tree; when they had made considerable progress, one of them retired to a short distance, and took his station in the water, looking steadfastly at the top of the tree. As soon as he perceived the top begin to move towards its fall, he gave notice of the danger to his companions, who were still at work

FIELD TRIAL TIME



Fine Bird Dogs Compete For Prizes

By Haywood McDaniel

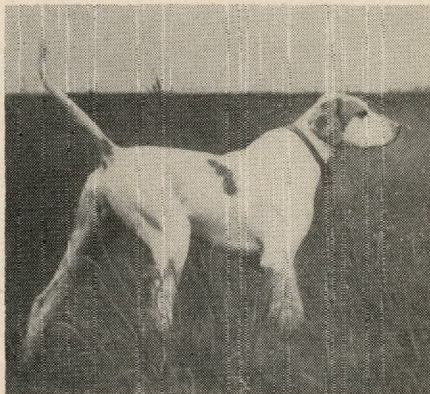
It was field trial time again in South Texas and Commander's Frank is the new Southwestern States Regional Champion. This good looking white and orange setter, in the famous string of long hairs owned by Carl Duffield of Tyler, Texas, was skillfully piloted to the title position by the colorful veteran sportsman. The trial was held on January 23, and 24, on the Pandora Quail Management Project located near the small town of Nixon, Texas, and about 55 miles east of San Antonio.

Frank's win of the Texas Amateur title was not an easy one for it was bestowed only after a thrilling and spectacular second series contest with Iron Jacket, a bold and attractive young pointer dog owned and handled by A. E. Martin of San Antonio. This



white and orange pointer with the significant name and his equally energetic hardler, provided tough and thrilling competition for their more experienced opponents in the second series contest. It was only by a very slim margin, apparently in the matter of showing more "finish" on game that the decision went to the setter and the runner-up position was awarded to the pointer.

Frank is from the first litter by Flight Commander and Cleratis. This mating has done much to keep the setters before the public as strong contenders in the chicken trials of Canada and the quail trials of the south and southwest. His win on this occasion



duplicated the feat of his famous sire which also won the championship of Region Seven (Texas) several years back.

The second series contest was con-

cluded late in the afternoon of the second day. The dramatic finish provided by the thrilling contest between the veteran setter campaigner and the "home grown" pointer, together with the general excellence of the grounds and the number of birds found throughout the trial, spelled success to the initial attempt of the Bird Dog and Quail Club of San Antonio to stage a field trial of major importance. This Club, which was organized in 1944, is not primarily a field trial club. But it was organized by bird dog owners and quail hunters. When they were requested by the Regional Committee through its secretary, E. A. Corbett, of Fort Worth, to consider holding the Regional Championship on the grounds of the Pandora Quail Management Project, the directors of the Club agreed to tackle the job. The success of their efforts was obvious to everyone who followed the trial.

Conditions for running the trial were excellent. The weather, though unseasonably warm even for South Texas, did not adversely affect the work of the dogs in either their ground work or bird work—and there were quail in abundance. Birds were pointed on each of the six one-hour courses, and only one brace of dogs failed to show on birds under judgment during the four days of running. Over twenty coveys were moved by the dogs and the gallery during each day of the trials and on the last day of the championship twenty-five coveys were contacted by the competing dogs.

The grounds, in spite of numerous

fences, would please the most critical fieldtrialers. The job of running the trial was well organized and proceeded with smoothness and dispatch. The efficient way in which the fence problem was handled by a special crew, including special guides to assist handlers and scouts, was especially commendable and showed thorough preparation to meet this important responsibility. Roy Holstein, Deputy Game Warden, employed by the Club, was captain of the fence crew and always on the job. A. E. Martin, Club President, and Haywood McDaniel alternated in the capacity of Chief Marshall. The Lions Club of Nixon, with Dr. J. F. Wheeler as President, not only cooperated in making preparations for the trial, but they also donated the beautiful championship trophy. The Lions Club Hall in Nixon was used for the drawing of the championship stake on Sunday night, January 22.

In giving credit to the many who assisted in the staging of this trial, it must be understood that without the cooperation of the Texas Game, Fish and Oyster Commission, the trial would not have been possible. State Game Department Biologists did the organizational work that established the Pandora Quail Management area as a research project. Al Springs, Wildlife Biologist in charge of research work on the Pandora area, not only cooperated with the Bird Dog and Quail Club in preparing the

grounds for the trial, but also helped with the actual running of the trial.

The judging was in the capable hands of Fred Lasiter of Wewoka, Oklahoma, Ray Huckaby of Bienville, Louisiana, and W. J. Aldrich of Derby, Texas. Mr. Aldrich has assisted in judging the three shooting dog trials held by this Club and is a very popular judge of bird dogs in these parts. Mr. Lasiter and Mr. Huckaby are well known field trial judges of long experience, and the three worked in complete harmony in arriving at the difficult decisions. Especially did they show conscientious effort in arriving at a decision in the championship, and their decisions were well received.

The cooperation given by the cooperating landowners, the general interest shown by the Pandora-Union Valley community, and the support provided by the Lions Club and other citizens of Nixon, Texas, where most of the visiting sportsmen headquartered, give hope that more and bigger field trials will be held on these excellent grounds.

CONTORTIONIST OWL

The owl cannot move its eyes in their sockets, but nature compensates for this lack by allowing the bird to rotate its head in an arc as much as 273 degrees. To many who have seen an owl turn its head three-quarters of the way around it appeared that the bird was all but wringing its own neck.

It's State Fish Application Time

Fish deliveries from hatcheries are made over the state twice each year. The first period is right after bass fry are available. The date of the first delivery is dependent upon weather and the spawning of bass. The second period is after August 1. This period of distribution is also dependent upon the weather inasmuch as fish can be hauled best in cooler weather and are consequently held back until fall. Stocking ratios call for 150 bass per acre of water and; therefore, lakes that contain over ten acres of water would require 1,500 bass or more to stock them.

Advance fry can be supplied in huge numbers and all lakes over ten acres can be amply stocked during the spring period. After bass are raised to fingerling size, there are insufficient numbers of them available to stock any waters of ten acres or more. Therefore, it is requested that all owners of lakes ten acres or more in size send in their applications just as soon as possible if they desire to get fish this year.

Smaller lakes will be stocked after August 1 with fingerlings. When fry are placed in waters that have not been stocked they will grow faster than fingerlings that are shipped in the fall because the bass fry have more growing space.

All applicants for fish should get their requests in to the Game, Fish and Oyster Commission just as soon as possible. Although ninety per cent of the fish produced in state hatcheries are placed in public waters, every effort is made to stock privately owned waters which have not been previously or recently stocked. When a request is received, an application card will be sent to the applicant. This card should be filled out and returned promptly to the Texas Game, Fish and Oyster Commission, Austin, Texas.

Field Manners

A vast number of hunters and fishermen are being harmed by a minority group of hunters and fishermen who have bad field manners. Don't tear down fences, damage crops, disturb stock or dirty springs. Unless all sportsmen immediately start improving their relationship with the landowner they will find themselves with fine guns and rods, expensive dogs, a boat and an outboard motor, lots of gasoline, a new hunting or fishing license—but with fewer and fewer places to hunt and fish.



Here is a handsome pointer that is sure of his game.

IN THE LONG AGO when Peter and his crew seined all night in the Sea of Galilee and caught nothing, they no doubt commented on the scarcity of fish. But when they obeyed the order to "cast on the other side" the miraculous haul of fishes was made. This can well serve to illustrate viewpoints on fish abundance: that the supply can be depleted; that fishermen may not know where to cast. Fish are not to be found in catchable quantities in all waters and it often happens that visitors from the interior who fish without a guide, or without adequate information, return home with an empty creel, cursing their poor luck on the Texas coast.

It seems probable that intensive seining and the noise of boats may drive fish into deeper water, scatter their schools and thus reduce the number caught, but eminent authori-

Hynes Bay, Mission Bay, San Antonio Bay, Trespalacios Bay, Carankaway Bay, Turtle Bay, most of Lavaca Bay, Bastrop Bay, Oyster Bay, the larger part of Galveston Bay.

The next session of the legislature in 1897 amended the law making the breeding season terminate September 1 and adding more waters which were Clear Creek and Clear Lake in Galveston and Harris Counties up to the G. H. & H. Railway bridge, the Trinity River with adjacent bayous and lakes, up to and including Lake Charlotte, Ingleside Cove, the cove between Mustang and Harbor Islands, Redfish Bay in Nueces and Aransas Counties, other waters in that vicinity, and all of Galveston Bay.

The next session of the legislature in 1899 again amended the law adding the north shore waters of Corpus Christi and Matagorda Bays, but cut-

not regarding it the others think it is useless for them to do so, and hence arises the necessity of a rigid law for the protection of fish."

What that rigid law was to be the report did not say, but in the following Spring of 1905 we find Kibbe's opinion clearly reflected in the drastic law that was enacted. The obvious meaning of the new law was that if fishermen will not stay out of closed waters during the breeding season, they must stay out altogether. Accordingly, the new law, besides adding Espiritu Santo Bay and a large part of Laguna Madre to the summer breeding grounds as already given, closed permanently the following areas against nets and seines: The waters of Calhoun, Victoria and Jackson Counties north or west of a line starting at the extreme east end of Gallinipper Point in Cal-

Marine Fisheries

History of Salt Water Fish Conservation . . . 1895 — 1948

By J. G. Burr

ties on marine life hold the belief that the sea can be depleted. It is beyond question that certain species, such as shad and salmon, can be fished out. But shortage is not uncommon whether it be depletion or enforced migration, and when the pole and line fisherman cannot get fish with the readiness to which he is accustomed he naturally assumes that the netter has either caught them or driven them away. It is a common complaint that seiners, observing the success of a pole and line man in a certain place, will move in and catch or scatter the school.

It is not unusual for fishermen to remark that times are not what they used to be when phenomenal catches were made. As far back as 1881 the *Galveston News* carried an editorial complaining of the absence of laws to protect marine fish. "Plentiful a few years ago," it was said, "fish in the bays are becoming scarce by the destruction of spawn by seines in shallow waters." There was no law affecting marine fishes until 1887.

In view of present day methods of closing areas, it is noteworthy that the same ideas were in vogue in 1895 when the bill creating the fish and oyster commission closed to drag seines and nets virtually all the north shore waters during the breeding season from April 1 to October 1 of each year. They were Baffin's Bay, Puerto Bay, St. Charles Bay,

ting down the closed areas of Galveston Bay to the waters within Harris and Galveston Counties between the west end of West Bay and Morgan's Point, and Mesquite Point, or the same area as in the original law.

With only the minor addition of Keller's Bay to the closed areas in 1901 the legislature rested until 1905. The experiment of closed waters had been on for ten years and had the evident approval of Commissioner Kibbe, who in his reports made frequent reference to the value of protection for breeding grounds. The enactment of these laws appears to have met with but little opposition from the fishermen judging by the House and Senate votes, which were sometimes almost unanimous. In his report of 1904 Kibbe said "the demand for fish early overreached the supply, and before the present laws for the protection of fish were passed there was annually a very marked decrease in the supply of fish found on the Texas coast. That this decrease was largely brought about by failure of the fishermen to observe the natural laws for fish propagation is a fact that cannot be denied, and it is this evil which the fish laws seek to correct, mainly by protecting the breeding waters of the fish during their breeding season. The fishermen recognize this fact as well as other people, but some seem not to regard it, and so long as a few persist in

houn County and running north to the extreme south point of Point Comfort in Calhoun County; Oyster Lake in Matagorda County; all Laguna Madre waters west of a line from the outer end of the wharf at Point Isabel to Potrero Largo in Baffin's Bay; Redfish Bay in Aransas and Nueces Counties, and all of the waters of Corpus Christi Bay and Nueces Bay north of a line running from the south end of the railroad bridge to the Hatch peninsula at Ingleside.

In his report for the year 1907 Commissioner R. H. Wood complained that Galveston waters were not supplying even the markets of that city, and the table shows that port to have dropped far behind all other important coast fisheries with a yield of only 185,119 pounds of fish. A salt water hatchery was recommended and in the report of 1908 a strong plea was made for two hatcheries in the bays west of the Trinity. Said Wood: "I believe we could have used twice as many oysters and several times the amount of the fish catch. Our population is rapidly increasing and we cannot expect under present conditions any substantial increase in either of these foods; on the contrary, we can expect, if we depend on the natural law governing the supply, to see a steady decrease. There is a remedy and it should be used. I see no reason why we should stand with folded arms and watch

the gradual falling off of the supply." (No such hatchery of marine fish has been considered feasible during the past quarter of a century, and any such plan has been discouraged by the federal government.)

It was recommended that all passes and the waters within a mile be closed to seines and nets. It must be obvious that such an omission in the law was well nigh fatal in the application of protective measures, so the legislature in 1909 closed for the first time the passes and added several small bodies of water to those already permanently closed.

In 1913, the third year of the administration of Commissioner W. G. Sterett, the legislature abolished the law closing bays and sections of bays, and as a substitute provided that no drag seines should be used in any bay waters during the months of June, July and August and provided

that the commissioner might close by proclamation such areas as he deemed suitable for breeding grounds. The report of the commissioner for that year is missing and we are without what was perhaps a full discussion of the conclusions reached after a try-out of seventeen years of closed waters, though in an earlier report it was hinted that the closed areas had not been properly selected. But in 1919, when Mr. Sterett was re-appointed after an absence of four years, his report for that year contained a prophetic summing up of the troublesome question as he then saw it.

"It is a question," said he, "of whether all seining and netting in our salt waters should be forbidden. There are those who contend for this, saying with much truth, that our fish are getting more scarce every day and no government power can stop such destruction as long

as seining and netting are permitted. On the other side, the investment in seines, nets, boats and other property invested in the fisheries through statutory promise that the waters would be open to them is set forth, and the question asked—is the State justified in destroying this property by closing her waters to them?"

"The commission is aware of the growth of opinion in favor of the prevention of seining and netting both fresh and salt waters but it does not share in the opinion that this is the only way to save the fish." Such was the belief of Commissioner Sterett who had spent several years on the coast with headquarters most of the time at Galveston. (A similar view was held by John Pearson of the U. S. Bureau of Fisheries who spent more than a year studying the fisheries of the Texas coast in the years 1926-27.)

"Restrictive laws," added Sterett, "are useless if they cannot be enforced to the extent of prevention of violations in some parts of our vast areas of waters. The Commissioner believes that the solution of this problem lies with those business men along our coast who buy the marine products and distribute them. They alone can control the fishermen, and it is evident that if they do not do it, the day is not far away when seines and nets will be driven from the waters."

It took just ten years almost literally to fulfill this prophecy, but it came gradually. In 1925 virtually the same areas were closed by statute which had been closed thirty years before in 1895, and the year 1929 witnessed the permanent closing of all littoral waters to drag seines, though the law did not become effective until 1930. Repetition of old laws was a form of rotary legislation but the irrepressible conflict, spoken of by Sterett, had reached a climax, and there was little choice. The age old conflict between commercial and sport fishermen had again been decided in favor of the sportsmen.

That the waters heretofore closed to seines and nets were frequently raided is no doubt true, but an examination of the tonnage of commercial fishermen indicates that they caught much less fish during the years of closed waters. During the first period of closed waters from 1900 to 1913 the average annual catch was 3,217,717 pounds. From 1913 to 1925, when the waters were all open except passes and a few areas closed by proclamation, the average yield was 4,410,416 pounds. From 1925 to 1929 inclusive, when the waters were again closed, the average annual yield dropped back to 3,344,882 pounds, almost as low as the figures of the first closed period. The average annual yield dur-



ing closed periods was more than a million pounds short of yields in open waters. With some variations the closed areas remain the same in 1948.

Promoters of closed water laws had in mind that it would stimulate deep sea fishing which has been practiced with considerable success at Galveston and a few other ports. The red snapper industry came into existence a little before 1900 and by 1903 the annual production had reached 3,500,000 pounds. The snapper vessels brought in more than the total fish catch of the bays. In later years the snapper catch was down to about one million pounds a year, and in the year 1947 it was 807,475 pounds.

It may be added that the Fisheries Company of Port Arthur operated in 1900 with two boats and in a period of seven months caught 84,000 barrels of menhaden from which they produced 85,000 gallons of oil and 1,600 tons of fertilizer; the estimated value of the output being \$63,800. Other menhaden companies have operated in Gulf waters since then, but without a Texas base of operation, and a record of their catch can be obtained only through the Bureau of Fisheries census at Washington.

Reverting to the prospect of promoting deep sea fishing we find a discussion of the subject by M. L. Wood, printed in the U. S. Fish Commission Bulletin of 1882, indicating that the fishermen of Florida had already begun to exploit the red snapper, of "Snapper Banks."

"It is my impression," said he, "that when fully developed, as they doubtless will be some day in the near future, the fishing interests of the Gulf will compare favorably with those of the fishing banks of Newfoundland. At present, however, there is no comparison. Another thing that will tend to make Gulf fishing a financial success is the apparently insatiable appetite of the Cubans for fish, either fresh or salted. Even now the shipments of fish alive, on ice, and salted, each week from Key West, are surprising.

"The snapper banks where fish are caught, and several kinds besides snappers are caught together, are quite common in the Gulf; their location is always a difficult subject, excepting for a few of the well known ones close to port. The number of banks is much larger than is generally supposed, even by fishermen themselves. . . and the quantities of fish practically inexhaustible.

"I also believe there is a sort of migration from one sort of bottom to another, depending upon causes, which at present, owing to the lack of investigation, are involved in mystery. This investigation, I very much fear, will not be undertaken or carried

out successfully until the government takes it in hand. No private individual or corporation could afford to devote the time necessary to hunting up the rumored banks, or examine a place from which the fish have gone, to find out the reason of their departure.

"There is no reason that I can see why, if the fish banks of the Gulf were as well marked out and the habits of the fishes as well understood as they are on the Newfoundland banks, the fishing interests of the Gulf should not develop enormously. . . This would require the location and the limits of each snapper bank to be practically determined, so that steamers fitted out for refrigeration could make the rounds of a certain number of banks, and lose no time hunting a very indefinite spot such as most of the snapper banks of the Gulf are at present."

Having this thought in mind the writer made some studies in the fall of 1945 and published an article on the subject in the December issue of TEXAS GAME AND FISH. As the snappers feed around shell banks

SCALEY SYMPHONY

Every cluster of fishermen has its wandering angler who throws his bait into the water, secures the pole and then takes off in search of conversation and counsel.

One such outdoor disciple noticed two small boys who seemed to be getting considerable action. "How are you doing, boys?" asked the visitor. "We're doing fine," replied one of the lads, proudly holding up a stringer with many wriggling fish. "What are those?" asked the man. "Why those are bugle-mouth bass," promptly replied the youth, eyeing his catch of small carp and suckers.

the writer, by consulting the U. S. Geodetic charts which list the coral banks or humps, selected some thirty-six locations and marked them with the latitude and longitude to facilitate their finding. The list contains a number of banks already well known to fishermen. Just how much attention the snapper people have paid to the magazine article is not known. At that time the war was on and the snapper catch was down to half a million pounds, probably due to the danger of submarines. The present harvest of a little more than 800,000 pounds, as above stated, does not indicate any great revival of the snapper industry. Good prices will usually flood a market, but prices can get so high that demands are cancelled out.

MARINE SEMINAR IS ANNOUNCED

The Game, Fish and Oyster Commission announces that the spring session of the Marine Laboratory Seminar and Field Study of Marine Sciences is scheduled for the Easter holidays, April 6 to 9, inclusive. It will be held at the Marine Laboratory in Rockport, with the arrangements for the program under the direction of J. L. Baughman, chief marine biologist.

This service is designed to give the colleges and universities of the state an opportunity to acquaint their students with the marine sciences. It is basically planned for biological and closely allied majors; however, it should be of value to representatives of many industries and agencies.

Twenty lectures have been tentatively scheduled for the three day meeting. The entire Marine Laboratory staff, equipment, and library will be available to the seminar. As soon as a definite schedule has been formulated and approved a program announcement will be sent out. Arrangements have been made for housing at the rate of \$1.00 per night and, to obtain this rate, all arrangements for billeting should be handled through the Marine Laboratory offices in Rockport.

New Dingell Bill

Congressman John D. Dingell of Michigan has re-introduced a revised version of his Federal Aid to State Fisheries Bill which unanimously passed both houses of Congress last Spring but which was vetoed by President Truman, the Wildlife Management Institute reports.

The new bill, H. R. 6533, would make the act effective on July 1, 1950 whereas the former would have been retroactive to July 1, 1947. It was this feature to which the Treasury Department and the President objected so strenuously. The present bill carries an authorized appropriation of \$2,000,000 for the first year's operations to permit administration to begin at once instead of waiting for a full year to pass so that revenue from the ten per cent excise tax on fishing rods, creels, reels, and artificial lures could be determined. With these exceptions the new bill is substantially the same as the one vetoed at the close of the last session of Congress.

The egret, once nearly exterminated by the feather hunters, is becoming common again in marshes all over the East in late summer and early fall.

AMERICAN MERGANSER

The American Merganser, one of our most colorful migratory birds, is well-known throughout the continent of North America. The male is a large duck, with a black head and much white on the wings and body, while the female is brown-headed, grey-backed and white-breasted. Their bills are long, narrow, cylindrical and toothed. This species is sometimes called "pond" sheldrake, because it prefers fresh water and will stay inland during winter if open water can be found.

The American Merganser is considered less desirable by hunters than other ducks because their fish diet is said to impart a strong flavor to their flesh.

In winter they are found in large numbers on the Great Lakes; on all the larger inland bodies of water; and on both coasts, from the Gulf of Mexico to the far north. In spring, they are the very first of the waterfowl to start on the northward migration.

RED-BREASTED MERGANSER

The Red-Breasted Merganser is common throughout America, Asia and the northern parts of Europe. It is distinguished from the American Merganser by its straggly crest, white collar and reddish upper chest. Like the American Merganser, this species is not highly regarded as a game bird because their flesh is tough and somewhat fish flavored.

The Red-Breasted Merganser is an awkward bird on land. It often stands with its body parallel with the ground, like an ordinary duck, but more often it stands with its body at an angle of 45 degrees. However, it is an expert at diving.

The Red-Breasted Mergansers spend their winters on the Atlantic Coast from Maine south; on the Gulf Coast; and on the Pacific, south from British Columbia. The northward migration of this species starts in March and ends in May.



American Merganser

MALE AND FEMALE

Red-Breasted Merganser

MALE AND FEMALE

FISHES OF TEXAS

The Lamprey

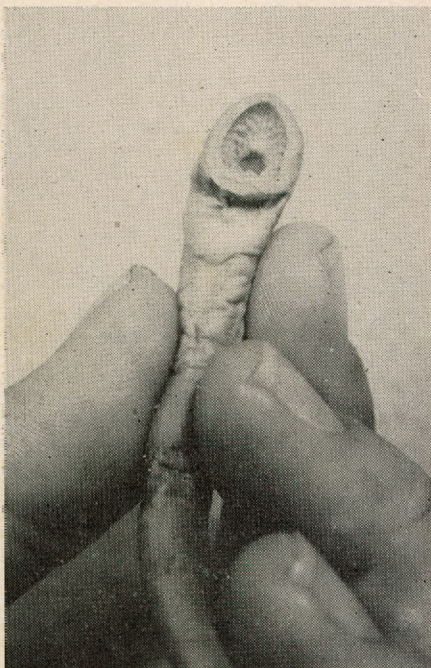
By Marion Toole

Editor's Note:

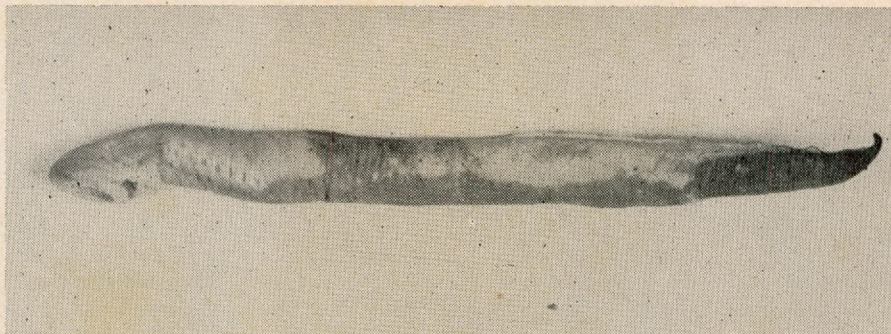
At the inception of TEXAS GAME AND FISH a series of articles featuring various species of fishes were prepared by Marion Toole, Chief Aquatic Biologist. These articles were run monthly in the magazine and featured one or two freshwater fishes each month.

At the time these articles were run, the subscription list was small and not many of our present readers read the articles. Since most of the magazine issues carrying these articles are out of print and consequently unavailable, it has been deemed wise to re-run all such fish articles. The whole series will be revised and various species of fish not formerly described will be included.

In addition, J. L. Baughman, Chief Marine Biologist, is preparing an article on a salt water fish each month so we can present a complete picture of our Fishes of Texas.



The lamprey's mouth is fashioned like a suction cup with rows of sharp teeth on the inside. Thus, this parasite is able to rasp through scales, skin, or muscles, and eventually drink the blood of its host.



Paul Whaley, of Marshall, Texas, captured this lamprey attached to a crappie while fishing in Caddo Lake.

IN THE STUDY of ichthyology we have some specialized workers known as taxonomists whose task it is to work out the keys to classification whereby fisheries workers may identify one fish from another. In preparing these keys the least developed fish is included first and subsequent fishes are listed as they show more and more development. Consequently the first fish or fish-like animal (since many workers do not consider these animals as fishes) to come under our scrutiny is the lamprey which many of you good readers have never seen.

This fish is most important to students of vertebrate comparative anatomy because it is the second in line of development of the vertebrates or those animals with a spinal column. The first in line is a small creature known as a lancelet (*Amphioxus*), which lives in the sea and is the special study of my colleague, J. L. Baughman, the marine biologist.

There are several species of lampreys occurring in and around the United States in both fresh water and salt water. The lamprey that is causing the most trouble is the sea lamprey (*Pteromyzon marinus*) which ordinarily lives in the Atlantic, but some landlocked specimens of this species have just about taken over the Great Lakes and to such an extent the fisheries of these lakes are endangered. Besides the sea lamprey we have six other species occurring in fresh water. Three of these lampreys are considered parasitic and three are non-parasitic. Carl L. Hubbs (1925) in his paper on the "Life Cycle and Growth of Lampreys" states that, "After metamorphosis the life of the lampreys follows one of two courses. In one type of life-cycle, obviously the most primitive, the transformed lampreys retain a functional alimentary system and develop strong, sharp teeth. They feed in a semi-parasitic fashion on other fishes, and continue to live and grow, usually in the sea, or in lakes and larger streams. Having existed thus for an unknown period of time, they re-ascend the smaller streams in spring migration,

spawn, die, and thus complete their life cycle."

Dr. Hubbs further states, "The lampreys of the contrasting life-history type entirely cease their feeding and growth after metamorphosis, which takes place in late summer or early fall (August to October). An entire period or element in the life-cycle is thus eliminated. The alimentary system rapidly degenerates into a non-functional condition. The teeth are reduced in size and particularly in sharpness, and in extreme cases variously decreased in number, or even fragmented. In this degenerate adult condition they continue to live, however, for a period of more than four but not less than eleven months, unless prematurely destroyed. Having thus passed the winter, they spawn the following spring (March to June); then die, as do the parasitic forms."

In Texas we have both parasitic and non-parasitic forms occurring. Clark Hubbs, now associated with the University of Texas, has informed the writer that he has recently collected some specimens of the southern brook lamprey, *Ichthyomyzon gagei*, from some small streams in Nacogdoches County. This species is the non-parasitic form that does not harm fishes.

The lamprey that is shown in the illustration was sent to the writer by Paul Whaley of Marshall, Texas, and it was captured incidental to catching from Caddo Lake a crappie on which the lamprey was attached. Whaley has reported that other fishes taken from that lake had lampreys attached to them. These are undoubtedly one of the parasitic forms. The illustrated lamprey has not been identified officially yet, but it looks similar to the Western Lamprey *Ichthyomyzon castaneus* Girard, which has been reported from Oklahoma, Arkansas and Louisiana as its southern range.

After lampreys are hatched they are known as ammocoetes, which is the larval stage. They then go through a period of metamorphosis, which is the period an individual passes after leaving the egg and before attaining

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THE GREAT WHITE SHARK

By J. L. Baughman

ON FEBRUARY 7, 1950, the boat K. T., of the Marine Laboratory of the Texas Game, Fish and Oyster Commission, swung into the dock with a strange looking shark on board. Pointed-nosed, heavily-built, with a huge, mackerel-like tail, it resembled nothing previously taken in the shark fishing operations along the coast and, at first glance appeared to be a mako, or mackerel shark, one of the great game fish of the world. However, further examination disclosed the fact that it was a Great White Shark, or Man Eater, the first of its kind ever recorded from the Texas coast. Only a baby, a mere seven feet six inches in length, and about 250 pounds in weight, it had been taken on experimental shark fishing gear twelve miles out in the Gulf, in ninety feet of water.

Rovers of the ocean, these white sharks are distributed throughout the seas of the world, and are members of a family to which belonged the greatest of all sharks, a fossil giant

in whose mouth several men might stand, and whose teeth are more than five inches long. The length of this shark has been estimated at eighty feet, and the weight was enormous, probably reaching well over 100 tons. White sharks do not reach this size of course, although occasionally they will reach forty feet in length and a weight of many thousands of pounds.

One of the most voracious of all the fishes in the sea, the food of the white shark is varied. A thirty-footer has been reported which had a whole sea lion in its stomach; and seals, sturgeons and tuna have been found in specimens no longer than nine feet. Sea turtles are a regular item of its diet in southern waters, as is a wide variety of smaller fishes and marine animals, including chimaeras and squids. Moreover, a large specimen from Florida contained two seven-foot sand bar sharks, evidently torn from hooks on the trot-line on which the white shark itself was taken. They are also scavengers. The stomach of one

caught in the harbor of Sydney, Australia, contained garbage, including horse meat, legs of mutton, parts of a pig, dog and other similar material (Bigelow and Schroeder, 1949).

White sharks have attacked small boats, presumably to get at the people in them, and in Australia, where bathing beaches must be protected from sharks by woven wire fences, white sharks or white pointers, as the Australians call them, have long been classed as man-eaters. There are apparently well authenticated instances of attacks by this species on humans, along our east coast. Four deaths from such attacks occurred on the New Jersey coast in 1916, and were presumably the work of one seven-footer taken a few days later at the mouth of New York Harbor. Another death caused by a white shark occurred in Panama Bay in 1944.

This great fish has long been held in awe by the seafaring peoples of the world because of its ferocity, and has exercised as great a fascination on the popular imagination as have the great predatory beasts of the land. The idea that a fish may be large enough, strong enough, and well enough armed to destroy man, the mighty, is a never ending source of wonder and comment.

In southern seas, where the great white shark has long been known to the brown-skinned peoples of the Pacific world, a considerable mass of folklore has grown up about them. (Baughman, 1948).

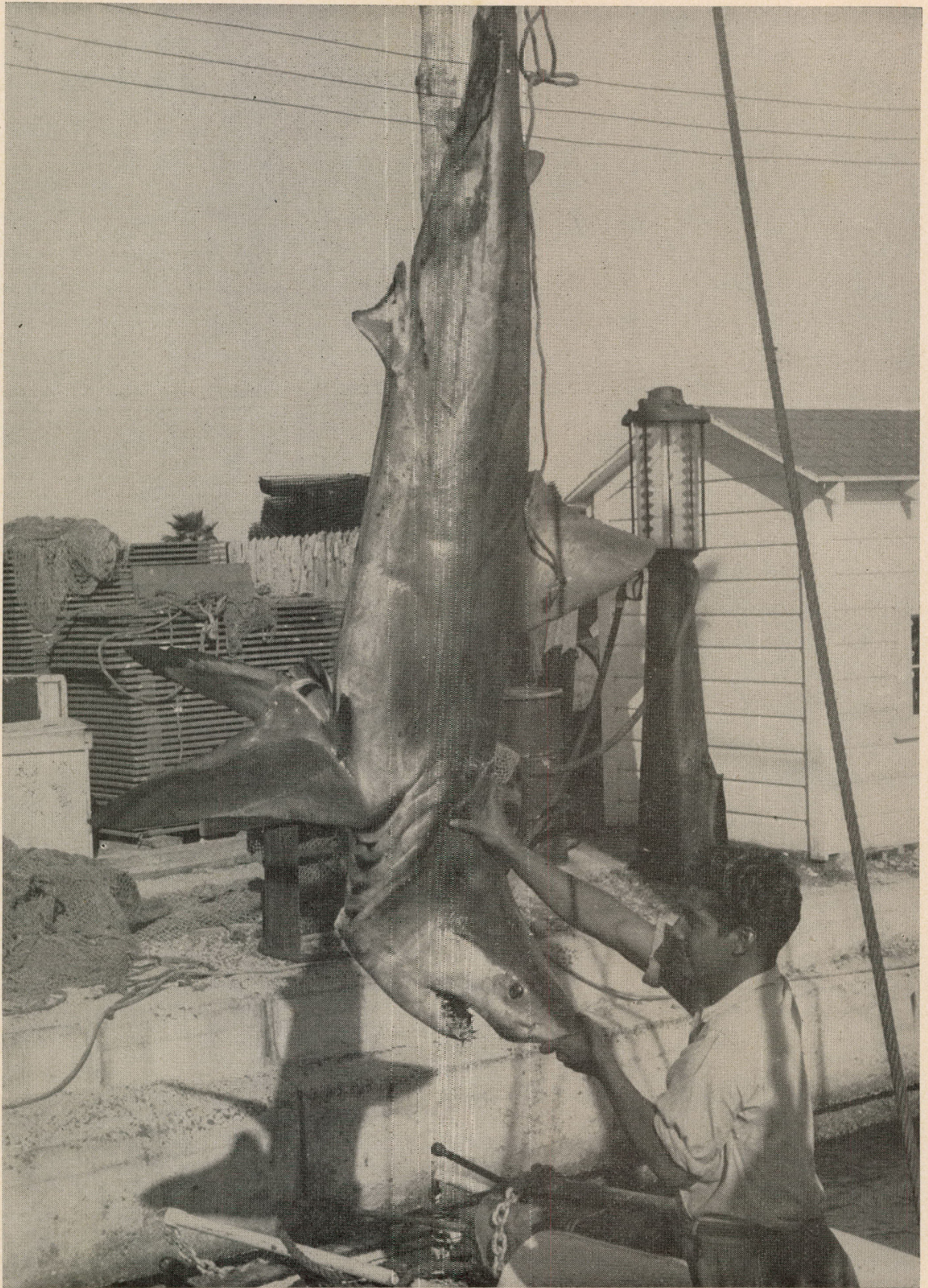
In the Hervey Islands, the spirit of a deity named Tiaio, said to be a former king of Mangaia, took possession of a large white shark, the terror of these islanders, and he had a small sacred grove set aside for his worship.

Between northern Australia and the island of New Guinea lies an extensive stretch of island-dotted water, known, after Luis Vaez de Torres, its discoverer, as Torres Straits. Here on the islands, as well as on the mainlands of Australia and New Guinea, live numerous tribes whose subsistence comes mainly from the sea. Hence it is little wonder that sharks receive much attention from them and occupy

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This is the business end of the great white shark captured off the Texas coast.



HIGH



Sailing on Lake Travis brings pleasure to many, and plans are now being made for a regatta.

By Wick Fowler

IN THE HILLS west of Austin lie the Highland Lakes of Texas, strung like glittering pendants on a thin strand of silver. Where twenty years ago there were only green canyons and an unpredictable Colorado River, today there is a whole vacationland of varied wonder beckoning the fisherman, the hunter, the boating enthusiast and the mere relaxationist.

The lakes on the Central Texas highlands—Buchanan, Inks, Travis and Austin—offer just about everything that brings pleasure to those who enjoy life in the outdoors. Thousands of Texans have already found this to be true; more thousands are sure to discover it as the recreation area is further developed.

Within the last couple of months, through an unforeseen combination of circumstances, the existence of

Texas' Highland Lakes has been brought to the attention of an estimated 30,000,000 Americans. The daily press, the newsreels, radio and television reported in detail the story of Operation Waterlift, in which a tank-truckload of Highland Lakes water was sent to water-short Texans in New York.

Back in the 1930s the Lower Colorado River Authority was set up to build a series of dams on the river for flood-control and hydro-electric purposes. In due time these dams were completed, backing up water in clear lakes whose combined shoreline

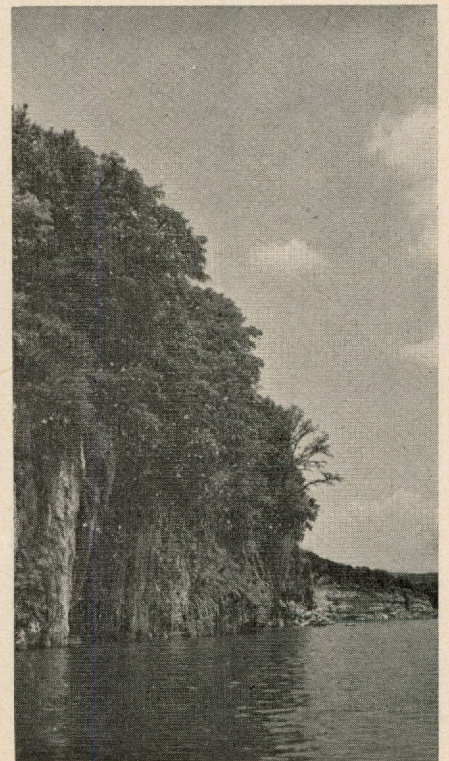
Cypress bluffs on Lake Travis help make up the picturesque country bordering all of the highland chain along the Colorado River.

is longer than the Texas coast on the Gulf of Mexico

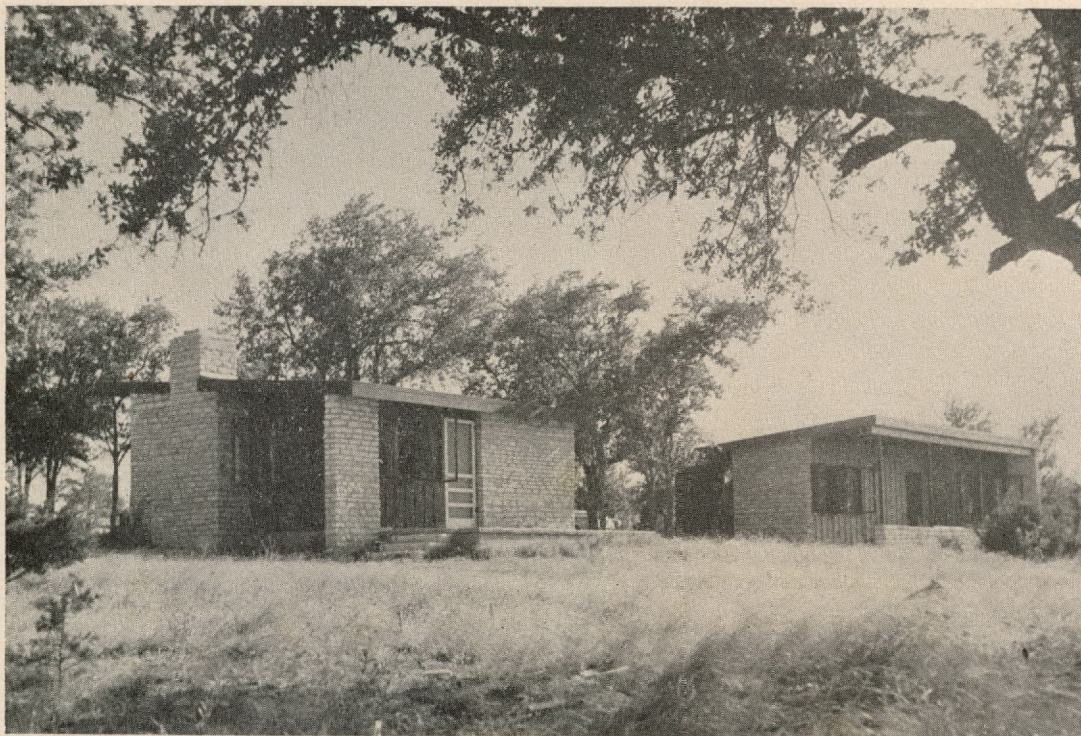
Sixty miles west of the state capital of Austin is Lake Buchanan, head of the chain. This lake, thirty-two miles long and eight miles wide, one hundred thirty-two feet deep at its deepest point, was the first formed. It has also been the most heavily stocked with fish; therefore it has been highly popular with anglers. And its lakeshore accommodations are considerably more extensive. The only drawback is that Lake Buchanan is in a higher altitude than the other Highland Lakes and as a result is more exposed to the winds which sometimes make the water choppy if not downright rough. Burnet, a busy and clean little town, is only a short way from Buchanan; and supplies or equipment not available at the lake may almost certainly be found there

Three miles downstream is Inks Lake, formed when Roy Inks Dam was built a short time after its big brother at Buchanan. Inks Lake is sheltered, a fine body of water for fishing and boating alike. The accommodations for visitors here are classified as good.

Next in the chain comes Lake Travis, a tremendous body of water backed up when engineers put a concrete wall across a canyon just west



LAND LAKES OF TEXAS



Two beautiful cabins that are now available on Lake Travis shore. At present, there is much activity along the water's edge. Soon accommodations for all who wish to vacation at this new playground will be available.

of an old ford in the Colorado River. This spot was known as Marshall Ford to the oldest residents in the area.

Since another age, the Colorado had been tirelessly cutting a winding canyon through the hills from Marble Falls to Marshall Ford. In this same country a smaller river, the Pedernales, and creeks like Cypress, Big Sandy, Cow, Hurst, Horn, Hamilton, Lime, and Bee had been busy cutting smaller canyons as offshoots of the Colorado.

The engineers who surveyed this area in the 1930s thought that these canyons, which came to an end at the old ford sixteen miles from Austin, were the greatest potential water reservoir in the Southwest. Today that reservoir winds for sixty-five miles back up in the Central Texas Highlands, has a shoreline 270 miles long and a maximum depth of 225 feet. The state game department has assiduously stocked Lake Travis with

fish and, though a comparatively new lake, it is increasingly popular. It is described as the best of the chain of lakes for boating purposes on account of its length, deep tributaries and sheltering hills. Large cruisers and sailboats ply the lake and there are twenty storage docks for servicing boats. Boats may be rented and accommodations for visitors are good but not sufficient in number to take care of the need at peak times. Austin is nearby, however, and more building is going on near the lake shores.

Lake Austin is at the city's edge, three miles from the business district. It is a narrow body of water stretching back twenty miles on its winding course into the hills. On its surface are more than 500 boats.

The lakes are well-stocked with bass, bream, goggle-eye and catfish. Enormous catches have been reported from Buchanan and Travis, and the others yield their share. Since more than 300 days in the year are suitable for fishing in this part of Texas, the

weather rarely interferes with the fisherman's plans. Deer and turkey abound in the same country for the sportsman who prefers to hunt for this game in season.

With lodges, fishing camps, cabins and boatdocks continually being built, the time is not far off when accommodations should be sufficient to take care of all who wish to spend some time in the Highland Lakes country. Roads into the area are being constantly improved. A state highway is being built to traverse the entire south side of Lake Travis. Paved roads carry the traveler to all of the lakesides.

Less than 200 miles separate the Highland Lakes from Dallas, Houston and Fort Worth. San Antonio is less than 100 miles away. The vacationist or sportsman from outside the state can obtain rail or air transportation which will bring him to Austin, on the edge of one lake, sixteen miles from another and sixty from the others.—Texas Parade.

So You Believe It, Eh?

By E. G. Marsh, Jr.

IN much of the Southeastern United States, including East Texas, the so-called Hoop Snake is a terrible creature almost universally feared. This strange animal reportedly grasps its tail in its mouth, making a hoop of its body, and rolls speedily up and down hills in search of unwary travelers. One slight prick of the Hoop Snake's tail is sufficient to cause immediate death. Trees, attacked in some moment of intense rage, have been found afterwards turned black and dying! At least that's the story you hear, and you hardly dare contest the truthfulness of it when someone tells you that "I seen it with my own eyes down on Black Bayou"—even in spite of the fact that fabulous rewards have been offered for single specimens, dead or alive, and to this day not one has been delivered to the laboratory of any authority on snakes.

Tales just get started, maybe from some unintentional mis-statement, and they seem to grow in inaccuracy with each passing generation—perhaps it's only a way to keep life from becoming completely humdrum. Perhaps our belief in them is an expression of a subdued desire to have been a pioneer.

As a boy I grew up in a part of Texas that had long since lost almost every feature of its original wild state. People lived everywhere and raised lots of children and milk cows and chickens and cotton. Yet, periodically through this ordinarily peaceful community the word would come flying around that a panther had been seen over on Cedar Creek. The thrill of such occasions was always great. Children were cautioned to stay out of the woods for fear that they would be eaten. Coon dogs would refuse to hunt at night and squirrel dogs, though they could be coaxed into the woods in the daylight, would often quit the trail and go streaking for home. Occasionally a pig or even a grown hog would be carried away out of the pen and whole flocks of sheep would disappear overnight from outlying pastures. All the while, the panther would be seldom seen but his huge tracks were found even on doorsteps where he had tried to enter a house, and there was not a night passed that his blood curdling screams, like those of a dying woman, would miss being heard in some more remote section of the community!

All of that was my experience as a boy. At least, with my imagination, wildly inspired by the talk of adults,



I found signs that were taken to be tracks of the panther. I heard noises, too, at night in the woods, and to me they were distant panther screams. I never saw the panther, but I have a vivid remembrance of talking to a woman who was telling that she did. The huge cat jumped into her hog pen and carried away a pig while she was slopping the hogs. She had fallen into a death faint at the first glimpse.

Now that I look back on those experiences, though, I find little basis for believing that they were little more than fantastic workings of the community's imagination. Actually, there is no authentic record of occurrence of the panther, commonly known as a mountain lion, in that neighborhood during the last fifty years and my experience dates back only twenty-five years. Besides the mountain lion or panther doesn't scream like a dying woman!

But the screaming of mountain lions is another story for which you can find almost as many versions as there are people in the Southwest.

Let me remind you again that I don't mean to call anyone a liar. I do not question the veracity of my friends. That they may have heard lions trampling all around screaming with their utmost might is a fact that I cannot dispute.

On the other hand, it is equally true that the lions with which I have had abundant occasion to associate were not the screaming kind. I worked in Mexico off and on from 1935 to 1940 and from then until the present I have ranged considerably over Western Texas. Lions are present over most of that territory and in many sections they are common. I trapped one six months old cub by accident and tried hard to capture others. Also I have been present when three were caught by dogs. None of them screamed or even made a loud sound-

ing noise. The best they seemed to be able to do was snarl.

For twenty months at one time, I lived mostly alone and trekked by pack train over hundreds of miles of lion infested mountains of Northern Mexico. I sincerely tried to find one screaming cat. This is attested by the following excerpt from my diary, written under date of August 17, 1936, 7,000 feet up in Viboras Canyon of the Del Carmen Mountains of Northern Coahuila, Mexico. I was alone in camp at night and inclined toward the romantic, as you can see.

"August 17: The moon rose early tonight and spilled over into the Canyon just as the sun fell behind the western foothills. The craggy peaks above me are now quietly surrendering their shadows to the golden light.

"Today has been a memorable one in several respects. I met a pack train on the trail to Boquillas this morning. One of the drivers was an acquaintance of mine and he told me that there was a party in Muzquiz who was starting out to visit my camp. He didn't remember his name except that he was an official of the Mexican government known as Don Joaquin. It matters little for I have been here alone too long and anyone who visits me would be royally welcomed.

"Late this evening with the campfire crackling in the crisp mountain air, I was startled by a noisy commotion up the canyon from here. It ended in a screaming cry that went through all the keys from high to low. And for a full thirty seconds thereafter, I could hear it echoing and re-echoing in the canyons beyond. Surely it must have been a lion. I have sensed the presence of one for

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Gun Dog Psychology

BY JAMES R. HAYES

WE LEFT the dirt-road about four o'clock, unleashed Tessie, and followed her into the field. There were six weeks in the hunting season, and the three of us—Paul, his pointer, and I—were warming-up for the big day.

The autumnal afternoon was slipping steadily on towards evening. All nature was at the season of ripening—in open fields, burdocks and briars were brown in the dry yellow grass; the fringing woods were brilliant with fall colors.

Tessie ranged eagerly through the brush, nose wanting bird-scent. Cross-field she worked, to a clump of young sumacs. A half-fallen railfence showed above the tall grasses. Tangles of briar

and goldenrod grew up through the rails. It looked birdish. And Tessie, hot on a trail, slid into a beautiful point beside the fence.

Paul and I stood there, watching, then moved into flush. There was a flurry of wings as a ringneck, iridescent in the sunlight, hammered out and sailed to a far-away cornfield. We watched him glide out of sight.

"Instinct," said Paul, patting Tessie's side, "instinct is a wonderful thing. Just think of all the breeding, all the generations of gun-dogs that went into that point."

"Aren't you forgetting something?"

I asked. "Seems to me the trainer deserves a little credit."

"No doubt about that," Paul said. He picked some burrs from Tessie's ear. "But it's mainly instinct. In the blood, y'know."

I didn't know, but I decided to find out. My findings were rather surprising. For it was, for me, really surprising to discover how few dog owners completely understand the basic motives underlying hunting and pointing traits in their dogs, understand the psychology of gun-dogs. I bring in this term "psychology" because it is, in essence, the study of behavior and motives. And since we cannot possibly know what our dogs think, we

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Is it instinct or training that makes a good bird dog? Mother Nature's contributions are many, but it takes more to make a fine hunter out of your dog. An understanding of the dog's mental make-up helps a lot.

gnawing at the base, by slapping his tail upon the surface of the water; and they immediately ran from the tree out of harm's way."

In the Navasota it is to be expected that beaver, if they have not already done so, may soon begin to climb over the Fort Parker dam and into the big lake above. In the lake is an artificial island, put there by the State Park Board, which is now well covered with willow and other shrubbery and suitable for a well-protected beaver home.

The beaver burrow or den is made near deep water and has an entrance which is below the water line under some tree or root, or overhanging bank. Over the chamber is a thin place to admit air. If the vent gives way, leaving the chamber dangerously exposed, the vent is repaired with a pile of interlacing sticks. The lodge usually contains but one circular chamber which is about two feet high and six feet across.

Says Hearne: "I have seen a large beaver house built in a small island that had a dozen apartments under one roof; and with only two or three of these excepted, none of them had any communication with each other but by water. In many cases the entrance is protected with a mass of sticks which also is winter food. This pile is called a false lodge. A higher type of lodge is seen in lakes where there are no annual freshets to carry away the pile, which grows from year to year."

The favorite food of the beaver is the bark of trees such as the aspen, birch and willow, but seldom pine trees. They also eat mushrooms, berries, and the roots of sedge, bulbs of lillies and tubers of many plants. They store up winter food in the fall for their families. They do not hibernate but remain active in winter. Busy as beavers is an old saying, yet they are essentially sociable and have time to be playful. They mate for life. In the love season, says Richardson, "their call resembles a groan, that of the male being hoarser, but the voice of the young is exactly like the cry of a child. One day a gentleman espied five young beavers sporting in the water, leaping upon the trunk of a tree, pushing one another off and playing a thousand interesting tricks. He approached softly under cover of the bushes and prepared to fire on the unsuspecting creatures; but a nearer approach discovered to him such a similitude between their gestures and the infantile caresses of his own children, that he threw aside

The Young and Old of It

There has always been much interest in the designations of the male, female and young of various animals, particularly those that come under the classification of wildlife. "Just how some of these designations were determined seems shrouded in considerable mystery," says Henry P. Davis, public relations manager, Remington Arms Company, Inc., "but the matter is an interesting one at least, despite the attendant confusion. For instance, why should a very young rabbit be called a fawn, the same as the young of a deer or caribou? Below is a list of some designations, which has been compiled by L. H. Olander, a director of the Salt Lake County (Utah) Fish and Game Association. If any readers have further names to add to this list, I'd like to have them and will pass them along to Mr. Olander."

Animal	Male	Female	Young
Elk, moose, cattle, seal, elephant, giraffe, whale, walrus, buffalo.....	Bull	Cow	Calf
Rabbit, caribou, mule or white-tail deer	Buck	Doe	Fawn
Red Deer*	Stag	Hind	Fawn
Antelope**	Buck	Doe	Kid
Wolves, Coyotes.....	(?)	Bitch	Whelp, pup, cub
Fox.....	Dog fox	Vixen	Whelp, kit
Cats (large).....	Tom	Lioness, tigress	Cub
Cats (small).....	Tom	Tabby	Kitten
Beaver, mink, muskrat.....			Kit
Sheep.....	Ram	Ewe	Lamb
Goats	Billy	Nanny	Kid
Swine	Boar	Sow	Shoat
Pheasant, quail.....	Cock	Hen	Chick
Swan	Cob	Pen	Cygnets
Ducks	Drake	Duck (?)	Duckling
Geese	Gander	Goose	Gosling
Trout	Buck	Female	Fry
Shark	Bull	(?)	Cub

*A male red deer, over five years old, is referred to as a "hart".

**At the 1946 Western Game and Fish Commissioners Convention, it was generally agreed upon by the eleven Western states that a young antelope should be referred to as a fawn.

his gun. Few traders in the fur world have acted so feelingly."

The beaver is beneficial as a dam builder for fish in small streams and for the erection of reservoirs from which meadows are irrigated by overflows. But this is frequently overdone in Wyoming and in other states where the game wardens have to trap and move the beavers away. It is said that the beavers insist on coming back, much to the annoyance of the wardens.

A hawk soaring high in the air has such unusual sight that it can detect a mouse moving through the grass.

YOU CAN HELP

Duck stamps, which annually become void after June 30, will give double aid to water fowl conservation under a plan advanced by Ducks Unlimited. Duck hunters are asked to donate their old stamps for sale to stamp collectors. Proceeds will be used for duck production projects on the Canadian breeding grounds. Leave the stamps attached to state hunting licenses and mail to Ducks Unlimited, 342 Madison Avenue, New York 17, New York.

The southern fox squirrel is the only squirrel in America which has a white nose and white ears.



Rio Grande country yields plenty of game including deer, blue quail and javalina for these hunters on a two-day trip. Left to right: W. A. Pounds, president of Tyler State Bank & Trust Co., Tyler; W. E. Nettle, president of Gibraltar Life Insurance Co., Dallas; and George W. Pirtle, consulting geologist, of Tyler.

Insects Showing Immunity to DDT

War-developed DDT, hailed in the press a few years ago as the answer to all problems stemming from noxious insects, is losing its effectiveness against some important pests, the Wildlife Management Institute reports.

Strains of houseflies and mosquitoes which are resistant to the insecticide have been reported from many parts of the world. After control operations cease, swamps or marshes sprayed appear devoid of mosquitoes. Freed of competition from less fortunate members of their tribe, however, the few immune survivors present breed and multiply until, in many places, they predominate. Ten times the amount of DDT needed to curl the toes of an ordinary *Aedes* fails even to stagger these hardy super-skeeters. Heavy applications of DDT had little effect in controlling large swarms of mosquitoes at Cocoa, Florida, this year although spraying operations had been highly effective for five preceding years, the Department of Agriculture states.

White Shark

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a considerable place in their folklore, although there seems to be little evidence of their worship as deities.

Perhaps the closest approach to such worship lies in the use of these fish as totemic emblems for various clans throughout the territory. On Mabuag the Baidam (probably the great white shark) is the totem of one of the tribes.

In Samoa the white shark, as a representative of the god Mose, served to guard the coconut trees and plantations of the natives. An image of the shark was plaited from coconut fiber, fins and other external characteristics being added. This image was then suspended in the coconut or breadfruit tree the owner desired to protect, or among the rows of his garden, and was tantamount to the expressed imprecation that the thief might be devoured by a white shark the next time he went fishing. So strong was this belief that the tale was told of a Christian who derisively thrust his arm into the maw of such a sham shark and who, on his next trip to the sea, lost both arms to one of these marauders.

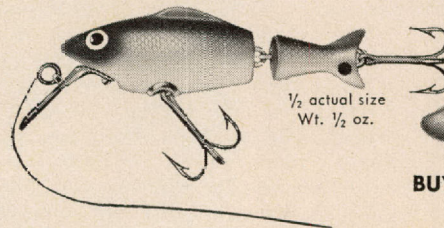
White sharks, in spite of their ferocity and muscular power, do not put up as spectacular a resistance when caught on hook and line, as does their close cousin the mako or mac-

erel shark, not having the mako's habit of jumping. Nor are they steady, slugging fighters like tuna or swordfish. For example, an Australian specimen of 1,329 pounds was landed on

hook and line in fifty-three minutes, and a South African specimen was hooked from the shore and whipped in five hours. This shark weighed 2,176 pounds, and is one of the largest, if not the largest, fish ever landed on rod and reel.

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Conservation Need Survey Is Urged

Completion of detailed surveys to determine potential productivity and conservation needs of all American farms at the earliest possible date has been urged by Dr. H. H. Bennett, chief of the Soil Conservation Service. This information, he said, is vital before an adequate conservation program can be executed on any farm, and it is desirable for planning and carrying out other agricultural programs.

Dr. Bennett stated that evaluation of lands for taxation or loans would be sounder and more equitable if made on the basis of their capability for production; that land capability could be used as the basis for sound procedure and beneficial adjustments in all types of agricultural credit or land tenure; and that it might be used as a guide for expansion of rural road building, rural electrification, and other permanent enterprises. Although 500 million acres already have been surveyed, new requests from farmers' soil conservation districts for farm planning assistance have so taxed the Service that conservation inventory work within recent months has not been able to progress as rapidly as it should. The Service assisted 154 more districts during the past fiscal year than it did the preceding year.

The Soil Conservation Service chief emphasized that we now are cultivating many millions of acres that should go out of cultivation into permanent pasture or quick-growing trees. This is important to the individual farmer because it would mean more efficient production and a more stable income in the long run.

Simple But Effective

If you ever want to determine the weight of a fish and no scales are handy try this method. Measure the length and girth. Multiply the length by the square of the girth and divide the results by 800.

For example if your fish is 18 inches long and 10 inches in girth— $18 \times 10 \times 10$ equals 1800 divided by 800 gives you 2.25 pounds. Although this won't be exact you will be surprised how accurate it is.

GROW MORE FISH

Have lake soil and water analyzed, then follow directions for applying only the necessary minerals.

For Information Write to:

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So You Believe? . . .

• Continued from Page 20

days and poor Pancho, the burro, from his actions, I judge, has done the same. Neither of us likes to think of ourselves as possible victims. Anyway, you can bet that the camp fire will be kept burning big all night and that the ramshackled door to this old grass shack will be securely fastened."

And I went to sleep that night positively convinced that I was under siege by lions!

Next day I found a freshly eaten carcass of a rabbit beneath a pine tree several hundred feet above camp. Strangely, though, essentially all of the skeleton was intact and I found rabbit hair on the ground and in bushes over a large area. Two days later just at dusk, as I was returning by the same spot, I heard the swishing of wings, and looking up, I saw a huge owl settle into the pine with the limp body of a rabbit clasped in its talons. Momentarily it hesitated, then without seeing me it looked down at the carcass and let out a scream worthy of any lion. When the cry died out it fell to eating viciously.

That's all of the story. My screaming lion turned out to be an owl. . . .

At other times I have been similarly convinced by circumstances. But down to this day, as far as I personally know, the strange cries which I have heard in the night came from less ferocious animals such as badgers and coons. Both of which, if you ever have had the occasion to hear, can utter most alarming vocalizations.

I know a man who has spent forty years killing lions, wolves, and coyotes from Alaska to Mexico. In his opinion, lions do not scream like dying women. I know two other men, one a hunter who is famous for his cat hunting expeditions in both Texas and Mexico, and the other a trapper who has caught and killed more than one hundred lions in the South Texas brushland since 1920. Both of these truly experienced outdoorsmen have heard lions growl, and meow, and purr but never scream.

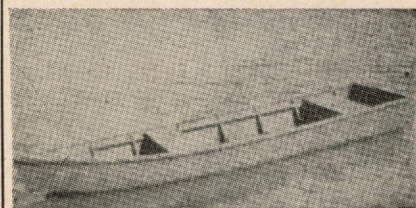
All of which reminds me that it makes little difference whether Hoop Snakes roll or lions scream. If you have seen or heard one, then that's your experience and I am sure that the occasion added something of interest to your life. Civilization must be kept from being monotonous. And so long as we have rats that die and go to Heaven and return as bats, and so long as bull snakes suckle cows and cause calves to die of starvation, we will continue to have an inspiring world around us. Believe it or not!

Most Fish Hooks Imported

FISHHOOKS were made in several countries before the war, but the majority of the fly hooks sold in this country came from Norway and England. There is no standard terminology by means of which all hooks can be described to indicate length of shank, width of bend, length of barb, and type of point. Although the same numbering system may be used, nearly all foreign manufacturers have variations in their lengths of shank, shape and quality of hook. There have been many attempts to standardize the length of shank, width of bend, diameter of wire, and other features, but there have been few concrete results. During the last few years, however, there has been some success in getting established in this country a standard for fly hooks. This was proposed by the National Association of Angling and Casting Clubs. The association proposed that fly-hook size be governed by length of shank, exclusive of the eye; that the gap between the point and shank be one-half the length of the straight shank; that the diameter of the eye be the same as the diameter of the wire, and that the standards be applicable to every bend and style of hook.

Tiny one-celled animals may digest food throughout their entire bodies.

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Recipes That Please the Most Critical

QUAIL

In case those quail you brought home last season have been lost in your deep freeze, dig them out for here is an idea on how to cook them that will please the most critical.

Allow the bird to thaw—completely. Salt them and brown in butter or bacon grease. An old-fashioned dutch oven is best but a heavy aluminum pot will do. After the birds are brown, add about one inch of water and two bay leaves. Cover and cook very slowly. The secret to success of this recipe is to cook the birds slowly and add only small quantities of water at a time. Just before you are ready to take them off the stove, add one cup of sour cream and—presto! you have a creamy, spicy gravy fit for a king, not to mention a prize Texas game bird so tender it will melt in your mouth. Perhaps it will take you a little longer to prepare, but good things are worth waiting for!

VENISON

Are you one of those skeptics who says venison is all right, but . . . ? If you are, here is a suggestion from one who knows better. Select a roast, any size or cut to suit your needs, and allow to drain for thirty minutes. Brown the roast in a heavy roaster.

To a three pound roast add one cup of water more or less, depending on the size of the roast. Two or three bay leaves will make a delicious dish even better.

Cover the roast and cook very slowly. Instead of adding plain water, add one-half American red wine and half water. Never add more than one cup of liquid at a time. Remember, you do not want to boil it—roast it!

Try this one and your venison won't go begging.

Male ants live but a short time in the adult state. The workers exist only a few months. The average life of a queen is not more than 12 months although some queen ants have been known to live six or seven years.

A mole can move an object thirty-two times its own weight.

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GUN DOG PSYCHOLOGY

• Continued from Page 21

can judge them only through their behavior.

Like Paul, many dog owners have the notion that hunting is instinctive for sporting dogs. By "instinctive" they mean that their hounds and pointers are compelled to hunt, that it is a natural inborn urge. Yet recent studies indicate that it is no more instinctive for dogs to hunt than it is for them to jump through hoops. If we raise our setters with game birds, they will become conditioned to them. Such conditioning could not have taken place if hunting was instinctive.

Similarly, a beagle pup, raised in a controlled environment and not given the opportunity to develop hunting traits, will not come by them naturally. Chances are good that he will learn to run rabbits if permitted to observe other hounds. But unless the opportunity to learn and imitate is present, he will not hunt through instinct, heredity, or internal compulsions.

There are many popular misconceptions concerning the instincts. When a dog circles several times before lying down, we say it is an instinct. In the dawn of dog history, wild canines circled to trample down grass. Therefore, through the magic process of heredity, our dogs continue to circle before lying down. Yet pups will never circle before lying down unless they see other dogs circling. And that makes it learned behavior, not an instinct.

We also say that migratory traits in birds are instinctive. But scientific studies have conclusively demonstrated that migratory traits in birds are responses to certain external conditions. Instinct is an internal compulsion.

Concerning pointers and pointing, all evidence tends to show that pointing is strictly a learned skill. All dogs point. That is, all dogs have a tendency to become rigid and look at objects. This inclination is possibly a holdover from puppyhood when, due to poor vision, it was necessary for the dog to stare intently at objects to determine what they were. The same is true of noises. When the pup heard a strange sound, he froze, ears erect, body rigid, assuming all the characteristics of a point.

Pointing in bird dogs is merely a strengthening and a directing of freezing tendencies through imitation and reward training. When a pointer pup sees a trained dog pointing game, sees that the action is rewarded, he becomes conditioned to act in the same manner. If his trainer pats his head, the dog quickly comes to know that pointing is the correct response for certain smells and conditions.

Later the dog is taught to differentiate between various scents and conditions. If he points a rabbit or a field mouse, the reward is withheld. Gradually the stimulating conditions of pointing are narrowed until the dog learns which scents to point and which to ignore. As the dog matures and lessons are continued, performance improves. Higher order conditioning follows—the scent of birds is associated with the sight of birds; our dogs come to know, through trial and error, the pheasants will run and quail will set; they learn to a limited degree what the gun signifies, how to handle cripples, and to enjoy this exciting sport.

That pointing is so learned makes it clearly an acquired trait, not an instinct. Moreover, the fact that a bitch is a good pointer will not necessarily make her pups good pointers. Unquestionably the pups will have a better chance of making the grade—better, say, than the pups of a poorly hunting bitch. But the former pups will have the advantage of watching their well-trained mother perform, and will inherit, to some extent, the intelligence and learning capacity which enabled the mother to learn pointing so well. Her pointing skill will not be passed on through birth, however. The pups will not point game unless given the opportunity to learn and imitate.

Another fallacy held by many hunters concerns the "instinct" of dogs to retrieve game. Most trainers, I believe, will agree that retrieving is anything but instinctive. It must be carefully developed. The dog learns that he will be rewarded if he picks up thrown objects and returns them to his trainer. Finally this basic skill is narrowed into the more precise function—that of picking up and retrieving game.

Through every phase of gun-dog training, these concepts are the same. First the general principles are strengthened and directed, then narrowed into the desired response.

The best approach to the training of hunting dogs involves asking yourself: "Why does my dog do the things he does?" For by understanding the basic motives underlying behavior, the trainer can more readily and more effectively channel that behavior into precise, highly skilled functions. Performance of hunting dogs can be first-rate only if training is first-rate. Intelligence, learning capacity, build, color, steadiness—these can be improved and maintained through careful breeding. Mother Nature's contributions are many; but she cannot make a hunter of your dog.

Instinct notwithstanding—your dog can only be as good as you make him.

—Pennsylvania Game News.

Pollution Bill Merits Support

A bill (H. R. 5089) introduced in the House of Representatives last June by Congressman Byrnes of Wisconsin, merits support by all who are interested in seeing the streams and rivers of America restored as recreational assets.

Now awaiting action in the House Committee on Ways and Means, this bill has as its stated purpose encouraging "the prevention of water pollution by allowing amounts paid for industrial waste treatment works to be amortized at an accelerated rate for income-tax purposes." The terms of the bill thus give owners of industrial plants a financial incentive for installing costly treatment systems. While many industries are able to salvage raw materials and by-products from properly installed purification plants and thus defray a part of the operational cost, the initial installation expenses often are prohibitively high. With many others, there is little or no financial return and the expense of treatment-system installation and maintenance must be derived entirely from company profits. For small firms operating on a narrow margin of profit, effective pollution-control installations would be impossible under present conditions. Necessary financial considerations of lawmakers for constituents have been a serious factor in blocking workable anti-pollution legislation. By giving firms a helping hand, this bill, if passed, would do much to stimulate pollution abatement on a voluntary basis. Amortization deductions provided for in the bill, which would be an amendment of the Water Pollution Control Act of 1948, are based on a period of 60 months, beginning at the election of the taxpayer one month after treatment works are completed or acquired.

The importance of this bill goes further than improving recreational facilities. Pollution is a menace to health and property values and directly affects, in one way or another, every person in the nation, regardless of his interest or financial standing. It is time that steps were taken to end these abuses to one of our basic natural resources. This bill will go far toward helping the cause.

Sportsmen, property owners, and civic leaders should make their views on this bill known to their congressman. It is an urgently needed piece of legislation which will do much toward improving the future health and happiness of American citizens.

The Lamprey —

• Continued from Page 15

sexual maturity, and finally their adult stage. Lampreys can live for several years but as soon as they spawn once, they die.

The non-parasitic forms are of no particular harm, but the parasitic forms can do tremendous damage as was pointed out about the sea lamprey. The illustration shows that the mouth is fashioned like a suction cup, the insides of which are armed with rows upon rows of sharp teeth. Parasitic lampreys fasten onto a host fish with their suckorial mouth and then with their teeth rasp through the scales or skin and muscles of their host, eating the muscle tissue and drinking its blood. The host fishes do not always die, but if they don't, they are left in a bad shape. Fortunately, the lampreys mainly attack the sucker fishes, such as carp and buffalo, more than they do other fishes but no particular species is immune from their depredation. Thus far, there is no feasible way known to fight them. In the Great Lake region, dams are being constructed to stop their spread.

If any of you anglers should catch a fish with a lamprey attached, it would be appreciated by the writer if you would send the specimen to the Game, Fish and Oyster Commission, telling where it was caught and what the host fish was so we can derive a better picture of their distribution. Specimens can best be sent in by wrapping the specimen in cheesecloth, which should be thoroughly saturated with alcohol and packed in a small lard or syrup can.

Forbes and Richardson in their *Fishes of Illinois* state that the lamprey is used by man for food and bait. Most lampreys in this country are pickled and put in tins. They further state that pickled lampreys are said to be of very fine flavor.

Annual Wildlife Week Announced

America's 13th annual National Wildlife Restoration Week, originally established by Presidential proclamation in 1938, will be observed this year during the week of March 19-25, under the sponsorship of the National Wildlife Federation, according to the Wildlife Management Institute.

Wildlife Week aims to focus the attention of 150 million Americans upon the importance of wildlife Conservation to their every-day life and the debt which they owe coming generations to help perpetuate our natural resources for future welfare and prosperity. State, county and local group meetings throughout the nation will direct public discussions of wildlife conservation through prudent management of America's natural resources, including water, soil, trees and all other plants as well as animal life. Conservation-minded and public-spirited organizations participating will include sportsmen's associations, garden and nature clubs, and other adult and school groups.

The distribution of Wildlife Conservation Stamps during the Week and at other times is part of the Federation's education program. Proceeds from their sale are the organization's main source of income to carry on its wildlife programs.

MORE FISHERMEN IN 1949

The popularity of fresh water fishing throughout the United States continued its upward spiral last year. Sales of anglers' licenses climbed to a new high record of 15,478,570 in the United States.

Most of the early spring-song of birds is by way of announcing their claims on certain nesting areas.

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In Adam's Footsteps

In the days when the American Indian was running this country, he was directly dependent on the wild animals of the forest, the fishes of the streams and wild fruits for daily supply of food. His cultivated crop failures were not his principal source of worry. It is said that one tribe of American Indians considered it foolish to plant corn where the Mormon crickets would devastate this crop; they, being practical people, ate the crickets instead. An abundant wildlife population kept these scattered bands of people sustained.

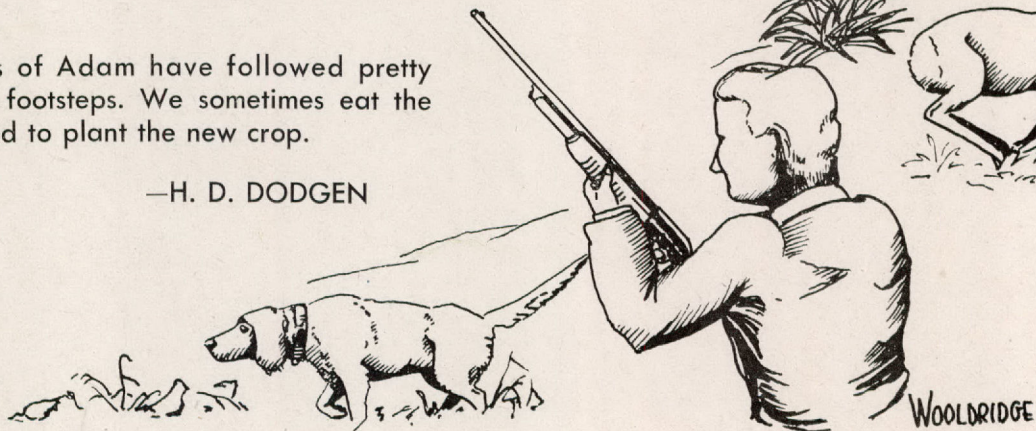
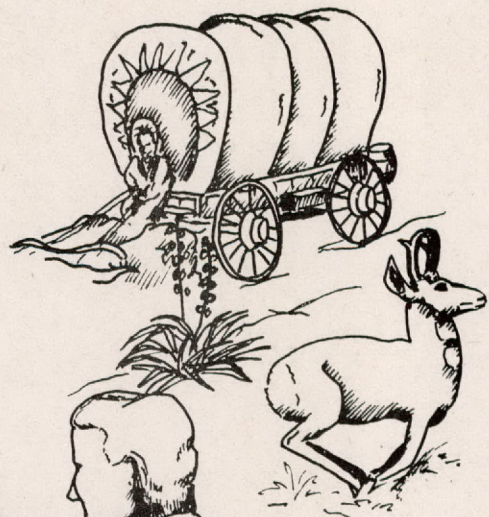
The early American settler followed somewhat the same primitive dependence on nature. His successful effort to establish his politically free and independent existence and a higher standard of living was accomplished through drawing on the available deposit of natural resources. Heavy checking on this deposit brought us to the necessity of being more conservative with the remainder of our replenishable wildlife resources. With ever-increasing numbers, sportsmen go afield in pursuit of a bag of quail or a string of fish. Smaller withdrawals or larger deposits are necessary to prevent overdrawing the wildlife account.

With the gaining of our independence and the adoption of our Constitution, there was laid the cornerstone of a new economic and social system based upon free enterprise and individual initiative. With individual freedom goes individual responsibility, and such responsibility must be applied to the needs of wildlife conservation.

Each hunter and fisherman may contribute his share by placing his hand to the job of supplying food and cover suitable to some needy wildlife family, by regulating himself to the habit of taking on that which can be safely spared, even though this may be less than the amount allowed by law.

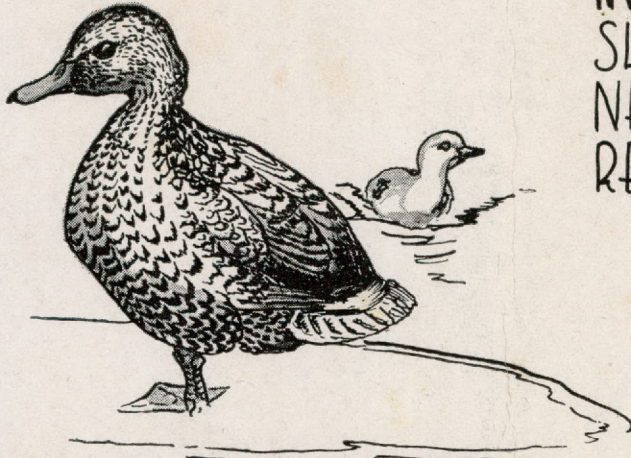
The sons of Adam have followed pretty well in his footsteps. We sometimes eat the seed needed to plant the new crop.

—H. D. DODGEN



CONSERVATION AT WORK

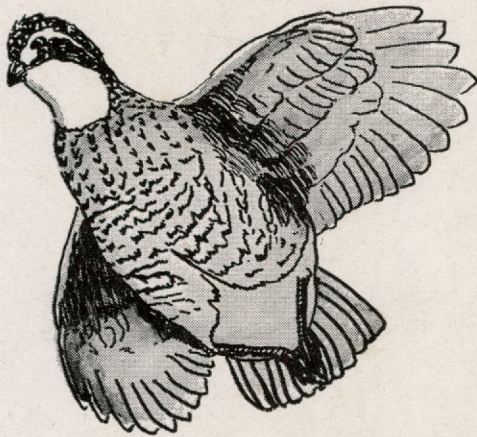
TEXAS
GAME FISH & OYSTER
COMMISSION



WOODED FARM PONDS AND
SLOUGHS PROVIDE NATIVE
NESTING DUCKS WITH
REFUGE AND FOOD



DEER CAN'T COMPETE
WITH OVERGRAZING
GOATS AND SHEEP



GIVE QUAIL A LITTLE
HELP AND THEY WILL
GIVE YOU THE BEST
OF HUNTING

