

# New Fish Processing Method Developed By A&M Scientist

Billions of tons of small, rough fish, taken in nets of commercial shrimp and fishing boats each year, may soon be converted from one of commercial fishing's biggest liabilities to a profitable enterprise—as the result of an invention announced here today.

Dr. W. W. Meinke, manager of the Chemurgic Laboratory of the Texas Engineering Experiment

Station, has developed a method of scaling and gutting small fish, without the use of machinery.

Meinke places the small fish in an enzyme solution, and, by regulating time, temperature and enzyme concentration, brings out fish carcasses free of scales and viscera. Only the bones and meat remain on these fish; viscera and scales go off into solution, the latter to be separated for production of scale and bone meal, and the former to be kept in solution as fish solubles.

The new method is expected to cut man-hour requirements in plants processing fish for food, to be of potential economic importance in the sardine and mackerel canning industry, and to open markets for products made from the small "waste" fish that have been thrown over the side in commercial fishing operations in the past.

Meinke points out that his gutting and scaling operation works on a principle similar to that used in tenderizing meat. Whole small

fish are placed in tanks with the enzyme solution which selectively loosens the scales and "digests" the viscera. The whole carcasses are removed and washed with water and set aside for further processing. Nothing is wasted.

Formulae for the amount of enzymes used, for time of "soaking" and for temperature, are carefully worked out, since differences in species of fish require various times and temperatures for effective scaling and gutting.

At the Chemurgic Laboratory, Meinke and his staff have been using common Gulf species, such as golden croaker, sand trout and the like. But, he says, the method will apply to most species of small, hitherto wasted fish, and, with certain refinements, should have applications in processing better fish, such as sardines, mackerel, tuna and salmon.

Marketable products produced in the Chemurgic Laboratory, from the small fish, include fish flours, meals, fish solubles and bone and scale meals with a number of uses.

Fish flour can be used for enrichment of such human foods as cereals. Meinke points out that for enrichment a high protein content is desired, and that the fish flours run as high as from 80 to 90 per cent protein.

Fish solubles, resulting from digestion of the viscera and soft skin in the fish, have a ready market with producers of formulated poultry feeds, and are valued at from \$80 to \$100 a ton. The use of fish solubles in poultry rations during the past ten years has been one of the biggest advancements in poultry feeding in the nation.

Bone and scale left over from processing have potential uses as mineral supplements, and as protein supplements in poultry feeds.

Carcass flesh from the rough fish is available for the cat-and-dog food industry, and for other uses.

The idea of converting billions of tons of small fish that are now a nuisance to commercial fishers and shrimpers, into products of marketable value, has sparked more than two years research at the laboratory at College Station.

"On an average," Meinke points out, "shrimpers get about six pounds of rough fish to every pound of shrimp taken in trawls. This varies, of course, from essentially pure shrimp hauls, to those consisting almost entirely of trash fish. Depending on what comes up in the net, the shrimper may work the area, or have to make long runs to new grounds."

"To convert the rough fish to saleable products will, of course, be converting a big liability to an asset. The value of the rough fish catches will depend on a number of factors—including such features as cost of transportation, developing practical icing methods, processing without the expense of big machinery operations."

Under laboratory conditions, Meinke and his staff have converted "waste" fish into products with a value of \$34.76 a ton—at a cost of \$27.86 per ton.

Buddhist priests have their last meal of the day at noon and do not touch food again until the following morning.

# News of the World

By The Associated Press

## India Keeping Out of Anti-Red Revolt

NEW DELHI, India—Prime Minister Nehru told Parliament Monday India is keeping hands off the anti-Communist revolt in Tibet, and that fighting between the Red Chinese and street mobs apparently has died down in Lhasa, the capital.

His statement apparently demolished one of the last hopes of the Tibetan rebels.

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## Coal Mine Explosion Kills Nine

ROBBINS, Tenn.—A gas explosion ripped the interior of a small coal mine Monday killing nine men. There were no survivors.

The blast occurred at 8:30 a. m., about a half hour after the men entered the mine.

It took rescue workers five hours to recover all the bodies, which were badly burned and torn. They were found about 4,000 feet from the mine entrance.

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## Ike Bids to Raise Unemployment Insurance

WASHINGTON—President Eisenhower renewed a bid Monday he made five years ago that the states raise the amount and duration of unemployment insurance benefits.

Eisenhower made the plea at a meeting with an eight-governor executive committee of the Governors Conference. He reiterated his opposition to improving the jobless aid program by federal legislation as advocated by some Democrats in Congress.

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## Senate Passes Bill Helping Unemployment

WASHINGTON—The Senate passed a 389½-million-dollar bill designated to help areas of chronic unemployment with federal grants and loans Monday. It far exceeded President Eisenhower's request.

The roll-call vote was 49-46. The bill now goes to the House which has conducted hearings on similar legislation.

Eisenhower last year vetoed a similar bill, carrying \$100 million less than the measure before the Senate Monday. Republicans freely predicted he also would veto this new version.

## A&M Prof Takes Louisiana Tour

Fred E. Smith, professor of geology at A&M, recently returned from conducting a weekend field trip in east Texas and western Louisiana. The purpose of the trip was to collect and study the surface outcrop of the Moody's Branch Marl between the Red River in Louisiana and the Brazos River in Texas.

Carroll D. Pitzer, a graduate student in the Department of Geology and Geophysics from Refugio is studying the microfauna of this member of the Jackson formation for his Master's thesis. They were accompanied by Suparb Poo-brasert, Bangkok, Thailand; J. Mayo Waggoner, College Station and Kenneth E. Davis of Waco, students.

## Morgan To Attend Composition Meet

Dr. Stewart S. Morgan, head of the Department of English, will attend the annual meeting of the Conference on College Composition and Communication in San Francisco, Calif., April 2-4.

The Conference on College Composition and Communication is a branch of the National Council of Teachers of English. Morgan is state chairman of achievement awards for the NCTE.

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STATEMENT OF CONDITION OF COLLEGE STATION STATE BANK AT CLOSE OF BUSINESS March 12, 1959

RESOURCES

Cash	\$1,144,034.73
U. S. Government Bonds	817,731.78
Municipal Bonds	131,091.32
Stock Federal Reserve Bank	6,000.00
Loans	1,740,865.32
Banking House	38,577.00
Furniture and Fixtures	18,000.00
Other Real Estate Owned	1.00
Other Assets	1,360.00
TOTAL RESOURCES	\$3,897,661.15

LIABILITIES

Capital Stock	\$ 100,000.00
Surplus	100,000.00
Undivided Profits	38,332.53
Deposits	3,644,498.62
Reserves	14,830.00
TOTAL LIABILITIES	\$3,897,661.15

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