

## ECONOMICS

# Riches from Fishes

**Fine leathers, vitamin A, oil, fertilizer and stock food come from the ocean depths. 4,500,000,000 pounds of fish produced annually in the United States.**

By A. C. MONAHAN

► **FINE LEATHERS** for ladies' slippers, purses and belts may some day be obtained from ocean depths. Scaleless fish, such as catfish and sharks, have tough hides that before the war were used in wearing apparel, and soon may be used again. Improved tanning processes may give them a permanent place in the market.

Making leather from fish skin is just another step in the program of the commercial fishing industry which looks forward to the day when all former fish wastes will become valuable by-products. The industry wastes little now, hardly more than meat packers do of the cow or hog, but its goal is to use every bit of the fish for the products that will bring in the greatest financial returns. By-products mean the difference between profit and loss.

Commercial fishing is primarily for food, but some fisheries are interested in fish with little or no food value because of their value for oil, animal food and fertilizer. Some fish only for sharks to obtain the important vitamin A in their livers. But the rest of the shark is not wasted; it makes feed, fertilizer and leather.

## Large Industry

The American fishing industry produces annually an average of about 4,500,000,000 pounds of fish, oysters, shrimp and other seafood, of which two-thirds by weight reaches the market as foods for humans and one-third as by-products. In canning and filleting, much edible flesh is unusable for those particular purposes and becomes shredded fish-flakes or canned dog rations. Some 600,000,000 pounds of former waste becomes meal and oil. Even oyster and clam shells find a use in poultry yards or in manufacturing processes.

Fish has long been used for fertilizer. Fish meal is food for hogs and cattle as well as for chickens. Cod liver oil, from livers formerly discarded, is a valuable medicine in the treatment of diseases causing emaciation. The soupfin shark's liver is particularly rich in vitamin A,

although today dog-shark liver is a greater source of this vitamin because the poundage taken is much greater. Fins of the soupfin shark bring a high price from Chinese on the West Coast who make a finely flavored gelatine from its delicate fin-rays.

The United States has ample fishing resources. This is fortunate because Americans are fisheaters. The per capita consumption is not as great as it is in England, Japan and other island countries, but might approach the British consumption if inland Americans ate as much as those living within a few hundred miles of the oceans.

Americans in the interior have greatly increased their use of salt water fish since they have been able to buy the so-called filleted product all ready to cook. The average housewife never did like the job of "cleaning" fish. Incidentally, filleting fish in factories saves for factory by-products vast quantities of former household wastes dumped into garbage cans.

One reason that America has ample fish is because the country has vast underwater continental shelves extending many miles from much of its coasts. Fish must have food.

The necessary food is found in the plant and animal life in the relatively shallow waters over these shelves, and not in the deep water of mid-ocean. Plankton grow in these offshore waters, and much food is carried to them by entering rivers. Insects, grubs, worms and mollusks are more abundant. Fish eggs are more plentiful, and, for fish that like to eat fish, small varieties and young fish are available.

The North Atlantic fishing region, historically well known, includes the New England coast and the Newfoundland banks. It has a broad continental shelf that extends in places hundreds of miles to the sea, with several banks or underwater plateaus. The region is the great home of the cod, sacred to Massachusetts, but is more abundant in haddock, flounders, pollock and rosefish. The New England coast is the home of the lobster, clam and scallop.

The Middle Atlantic states region is

best known for its oysters, crabs, shad, alewives and striped bass. It is noted also for its menhaden fishing, a fish taken almost wholly for the fish oil and meal industry.

The South Atlantic area, which includes the Gulf of Mexico, is also noted for oysters, crabs, and menhaden. The Gulf is the seat of the largest shrimp fisheries in the world. Both Middle and South Atlantic regions produce many other edible fish. Florida offshore waters are the hunting grounds for the tarpon, the famous six-foot fighting gamester.

Sardines, or pilchard, constitute the principal landings in the South Pacific or California region, but the tuna is an important catch. It is taken mostly in waters south of the United States-Mexico line. More fish in volume is now landed annually in California ports than even in New England.

Unlike conditions of the North Atlantic coast, waters rich in food for fish in the Pacific are not confined to the continental shelf but extend many miles to sea.

## Salmon Area

The North Pacific fisheries region is off the coast of Oregon, Washington and British Columbia. It is a salmon area, with heavy production also of halibut, albacore, oysters, crabs, and sharks. It is the principal center of the shark-liver oil industry.

Alaska is one of the most important of the fishery resources of the United States and is noted particularly for its salmon. Salmon is America's most valuable fish catch, and about 90% of it comes from Alaska. Approximately 600,000,000 pounds of Pacific salmon are landed each year, 85% of which is canned. In addition to this commercial catch, millions of pounds are caught annually by sportsmen because salmon is a sport fish.

Salmon canneries use more of the fish than any other fish canning industry. On the other hand, they utilize less of the waste. Some of the roe reaches the market as caviar, and some of the fish waste is used for meal and oil, but the bulk is thrown away.

Inland waters furnish America with much fishfood. The commercial catch in the Great Lakes, the Mississippi and other lakes and rivers, excluding sea-

run fish, is in the neighborhood of 175,000,000 pounds a year. No estimate is possible of the amount taken by individuals either for the family food or for sport. These inland bodies of water individually contain rather small populations of fish, but they add up to a vast total.

In the Great Lakes, the lake herring is the most important in point of weight taken annually. It lives off shore, feeding on plankton and on mollusks, crayfish, insect larvae and fish eggs. It belongs to the same family as the famous white-

fish for which the lakes are noted. Whitefish, often called the king of freshwater fish, has become severely depleted through wasteful fishing methods and inadequate protection. The annual catch now is only about one-fifth by weight of the catch of lake herring.

The annual commercial catch of fish runs from four to five billion pounds with a value to the fisherman of over \$200,000,000. The American fishing industry produces some 3,000,000,000 pounds of food and 1,500,000,000 pounds of by-products. It provides annually over 27,-

000,000 gallons of ordinary fish oils and an average of 1,100,000 gallons of liver oils.

The American fishing industry employs over 65,000 regular fishermen working on vessels, row-boats or from the shore, and 60,000 others engaged part time in commercial fishing. In addition many thousands are employed in canning and other processing plants. The total capitalized value of United States fishery resources is estimated, by government authorities, as \$5,855,000,000.

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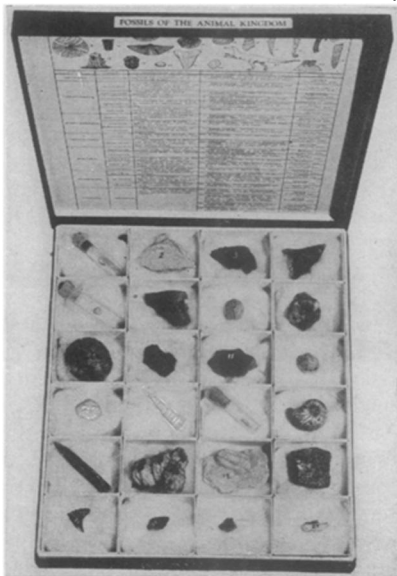
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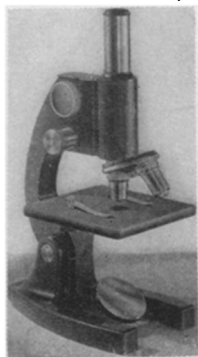
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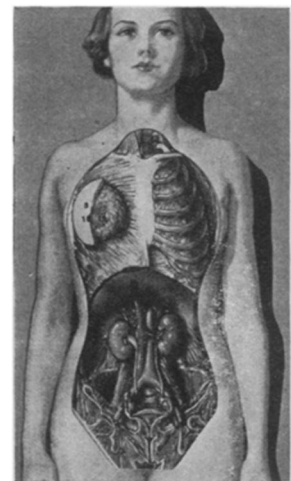
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