

Texas
Game and Fish

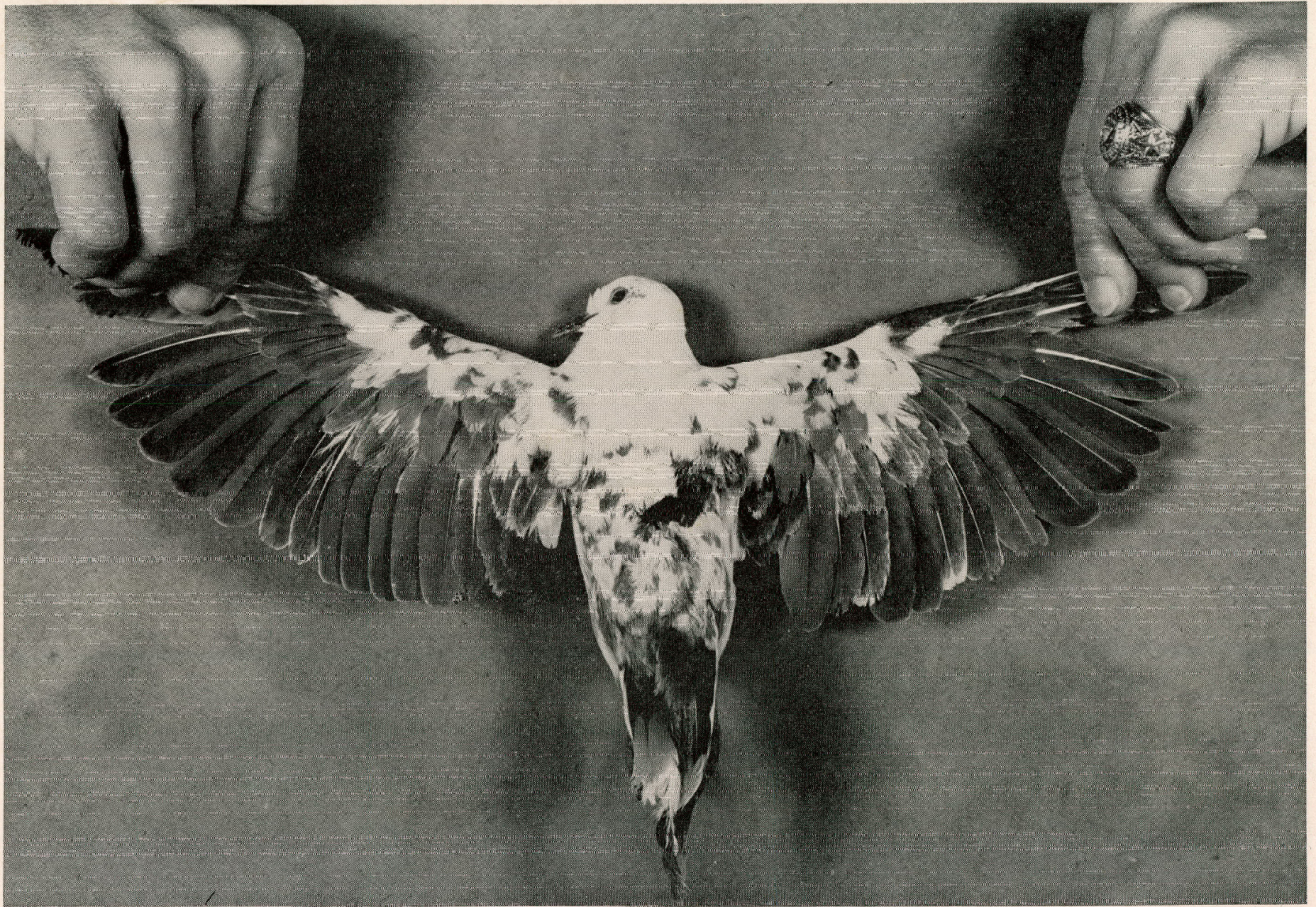
JANUARY

1956

TEN CENTS



BECKENDORF



This freak mourning dove didn't know what color to be. It turned out a mixture of its normal color and white and was mottled in appearance. The bird was killed in Goliad County by J. H. Hammack of Victoria.

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.

January, 1956

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In This Issue



★
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The Cover

On the poisonous coral snake, featured on this month's cover, the red and yellow bands touch each other, while on the harmless species which resemble the coral snake red and yellow bands are separated by black. An easy way to remember the color combinations—"Red and yellow, kill a fellow; red and black, venom lack." The painting is by Charles Beckendorf.

Letters to . . .

Big Sardine

Editor:

I am writing a report of a seven pound channel catfish caught in a most unusual manner by my girl friend, Shirley Ann Fuchs of Carmine, Texas. This incident happened last summer when Shirley Ann and her mother, Mrs. Otto L. Fuchs, went fishing on their large farm pond, armed with cane poles, hook, line, sinker and a can of earthworms. Shirley landed a three pound catfish, and with her morale so high she kept fishing to try her luck.

Casting in the general direction of "something" bobbing in the water, she hooked "something" she couldn't land. Her brother waded out in the water and lifted out a seven-pound channel catfish with its head caught in a half-gallon molasses bucket. The inside rim of the bucket prevented the fish from pulling its head out of the container. How long the fish, with its fins caught inside, had been there is not known. Her daddy had to cut the rim of the bucket in several places to liberate the fish.

Johnnie D. Mueller
Rout 2, Box 210
Burton, Texas

Rate Change

Editor:

At \$2 per year, Texas Game and Fish Magazine is still a real bargain.

Val Maspero, Jr.
Jourdanton, Texas

ARE YOU CHANGING YOUR ADDRESS?

Then please fill out the following form and send to TEXAS GAME AND FISH, Walton Bldg., Austin, Texas, so that you will continue to receive your copies of the magazine. The magazine is sent second-class mail and cannot be forwarded by the post office nor remailed from this office. Allow six weeks for processing.

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Editor:

. . . I never could see how you published TEXAS GAME AND FISH Magazine for the old price—or for the new rate, either!

Mrs. E. B. Kinsey
Box 145
Burnet, Texas

(The above letters express in a few simple words the reaction of most folks to our recent rate change. And we are humbly grateful for such loyalty and understanding on the part of our readers.—Ed.)

More Quail!

Editor:

A map in the December issue showed the population status of quail in individual counties of Texas compared to last year. Cameron County was shown as the only county with fewer quail this year than last. I believe this is in error.

I have been stationed as warden in this county for the past three years, and we have more quail this year than in any of the previous years. Many folks in Cameron County subscribe to TEXAS GAME AND FISH, and they keep asking me why I sent in a report saying we have fewer quail.

R. E. Middleton
Game Warden
Box 1550
Brownsville, Texas

(To get Warden Middleton off the hook with his home folks, he was not the one who sent in the report.

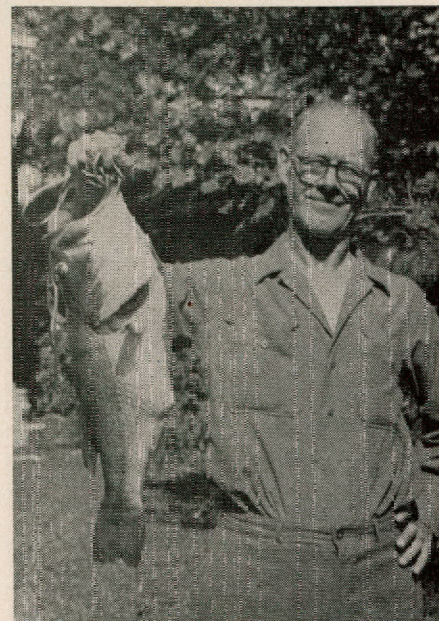
(The quail population map was compiled from reports by wardens and wildlife technicians of the Game and Fish Commission, but not all wardens nor all technicians were requested to make a report. Three persons were selected for each region of Texas. In many cases all three agreed on the quail population in each of the counties for which they reported. When opinions varied, an average was used.

(Three persons were asked to report on the region which included Cameron County. All three sent in regional reports, but, unfortunately, only one of the three reported on Cameron County. He reported fewer quail there this year than last.—Ed.)

Ace Fisherman

Editor:

I fished recently in a lake near Marshall and caught a number of bass.



Oddly enough, the catch contained two four-inch fish—one four inches long (which I released) and the other four inches between the eyes (which I kept!).

I am enclosing a photo of the big one. I didn't have a chance to weigh him until he had been dead for some time and his skin was dry. At that time, he scaled seven pounds, two ounces.

He showed a stubborn reluctance to changing environment before I finally got him on my stringer. The lure was an L and S Bassmaster, the rod a six-foot Heddon Superlative, the reel a Shakespeare Sportcast, and the line nine-pound Gladding.

Elmer Sohn
Top Cleaners
Marshall, Texas

(Sohn has a reputation for fooling the big ones with amazing consistency. When the accompanying letter and photo was received, the editor wrote to ask Sohn how he managed to catch so many lunkers. In reply, he attributed much of his success to "being able to cast a plug accurately to spots where the big one might be" and he says he mastered his accuracy through tournament casting at targets. Another example that practice pays off in any sport!

(Sohn wrote that this particular big bass was "lying between two button willows with only about a foot of water between them. I got the plug in there, and he hit it."

(Readers may remember that Sohn was pictured in TEXAS GAME AND

. . . the Editor

FISH several years ago as president of the Marshall Anglers Club, an organization of tournament casters. At that time he was holding another lunker bass. And anything over six pounds is a real giant in deep East Texas, where bass seldom reach the sizes found in other parts of the state. Sohn also is an official of the thriving East Texas Wildlife Association.—Ed.)

Unsigned Letters

(It is the policy of newspapers and magazines everywhere never to publish a letter which is unsigned by the sender. TEXAS GAME AND FISH must necessarily follow this policy, also. So please do not send unsigned letters and ask that they be published. The Editor will gladly omit the name of the writer when a letter is printed in the magazine if the writer requests, but all published letters must be signed when received by the magazine in their original form.

(This notice is prompted in part by a letter received recently, which presented information of importance to the Commission. However, it was impossible to obtain additional information on the subject because the writer failed to sign his or her name. Thus, the writer, who intended to be helpful thwarted his or her efforts to a great extent.—Ed.)

Whooper Inspiration

Editor:

. . . The return of the whooping cranes to Texas for the winter has had a great effect on the interest in the current wildlife project of my class of school children.

The whoopers caught the fancy of the children's parents, and now some of my pupils tell me their parents are a big help in finding additional information, news clippings, etc., for the wild-life project.

And my thanks to you for the material and help from the Commission.

Mr. J. K. Stuckey
3112 Marshall
Vernon, Texas

(For those who haven't heard, press-count on the world's remaining whooping cranes at Aransas National Wildlife Refuge on the Texas coast was 28, an increase of seven over last year. Eight young whoopers returned from the summer nesting grounds this year—one adult failed to return.—Ed.)

Announcing

NEW RATES

for

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Despite rapidly rising production costs during the past 10 years, *Texas Game and Fish* subscribers have continued to receive the magazine each month for only \$1 per year. That's less than 10 cents per copy and only about one-half the total production cost. To enable *Texas Game and Fish* to pay its own way WITHOUT lowering its present quality, it is necessary that rates be increased.

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A new ship channel and fish pass for the Texas coast at

Port Mansfield

A new waterway connecting lower Laguna Madre with the Gulf will be born and special consideration will be given fish and fishing at this new port.

By TOWNSEND MILLER, Editor

TEXAS will see a new port created on its southerly Gulf coastline during 1956. Located in Willacy County at Port Mansfield, about 25 miles east of Raymondville, it will serve commercial and sport fishermen, ranching and farming, shrimping, and various industries of South Texas.

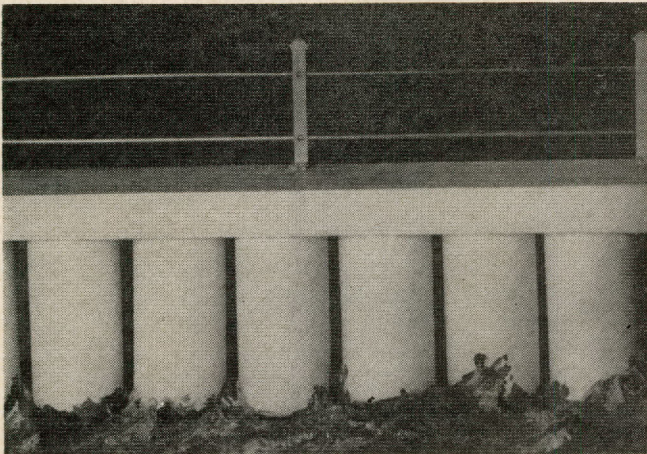
Most important to fishermen, the proposed jettied channel for the port will slice through Padre Island, giving fish a much-needed passage between the Gulf and fish-rich Laguna Madre's long slender bay area. In fact, it will provide Laguna Madre with the only opening through the island into the Gulf between Port Aransas over 100 miles to the north and Port Isabel 38 miles to the south.

The new ship channel at Port Mansfield will be only the sixth jettied, major channel on the entire Texas Coast. The other five are at Port Isabel (leading to Brownsville), Port Aransas (to Corpus Christi), Freeport-Velasco, Galveston-Houston, and Sabine (to Beaumont-Port Arthur).

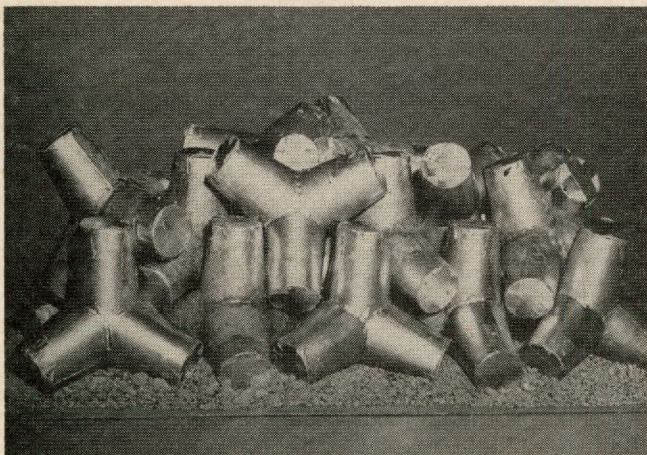
The channel will be about nine miles long, running due east from Port Mansfield across Laguna Madre and the Intracoastal Canal, through Padre Island, and on into the Gulf. The jetties will extend from the Island into the Gulf 2300 feet on the north side and 2000 feet on the south, with 1000 feet between them. The proposed channel will be 18 feet deep with a bottom width of 100 feet and will require removal of some six and one-half million cubic yards of sand and clay.

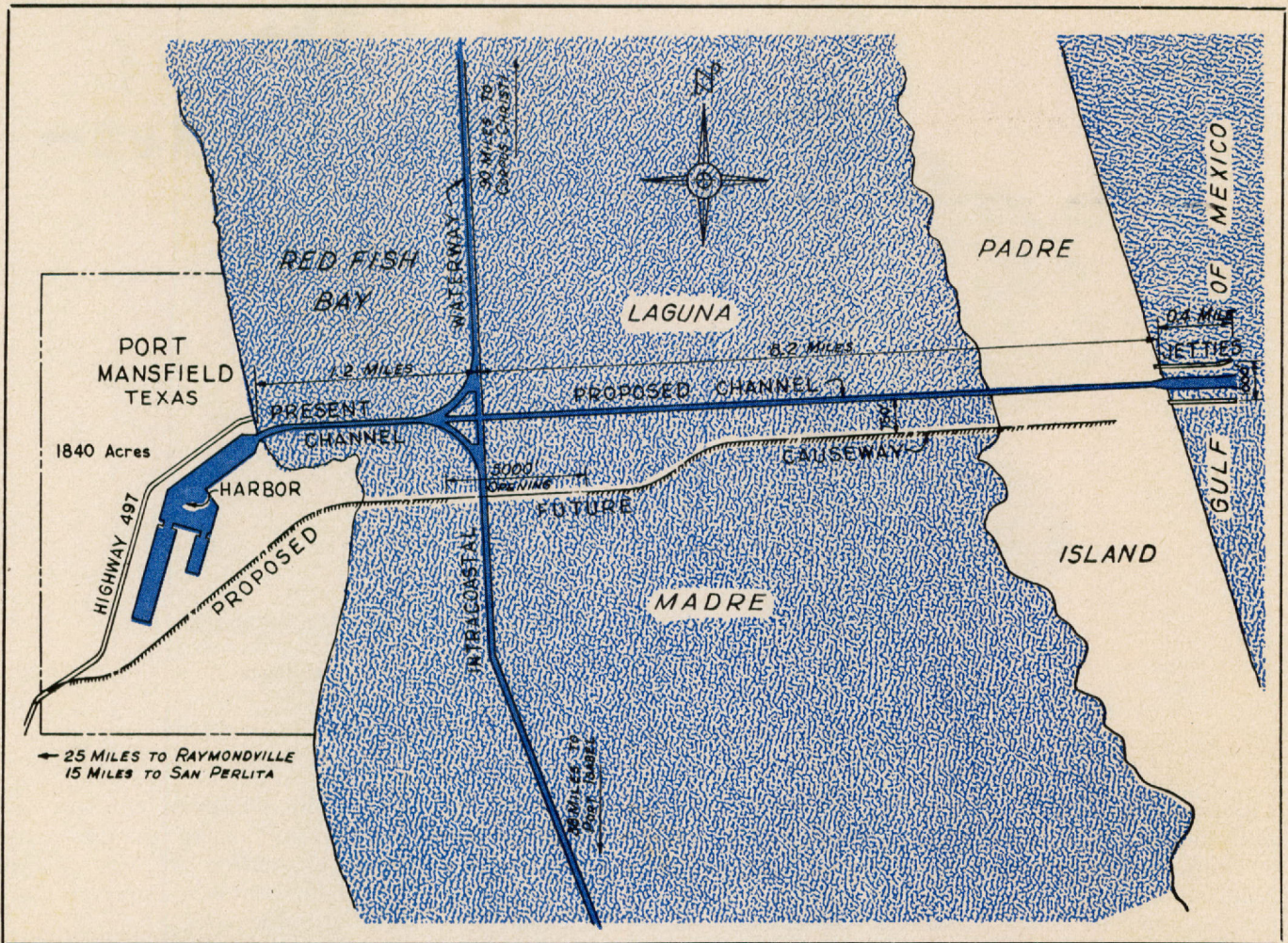
The extensive port facilities include a basin and docks 2100 feet long and 350 feet wide for commercial fishing and shrimping boats, a basin 800 feet by 250 feet with 77 stalls for small craft, and a 1000-foot turning basin, along with other facilities.

Estimated total cost of the channel, jetties, and port is over \$2,500,000. County bonds for this amount have been approved by the citizens of Willacy County, and contracts were slated to be let early this month.



Revolutionary jetties, unique to Texas, will permit small fish easy passage through them instead of forcing fish into deeper water around the jetties' ends. Photos show models of two types under consideration. One consists of huge concrete pillars with spaces between (above); the other is made up of 15-ton concrete tetrapods (below).





The nine-mile ship channel for Port Mansfield's new harbor will cross Laguna Madre and the Intracoastal Waterway, cut through Padre Island, and extend over 2000 feet into the Gulf between jetties. Harbor facilities include turning basin, a shrimp basin

with docks for large craft, and a smaller basin with stalls for small craft. Future plans call for a causeway connecting Port Mansfield with Padre Island.

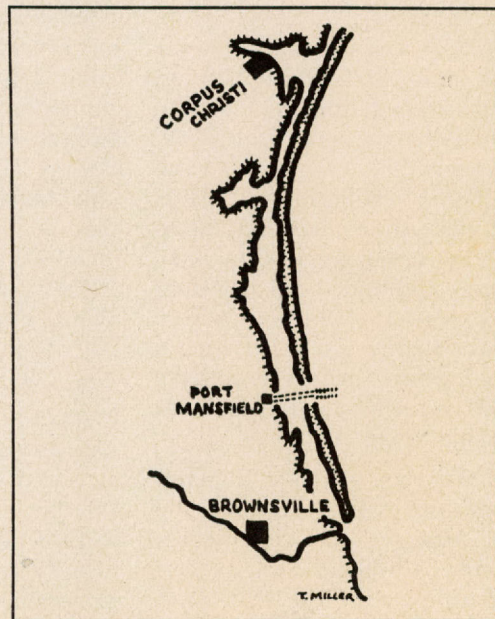
The Willacy County Navigation District, under which the project will be constructed and administered, owns approximately 1760 acres at the port. This will be leased to port users for up to 30 years. Lots and streets, which will be paved, have been laid out, and a complete water system will be installed.

In addition, the State Highway Department has already let a contract for extension of the present highway one mile along the beach, and an adjoining area of 2500 feet along the waterfront has been set aside for public recreational use.

It is hoped that in the future a proposed highway will be constructed running south from Port Mansfield down the beach of Padre Island. The highway would extend to the existing causeway at Port Isabel, which connects Padre Island's southern tip with the mainland. Access to the northern end of the highway at Port Mansfield would be across a proposed causeway there.

Material removed when dredging the new ship channel will be piled south of the channel to form a fill for this proposed new causeway. Plans call for a gap

The Port Mansfield channel will provide the only passage for fish from the Gulf into Laguna Madre's bay areas for almost 150 miles. Nearest pass to the north is at Port Aransas, above Corpus Christi, and the nearest to the south is at Port Isabel around the southern end of Padre Island.



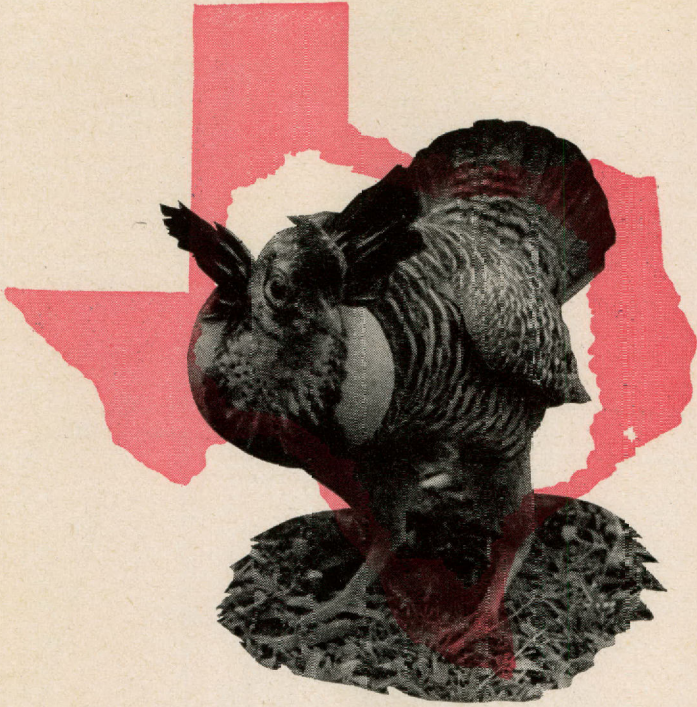
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The Prairie Chicken—

WHERE NEXT?

By V. H. LEHMANN

King Ranch



The prairie chicken, with his vocal booming and courtship dance, is a colorful part of Texas, and he is fast disappearing. "Where next?" depends largely upon habitat preservation.

A prominent public official recently described narcotics addiction as "death on the installment plan." Death on the installment plan also describes the state of the Attwater's prairie chicken.

Attwater's prairie chicken, close relative of the already extinct heath hen of the Northeast (both are *Tympanuchus cupido*), is a native of tall grass prairie near the Gulf of Mexico in Texas and Louisiana (Lehmann, 1941a). Merrill (1879) reported a prairie chicken, probably the Attwater's chicken, as far south as near Brownsville, Texas. The northeastern limit of distribution was southwestern Louisiana, near Abbeyville, Opelousas, and Bayou Teche (Oberholser, 1938). Even in early times, however, heaviest and most stable populations were in Texas and northern Arkansas County to western Jefferson County. That was roughly six million acres of upland prairie which may have supported as many as a million birds in favorable years.

The heath hen of New England became extinct in 1932. By 1937 the status of Attwater's prairie chicken, heath hen of the South, was precarious. Completion of the first (and

the last) intensive survey by the Texas Cooperative Wildlife Research Unit, Dr. Walter P. Taylor, Leader, showed a remaining range of about 450,000 acres and a total population of approximately 8,700 (Lehmann, 1939 and 1941a). Although range and population decline were probably over 90 per cent, respectable colonies were available for restoration effort. A closed season was invoked by the Texas Legislature. Nothing else was done.

In 1937 the Attwater's prairie chicken was already extinct in Louisiana; John Blanchard, Chief, Education and Publicity, Wildlife and Fisheries Commission, quotes Dr. George H. Lowery, Director, Louisiana State University, as authority that it was last seen near Vinton in 1919 (Blanchard, pers. comm., 1955). Texas had seven major and about nine minor colonies (Prev. cit., 1941a).

The most easternly colony was in Chambers, western Jefferson, and southeastern Liberty Counties; it consisted of about 92,000 acres and 450 birds. According to Dan Lay, Wildlife Biologist, Texas Game and Fish Commission, and U. S. Game Management Agents G. Christopher

and Frank Clarkson, chickens became extinct there in the early 1940's. Expanding rice farming and oil development were important decimating influences.

A second large colony of the late 1930's was in eastern Brazoria and western Galveston counties. Approximately 1280 chickens inhabited about 54,000 acres. Frank Mebane, Warden Supervisor, Texas Game and Fish Commission, reports that all of the best prairie habitat is now in rice; not more than fifty prairie chickens remain.

Area-wise, the largest chicken colony of 1937 (over 100,000 acres) was in northeastern Fort Bend, western Harris, and eastern Waller counties. Possibly because of appreciable hunting pressure, it contained about 335 birds. Although legal hunting ended, rice fields advanced. Clarkson estimates the present chicken populations at fifty. A consensus places present numbers at 250.

The Rock Island-Garwood Prairie of western Colorado County, its prairie chickens enjoying the special interest and attention of veteran State Warden T. T. Waddell, had about 500 birds in 1937. Waddell reports that some 200 chickens remain;

they have been pushed by rice plows to the outskirts of the town of Rock Island. For all practical purposes this is a third colony lost.

Nineteen years ago, some 65,500 acres of scrub oak prairie in northern Victoria and southeastern DeWitt counties supported an estimated 892 chickens. Grass cover and perhaps food were premium in recent drought; State Wardens Charles Edmonson and W. B. Henry place present numbers at 300.

Heavy chicken populations of the 1930's were in the Bernard River country of Colorado and Austin counties (800) and in northern Aransas and eastern Refugio counties (4,242). Waddell believes that the Bernard River colony still contains 500 to 600 chickens despite additional inroads by rice farming. Richard B. Davis, Wildlife Biologist, Copano Foundation, and W. T. Harris, State Game Warden, report that the Refugio-Aransas colony consists of about 2,000. Drought is held important in recent decline. Numerous dead chickens were found by range riders in Refugio County during the dry and cold winter of 1950-51. That same winter, thousands of bobwhites and chestnut-bellied scaled quail are known to have died of nutritional deficiencies in territory to the southwest (Lehmann, 1953). Fortunately for the prairie chicken, there had been insufficient water for rice farming in Refugio County. A pasture of 5,000 acres which had a chicken density of one per five acres in 1937 (highest density in Texas) was, however, plowed and planted to grain in 1955.

Texas also had what might be termed "minor" colonies of chickens in 1937; *i.e.*, isolated groups of 100 individuals or less located in southwestern Liberty, southeastern Harris, northwestern Galveston, north-central Wharton, southwestern Matagorda, southwestern Jackson, southwestern Lavaca, southwestern Goliad, central Victoria, and northern Calhoun counties. At the time it was thought that such minor colonies were reduced beyond the point of probable recovery (Prev. cit., 1941a). They evidently were. Six of the nine groups are now gone; the remaining three contain a probable total of less than 150 birds.

The present status of the Attwater's prairie chicken, therefore, is far from encouraging. Once occurring in two states, Texas and Louisiana, it now occurs only in Texas. While Attwater's chickens were once common to abundant in twenty-one Texas counties, they now are known to occur in parts of only eleven. One of the major colonies has been entirely eliminated since 1937. Two others are no longer major colonies. Six of nine minor colonies are gone. Over-all decline since the late 1930's has been from about 8,700 to about 3,550 birds.

Tall grass prairie is essential for prairie chicken welfare. Man will not have done the maximum to insure the survival of the Attwater's prairie chicken until combination research-management areas, each at least 5,000 acres in size, are administered primarily for prairie chickens in more than a single locality. More than a single area is held important for protection against the sometimes catastrophic effects of flood, hail, and drought.

At the present time, all of the best occupied prairie chicken range is privately owned; little has been available for purchase by conservation agencies since World War II. Recent non-availability of land for public purchases, however, has not been valid reason for the lack of public management effort.

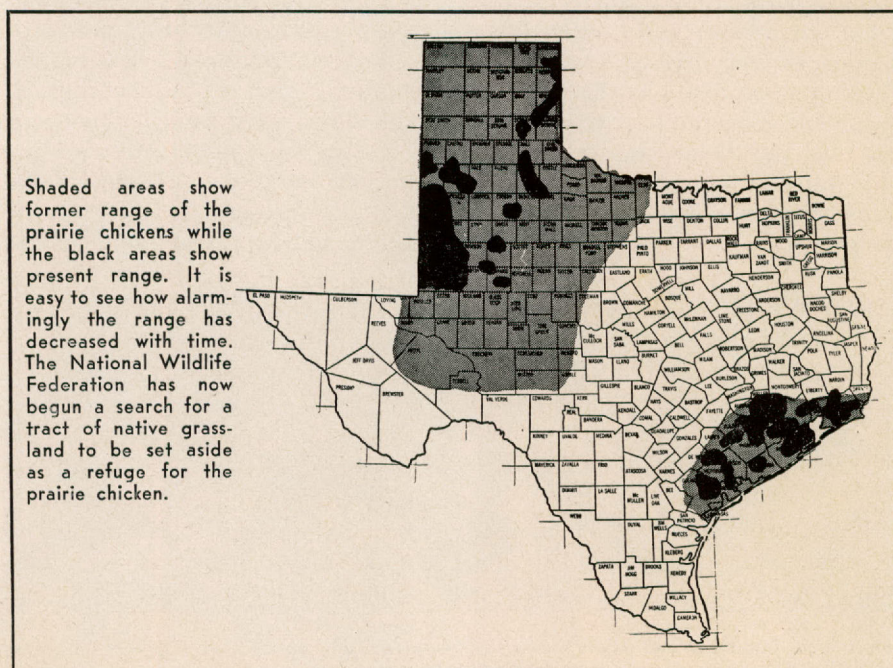
Despite the serious inroads of agriculture, there remains a greater shortage of prairie chickens than of prairie range. Most grassland admittedly does not now have cover adequate for maximum chicken populations. Much would have a capacity for higher-than-present populations, however, if management techniques, such as the regulation of fire to improve nesting cover, modification of livestock waterings for dependable drinking water, supplementary feeding in emergency periods, etc., were wisely employed. They hardly will be until competent on-the-ground technical service is provided to landowners. That is the primary obligation of the Texas Game and Fish Commission.

Worthy of immediate attention are the isolated bands of chickens now existing largely, if not entirely, on fallow rice land in several places. Everything indicates that they are doomed in present locations. They might live and multiply if trapped and transplanted to more hospitable places.

Fifteen years have passed since it was written:

The booms of the Attwater prairie chicken, drums of the prairie, are becoming . . . faint—drums of the dying they seem to be. Drums of the dying they are, unless man acts quickly and

● Continued on page 26



B A T S

By DR. R. B. EADS
Texas State Department of Health

Rabies is a major public health problem in Texas due to its prevalence in dogs as well as such wild animals as foxes and skunks and the possibility of their transmitting the infection to human beings. Additionally, severe losses of livestock from rabies are experienced annually, especially in East Texas. To attack the rabies problem the Texas Pasteur Institute was created in 1904; in 1928 the Institute was absorbed by the Bureau of Laboratories, Texas State Department of Health. Treatments were given in Austin to patients exposed to rabies in the entire state until 1934 when methods of preparation were improved to the point that the treatments could be shipped throughout the state.

The recovery of rabies virus from insect-eating bats in Florida focused attention on these animals as possible reservoirs and transmitting agents of this disease. Studies of Texas bats initiated by the State Department of Health have demonstrated that the disease is prevalent in our multimillion population of the Mexican free-tailed bat, *Tadarida mexicana*.

During the two years that the investigation has been in progress some 2,000 bats have been tested in our laboratory. Represented in the total have been ten of the some 25 species reported from Texas. A majority have been the Mexican free-tailed bat and the small brown bat, *Myotis velifer*, due to their abundance. Rabies virus has been repeatedly recovered from Mexican free-tailed bat brains and salivary glands. The only other species found infected has been a single specimen of the "red bat," *Lasiurus borealis*.

The implications of these findings in insectivorous bats are not at all clear. The role played by vampire bats in maintaining and transmitting rabies in South America, Central America and Mexico has been known for half a century or more. The blood-sucking bats are affected by this viral disease in an unorthodox manner. All other mammals are believed to develop recognizable symptoms and die when infected with rabies, even though there may be a long incubation period. Vampire bats, however, may have a subclinical infection and develop immunity to the disease but remain

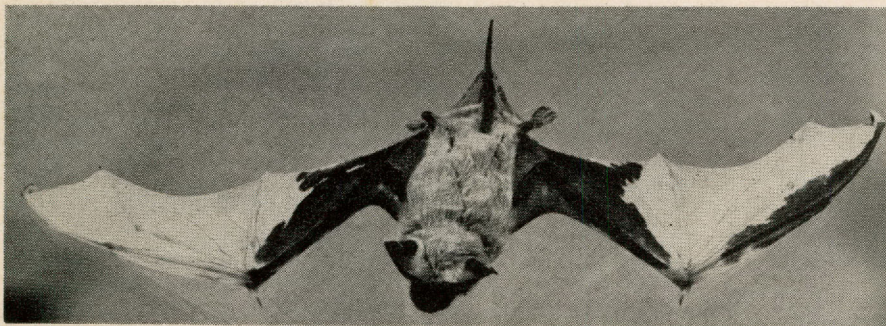
infectious to other animals, especially cattle. In other words, a carrier state may exist in vampire bats, a situation which has not been shown to exist in other animals.

Present evidence indicates that a similar situation may exist in our Mexican free-tailed bats. Studies have shown that some of these apparently healthy bats have protective antibodies against rabies in their blood. This may indicate either asymptomatic cases of rabies or recovery from the disease. The presence of the virus in the salivary glands of these apparently healthy bats indicates that they are at least potentially infectious to other animals.

It may well be that rabies in insectivorous bats is a dead end. Their teeth are sharp enough to transmit the disease to other bats, but methods by which they could infect wild carnivores such as raccoons or skunks appear limited. Destruction of the bats is certainly not advocated since they are tremendously beneficial in destroying insect pests.

However, these data are given as background information to explain the interest of public health personnel in insectivorous bats. The bat rabies survey has been statewide in scope but since our studies have indicated that the free-tailed bat is the chief species affected by the virus and that the greatest concentrations are in the limestone caverns of Central Texas, our most intensive investigations have been carried on in this area.

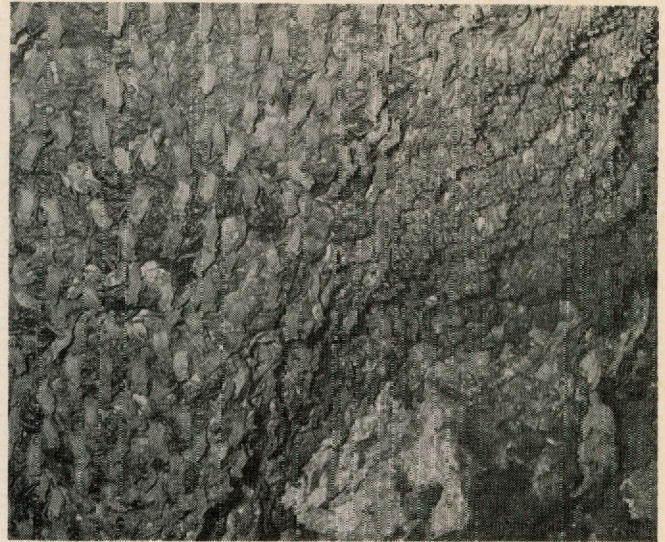
The masses of free-tailed bats in their daytime cave retreats constitute an amazing biological phenomenon without parallel—little known except



An unusual free-tailed bat taken during a state-wide study on bats as reservoirs of rabies virus. The bat is almost white, and is the first found with such an extensive white marking.



Entrance to Ney Cave, shown as bats are just beginning to emerge on their evening feeding flight.



Close-up of bats on the wall of Ney Cave in Medina County.

to a few biologists, cave explorers and residents in the immediate vicinity of one of the bat caves. We have made an effort to locate all of the free-tailed bat caves in Central Texas. Colonies in a total of eight caves have been studied, several of them intensively. Included are Ney Cave (Medina County), Bracken Cave (Comal County), Frio Cave (Uvalde County), Devil's Sinkhole (Edwards County), Davis Blowout Cave (Blanco County), James River Bat Cave (Mason County), Beaver Creek Cave (Burnet County), and Valdina Farms Sinkhole (Medina County).

Various authorities have estimated as many as 15-20 million bats in the larger colonies during the summer months and our observations are in

accord with these estimates. Some 75 million bats are present in the above caves during the peak population months of July and August.

These caves are not large in relation to such well-known tourist attractions as Carlsbad and Longhorn Caverns. For example, Bracken Cave near San Antonio is a single chamber about 1,000 feet long, 30-50 feet in height except toward the rear where a mountain of tumbled down rock reaches almost to the ceiling, and the width is at most about 100 feet.

These bat harborage have certain characteristics in common. They are located in secluded areas and have not been commercially developed as tourist attractions. The entrances are large, allowing a sizable column of

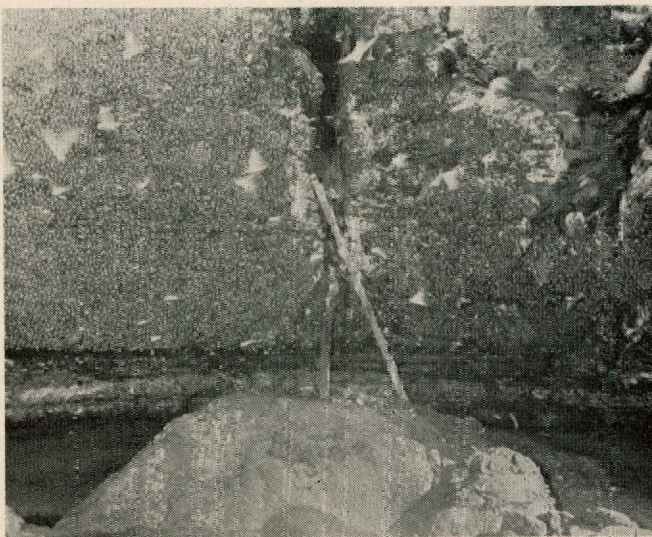
bats to enter or leave the caves. The entrance to Bracken Cave is approximately 40 feet wide and about 20 feet high. Also, the chambers are large and the ceilings are high. These caverns are relatively dry, or at least the chambers in which the *T. mexicana* congregate are dry.

There are a limited number of caves which are suitable for utilization by multimillion populations of free-tailed bats and as far as we have been able to ascertain they are all in Central Texas. Free-tailed bat colonies in West and South Texas are limited to small caves, abandoned mines or buildings and seldom number over a few thousand.

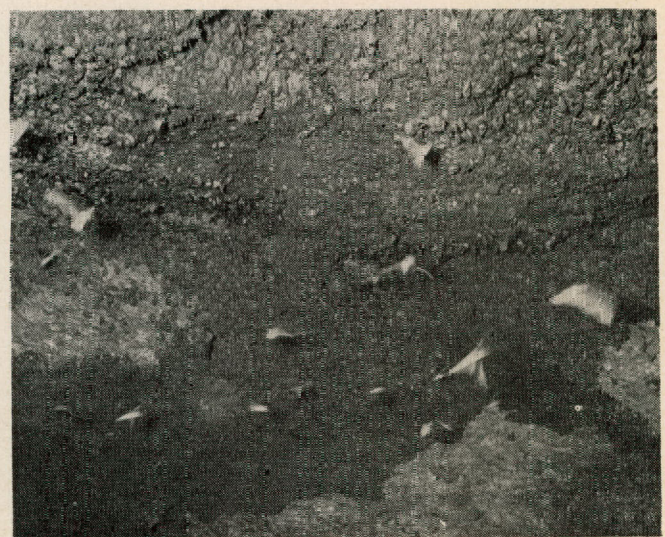
While there is a limited number of these large Central Texas caves, there are countless caves with small

• Continued on page 28

Solid mass of bats clinging to the walls of Ney Cave.



A portion of the millions of bats in Bracken Cave, Comal County.



Just how good were

'The Good Old Days'

of "free" deer hunting?

Reprinted from
the syndicated
outdoor news
column

By HART
STILWELL



Back in the early twenties, those "good old days" that some people moon about, Texas had four game wardens, and two of them were one-legged men.

Of course the state didn't deliberately pick one-legged men in order to give the hunter more than an even break in getting away from the law. But it seemed that way.

Furthermore, nobody liked those game wardens much. People resented interference with their "free" hunting.

The result? Well, you could have started out of Dallas and hunted your way to the blackbush-mesquite belt west of San Antonio without seeing a deer. Frank Cowsert, until recently in charge of law enforcement for the state game department, told me he lived for four years on a good-size ranch in the Kerrville country and never once saw a deer on the ranch.

About the only deer in the Hill Country, where they are now so numerous that shooting of does has been legalized, were on a few ranches the owners of which went to a lot of trouble and expense to protect deer—notably the Schreiner properties.

Deer had been cleaned out of the vast Big Thicket quite a while before that. In fact, deer were on the way out in Texas. There were quite a few in the mesquite belt of extreme south and southwest Texas, but that country was beginning to develop.

If things hadn't changed, deer would be gone now.

The change came in some new laws passed in the mid-twenties, and the two men who led the fight to get these laws passed were Gus Schreiner and the late Senator A. E.

Wood. Those laws permitted landowners to charge hunters for the privilege of hunting deer, and gave game wardens authority, among other things, to make arrests for trespass.

Deer compete with livestock for food. Unless the ranchman can get something out of his deer crop, he's likely to kill the deer off himself—that was routine in the old days, law or no law.

With the change in the law, the ranchman began realizing that he could make money off deer. Now he makes it. Now we have deer.

Which all adds up to a system that you may or may not like. It's quite true that it costs a hunter at least \$100, probably more, to get in on a fairly good lease. And, of course, some hunters pay several times that amount.

It is also true that there is deer hunting for a lot of people—and there wasn't in the good old days.

If it were possible to have public hunting, I would be among the first to favor it and work for it. As I have explained previously, it's certainly not practicable on anything approaching a big scale.

So we might as well be happy that we have deer—at a price. And until somebody comes along with a better system, we might as well quit bellyaching about the present one.

After all, you pay \$3.60, maybe more, to see a football game now. Back in the good old days you drove up, or walked up, to the fence and watched. You pay to swim, to ride a horse, to get to a place to fish, to shoot at ducks.

Sure, it's all commercial. But I feel deeply indebted to Gus Schreiner and Senator Wood and others for the fact that we have deer.

Pity the Poor Fish!

Hardhead catfish often are called "mouth-breeders." The father carries first the eggs, then the young, in his mouth.

By Shirley Ratisseau Dimmick



Consider the fish. He is an animal with a selfish, unfeeling nature, and he has a dull outlook on life. He can well be termed the "poor fish," for there seems to be no consciousness of love, sex or parental attitude. Indeed, the fish has hardly any attitude other than the immediate one of survival. Most species of fish eat, sleep, live from day to day (if they are lucky enough to outrun other larger and hungrier fish) and could care less about the reproduction of their own species. For a great majority of fish, such as the mackerel, come together in great schools during spawning season and with no mating at all, release their reproductive cells into the water. This seems to be a hit or miss proposition, and it appears to be of little concern to that species whether chance will develop new mackerel or not.

Other species, like the trout, have unmistakable pairing. And many other species of fish have a unique mating, and a fine parental solicitude while the eggs are in the process of being hatched. Alas for the young fry after they leave the egg stage, however, for many a parent then turns greedily upon them and eats them for breakfast.

● Continued on page 27

Our readers write us:

Editor:

I am enclosing a picture that I took on the northern coast of Mexico in June.

This was the second hardhead salt water catfish that was snagged with a plug. The unusual part of it was that both had their young in their mouth.

Please let me know if these fish were protecting their young, feeding on them, or were the small fingerlings eating out of its parent fish.

The fish in the picture was about 12 inches long, and we took out 32 small catfish. Do salt water fish hatch their young in their mouths?

I am looking forward to hearing from you.

Yours very truly,
A. M. Guerra
Mission, Texas

Editor:

While fishing this August I caught a 12-inch hardhead catfish. As I picked it up to disengage the hook, it spit out or shed about a dozen baby catfish of the same variety. Some of these were $1\frac{1}{4}$ to $1\frac{1}{2}$ inches long, were fully active, and swam in the water in the bottom of the boat.

I could not tell where these fish came from, but John and son "Pat" Patton of Elgin and San Antonio, fishing with me, declared that they came from the larger fish's mouth. I was fishing with live shrimp and this bait, with the hook, was caught deep in the fish's mouth so that it seems impossible that the catfish could have taken the baited hook without also swallowing the babies.

I have never heard of fish carrying young in their mouths, but don't believe either that the larger fish was in the process of devouring the young. Can you explain this mystery?

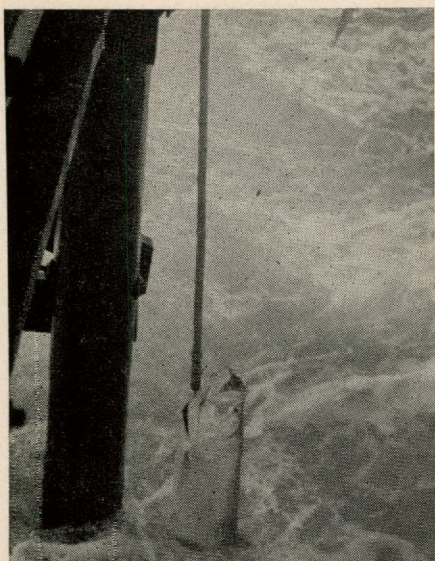
Very truly yours,
Lloyd W. Burwick
McAllen, Texas

Tarpon on

TEXAS



Padre Island Pier.



If tarpon are gaffed properly, they will live to fight another day. Shown here is a six foot beauty.

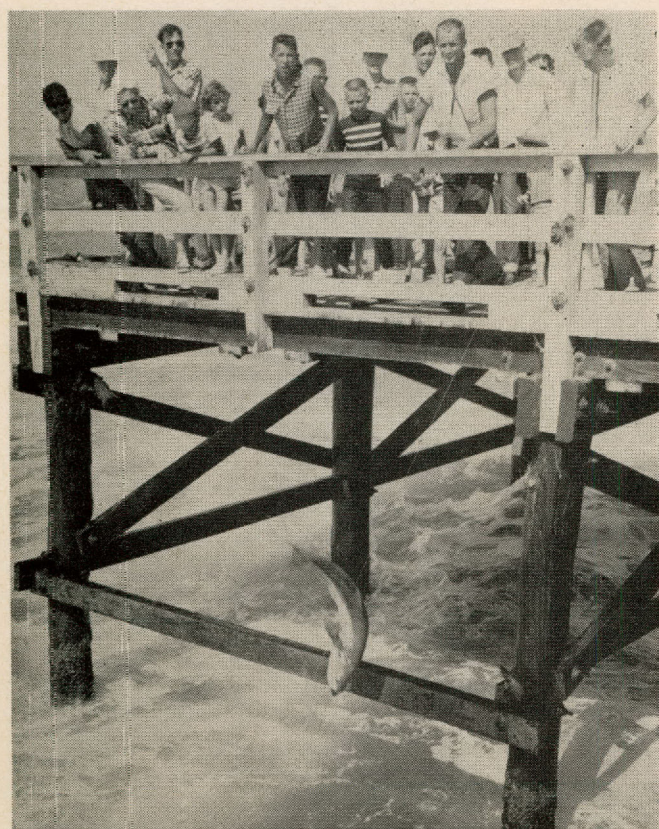
There's one nice thing about piers that appeals to a great number of fishermen—they're stationary! Besides that factor, the fish bite just as well around piers as they do around boats.

A lot of folks who cannot afford the charter boat and all the sport that goes with it find just as much excitement in casting their lines over the side of some of the fine piers in Texas salt waters. As shown in these photographs, tarpon especially are a frequent catch. Most of these piers are open to the public and are free. Others charge admission, but this is usually a negligible fee.

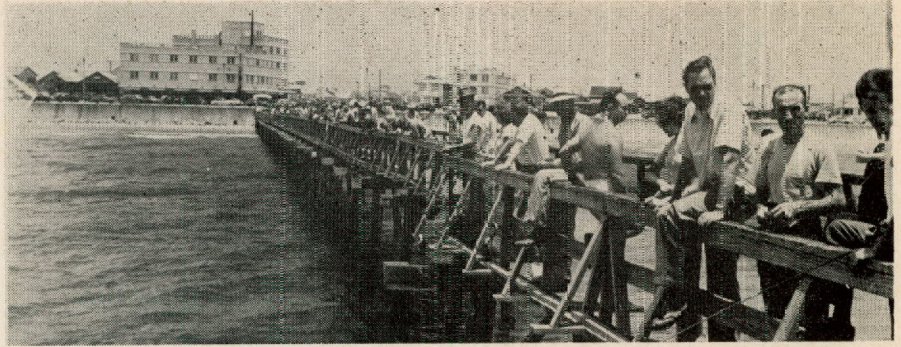
There are distinct advantages to pier fishing. Families having children find it easy to take the youngsters right along with them, since water, shade and other necessities are nearby. The railing corrals the children, and at the same time, gives the older angler something to lean his elbows on when the time is lengthy between

Left, Jack Stewart (in white shirt) releases his second catch for the day. This one, caught from Bob Hall pier near Corpus Christi, measured five feet, nine inches.

Below, a tarpon leaping in a vain attempt to free himself. This one will never live, as he is hooked deep in the gills. Most tarpon are hooked in the hard bony part of the mouth, thus many are lost on the second jump.



Triumph



Pier at Galveston.

PIERS

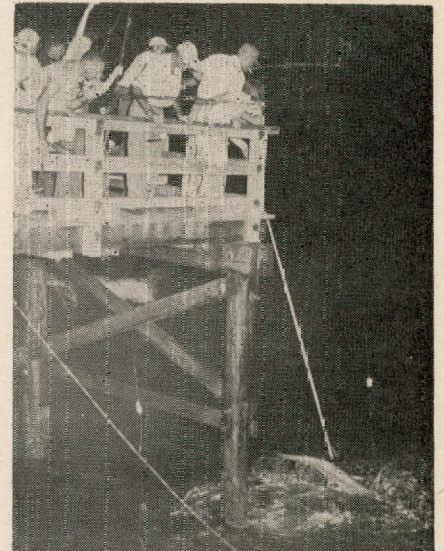
Photos by GERRY MAYFIELD

strikes. The one disadvantage is the barnacles that grow on the pilings. These sharp shell-like structures have the unliked tendency to cut any fishing lines that pass near them. For this reason the veteran fisherman will strive to keep his catch in the open and from underneath the pier.

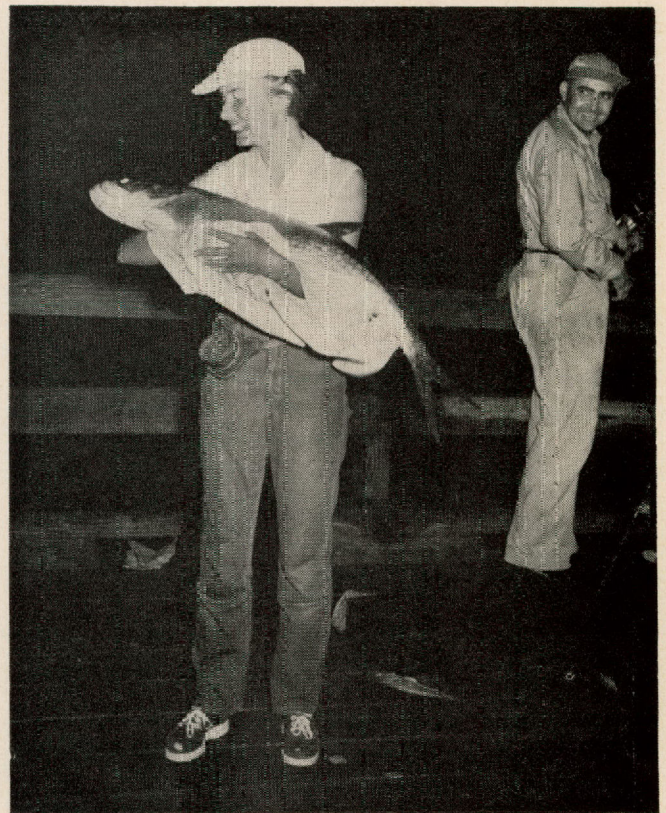
The next time you have a yen to do battle with the silver king why not head for the piers of the Gulf Coast? And take the family along—but watch Junior. Many young fishermen have graduated from the piggy perch class to the big game fish division while fishing from these Texas fishing piers.—Shirley R. Dimmick.

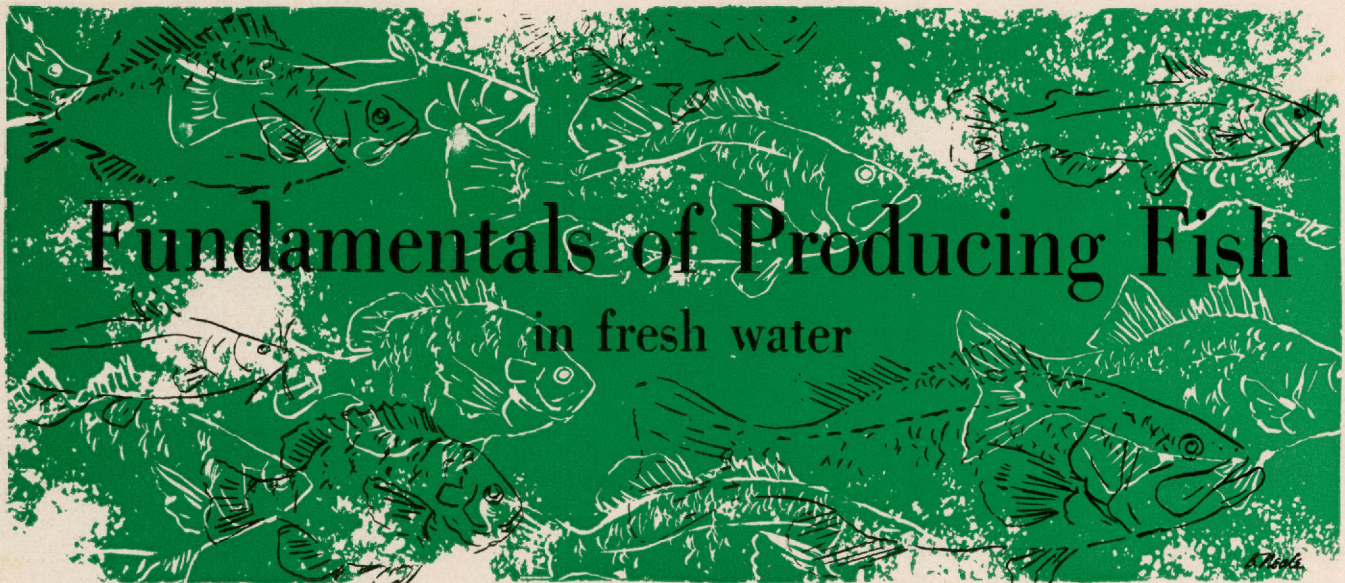
Right, Marilyn Shaw of Corpus Christi cuddles a baby tarpon, showing that even a three footer is a nice catch.

Below, James McLaughlin of El Monte, California lost 33 tarpon before he hooked this one. Just as the fish was to be gaffed, he ran under the pier. 99 times out of 100 the line would have been cut by the barnacles on the pilings, but amazingly it held and the line was grabbed on the other side of the pier. McLaughlin can be seen tensely holding his rod as the tarpon is gaffed.



Pier fishing is good 24 hours a day, and this six foot, four inch silver king is brought to gaff at night.





Fundamentals of Producing Fish in fresh water

By DR. R. W. ESCHMEYER

**Informed sportsmen, making use
of factual, scientific information, can do
much to improve their own fishing.**

Thirteenth and last in a series by the late Executive Secretary of the non-profit Sport Fishing Institute

In the early days, sportsmen were responsible for the beginnings of modern fish conservation. Their early squabbling led to the hiring of biologist to serve as trouble shooters. This hiring, in some states, led to the change, from indiscriminate stocking and arbitrarily-made regulations, to a more effective fish conservation program.

Today, as in the early days, our progress will be determined mainly by the actions of sportsmen. We can have good fishing only if the anglers, themselves, insist on an up-to-date program; and, only if they, collec-

tively, take a hand in the many aspects of fish conservation which cannot be handled by the fishery authorities alone.

ORGANIZATION

Individuals carry little weight in an age when group action determines what shall be done. Individual sportsmen can be of only limited help to a fish conservation program; organized sportsmen, working together, can carry enough weight to decidedly influence our fishing future.

We have organized sportsmen's

groups in our least progressive states, as well as in those which lead the fish conservation parade. So, the mere fact that a sportsmen's organization exists in a state is of little importance. The stress of that organization, and the ability, progressiveness, and caliber of its leaders are the important items.

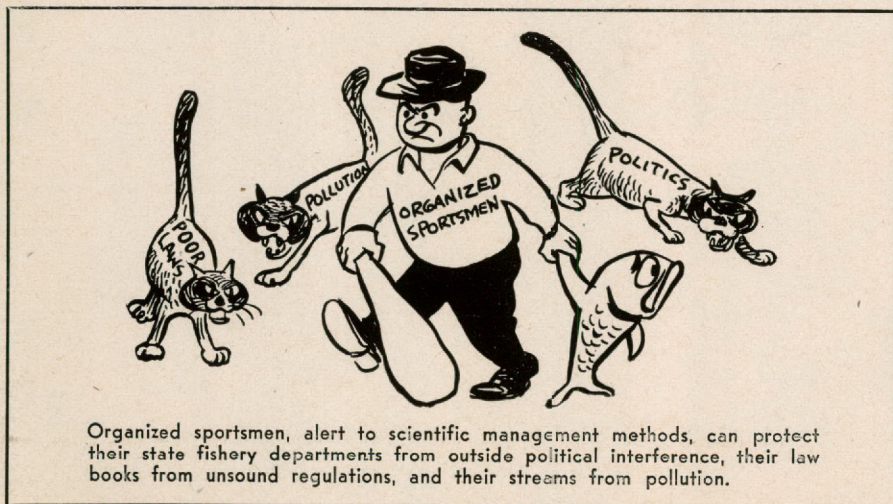
SPORTSMEN'S ACTIVITIES

Here are a dozen specific suggestions for sportsmen's groups:

1. The organized sportsmen should insist that the state have a modern fish (and game) program, handled by well-paid, competent personnel, free from politics.

2. Sportsmen should insist that the regulations be made by the fish and game (or conservation) department, and that they be based on factual information. If made by the legislature, sportsmen should see to it that only the proper laws are enacted.

3. The pollution problem can be solved by an enlightened public opinion. It's too big a program for the fish and game authorities to handle, but pressure from sportsmen's organizations can go far toward forcing



Organized sportsmen, alert to scientific management methods, can protect their state fishery departments from outside political interference, their law books from unsound regulations, and their streams from pollution.

pollution abatement.

4. The cluttering of our waters and shorelines with cans, bottles, and other debris is leading to an increase in "keep out" signs. The remedy to this problem must come chiefly from the sportsmen, themselves, through educational programs.

5. In many instances, the quality of our fishing depends on land use in the watershed—on the farming, forestry practices, etc. In some instances such as preventing silting of fishing waters as a result of improper road building, the sportsmen can be extremely helpful by putting pressure on the road builders to correct the bad practices. In some other aspects of land use, especially on private land, improvement must come through education.

6. Some city water supply reservoirs are open to fishing, others aren't. There is no excuse for not permitting fishing on such waters, provided certain sanitary regulations are enforced. It's another problem for the organized sportsmen.

7. Each sportsmen's organization needs an active and capable education committee. It can be expected to do an effective job in helping out on both adult and juvenile conservation education.

8. Many bills introduced in Congress, if passed, may vitally affect our future fishing—some beneficially, others adversely. Passage of the bills depends to a considerable degree on the expressed views of constituents. Sportsmen can have a decided influence on national legislation as it affects national forests, national parks, and other public domain. State legislation can also greatly influence our fishing. Sportsmen must play an active part in the passing of desirable state and national legislation, and in the defeat of proposals which would harm our favorite form of recreation.

9. Sportsmen must play a vital role in having proper recognition given to fishing values in the building of dams for hydropower, flood control, or irrigation.

10. In areas where fishing waters are scarce, organized sportsmen can take the initiative in the building of fishing lakes, for club use or for pub-

lic use. In some areas, this is an important club activity.

11. Each sportsmen's group should have an active "junior" program. This might include sponsoring kids for conservation camps, building kid fishing lakes, casting instruction, providing suitable conservation literature for youngsters, and a wide variety of other activities.

12. Assuring public access to existing waters is a big and growing problem. Organized sportsmen can influence it immensely.

A REMINDER

This concludes the brief discussion of "Fish Conservation Fundamentals." We remind the reader that coverage of the subject is far from complete. Too, there are many exceptions to the statements made. There is no assurance that the discussion is free from personal bias on the part of the author. This is simply an attempt to "put the pieces together" in a brief discussion of a broad and complicated field.

Fish conservation is undergoing constant change. Most of these changes seem to be in the right direction. We are faced with many problems, but our own viewpoint,

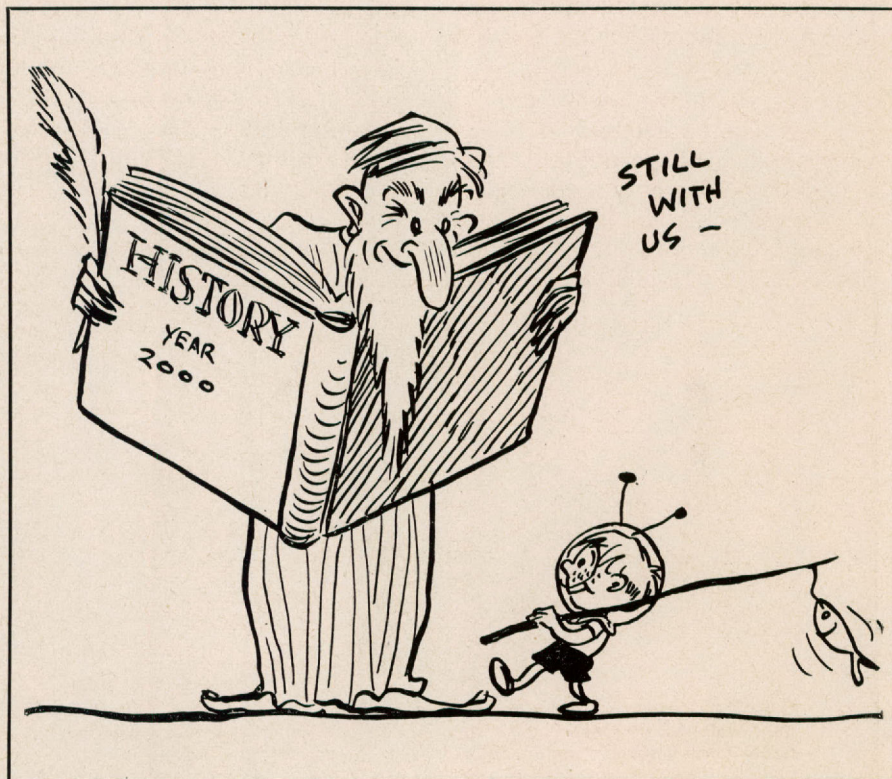
Fish Management Series Available in Free Book

This article is the last of a series. The entire series, written in non-technical language for the average fisherman, has been published in booklet form entitled "Fish Conservation Fundamentals" by the Sport Fishing Institute.

A limited number of copies are available from the Game and Fish Commission, Austin, and will be mailed without charge upon request.

nevertheless, is an optimistic one. There are, now, many instances to show where modern fish conservation is helping our angling. We are extremely well impressed with the fine job which most of the state fishery organizations are doing, despite numerous obstacles.

If the present progress continues, we have every reason to believe that fishing will still be America's most popular form of outdoor recreation long after the present generations of fish have terminated in the frying pan or died of old age!





Fred Rogers of Fort Worth with buck believed to be prize of the entire Panhandle hunt. Guy Kerbow and Don Morrison of Pampa assist. Kill was on Morrison ranch in Roberts county.



John Gikas with fine buck. Fellow hunters look on with game wardens G. P. "Slim" Davis and Jack Woodford.

THE 1955 ANTELOPE HUNT

Text and Photos by
JACK PORTER and Warden S. V. WHITEHORN

It's no simple task to bag a buck antelope as they zip across the prairie at speeds up to 60 miles per hour, especially when they are bunched together with a herd of does. However, this is just exactly what 910 hunters did on the hunts that were held in the Texas Panhandle and in the Trans-Pecos region on ranches where a surplus of antelope occurred and where the ranchmen

agreed to allow hunting.

Counting the cattle, the other hunters, and the objects that the hunter had to allow for in order to get a shot "in the clear," they all should be placed in the sharpshooter class. After all, many of the bucks were traveling at a fast clip or they belted through clumps of soapweed and sage or were shot at long ranges of 175 yards and up.

Never has there been a happier group of people interested in antelope hunting than those who submitted



Left, proud hunters Walter A. Gloyne and wife of Lckney. An interesting revelation was that for many sportswomen and sportsmen, this was their first pronghorn hunt.

Below, shown with their kill from the Wilmeth ranch (left to right) is unidentified hunter, Ernest Wilmeth, Mrs. Bill Russell, Mrs. Ernest Wilmeth, and Bill Russell.





Three Fort Worth hunters, Sam Strader, Arthur B. Kirby and W. E. West, Jr. all bagged an antelope. They are shown on Finch ranch in Dalhart with two of their kill.

their names for the drawing held in the Austin office to select the hunters. As names were drawn, each hunter was assigned a ranch to hunt and a date to hunt. Only buck antelope were hunted in the Panhandle, while both does and bucks were hunted in the Trans-Pecos.

The hunts were closely supervised by wardens and biologists, and, as is the case in most controlled hunts, the hunting success was excellent. In the Trans-Pecos the open season was from October 1 through October 20. Open season in the Panhandle was from October 12 through October 20. During these periods hunters arrived, spent a day in the field, and most of them got their antelope. 962 antelope hunting permits were issued and 910 hunters went home with an antelope.

Game laws forbid the killing of does except when a surplus number exists and is harvested under control of the Game and Fish Commission—for instance as in the Trans-Pecos hunt. One of the more challenging

Right, Mr. and Mrs. Herman Graham, Fort Worth, with bucks killed in Hartley county.

Below, a fine trophy bagged by Bob Lirdsey, Jr. of Canyon who shot the animal at a range of nearly 500 yards.



Rhea Gunn, left, shown here with Warden Charles Boynton, downed this one at 185 paces during the three-day Dalhart hunt.

features of antelope hunting is the habit of does protecting the bucks. Following the crack of the first rifle the does of the herd will bunch around the bucks, protecting the proud males from hunters. The best hope is to nail the buck on the first shot or stalk him while he stands alone.

There were a few gentle bucks the first few minutes of the hunts, but after that the game was spirited. There were some exceptionally long shots made that brought down game. In the Panhandle hunt, Carl Tennis of San Antonio, who was hunting with J. M. Montgomery of the same city, brought down a fine specimen at 800 yards using a 270 calibre rifle on the E. C. "Ted"

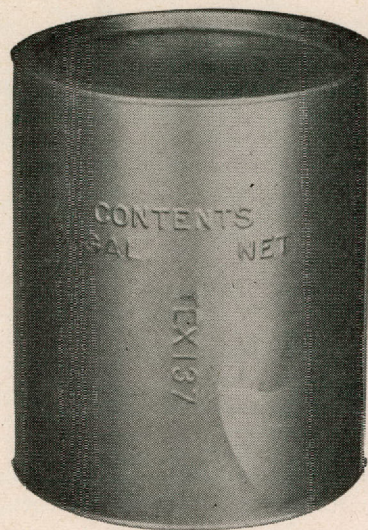
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OYSTERS

...with a pedigree

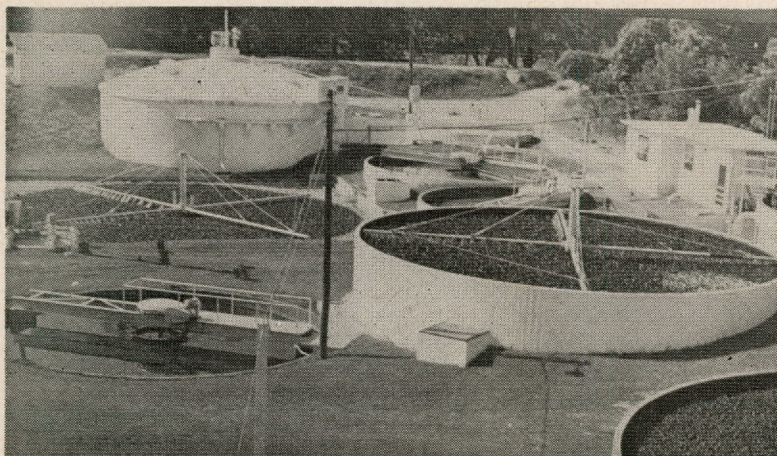
MANY OF our Texas Municipalities have ordinances to the effect that only "Certified" oysters can be offered for sale, etc., in the community. The certification program is sponsored by the U. S. Public Health Service and administered by State Health Departments. There is no State law in Texas requiring that all oysters offered for sale be certified; but only certified oysters are permitted unrestricted traffic in interstate commerce.



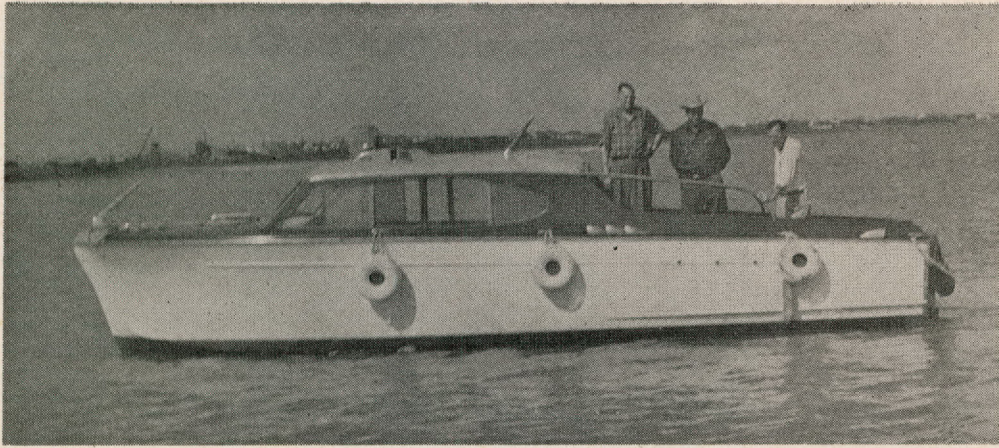
CERTIFIED OYSTERS are identified by a number preceded by an abbreviation of the name of the certifying State embossed into the metal of the can. The story behind the number on the can might be divided into the following sections:

By **N. E. DAVIS**, District Engineer
Texas State Health Department

1. Stream pollution survey of the watershed for about 75 miles or more inland, dependent upon conditions found.
2. Pollution survey of oyster growing waters, including very extensive bacteriological investigations.
3. Inspections of equipment and operations of oyster shucking establishments by field personnel of State and Public Health Service.
4. Review of reports and issuance of certification numbers by State and Public Health Service Administrative Offices.



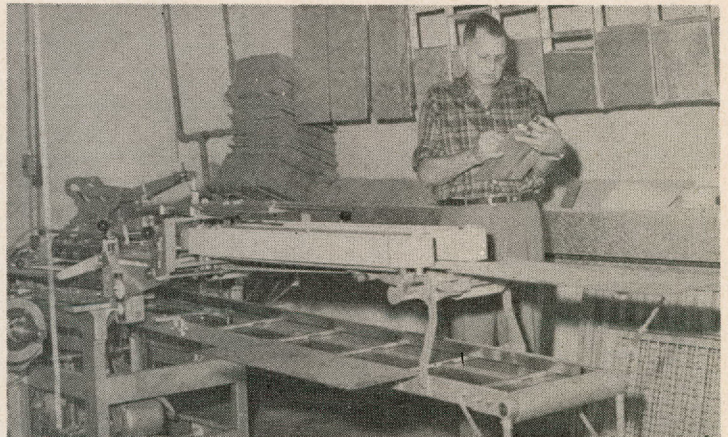
WATERSHED SURVEY. On a small watershed like that of Lavaca Bay, all sewage treatment plants and industrial plants discharging liquid wastes to streams are checked. The survey includes a description of the sewage plant, designed capacity, present load, operation, results obtained, and condition of receiving stream substantiated by analytical data if required. The 1954 report on survey of the Lavaca Bay watershed included necessary data on sewage treatment facilities of nine municipalities and one large industrial works.



GROWING AREA SURVEY. This phase of the certification program is concerned with the quality of water in the Bay from which the oysters are taken. The Game and Fish Commission has been most cooperative in furnishing water transportation as well as information as to where the oyster reefs are located. A map is first prepared showing principal reefs and possible sources of pollution. Sampling stations are indicated on the map. As work progresses, additional sampling stations are usually added as finding may indicate. Thirty-eight stations were established in Lavaca Bay. Samples are purposely collected at various conditions of temperature, wind, tide, run-off, etc. Twenty

entries of conditions found and laboratory results are required for each sample. The most significant single figure is the logarithmic average of the most probable number of coliform bacteria present. The determination of most probable number of coliforms alone required laboratory inoculation and recording of results of more than 1,840 fermentation tubes. This was aside from determination of chlorides, specific gravity, pH, etc. The average number of coliforms found in the approved growing areas of Lavaca Bay was 7.4 per 100 centimeters, which is well below the 70 organisms per 100 cubic centimeters established as upper limit of standards.

OYSTER HOUSE INSPECTIONS. Shucking houses are inspected in accordance with Public Health Service standards. Inspection forms are furnished by the Public Health Service and contain 128 separate items to be checked. These items include not only equipment and the establishment itself, but operational procedures, such as sterilization of equipment and packing containers, insect and rodent control, maintenance of records of disposition of finished product, etc. Inspections are normally made by Texas State Health Department personnel, but the Public Health Service also makes inspections, usually but not necessarily with State Health Department personnel.



ISSUANCE OF CERTIFICATES. Copies of field inspection reports of shucking houses and other pertinent information are submitted to the Central Office of the State Health Department and the Regional Office of the Public Health Service. If conditions warrant, the reports from the field are accompanied by a recommendation for approval. Upon favorable review by the Central Office of the State Health Department an official notification of approval is sent to the oyster plant along with a designated certification number. The Public Health Service is notified of the approval by the State Health Department and the Public Health Service in turn notifies all State and Territorial Health Departments by means of regularly issued printed lists that the product of the establishment is certified.

By JAY VESSELS

WESTWARD HO!

AP carried a brief item about the resourceful Ontario big game hunter. Farmer Burrell Bradshaw needed fresh milk for his ulcer on a two weeks' brush invasion. So he hitched up his best cow to a cart and got double duty in hauling in his duffle. Gut T. McMammal, spokesman for the wary folks, said he just hoped the bovine union didn't hear about this heroic heifer in harness.

NERVOUS NOVICES

E. A. Walker, Director of Wildlife Restoration for the Game and Fish Commission, said the principal factor in the low per capita kills by nimrods on public hunts was their tendency to wander around. "Our men placed the hunters on stands, explaining that if they would stay there long enough and stay still, they might get a shot," said Walker. "But since many of the participants in the hunts on the Wildlife Management Areas were newcomers to deer shooting, most of them couldn't resist the temptation to look around and expose themselves to the deer." Walker said the unexpectedly low degree of individual luck contributed to a smaller take of the surplus deer than anticipated. However, he said the interest shown by this new class of hunters promises to help swell public sentiment toward restoration projects.

QUAIL FOR QUAIL

C. J. Jackson, public school principal at Borger, reported how he observed seventy-five quail last fall along a Canadian river area where he could get up only five quail the year before. By a coincidence, a town just a short distance west of the comeback plot is named "Quail."

WHOOOPER DIVIDEND

Some of the older folks profess unhappiness over reportorial emphasis given the Whooping Cranes, perhaps not realizing that the fight to save the giant birds amounts to nothing more than making it symbolic of the effort to spare all wildlife. But down at Mission, Texas, the seventh graders in the public schools caught on fast. Their teacher, Vada Pace Milder, wrote the Game and Fish Commission for available material on the plumed celebrities, stating: "The arrival of the Whooping Cranes in Texas has stimulated our interest in conservation."

BONN VOYAGE

Ed Bonn, aquatic biologist for the Game and Fish Commission, says fishermen are mystified as to why technicians tag fish. Here's Bonn's explanation: Fish are tagged to secure information of certain aspects of a fish's life history. Migration of fish may be studied by tagging. Growth rates of fish may also be calculated from tagging. When a fish is tagged, its length weight and condition are recorded. The tag is numbered and the location of tagging is recorded. Thus, when the tagged fish is recovered, it is possible to determine the increase in length and weight which has occurred. No wonder Bonn spends a great deal of time in the Lake Texoma area encouraging fishermen to report their tagged catch to him.

CAW, CAW! BANG, BANG!

The *Denison Herald* carried an article about a farmer who used his duck blind techniques to construct a hideout in his pecan grove to clobber crows. He used a .22 target rifle with a four-power telescope and once bagged sixty crows within two hours.

OH, THAT BIG CAT!

A Fort Worth fellow named Gene Ward makes pin money retrieving golf balls from water hazards on local golf courses. He simply adapted to civilian life some of the tricks he learned as a Navy frogman. Yet with all the delicate combat experience, hassling with mines and all, Ward said one of his scariest experiences came when he stepped into a catfish hole while skindiving for golf balls. He displayed a four-inch scar on his knee.

NO HEAD HOLE, HUH?

Texas game wardens and fish hole looters will appreciate this UP item: "Washington, Ind.—Charles Davis, convicted of illegally 'phoning' catfish, proved to be a better sport than the fish thought. Davis called at the local newspaper office to compliment the writer of the story about his conviction and to buy five copies of the paper. 'I want to send them to some relatives,' said Davis. 'The only thing they left out was that the game warden shot a hole in my boat.'"

HOW IT'S DONE

John Dodgen, foreman of the sprawling Fitzsimmons Ranch near Llano, had a perfect proposal to buck hunters leasing pastures when the antlerless harvest time came. Dodgen suggested the buck hunters supervise the taking of the surplus antlerless animals. This they did with enthusiasm. The Dodgen plan may receive widespread use, too.

PLUG FOR BOOTS

Allie Clark of Clarksville recommends high shoes or boots for brush wear. He has fang marks beyond the ankle spot on his boots to show where a rattler struck him.

Press Views Game Notes

DOE HORNS DE LUXE

T. D. Carroll, member of the Game and Fish Commission's TV staff, brought back an unusual twist from the big game season. A hunter told him he had a bead on a "buck"—that is a deer with horns—when he noticed the animal was nursing a fawn. One of those freakish cases where the female deer grew antlers, ordinarily associated with a buck. The fawn being observed so late in the fall was NOT so unusual last fall, all because the drought so impoverished many deer that their mating schedule was upset.

NIGHT HUNTERS NOTE!

A San Antonio man fell off a thirty-foot cliff while coon hunting at night in a strange rural area. He was knocked out for an hour but was able to crawl to his pickup truck and drive to a nearby residence for aid.

WAY BACK WHEN

Dick Morehead, Austin staffer for the Dallas *Morning News*, is the outdoor type and is known among the trade as one of the more agile journalists. But Dick insists it isn't so. He convinced himself, said Dick, when he went back to his boyhood haunts in the Panhandle and tried to camouflage himself with a tumbleweed—again. Dick said the duck population in the old home bailiwick was tremendous and that the Panhandle folks, for a change, got a fine shoot last fall.

RISK OF THE WILDS

For the second fall in succession, a report of a rabid doe deer was made to Game and Fish Commission headquarters in Austin. This stricken animal was bitten by a rabies-infected fox and had to be destroyed.

LONESOME HEART CLUB

Editors sometimes are hard-pressed to find the answers they are supposed to have. For example, a woman called Tex Mayhall, outdoor editor of the Austin *American-Statesman*, that she had two lonesome mallard drakes. Did Tex know of two refined mallard hens eager for company of gentlemen ducks? Mayhall assumed they have tuxedos and will travel but at press time he had not yet filled the order.

SHOO! THAT MEANS YOU!

Bob Ramsey, Wildlife Biologist for the Game and Fish Commission, reported a hair-raising anecdote from the last big game hunting season that happened on his own ranch in Real County. Some turkey hunters decided to park some spare shelled corn in their deer blind overnight rather than carry it back to camp and covered the grain sack over carefully with brush. Next morning they found the blind trampled, the sack shredded and the grain gone to the last kernel. That, they deduced, would be javelinas. Yes, sir, wild hogs on the loose. And fair game, too. One of the fellows decided to make certain. He rebuilt the blind, sat down and waited quietly. Pretty soon here came about twenty head of javelinas, moving single file straight at him. The nervous nimrod recalled what the long-tusked beasts had done to the gunny sack and when the leader was about five paces away he leaped up and hollered. No, not "SCRAM!" but "SHOO!" And loud. The raiders departed in one wave. Amid the supreme silence our hero retreated and offered the test tube role to just anybody.

HIGH JUMPING HUNTER

A snake-wary Colorado county hunter made some of the professional acrobats seem pretty ordinary when he dropped down into his favorite barrel goose blind one dark morning and encountered a live possum that didn't play possum. By the time he regained his bearings and had fished out the marsupial, it was well past daybreak. And the geese also were giving him the run-around by that time.

EVERYBODY HELPS

Game Warden August Timmerman of Hondo reported the civic-minded folks rallied during the recent antlerless deer season to reduce Medina county deer surpluses. One day the Mayor of Hondo came to the rescue of the swamped Game and Fish Commission crew processing carcasses at the checking station. Another day the local baker brought out some hot pies and coffee. "Pretty good teamwork," said Timmerman, gratefully.

BIG-TIME RECOGNITION

Wildlife's gradual climb up the ladder to recognition is reflected in a top page editorial in the *Beaumont Journal* urging hunters to watch for banded waterfowl and why. The editorial, headed "Feathers and Fur," cited the need for determining migration habits of ducks. It also stressed that almost ten per cent of mallards trapped in mid-America and tagged and released on the Atlantic seaboard, were found to have returned to their old habitat.

TEACHING THE KIDS

The Central Texas Sports Club at Temple is doing its part toward helping youngsters learn about guns. It has organized a Junior Rifle Club under National Rifle Association rules. The Sports club and the Temple rifle club have jointly completed a rifle range for general use.

DEER-PROOF FENCE

J. H. McLean writes in the San Antonio *Light* about Rancher Walter White's successful Mason county fence experiment whereby he spaces the top two wires ten inches apart. McLean reports that in the first year not one deer was found with its feet entangled in the 5.5 mile stretch of new fencing.

TALE OF A TOMCAT

Don Swanson, Outdoor Editor for the Dallas *Times Herald*, makes the cat lovers happy with a tale about a Texoma tabby. A resort owner befriended a stray, taught it to eat only minnows and was rewarded when the feline assumed "watchdog" duties. The cat camps on the minnow bait tank and has run off several varmints trying to raid the place.

GUNS

and

SHOOTING

HOME BREWED AMMUNITION

By JOHN A. MASTERS

Those of us who handload usually overlook an important fact. There is a constant stream of new handloaders coming along, and too often, we overlook these neophytes and their problems. True, there are excellent handbooks on the subject, but a few sessions with an experienced loader will do a great deal for a beginner that books just won't do.

I am starting an ambitious project with this article. What I hope to do is discuss handloading, first, in the most elementary fundamental fashion, and later, in a more technical manner. To those of you who already load, some of the following will be old stuff, and boring. It is directed

at those just beginning. A later article will be directed at more experienced loaders, and will include a discussion of the merits and demerits of the more popular loading tools and accessories.

Let it be said in the beginning that the writer lays no claim to vast knowledge or original ideas. I have been privileged to work with some of the best loaders in the state, and much of what I will have to say comes from them. Personally, I have loaded for many calibers, and my experience includes at least several thousand rounds. During the past year alone, I used over 2000 primers.

What I really hope to do is answer

some questions that usually arise for which no ready answer is forthcoming from the literature.

Let's take a lad who is just about to start his loading career. Assume he has obtained a Lyman "nutcracker" tool, and for the sake of uniformity also bought an Ideal Powder Measure. Let's say he is going to load for the .222 Remington.

Now, all this lad knows is what he has read from a loading manual. He decides he is ready to load, so he goes to a gunshop to get some bullets and powder and primers.

To begin with, he asks for primers. He is surprised to learn that there are several different kinds. Sure, the loading manual told him what kind, but he didn't get that point. He is saved by the help of the gunsmith, who was able to recommend the proper kind. Now that he knows that he wants Small Rifle Primers, what brand. He doesn't know. The gunsmith sells him, say, Remington. OK. Now for powder. Gunsmith likes 4198. Not knowing, the lad buys it. Bullets? Here, the confusion really starts. With the help of the gunsmith, who has considered barrel twist, loads, and what the lad plans to shoot, the boy buys 55 grain semi-points, and goes his way.

Once home, he digs out the loading manual. Book says 21 grains of 4198 is the maximum load. The chart in his handbook tells him how to set the measure. He sets it for 21 grains, and proceeds to load his first batch. He wants to try them right away, so he heads for the range. First one he lets off sounds loud to him, and when he tries to open the bolt, it won't come. He takes the gun to the gunsmith where he bought the

Shootin' Shorts

I have been shooting the new Higgins Semi-Automatic shotgun since the dove season opened, and I am of the opinion that this is an outstanding value in a shotgun. I have shot all sorts of ammunition in my sample, and have not yet had a malfunction.

The gun has a considerably lessened recoil due to its design. I have not felt the need for a recoil pad on mine even with high brass ammo.

This gun depends on a gas piston for its operation. A small amount of gas is taken off through a port in the barrel, and caused to actuate a piston which in turn operates the breech block.

My sample was a bit rough in spots, but soon smoothed up. I found it wise to clean the piston, which is really a ring operating around the magazine tube, at regular intervals.

I don't know that I prevented a malfunction, but a considerable quantity of powder fragments and carbon collected in the forearm, and had to be removed.

Another nice shotgun in recent weeks is the new Fox BST double. My sample is a 16 gauge, with 26 inch barrels, bored IC and Mod. This is a nice handling, beautifully made little firearm. It has a nice handfilling beavertail fore-end, and a well formed buttstock tastefully checkered. It is equipped with a single non-selective trigger. So far, mine has not doubled. I have not yet finished by checking this little gem, so will report further later.

I have received some excellent kill reports from the new 6mm cartridges, but would like to have more. Let me hear from you if you whacked your buck with one.

stuff. Gunsmith hammers the bolt open, observes the swollen primer pocket, and the crater around the firing pin dent. He gets one of the cartridges from the boy, pulls the bullet, and weighs the charge. Finds a dangerous overload.

Sometime later, the boy leaves with these gems of knowledge. Never load maximum loads until you have worked up to them. Never load near max loads from the setting of a measure without checking it against a reliable scale. Some powders don't measure out well from a measure, and 4198 is perhaps the worst offender.

Fortunately for our boy, he had a good adviser in the gunsmith, and went away ready to try again. From such experiences, however, many beginners are discouraged.

It is my purpose to discuss handloading in fundamental terms in this first of a series of articles, so that a beginner may avoid some early mistakes. I am going to assume that a Lyman Truline Junior tool is the cheapest tool that should be purchased, since the added cost over the nutcracker type is small. I do not intend to infer that perfectly good ammunition cannot be produced with a nutcracker tool. To me, it is too doggone slow and difficult to use, and I just wouldn't recommend that any one buy one.

First, let's consider the raw materials from which cartridges are made. Most important is the brass case. We will assume that the cases have been fired in the same rifle that the reloads are going to be used in.

Wipe each case clean on the outside with a soft cloth. As each one is wiped, examine it closely for signs of head separation, neck splitting, or other defects. As each case is cleaned, stand it up on the primer end or better yet, insert it into a loading board.

Now, set up your tool and decap and necksize all your cases. Clean the primer pockets carefully, and set them back in the loading board. Now, carefully insert the fresh primers. Watch carefully for oversize primer pockets. This can be detected by the ease with which the primer enters the primer pocket. If the pocket has not been enlarged, the primer should go in with a bit of effort, and

fit snugly. If it drops in with no conscious effort, better discard the case. You will soon learn how to detect oversize primer pockets.

Now, with a countersink or rose reamer, chamfer the mouth of each case carefully. You will find this little extra efforts pays off in improved accuracy, and easier bullet seating.

Primers themselves are remarkably uniform and dependable. They are made in assorted sizes for use in pistol, shotgun and rifle cartridges. Consult your loading manual for the size for the case you intend to load. The brand of primer makes little difference. All American made primers are excellent. You should, however select a brand and stick with it since changing primers can affect the accuracy of a particular load.

When you are priming cases, take care to see that the primer is well seated. It should go in until it is flush with the head of the case.

Now for the powder. I strongly urge that a powder measure and scale be used together. I don't advocate weighing each charge, but I cannot emphasize too strongly that the setting of the measure should be checked on a dependable powder scale. Once set, check say every tenth charge on the scale to see if the measure is still set properly.

When throwing powder from a measure, be sure that ALL of each charge comes from the drop tube. Flip the knocker on the measure if it has one, if not, tap it gently. Some powders, notably 4831, have a tendency to "bridge over" in the drop tube, resulting in lack of uniformity in the charges. After all the charges have been thrown, examine the powder level in each case. Any that look too full or short should be dumped back into the measure and rethrown.

Now, seat the bullets. They should all go in with about the same amount of pressure. Any that go in hard will almost invariably result in a "flyer."

Next month, we will go into how to select cases, primers, bullets, and powder. We will discuss such things as case trimmers, case gauges, and perhaps get to measures and scales. If you beginners will save these articles, I believe you will find a pretty good primer on handloading will emerge.

First Scoter Ducks Killed In Texas


Two white-winged scoter ducks, first ever reported killed in Texas, were shot November 5 on Lake Kickapoo near Wichita Falls.

The white-winged scoter is a sea duck which winters along the Pacific Coast from Alaska to Lower California and along the Atlantic Coast from Labrador to North Carolina. Individuals are known to have strayed to Florida, Colorado, and Louisiana, but these apparently are the first identified as being taken in Texas.

They were killed by Jimmy Culum, Wichita Falls. Not recognizing the large birds, he showed them to Warden Bill Cave. Warden Cave identified them as white-winged scoters and recommended that one of them be presented to the Biology Department at Midwestern University, Wichita Falls. There the identification was confirmed and the importance of the kill established.—Dr. Walter W. Dalquest, Aquatic Biologist.

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almost a mile wide in the dirt fill portion of the causeway to permit free flow of water along Laguna Madre and afford easy passage for migrating fish.

The value of the new ship channel as a vital passageway for fish between Laguna Madre and the Gulf will be enhanced tremendously by special considerations being given to the jetty construction by the Navigation District. Plans call for a type of jetty unique to Texas which is designed to permit small fish to pass through it. Openings will allow for passage of small fish, but the jetty still will produce a barrier capable of breaking up wave action.

The unusual "fish" jetties will be constructed in one of two ways, at the option of the contractor whose bid is successful.

One type is called the Raymong Concrete Pile. (See photo on page

4.) It consists of precast steel-reinforced concrete cylinders four and one-half feet in diameter, which are spaced three inches apart to permit fish passage between them. They will be topped with a concrete slab walkway two feet thick and six feet wide, running the length of the jetties.

The other type is constructed of giant precast concrete tetrapods, which are dropped to the ocean floor and upon each other until they rise above the surface (see photo on page 4). The tetrapods interlock to form a firm barrier against wave action, but spaces allow fish to pass between them. These odd-shaped blocks are about nine and one-half feet high and weigh 15 tons each.

Charles R. Johnson, Port Director, appeared before the members of the Game and Fish Commission when they met in October. At that time he requested financial assistance in the construction of these special jetties, citing their benefit to fish. Johnson asked the Commission for \$300,000 to aid in the jetty construction and in maintenance of the pass, the sum to be paid in installments of \$30,000 per year for ten years.

The Commission at that time agreed to take the proposal under advisement and to study the financial position of the Commission to see if the money might be available.

Although the channel is being built as a passage for boats into the port, it undoubtedly will benefit fishing in the lower Laguna Madre area. Marine biologists of the Commission long have recognized the value of a fish pass from the Gulf

into the bay areas, but past attempts to maintain such passes without jetties have failed.

It is known that salt-water fish utilize bay areas extensively for spawning or as nurseries for the young. However, the extensive length of Padre Island virtually cuts the great areas of Laguna Madre off from the Gulf. Channels, such as the proposed pass at Port Mansfield, would enable fish to utilize the bays for reproduction and growth while at the same time improve the condition of the waters there.

Experiments by the Commission to open and maintain un-jettied passes through Padre Island have resulted in repeated failure due to tides and wave action that have quickly closed such passes in this south coastal region. Further investigations by the Commission revealed that jettied passes were far too expensive, with costs estimated by engineers at from \$1 million to \$2 million.

The Port Mansfield ship channel will provide the Lower Laguna Madre with an ideal fish pass and in addition will incorporate jetties with features of benefit to fish which are not present in other jetties. The lack of openings in other Texas jetties has been particularly detrimental to small fish because the fish were forced into deep water and around the end of the jetties in order to gain entrance. Many small fish failed to use the channels because they were attacked by larger fish in the deeper water or because they refused to make the attempt rather than take the risk.

The new type jetties will solve this problem by permitting small or young fish to pass through the jetties instead of being forced around them to enter the channel.

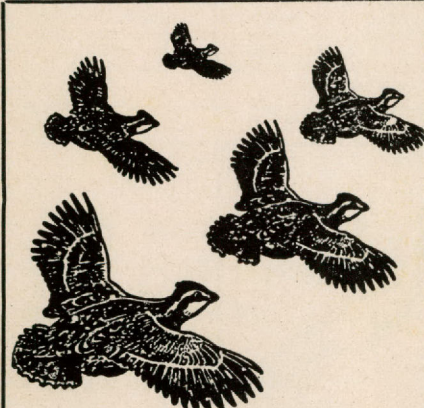
Port officials expect the channel and jetties to be completed in about a year.

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NEWS and VIEWS on SHREWS

An amusing article about a very small and very hungry bundle of fur

By RALPH POGUE

(Editor's Note: According to the FIELD BOOK OF NORTH AMERICAN MAMMALS by H. E. Anthony, it is the Rio Grande Short-tailed Shrew, *Cryptotis berlandieri* (Baird), that is "found in the Lower Rio Grande Valley, on both sides of the river, and probably the coast region of southern Texas. Limits of range unknown." (Merriam.) In general habits it is much like other shrews, showing a fondness for dark, damp localities where there is an abundance of cover and plenty of insect food.")

THE shrew is a most valuable species of wildlife in that when we become distressed over rising food costs, atom bombs and fast living, we can be thankful we are not one.

In the first place, a shrew doesn't live long enough to worry about the atom bombs or anything except getting enough to eat. And plenty to eat means from one to three times its weight in food each day. As for fast living, a shrew makes man's routine look something like a slow-motion newsreel of a Mexican siesta.

Though seldom seen, shrews are common in North America and are found as far north as the Arctic Circle. They are about a second cousin to a mole but live chiefly above ground in tundra or leaf mould of woodland, marsh and meadow. The smallest of all mammals, an adult pigmy shrew weighs no more than a plugged nickel and is scarcely longer than its scientific name, *Microsorex hoyi*. The largest species reaches a length of about five inches and a weight of 20 or more grams, which is pretty big from a shrew's view.

Missouri has two principal species: the little short-tailed shrew and the large short-tailed shrew. The main difference between the two is that one is bigger than the other. If you must get technical, their scientific names are *Cryptotis parva* and *Blarina brevicauda* respectively.

To describe a shrew, one might say that it is a tiny animal covered with fine brown fur and could, in haste, be mistaken for a midget mouse. That is not entirely correct, for a large short-tailed shrew might be mistaken for a runty rat. Unlike a mouse or rat, however, the shrew has a long protruding nose which seems contiguous with the head. The shrew doesn't appear particularly shrewd.

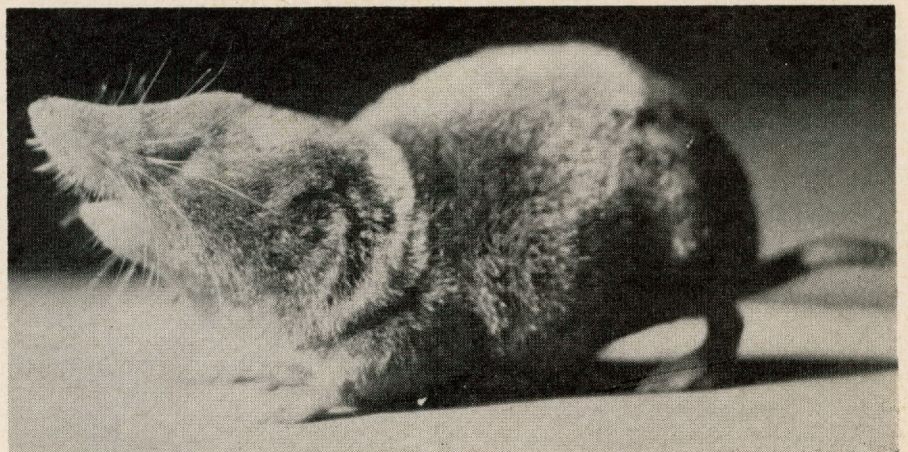
Shrews don't waste their precious time on marriage vows. Hamilton, in his *American Mammals*, dubs them "promiscuous" and says, unflatteringly: "There seems to be no

moral necessity of life with them, other than the most rapid increase possible."

The young enter this world naked, blind, toothless and incredibly tiny. At least three litters are born a year, each containing from four to seven young. Hamilton adds that little is known about their home life but notes that they exercise a most unique method of transporting their young to safety. "When the nest is disturbed," he writes, "the young grasp the mother or one another by the fur of the rump and are pulled away from danger in a veritable chain."

If you can imagine eating more than your weight each day, you have some inkling as to a shrew's appetite. The metabolic rate of this diminutive denizen (183 as compared with man's 78) is so terrific that the creature is constantly poking its curiously pointed nose under this leaf or that rock in search of anything edible. Day and night, win-

Photograph by Vernon Bailey, U. S. Fish and Wildlife Service



The short-tailed shrew, one of the two or three varieties found in Texas.

ter and summer, the shrew goes on its fast and furious way, burning up calories and protoplasm until, if lucky, it dies of old age at 12 to 14 months.

This insectivore's principal foods consist of insects and their larvae, centipedes, salamanders, snails, earthworms, sow bugs and other invertebrates found in leaf mould. Since the creature must eat every few hours or starve, it often hoards snails and other choice morsels which it actually refrigerates to prevent spoiling. This it does by storing the food cache underground in warm weather and above ground during cold spells. Some of the larger shrews are excellent mousers and capable, one observer said, of destroying mice at the rate of a thousand per year. In captivity, shrews have been noted to eat up to three times their weight in a 24-hour stretch. Shrews also eat shrews.

While most carnivores kill their victims before sitting down to a

meal, the shrew starts eating first and asks questions later. If, for example, a little large short-tailed shrew catches a mouse by the tail, he is likely to start eating right then and work his way up, emitting a continual high-pitched growl until the final, juicy chomp.

At this point, one might wonder if a shrew doesn't get chewed up a bit, too, while eating a mouse alive. Nature must have realized that the shrew, with its souped up metabolism, might starve if it had to kill its food by main strength, so she fixed that. Inside the mouth at the base of the lower front teeth is a poisonous gland which goes into action when the shrew first samples its victim. Though it would cause only a mild swelling in man, one shrew is equipped with enough to slay 200 mice. The venom reacts similarly to that of poisonous snakes but is distributed in much smaller quantities.

The shrew is said to have a terrible disposition which no doubt accounts for the term "shrewish" as sometimes applied to certain members of a certain sex of the human race. Men who know shrews best say that when you place several together, they immediately go about eating each other. One can imagine what might happen if there should ever be a famine in shrew foods. The little demons would turn upon one another and be devoured to the last shrew which, to appease its own hunger, would then devour itself.

This shouldn't happen, for shrews are beneficial. They never damage crops, but serve to rid fields and woodlands of many injurious insects. In general, shrews are good news.

—Missouri Conservationist.

Where Next?

• Continued from page 7

forcefully in the prairie chicken's behalf (Lehmann, 1941b).

The Attwater's prairie chicken dies on the installment plan—and another fifteen years of grace is not anticipated.

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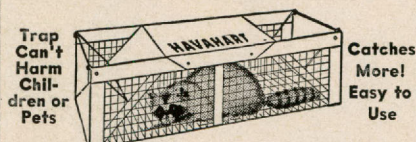
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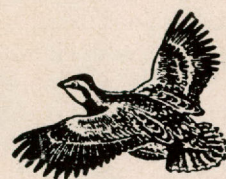
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Not so the saltwater catfish.

The hardhead catfish is so called by the angler who catches the pesky critters and is either (1) finned with the sharp top fin, or (2) faced with getting it off the hook painlessly and with as little irritation as possible. The hardhead of the Texas coast is not a food fish as is his larger cousin, the gafftopsail catfish. But both have something in common that elevates even the lowly hardhead to a higher status in the eyes of man.

Both the hardhead and the gafftopsail are touching instances of postnatal care. So-called "mouth-breeders," they are outstanding examples of parental solicitude. The father takes the eggs in his mouth after they are fertilized, and carries them there throughout their entire development.

Holding a mouthful of wriggling youngsters cannot be any fish's idea of a good time, but there they stay until the yolk sac is absorbed and they are about three inches in length. This period before liberation may take as long as 65 days, and during that entire time, no food is eaten. Many anglers have caught catfish and found the small cats in the larger fish's mouth, so this is a disputed point.

Their spawning season is in late spring and early summer. A male of around twenty-two inches may carry

as many as 55 eggs in this manner.

It is interesting to note that the balance of Nature is adjusted so that each species maintains itself at a fairly constant level. By the number of eggs spawned, the perils encountered by that species (from egg to their maturity) can be imagined. If the hardhead laid the thousands of eggs laid by other fish, and they all hatched, the coastal waters would be alive with them. Even the most patient fisherman would throw down his pole in disgust. As it is, nature has provided a safe place for the young catfish until they are mature enough to fend for themselves. This assures that most of the young will live, but it also cuts down on the number of fish that are reproduced from one pair of parents.

In answer to the queries about the baby catfish, it is hoped that this will clarify things. The male fish is not devouring his offspring, but rather protecting them. And if you can't admire his parental instinct yet, how would YOU like to carry around a brood of children with the sharpest fins in fishdom? You might get stuck with more than baby sitting!

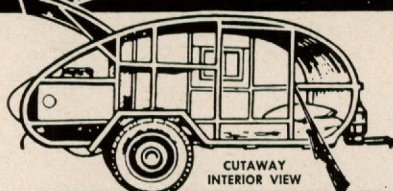
Swift Appointed Head Of Wildlife Federation

Ernest F. Swift, former director of the Wisconsin Conservation Department and for the past eighteen months an assistant chief of the U. S. Fish and Wildlife Service, has accepted the position of executive of the National Wildlife Federation.

The Federation is a non-profit, non-governmental organization made up of state wildlife federations and sportsmen's leagues. It represents through its state affiliates and their associated clubs a total membership of some three million persons, making it the nation's largest conservation organization.

This organization is financed largely by the distribution of its famed Wildlife Conservation Stamps. These are gummed reproductions of color paintings by America's leading nature artists, issued annually in sheets of 26 separate subjects.

Mr. Swift has been noted for his vigorous and outspoken advocacy of conservation principles and of the value of wildlife resources as against competing pressures on the nation's lands and waters.



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entrances (typically some six feet wide and about the same height), with narrow passageways or even crawlways and small chambers with low ceilings. These caves are for the most part underground streambeds from which the water has been diverted or which are now above the water table. They are usually damp and free-tailed bats do not utilize this type of cave as daytime retreats. *Myotis velifer* and *Pipistrellus subflavus* do, but seldom on a permanent basis as they seem to move freely from cave to cave.

A great deal of information has been amassed concerning the life history of the Mexican free-tailed bat in this area, but gaps of considerable magnitude still remain. Regular observations of the bats in Bracken Cave, supplemented by occasional visits to the other caves listed in this discussion, over a two-year period have shown that there is a marked seasonal fluctuation in population sizes starting with no discernible bats at all or only occasional specimens deep within crevices in the walls during November, December, January and most of February. During the latter part of February the first few thousand arrivals

are noted. The numbers increase steadily during March and April. In May and June the numbers are fairly constant, until the latter part of June when the young are born. Thus the population peak is reached in July and August. In September and October the bats gradually leave the nursery caves.

Just where these bats spend the winter remains a subject for conjecture; the mystery is heightened when the number of individuals involved is considered. Three theories are worth considering: (1) the bats migrate south into Mexico or Central America; (2) they hibernate in the large caves by crawling into deep cracks and crevices in the walls; and (3) the large colonies split up into smaller groups which seek out more obscure caves or buildings in which to hibernate.

The theory that the free-tailed bats migrate south in search of the flying insects that make up their food is probably most widely accepted and with some justification. It is known that certain of these bats which are sheltered in protected buildings remain in Central Texas throughout the winter in spite of the drop in their food supply. However, the numbers of bats in buildings appear to drop off in the winter rather than to sharply increase as would be the case if the cave bats simply entered buildings during the colder months.

In an effort to settle this problem, we have banded over 15,000 bats, chiefly *T. mexicana*, with Fish and Wildlife Service numbered bands on their right forearm. As yet no light has been shed on their winter activities but recoveries of banded

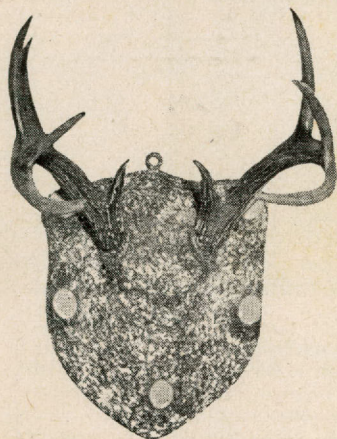
bats have been of sufficient number to provide considerable information concerning their summer behavior.

Numerous bats banded during the summer and fall of 1954 were seen the following year. During the spring and summer they were always taken in the caves in which they were banded, indicating that many of the bats return to the same caves each summer and that movement from cave to cave during this period is at a minimum. That this colony integrity breaks down during the fall is indicated by the fact that four *T. mexicana* banded at Frio Cave (Uvalde County) in April and May, 1955 were recovered in the Adam Wilson Ranch Cave (Kerr County) October 13, 1955. Only a few thousand bats were in the small Wilson Ranch Cave. They probably all came from the Frio Cave, some 35 miles distance.

Banded bat recoveries during the spring and summer months indicate that these animals range far afield in their search for insects. Illustrative of this point are the following selected records: a *T. mexicana* banded September 29, 1954 in Bracken Cave was recovered in Seguin, March 1, 1955 (30 miles); a *T. mexicana* banded September 24, 1954 in Bracken Cave was recovered in Gillett, March 30, 1955 (55 miles); a *T. mexicana* banded March 14, 1955 in Bracken Cave was recovered nine miles south of Gonzales, April 1, 1955 (60 miles); a *T. mexicana* banded October 8, 1954, in Bracken Cave was recovered near Luling, May 11, 1955 (45 miles); a *T. mexicana* banded April 28, 1955 in Bracken Cave was recovered in San Antonio, July 14, 1955 (15 miles); and a *T. mexicana* banded October 6, 1954, in Ney Cave was recovered two miles east of Kerrville, July 13, 1955 (50 miles).

Although there are over 20 species of bats in Texas, most of them are recorded from the western part of the state. The bat retreats of Cen-

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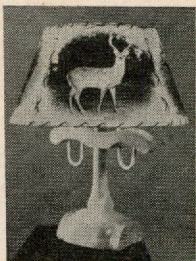


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tral Texas discussed here have shown surprising little variety in regard to species of bats present. The little brown bat, *Myotis velifer*, is the only species common to a majority of the caves, in addition to the free-tailed bats. The little brown bats usually are found in small rooms off the main free-tailed bat chambers in relatively small colonies of a few thousand individuals. Additional species are the lappet-chinned bat, *Mormoops megalophylla*, a Mexican species, found in Frio Cave, and the mule-eared bat, *Corynorhinus rafinesquei*, found in the Devil's Sinkhole. It will be noted that the Devil's Sinkhole is on the western border and Frio Cave on the southern border of the Central Texas area being discussed in this paper.

Each of these caves annually produces tons of guano, an organic fertilizer of high nitrogen content. Some sixty tons a year are harvested from Bracken Cave alone. All of these caves have histories of intermittent mining operations dating back to the 1860's when certain of them were utilized as sources of nitrates by the Confederacy.

An interesting array of parasites, both external and internal, and predators prey on these large bat colonies. The parasites include several species of ticks, blood-sucking flies, fleas, mites, roundworms, flatworms and flukes. A unique blood-sucking bug related to the bedbug lurks in crevices in the walls of Ney Cave, coming out at intervals to feed on the bats.

Carnivorous animals, raptorial birds and even reptiles abound in the vicinity of these caves. That the bats are major items of raccoon diet during certain times of the year has been shown by our frequent findings of raccoon feces composed largely of bat fur and bones. Two species of snakes have been either directly observed feeding on bats or were found to contain bats upon their dissection. Hawks and owls frequent the vicinity of these caves and secure bats for food by diving into their evening emergence flights. With the exception of the birds, as far as we have been able to determine, the predators only capture sick or weak bats that fall to the ground. In cer-

Available Wildlife Funds Increase

Game restoration projects in the various States this year will receive nearly \$2 million more in federal aid funds than were available during the previous 12 months, according to the Wildlife Management Institute. The U. S. Fish and Wildlife Service, administrator of the fund under the terms of the Federal Aid in Wildlife Restoration Act of 1937, reports that the \$11,610,500 presently available for wildlife restoration work this year exceeds last year's total by \$1,813,700.

This money comes from an 11 per cent excise tax paid by sportsmen on sporting arms and ammunition. It is allocated to each State on the basis of size and the number of hunting licenses actually sold.

Under a somewhat similar plan of more recent origin, 10 per cent excise tax collections are made on sport fish-

tain of the caves it would not be too difficult for the snakes and carnivores to take bats from the mass emerging on the evening flights. Predator tracks have not been found in the caves during the summer months, coincident with a plentiful supply of outside food. During the fall, however, the caves abound with wild mice, raccoons and other life. A study of the raccoon feces within the caves indicates that occasional bats fall from the ceiling and are consumed.

Added to the parasites and predators are the rabies virus and doubtless other disease organisms which afflict the bats. That the mortality rate is high from diseases or other causes is attested to by the abundance of dermestid beetles, both larvae and adults, which litter the cave floors and subsist on the fallen dead bats. They skeletonize a bat in a matter of minutes. In view of the vicissitudes which beset these colonies it is amazing that their numbers remain fairly constant from year to year.

ing tackle under a program of federal aid to sport fisheries restoration in each State. The total payments this year will be \$4,927,400, the largest ever made.

With the required matching provisions of one State dollar for every three Federal dollars, this means that more than \$22 million could be used for game and fish restoration work in the States this year.

There is a likelihood that this will be increased by the appropriation of one-fifth of the backlog \$13.5 million in wildlife restoration funds under the terms of an act passed by Congress last year. The failure of Congress to appropriate the full previous year's tax receipts for this work early in the aid program created the backlog. Now that Congress has directed that this money be divided among the States over a five-year period, there is a good chance that the initial one-fifth will be requested in the first supplemental appropriations bill submitted to Congress early next year. Should the request be granted, then the States can go ahead and obligate the additional money on approved projects.

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Houghton ranch. This kill was witnessed by Frank Hamer, Jr., game warden, from his airplane.

Antelope hunting begins with dawn when the men pack their 30.06's, .270, 30-30's and .222 Swifts in their cars and pick-ups, and head for the open plains. There were some interesting sidelights revealed especially in the type of guns used. It seemed as though the two-seventy was the most popular gun used with the 30.06 following closely behind.

However, the 30.06, the old stand-by for half a century, is fading out of the picture when it comes to antelope hunting. There were some 257 Roberts used. The majority of the hunters used modern caliber guns which probably resulted in the high rate of success.

The gentle-looking, but wild antelope sense the approach of man long before the hunter even sees his prey. With luck, following the first shot of the hunt, sportsmen were lucky if they could come to within two city blocks of the animals in their cars.

Shooting of antelope from cars is forbidden, therefore, hunters were forced to shoot the wary prairie goats from afoot. Stalking with a car was permitted. The majority of the hunters were forced to change their hunting tactics after they learned that stalking by car did not permit them to get within shooting range.

After exchanging ideas, most hunters agreed that the best method of

hunting was the stalking or "still" hunting method. Antelope, as deer, have runs and trails which, if undisturbed, they generally follow. The hunters followed the fence rows until they found ruffled dirt and grass and hair clinging to the fence wire. There they surmised would be a suitable place for the stalking of the sharp-eyed antelope. The next task is a good blind of bear grass, patience and a sense of shooting range.

While the hunter remains in his blind, others in pick-ups and cars will scout the surrounding miles of prairie and gentle canyons. Once spotted the "herders" slowly coax the antelope herds of pairs in the general direction of the waiting hunter. If not rushed the antelope will herd, if pushed they will break and may go in any direction, causing much delay and loss of good shots.

It seems the antelope are completely taken by surprise when they find a lone hunter waiting behind a clump of bear grass in the midst of thousands of acres of prairies. Generally the antelope sense that a car is their greatest danger, however, other alert bucks will spot a hunter in hiding and make a hasty

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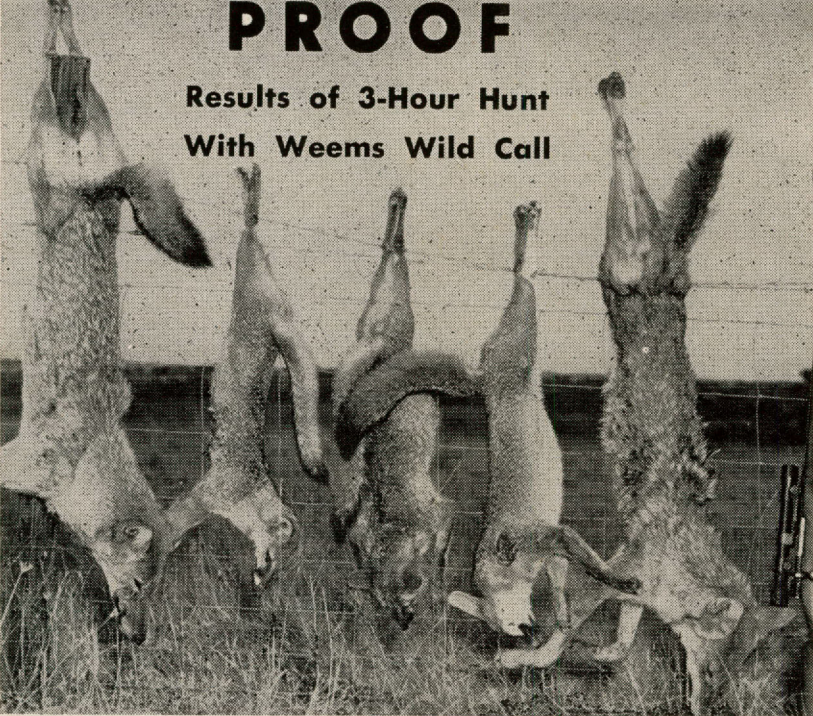
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Hunters Shoot At Dummy Deer

From the San Angelo
Standard-Times

Anything with horns is likely to be shot during deer hunting season.

Arthur Neal, Rochelle ranchman, and his two grandsons, proved that recently.

They constructed a realistic looking pasteboard deer and rigged the dummy with real antlers. That was just before the deer season opened.

They placed their dummy deer in a thickly wooded canyon on the Neal ranch.

The morning after the season opened the Neals checked their deer. It was still standing but it had been perforated with two shots.

As the days passed, more and more holes were drilled through the dummy by the nimrods seeking deer. A few chagrined hunters confessed to being fooled into shooting at the fake.

exit in the other direction.

Any antelope hunter will agree that a powerful set of binoculars is as important in the hunt as the rifle. Man's eyes cannot compare with those of the antelope and the wiry animal must be sought out far in advance so that the hunter's strategy can be planned. Often antelope will start in another direction before he can even be seen by man's naked eye. Only too often the hunter will peer through his powerful binoculars to find an alert buck setting him or pointing him as though he were a bird two miles away.

Most antelope hunters agree that a caliber smaller than a 30.06 should be used on antelope. Any long-range rifle, particularly the .222 Swift is an excellent caliber for the light-boned antelope. The .270's are frequently used and make good clean kills although they, too, are a bit too heavy a caliber for the prairie goats. The majority of the hunters used 4-power scopes, although it is not a necessity. Iron sights are sufficient for persons with extremely good eyesight.

Reports from ranches hunted indi-

Summary of Seasons

FISH — GAME — FURBEARERS

WARNING—The open seasons listed below are general state laws. Many counties, by action of the legislature, have special laws which differ from the general laws. A digest of Game and Fish Laws, which notes these exceptions, may be obtained from your local game warden, from your gun and tackle dealer, or by writing the Texas Game and Fish Commission, Austin.

GAME ANIMALS AND BIRDS

Mourning Doves—North Zone closed Oct. 15. South Zone closed Nov. 28.

Gallinules and Rails (except Coot)—Season closed Oct. 30.

Coot and Ducks—Opens Nov. 2, closes at sunset on Jan. 15. Shooting hours, one-half hour before sunrise to sunset. Season closed on black-bellied tree ducks. Limits: 10 coots per day or in possession; 5 ducks per day, 10 in possession, including not more than one wood duck and one hooded merganser.

Geese—Opens Nov. 17, closes at sunset Jan. 15. Shooting hours ½ hour before sunrise to sunset. Limits: 5 per day or in possession, including not more than 2 Canada geese or subspecies, or 2 white-fronted geese, or one of each.

Squirrel—General open season October, November, December, May, June and July. Limit: 10 per day, 20 in possession. Panhandle season, October 1 to December 1, and May 1 to July 1, both days inclusive; limit, 5 per day or in possession. West of Pecos, season closed.

Deer, Turkey and Bear—General season closed Dec. 31. Panhandle: no open season on bear; deer and turkey closed Nov. 28. West of Pecos: deer and bear season closed Nov. 25; no open season on turkey.

Javelina—General season closed Dec. 31. Panhandle: no closed season, no limits. West of Pecos: season closed Dec. 31. Note—Javelina season open all year in many counties; no bag limit (see Game and Fish Law Digest).

Chachalaca and Quail—General season open Dec. 1 to Jan. 16, both days inclusive. Limits: 5 chachalaca per day, 10 per week or in possession; 12 quail per day, 36 per week or in possession. Panhandle quail season Dec. 1 to Jan. 16, both days inclusive; limit 10 per day, 20 in possession; season closed on chachalaca. West of Pecos, quail season closed Dec. 31; Mearns quail and Chachalaca season closed.

Wilson Snipe or Jacksnipe—Season open one-half hour before sunrise Jan. 1 to sunset on Jan. 15; limit: 8 per day or in possession.

FURBEARERS

All furbearers except Muskrat—December and January.

Muskrat—November 15 to March 15.

GAME FISH

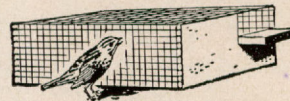
There are no closed seasons on game fish in Texas (except for special county laws).

cated that the hunters had almost 100 per cent luck in bagging their bucks.

Antelope is said to taste very similar to baby veal and has no resemblance to mutton or goat meat as would commonly be thought.

Besides some good meals for the coming days, hunters have fine head trophies which will remind them in the years ahead of their adventurous antelope hunt in the fall of '55.

CONTROL ENGLISH SPARROWS



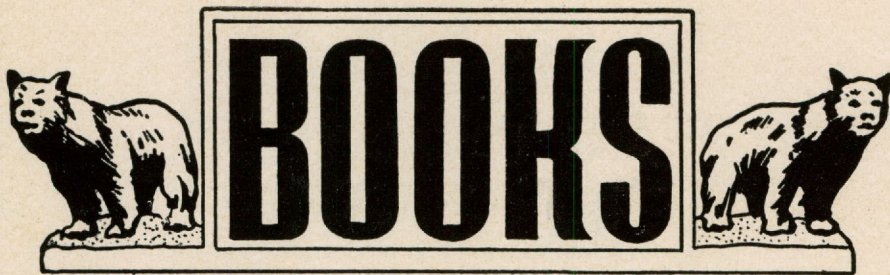
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"My Hobby is Collecting Sea Shells and Coral" is full of good photographs and reputable information about specimens, how to recognize shells and coral, and what to do with your collection after you have collected it.

"My hobby is Bird Watching" is not only a book containing excellent photos of birds but also a guide to bird identification and where to find birds. For the bird-watcher there are many tips on bird feeders, watching equipment, field trip records and bird-watching clubs. The reader who is not a dyed-in-the-wool "watcher" will enjoy its maps of the principal flyways of the con-

tinents and pages that concern bird migration.

Photographers will be keenly interested in the "how-to" of bird photography, as the author explains this from camera equipment to remote control and blinds to backgrounds.—S.R.S.

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These attractive, well bound children's books tell the stories of nature in an interesting and thoroughly understandable manner. The author knows her children, and each of these books is designed with them in mind.

The books on insects and weeds and wildflowers have drawings and descriptions that are simple, and easy for a child's mind to comprehend. The book on seasons explains the earth's movements and what causes us to have the four seasons of the year. Accompanying pictures give a good example of each different time of the year. "Animal Babies" is a fine coverage of the tiny animals of the world, and it also goes rather beautifully into the lives of human babies.

A good collection for the children of any family.—S.R.S.

GUIDE TO BETTER ARCHERY by Thomas A. Forbes. 300 pages illustrated with black and white drawings by Ned Smith. Published in 1955 by The Stackpole Company, Telegraph Press Building, Harrisburg, Pennsylvania. \$4.95.

This book is all the name implies—a good guide to better archery, and it covers everything from the rounds

used in competition to bow hunting methods for the taking of game animals. Detailed instructions are given on the layout and construction of a field course, and there are chapters on use of magnetic compasses and map reading.

Of added interest is the section describing the dressing, preserving and cooking of venison. This is made more clear by the fine diagrams which give a coherent guide to skinning and the various cuts of venison to be had.

In this day of hunting accidents, the chapter on safety code is a must for beginners and professionals alike.

DICK BUTTON ON SKATES by Dick Button. 217 pages, illustrated with photographs and black and white diagrams. Published in 1955 by Prentice-Hall, Inc., 70 Fifth Avenue, New York 11, N. Y. \$3.95.

The author of this book gives you a first-hand account of his rise to skating fame through his early trials and the triumph of world championships. You can read of the Olympic performances, and see many action pictures taken during these games.

Skaters will find detailed accounts of skills acquired through the author's years of experience and competition. In clear-cut instructions, there is an easy-to-understand section on figure skating, free skating, basic jumps and spins, and advanced maneuvers.

Dick Button writes of his personal skating history in an amusing manner, and the book, while adhering to factual data, is highly entertaining.

INSECT FACT AND FOLKLORE by Lucy W. Clausen. 194 plus xiv pages illustrated with black and white drawings by Jan B. Fairervis. Published 1954 by The Macmillan Company, New York City, New York. \$3.50.

This book outlines how the fascinating creatures of the insect world live, but, unlike most books on entomology, it goes a step further. This one emphasizes how insects live with and around humans and how each is affected by the other.

The volume is slanted definitely to be comprehended by the layman, and in so doing, the author has emphasized reading pleasure on an equal basis with information. The insects take on personality, leaving the reader with a vivid and enjoyed profile of each.

Stressed are the relationships between humans and insects, good or bad, expressed in interesting, easy-to-understand language and spiced with legends and folklore.

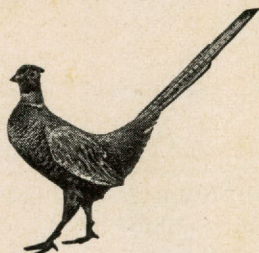
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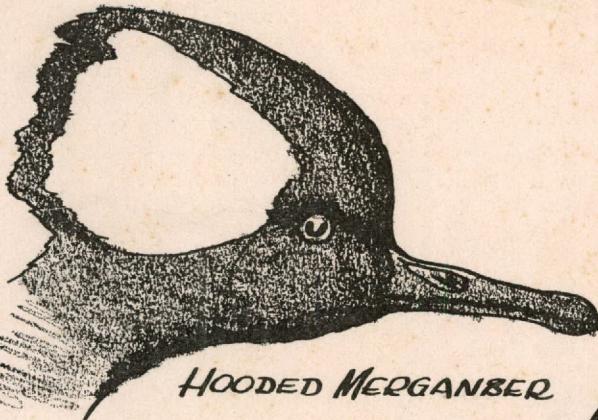
MOUNTAIN QUAIL



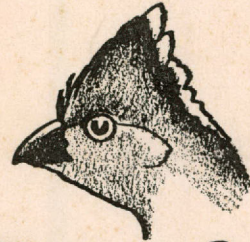
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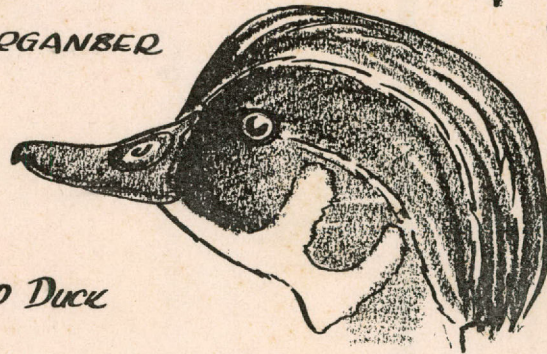


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